

CURRENT AFFAIRS MAGAZINE JUNE, 2023



Educrat IAS
India's Best Mentorship for Civil Services

- DELAYED MONSOON
- ARCTIC SEA ICE MELTING
- INDIA NEW ZEALAND ROUND TABLE MEETING
- TAX DEVOLUTION
- CENTRAL BUREAU OF INVESTIGATION



TABLE OF CONTENT

Mains Daily News Analysis	2	14) India-Egypt Relations	48
GS – 1	2	15) India US Strategic Partnership	51
1) Unveiling Ancient Climate Secrets with Ladakh	2	16) Titan Tragedy Lessons for Proposed Indian Submersible Dive	53
2) 130th Year of Gandhiji's Satyagraha	3	17) Need for UCC in India	56
3) El Nino 2023: Unusual Warming Like 2009	5	GS – 3	59
4) Delayed Monsoon	6	1) Tracking SDG7: The Energy Progress Report 2023	59
5) Arctic Sea Ice Melting	8	2) Mission on Advanced and High-Impact Research	61
6) Climate Resilient Agriculture	10	3) Inclusion of Urea in Nutrient-Based Subsidy Regime	63
7) World Desertification Day 2023	12	4) Compromise Settlement for Wilful Defaulter: RBI	65
8) Indian Ocean Dipole	15	5) Adoption of E20 Fuel and Green Hydrogen Production	68
9) Critical Minerals for India	17	6) Subsidies and Climate Change	70
GS – 2	20	7) India's Jet Engine Deal with the US	73
1) Delimitation	20	8) Paris Global Climate Financing Summit	75
2) Global Slavery Index 2023	22	GS – 4	78
3) World's Largest Grain Storage Plan in Cooperative Sector	24	1) Neurotechnology and Ethics	78
4) India's E-cooking Transition on World Environment Day	26	2) Organic Intellectuals and Capitalist Hegemony	80
5) Converting Plastic Waste into Fuel	28	Prelims Booster- The Hindu & Indian Express	82
6) Addressing AMR in the Draft Pandemic Treaty	30	Prelims Booster- Press Information Bureau (PIB)	106
7) India New Zealand Round Table Meeting	33	Places in News	128
8) Tax Devolution	34	Edufacts	132
9) UNDP's 2023 Gender Social Norms Index	36	Practice MCQs on Current Affairs- June 2023	134
10) Central Bureau of Investigation	39	Practice MCQs on Conventional Subjects- June 2023	162
11) Global Trends: Forced Displacement in 2022	41		
12) Global Gender Gap Report 2023: WEF	44		
13) ODOP Sampark Event in Nagaland	46		

Mains Daily News Analysis

GS – 1

1) Unveiling Ancient Climate Secrets with Ladakh

Why in News?

Scientists have made significant strides in **understanding climate variations during the transition from the last deglaciation period**, approximately 19.6 to 6.1 thousand years ago.

- By studying sediment deposits from **ancient lakes in the Indus River valley in Ladakh**, they have reconstructed climate records and shed light on the region's climate history.

What are the Major Findings of the Research?

▪ Research Methodology:

- Scientists sampled sediment deposits from an 18-meter-thick sequence found along the **Indus River at an altitude of 3287 metres**.
- The researchers conducted meticulous laboratory analyses on the samples, examining physical characteristics such as **colour, texture, grain size, grain composition, total organic carbon, and magnetic parameters**.
- These parameters were used to extract information about past climate conditions from the **palaeolake sedimentary archive**.

▪ Major Findings Related to Climate Evolution:

- Between 19.6 and 11.1 thousand years ago, a **cold arid climate dominated the region** due to the influence of **westerly circulation**.
- From 11.1 to 7.5 thousand years ago, **monsoon forcings became the primary driver of climate**, leading to a period of strong monsoons.
- Afterward, **orbitally controlled solar insolation** played a crucial role in shaping the climate by influencing the position of the **Inter Tropical Convergence Zone (ITCZ)** and the variability of atmospheric circulations.
- During the mid-Holocene (7.5 to 6.1 thousand years ago), the westerlies regained strength, coinciding with decreasing insolation, a **weakening monsoon, and enhanced El Nino activities**.
- The study also demonstrates the **potential of using multiple physical parameters of sediments to reconstruct paleoclimate variations** (changes in Earth's climate that occurred in the geological past) with high resolution and accuracy.

What is the Significance of Ladakh in Climate Research?

- **High-altitude Environment:** Ladakh region, located in the Trans-Himalaya, serves as an environmental boundary between **North Atlantic and monsoon forces**.
- This region is characterised by **extreme temperatures, low oxygen levels, and arid conditions**.
- Studying the climate dynamics and changes in such high-altitude environments helps scientists **better understand the impacts of climate change on similar regions worldwide**.
- **Ideal to Study Atmospheric Circulation:** Its **geographical position makes it ideal for studying variations in atmospheric circulations**, including the westerly winds and the Indian summer monsoon.
- Understanding the variability of these atmospheric circulations is crucial in the context of **global warming and its implications for regional climate patterns**.
- **Sedimentary Archives:** Among the **various sedimentary archives that exist in Ladakh**, the sediment deposits in lakes are useful in **attesting both short and long-term climatic changes**.
- This is because **lakes have continuous sedimentation rates and preserve physical and chemical characteristics** of the sediments that reflect past environmental conditions.

- **Glacial Retreat:** The **Himalayan region**, including Ladakh, is home to numerous glaciers that act as a crucial source of freshwater for rivers like the **Indus, Ganges**, and Brahmaputra.
- **Climate change has accelerated the retreat of these glaciers**, leading to concerns about water security, changes in river flow patterns, and potential impacts on local ecosystems and communities.
- **Ladakh provides an important location to monitor glacial changes** and study the consequences of glacial retreat.
- Also, the **transition from a glacial to interglacial climate period** entails large-scale climate reorganisation. Understanding the dynamics during this transitional phase is crucial for **comprehending climate evolution**.
- Mountainous regions like **Ladakh are particularly susceptible to these changes due to their unique geomorphological characteristics**.

Westerly Circulation

- It refers to the **predominant west-to-east flow of winds in the mid-latitudes of both hemispheres**.
- It is caused by the **rotation of the Earth and the temperature differences between the equator and the poles**. The westerlies play a crucial role in weather patterns and the transport of heat, moisture, and pollutants across regions.

Orbitally Controlled Solar Insolation

- It refers to the **variations in the amount of solar radiation received on Earth due to changes in Earth's orbit around the sun**.
- These orbital variations occur over long periods, such as tens of thousands of years, and can impact climate patterns.

Intertropical Convergence Zone

- The **ITCZ is a low-pressure zone near the equator** where trade winds from the northern and southern hemispheres converge.
- It is **characterised by abundant rainfall and is responsible for the formation of tropical rainforests and monsoon systems**.
 - The **ITCZ migrates north and south with the changing seasons**, following the sun's zenith position.

El Nino Activities

- **El Nino is a climate phenomenon that occurs in the tropical Pacific Ocean**. It involves the **warming of sea surface temperatures**, disrupting the normal patterns of atmospheric circulation and weather systems.
- During El Nino events, the **trade winds weaken, and warm waters from the western pacific flow eastward, altering rainfall patterns globally**. El Niño has significant impacts on weather, agriculture, fisheries, and ecosystems.

2) 130th Year of Gandhiji's Satyagraha

Why in News?

On 7th June 2023, the **Indian Navy** participated in a commemorative event to **mark the 130th Anniversary of the start of the struggle against apartheid**, started by Mahatma Gandhi (**7th June 1893**) at the **Pietermaritzburg Railway Station near Durban, South Africa**.

- **INS Trishul, a frontline warship of the Indian Navy visited Durban to commemorate the event**.
- This visit also commemorates the **30-year re-establishment of diplomatic relations between India and South Africa**.

How was the Satyagraha Movement Started?

- On 7th June, 1893, **Mahatma Gandhi** faced racial discrimination when he was forced to leave a **first-class compartment on a train in Pietermaritzburg, South Africa**. Despite purchasing a ticket, a European passenger demanded his removal, citing that **non-whites were not allowed in first-class compartments**.
- This incident became a pivotal moment for Gandhi, sparking his fight against racial oppression and the development of his philosophy of **Satyagraha (nonviolent resistance)**.
- In recognition of his contribution, Nelson Mandela, then President of South Africa, conferred **the Freedom of Pietermaritzburg** posthumously **on Mahatma Gandhi in a moving ceremony at Pietermaritzburg Railway Station on April 25, 1997**.

What were the Contributions of Gandhiji in South Africa?

- **Legal and Social Activism:**
 - Gandhi arrived in South Africa in 1893 to handle a **legal case but was inspired to fight for the rights of Indians in the country**.
 - He organized Indians in **Durban and founded the Natal Indian Congress in 1894** to advocate for voting rights for Indians.
 - He **confronted discrimination and racism** through his law practice, representing Indians and addressing their grievances.
 - He mobilized support for the welfare of Indians and **established the Transvaal British Indian Association in Johannesburg in 1903**.
- **Satyagraha and Passive Resistance:**
 - Gandhi launched his first Satyagraha (nonviolent resistance) campaign in **Johannesburg in 1906** against an **ordinance that imposed restrictions on Asians**.
 - He organized mass meetings and encouraged civil disobedience to challenge discriminatory laws.
 - Gandhi faced imprisonment multiple times for his nonviolent protests, including the famous **Volkrest Satyagraha in 1913**.
- **Establishment of Communal Living:**
 - Gandhi founded the **Phoenix Settlement in Durban in 1904** as a community living experiment.
 - He established the Tolstoy Farm near Johannesburg in 1910 to prepare **Satyagrahis (followers of nonviolence)**.
 - **These initiatives aimed to foster self-reliance, promote communal harmony, and provide training in practical skills.**
- **Mobilization of Indian Community:**
 - Gandhi's activism and leadership inspired the **Indian community to stand up against discriminatory laws and regulations**.
 - His methods of nonviolent resistance and civil disobedience had a significant impact on the **South African Native National Congress**, formed in 1912.
 - Gandhi's political **ideas and mobilization efforts played a role** in shaping the formation and direction of the South African independence movement.
- **Legal Reforms and Recognition of Indian Rights:**
 - Through his activism and negotiations, Gandhi compelled the South African government to **pass the Indian Relief Act in 1914**.
 - **This act abolished several discriminatory laws** and recognized the rights of Indians in South Africa.

- Gandhi's efforts laid the **groundwork for future reforms and set a precedent** for nonviolent resistance in the struggle against oppression.

3) El Nino 2023: Unusual Warming Like 2009

Why in News?

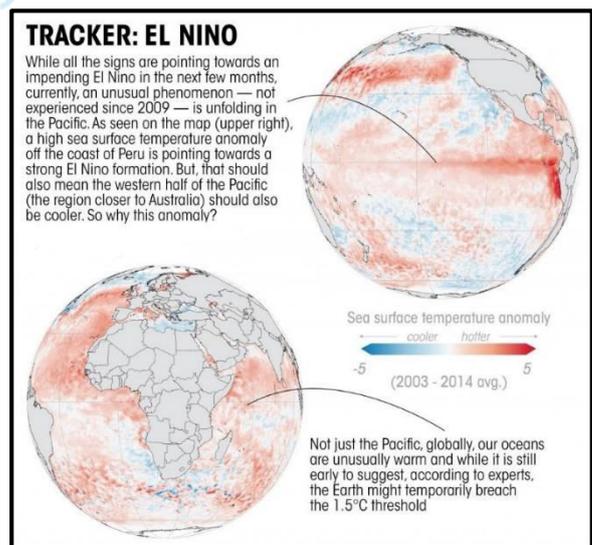
Recently, an **unusual phenomenon** is developing along the **equatorial Pacific region**, indicating the **emergence of El Nino conditions in 2023**. Experts warn that this **simultaneous warming of the eastern and western regions of the equatorial Pacific**, a trend **last observed in 2009**, could have severe implications for marine life worldwide.

What are the Causes for this Phenomenon?

- The **eastern Pacific is getting warmer**, which should make the **west cooler**.
 - However, due to **global warming**, there is **basin scale warming** across the tropical Pacific.
- **Two things could have triggered this phenomenon:**
 - **Global warming** in the Pacific and other modes of natural variability
 - The transition from **La Nina winter** into an **El Nino summer** which is part of the **El Nino-Southern Oscillation (ENSO) cycle**.
- **Basin Scale Warming in the Equatorial Pacific:**
 - Due to **global warming**, the equatorial Pacific experiences basin scale warming, **causing both eastern and western regions to become warmer**.
 - The measurement of basin scale **refers to the spatial extent of a basin or common water outlet**, in this case, the **equatorial Pacific region**.
 - Recent data analysis shows that the ocean temperatures on May 29, 2023, were unusually warm compared to the 2003-2014 average.

What are the Potential Consequences of this Phenomenon?

- **Global Warming:**
 - The end of La Nina means that the **ocean is not taking up heat, which will dissipate into the atmosphere**.
 - If the atmosphere is warmer, then the **ocean doesn't lose as much heat, causing it to warm up at the surface**.
 - This may temporarily push **global warming beyond 1.5°C**.
- **Geophysical Effect:**
 - The phenomenon will affect **cyclones, hurricanes, and typhoons**, with **Typhoon Mawar** in the **western Pacific** already being one of the strongest.
 - The warming of ocean waters acts as a catalyst for **marine heatwaves**, the **slowing of meridional circulation**, which could cause unmitigable losses for **marine biodiversity**.
- **Coral Bleaching:**
 - A warming of 1.5°C threatens to **destroy 70 to 90 per cent of coral reefs**, and a 2°C increase means a nearly **100 per cent loss** – a point of no return.



Previous El Nino Events:

- El Nino events of **1982-83 and 1997-98** were the **most intense** of the 20th century.
- During the **1982-83** event, sea surface temperatures in the eastern tropical Pacific were 9-18° F above normal.
- The El Nino event of **1997-98** was the first El Nino event to be **scientifically monitored from beginning to end**.
- The 1997-98 event produced drought conditions in **Indonesia, Malaysia, and the Philippines. Peru and California experienced very heavy rains and severe flooding.**
- The Midwest experienced record-breaking warm temperatures during a period known as **“the year without a winter.”**
- **The El Nino, along with global warming, had made 2016 the warmest year on record.**

What is the Impact El Nino 2023 on India?

- **Weak Monsoon for India:** The development of an El Nino in May or June 2023 may cause weakening of the **southwest monsoon season**, which brings around **70% of the total rainfall India receives** and on which most of its farmers still depend.
- However, **sub-seasonal factors such as the Madden-Julian Oscillation (MJO)** and monsoon low-pressure systems **can temporarily enhance rainfall** in some parts as witnessed in the year 2015.
- **Hot Temperatures:** It may also cause **heatwaves** and **droughts** in India and other regions around the world such as South Africa, Australia, Indonesia and the Pacific Islands.

4) Delayed Monsoon

Why in News?

In 2023, the **monsoon** arrived over the **Kerala coast on June 8**, which is a delay compared to its normal onset date of June 1.

What is Monsoon?

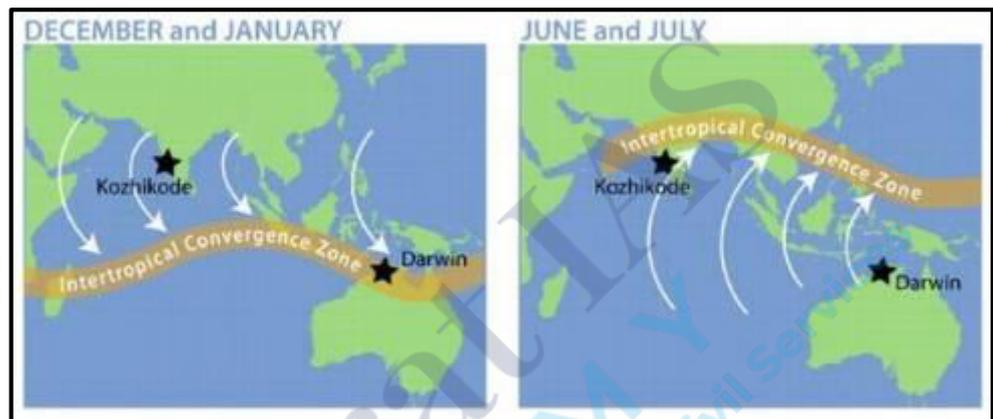
- **About:**
 - Monsoons are **seasonal winds** (Rhythmic wind movements or Periodic Winds) **which reverse their direction** with the change of season.
- **Factors Influencing South-West Monsoon:**
 - The **differential heating and cooling of land and water** creates a low pressure on the landmass of India while the seas around experience comparatively high pressure.
 - The **shift of the position of Inter Tropical Convergence Zone (ITCZ)** in summer, over the Ganga plain (this is the equatorial trough normally positioned about 5°N of the equator.
 - It is **also known as the monsoon-trough** during the monsoon season).
 - The presence of the **high-pressure area, east of Madagascar**, approximately at 20°S over the Indian Ocean. The intensity and position of this high-pressure area affect the **Indian Monsoon**.
 - The **Tibetan plateau gets intensely heated during summer**, which results in strong vertical air currents and the formation of low pressure over the plateau at **about 9 km above sea level**.
 - The **movement of the westerly jet stream to the north of the Himalayas** and the presence of the **tropical easterly jet stream** over the Indian peninsula during summer.
- **Southern Oscillation (SO):**

- It is a shift in wind and sea surface temperature between the tropical eastern Pacific Ocean and the Indian Ocean. **It is commonly referred to as the phenomenon of shifting air pressure.**
- **La Nina is the cooling phase, and El Nino** is the warming phase.
- La Nina generally impacts positively on Indian Monsoon.
- **Indian Ocean Dipole (IOD):**
- IOD is the difference between the temperature of eastern (Bay of Bengal) and the western Indian Ocean (Arabian Sea).
- **A positive IOD brings more rainfall in India while negative IOD impacts negatively.**

What is the Onset of Monsoon?

▪ Monsoon Onset:

- The onset of the monsoon over the Kerala coast signifies the **start of the four-month southwest monsoon season, which accounts for over 70% of India's annual rainfall.**



- Contrary to common assumptions, the onset does not refer to the first rain of the season but rather follows specific technical criteria set by the **India Meteorological Department (IMD).**

▪ Conditions for Monsoon Onset:

- The IMD determines the monsoon onset based on significant transitions in atmospheric and ocean circulations in the **Indo-Pacific region.**
- The declaration of onset relies on specific parameters related to **rainfall consistency, intensity, and wind speed.**

○ Rainfall:

- The onset is declared when at least 60% of 14 designated meteorological stations in **Kerala and Lakshadweep record at least 2.5 mm of rain for two consecutive days** after May 10.
- The **onset is declared on the second day if specific wind and temperature criteria are met.**

○ Wind Field:

- The **depth of westerlies within the equator to 10°N latitude and the 55°E to 80°E longitude range** should extend up to 600 hectopascal (hPa).
- The **zonal wind speed between 5-10°N latitude and 70-80°E longitude** should be around 15-20 knots (28-37 kph) at 925 hPa.

○ Heat:

- The **Outgoing Longwave Radiation (OLR) value, derived from INSAT,** should be below 200 watt per sq m (wm²) in the area between 5°N and 10°N latitudes and 70°E and 75°E longitudes.

▪ Impact of Delayed Onset:

- **Agriculture:**
- Delayed monsoon onset can affect **agricultural activities, particularly sowing of crops.**
- Farmers heavily rely on monsoon rains for **irrigation and crop growth.**

- A delay in rainfall can lead to a **postponement of sowing, affecting crop yields** and agricultural productivity.
- **Water Resources:**
 - Delayed monsoon onset can **result in water scarcity**, especially in regions dependent on rainfall for replenishing water reservoirs, rivers, and lakes.
- **Energy Sector:**
 - Delayed monsoon can **impact hydropower generation**, which relies on sufficient water availability.
- **Environment:**
 - It can **affect the growth and distribution of vegetation**, delay the migration of certain species, and disrupt ecological cycles.
 - Delayed monsoon can also **contribute to soil erosion, land degradation, and reduced biodiversity** in affected regions.

5) Arctic Sea Ice Melting

Why in News?

A recent study in the Nature journal suggests that the melting of Arctic Sea ice in summer is inevitable in the coming decades.

- The **loss of Arctic Sea ice due to global warming (arctic amplification)** has raised concerns about its impact on global climate and the environment.

What are the New Findings on Arctic Sea Ice?

- **Sea Ice Decline:**
 - **Intergovernmental Panel on Climate Change (IPCC)** reports **confirm the decline** of Arctic Sea ice.
 - The first "**sea-ice free summer**" is **projected to occur before 2050**, due to global emissions **driving temperatures beyond 4.5°C**.
 - Satellite records indicate a yearly rate of **Arctic ice loss at nearly 13%**.
- **Insufficient Emission Reductions:**
 - The Nature study indicates that **no emission scenario can prevent the loss of Arctic Sea ice** in summer.
 - If significant emission **reductions are not undertaken**, an **ice-free summer** could occur **as early as the 2030s**.
- **Underestimated Melting Rate:**
 - **Human-induced factors contribute to approximately 90%** of ice melting, while natural variability accounts for the rest.
 - **Climate models**, including those used by the IPCC, **underestimated the speed of melting**.
 - Correcting for this underestimation reveals the possibility of **ice-free Augusts and Octobers by 2080**.

What is the Importance of Arctic Sea Ice?

- **Climate Influence:**
 - Arctic sea ice **plays a crucial role in influencing global climate patterns**.
 - It **reflects sunlight**, helping to **maintain the earth's energy balance** and **cool polar regions**.
 - Sea ice **acts as a barrier**, keeping the **air cool by separating cold air above from warmer water below**.

- **Biodiversity and Indigenous Communities:**
 - Changes in sea ice **impact biodiversity**, particularly **mammals like polar bears and walruses**.
 - **Indigenous Arctic populations** reliant on sea ice for hunting, breeding, and migration are affected.
- **Economic Opportunities and Competition:**
 - Reduced ice cover **opens shipping lanes and facilitates access to natural resources** in the Arctic.
- This leads to **increased competition among countries for influence** and resource exploitation in the region.

What is Arctic Amplification?

- **About:**
 - **Arctic amplification** refers to the phenomenon where changes in surface air temperature and net radiation balance produce larger effects at the poles, specifically in the **Arctic region**.
- **Causes:**
 - It is a **result of global warming caused by anthropogenic forces** or human activities since pre-industrial times, leading to a **1.1-degree Celsius increase** in the Earth's average temperature.
 - The **primary causes** of Arctic amplification include **ice-albedo feedback, lapse rate feedback, water vapor feedback, and ocean heat transport**.
 - **Diminishing sea ice in the Arctic** due to global warming **plays a significant role** in amplifying the warming effect.
 - **Sea ice and snow have high albedo**, reflecting most solar radiation, **while water and land absorb more radiation**, leading to **increased warming**.
 - The **reduction of sea ice allows the Arctic Ocean to absorb more solar radiation**, further amplifying the warming effect.
 - The **lapse rate, which is the rate at which temperature decreases with elevation**, decreases with warming, contributing to Arctic amplification.
 - **Studies suggest that the ice-albedo feedback and lapse rate feedback account for 40% and 15% of polar amplification, respectively.**
- **Consequences:**
 - **Weakening of Polar Jet Streams:**
 - **Diminished sea ice weakens polar jet streams**, resulting in **rising temperatures and heatwaves in Europe**.
 - **Unseasonal showers in northwest India** have also been linked to this weakening.
 - **Melting of Ice:**
 - The **Greenland ice sheet's melting contributes to rising sea levels**, with a complete melt potentially causing a seven-meter rise.
 - **Changes in Composition of Sea Water:**
 - Warming of the Arctic Ocean and seas, along with **changes in salinity and acidification**, affects biodiversity, including marine and dependent species.
 - **Affects Fauna:**
 - Increased rainfall due to Arctic amplification affects the **availability and accessibility of lichens, leading to starvation and death among Arctic fauna**.
 - **Gaseous Emission:**

- Thawing **permafrost releases carbon and methane, greenhouse gases** responsible for global warming.
- It may **also release long-dormant bacteria and viruses**, potentially leading to disease outbreaks.

What is Impact on India?

- **Extreme Rainfall Events:**

- Studies found that the **reduced sea ice in the Barents-Kara Sea region can lead to extreme rainfall events** in the latter half of the monsoons — in **September and October in India**.

- **Warming of Arabian Sea:**

- The changes in the atmospheric circulation due to diminishing sea ice combined with the warm temperatures in the Arabian Sea contribute to enhanced moisture and drive extreme rainfall events.

- In 2014, **India deployed IndARC**, India's first moored-underwater observatory in the **Kongsfjorden fjord, Svalbard**, to monitor the impact of the changes in the Arctic Ocean.

- **Rise in Sea Level along Indian Coast:**

- According to the 'State of Global Climate in 2021' report, **sea level along the Indian coast is rising faster than the global average rate**.



6) Climate Resilient Agriculture

Why in News?

Research conducted in the **drought-prone Jalna district of Maharashtra** sheds light on the effectiveness of **different interventions in enhancing the climate resilience of farming systems**.

What are the Major Findings of the Research?

- **About:**

- The research, published in the **International Journal of Water Resources Development**, explores the impact of **various agricultural development interventions** over a 15-year period in two semi-arid villages, **Babai and Deulgaon Tad of Maharashtra**.

- **The villages were selected as two farming systems:**

- One where interventions were aimed at improving **agricultural productivity and irrigation infrastructure (Babai)**
- Another where interventions targeted the building of **adaptive capacities besides improving agricultural productivity (Deulgaon Tad)**.

- **Findings:**

- **Watershed development interventions resulted in intensified agriculture** and altered cropping patterns.
- However, over time, **these approaches led to declining groundwater tables** and deteriorating soil health.
- **Conventional agricultural development pathways** showed limited success in semi-arid regions.

- **Climate resilience indicators improved when productivity-enhancing interventions were combined with water management**, soil health, livelihood diversification, and food and nutrition security.
- Monitoring, evaluation, learning, and adaptive decision-making were key components for enhancing resilience.
- **Babai had better water resources**, resulting in higher resilience compared to Deulgaon Tad in 2007. Babai's resilience was attributed to **access to adequate water throughout the year and better soil quality**.
- However, there has been **no substantial change in the overall resilience of Babai over the years**, according to the research.
- Deulgaon Tad, with lower resilience in 2007, **witnessed improvements across all resilience attributes due to interventions focusing on adaptive capacities** and natural resource management.

What are the Major Impacts of Climate Change on Indian Agriculture?

- **Changes in Rainfall Patterns:** Climate change has led to altered rainfall patterns, including changes in **timing, intensity, and distribution of rainfall**.
 - This can result in **droughts, floods, and erratic rainfall, affecting agricultural productivity**.
 - For instance, in **2019, India experienced delayed and deficient monsoon rains**, leading to reduced crop yields in many regions.
- **Increased Temperature:** Rising temperatures can have **adverse effects on crop growth and development**.
 - **High temperatures during the growing season can decrease crop yields and reduce the nutritional value of crops**. Heat stress can also impact livestock health and productivity.
 - In recent years, **heatwaves in India have affected crop yields**, particularly for heat-sensitive crops like wheat and rice.
- **Shifting Pest and Disease Patterns:** Climate change influences the distribution and abundance of pests and diseases, posing challenges to agricultural pest management.
 - Changes in temperature and rainfall patterns **can favour the spread of certain pests and diseases, impacting crop health**.
 - For instance, the increased incidence of pests like the **pink bollworm has affected cotton production in India and Locust swarms from Somalia region due to erratic rain**.
- **Water scarcity:** Climate change affects water availability, particularly in regions dependent on rainfall or snowmelt for irrigation.
 - **Changes in precipitation patterns and melting glaciers can lead to water scarcity, especially during critical crop growth stages**. This can result in reduced agricultural productivity and increased competition for water resources.
- **Changes in Cropping Patterns:** Climate change can influence the suitability of different crops in certain regions. **As temperature and rainfall patterns shift, farmers may need to adapt their cropping patterns to ensure productivity**.
 - Some crops may become less viable, while others may become more suitable: **On all-India basis, climate change is projected to increase coconut production**.
- **Increased Extreme Weather Events:** Climate change has been linked to an increase in extreme weather events, such as **cyclones, storms, and hailstorms**. These events can cause significant damage to crops, livestock, and infrastructure, leading to yield losses and economic hardships for farmers.
 - **For example, the recent Cyclone Biporjoy**.

Way Forward

- **Input Intensive to Knowledge Intensive Agriculture:** India is known for its diversity of farming practices. It is important to get **diverse points of view engaged in a national-level dialogue to find suitable solutions for the future.**
- Also, the **Advanced world is moving towards precision farming using sensors and other scientific tools for exact practices** and application of inputs.
- A **smart and precise move towards high-tech farming in India** will reduce average cost, raise farmers' income, and address many other challenges of scale.
- **Intercropping and Agroforestry:** Growing different crops together in the same field or **integrating trees with crops can enhance biodiversity, reduce soil erosion, and increase climate resilience.** For instance, **intercropping legumes with cereals not only provides additional income but also improves soil fertility through nitrogen fixation.**
- Also, encouraging the **cultivation of non-traditional crops** that are more resilient to climate extremes can reduce dependence on a single crop and mitigate risks.
- For example, **promoting drought-tolerant millets** can help farmers cope with changing climatic conditions.
- **Climate-Smart Water Management:** Efficient water management is **crucial for climate resilience in agriculture, especially in water-stressed regions.** Implementing climate-smart water management practices can enhance agricultural productivity while conserving water resources.
- **Constructing ponds, check dams, and farm ponds** to capture and store rainwater can help recharge groundwater and provide irrigation during dry spells.
- **Farmers can utilise this stored water during droughts or for supplementary irrigation,** thereby reducing dependence on erratic rainfall patterns.

7) World Desertification Day 2023

Why in News?

World Day to Combat Desertification and Drought is observed every year on the **17th of June.**

- The theme for this year is **“Her Land. Her Rights”** which focuses on **women’s land rights, essential for achieving the interconnected global goals of gender equality and land degradation neutrality by 2030** and contributing to the advancement of several other **Sustainable Development Goals (SDGs).**



What are the Highlights of World Day to Combat Desertification and Drought?

- **Background:**
- Desertification, along with climate change and the loss of biodiversity, were **identified as the greatest challenges to sustainable development during the 1992 Rio Earth Summit.**
- Two years later, in 1994, the UN General Assembly established the **United Nations Convention to Combat Desertification (UNCCD),** the sole legally binding international agreement linking environment and

development to sustainable land management and declared 17 June "**World Day to Combat Desertification and Drought**".

- Later on, in 2007, the **UN General Assembly declared 2010-2020 the United Nations Decade for Deserts and the fight against Desertification** to mobilise global action to fight land degradation, led again by the UNCCD Secretariat.
- **Issues Addressed:**
 - Women's control over land is crucial. However, **they often lack rights and face barriers worldwide**. This limits their well-being and prosperity, especially when land degradation and water scarcity occur.
 - Investing in **women's land access is an investment in their future** and the future of humanity.
 - Desertification, land degradation and **drought** disproportionately impact women and girls, as they often **do not have access to and control of land resources**. They are most **affected by reduced agricultural yields and increased water scarcity**.
 - In most countries, **women have unequal and limited access and control to land**. In many regions, **they remain subject to discriminatory laws and practices** that impede their right to inherit, as well as their access to services and resources.
- **Gender Equality: An Unfinished Business:**
 - According to UNCCD's landmark study "**The Differentiated Impacts of Desertification, Land Degradation and Drought on Women and Men,**" gender equality remains unfinished business in every part of the world.
 - Today, nearly half of the global agricultural workforce is female – yet **less than one in five landholders worldwide are women**.
 - **Women's rights to inherit their husband's property continue to be denied** in over 100 countries under customary, religious, or traditional laws and practices.
 - Globally, **women already spend a collective 200 million hours every day collecting water**. In some countries, a single trip to fetch water can take over an hour.
- **Initiative Taken & Recommendations:**
 - **A Global Campaign:**
 - Together with partners, high-profile personalities and influencers, **UNCCD has launched a global campaign to recognize excellence, leadership, and efforts in sustainable land management** by women and girls.
 - **Recommendations:**
 - Governments can promote laws, policies and practices that end discrimination and secure women's rights to land and resources.
 - Businesses can prioritise women and girls in their investments and facilitate access to finance and technology.
 - Individuals can support **women-led initiatives that are restoring land**.

What is UNCCD's Gender Action Plan, 2017?

- The gender action plan, 2017 **was adopted during the Conference of the Parties (COP23)**, in Bonn, Germany to **incorporate gender equality and women's empowerment** in climate change discourse and actions.
- The aim is **to ensure that women can influence climate change decisions and that women and men are represented equally in all aspects** of the **UN Framework Convention on Climate Change (UNFCCC)**, as a way to increase its effectiveness.

What are Desertification and Drought?

- **Desertification:**

- **About:**

- Degradation of land in arid, semi-arid and dry sub-humid areas. It is caused primarily by human activities and climatic variations.

- **Causes:**

- Climate change
- Deforestation
- Overgrazing
- Unsustainable Agricultural Practices
- Urbanisation

- **Drought:**

- **About:**

- Drought is generally considered as a **deficiency in rainfall /precipitation over an extended period, usually a season or more, resulting in a water shortage** causing adverse impacts on vegetation, animals, and/or people.

- **Causes:**

- Variability in rainfall
- Deviation in the route of monsoon winds
- Early withdrawal of the monsoon
- **Forest fires**
- **Land degradation** in addition to Climate change

What are the Related Initiatives to Reduce Desertification?

- **Indian Initiatives:**

- **Integrated Watershed Management Programme, since 2009-10:**

- It was **launched by the Department of Land Resources, Ministry of Rural Development** that aims to restore ecological balance by harnessing, conserving and developing degraded natural resources with the creation of Rural Employment.

- **Desert Development Programme:**

- **Launched in 1995 by the Ministry of Rural Development** to minimise the adverse effect of drought and to rejuvenate the natural resource base of the identified desert areas.

- **National Mission on Green India:**

- It was approved in 2014 and **implemented under the Ministry of Environment, Forest and Climate Change** with the objective of protecting, restoring and enhancing India's diminishing forest cover with a deadline of 10 years.

- **Global Initiatives:**

- **Bonn Challenge:**

- The **Bonn Challenge** is a global effort to bring 150 million hectares of the world's **deforested and degraded land into restoration by 2020, and 350 million hectares by 2030.**

- At the **UNFCCC Conference of the Parties (COP) 2015** in Paris, India also joined the voluntary Bonn Challenge pledge to bring into restoration 21 million hectares of degraded and deforested land by the year 2030.
- The target **has now been revised to restore 26 million hectares of degraded and deforested land by 2030.**

8) Indian Ocean Dipole

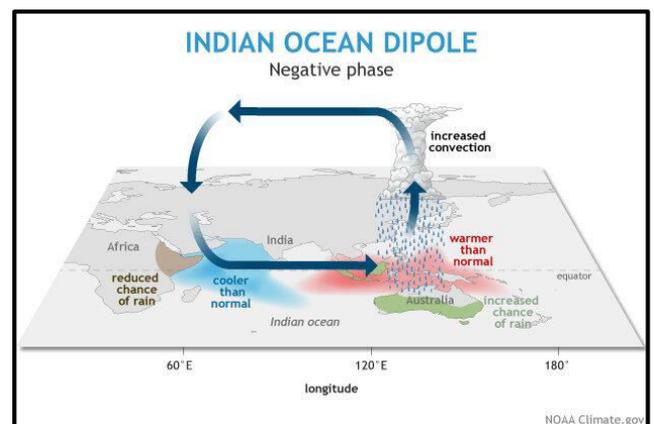
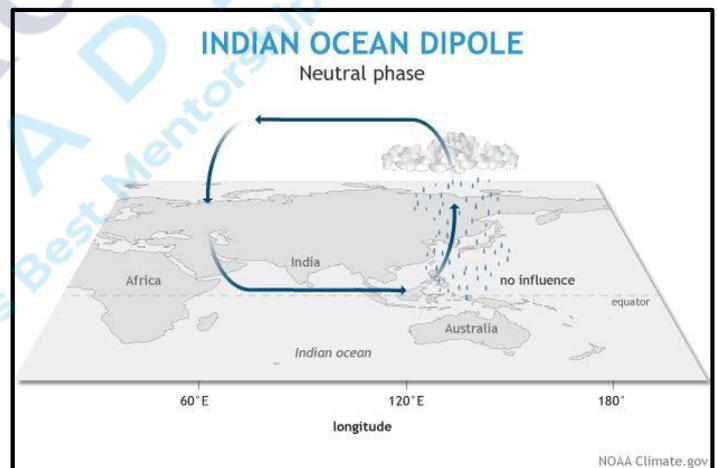
Why in News?

The Indian **Monsoon** is expected to be influenced by the **El Nino phenomenon in 2023**, there are also anticipations of a positive **Indian Ocean Dipole (IOD)** developing, which could potentially offset the **impact of El Nino**.

- According to the India Meteorological Department (IMD), there is about 80% probability for positive IOD conditions and 15% of a neutral IOD during June-August 2023 season.
- While the El Nino is already firmly established in the Pacific Ocean in 2023, the IOD is **still in the neutral phase** and may develop in the coming months.

What is the Indian Ocean Dipole (IOD)?

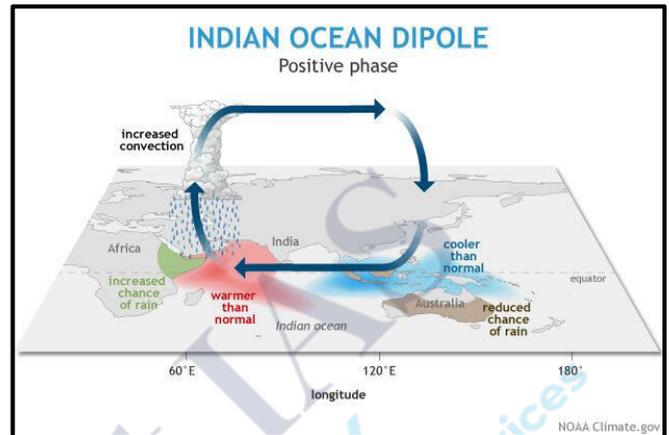
- **IOD or Indian Nino:**
 - IOD, sometimes referred to as the **Indian Nino**, is similar to the **El Nino** phenomenon, **occurring in the relatively smaller area** of the Indian Ocean between the **Indonesian and Malaysian coastlines in the east and the African coastline near Somalia** in the west.
- **The El Nino** is the warmer-than-normal phase of the **El Nino Southern Oscillation (ENSO) phenomenon**, during which there are generally warmer temperatures and less rainfall than normal in many regions of the world, including India.
 - One side of the ocean, along the equator, gets warmer than the other.
 - IOD is said to be positive when the western side of the Indian Ocean, near the **Somalia coast, becomes warmer** than the eastern Indian Ocean.
 - It is negative when the **western Indian Ocean is cooler**.
- **Mechanism:**
 - **Negative IOD:**
 - The air circulation in the Indian Ocean basin moves from **west to east**, that is from the **African coast towards the Indonesian islands**, near the surface, and in the opposite direction at the upper levels. That means the **surface waters in the Indian Ocean get pushed from west to east**.
 - In a normal year, **warmer waters in the western Pacific** near Indonesia cross over into the Indian Ocean and make that part of the Indian Ocean slightly warmer. That causes the air to rise and helps the prevailing air circulation.



- In the years when the air circulation **becomes stronger, more warm surface waters from the African coast** are pushed towards the Indonesian islands, making that region warmer than usual. This causes hotter air to rise, and the **cycle reinforces itself**.
- This is the **state of negative IOD**.

- **Positive IOD:**

- Air circulation becomes **slightly weaker** than normal. In some rare cases, the air circulation **even reverses direction**. The consequence is that the African coast **becomes warmer while the Indonesian coastline gets cooler**.
- A positive IOD event is often seen developing at times of an **El Niño, while a negative IOD is sometimes associated with La Niña**.
- During El Niño, the Pacific side of Indonesia is cooler than normal because of which the Indian Ocean side also gets cooler. That **helps the development of a positive IOD**.



- **Impact of IOD:**

- In the Indian Ocean, IOD exhibits an **ocean-atmosphere interaction** that closely resembles the fluctuations observed during El Niño events in the **Pacific Ocean**. However, the IOD is considerably **less powerful compared to El Niño, resulting in relatively minimal impacts**.
- A positive IOD helps rainfall **along the African coastline and also over the Indian sub-continent** while **suppressing rainfall over Indonesia, southeast Asia and Australia**. The impacts are opposite during a negative IOD event.

- **Past Events:**

- In 2019 the IOD event developed during the late monsoon but was **so strong that it compensated for the deficit rainfall** during the first month of the monsoon season (June had 30% deficiency that year).
- The deficit in June that year was also **attributed to a developing El Niño but that fizzled out later**.

What is ENSO?

- In a normal year, the eastern side of the Pacific Ocean, near the **northwestern coast of South America**, is cooler than the western side near the islands of Philippines and Indonesia.
- This happens because the **prevailing wind systems that move from east to west sweep the warmer surface waters** towards the Indonesian coast.
- The relatively **cooler waters from below come up** to replace the displaced water.
- An El Niño event is the **result of a weakening of wind systems that leads to lesser displacement** of warmer waters.
- This results in the **eastern side of the Pacific becoming warmer** than usual. During **La Niña, the opposite happens**.
- Both these conditions, together called **El Niño Southern Oscillation (ENSO)**, affect weather **events across the world**.
- Over India, the El Niño has the **impact of suppressing monsoon rainfall**.

9) Critical Minerals for India

Why in News?

The **Ministry of Mines**, Government of India recently unveiled **the first-ever report on "Critical Minerals for India"** prepared by an expert team constituted by the Ministry of Mines.

- The report identifies and prioritizes minerals essential for various industrial sectors, aligning **with India's vision of achieving a robust and resilient mineral sector in line with the larger goal of attaining 'Net Zero' emissions.**

What are Critical Minerals?

▪ Minerals:

- **Minerals are natural substances** that are formed by geological processes. They have a **definite chemical composition and physical properties.**
- They are classified into **metallic and non-metallic minerals** based on their characteristics and uses.
- Metallic minerals are those that contain metals or metal compounds, such as **iron, copper, gold, silver, etc.**
- Non-metallic minerals are those that do not contain metals, such as limestone, **coal, mica, gypsum, etc.**

▪ Critical Minerals:

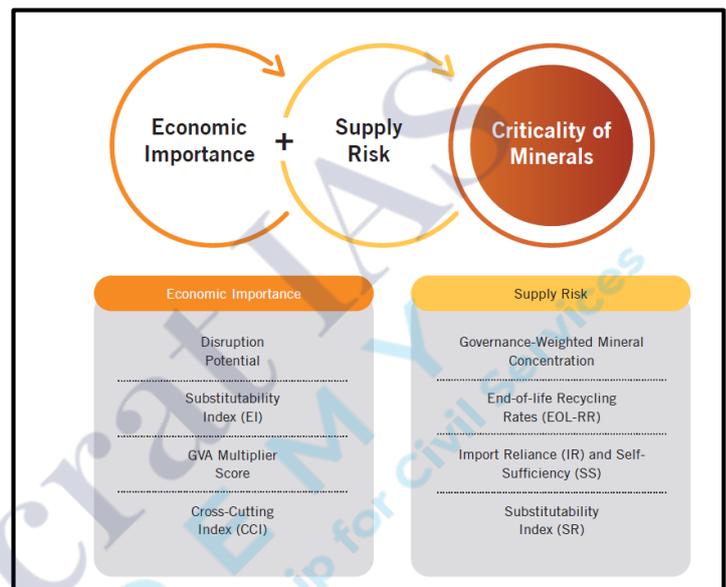
- Critical minerals are those **minerals that are essential for economic development and national security, the lack of availability of these minerals or concentration of extraction or processing in a few geographical locations may lead to supply chain vulnerabilities** and even disruption of supplies.

▪ Declaration of Critical Minerals:

- It is a dynamic process, and it can evolve over time as **new technologies, market dynamics, and geopolitical considerations emerge.**
- Different countries may have their own unique lists of critical minerals based on their specific circumstances and priorities.
- The **US has declared 50 minerals** critical in light of their role in national security or economic development.
- Japan has identified a set of **31 minerals as critical for their economy.**
- The **UK considers 18 minerals critical, EU (34) and Canada (31).**

▪ Critical Minerals for India:

- **Expert Committee** under Ministry of Mines has identified a set of **30 critical minerals for India.**
- These are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.
- **Creation of Centre of Excellence for Critical Minerals (CECM)** in the Ministry of Mines is also recommended by the Committee.



- CECM will **periodically update the list of critical minerals for India** and notify the critical mineral strategy from time to time.

What is the Significance of Critical Minerals for India?

- **Economic Development:** Industries such as **high-tech electronics, telecommunications, transport, and defense heavily rely on these minerals.**
- Additionally, **critical minerals are essential for green technologies like solar panels, wind turbines, batteries, and electric vehicles.**
- Given India's significant domestic demand and potential in these sectors, their growth can lead to job creation, income generation, and innovation.
- **National Security:** These minerals are vital for **defense, aerospace, nuclear, and space applications**, necessitating the use of high-quality and reliable materials capable of withstanding extreme conditions and performing complex functions.
- To ensure defense preparedness and self-reliance, **India must secure a steady supply of critical minerals.**
- **Environmental Sustainability:** They are **integral to the transition toward clean energy and a low-carbon economy**, enabling the reduction of India's reliance on fossil fuels and greenhouse gas emissions.
- With a commitment to **attaining 450 GW of renewable energy capacity by 2030**, these minerals are **essential for achieving India's green objectives.**
- **International Cooperation:** These collaborations **enable India to diversify its import sources, reduce dependency on China, and enhance mineral security and resilience.**

What are the Challenges for India Related to Critical Minerals?

- **Implications of the Russia-Ukraine Conflict:** Russia is a significant producer of various critical minerals, while Ukraine possesses reserves of lithium, cobalt, graphite, and rare earth elements.
- The ongoing war between the two countries affects these critical mineral supply chains.
- **Limited Domestic Reserves:** India has limited reserves of critical minerals such as **lithium, cobalt, and other rare earth elements.**
- Most of these minerals are **imported, making India heavily dependent on other countries for its supply.** This reliance on imports can create vulnerability in terms of price fluctuations, geopolitical factors, and supply disruptions.
- **Increasing Demand for Minerals:** The manufacturing of renewable energy technologies and the transition to electric vehicles necessitate larger quantities of minerals such as **copper, manganese, zinc, lithium, cobalt, and rare earth elements**
- **India's limited reserves and higher requirements make it reliant on foreign partners to meet domestic needs.**

Sl. No.	Critical Mineral	Percentage (2020)	Major Import Sources (2020)
1.	Lithium	100%	Chile, Russia, China, Ireland, Belgium
2.	Cobalt	100%	China, Belgium, Netherlands, US, Japan
3.	Nickel	100%	Sweden, China, Indonesia, Japan, Philippines
4.	Vanadium	100%	Kuwait, Germany, South Africa, Brazil, Thailand
5.	Niobium	100%	Brazil, Australia, Canada, South Africa, Indonesia
6.	Germanium	100%	China, South Africa, Australia, France, US
7.	Rhenium	100%	Russia, UK, Netherlands, South Africa, China
8.	Beryllium	100%	Russia, UK, Netherlands, South Africa, China
9.	Tantalum	100%	Australia, Indonesia, South Africa, Malaysia, US
10.	Strontium	100%	China, US, Russia, Estonia, Slovenia
11.	Zirconium(zircon)	80%	Australia, Indonesia, South Africa, Malaysia, US
12.	Graphite(natural)	60%	China, Madagascar, Mozambique, Vietnam, Tanzania
13.	Manganese	50%	South Africa, Gabon, Australia, Brazil, China
14.	Chromium	2.5%	South Africa, Mozambique, Oman, Switzerland, Turkey
15.	Silicon	<1%	China, Malaysia, Norway, Bhutan, Netherlands

Table.1 The net import reliance for critical minerals of India (2020) (Source: A report on 'Unlocking Australia-India Critical Minerals Partnership Potential' by Australian Trade and Investment Commission, July 2021)

Conclusion

India has an opportunity to strengthen its international cooperation and partnerships through the strategic management of critical minerals. By **participating in initiatives like the Mineral Security Partnership (MSP)** led by the United States, India can contribute to the establishment of global critical mineral supply chains.

- **Bilateral agreements with countries such as Australia, Canada, Japan, and South Africa** can further enhance India's position in critical mineral exploration, development, processing, and trade.



GS – 2

1) Delimitation

Why in News?

Many politicians of the Southern States are raising voices **over Delimitation of constituencies based on population**, which they consider to be unfair.

- Southern states that followed population control policies are now facing potential disadvantages despite their success in controlling population growth.

What is Delimitation?

▪ About:

- Delimitation **means the act or process of fixing limits or boundaries** of territorial constituencies in a country or a province having a legislative body.
- Delimitation for **LS (Lok Sabha)** and **LA (Legislative Assembly)** is different from that of **Local bodies**.
- **The Delimitation Commission Act was enacted in 1952.**
- The Delimitation Commission is appointed by the **President of India and works** in collaboration with the **Election Commission of India (ECI)**.
- **Delimitation Commissions have been set up four times — 1952, 1963, 1973 and 2002** under the Acts of 1952, 1962, 1972 and 2002.
- The first delimitation exercise was carried out by the **President (with the help of the Election Commission) in 1950-51.**

▪ History:

- The last delimitation exercise that changed the **state-wise composition of the Lok Sabha was completed in 1976** and done on the basis of the **1971 census**.
- The **Constitution of India mandates that the allocation of seats in the Lok Sabha should be based on the population of each state so that the ratio of seats to population is as close as possible to being equal across all states**. It is intended to ensure that each person's vote carries roughly the same weight, regardless of which state they live in.
- However, this provision meant that states that **took little interest in population control could end up** with a greater number of seats in Parliament.
- To avoid these consequences, the Constitution was amended **42nd Amendment Act of 1976** froze the allocation of seats in the Lok Sabha to the states and the division of each state into territorial constituencies till **the year 2000** at the 1971 level.
- The **84th Amendment Act of 2001** empowered the government to undertake readjustment and **rationalisation of territorial constituencies** in the states on the basis of the population figures of 1991 census.
- The **87th Amendment Act of 2003 provided for the delimitation of constituencies on the basis of 2001** census and not 1991 census.
- However, this can be done without altering the number of seats allotted to each state in the Lok Sabha.
- **Need:**
- To provide **equal representation to equal segments** of a population.
- Fair **division of geographical areas** so that one political party doesn't have an advantage over others in an election.
- To follow the principle of **"One Vote One Value"**.

- **Constitutional Provisions:**

- **Under Article 82**, the Parliament enacts a **Delimitation Act** after every Census.
- **Under Article 170**, States also get divided into territorial constituencies as per Delimitation Act after every Census.

What are the Concerns Related to Delimitation?

- **Regional Disparity:**

- Disparity in representation between north and southern part of **India in the Lok Sabha** due to population as a deciding factor.
- The delimitation based solely on population **disregards the progress made by the southern states in population control** and may lead to disparities in the federal structure.
- Despite having only 18% of the country's population, **the southern states contribute 35% to the country's GDP.**
- The northern states, which did not prioritize population control, are expected to **benefit in the delimitation process due to their higher population growth.**

- **Inadequate Funding:**

- After the **15th Finance Commission** used the 2011 **Census** as a basis for its recommendation, concerns were raised about southern **states losing funding and representation in parliament.**
- Previously, the 1971 Census was used as the base for funding and tax devolution recommendations to states.

- **Affecting the Reservations for SCs/ STs:**

- The scheduled delimitation and **reallocation of seats may result in not only a loss of seats** for southern states but also **an increase in power for political parties** with their base of support in the north.
- This could potentially lead to a shift of power toward the north and away from the south.
- The exercise will also affect the division of seats **reserved for the Scheduled Castes and Scheduled Tribes (SC/ST)** in each state (**under Articles 330 and 332**).

What is the Delimitation Commission?

- **Appointment:**

- The Commission is appointed by the **President** of India and works in collaboration with the **Election Commission of India.**

- **Composition:**

- Retired **Supreme Court judge**
- **Chief Election Commissioner**
- Respective State Election Commissioners

- **Functions:**

- To determine the number and boundaries of constituencies to make the population of all constituencies nearly equal.
- To identify seats reserved for **Scheduled Castes and Scheduled Tribes**, wherever their population is relatively large.

- **Powers:**

- In case of a difference of opinion among members of the Commission, **the opinion of the majority prevails.**
- The **Delimitation Commission in India is a high-power body** whose orders have the force of law and cannot be called in question before any court.

Way Forward

- A Delimitation Commission should be set up to **redraw constituency boundaries based on the 2031 Census.** And a **State Reorganisation Act** should be enacted to **split states into smaller ones** based on the population recommendations made by the Delimitation Commission.
- There has been significant population growth in India since the **last delimitation exercise, emphasizing the need to address the resulting asymmetry in political representation.**
- Instead of relying solely on population as the criterion for delimitation, **other factors such as development indicators, human development indices, and efforts in implementing family planning programs could be considered.** This would provide a **more comprehensive and equitable representation** of states' needs and achievements.
- States that have effectively implemented family planning programs should be **acknowledged and rewarded** for their efforts.
- The guidelines for the devolution of funds **should be reviewed to incorporate a more balanced approach.**
- The growth potential of the localities proposed for the merger and their growth in population were taken as criteria for the delimitation exercise.

2) Global Slavery Index 2023

Why in News?

A new report, **'The Global Slavery Index 2023'**, by the **Walk Free Foundation**, highlights the **increasing prevalence of modern slavery worldwide**, with the number of people living in such conditions reaching **50 million**—an alarming **25% rise in the past five years.**

- The report emphasises the significant role played by **G20 nations** in **exacerbating this crisis** through their trade operations and global supply chains.
- **India, China, Russia, Indonesia, Turkey, and the U.S.** are among the top **G20 countries with the highest number of forced labourers.**

What is Modern Slavery?

- Modern slavery encompasses various forms of exploitation, including **forced labour, forced marriage, debt bondage, commercial sexual exploitation, human trafficking,** slavery-like practices, and the sale and exploitation of children.
- Modern slavery has devastating consequences for **individuals, communities, and societies.**
- It violates **human rights, undermines human dignity and erodes social cohesion.**
- It also **hampers economic development, perpetuates inequality, and fuels corruption.** It poses a threat to global security and stability by fuelling **conflict, terrorism, and organised crime.**

What are the Major Takeaways of Global Slavery Index 2023?

- **Key Highlights:**

- According to the **Global Slavery Index 2023**, an estimated **50 million people were living in modern slavery on any given day in 2021**, an increase of 10 million people since 2016.

- This means that one in every 160 people in the world is a victim of modern slavery.

- It ranks **160 countries based on their estimated prevalence of modern slavery per 1,000 people**.

Most prevalent				Least prevalent			
The countries estimated to have the highest prevalence of modern slavery tend to be conflict-affected, have state-imposed forced labour, and have weak governance.				The countries with the lowest prevalence of modern slavery are those with strong governance and strong government responses to modern slavery.			
	Rank	Prevalence Rate*	# of People		Rank	Prevalence Rate*	# of People
North Korea	1	104.6	2,696,000	Switzerland	160	0.5	4,000
Eritrea	2	90.3	320,000	Norway	159	0.5	3,000
Mauritania	3	32.0	149,000	Germany	158	0.6	47,000
Saudi Arabia	4	21.3	740,000	Netherlands	157	0.6	10,000
Türkiye	5	15.6	1,320,000	Sweden	156	0.6	6,000
Tajikistan	6	14.0	133,000	Denmark	155	0.6	4,000
United Arab Emirates	7	13.4	132,000	Belgium	154	1.0	11,000
Russia	8	13.0	1,899,000	Ireland	153	1.1	5,000
Afghanistan	9	13.0	505,000	Japan	152	1.1	144,000
Kuwait	10	13.0	55,000	Finland	151	1.4	8,000

*Estimated number of people in modern slavery per 1,000 population

- The countries with the highest prevalence are **North Korea (104.6)**, **Eritrea (90.3)**, and **Mauritania (32.0)**, where modern slavery is widespread and often state-sponsored.

- The countries with the lowest prevalence are **Switzerland (0.5)**, **Norway (0.5)**, and **Germany (0.6)**, where strong governance and effective responses to modern slavery are evident.

- **Asia and the Pacific** has the largest number of people in modern slavery. (**29.3 million**)

- **India has the prevalence of 8.** (Estimated proportion of population living in modern slavery per thousand people).

- **Contributing Factors:**

- The report identifies **climate change, armed conflict, weak governance, and health emergencies** like the **Covid-19 pandemic** as key factors that have contributed to the **rise in modern slavery**.

- G20 nations account for **more than half of all people living in modern slavery**, primarily due to the importation of products worth **USD 468 billion from countries with weak worker protection**, thereby worsening forced labour conditions.

- **Role of Global Supply Chains:**

- Complex and opaque global supply chains, which involve the **sourcing of raw materials, manufacturing, packaging, and transportation**, are deeply entangled with forced labour.

- The report highlights the importation of high-risk products, such as **electronics, textiles, palm oil, and solar panels**, and their association with forced labor, human trafficking, and child labour.

- It reveals that **G20 countries collectively import billions of dollars worth of textiles and apparel goods at risk of being produced by forced labour every year**.

- **Assessment Methodology:**

- Factors such as **political instability, inequality, lack of basic needs, criminal justice mechanisms, internal conflicts**, and displacement defined a **nation's vulnerability to modern slavery**.

- The index uses data released by the **International Labour Organisation (ILO)**, **Walk Free**, and the **International Organisation for Migration (IOM)** in 2022 to illustrate how **"modern slavery is hidden in plain sight"**

- **Case Study: Textiles Industry:**

- The **report highlights the textiles industry as a significant contributor to forced labour**. It describes conditions of forced and unpaid work, health and safety risks, poor wages, lack of benefits, and debt bondage.

- The **Sumangali scheme in Tamil Nadu** is cited as an example of exploitative conditions trapping women and girls in spinning mills.

▪ **International Efforts and Challenges:**

- Despite the **adoption of a goal to end modern slavery, forced labour, and human trafficking by 2030**, the report highlights the significant increase in the number of people living in modern slavery and the lack of progress in government action.
- The report attributes the **increase of 10 million people to compounding crises**, including armed conflicts, environmental degradation, assaults on democracy, global rollback of women's rights, and the economic and social impacts of the COVID-19 pandemic.

▪ **Recommendations:**

- The Global Slavery Index recommends implementing stronger measures and legislations to **prevent governments and businesses from sourcing goods and services linked to modern slavery**.
- The report also suggests **embedding anti-slavery measures in climate change sustainability plans, providing education to children, tightening regulations around child marriage**, and ensuring transparency in value chains.

What is India's Stance Related to Modern Slavery?

▪ **Legislative Framework:**

- India has taken **legislative measures** to combat modern slavery, including the **Bonded Labour Abolition Act of 1976** (the Act was amended in 1985 to include contract and migrant workers) **and the Central scheme for Rehabilitation of Bonded Labour**.
- The Supreme Court has also ruled that **non-payment of minimum wages amounts to "forced labour" under Article 23 of the Constitution**.

▪ **Challenges:**

- Challenges remain in **implementation of the Acts, corruption, legal loopholes, and lack of politics** that hinders effective eradication of modern slavery in the country.
- For instance, Growing evidence shows indigenous communities and those engaged in fishing and agriculture in **States like Odisha and West Bengal have become victims of debt bondage, human trafficking and mass displacement**.

▪ **Need of the Hour:**

○ **Multi Pronged Approach:**

- Government needs to **enact and enforce laws that criminalise all forms of modern slavery and protect the rights of victims**.
- **Businesses need to ensure that their operations and supply chains are free from forced labour and human trafficking**.
- Civil society needs to **raise awareness, advocate for change, and provide support to survivors**.
- Individuals need to **educate themselves about the issue**, demand transparency from companies they buy from or invest in, and report any suspected cases of modern slavery they encounter

○ **Survey on Bonded Labour:**

- There is also a need to properly identify and enumerate people stuck in modern slavery conditions. **India's last national survey of bonded labour was done in the mid-90s**.

Note: Walk Free is an international human rights group focussed on the eradication of modern slavery, in all its forms, in our lifetime.

3) World's Largest Grain Storage Plan in Cooperative Sector

Why in News?

The Union Cabinet has given its approval for the **establishment of the "world's largest grain storage plan in the cooperative sector" with an outlay of around Rs 1 lakh crore.**

- The initiative aims to **curb crop damages, prevent distress sales by farmers, and bolster the country's food security.**

What are the Major Highlights Related to Grain Storage Plan?

▪ About:

- **The plan focuses on the creation of godowns and other agricultural infrastructure at the level of Primary Agricultural Credit Societies (PACS) to strengthen food security, reduce wastage, and empower farmers.**
- This ambitious project aims to converge **eight ongoing schemes of three ministries to address the shortage of agricultural storage infrastructure in India.**
- Ministry of Cooperation will **implement a pilot project in at least 10 selected districts.**

▪ Inter-Ministerial Committee:

- An **Inter-Ministerial Committee (IMC) will be constituted under the chairmanship of the Minister of Cooperation, with the participation of the Ministers of Agriculture and Farmers Welfare, Consumer Affairs, Food and Public Distribution, and Food Processing Industries, along with the concerned secretaries.**

▪ Rationale:

- The Ministry of Cooperation has developed the grain storage plan to leverage the **strength of cooperatives and transform them into successful business enterprises, aligning with the vision of "Sahakar-se-Samridhi" (Cooperation for Prosperity).**
- The plan focuses on establishing agri-infrastructure, including **warehouses, custom hiring centres, and processing units, at the PACS level.**
- India has over **1,00,000 PACS** with a vast membership base of more than 13 crore farmers.
- Given their significant role in the agricultural and rural landscape, the **plan seeks to empower PACS by creating decentralised storage capacity and other necessary infrastructure.**
- This transformation will **enhance the economic viability of PACS and contribute to the growth of the Indian agricultural sector.**

▪ Benefits:

- **Addressing Infrastructure Shortage:** The plan aims to establish godowns at the level of PACS to **alleviate the shortage of agricultural storage infrastructure in the country.**
- **Diversification of PACS Activities:** PACS will be empowered to undertake various activities, including functioning as **procurement centres for state agencies or the Food Corporation of India (FCI),** serving as fair price shops, and setting up custom hiring centres and common processing units.
- This diversification will enhance the incomes of farmer members.
- **Reduction of Food Grain Wastage:** By creating decentralised storage capacity at the local level, the plan aims to **reduce grain wastage, contributing to improved food security.**
- **Preventing Distress Sale:** The plan provides farmers with various options, **preventing distress sale of crops** and enabling them to realise better prices for their produce.
- **Cost Reduction:** The establishment of storage facilities at the PACS level will significantly **reduce transportation costs of food grains** to procurement centres and fair price shops.

8 SCHEMES IDENTIFIED FOR CONVERGENCE

Ministry of Agriculture and Farmers' Welfare

- Agriculture Infrastructure Fund (AIF)
- Agricultural Marketing Infrastructure Scheme (AMI)
- Mission for Integrated Development of Horticulture (MIDH)
- Sub-Mission on Agricultural Mechanization (SMAM)

Ministry of Food Processing Industries

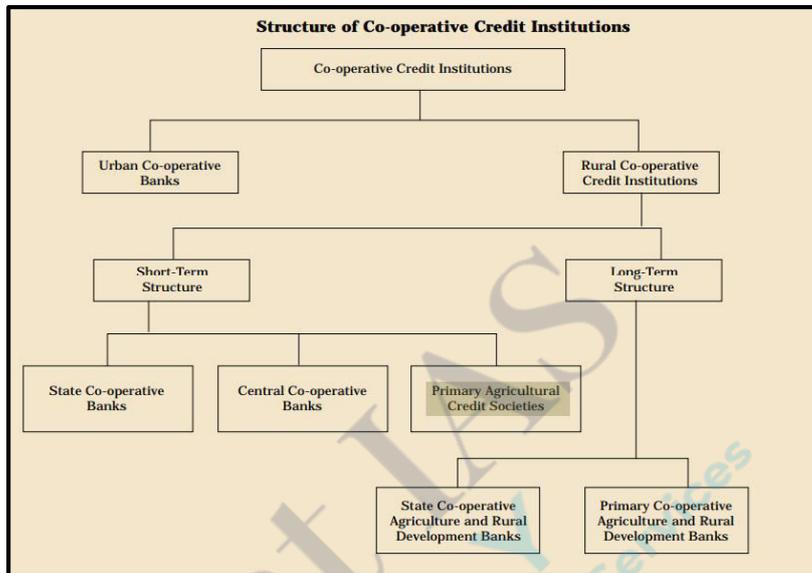
- Pradhan Mantri Formalization of Micro Food Processing Enterprises Scheme
- Pradhan Mantri Kisan Sampada Yojana (PMKSY)

Ministry of Consumer Affairs, Food and Public Distribution

- Allocation of food grains under the Food Security Act
- Procurement ops at MSP

What are Primary Agricultural Credit Societies?

- PACS constitute the lowest tier of the **Short-Term Cooperative Credit (STCC) structure in the country**, headed by the **State Cooperative Banks (SCB)** at the state level.
- Credit from the **SCBs is transferred to the District Central Cooperative Banks (DCCBs)**, which operate at the district level. The DCCBs work with PACS, which deal directly with farmers.
- The first PACS was **established in 1904**. They are **involved in short term lending**. At the start of the **cropping cycle, farmers avail credit to finance their requirement of seeds, fertilisers etc.**
- The **Union Budget 2023-24** has announced **Rs 2,516 crore** for **computerisation of 63,000 PACS** over the next five years, **with the aim of bringing greater transparency and accountability in their operations** and enabling them to diversify their business and undertaking more activities.



4) India's E-cooking Transition on World Environment Day

Why in News?

World Environment Day, observed **annually on June 5th**, serves as a **platform to raise awareness about environmental protection and sustainability**.

- On the 50th anniversary of this significant day, the **Bureau of Energy Efficiency (BEE)** and the **Collaborative Labeling and Appliance Standards Program (CLASP)**, an international non-governmental organization organized a **"Conference on Consumer-Centric Approaches for E-cooking Transition"** in New Delhi.
- The conference aimed to accelerate the deployment of **energy-efficient, clean, and affordable e-cooking solutions in India**.

What are the Key Highlights About World Environment Day 2023?

- **About:**
 - The **United Nations Assembly** established **World Environment Day on 5th June 1972**, which was the first day of the **Stockholm Conference on the human environment**.
 - It is hosted by a different country each year.
 - **India in 2018 hosted the 45th celebration** of World Environment Day under the theme **'Beat Plastic Pollution'**.
 - The year 2023 World Environment Day is hosted by **Côte d'Ivoire in partnership with the Netherlands**.
 - This year marks the **50th anniversary of World Environment Day**.
- **Theme for 2023:**
 - The theme will focus on solutions to **plastic pollution under the campaign #BeatPlasticPollution**.
- **Objective:**

- Raise awareness, mobilize communities, and encourage collaborative efforts to **address plastic pollution and promote a healthier and more sustainable environment.**

What is E-Cooking?

▪ **About:**

- E-cooking involves the use of **electric cooking appliances as a clean and energy-efficient** alternative to traditional cooking methods.
- It encompasses the adoption of **electric stoves, induction cooktops, and other electric cooking devices in households.**

▪ **Transition to E-cooking:**

- India's achievement of **24/7 electricity** access has been a significant driver for the transition to e-cooking.
- The **Saubhagya Scheme** has played a pivotal role in **providing electricity connections** to millions of households, **eliminating power cuts**, and creating an environment conducive to the adoption of electric cooking.

▪ **The Role of LiFE:**

- E-cooking plays a vital role in the **Mission Lifestyle for Environment(LiFE)** initiative.
- Launched by **Prime Minister Narendra Modi** at the **26th UN Climate Change Conference of the Parties (COP26)** in 2021.
- Mission LiFE aims to **transform individuals into pro-planet advocates and promote sustainable lifestyles.**
- Access to **clean cooking energy** is an essential aspect of India's energy transition journey, **aligning with the goals of Mission LiFE.**

▪ **E-Cooking as the Future of the Indian Kitchen:**

- With reliable electricity access, **e-cooking is poised to become the future of Indian kitchens.**
- The **scalability and affordability** of electric cooking technology make it a **viable option for both urban and rural areas.**

▪ **Affordable E-Cooking Business Models:**

- **Developing affordable business models** is crucial to promote widespread adoption of e-cooking solutions.
- Utilizing **renewable energy sources**, such as **solar and thermal power**, can help reduce costs and make e-cooking more accessible.
- **Implementing aggregation models and price reduction strategies** can further enhance affordability, enabling e-cooking to reach a larger population.

▪ **Minimal Technology Barriers:**

- E-cooking faces minimal technology barriers, as concerns regarding **appliance faults and compatibility with various dishes have been addressed.**
- Replicating successful e-cooking models at scale and gradually replacing traditional cookers with electric ones can build consumer confidence and facilitate a smooth transition.

▪ **Benefits for the Power Sector and Consumers:**

- E-cooking presents a win-win situation for both the power sector and consumers.
- It aligns with **Sustainable Development Goal 7.1**, ensuring universal access to clean cooking and improving indoor air quality.
- **E-cooking can reduce energy consumption** in reheating and contribute to a cleaner, greener lifestyle.

What are the Other Initiatives Shaping India's Energy Transition?

- Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA)
- Green Energy Corridor (GEC)
- National Smart Grid Mission (NSGM) and Smart Meter National Programme
- Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles (FAME)
- International Solar Alliance (ISA)

What is Bureau of Energy Efficiency?

- The Government of India set up the Bureau of Energy Efficiency in **March 2002 under the provisions of the Energy Conservation Act, 2001.**
- It assists in developing policies and strategies with the **primary objective of reducing energy intensity of the Indian economy.**
- **Major Programmes: State Energy Efficiency Index, Perform Achieve and Trade (PAT) scheme, The Standards & Labeling Programme, Energy Conservation Building Code.**

5) Converting Plastic Waste into Fuel

Why in News?

As the world observes the **50th anniversary of World Environment Day on June 5**, this year's campaign, **#BeatPlasticPollution**, highlights the urgent need for **global solutions to combat the pervasive issue of plastic pollution.**

- The **Department of Science and Technology (DST)** is supporting a range of technologies aimed at addressing the global issue of plastic pollution. By focusing on reducing, reusing, and recycling plastic waste, they developed a **Pilot scale mobile plant that converts plastic waste into fuel.**

What is Plastic?

▪ About:

- The word plastic is derived from the Greek word **plastikos**, meaning **“capable of being shaped or moulded.”**
- It refers to a wide range of **Synthetic or semi-synthetic materials derived from polymers**, characterized by their **plasticity and ability to undergo deformation.**
- Modern plastics primarily originate from **fossil fuel-based chemicals** like natural gas or petroleum but can also be produced from **renewable materials** such as corn or cotton derivatives.
- Around 70% of global plastic production is concentrated in six major polymer types – referred to collectively as **commodity plastics.**
- **These include**
 - Polyethylene terephthalate or PET,
 - High-density polyethylene or HDPE,
 - Polyvinyl chloride or PVC,
 - Low-density polyethylene or LDPE,
 - Polypropylene or PP,
 - Polystyrene or PS,

- Other Plastics.
- Each of these has different properties and can be identified by their **resin identification code (RIC)** denoted by symbols found on plastic products.

What is Resin Identification Code?

- RIC was developed in 1988 by the **Society of the Plastics Industry (SPI)**.
- Created to facilitate **efficient sorting and recycling of plastics**.
- Each **RIC corresponds to a specific type of resin used** in a plastic product.
- Proper recycling according to RIC preserves the value of the product.
- The **American Society for Testing and Materials (ASTM)** an international organization took over the administration of RIC after 20 years.
- **RIC specifically applies to plastic**, not glass, paper, or other recyclable materials.

- **Microplastics:**

- **Microplastics** are plastic particles **measuring less than five millimeters in diameter**.
- **Primary microplastics** are tiny particles designed for commercial use, such as in cosmetics or textiles, while **secondary microplastics** result from the **breakdown of larger plastic items**.
- **Microplastics persist in the environment, contaminating the food chain, water sources, and air, and posing health risks** due to toxic chemicals they contain.
- **Decomposition Rate and Impact:**
- Plastics have a **slow decomposition rate**, leading to their **accumulation in natural ecosystems**.
- Instead of breaking down into harmless substances, **plastics fragment into smaller particles, contributing to the presence of microplastics**.
- According to the most recent global estimates, an **average human consumes at least 50,000 microplastic particles annually** due to contamination of the food chain, potable water, and air.
- Microplastics contain toxic chemicals, with the biggest health risk being associated with **BPA (Bisphenol A)**.
- BPA, used to **harden plastic**, contaminates food and drinks, leading to **liver function alterations, insulin resistance, adverse effects on foetal development, reproductive system issues, and impacts on brain function**.
- **Note:**
- The **Great Pacific Garbage Patch (GPGP) also known as the trash vortex**, located in the North Pacific Ocean between California and Japan, is the **largest accumulation of plastic waste, formed by converging ocean currents**.

Polymer Type	Applications	Resin Identification Code
Polyethylene Terephthalate (PET) & (rPET)	PET plastic bottles, clear plastic bottles, salad trays.	 PETE
High-Density Polyethylene (HDPE) & (rHDPE)	Milk bottles, bleach, jerry cans, cleaners, general industrial use and shampoo bottles.	 HDPE
Polyvinyl Chloride (PVC)	Pipes, window and door frames, thermal insulation, automotive parts.	 PVC
Low-Density Polyethylene (LDPE)	Bin liners, carrier bags and packaging films.	 LDPE
Polypropylene (PP)	Packing tape, plastic straws, microwavable meal trays and tubs and pails.	 PP
Polystyrene (PS)	Yoghurt pots, foam fast food boxes, plastic cutlery, protective packaging for electronics and toys.	 PS
Unallocated References	Other plastics that do not fall into the above.	 OTHER

How Plastic is Converted into Fuel?

▪ Pilot Scale Mobile Plant:

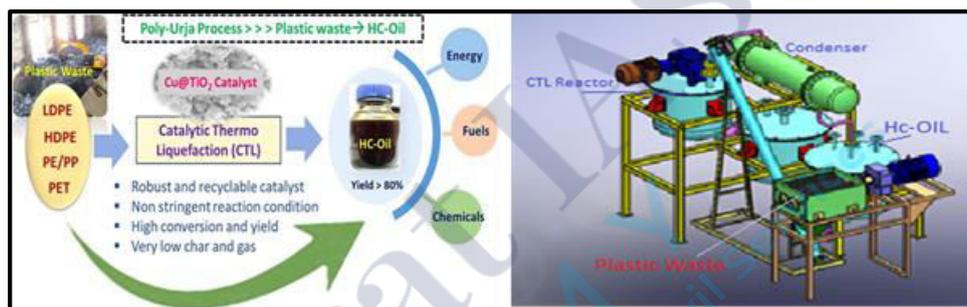
- An indigenously designed process has led to the **development of a vehicle-mounted mobile plant**.
- The plant **converts various types of plastic waste into carbon-densified HC-Oil (Hydrocarbon Oil)** through a low-stringent process named **ICT-Poly Urja**.

• ICT Poly Urja is developed by the **Institute of Chemical Technology (ICT) Mumbai**.

- The presence of a selective, recyclable, reusable, and inexpensive catalyst enables low-cost conversion of plastic waste into fuel.

▪ **ICT-Poly Urja Process:**

- Different types of plastic waste, like bottles or packaging materials, are collected and sorted.
- A special substance called **Cu@TiO₂ catalyst** is added to the plastic waste. This catalyst helps break down the **plastic into smaller molecules**.



- The mixture of plastic waste and catalyst is **heated up** under moderate conditions. This means it doesn't require extremely high temperatures.
 - As the plastic waste is heated, it undergoes a **chemical transformation called Catalytic Thermo Liquefaction (CTL)**. This process converts the plastic waste into a substance called **Hydrocarbon Oil (HC-Oil)**.
 - The resulting HC-Oil is a type of fuel that can be used for various purposes. It has a **high energy content and can be burned to generate heat, steam, or even electricity**.
- ### ▪ **Efficient and Mobile:**
- The CTL process requires **less energy compared to traditional methods like pyrolysis and gasification**.
 - Moderate operating conditions contribute to energy efficiency.
 - The mobile plant mounted on a vehicle **offers operational benefits**.

How is India Addressing the concerns regarding Plastic-Waste?

- National Dashboard on Elimination of Single Use Plastic and Plastic Waste Management.
- Plastic Waste Management Amendment Rules, 2022.
- India Plastics Pact.
- Project REPLAN.

6) Addressing AMR in the Draft Pandemic Treaty

Why in News?

The **Draft Pandemic treaty** also known as **“Zero Draft”**, is currently under negotiation by **Member States at the World Health Assembly**.

- However, there is growing concern that the provisions **addressing antimicrobial resistance (AMR) are at risk of being removed from the final text.**
- **Civil society and research organizations** provided analysis and recommendations on addressing AMR.
- A special edition of the **Journal of Medicine, Law and Ethics** emphasized the importance of including AMR in the Treaty.

What is the Draft Pandemic Treaty?

- **About:**

- The draft pandemic treaty, is an **international agreement** proposed to prevent, prepare for, and respond to **pandemics and global health emergencies.**
- It is being negotiated by the **World Health Organization (WHO)** and member states.
- The treaty aims to **strengthen global cooperation and solidarity in addressing health threats.**
- It covers aspects such as **surveillance, detection, notification, access to health technologies, collaboration, and accountability.**
- The treaty is based on principles of **human rights, equity, and solidarity, while respecting each state's sovereign right** to determine its health policies.
- It establishes a **global health threats council, a global health threats fund, and an independent review and evaluation mechanism.**
- The draft pandemic treaty is a response to the **lessons learned from the COVID-19 pandemic.**

- **Principal Components of the Draft:**

- **Global Cooperation:**

- It calls for **increased global coordination and cooperation** in the preparation for and response to pandemics and **other global health emergencies.**

- **Strengthening of Health Systems:**

- It emphasizes the **need to strengthen health systems in all countries**, particularly in **low- and middle-income countries**, to ensure they are better prepared to respond to pandemics and other global health emergencies.

- **Investment in Research and Development:**

- It calls for **improved access to essential health technologies**, such as **vaccines**, diagnostics, and treatments, during pandemics and other global health emergencies.
- It calls for **increased investment in research and development** of health technologies, particularly for diseases that pose a significant threat to global health.

- **Transparency in Sharing of Information:**

- It calls for **increased transparency and sharing of information about pandemics** and other global health emergencies, including data on the spread of diseases and the effectiveness of interventions.

- **Pathogen Access and Benefit-Sharing System (PABS):**

- The constitution of **PABS** has been constituted under the WHO, making Genomic sequences of all pathogens with the pandemic potential **to be shared on an "equal footing" in the system.**
- The PABS system is an important tool for **ensuring the responsible and equitable use of pathogens and their genetic resources** in the research and development of **new medicines and vaccines**, while also recognizing the rights and interests of the countries and communities that provide these resources.

- **Addressing Gender Disparities:**

- In addressing gender disparities in the healthcare workforce, the draft aims to “**ensure meaningful representation**, engagement, participation and empowerment of all health and care workers” by stressing equal pay and addressing barriers specific to women in taking leadership roles.

Why is AMR Crucial in the Pandemic Treaty?

▪ Reasons to Include:

- AMR is the process by which infections caused by **microbes become resistant to the medicines developed to treat them.**

- Microbes include **bacteria, fungi, viruses and parasites.**

- **Bacterial infections alone cause one in eight deaths globally.**

- **Not all pandemics are caused by viruses, and past pandemics have been caused by bacterial diseases.**

- AMR is fueling the rise of **drug-resistant infections**, including **drug-resistant tuberculosis, pneumonia and drug-resistant Staph infections** (caused by bacteria called **staphylococcus**) such as **methicillin-resistant Staphylococcus aureus (MRSA).**

- **Secondary bacterial/ fungal infections** are a serious concern during viral pandemics, requiring effective antibiotics.

- Research from Northwestern University suggests that many of the **deaths among hospitalized COVID-19 patients** were associated with **pneumonia — a secondary bacterial infection** that must be treated with antibiotics.

- **Black fungus** is a fungal infection caused by **Mucorales fungi**, primarily affecting **immunocompromised** individuals with conditions like **COVID-19 or diabetes.**

▪ Impact of Excluding AMR Measures:

- Removal of AMR-related measures would **hinder efforts to protect people from future pandemics.**

- Measures at risk of removal include **access to safe water, infection prevention, surveillance, and antimicrobial stewardship.**

- Antimicrobial stewardship is the **effort to measure and improve** how antibiotics are prescribed by **clinicians and used by patients.** It **aims to improve clinical outcomes** and **minimize adverse events** related to antibiotic use, including the development of antibiotic resistance.

- **Weakening the language of the Treaty** could allow countries to **opt-out of preventive actions.**

▪ The Urgency of Addressing AMR in the Pandemic Treaty:

- AMR requires **global political action and collaboration to mitigate its impact.**

- Safeguarding **antimicrobials is crucial for pandemic response** and preparedness.

- **Failing to address AMR** in the pandemic treaty **undermines its broader goals of protecting nations and communities from future health emergencies.**

7) India New Zealand Round Table Meeting

Why in News?

Recently, the **first Round Table Joint Meeting** between India and New Zealand with the industry and industry associations of both the countries took place in New Delhi.

- The meeting was co-chaired by the **Additional Secretary, Department of Commerce** and **High Commissioner** of New Zealand.

What are the Key Highlights of the Meeting?

- Both the countries acknowledged the **huge potential in India and New Zealand partnership** and the need for **bringing in synergy for enhanced economic relations** in areas of mutual interest.
- There was an acknowledged need to work beyond any free trade agreement and explore other areas where both can complement each other.
- The discussions focused on taking forward the objectives of the **Joint Trade Committee (JTC)**, formed under the **Bilateral Trade Agreement of 1986**.
- New Zealand emphasised on facilitating trade and association with private sectors with some of the key areas being the **promotion of Unified Payment Interface (UPI)** system, **carbon credit co-operation** and working on issues like the requests on **non-tariff measures for bilateral gains** to the businesses of both the sides.
 - The need for **increasing the air connectivity links** between the two countries was also emphasised.

What are the Key Points about New Zealand?

- **Official Name:** New Zealand/Aotearoa (Maori)
- **Form of Government:** Parliamentary democracy
- **Capital:** Wellington
- **Official Languages:** English, Maori
- **Currency:** New Zealand dollar
- **Major Mountain Ranges:** Southern Alps, Kaikoura Ranges
- **Highest Mountain Peak:** Mount Cook (3,754 meters) - called "**Cloud Piercer**" by Maori people
- **Major Rivers:** Waikato, Clurtha, Rangitaiki, Wanganui, Manawatu, Buller, Rakaia, Waitaki and Waiau
- **2 Main Islands:** North and South Islands - separated by the **Cook Strait**

How are India's Relations with New Zealand?

- **Historical Relations:** India and New Zealand have a **longstanding, friendly and growing relationship with ties going back to the 1800s**, when Indians settled in Christchurch around the 1850s.
- Larger numbers of immigrants from Punjab and Gujarat came to New Zealand in the 1890s. Indian troops fought alongside the **Anzacs in Gallipoli in 1915**.
- **Political Relations:** India and New Zealand have cordial and friendly relations **rooted in the linkages of the Commonwealth, parliamentary democracy, and the English language**.



- Both countries became independent in the same year and **diplomatic representation of India was established in 1950.**
- Other common interests of the two countries include **their commitment to disarmament, North-South Dialogue, human rights, ecological preservation and combating international terrorism.**
- New Zealand identified **India as a priority country in its “Opening Doors to India” policy** notified in October 2011, which was reiterated in 2015.
- **Cooperation during Covid-19 Pandemic:** Both countries cooperated extensively both bilaterally in fighting against the pandemic by **ensuring the continuity of supply chains of essential commodities, medicines, and vaccines.**
- India and New Zealand also facilitated the **repatriation of each other’s nationals stranded in the wake of Covid-19.**
- **Trade Relations:** India is New Zealand’s **11th largest two-way trading partner** with total two-way trade valued at USD 1.80 billion during the year ending September 2020.
- **Education and tourism are New Zealand’s growth sectors** with India.
- **Indian students** (~15000 in number pre-pandemic) are **the 2nd largest source of international students** for New Zealand.
- India primarily **imports logs and forestry products, wood pulp, wool and edible fruit & nuts** from New Zealand and exports mostly pharmaceuticals/medications, precious metals and gems, textiles and motor vehicles and non-knitted apparel and accessories to New Zealand.
- India shares **Free Trade Agreements (FTAs)** with New Zealand.
- **Business Alliances:** India -New Zealand Business Council (INZBC) and India New Zealand Trade Alliance (INZTA) are the two prominent organizations working to promote India-NZ trade and investment relations.
- **Cultural Relations:** All Indian festivals including **Diwali, Holi, Rakshabandhan, Baisakhi, Guruparv, Onam, Pongal, etc.** are celebrated with much enthusiasm all over New Zealand.
- New Zealand has approximately 2,50,000 persons of Indian origin & NRIs, a vast majority of which has made New Zealand their permanent home.
- **Civil Aviation Cooperation:** Given the large Indian diaspora in New Zealand and **increasing two-way tourism flow, there is a strong case for a direct air connection between the two countries** which might prove to be a game-change for all aspects of bilateral relations.
- The direct flights operated between the two countries under the **Vande Bharat Mission** have strengthened the prospects of a direct weekly flight as and when the possibility becomes commercially feasible for airlines.

8) Tax Devolution

Why in News?

Recently, the Union government has released the 3rd Installment of **Tax Devolution** to state governments amounting to Rs 1,18,280 crore in June 2023, as against the normal monthly **devolution of Rs 59,140 crore.**

- It will **enable states to speed up capital spending**, finance their development/ welfare related expenditure and also to make available resources for priority projects/ schemes.
- **Uttar Pradesh received the highest** (Rs 21,218 crore) followed by **Bihar** (Rs 11,897 crore), **Madhya Pradesh, West Bengal and Rajasthan.**

What is Tax Devolution?

- **About:**

- Tax devolution refers to the distribution of tax revenues between the central government and the state governments. It is a constitutional mechanism **established to allocate the proceeds of certain taxes among the Union and the states** in a fair and equitable manner.
- **Article 280(3)(a)** of the Constitution of India mandates that the Finance Commission (FC) has the responsibility to **make recommendations regarding the division of the net proceeds of taxes** between the Union and the states.
 - **Key Recommendations of 15th Finance Commission:**
- **Share of States in Central Taxes (Vertical Devolution):**
 - The share of states in the central taxes for the 2021-26 period is **recommended to be 41%**, same as that for 2020-21.
 - This is less than the **42% share recommended by the 14th Finance Commission for 2015-20** period.
 - The adjustment of **1% is to provide for the newly formed union territories of Jammu and Kashmir, and Ladakh** from the resources of the centre.
- **Horizontal Devolution (Allocation Between the States):**
 - For horizontal devolution, it has suggested **12.5% weightage to demographic performance, 45%** to income, 15% each to population and area, 10% to forest and ecology and 2.5% to tax and fiscal efforts.
- **Revenue Deficit Grants to States:**
 - Revenue Deficit is defined as the **difference between revenue or current expenditure and revenue receipts, that includes tax and non-tax.**
 - It has recommended **post-devolution revenue deficit grants amounting to about Rs. 3 trillion** over the five-year period ending FY26.
- **Performance Based Incentives and Grants to States:** These grants revolve around four main themes.
 - The first is the **social sector**, where it has focused on **health and education.**
 - Second is the **rural economy**, where it has focused on **agriculture and the maintenance of rural roads.**
 - The rural economy plays a significant role in the country as it encompasses two-thirds of the country's population, 70% of the total workforce and 46% of national income.
 - Third, **governance and administrative** reforms under which it has recommended grants for judiciary, **statistics and aspirational districts** and blocks.
 - Fourth, it has developed a **performance-based incentive system for the power sector**, which is not linked to grants but provides an important, additional borrowing window for States.
- **Grants to Local Governments:**
 - Along with grants for municipal services and local government bodies, it includes **performance-based grants for incubation of new cities** and health grants to local governments.
 - In grants for Urban local bodies, basic grants are proposed only for cities/towns having a population of less than a million. For Million-Plus cities, **100% of the grants are performance-linked through the Million-Plus Cities Challenge Fund (MCF).**
 - MCF amount is linked to the performance of these cities in improving their air quality and meeting the service level benchmarks for urban drinking water supply, sanitation and solid waste management.

What is the Role of the FC in Maintaining Fiscal Federalism?

- **Distribution of Tax Proceeds:**
- The Finance Commission recommends the **distribution of the net proceeds of taxes** between the Union government and the state governments.

- This ensures a **fair and equitable sharing of tax revenues**, taking into account the fiscal capacities and needs of the states.
- **Allocation of Taxes Among States:**
- The Finance Commission determines the **principles and quantum of grants-in-aid to states** that require financial assistance.
- It assesses the **financial needs of states and recommends measures** to allocate funds from the consolidated funds of the states.
- **Augmenting Resources of Local Governments:**
- The Finance Commission **suggests measures to augment the consolidated fund of a state** in order to supplement the resources of **Panchayats and Municipalities** in that state.
- **Cooperative Federalism:**
- The Finance Commission's functioning is **characterized by extensive consultations with all levels of governments, promoting the principle of cooperative federalism.**
- It engages in consultations **with the central government, state governments, and other stakeholders** to gather inputs and ensure a participatory approach in decision-making.
- **Public Spending and Fiscal Stability:**
- The recommendations of the Finance Commission are aimed at improving the quality of **public spending and promoting fiscal stability.**
- By evaluating the financial position of the Union and state governments, the **Commission provides guidance on fiscal management**, resource allocation, and expenditure priorities.

What is the 15th Finance Commission?

- The Finance Commission is a **constitutional body that** determines the method and **formula for distributing the tax proceeds** between the Centre and states, and among the **states as per the constitutional arrangement** and present requirements.
- Under **Article 280 of the Constitution**, the **President of India** is required to constitute a Finance Commission at an interval of five years or earlier.
- The **15th Finance Commission** was constituted by the President of India in November 2017, under the chairmanship of NK Singh.
- Its recommendations will cover a **period of five years from the year 2021-22 to 2025-26.**

9) UNDP's 2023 Gender Social Norms Index

Why in News?

Biased gender social norms continue to impede progress towards achieving gender equality and violate human rights, according to the **United Nations Development Programme (UNDP).**

- Despite global efforts and campaigns advocating for women's rights, a significant percentage of people still hold biased beliefs against women.
- The **UNDP's 2023 Gender Social Norms Index (GSNI)** provides insights into the persistence of these biases and their impact on various aspects of women's lives.

What are the Key Findings of the Index?

- **About:**

- UNDP tracked people's attitudes towards women in four dimensions: **political, educational, economic and physical integrity**. UNDP reports that nearly **90% of people still hold at least one bias against women**.
- **Findings:**
- **Political Participation and Representation:** Biases in gender social norms contribute to a **lack of equality in political participation**. Approximately **half of the world's population believes men make better political leaders**, while **two in five believe men make better business executives**.
- **Countries with greater bias exhibit lower representation of women in parliament.**
- On average, the **share of heads of state or government who are women has remained around 10% worldwide since 1995**, and women hold just over a quarter of parliament seats globally.
- Women are **grossly underrepresented in leadership in conflict-affected countries**, mainly at the negotiation tables in the recent conflicts in **Ukraine (0%), Yemen (4%), and Afghanistan (10%)**.
- **Indigenous women, migrant women, and women with disabilities** face even more significant challenges in attaining political representation.
- **Economic Empowerment:** Despite progress in **education, gender gaps in economic empowerment persist**.
- The increase in women's education has not translated into better economic outcomes.
- In **59 countries where adult women are more educated than men, the average income gap is 39%**.
- **Domestic Chores and Care Work:** Countries with **higher bias in gender social norms witness a significant disparity in domestic chores and care work**.
- Women spend **nearly six times more time on these tasks than men**, limiting their opportunities for personal and professional growth.
- Also, Alarmingly, **25% of people believe it is justified for a man to beat his wife**, revealing deep-rooted biases.
- **Hopeful Signs and Breakthroughs:** While overall progress has been limited, an increase in the share of people with no bias in any indicator is observed in **27 out of 38 surveyed countries**.
- The **largest improvements were seen in Germany, Uruguay, New Zealand, Singapore, and Japan**, with progress greater among men than women.
- Breakthroughs in gender social norms have been achieved through policies, regulations, and scientific advancements.
- **The Urgent Need for Change:** Biased gender social norms not only impede women's rights but also hinder societal development and well-being.
- The **lack of progress in gender social norms coincides with a decline in the Human Development Index (HDI)**.
- Achieving freedom and agency for women benefits society as a whole.

What are the Major Challenges Related to Gender Equality in India?

- **Cultural and Societal Norms:** India has deep-rooted cultural and societal norms that perpetuate gender bias. **Traditional beliefs regarding gender roles** and expectations limit women's freedom and opportunities.
- For instance, the **preference for male children, leading to a significant gender imbalance and instances of female infanticide**.
- **Violence against Women:** Incidents of violence against women, such as **domestic violence, sexual harassment, and rape, continue to be prevalent in India**.

- Although laws have been enacted and awareness campaigns launched, these incidents persist, demonstrating the challenge of changing deep-seated attitudes and behaviours.
- Recent cases, such as the **Hathras gang rape case in 2020**, highlighted the gaps in the system and sparked outrage regarding the handling of such cases.
- **Economic Disparities:** Economic disparities between **men and women contribute to gender bias**. Women in India often face **unequal pay, limited job opportunities, and lack of representation in decision-making roles**.
- The **gender wage gap** remains a persistent issue, with women earning less than men for similar work.
- **Limited Access to Education and Healthcare:** Gender bias is perpetuated by limited access to education and healthcare for women in certain parts of India.
- Despite progress in **increasing female literacy rates, particularly in urban areas, rural areas still face significant challenges**.
- Moreover, inadequate access to healthcare, including reproductive health services, poses additional obstacles for women's well-being and development.
- **Differentiation in the Socialisation Process:** In many parts of India, especially in rural regions, there are **still different socialisation norms for men and women**.
- Women are expected to be **soft-spoken, calm, and quiet**. They should walk, talk, sit and behave in a certain manner. **Whereas men ought to be confident, loud, and could display any behaviour as per their wish**.

What are the Recent Government Schemes Related to Women Empowerment?

- Sukanya Samridhi Yojna
- Beti Bachao Beti Padhao Scheme
- Pradhan Mantri Matru Vandana Yojana
- Pradhan Mantri Mahila Shakti Kendra Scheme
- One Stop Centre

Way Forward

- **Better Education Opportunities:** Giving education to women means giving education to the whole family. Education plays an important role in building self-confidence among women.
- Also, **India's education policy should target young men and boys to positively change their attitudes towards girls and women**.
- Also, there is a need to **incorporate gender equality and sensitivity** into the school curriculum from an early age, emphasising respect, empathy, and equal opportunities for all.
- **Economic Independence:** There is a need to **encourage entrepreneurship and provide financial support, training, and mentorship to women** to establish their businesses, and **promote equal pay and flexible work arrangements**.
- There is also a need to **implement skill development programs to enhance women's employability** and promote their participation in traditionally male-dominated sectors.
- **Awareness About Safety Measures:** A multi-sectoral strategy to raise awareness among **women about the current government initiatives and mechanisms should be devised** to ensure the safety of women throughout the country.
- **Panic Button, Nirbhaya Police Squad** are some good steps in the direction of women's safety.

The gender score | India ranked 135 in gender parity out of 146 countries, according to the Global Gender Gap Report 2022 released by the World Economic Forum. A look at India's ranking in the four sub-indexes based on which the overall ranking was determined

India	Rank 2022*
Global gender gap index	135
Economic participation and opportunity	143
Educational attainment	107
Health and survival	146
Political empowerment	48

*out of 146 countries



- **From Women Development to Women Led Development:** Women should be reimagined as architects of India's progress and development, rather than being passive recipients of the fruits of development.

10) Central Bureau of Investigation

Why in News?

Recently, the Tamil Nadu government has announced that it has withdrawn the general consent given to the **Central Bureau of Investigation (CBI)**, under Section 6 of the **Delhi Special Police Establishment (DSPE) Act, 1946**.

- **Mizoram, West Bengal, Chhattisgarh, Rajasthan, Maharashtra, Kerala, Jharkhand, Punjab and Meghalaya** had withdrawn their general consent given to CBI as of March. 2023.

What is the Central Bureau of Investigation?

- The CBI was **established by a resolution of the Ministry of Home Affairs and later transferred to the Ministry of Personnel, Public Grievances and Pensions**, currently functioning as an **attached office**.
- Its establishment was **recommended by the Santhanam Committee** on Prevention of Corruption.
- The CBI operates **under the DSPE Act, 1946**. It is **neither a constitutional nor a statutory body**.
- It investigates **cases related to bribery, governmental corruption, breaches of central laws, multi-state organized crime, and multi-agency** or international cases.

How does the CBI function in India?

- **Provision of Prior Permission:**
 - The CBI is **required to obtain the prior approval of the Central Government before conducting any inquiry** or investigation into an offence committed by officers of the rank of joint secretary and above in the Central Government and its authorities.
 - However, **in 2014, the Supreme Court held it invalid and held that Section 6A of the Delhi Special Police Establishment Act**, which granted protection to joint secretary and above officers from facing even a preliminary inquiry by the CBI in corruption cases, was **violative of Article 14**.
- **General Consent Principle for CBI:**
 - The consent of the **state government to CBI can be either case-specific or "general"**.
 - General consent is **normally given by states to help the CBI in the seamless investigation of cases of corruption** against central government employees in their states.
 - This is **essentially consent by default, which means CBI** may begin investigations taking consent as having been already given.
 - In the **absence of general consent, CBI would have to apply to the state government** for its consent in every individual case, and before taking even small actions.

What are the Challenges Before CBI?

- **Lack of Autonomy:**
 - One of the **major challenges is political interference** in its functioning.
- **Resource Constraint:**
 - The CBI also faces a **lack of infrastructure, sufficient manpower, and modern equipment**.

- There have also been concerns about questionable methods of procuring evidence and officers failing to abide by the rule book.
- **Legal Limitations:**
 - The agency currently **operates under outdated legislation that does not adequately address contemporary challenges.**
 - It has resulted in **several issues, including ambiguity in its jurisdiction, lack of transparency, and inadequate accountability mechanisms.**
- **Procedural Delays:**
 - **Legal procedures and lengthy court processes** can pose challenges for the CBI.
 - Obtaining search **warrants, recording statements, and presenting evidence in court can be time-consuming,** leading to delays in completing investigations and securing convictions.

Why is There Need for Institutional Reforms in the CBI?

- **Independence and Autonomy:**
 - Establishing the **CBI as an independent investigative agency separate** from the administrative control of the Central Government.
 - **Ensuring functional autonomy** to carry out investigations without undue interference from political or bureaucratic influences.
 - **Strengthening legal provisions** to safeguard the autonomy and impartiality of the CBI.
- **Jurisdiction and Coordination:**
 - **Clarifying its jurisdictional boundaries to avoid conflicts** with state police forces and ensuring smooth coordination and strengthening collaboration and information sharing with state agencies to streamline investigations.
- **Legal Framework:**
 - **Reviewing and updating existing laws** to enhance its **investigative powers, providing statutory backing** to investigative techniques, and streamlining legal procedures to expedite investigations and trials.
- **Technological Upgradation:**
 - Investing in **advanced technology and infrastructure** to equip the CBI with modern tools for digital forensics, data analysis, and crime mapping.

What are Some Supreme Court Observations on CBI?

- **Coalgate Case:**
 - In 2013, a Bench headed by Justice R M Lodha described the CBI as “**a caged parrot speaking in its master’s voice**”
- **CBI VS CBI Case:**
 - The SC in CBI VS CBI case held that the power to remove/send on leave the director of CBI, **vested in the selection committee, not with the central govt.**
 - SC says this verdict **when CBI Director challenge the decision of central govt to send him on leave without his will.**

Way Forward

- **Statutory Backing:**
 - Several committees have **proposed conferring statutory status to the CBI to ensure its smooth functioning and operational autonomy**. The suggested measures include granting the authority to initiate investigations, file chargesheets, and prosecute cases without any undue external influence.
- **Whistleblower Protection:**
 - Provisions should be included in the law **to protect whistleblowers within the CBI, ensuring transparency, exposing corruption**, and safeguarding individuals who report misconduct from retaliation through confidential reporting mechanism.
- **Capacity Building:**
 - The new law should **promote regular training and professional development programs** for CBI personnel to enhance their skills, knowledge, and understanding, enabling them to effectively handle complex cases.

11) Global Trends: Forced Displacement in 2022

Why in News?

The **year 2022 witnessed a staggering surge in the number of people uprooted from their homes** due to social and **climate crises**, as highlighted in a report by the **United Nations High Commissioner for Refugees (UNHCR)**.

- With an increase of 21% compared to 2021, **a total of 108.4 million individuals were forcibly displaced, including a significant number of children.**

What are the Major Highlights of the Report?

- **About:**
 - According to UNHCR's statistics on forced displacement, the number of people who were forced to flee their homes due to **persecution, conflict, violence, human rights violations and events seriously disturbing public order reached a record 108.4 million by the end of 2022, and 30% of them were children.**
 - This represents an increase of **19 million people compared to the end of 2021.**
 - Of the global total of 108.4 million forcibly displaced people, **35.3 million were refugees**, people who crossed an international border to find safety.
 - **Forced displacement** can be **internal or external**, depending on whether the displaced people remain within their country of origin or cross an international border.
- **Drivers of Displacement:**
 - The main driver of displacement in 2022 was the **full-scale war in Ukraine, which erupted in February 2022** and created the fastest and one of the largest displacement crises **since World War II.**
 - By the end of 2022, **a total of 11.6 million Ukrainians remained displaced, including 5.9 million within their country** and 5.7 million who fled to neighbouring countries and beyond.
 - Other ongoing and new conflicts also contributed to forced displacement across the globe, such as in the **Democratic Republic of the Congo (DRC), Ethiopia and Myanmar, where more than 1 million people were displaced within each country.**
 - The total number of people displaced across the world increased to 110 million by May 2023, **driven by the fresh conflict in Sudan**
 - In addition to conflict and violence, **climate change and natural disasters also triggered displacement** and exacerbated the vulnerability of displaced populations.

- **Climate disasters caused 32.6 million internal displacements** throughout 2022 and 8.7 million of the people did not manage to return home by the end of the year.
- **Disaster related internal displacement accounted for more than half (54%)** of all new displacements in 2022.
- **Displacement Burden on Poorer Countries:**
 - **Low- and middle-income countries** bore the greatest burden, with **90% of the displaced population originating from these nations.**
- **These countries also hosted 76% of the world's refugees in 2022**, highlighting their disproportionate responsibility.
- **Least Developed Countries (LDCs)** hosted **20% of the global refugee population**, with nations such as **Bangladesh, Chad, the DRC, Ethiopia, Rwanda, South Sudan, Sudan, Uganda, Tanzania, and Yemen** facing significant challenges.
- **Statelessness:**
 - **Statelessness exacerbates the difficulties faced by refugees**, denying them access to basic necessities like healthcare, education, and employment.
 - An **estimated 4.4 million people worldwide were stateless or of undetermined nationality by the end of 2022**, a 2% increase from the year 2021.

What are the Impacts of Forced Displacement?

- **Impacts on Refugees:**

- **Economic**

Hardships: Many refugees lose their **livelihoods and economic stability upon displacement.**

They often face barriers in accessing employment opportunities, education, and financial resources in host countries.

- Economic hardships can result in **poverty, limited access to essential goods and services, and increased vulnerability.**

- **Education Disruption:** For refugee children and youth, access to education is often disrupted or entirely denied.

- **Limited educational opportunities can hinder their long-term development** and prospects for a better future, perpetuating a cycle of poverty and dependency.

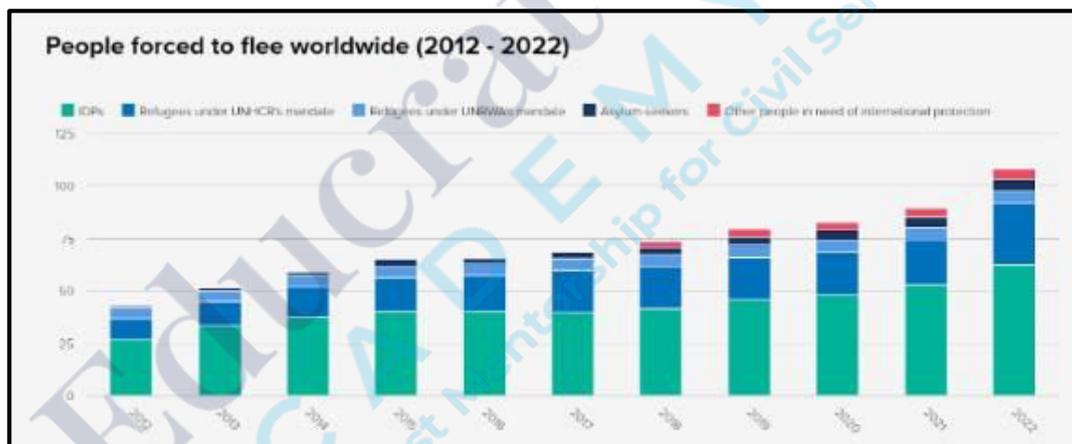
- **Trauma and Emotional Distress:** Refugees often experience traumatic events during their displacement, including **violence, loss of loved ones, and the destruction of their homes and communities.**

- This can lead to **severe emotional distress, including post-traumatic stress disorder (PTSD), anxiety, and depression.**

- **Physical Health Challenges:** Displaced refugees may face numerous health challenges, including **inadequate access to healthcare, malnutrition, and exposure to unsanitary conditions.**

- **Lack of proper sanitation and healthcare facilities** can lead to the spread of diseases, further compromising their well-being.

- **Social and Cultural Challenges:** Refugees often face challenges in integrating into the host society due to **language barriers, cultural differences, and discrimination.**



- Social exclusion and marginalization can exacerbate their feelings of isolation and hinder their ability to rebuild their lives.
- **Impacts on Host Communities:**
 - **Strain on Resources and Services:** The sudden influx of refugees can place significant pressure on host communities' resources, **including housing, healthcare facilities, schools, and public services.**
 - The **increased demand can overburden existing infrastructure**, leading to shortages and reduced access for both refugees and host community members.
 - **Social Cohesion and Cultural Dynamics:** The arrival of refugees may create **social tensions and cultural dynamics within host communities.**
 - Differences in language, religion, and customs can generate misunderstandings and conflicts.
 - **Increased Competition for Jobs:** The presence of refugees can lead to competition for employment opportunities in host communities.
 - Some host community members may **perceive refugees as taking away jobs or driving down wages, leading to tension and resentment.**

What can be the Possible Solutions to Address Forced Displacement?

- **Humanitarian Assistance:** Providing immediate humanitarian aid such as food, shelter, healthcare, and clean water to displaced populations is crucial.
 - **International organisations, governments, and NGOs** should work together to ensure the **basic needs of displaced people are met.**
- **Conflict Resolution and Peacebuilding:** Addressing the root causes of forced displacement requires efforts to resolve conflicts and promote peace.
 - **Diplomatic negotiations, mediation, and peacebuilding initiatives** can help prevent further displacement by resolving the underlying issues.
- **Protection of Human Rights:** Upholding and protecting the human rights of displaced individuals is essential.
 - Governments should enact and enforce laws that protect the **rights of displaced people, including their right to safety, dignity, and access to basic services.**
- **Empowering Local Communities:** Strengthening the capacity of host communities to accommodate and support displaced populations can help mitigate tensions and promote social cohesion.
 - This can be done through **investments in infrastructure, education, healthcare, and livelihood opportunities.**
- **Regional and International Cooperation:** Forced displacement often requires a coordinated response from multiple countries and international organisations.
 - Collaboration between governments, regional bodies, and humanitarian agencies is crucial **to share responsibilities, resources, and expertise in addressing displacement challenges.**
 - This includes framing a legislation that **recognizes the rights of displaced people, establishes procedures for their protection**, and provides avenues for durable solutions such as **voluntary return, resettlement, and local integration.**

What is the United Nations High Commissioner for Refugees?

- UNHCR, the **UN Refugee Agency**, is a global organisation dedicated to **saving lives, protecting rights and building a better future for people forced to flee their homes because of conflict and persecution.**
- It was established by the **General Assembly of the United Nations in 1950** in the **aftermath of the Second World War** to help the millions of people who had lost their homes.

- Currently, UNHCR is governed by the **UNGA and the UN Economic and Social Council (ECOSOC)**.
- It is guided by and acts as the guardian of the **1951 Refugee Convention and its 1967 Protocol**.
- **India is not a party to the 1951 Refugee Convention and its 1967 Protocol.**

12) Global Gender Gap Report 2023: WEF

Why in News?

Recently, 17th edition of the **Global Gender Gap Report 2023** has been released by the **World Economic Forum (WEF)**, evaluating the **status of Gender Parity** across 146 countries.

What is the Global Gender Gap Index?

▪ About:

- It benchmarks countries on their progress towards **gender parity in four Key dimensions** with Submatrices.
 - Economic Participation and Opportunity
 - Educational Attainment
 - Health and Survival
 - Political Empowerment
- On each of the four sub-indices as well as on the overall index the **GGG index provides scores between 0 and 1**, where 1 shows full gender parity and 0 is complete imparity.
- It is the longest-standing index, **which tracks progress towards closing these gaps over time since its inception in 2006.**

▪ Objectives:

- To serve as a **compass to track progress on relative gaps** between women and men on health, education, economy and politics.
- Through this annual yardstick, the **stakeholders within each country are able to set priorities** relevant in each specific **economic, political and cultural context.**

What are the Key Findings?

▪ Global Gender Gap Score:

- The global gender gap score in 2023 **stands at 68.4%**, indicating a modest improvement of 0.3% points compared to the previous year.
- At the current rate of progress, it would take **131 years to achieve full gender parity**, showing a significant slowdown in the overall rate of change.

▪ Top-Ranking Countries:

- Iceland has **maintained its position as the most gender-equal country** for the 14th consecutive year, with a gender **gap score of 91.2%**.
- It is the **only country to have closed over 90% of its gender gap.**
- Three other Nordic countries—Norway (87.9%), Finland (86.3%), and Sweden (81.5%)—join **Iceland in the top five rankings**, highlighting their strong commitment to gender equality.

▪ Health and Survival:

- The gender gap in health and survival has closed by 96% globally.

▪ **Political Empowerment:**

- The political empowerment gender gap remains significant, with a closure rate of 22.1% globally and a projected timeline of 162 years to close the gap.

▪ **Educational Attainment:**

- The gender gap in educational attainment **has closed by 95.2%**, with significant progress **made over the 2006-2023 period**.
- The gender gap in educational attainment is projected to close in 16 years.

▪ **Economic Participation and Opportunity:**

- The gender gap in economic participation and opportunity **stands at 60.1% globally**, highlighting the persistent challenges in achieving gender equality in the workforce.
- The gender gap in economic participation and **opportunity is projected to close in 169 years**.

How has India Fared in the Gender Gap Report 2023?

▪ **India's Rank:**

- India has made significant progress, **rising from 135th (in 2022) to 127th** out of 146 countries in the report's 2023 edition, indicating an improvement in its ranking.
- **India's neighbours Pakistan ranked at 142**, Bangladesh at 59, China at 107, Nepal at 116, Sri Lanka at 115 and Bhutan at 103.
- The country has improved by **1.4 percentage points and eight positions** since the last edition, marking a partial **recovery towards its 2020 parity level**.

• **India had closed 64.3% of the overall gender gap.**

▪ **Gender Parity in Education:**

- India has achieved **parity in enrolment across all levels** of education, reflecting a positive development in the country's education system.

▪ **Economic Participation and Opportunity:**

- India's progress in economic participation and opportunity remains a challenge, **with only 36.7% gender parity achieved** in this domain.
- While there has been an uptick in parity in wages and income, there is a **slight drop in the representation of women** in senior positions and technical roles.

▪ **Political Empowerment:**

- India has made strides in political empowerment, **achieving 25.3% parity** in this domain. Women represent **15.1% of parliamentarians**, which is the highest representation **since the inaugural report in 2006**.
- 18 countries — including Bolivia (50.4%), India (44.4%) and France (42.3%) — have achieved **women's representation of over 40% in Local Governance**.

▪ **Health and Survival:**

- There is a 1.9%-point improvement in India's sex ratio at birth, **after more than a decade of slow progress**.
- However, India, along with Vietnam, China, and Azerbaijan, still **has relatively low scores on the Health and Survival** sub-index due to skewed sex ratios.

What are the Indian Initiatives to reduce Gender Gap in Social, Economic and Political Life?

▪ **Economic Participation and Health and Survival:**

- **Beti Bachao Beti Padhao:** It ensures the protection, survival and education of the girl child.

- **Mahila Shakti Kendra:** Aims to empower rural women with opportunities for skill development and employment.
- **Mahila Police Volunteers:** It envisages **engagement of Mahila Police Volunteers in States/UTs** who act as a link between police and community and facilitates women in distress.
- **Rashtriya Mahila Kosh:** It is an **apex micro-finance organization** that provides micro-credit at concessional terms to poor women for various livelihood and income generating activities.
- **Sukanya Samridhi Yojna:** Under this scheme girls have been economically empowered by opening their bank accounts.
- **Female Entrepreneurship:** To **promote female entrepreneurship**, the Government has initiated Programmes like **Stand-Up India and Mahila e-Haat** (online marketing platform to support women entrepreneurs/SHGs/NGOs), Entrepreneurship and Skill Development Programme (ESSDP).
- **Kasturba Gandhi Balika Vidyalaya:** They have been opened in Educationally Backward Blocks (EBBs).
 - **Political Reservation:** Government has reserved **33% of the seats in Panchayati Raj Institutions for women.**
- **Capacity Building of Elected Women Representatives:** It is conducted with a view to empowering women to participate effectively in the governance processes.

13) ODOP Sampark Event in Nagaland

Why in News?

Recently, the **Department for the Promotion of Industry and Internal Trade (DPIIT)** and Invest India, in collaboration with the **Department of Industries and Commerce, Nagaland** organised the ODOP Sampark Event in Nagaland.

- The event aimed to create awareness about the **One District One Product (ODOP) and PM Gati Shakti (Logistics) initiatives.**

What are the Major Highlights of the Event?

- **Enhancing Market Access:** One of the primary objectives of the event was to improve market access for Indian products, particularly from **Nagaland, in foreign markets like the European Union (EU), Switzerland, and others.**
- **Infrastructure Development:** To support the **ODOP products from Nagaland**, various measures to **improve logistics facilities** were highlighted such as:
 - Leveraging **Krishi UDAN scheme** for better transportation
 - Expanding railway connectivity
 - The **Union Budget 2023-24 has allocated INR 5000 crores for the construction of Unity Malls across the country**, which will act as centralised marketplaces for ODOP products.
- **ODOP Exhibition:** The event showcased various ODOP products from Nagaland, including **chili, fish, coffee, and turmeric.**

What is One District One Product Initiative?

- **About:**
- **ODOP is an initiative to boost economic growth at the district level by promoting and branding one product from each district of the country.**

- The idea is to **leverage the local potential, resources, skills, and culture of each district and create a unique identity for them** in the domestic and international markets.
- **Over 1000 products have been selected from all 761 districts in the country.** The initiative covers a wide range of sectors, **including textiles, agriculture, processed goods, pharmaceuticals, and industrial items.**
- **Also,** multiple ODOP products were displayed at the **World Economic Forum** in January 2023 in the **Indian Pavilion at Davos in Switzerland.**
- **Background:**
 - The **concept of ODOP was first launched by the Uttar Pradesh government in January 2018.**
 - The scheme was successful in reviving the traditional industries and crafts of the state, such as **chikankari embroidery, brassware, pottery, carpets, leather goods, etc.**
 - Inspired by it, the **central government adopted the concept and launched it as a national initiative.**
- **Implementation:**
 - The **Ministry of Food Processing Industries (MoFPI)** implements the scheme for the food processing sector.
 - The Ministry of Textile inaugurated the **'Lota Shop' at National Crafts Museum, New Delhi** under the Central Cottage Industries Corporation of India Limited (CCIC) to showcase and sell the products of ODOP scheme.
 - The **Directorate General of Foreign Trade (DGFT)** also aligned its Districts as an **Export Hub initiative with ODOP to boost exports.**
- **Significance:**
 - **Economic Development:** ODOP aims to strengthen the local economy **by identifying a unique product or craft for each district and developing it as a specialty.**
 - This approach helps in creating a **diversified and sustainable economic base at the grassroots level,** leading to increased **income generation, employment opportunities, and overall economic growth.**
 - **Entrepreneurship and Skill Development:** The initiative encourages local entrepreneurship by focusing on specific products and crafts.
 - It aims to **provide skill development, capacity building, and technical support to artisans and entrepreneurs,** enabling them to enhance their production capabilities, product quality, and market reach.
 - This, in turn, empowers individuals and communities **by promoting self-employment and fostering a culture of innovation.**
 - **Preserving Traditional Knowledge and Heritage:** India has a **rich heritage of traditional crafts and products** that are deeply rooted in the cultural fabric of each district.
 - The ODOP initiative aims to preserve and promote these traditional arts, crafts, and industries, which **often face challenges due to globalization and changing consumer preferences.**
 - **Market Linkages and Branding:** ODOP focuses on providing market linkages and **creating a robust marketing ecosystem for local products.**
 - By leveraging the unique characteristics of each district's product, the initiative helps in creating **niche markets, attracting buyers, and increasing exports, thereby boosting the local economy.**
- **One District One Product Awards:**
 - Recognizing the efforts of various stakeholders in promoting economic development and realising the vision of **Atmanirbhar Bharat, DPIIT has instituted the One District One Product Awards.**
 - These awards will acknowledge the outstanding work done by States/UTs, Districts, and Indian Missions Abroad.
 - The awards will be launched on the **Rashtriya Puraskar Portal.**

What is PM Gati Shakti?

▪ About:

- **PM Gati Shakti is a National Master Plan for Multi-modal Connectivity**, a digital platform to bring **16 Ministries, including Railways, Civil Aviation, MEITY, Shipping, and Road Transport, together** for integrated planning and coordinated implementation of infrastructure connectivity projects.

▪ Features:

- The plan **incorporate the infrastructure schemes of various Ministries and State Governments like Bharatmala, Sagarmala, inland waterways, dry/land ports, UDAN etc.** and cover economic zones like **textile clusters, pharmaceutical clusters, defence corridors, electronic parks, industrial corridors, fishing clusters, agri zones etc.** to improve connectivity and make Indian businesses more competitive.
- The plan also **leverage technology extensively including spatial planning tools with ISRO imagery developed by BiSAG-N (Bhaskaracharya National Institute for Space Applications and Geoinformatics)** and enable transparency in monitoring current projects.

14) India-Egypt Relations

Why in News?

Recently, the Indian Prime Minister (PM) has visited Egypt for the **first time since 1997** to discuss bilateral relations between **India and Egypt**.

- The Government of Egypt bestowed the highest honor of the land — the **Order of the Nile** — on the PM.

Note: Instituted in 1915, the 'Order of the Nile' is conferred upon heads of states, crown princes, and vice presidents who offer Egypt or humanity invaluable services.



What are the Key Highlights of the Visit?

- **Strategic Partnership Agreement:** The visit marked the **signing of a strategic partnership agreement between India and Egypt**, which is a significant milestone in the bilateral relationship between the two countries. The strategic partnership will have **broadly four elements**:
 - Political
 - Defense and Security
 - Economic engagement
 - Scientific and academic collaboration.
 - Cultural and people-to-people contact
- **Memoranda of Understanding (MoUs):** Three MoUs were signed between India and Egypt in the fields of **agriculture, archaeology and antiquities, and competition law**, aiming to enhance **cooperation in these areas**.
- **Bilateral Discussions:** Indian PM and Egypt's President discussed various topics, including **multilateral cooperation at the G-20, food and energy security, Climate Change, and Clean Energy** collaboration.
- **India Unit in Egyptian Cabinet:**
 - Indian PM met with the India Unit, a group of high-level ministers constituted by Egyptian President in Egyptian Cabinet in March, 2023 to enhance India-Egypt relations.

- **Commonwealth War Grave Cemetery:** Indian PM paid homage to over **4,300 Indian soldiers who lost their lives in Egypt** and Aden during **World War I** at the Heliopolis Commonwealth War Grave Cemetery.
- **Egypt's Participation in G-20 Summit:** **Egypt was designated as a "guest country"** at the upcoming G-20 summit scheduled to be held in September, further strengthening bilateral ties between India and Egypt.
- **Al-Hakim Mosque:** Indian Prime Minister visited the **11th-century Al-Hakim Mosque** in Cairo, which was restored by India's Dawoodi Bohra community.
 - The mosque was built in 1012 and is the fourth oldest mosque in Cairo. The Dawoodi Bohra **Muslims are known for their adherence to the Fatimi Ismaili** Tayyibi school of thought and originated from Egypt before establishing a presence in India in the 11th century.

How Has Been the India-Egypt Relations?

- **History:**
 - The history of contact between **India and Egypt, two of the world's oldest civilizations**, can be traced back to at least the time of **Emperor Ashoka**.
 - Ashoka's edicts refer to his relations with **Egypt under Ptolemy-II**.
 - In modern times, **Mahatma Gandhi and the Egyptian revolutionary Saad Zaghloul** shared the common goal of **independence** from British colonial rule.
 - The joint announcement of establishment of diplomatic relations at Ambassadorial level was **made on 18th August 1947**.
 - **India and Egypt signed a friendship treaty in 1955**. In 1961, India and Egypt along with Yugoslavia, Indonesia and Ghana established the **Non-Aligned Movement (NAM)**.
 - In 2016, the joint statement between **India and Egypt identified political-security cooperation, economic engagement and scientific collaboration**, and cultural and people-people ties as the basis of a new partnership for a new era.
- **Bilateral Trade:**
 - India's trade with Egypt stood at USD 6,061 million in 2022-23, having **declined by 17% over the previous year**.
 - Nearly a third of it was petroleum related.
 - India was **Egypt's sixth largest trading partner**, while Egypt was India's 38th in 2022-23.
 - Indian investments in **Egypt are spread over 50 projects totalling USD 3.15 billion**. Egypt has invested **USD 37 million in India**.
- **Defense Cooperation:**
 - The two Air Forces collaborated on the **development of fighter aircraft in the 1960s**, and Indian pilots trained their Egyptian counterparts from the 1960s until the mid-1980s.
 - Both the **Indian Air Force (IAF) and Egyptian air force fly the French Rafale fighter jets**.
 - In 2022, a pact was signed between the two countries that have decided to also **participate in exercises** and cooperate in training.
 - The first joint special forces exercise between the Indian Army and the Egyptian Army, "**Exercise Cyclone-I**" was completed in **January 2023 in Jaisalmer, Rajasthan**.
- **Cultural Relations:**
 - **The Maulana Azad Centre for Indian Culture (MACIC) was established in Cairo in 1992**. The centre has been promoting cultural cooperation between the two countries.

What are the Opportunities and Challenges for India?

▪ Opportunities:

- **Combat Religious Extremism:** India aims to combat **Religious Extremism by supporting moderate countries** in the region and promoting social reforms.
- India has identified it as a key player in the **Gulf Region** since it maintains a moderate stance on religion, enjoys strong relations with the **UAE (United Arab Emirates)** and Saudi Arabia (which have made substantial investments in Egypt).
- **Strategically Located:** Egypt holds a strategically significant position with the **Suez Canal, through which 12%** of global trade passes.
- By enhancing bilateral relations with Egypt, **India hopes to advance its goals in the region.**
- **Indian Investment:** Egypt seeks investments in infrastructure — **Metro projects in Cairo and Alexandria, a Suez Canal economic zone, a second channel of the Suez Canal,** and a new administrative capital in a Cairo suburb.
- More than **50 Indian companies have invested more than USD 3.15 billion** in Egypt.
- **Similar Socio-Economic Conditions:** Egypt is a large country (population 105 million) and economy (USD 378 billion). It is politically stable, and its **socio-economic conditions are quite similar to India.**
- Egypt's largest imports are refined petroleum, wheat (world's largest importer), cars, corn and pharmaceuticals — all of which **India has the potential to supply.**
- **Infrastructure Development:** Moreover, the Egyptian government has an ambitious infrastructure development agenda, **with 49 mega projects including the construction of a New Cairo (USD 58 billion), a USD 25 billion nuclear power plant and a USD 23 billion high-speed rail network.**
- During 2015-19, Egypt was the world's third-largest arms importer. These present opportunities for India.

▪ Challenges:

- **Economic Crisis in Egypt:** The huge financial commitments of the Egyptian economy have **coincided with a static economy,** pandemic, global slowdown and the **Ukraine conflict.**
- Consequently, tourism has dropped and imports such as cereals have become costly. Annual **Inflation** is above 30% and the currency has lost more than half its value since February 2022.
- **Abysmal Debt and Forex:** Egypt's foreign debt is over USD 163 billion (43% of the GDP) and its net foreign assets are minus USD 24.1 billion.
- The acute forex situation compelled the government to issue in January 2023 an order for the **postponement of projects with a large foreign currency** component and cuts to non-essential spending.
- **China's Growing Influence:** India's concerns regarding China in Egypt revolve around China's growing economic influence, **its expanding presence in strategic areas,** its bilateral trade agreements, which can have potential implications for **India's regional interests and security.**
- China's bilateral trade with Egypt is currently at USD 15 billion, double that of **India's USD 7.26 billion in 2021-22.**
- During the past eight years, the President of Egypt has travelled to China seven times to lure Chinese investments.

Way Forward

- India needs to carefully balance its exposure to **Egypt with the opportunities** on hand.
- India may countenance **manageable eco-political risks** to partake Egypt's lucrative opportunities through various innovations such as the **EXIM line of credit, barter, and rupee trading.**

- India should, however, avoid a **repetition of its experience of Iraq in the 1980s and 1990s of having to defer its hard-earned construction project** dues until they had to eventually be paid off by the Indian taxpayer.
 - Moreover, such an arrangement may set a **precedent other similarly placed friendly countries may cite**. India may, instead, consider **trilateral funding arrangements for such projects** in Egypt or elsewhere with its partners in the Gulf, the G-20 or the multilateral financial institutions.

15) India US Strategic Partnership

Why in News?

The **Indian Prime Minister** was on a significant visit to the **United States of America**.

- The visit aimed to **strengthen the strategic partnership between the two countries** and focused on **addressing common challenges, taking a stand on global issues, collaborating in critical emerging technologies, promoting sustainable development, and transitioning towards clean energy**.

What are the Areas of Cooperation Highlighted During the Visit?

- **Strengthening Semiconductor Supply Chains: Micron Technology**, with support from the **India Semiconductor Mission**, will invest in a **new semiconductor assembly and test facility in India**.
 - Applied Materials will establish a **Semiconductor Centre for Commercialization and Innovation in India** to enhance the diversification of the semiconductor supply chain.
 - Lam Research will train **60,000 Indian engineers through its "Semiverse Solution"** to accelerate India's semiconductor education and workforce development goals.
- **Advanced Telecommunications: India and the US have established public-private Joint Task Forces** on the development and deployment of **Open RAN systems and advanced telecoms research and development**.
 - **Bharat 6G from India and the US Next G Alliance** will co-lead the public-private research, aiming to reduce costs, enhance security, and improve the resiliency of telecommunication networks.

Note: Open RAN, also known as **Open Radio Access Network**, is a concept and approach to **designing and implementing radio access networks in telecommunications**. It aims to introduce greater **openness, flexibility, and interoperability** into traditional RAN architectures by **decoupling hardware and software components and promoting multi-vendor integration**.

- **NASA-ISRO Collaboration in Space:** India has signed the **Artemis Accords**, joining 26 other countries committed to **peaceful, sustainable, and transparent cooperation for space exploration**.
 - NASA will provide **advanced training to Indian Space Research Organization (ISRO) astronauts**, with the goal of a joint effort to the **International Space Station in 2024**.
 - A strategic framework for human spaceflight cooperation between **NASA and ISRO is being developed by the end of 2023**.
- **Quantum, Advanced Computing, and Artificial Intelligence:** The **Joint Indo-US Quantum Coordination Mechanism** has been established to facilitate joint research on **quantum technology, Artificial Intelligence (AI), and advanced wireless technologies**.
 - Joint collaboration on trustworthy and responsible AI, including **generative AI**, will promote AI education, workforce initiatives, and commercial opportunities.
 - India's leadership as **Chair of the Global Partnership on AI** was commended, and **Google's investment in Indian startups and AI research centre** was appreciated.
- **Fibre Optics Investments: Sterlite Technologies Limited from India** has invested USD 100 million in constructing a **optical fibre cable manufacturing unit near Columbia, South Carolina**, facilitating **USD 150 million in annual exports of optical fiber from India**.
- **Cutting-edge Research:** The **US National Science Foundation** has joint research collaborations with India's Department of Science and Technology.

- A cooperative arrangement has been signed with **India's Ministry of Electronics and Information Technology** to promote emerging technologies.
- **Innovation Handshake:** The **US-India Commercial Dialogue** will launch an "**Innovation Handshake**" to connect the startup ecosystems of both countries, supporting the **US-India Initiative on Critical and Emerging Technology (iCET)**.
- **Critical Minerals Partnership:** India has become the **newest partner of the US-led Minerals Security Partnership (MSP)**, focused on developing diverse and sustainable critical energy minerals supply chains globally.
- **Epsilon Carbon Limited, an Indian company, will invest in a greenfield electric vehicle battery component factory in the US.**
- **Defense Partnership:** A groundbreaking proposal has been welcomed to co-produce **GE's F414 combat aircraft engines in India**, allowing for greater transfer of US jet engine technology.
- India intends to procure **armed MQ-9B SeaGuardian UAVs** from General Atomics to enhance intelligence, surveillance, and reconnaissance capabilities.
- Agreements have been reached for **service and repair of US Navy ships at Indian shipyards, fostering closer cooperation.**
- **Master Ship Repair Agreements** with Indian shipyards will expedite contracting processes for mid-voyage and emergent repair.
- The **India-US Defence Acceleration Ecosystem (INDUS-X)** has been inaugurated, fostering **joint innovation on defence technologies** and integrating India's private sector defence industry with the US defence sector.
- The adoption of a **Defense Industrial Cooperation Roadmap** will provide policy direction for defence industries.
- The roadmap aims to **enable co-production of advanced defence systems and collaborative research, testing, and prototyping.**

Note:

- **India and US have four foundational defence agreements:**
 - Basic Exchange and Cooperation Agreement for Geospatial Intelligence (BECA).
 - General Security of Military Information Agreement (GSOMIA).
 - Logistics Exchange Memorandum of Agreement (LEMOA).
 - Communication Compatibility and Security Agreement (COMCASA).
- **Fighting Terror and Drugs:** The US and India stand united in countering **global terrorism**, condemning terrorism and violent extremism in all forms.
 - Emphasis is placed on **taking action against UN-listed terrorist groups and urging Pakistan to prevent the use of its territory for launching attacks.**
 - A **counternarcotics framework** will be developed to disrupt the production and trafficking of illicit drugs, including synthetic drugs and precursors.
- **Cooperation in the Indo-Pacific:** The US will join the **Indo-Pacific Oceans Initiative**, promoting a **safe, secure, and stable maritime domain and regional coordination.**
 - India will continue to participate as an **observer in the Partners in the Blue Pacific.**
 - A **Indian Ocean Dialogue** will be held, bringing together experts and stakeholders to enhance regional coordination.
- **Strengthening and Reforming the Multilateral System:** Both countries supported a **comprehensive UN reform agenda**, including expansion of the **UN Security Council's permanent and non-permanent membership.**

- The U.S. endorsed **India's permanent membership on a reformed UN Security Council** and **India's candidature as a non-permanent member for the 2028-29 term.**
- **Initiatives on Healthcare:** Collaboration between US and Indian scientists will be fostered through grants to develop **AI-enabled digital pathology platforms and AI-based automated radiotherapy treatment for cancer.**
 - Agreements will be signed to further research on diabetes, and a **US-India Cancer Dialogue** will be hosted to accelerate progress against cancer.
- **Digital Public Infrastructure (DPI) for Inclusive Development:**
 - Recognizing the potential of **DPI approaches**, both countries aim to provide **global leadership in promoting inclusive development, competitive markets, and protecting individual rights.**
 - Collaboration will be pursued to develop and deploy robust DPIs, with safeguards for privacy, data security, and intellectual property.
 - Exploring the **establishment of an India-US Global Digital Development Partnership** to enable DPI development and deployment in developing countries.
- **Strengthening India-US Trade and Investment Partnership:**
 - Bilateral trade exceeds **USD 191 billion in 2022**, with a focus on greater engagement and technical cooperation in emerging technologies, clean energy, and pharmaceuticals.
 - **Harmonisation of standards and regulations**, lowering barriers to trade and investment, and promoting an innovative digital economy.
 - **Resolution of outstanding WTO disputes and market access issues**, with further engagement through the **India-US Trade Policy Forum.**
 - Exploring **restoration of India's status under the U.S. Generalised System of Preferences program** and recognition as a **Trade Agreements Act-designated country.**
- **Sustainable Development:** Collaborative efforts between **India and the US will continue to achieve national climate and energy goals**, including co-leading the **Hydrogen Breakthrough Agenda.**
 - Innovative investment platforms will be **created to attract international private finance for renewable energy**, battery storage, and emerging green technology projects in India.
 - The US Agency for International Development will support Indian Railways' target to become a **"net-zero" carbon emitter by 2030.**
 - Initiatives are in place to **decarbonize the transportation sector and promote biofuels.**
- **People-Centric Efforts:**
 - Initiatives have been taken to **simplify visa renewals for certain petition-based temporary work visas**, benefiting Indian nationals and reducing the need to leave the country for renewal.
 - Plans are underway to **open new consulates in Bengaluru and Ahmedabad**, fostering closer diplomatic ties.
 - Student exchanges and scholarships have been enhanced, with a record **number of visas issued to Indian students**, and increased opportunities for US undergraduate students to study or intern in India.
 - The Leaders welcomed the **establishment of the Tamil Studies Chair at the University of Houston** and **reinstating the Vivekananda Chair at the University of Chicago** to further research and teaching of India's history and culture.

16) Titan Tragedy Lessons for Proposed Indian Submersible Dive

Why in News?

Scientists are preparing for a Deep See Dive with the Vehicle **Matsya-6000** in late 2024 similar to the Titan **submersible**, which recently went missing.

- **The Matsya-6000 project under India's Deep Ocean Mission**, scheduled for late 2024, aims to explore the **Indian Ocean at a depth of about 6,000 meters**.
- In light of the recent incident of **Titan Submersible**, the safety systems employed for the crew will undergo reviews to ensure their effectiveness.

What are the Key Points of Titan Submersible?

▪ About:

- Titan submersible is operated by the privately owned U.S. company **OceanGate that organizes underwater expeditions** for both research and tourism.
- It was built with "off-the-shelf" components, is lighter and **more cost-efficient than other deep diving submersibles**.
- Titan is made of **carbon fibre and titanium** and weighs 10,432 kilograms.
- It is capable of **going 4,000 metres undersea** and moves as fast as three knots per hour (5.56 kph).

▪ Objective:

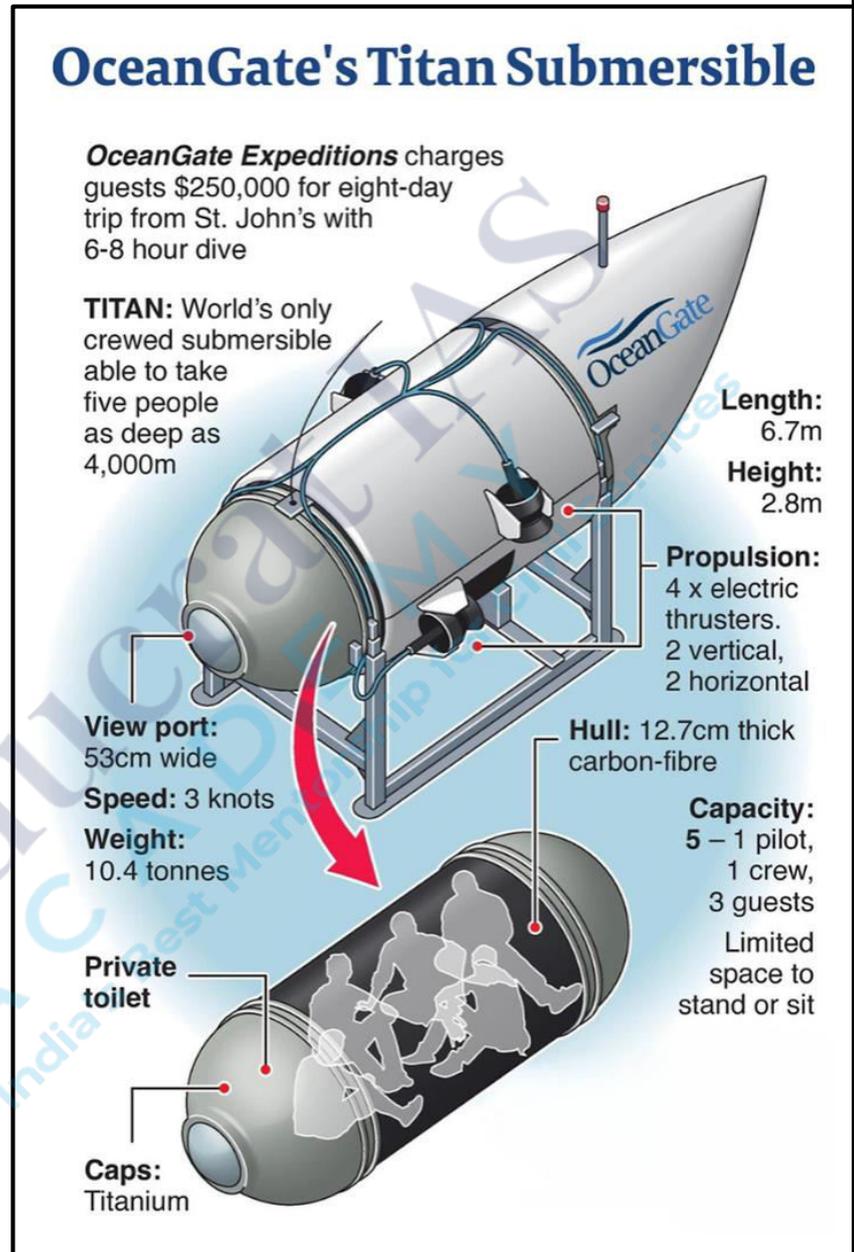
- Titan Submersible was travelling to see the **wreckage of RMS (Royal Mail Ship) Titanic**, which is nearly four thousand metres under water in the **frigid North Atlantic Ocean**.
- One hour and forty-five minutes into the journey, contact with Titan was lost.

▪ Concerns:

- The submersible's forward viewport was **certified for 1,300 meters, but OceanGate aimed to reach 4,000 meters**.
- The technology and components of the submersible **may not have met rigorous safety standards**. Insufficient hull testing raises the risk of failure and endangers occupants.
- The **pressure vessel's combination of titanium and carbon fiber is unusual** and raises concerns due to their different properties in deep diving situations.

What Happened to the Titan?

- The submersible "Titan" **experienced a "catastrophic implosion,"** according to the U.S. Coast Guard. The five occupants on board are presumed to have died during the implosion.



- An implosion is the **opposite of an explosion**. In an explosion, the force acts outwards, but in an **implosion the force acts inwards**. When a submersible is deep in the ocean it experiences **the force on its surface due to water pressure**.
- When this force becomes larger than the force hull can withstand, the **vessel implodes violently**.
- With every **descent of 10 meters into the water**, the pressure increases by approximately one atmosphere.
- One atmosphere is equivalent to the average atmospheric pressure at sea level, which is approximately **101.325 kilopascals (kPa) or 14.7 pounds per square inch (psi)**.

What are Carbon Fibres and Titanium?

- **Carbon Fibre:** Carbon fibre is a polymer that is **known to be quite strong despite being lightweight**. It can be as much as **five times stronger than steel** and twice as stiff.
- A carbon-fibre composite, compared to titanium, is much stiffer and does not have the same kind of elasticity.
- **Titanium:** Titanium is as **strong as steel but around 45% lighter**. It is twice as **strong as aluminum** but only 60% heavier, according to the United States Geological Survey.
- A titanium or thick steel pressure vessel is usually a spherical shape that can withstand the crushing pressures at 3,800m – the depth at which the Titanic wreck lies.
- **Titanium is elastic** and **can adapt to an extended range of stresses without** any measurable permanent strain remaining after the return to atmospheric pressure. It shrinks to adjust to pressure forces and re-expands as these forces are alleviated.

Submarine Vs Submersible

- While the two categories can overlap, a **submarine refers to an underwater vehicle** that is largely independent and has power reserves to **help it depart from a port or come back** to the port after an expedition.
- Meanwhile, a submersible is **generally smaller in size** and has less power, so it needs to **work with a ship in order to be launched** and recovered.
- The **missing submersible Titan was working with a vessel named Polar Prince**.

What are the Key Points Related to Matsya-6000?

- **About:**
 - Matsya-6000 is an indigenous deep-sea dive submersible being developed by the **National Institute of Ocean Technology (NIOT)** in India. It is designed to explore the depths of the Indian Ocean at a **depth of about 6,000 meters**.
 - The mission aims to send three Indian navigators to a point approximately **1,500 km away from Kanyakumari, India**.
- **Objective:**
 - The mission's primary objective is **to support India's energy requirements and explore ocean resources**.
 - India aims to conduct exploratory mining for **Polymetallic Nodules** containing valuable resources such as **copper, nickel, cobalt, and manganese**.
 - This endeavor aligns with the Indian government's Deep Ocean Mission, which aims to develop vehicles and technology for ocean scanning and mining.
- **Features of Submersible:**
 - The submersible features a **spherical titanium hull**, which is crucial for withstanding the immense pressure at great depths.

- The titanium hull is manufactured by the **Indian Space Research Organisation (ISRO)**, as no commercial fabricators in India were capable of producing such a hull.
- Two hemispheres of titanium alloy are **fused to create a single hull**, which serves as the primary barrier between the crew and the surrounding water columns.
- **Learning from Titan Incident:**
- The recent incident has highlighted the **need for thorough safety evaluations** and repeated testing.
- The inability to locate the submersible despite multiple communication systems **onboard raises questions**. Future submersibles may incorporate **"black box" equivalents**, similar to those found in aircraft, to aid in investigating the cause of such incidents.
- The choice of titanium for the submersible's enclosure, the utilization of syntactic foam, and the implementation of **acoustic communication and tracking systems should be thoroughly evaluated**.

17) Need for UCC in India

Why in News?

Indian Prime Minister in his recent address expressed his support for the **implementation of a Uniform Civil Code (UCC) in India**, stating that **India cannot function efficiently with a system of "separate laws for separate communities"**.

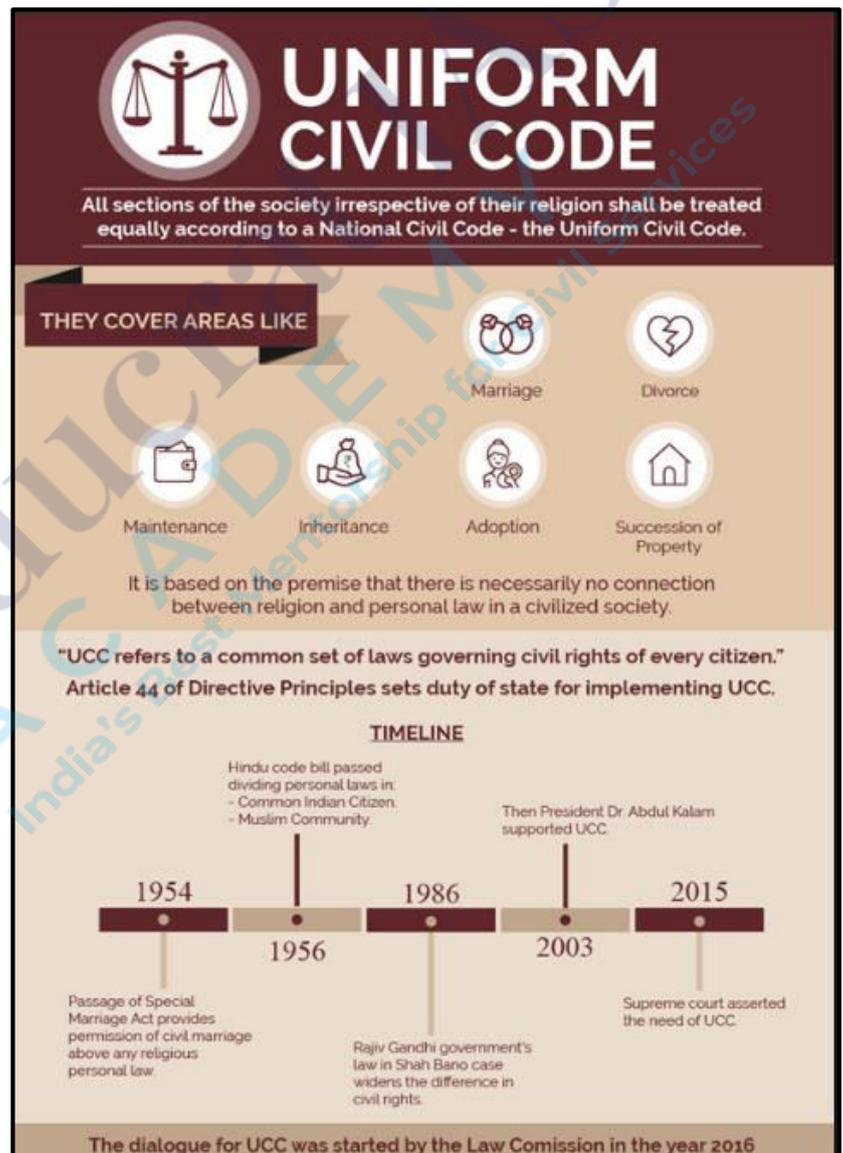
▪ Origin and History:

- The British government's 1835 report in colonial India called for **uniform codification of Indian law, including crimes, evidence, and contracts**.
- However, the **Lex Loci Report of October 1840 suggested that personal laws of Hindus and Muslims should be excluded from this codification**.
- As British rule progressed, the **B N Rau Committee was formed in 1941** to codify Hindu law, leading to the enactment of the Hindu Succession Act in 1956.

▪ Constituent Assembly's Views on UCC:

- During the debates in the **Constituent Assembly**, the inclusion of the UCC sparked significant discussion.
- There was a vote, **resulting in a 5:4 majority, where it was decided by the sub-committee on fundamental rights**, led by **Sardar Vallabhbhai Patel**, that the **UCC would not be included as a fundamental right**.
- Dr. B R Ambedkar, while drafting the Constitution, **stated that a UCC was desirable but should remain voluntary until the nation was socially prepared to accept it**.
- As a result, the UCC **was placed in the Directive Principles of State Policy (DPSP) (Article 44)**.

Note: In India, personal law subjects like marriage, divorce, inheritance come under Concurrent list (7th Schedule).



What are the Arguments in Favour of UCC?

- **Celebrating Diversity, Strengthening Unity:** It will promote national integration and secularism by removing the distinctions and contradictions based on religious personal laws and creating a common identity for all citizens.
 - It would also foster a sense of unity and harmony among diverse communities.
 - For example, UCC would enable inter-faith marriages and relationships without any legal hurdles or social stigma.
- **Empowering Women through Uniformity:** It would ensure gender justice and equality by abolishing the discriminatory and oppressive practices against women in various personal laws, such as polygamy, unequal inheritance, etc.
- **Streamlining Laws for Legal Efficiency:** India's current legal system is burdened with complex and overlapping personal laws, leading to confusion and legal disputes.
 - A UCC would simplify the legal framework by consolidating and harmonising various laws into a single code.
 - This would enhance clarity, ease of implementation, and reduce the burden on the judiciary, ensuring a more efficient legal system.
- **Drawing Inspiration from Global Success Stories:** Many countries across the world like France, have implemented a uniform civil code.
 - A UCC is the sign of a modern progressive nation implying that it has moved away from caste and religious politics.

What are the Arguments Against the UCC?

- **Threat to Minority Rights:** India's strength lies in its diverse society, and personal laws have been developed to accommodate these diversities.
 - Critics argue that imposing a single code might undermine the cultural and religious autonomy of minority communities, leading to feelings of alienation and marginalisation.
- **Judicial Backlog:** India already faces a significant backlog of cases, and implementing a UCC could exacerbate the situation.
 - The extensive legal reforms necessary to harmonize personal laws into a single code would demand significant time and effort.
 - Consequently, during this transitional period, the legal system may experience an increased burden due to the emergence of new cases challenging the constitutionality of the UCC.
- **Complexities within UCC in Goa:** Goa's implementation of a UCC has been praised by the Supreme Court in 2019. However, the ground reality reveals complexities and legal pluralities within the state's UCC.
 - The UCC in Goa permits a specific form of polygamy for Hindus and does not extend the Shariat Act to Muslims (they are governed by Portuguese and Shastric Hindu laws).
 - Additionally, Catholics enjoy certain privileges, such as exemption from marriage registration and the ability of Catholic priests to dissolve marriages.
 - This highlights the complexity of personal laws in India, even within a state known for implementing a UCC.

What are the Efforts Towards UCC in India?

- **Statutory Provision:**
 - **Special Marriage Act, 1954:** Under the act, civil marriage is permitted for any citizen, regardless of religion, allowing any Indian to get married outside of religious custom.
- **SC Judgements Recommending the Need for UCC:**

- Shah Bano Case 1985
- Sarla Mudgal Case 1995
- Paulo Coutinho vs Maria Luiza Valentina Pereira (2019)

What is the Stance of Law Commission Related to UCC?

- **Law Commission of India (2018):** It stated that UCC is neither necessary nor desirable at this stage, as it would be counter-productive for the harmony of the nation.
 - It also suggested that **reforms in personal laws should be done by amendments and not by replacement.**
- **Recently, 22nd Law Commission of India** has chosen to seek the opinions and suggestions of the general public as well as recognised religious organizations regarding the UCC.

What are the Challenges in Implementing UCC?

- **Political Inertia:** No political party has shown a **sincere and consistent commitment to enact UCC**, as it is seen as a **sensitive and divisive issue that may alienate their vote banks.**
 - Moreover, there is no consensus among various parties and stakeholders on the scope, content and form of UCC, as different groups have different views and interests on personal matters.
- **Lack of Awareness and Education:** Many people in India are not **even aware of their legal rights and obligations under their personal laws** or under the common laws.
 - They are also **not educated about the benefits and drawbacks of UCC** or about the experiences of other countries that have adopted or rejected UCC.
 - They are **often influenced by misinformation or propaganda** spread by vested interests or communal forces.

Way Forward

- **Comparative Analysis:** There is a need to **conduct a comprehensive comparison analysis of the various personal laws in India.** This will help in understanding the commonalities and areas of contention.
- **Enactment of Common Principles:** Based on the comparative analysis, **we can enact a law of personal status** that incorporates principles shared by the different personal laws.
 - These **common principles**, which align closely across various personal laws, can be immediately enforced to establish a uniform legal framework.
- **Family Law Board:** There is a need to **establish a Family Law Board within the Union Law Ministry** which would be responsible for **studying and recommending changes to personal laws** related to family matters.
- **Brick by Brick Approach:** A just code is far more important than a uniform code; **Pilot projects can be initiated in select regions** or communities which would demonstrate the viability, acceptance and practicality of a UCC.

1) Tracking SDG7: The Energy Progress Report 2023

Why in News?

A recent report, titled "Tracking SDG7: The Energy Progress Report 2023," was released through collaboration between the **International Energy Agency (IEA), International Renewable Energy Agency, United Nations Statistics Division, World Bank, and the WHO.**

- The report highlights **various challenges that hinder progress towards achieving United Nations' Sustainable Development Goal 7 (SDG 7).**

What are the Major Highlights of the Report?

▪ **Factors Hindering Achievement of SDG-7:**

- Factors such as **high inflation, uncertain macroeconomic outlook, debt distress, and limited financial flows** have contributed to the world falling off-track in achieving SDG 7.

○ **The report identifies several major economic factors that hinder the realisation of SDG 7 worldwide:**

- Uncertain macroeconomic outlook and high levels of inflation
- Currency fluctuations and debt distress in many countries
- Lack of financing and supply chain bottlenecks
- Tighter fiscal circumstances and soaring prices for materials

▪ **Progress Towards Specific Targets:**

- **Access to Electricity and Clean Cooking:** Global access to **electricity** increased from **84% to 91% between 2010 and 2021**, but annual growth has slowed.

- The number of people without electricity **decreased from 1.1 billion in 2010 to 675 million in 2021.**
- The **goal of universal access to electricity by 2030 remains elusive.**

- **Access to Clean Cooking:** It improved from 2.9 billion people in 2010 to 2.3 billion in 2021, but 1.9 billion people may still lack access by 2030.

- The report indicates that approximately 100 million people who recently transitioned to **clean cooking may revert to traditional biomass usage.**

- **Sub-Saharan Africa is expected to have the highest number of people without access to clean cooking in 2030 (6 out of 10 people).**

- **Renewable Energy (Target 7.2):** Renewable energy uptake has grown since 2010 but needs substantial scaling up.

- The **share of renewable energy in total final energy consumption remains low at 19.1% (or 12.5% excluding traditional biomass).**

- Meeting international climate and energy goals requires substantial investments of **USD 1.4-1.7 trillion annually in renewable electricity generation and related infrastructure through 2030.**

- **Energy Efficiency (Target 7.3):** The current rate of improvement in **energy efficiency is not on track to double by 2030.**

- The average annual growth of 1.8% falls short of the targeted increase of 2.6% per year between 2010 and 2030.

- **International Public Financial Flows (Target 7.a):** Financial flows supporting **clean energy** in developing countries have declined since 2020.

- Financial resources are more than a third lower than the average of the previous decade (2010-2019).
- The decreasing trend in financial flows is concentrated in a small number of countries, posing challenges for achieving SDG 7, particularly for least-developed countries, landlocked developing countries, and small island developing states.

What is Sustainable Development Goal 7?

▪ About:

- In 2015, all **United Nations Member States came together to adopt the 2030 Agenda for Sustainable Development**, aiming to create a harmonious and prosperous future for both humanity and the planet.
- Central to this agenda are the **17 Sustainable Development Goals (SDGs)**, which serve as a pressing call for action to be embraced by all nations, regardless of their development status.

▪ Background of SDGs:

- In **June 1992**, at the **Earth Summit in Rio de Janeiro, Brazil**, more than **178 countries adopted Agenda 21**, a comprehensive plan of action to build a global partnership for sustainable development to improve human lives and protect the environment.
- Member States unanimously adopted the **Millennium Declaration at the Millennium Summit in September 2000** at UN Headquarters in New York.
- The Summit led to the **elaboration of eight Millennium Development Goals (MDGs) to reduce extreme poverty by 2015**.
- **2015 was a landmark year for multilateralism and international policy shaping**, with the adoption of several major agreements:
 - Sendai Framework for Disaster Risk Reduction (March 2015)
 - Addis Ababa Action Agenda on Financing for Development (July 2015)
 - Paris Agreement on Climate Change (December 2015)

▪ Current Status:

- Now, the annual High-level Political Forum on Sustainable Development serves as the central UN platform for the follow-up and review of the SDGs.
- The **Division for Sustainable Development Goals (DSDG) in the United Nations Department of Economic and Social Affairs (UNDESA)** provides substantive support and capacity-building for the SDGs and their related thematic issues.

▪ SDG 7:

- Sustainable Development Goal 7 (SDG7) calls for **“affordable, reliable, sustainable and modern energy for all” by 2030**. Its three core targets are the foundation for our work: By 2030:

- **Target 7.1:** ensure universal access to affordable, reliable and modern energy services
- **Target 7.2:** increase substantially the share of renewable energy in the global energy mix

- **Target 7.3:** double the **global rate of improvement in energy efficiency**



- **Target 7.a: enhance international cooperation to facilitate access to clean energy research and technology**, including renewable energy, energy efficiency and **advanced and cleaner fossil-fuel technology**, and **promote investment in energy infrastructure** and clean energy technology
- **Target 7.b:** expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, **in particular least developed countries, small island developing States**, and land-locked developing countries.

2) Mission on Advanced and High-Impact Research

Why in News?

Recently, the **Ministry of Power** and the **Ministry of New and Renewable Energy** have **jointly launched** a National Mission named **“Mission on Advanced and High-Impact Research (MAHIR)”**.

- The Mission is planned for an initial period of five years from 2023-24 to 2027-28 and **will follow the technology life cycle approach of Idea to Product**.

What are the Key Details of the National Mission MAHIR?

- **Objectives of the Mission:**
 - To **identify emerging technologies and areas of future relevance for the global power sector** and develop them indigenously.
 - To provide a **platform for collective brainstorming** and synergetic technology development among power sector stakeholders.
 - To **support pilot projects of indigenous technologies** developed by Indian start-ups and facilitate their commercialization.
 - To leverage foreign alliances and **partnerships for research and development of advanced technologies and technology transfer**.
 - To promote **scientific and industrial R&D** in the power sector and create an innovative ecosystem.
 - To **position India among the leading countries in power system-related technologies** and applications development.
- **Funding:**
 - It will be funded **by pooling resources from the Ministry of Power, Ministry of New & Renewable Energy, and Central Public Sector Enterprises** under these ministries.
 - **Additional funding**, if required, will be mobilized from the Government of India's budgetary resources.
- **Areas Identified for Research under MAHIR:**
 - Alternatives to **Lithium-Ion storage batteries**
 - Modifying electric cookers/pans to suit Indian cooking methods
 - **Green hydrogen** for mobility (High Efficiency Fuel Cell)
 - Carbon capture
 - Geo-thermal energy
 - Solid state refrigeration
 - Nano technology for EV battery
 - Indigenous CRGO technology

What is the Structure of the Mission?

- **Two- Tier Structure:**
 - It has a two-tier structure consisting of a **Technical Scoping Committee and an Apex Committee.**
- **The Apex Committee:**
 - It **deliberates on technology and product development, approves research proposals**, and looks into international collaborations.
 - The Apex committee will look also into international collaborations. The final approval of all the research proposals / projects shall be given by the Apex Committee.
 - It is **chaired by the Union Minister for Power & New and Renewable Energy.**
- **Technical Scoping Committee:**
 - It **identifies research areas, recommends potential technologies**, and monitors approved research projects.
 - It is **chaired by the Chairperson of the Central Electricity Authority.**
- Central Power Research Institute (**CPRI**), Bengaluru **will provide all necessary secretarial assistance** to the Apex Committee and Technical Scoping Committee.

What is the Scope of the Mission?

- Once research areas are identified and approved, **outcome-linked funding proposals will be invited globally.**
- **Quality cum Cost-Based Selection (QCBS) basis will be used** for selecting the proposals.
- Pilot projects of technologies **developed by Indian start-ups will be funded**, and their commercialization will be facilitated.
- **International collaboration and technology transfer will be encouraged.**

What is the Significance of the MAHIR?

- **Indigenous Development:**
 - By developing advanced technologies within the country, India can **reduce its dependence on imports, enhance self-reliance**, and promote domestic innovation and manufacturing capabilities.
 - It aligns with the "**Make in India**" initiative and **contributes to the growth of indigenous technology-driven industries.**
- **Energy Transition and Net Zero Emissions:**
 - MAHIR can support the **adoption of cleaner and greener energy sources**, energy storage solutions, and carbon capture techniques.
 - This contributes to India's commitment to combating climate change and transitioning towards a sustainable energy future.
- **Economic Growth and Manufacturing Hub:**
 - MAHIR aims to make India a manufacturing hub for advanced power technologies. By developing and deploying cutting-edge technologies, it can **attract investments, foster innovation-driven industries, and create job opportunities.**

3) Inclusion of Urea in Nutrient-Based Subsidy Regime

Why in News?

In its non-price policy recommendations for the **Kharif crops 2023-2024** season, the **Commission for Agricultural Costs and Prices (CACP)** has recommended that Urea should be brought under the **Nutrient-Based Subsidy (NBS) regime** to address the problem of **imbalanced nutrient usage in agriculture**.

- **Currently, urea is excluded from the NBS scheme**, which has led to disproportionate use and deteriorating soil health.

Commission for Agricultural Costs and Prices

- The CACP is a statutory body of the **Ministry of Agriculture and Farmers Welfare, formed in 1965**.
- **Currently, the Commission comprises a Chairman, Member Secretary, one Member (Official) and two Members (Non-Official)**.
 - The non-official members are representatives of the farming community and usually have an active association with the farming community.
- It is mandated to **recommend Minimum Support Prices (MSPs) to incentivize the cultivators** to adopt modern technology and raise productivity and overall grain production.
- CACP submits separate reports recommending prices for Kharif and Rabi seasons.

What is the Need for Urea to be Included under NBS Regime?

- **Inadequate Supply of Natural Gas:**
 - Due to inadequate natural gas supplies, the capacity to produce urea fertilizer in India is limited, **leading to an increase in imports**. These imported urea fertilizers have a higher subsidy burden **per tonne compared to domestic urea**.
 - Additionally, the high global prices of raw materials for complex fertilizers further complicate the **government's efforts to contain fertilizer subsidies** in the medium-term.
 - As a result, the government's efforts to control fertilizer **subsidies will face challenges in the medium-term**, and subsidy amounts are likely to increase due to rising demand.
- **Imbalanced Nutrient Usage:**
 - Over the years, the excessive use of urea in agriculture has contributed to **worsening plant nutrient imbalance**. Non-urea fertilizers like phosphorus and potassium are **covered under the NBS**, where subsidies are linked to their nutrient content.
 - However, urea **remains outside this regime**, enabling the government to retain direct control over its maximum retail price (MRP) and subsidy.
 - This **discrepancy in pricing has led farmers to overuse urea**, neglecting other essential nutrients and causing soil health degradation.
- **Impact of Pricing Policies:**
 - While the MRP of urea has remained **unchanged at Rs 5,360 per metric tonne (MT)**, the prices of other fertilizers, such as **Diammonium Phosphate (DAP)** have increased over time.
 - The freedom granted to manufacturers of non-urea fertilizers to set MRPs within reasonable limits, along with fixed per-tonne subsidies based on nutrient content, has **contributed to their rising prices**.
 - Consequently, the sales of urea have been significantly higher compared to other fertilizers, **exacerbating the nutrient imbalance** in agriculture.

What are the Recommendations?

- **Bringing Urea under the NBS Regime:**
 - It will enable **subsidies to be linked to the nutrient content** of urea and promote the balanced application of fertilizers.
- **Introducing a Cap on Subsidized Fertilizer Bags:**
 - The government should set a **cap on the number of subsidised bags of fertilizers per farmer** as has been done for **subsidised LPG cylinders**, to reduce the government's subsidy burden.
- **Leveraging Technology and Identification Systems:**
 - The CACP highlights the **ease of implementing the proposed cap on subsidized fertilizers** by utilizing Point of Sale devices installed at retailer shops.
 - Beneficiaries can be identified through **Aadhaar Card, Kisan Credit Card (KCC), Voter Identity Card, among other identification methods.**

What is the NBS Regime?

- **About:**
 - Under the NBS regime – fertilizers are provided to the farmers at subsidized rates based on the **Nutrients (N, P, K & S) contained** in these fertilizers.
 - Also, the fertilizers which are fortified with secondary and micronutrients such as **molybdenum (Mo) and zinc** are given additional subsidy.
 - The subsidy on P&K fertilizers is announced by the Government on an annual basis for **each nutrient on a per kg basis** – which are determined taking into account the international and domestic prices of P&K fertilizers, **exchange rate, inventory level in the country etc.**
 - NBS policy intends **to increase the consumption of P&K fertilizers** so that optimum **balance (N:P: K= 4:2:1) of NPK fertilization** is achieved.
- **Significance:**
 - This will improve **soil health and as a result the yield from the crops** would increase, resulting in enhanced income to the farmers.
 - It will make rational use of fertilizers; this would also ease **off the burden of fertilizer subsidy.**

What are the Challenges Related to NBS?

- **Economic and Environmental Costs:**
 - The fertilizer subsidy, including the NBS policy, imposes a significant financial burden on the economy. It ranks as the **second-largest subsidy after food subsidy**, straining fiscal health.
 - Additionally, imbalanced fertilizer usage due to the pricing disparity has adverse environmental consequences, such as **soil degradation and nutrient runoff, impacting long-term agricultural sustainability.**
- **Black Marketing and Diversion:**
 - Subsidized urea is susceptible to **black marketing and diversion**. It is sometimes illegally sold to bulk buyers, traders, or non-agricultural users like plywood and animal feed manufacturers.
 - Moreover, there are **instances of subsidized urea being smuggled to neighboring countries like Bangladesh and Nepal**, leading to the loss of subsidized fertilizers intended for domestic agricultural use.
- **Leakage and Misuse:**

- **The NBS regime relies on an efficient distribution system** to ensure that subsidized fertilizers reach the intended beneficiaries, i.e., farmers.
- However, there may be instances of leakage and misuse, where subsidized fertilizers do not reach farmers or are used for non-agricultural purposes. This undermines the **effectiveness of the subsidy and denies genuine farmers** access to affordable fertilizers.
- **Regional Disparities:**
- Agricultural practices, soil conditions, and crop nutrient requirements vary across different regions of the country.
- Implementing a **uniform NBS regime may not adequately address** the specific needs and regional disparities, potentially leading to suboptimal nutrient application and productivity variations.

Way Forward

- A uniform policy for all fertilizers is necessary, **as nitrogen (N), phosphorus (P), and potassium (K) are crucial for crop yields and quality.**
- In the long term, NBS could be **replaced by a flat per-acre cash subsidy** that allows farmers to purchase any fertilizer.
- This subsidy should encompass **value-added and customized products that provide efficient nitrogen delivery and other essential nutrients.**
- It is crucial to strike a balance between price control, affordability, and sustainable nutrient management to achieve the desired outcomes of the NBS regime.

4) Compromise Settlement for Wilful Defaulter: RBI

Why in News?

Recently, The **Reserve Bank of India (RBI)** has introduced a circular allowing wilful defaulters and companies involved in fraud to opt for compromise settlements or technical write-offs.

- The circular provides guidelines for banks and finance companies in handling such cases.

What are the Key Points Related to Circular?

- **About the Circular:**
- **Compromise Settlements and Technical Write-Offs:**
- Banks and finance companies can undertake **compromise settlements or technical write-offs** for accounts **categorized as wilful defaulters or fraud**, irrespective of ongoing criminal proceedings against the debtors.
- The RBI's circular **enables these settlements** while **ensuring that criminal proceedings remain unaffected.**
- **Cooling Period for Fresh Loans:**
- Banks are required to impose a **minimum cooling period of 12 months** before granting fresh loans to borrowers who have undergone compromise settlements.
- The **cooling period** also **applies to exposures other than farm credit**, with regulated entities having the authority to set longer cooling periods based on their board-approved policies.
- **Concerns:**
- **Potential Loss of Public Money:**

- Banks have **previously approved compromise settlements** resulting in **significant losses** due to substantial **haircuts** on outstanding payments.
- There are concerns that allowing compromise settlements may **encourage big fraudsters and defaulters**.
- Allowing compromise settlements will bring low NPA artificially, even though financial policies are unstable.
- The Public sector banks account for a major share of the total Gross NPAs. The **NPAs of Public sector banks constitute around 72%** of the total, with the Private Sector Banks, Foreign Banks & Small Financial Institutions accounting for the rest.
- PSBs are recapitalised by Govt. Which leads to loss of public money.
- **Issues with Debt Recovery Tribunals (DRTs):**
- Instances have been reported where banks entered into compromise settlements without informing **Debt Recovery Tribunals (DRTs)**.
- The **DRT, Ernakulam** observed a case where a settlement was reached, but the bank failed to obtain the consent decree and concealed the settlement from the DRT for an extended period.
- It is also **diluting importance of both Asset Reconstruction Company and IBC**.
- **Benefits of Compromise Settlements:**
- **Reduces Cost:**
- Compromise **settlements facilitate early recovery of dues and save costs** for banks by reducing legal expenses and other associated costs.
- The **underlying objective is to recover dues** to the maximum extent possible within a shorter time frame.
- **Technical Write-Offs and NPA Reduction:**
- Banks have utilized write-offs to reduce **non-performing assets (NPAs)** over the past decade, resulting in lower reported NPA levels.
- **Write-offs were used for accounting and tax purposes**, but concerns exist that this practice **allowed banks and corporates to "evergreen" their loan books**.
- Compromise Settlements **aims to provide vital humanitarian assistance** to financially burdened companies facing Non-Performing Assets (NPA) resulting from unforeseen market risks.

What is a Non-Performing Asset?

- **About:**
- NPA **refers to a classification for loans or advances** that are in **default or are in arrears on scheduled payments of principal or interest**.
- In most cases, **debt is classified as non-performing, when the loan payments have not been made for a minimum period of 90 days**.
- For agriculture, if principle and interest is not paid for two cropping seasons, the loan is classified as NPA.
- **Gross NPA:**
- Gross NPAs are **the sum of all the loans that have been defaulted by the individuals**
- **Net NPA:**
- Net NPAs are the **amount that is realised after provision amount has been deducted from the gross non-performing assets**.
- **Laws and provisions related to NPAs:**
- **Bad Bank:**

- The bad bank in India is called **National Asset Reconstruction Ltd (NARC)**.
- This NARC will **work as an asset reconstruction company**.
- It will buy bad loans from the banks, relieving them of the NPA. NARC will then attempt to sell the stressed loans to distressed debt buyers.
- The government has already set up **India Debt Resolution Company Ltd (IDRCL)** to sell these stressed assets in the market. Accordingly, IDRCL will attempt to sell them in the market.
- **The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002:**
 - The **SARFAESI Act allows banks and financial institutions** to take possession of collateral assets and sell them to recover outstanding dues without the intervention of the court.
 - It **provides provisions** for the **enforcement of security interests** and **allows banks to issue demand notices** to defaulting borrowers.
- **The Insolvency and Bankruptcy Code (IBC), 2016:**
 - The IBC **provides a comprehensive framework** for the insolvency and bankruptcy resolution process in India.
 - It **aims to facilitate the time-bound resolution** of stressed assets and promote a creditor-friendly environment.
 - Under the IBC, **a debtor or creditor can initiate insolvency proceedings** against a defaulting borrower.
 - It establishes the National Company Law Tribunal (NCLT) and the **Insolvency and Bankruptcy Board of India (IBBI)** to oversee the process.
- **The Recovery of Debts Due to Banks and Financial Institutions (RDDBFI) Act, 1993:**
 - The RDDBFI Act **establishes Debt Recovery Tribunals (DRTs)** for the expeditious adjudication and recovery of debts due to banks and financial institutions.
 - DRTs have the power to hear and decide cases related to the recovery of defaulted loans exceeding a specified threshold.
- **The Indian Contract Act, 1872:**
 - The Indian Contract Act **governs the contractual relationship between lenders and borrowers**.
 - It establishes the **legal framework for loan agreements, terms and conditions, default, and remedies** available to lenders in case of non-payment.

Way Forward

- **Recovery Proceedings and Consent Decree:**
 - Banks must consider **ongoing recovery proceedings under judicial forums** while negotiating compromise settlements.
 - Settlements **should be subject to obtaining a consent decree** from the relevant judicial authorities.
- **Importance of NPA Recovery:**
 - The recovery of NPAs is **crucial to protect the interests of depositors** and stakeholders.
 - Compromise settlements **should prioritize the maximum recovery of dues** with minimal expense and within a shorter timeframe.
- **Consideration of Public Interest:**

- During compromise settlements, banks, being public sector entities, **should consider the interests of the tax-paying public over the borrowers'** interests.

Who is Wilful Defaulter?

- **When the borrower (individual or company) defaults on their payment obligation, even when it has the capacity to honour the said obligations.** There is a deliberate intention of not repaying the loan.
- When the funds are not utilized for the specific purpose for which finance was availed but the borrower is found to have diverted the availed funds for a purpose other than what was defined in the loan agreement.
- **When the funds are suspected to be siphoned off by the borrower** and have not been used for the purpose for which it was borrowed. Further, no assets are available that justify the usage of such funds.
- When the funds acquired by the buyer/ lender have been sold off without the knowledge of the bank/lender.

5) Adoption of E20 Fuel and Green Hydrogen Production

Why in News?

In a recent announcement, the Union Minister of Petroleum and Natural Gas, highlighted that **petrol blended with 20% ethanol, known as E20**, will soon be available at **1,000 outlets of oil marketing companies (OMCs) nationwide**.

- The **National Green Hydrogen Mission** aim to achieve a production capacity of **5 Million Metric Tonnes (MMT) per annum by 2030**, was also highlighted.

What is Ethanol Blending and E20 Fuel?

- **About:**
 - **Ethanol is an agricultural by-product which is mainly obtained from the processing of sugar from sugarcane**, but also from other sources such as rice husk or maize.
 - **Blending ethanol with petrol to burn less fossil fuel while running vehicles** is called **Ethanol Blending**.
 - **E20 fuel is a blend of 20% ethanol and 80% petrol**. The E20 was launched by the **Prime Minister of India in February 2023 in Bengaluru**. This pilot covers at least 15 cities and will be rolled out across the country in a phased manner.
 - India has been increasing **its ethanol blending in petrol from 1.53% in 2013-14 to 10.17% in 2022**.
 - The government has advanced its target to achieve 20% ethanol blending in petrol **from 2030 to 2025**.
 - During our **G20 presidency**, the government has also proposed to launch a **global biofuel alliance with countries like Brazil** to promote biofuels internationally.
- **Advantages:**
 - **E20 fuel has several advantages over conventional petrol, such as:**
 - It **reduces vehicular tailpipe emissions** by lowering the carbon monoxide, hydrocarbons and nitrogen oxides levels.
 - It **improves engine performance and reduces maintenance costs** by preventing corrosion and deposits.
 - It **reduces the import bill for crude oil** by substituting domestic ethanol production.
 - It is estimated that a **5% blending (105 crore litres)** can result in replacement of **around 1.8 million barrels of crude oil**.

- India imported 185 million tonnes of petroleum at a cost of USD 551 billion in 2020-21. A successful E20 programme **can save the country USD 4 billion or Rs 30,000 crore per annum.**
- It **supports the farmers and rural economy** by creating demand for surplus crops.
- **Challenges:**
 - **Shift Towards Sugarcane Production:** In order to achieve a 20% blend rate, almost **one-tenth of the existing net sown area will have to be diverted for sugarcane production.**
 - Any such land requirement is likely to put a **stress on other crops and has the potential to increase food prices.**
 - **Storage Constraint:** Annual capacity of required bio-refineries is stipulated to be **300-400 million litres**, which is still not enough to meet the 5% petrol-ethanol blending requirement.
 - Storage is going to be the main concern, **for if E10 supply has to continue in tandem with E20 supply**, storage would have to be separate which then raises costs.

What is Green Hydrogen?

- **About:**
 - **Green hydrogen** is hydrogen produced by **electrolysis of water using renewable or green energy.**
 - It is considered the **cleanest form of energy, as it does not emit any greenhouse gases when used.**
 - India has the potential to become a leader and a superpower in green hydrogen production, **according to the International Energy Agency (IEA).**
 - **India has abundant renewable capacity, especially solar power**, which can be used to produce green hydrogen at low cost.
 - India has also set a target of producing **5 million metric tonnes of green hydrogen per annum by 2025-26 under its National Hydrogen Mission.**
 - The **private sector is also actively engaged in pursuing green hydrogen production** and has attracted significant investment from international sources.
- **Applications:**
 - **Decarbonizing Energy Systems:** Green hydrogen can be used as a clean energy carrier and stored for later use.
 - It can be utilised in sectors such as **power generation, heating, and transportation to replace fossil fuels**, thereby reducing **carbon emissions.**
 - **Production of Green Ammonia:** Green hydrogen has the potential to replace **traditional fertilisers in agriculture through the production of ammonia using renewable energy sources.**
 - Green ammonia produced with help of green hydrogen is carbon-free, it has other benefits **over traditional fertilisers, including improved efficiency and reduced soil acidity.**
 - **Off-Grid and Remote Power Generation:** Green hydrogen can provide reliable and clean power in **off-grid or remote locations where access to electricity is limited.**
 - It can be used in **fuel cells or combustion engines** to generate electricity for communities, industries, and infrastructure.
- **Challenges:**
 - **Cost:** Currently, the **production of green hydrogen is more expensive compared to hydrogen produced from fossil fuels through steam methane reforming.**
 - The high cost is primarily due to the **capital investment required for renewable energy infrastructure.**

- **Scale and Infrastructure:** Establishing a comprehensive green hydrogen infrastructure, including **production, storage, and transportation, is a significant challenge.**
- Scaling up production capacity and building a distribution network for hydrogen require substantial investments.
- Additionally, **retrofitting existing infrastructure or creating new pipelines, storage facilities, and refuelling stations adds to the complexity and cost.**
- **Impact on Resources:** About **9 kilograms (kg) of water** is required per kg of hydrogen.
- The **production of green hydrogen requires vast amounts of resources: land, water, and renewable energy.** This can fuel land-use and water conflicts, human rights violations, energy poverty, and the delay of the de-carbonisation of the electricity grid in producer countries
- **Energy Efficiency:** The process of electrolysis requires large amounts of electricity to split water into hydrogen and oxygen.
- While **renewable energy sources can provide a clean electricity input,** the overall energy efficiency of the process is relatively low.

Way Forward

- **Policy and Regulatory Framework:** India needs to **formulate and implement supportive policies that provide incentives for ethanol production,** blending, and use, as well as promote the development of green hydrogen.
- This includes **setting blending mandates, ensuring a favourable pricing framework, and establishing quality standards for both E20 and Green Hydrogen.**
- **Technological Advancements:** In the case of E20, advanced blending technologies, such as **flex-fuel engines and compatible fuel systems,** need to be developed and made widely available.
- For Green Hydrogen, the **advancement of electrolyzer technologies,** storage systems, and efficient conversion processes is crucial to drive down costs and improve efficiency.
- **Public Awareness and Acceptance:** Public awareness and acceptance play a significant role in the successful adoption of E20 and Green Hydrogen.
- Raising awareness about the benefits of these alternatives, addressing concerns related to **fuel efficiency, performance, and compatibility,** and promoting the environmental advantages are essential.
- **Educating consumers, industry stakeholders, and policymakers** about the potential of these solutions and their contribution to decarbonization can drive acceptance and demand.

6) Subsidies and Climate Change

Why in News?

A new **World Bank report** highlights the negative consequences of **inefficiently subsidizing agriculture, fishing, and fossil fuel sectors,** both implicitly and explicitly, by spending trillions of dollars, exacerbating **climate change.**

- In total, the report calculated that subsidy in the three areas exceeded **USD 7 trillion,** equivalent to **8% of the global gross domestic product.**

What are the Major Highlights of the Report?

- **Fossil Fuel Subsidies and Climate Change:**
- The report acknowledges the **limited effectiveness of reducing incentives for polluting fuels,** as energy demand is not highly responsive to price changes.

- In 2021, countries spent **USD 577 billion on subsidies** aimed at **lowering the prices of polluting fuels like oil, gas, and coal.**
- These measures **incentivize the overuse of fossil fuels and contribute to air pollution**, particularly in industrializing middle-income countries with a high health burden.
- **The report highlights the disproportionate allocation of funds**, as most countries spend six times more on subsidizing fossil fuel consumption than on commitments made under the 2015 Paris Agreement.
- **Inefficient Agricultural Subsidies:**
- **Explicit subsidies** in the agricultural sector amount to approximately **USD 635 billion annually in countries with accessible data**, while global estimates exceed USD 1 trillion.
- These subsidies target farmers for purchasing specific inputs or cultivating particular crops.
- Research published in the report indicates that **subsidies tend to favor wealthier farmers**, even when programs are designed to target the poor.
- **Inefficient subsidy usage has resulted in up to 17% of all nitrogen pollution** in water over the past **30 years**, leading to health impacts and reducing labor productivity by up to **3.5%**.
- **Damaging Subsidies in the Fisheries Sector:**
- The fisheries sector receives an estimated **USD 35.4 billion per year** in subsidies, of which approximately **USD 22.2 billion contributes to overfishing.**
- Subsidies play a significant role in driving excess fishing capacity, depleting fish stocks, and reducing fishing rents.
- When fisheries are not managed sustainably and already severely depleted, the negative impacts of subsidies are even more pronounced.
- **Repurposing subsidies without incentivizing increased fishing capacity** is crucial for safeguarding remaining fish stocks.

What are the Positive Impacts of Subsidies?

- **Agriculture:**
- **Income Support:** Subsidies can provide income support to farmers, helping them **cope with price fluctuations, market uncertainties, and production risks.**
- For instance, the **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** scheme launched in 2019 provides direct income support to small and marginal farmers.
- **Increased Production:** Subsidies on inputs like **fertilizers, seeds, and irrigation** can promote increased agricultural production.
- The Indian government's support for fertilizers through the **Nutrient-Based Subsidy (NBS)** scheme ensures the availability of fertilizers at affordable prices to farmers.
- **Fishery:**
- **Modernization and Infrastructure Development:** Subsidies in the fishery sector can aid in the modernization of fishing practices and the development of infrastructure.
- This can lead to **increased productivity, improved safety measures, and better storage facilities.**
- The **Pradhan Mantri Matsya Sampada Yojana (PMMSY)** aims to enhance fish production and fishermen's welfare through various interventions, including infrastructure development..
- **Livelihood Support:** Subsidies **can provide livelihood support to fishermen, especially during lean seasons** and adverse climatic conditions.

- Schemes like the **National Scheme of Welfare of Fishermen** provide assistance to fishermen for the construction and repair of boats, supply of safety equipment, and training programs.
- **Fossil Fuel:**
- **Energy Access and Affordability:** Subsidies on fossil fuels, such as **LPG (liquefied petroleum gas) and kerosene**, can ensure energy access and affordability for vulnerable sections of society.
- The Indian government launched the **Pradhan Mantri Ujjwala Yojana (PMUY)** to increase LPG usage and reduce air pollution, deforestation, and health disorders

What are the Challenges Related to Subsidies?

- **Fiscal Burden:** Subsidies often impose a significant fiscal burden on the government.
- The cost of subsidies can **strain the government's finances and impact its ability to allocate resources** to other critical sectors such as healthcare, education, and infrastructure development.
- Balancing the need for subsidies with fiscal sustainability is a constant challenge.
- **Inefficient Targeting:** One of the major challenges is ensuring that subsidies reach the intended beneficiaries effectively.
- There is a **risk of subsidies being misdirected or captured by ineligible individuals or entities.**
- **Proper identification and targeting mechanisms** are essential to avoid leakages and ensure that subsidies benefit the intended recipients.
- **Market Distortions:** Subsidies can **distort market dynamics and create inefficiencies.** They may lead to **overproduction or overconsumption of certain commodities**, leading to market imbalances and price distortions.
- These distortions can affect the competitiveness of the sector and hinder the development of a sustainable and market-oriented agricultural, fishery, or energy sector.
- **Environmental Implications:** Subsidies on fossil fuels can **discourage the transition to cleaner and more sustainable energy sources.**
- They can **perpetuate the reliance on fossil fuels, contributing to environmental degradation, air pollution, and climate change.**

Way Forward

- **Targeted Subsidy Reforms:** Implement targeted subsidy reforms to ensure that subsidies reach the intended beneficiaries effectively.
- This can be **achieved through the use of technology, such as Aadhaar-linked identification systems**, to improve targeting accuracy and reduce leakages.
- **Gradual Reduction and Rationalization:** Gradually reduce and rationalize subsidies to ensure fiscal sustainability and minimize market distortions.
- Instead of **across-the-board subsidy cuts, a phased approach can be adopted, focusing on reducing subsidies for the affluent and gradually** redirecting funds towards investments in infrastructure, research and development, and capacity building in the respective sectors.
- **Promote Sustainable Practices:** Encourage the adoption of sustainable practices in agriculture, fishery, and energy sectors through subsidies.
- This can include providing **incentives for the use of organic farming techniques, efficient irrigation systems**, eco-friendly fishing practices, and renewable energy technologies.

- Subsidies should be designed to incentivize innovation, productivity improvements, and environmental conservation.

7) India's Jet Engine Deal with the US

Why in News?

Recently, India has announced a significant agreement between the American multinational corporation **General Electric (GE)** and **Hindustan Aeronautics Limited (HAL)**, during Indian PM's state visit to the US. The deal involves the transfer of critical jet engine technologies and the manufacturing of **GE's F414 engine** for India's **indigenous Light Combat Aircraft (LCA) Tejas Mk2**.

- This development marks a crucial milestone in **India's pursuit of advanced combat jet engine technology**.

Note:

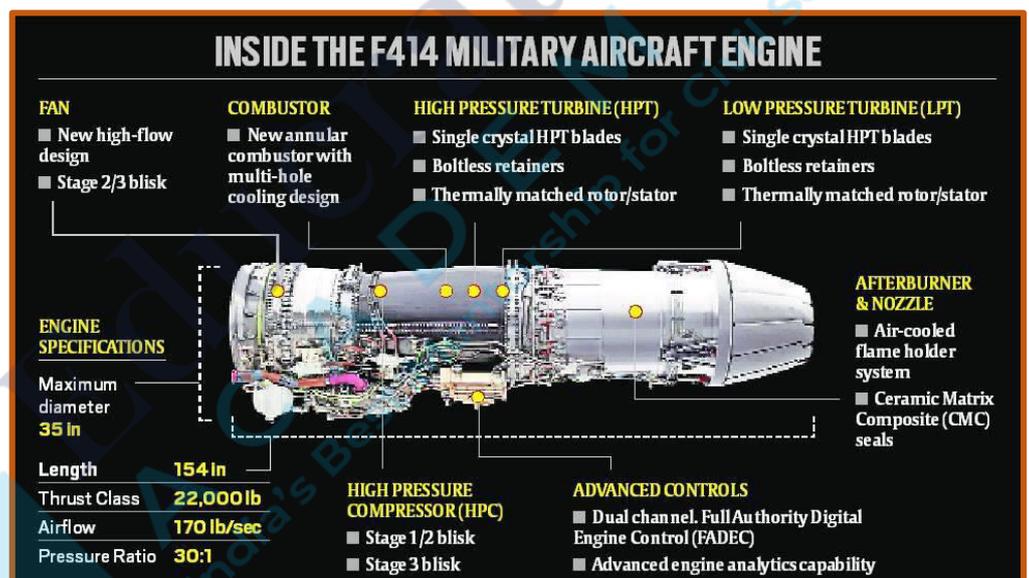
- The **India-US Defence Acceleration Ecosystem (INDUS-X)** was also launched during the ongoing visit of the PM.
- INDUS-X is meant as a platform for Indian and U.S. **start-ups and tech companies** to collaborate for the co-development and co-production of advanced technologies.

What is GE's F414 engine?

▪ About:

- GE's F414 engine is a **turbofan engine used by the US Navy for over 30 years**.

- It is equipped with a **dual-channel full authority digital engine control (FADEC)**, a **six-stage high-pressure compressor**, an advanced **high-pressure turbine**, and a "fuelraulic" system for nozzle area control.



- It offers **exceptional throttle response, excellent afterburner light and stability, and unrestricted engine performance** when required.
- The F414 engine has powered military aircraft in eight nations, making it a **trusted choice for modern fighter jets**.
- **India's Engine Requirements:**
 - For India, the F414 engine holds great significance, particularly in the context of the **LCA Tejas Mk2**.
 - The **Aeronautical Development Agency (ADA)** of the **DRDO** has selected the India-specific version of the engine, known as **F414-INS6**, for the **LCA Tejas Mk2**.
 - This strategic decision reflects **India's aim to bolster its indigenous defence capabilities** and reduce dependence on foreign suppliers.
 - Furthermore, there are prospects of utilizing F414 engines for the **Advanced Medium Combat Aircraft (AMCA)**, India's ambitious **fifth-generation fighter aircraft**.

What is LCA Tejas Mk2?

- The LCA Tejas Mk2 is an **upgraded version of the indigenous fighter aircraft developed in India.**
- It has the capability to carry **eight Beyond-Visual-Range (BVR) missiles** simultaneously and integrate both **native and advanced weapons** from other countries.
- The LCA Mk2 offers improved range and mission endurance compared to its predecessor, with a **mission endurance of 120 minutes, as opposed to 57 minutes for the LCA Tejas Mk1.**
- It is intended to serve as a replacement for the Jaguars, MiG-29s, and Mirage 2000s as they retire in the coming decade. Manufacturing has already begun, and the aircraft is expected to be rolled out by 2024.

Why is the India-US Jet Engine Deal Significant?

- **Self-reliance in Critical Technologies:**
 - Manufacturing engines for combat aircraft requires advanced technology and metallurgy, which only **US, Russia, UK and France have mastered.**
 - **India**, despite its push for self-reliance in **critical technologies**, including cryogenic rocket engines, **has not been able to join this list.**
 - The countries that have the technology to manufacture advanced engines for fighter aircraft have been **traditionally unwilling to share** them which is also why the deal is pathbreaking.
- **A Significant Component of iCET:**
 - The agreement for the transfer of technology was discussed in the talks between India's Defence Minister and the US Secretary of Defence earlier in June 2023 and was a key highlight of **India's National Security Advisor's meeting with his US counterpart** when the **US-India iCET** was operationalized.
- **Development Efforts by DRDO:**
 - The DRDO's **Gas Turbine Research Establishment (GTRE)** initiated the development of the GTX-37 engine for the LCA, followed by the ambitious Kaveri engine project in 1989.
 - Despite the development of 9 full prototype engines and 4 core engines and extensive testing, the **engines did not meet the requirements for fighter aircraft** making this deal crucial for its defence capabilities.
- **End of Technology Denial Regime:**
 - This pact finally lays to rest what former PM of India (in 2008) had described in as the **"technology denial regime"** imposed on India by the West, led by the US.
 - The **Nuclear Suppliers' Group's** waiver to the Indo-US nuclear deal marked the end of India's decades long isolation from the nuclear technology.
 - This jet engine technology transfer agreement is **another one of the important milestones in this journey.**

What are India's Recent Developments in Defence Sector?

- **India's Indigenous Developments:**
 - Successful testing of indigenous weapons and systems, including:
 - Rustom-2 drone
 - Light Combat Helicopter
 - Man Portable Anti-Tank Guided Missile
 - Agni-5 intercontinental ballistic missile

- Advanced Medium Combat Aircraft.
- **Launch and commissioning of indigenous naval vessels, including:**
- INS Karanj submarine
- OPV Vijaya patrol vessel
- INS Dhruv nuclear missile tracking ship
- INS Himgiri stealth frigate
- **India's Defence Collaboration with Other Countries:**
- Procurement and signing of contracts for defence equipment and platforms from foreign countries, such as:
- **Barak missiles and Precision Guided Munitions from Israel**
- **S-400 air defence systems from Russia**
- **Rafale fighter jets from France**
- Aside from GE, India has been talking to other global jet engine makers for technology transfer such as **Safran SA of France** and **Rolls-Royce of the United Kingdom for the AMCA.**

8) Paris Global Climate Financing Summit

Why in News?

The Summit for a New Global Financing Pact was recently held in Paris with an objective of **tackling the lack of financial support for developing countries.**

- The Summit was announced at the **27th Conference of Parties (COP27)** of the **UNFCCC**. The summit was also attended by India's Finance Minister.

What are the Key Highlights of the Summit?

- **The Scale of Crises Faced by Developing Countries:**
- Developing countries are grappling with a combination of crises, including poverty, escalating debt levels, and inflation **triggered by events such as the Russia-Ukraine Conflict.**
- Besides economic challenges, developing nations are under **pressure to decarbonise their economies** while lacking sufficient **Climate Finance.**
- **Demands from the Global South:**
- Leaders from the **Global South** demand that **Multilateral Development Banks (MDB)** address **transboundary challenges** and provide increased resources for development, including climate finance.
- Developing countries call for more **concessional and grant financing** to address their debt burdens, also **advocating for debt reductions** particularly for the least developed nations.
- While acknowledging the potential of private sector investment, they emphasise that **long-term development funds are necessary** to complement private sector financing.
- **Announcements at the Summit:**
- The Summit announced the **unlocking of an additional USD 200 billion** lending capacity for emerging economies.
- The **World Bank** introduced **disaster clauses to suspend debt payments** during extreme weather events.
- The **IMF** announced the allocation of USD 100 billion in **SDRs (Special Drawing Rights)** for vulnerable countries, although some SDRs still require approval from the US Congress.

- A new **Just Energy Transition Partnerships (JETP)** deal worth 2.5 billion Euros was announced for Senegal, aimed at increasing the share of renewable energy in the country's electricity mix.
- Zambia reached a **USD 6.3 billion debt restructuring deal**, and calls were made for a **Global Expert Review on Debt, Nature, and Climate**.
- The EU called for **increased coverage of global emissions by Carbon Pricing Mechanisms** and allocating a portion of revenues to climate finance.
- The Summit indicated that the **long-awaited USD 100 billion climate finance** goal would be achieved this year.
- This commitment was made at **UNFCCC COP 15 in Copenhagen** in 2009.

What is Climate Finance?

▪ About:

- It refers to **local, national, or transnational financing**—drawn from public, private and alternative sources of financing—that seeks to support mitigation and adaptation actions that will address climate change.

▪ Global Discussions:

- The **UNFCCC, Kyoto Protocol, and the Paris Agreement** call for financial assistance from Parties with more financial resources (Developed Countries) to those that are less endowed and more vulnerable (Developing Countries).
- This is in accordance with the principle of **“Common but Differentiated Responsibility and Respective Capabilities” (CBDR)**.
- In **UNFCCC COP26**, new financial pledges to support developing countries in achieving the global goal for adapting to the effects of climate change were made.

▪ Significance:

○ Climate Change Impact Mitigation and Adaptation:

- Climate finance is **needed for climate impact mitigation; large-scale investments** are required to significantly reduce emissions.
- It is **equally important for adaptation; significant financial resources are needed** to adapt to the adverse effects of a changing climate.
- Climate finance is critical to achieve the goal of limiting the rise in the earth's average temperature to **below 2°C over pre-industrial levels, (2018 IPCC report)**.

○ Recognition of Responsibilities:

- It **recognises that the contribution of countries to climate change and their capacity** to prevent it and cope with its consequences vary enormously.
- Hence, **developed countries should also continue to take the lead in mobilising climate finance** through a variety of actions, including supporting country-driven strategies and taking into account the needs and priorities of developing country Parties.

What are Initiatives regarding Climate Finance?

▪ Global:

- In **2010**, the **194 member countries** agreed to create the **Green Climate Fund (GCF)** at **UNFCCC COP 16**.
- GCF was established to support the developing countries in their efforts to **challenge climate change by aiding them in shifting to low-emission and climate-resilient development regime**.
- It is **headquartered in Incheon, Republic of Korea**.

- At the COP27 summit, delegates from the UN agreed to create a '**Loss and Damages' fund** to compensate the **most vulnerable countries** for their losses due to **climate-related disasters**.
- **India:**
- **National Adaptation Fund for Climate Change (NAFCC):**
- It was **established in 2015 to meet the cost of adaptation to climate change** for the State and Union Territories of India that are particularly vulnerable to the adverse effects of climate change.
- **National Clean Energy Fund:**
- It was created through the **Finance Bill 2010-11** by the recommendation of **Cabinet Committee of Economic Affairs (CCEA)** to promote clean energy and funded through an initial **carbon tax** on the use of coal by industries.
- **It is governed by an Inter-Ministerial Group** with the Finance Secretary as the Chairman.
- Its mandate is to fund research and development of innovative **clean energy technology** in the fossil and non-fossil fuel-based sectors.
- **National Adaptation Fund:**
- The fund was established in **2014 with a corpus of Rs. 100 crores** with the aim of bridging the gap between the need and the available funds.
- The fund is operated under the Ministry of Environment, Forests, and Climate Change (MoEF&CC).



Educrat IAS
ACADEMY
 India's Best Mentorship for Civil Services

1) Neurotechnology and Ethics

Why in News?

The **United Nations Educational, Scientific and Cultural Organization (UNESCO)** is organising an international conference in Paris, France to **address the ethical implications of neurotech devices that collect brain-wave data.**

- This conference aims to establish a global ethical framework to ensure individual freedom of thought, privacy, and protection of human rights.
- With the growing potential of neurotechnology to address neurological problems, concerns have been raised regarding its impact on personal identity and privacy.

What is Neurotechnology?

- **Neurotechnology** is defined as the **assembly of methods and instruments that enable a direct connection of technical components with the nervous system.** These technical components are **electrodes, computers, or intelligent prostheses.**
- They are meant to either **record signals from the brain and “translate” them into technical control commands,** or to manipulate brain activity by applying electrical or optical stimuli.
- From **bioelectronic medicine that improves the quality of life to brain imaging that revolutionizes our conception of human consciousness,** this technology has helped us to address many challenges.
- Neurotechnology **encompasses all technologies developed to understand the brain,** visualise its processes and even control, repair or improve its functions.

What are the Ethical Concerns Related to Neurotechnology?

- **Privacy Issues:** The **use of neurotechnology** can potentially reveal highly personal and sensitive information about an **individual's thoughts, emotions, and mental states.**
- Combined with artificial intelligence, **its resulting potential can easily become a threat to notions of human dignity, freedom of thought, autonomy, (mental) privacy and well-being.**
- **Cognitive Enhancement and Inequality:** Neurotechnologies aimed at enhancing cognitive abilities raise concerns about fairness and equality.
- If these technologies **become available only to a privileged few or exacerbate existing social inequalities,** it could lead to an unfair advantage for certain individuals or groups, **creating a "cognitive divide" in society.**
- **Psychological and Emotional Impact:** The ability to manipulate or access brain activity raises **ethical concerns regarding the psychological and emotional impact on individuals.**
- For example, **deep brain stimulation or neurofeedback** techniques may have unintended consequences or side effects on an individual's mental well-being, personal identity, or autonomy.

What is Deep Brain Stimulation (DBS)?

- It is a **neurosurgical procedure** that involves the **implantation of a medical device called a neurostimulator,** which delivers electrical impulses to specific regions of the brain.
- DBS works by altering the electrical signals in targeted brain regions, effectively "resetting" or normalising the neural activity
- DBS is primarily used to treat neurological conditions such as **Parkinson's disease, essential tremor, dystonia, and some cases of epilepsy and obsessive-compulsive disorder (OCD).**

- Parkinson's disease is a chronic, degenerative neurological disorder that affects the central nervous system.

How can the Ethical Concerns Surrounding Neurotechnology be Resolved?

- **Informed Consent:** Ensuring that patients have a **comprehensive understanding of the risks, benefits, and potential outcomes** of neurological interventions is crucial.
- **Healthcare** providers should engage in **transparent and thorough discussions with patients**, providing them with the information necessary to make informed decisions about their treatment options.
- **Ethical Review Boards:** Establishing **independent and multidisciplinary ethical review boards** can help evaluate the ethical implications of neurology research and interventions.
- These boards should consist of **healthcare professionals, ethicists, legal experts, and patient advocates** who can assess the potential benefits, risks, and ethical implications of proposed interventions.
- **Maintaining Privacy and Confidentiality:** **Safeguarding patient privacy and confidentiality** is of utmost importance in neurology.
- With the advancement of technologies like **brain-computer interfaces and deep brain stimulation**, it is crucial to implement robust privacy protocols and ensure that patients' sensitive information is protected.
- **Equity and Access:** Ethical concerns can arise when access to neurological treatments and interventions is limited by factors such as **cost, geographic location, or social disparities**.
- Efforts should be made to promote equity and ensure that these **interventions are accessible to all individuals** who can benefit from them, regardless of socioeconomic status.

What is UNESCO?

- **About:**
 - UNESCO is a specialised agency of the **United Nations (UN)**. It seeks to **build peace through international cooperation in Education, the Sciences and Culture**.
 - Its **Headquarter is in Paris, France**.
- **Members:**
 - The **Organization has 193 Members and 12 Associate Members**.
 - UNESCO has announced that the **United States intends to rejoin the organisation and settle over USD 600 million** in outstanding dues
 - Membership of the United Nations carries with it the right to membership of UNESCO.
 - **States that are not members of the United Nations may be admitted to UNESCO**, upon recommendation of the Executive Board, by a two-thirds majority vote of the General Conference.
- **Objectives:**
 - Attaining quality education for all and lifelong learning
 - Mobilising science knowledge and policy for **sustainable development**
 - Addressing emerging **social and ethical challenges**
 - Fostering **cultural diversity, intercultural dialogue and a culture of peace**
 - Building **inclusive knowledge societies through information and communication**
 - Focuses on global priority areas - **"Africa" and "Gender Equality"**.

2) Organic Intellectuals and Capitalist Hegemony

Why in News?

In a recent development that has **caught the attention of social and economic observers**, a growing wave of **organic intellectuals is emerging as a formidable force in challenging capitalist hegemony**.

- **Italian Marxist Antonio Gramsci** introduced the **concept of the "organic intellectual"** in his **Prison Notebooks**, highlighting **their significance in understanding his philosophy of praxis**.
- Gramsci emphasised the **complex relationship between class power, ideology, organic intellectuals, hegemony**, and the state in capitalist society.

What is Gramsci's Philosophy of Praxis?

- Gramsci's philosophy of praxis is a way of thinking about **Marxism** that focuses on the **importance of culture, ideas, and people's choices in bringing about historical change**.
- Instead of seeing economic factors as the only driving force behind history, **Gramsci believed that individuals are active participants in shaping their own destiny, rather than just passive victims of their circumstances**.
- According to Gramsci, in **modern capitalist societies, there are different social groups with varying interests and levels of awareness**.
- The dominant class holds power not only through economic means but also by influencing culture and morals.
- Gramsci's philosophy of praxis seeks to **understand how the ruling class maintains its control over the lower classes through cultural and moral leadership**.
- It also aims to understand **how the dominant class maintains its hegemony, or cultural and moral leadership**, over the subordinate classes and how the latter can develop a **counter-hegemony** that challenges the existing order.

Who are the Organic Intellectuals?

- According to Gramsci, **intellectuals are not a separate category of people who possess a special quality of mind** or a superior level of education. Rather, **intellectuals are defined by their function and role in society**.
- Gramsci distinguishes between two types of intellectuals: **traditional and organic**.
- **Traditional intellectuals** are those who **claim to be independent and autonomous from any class or social group**.
- They present themselves as the bearers of universal values and knowledge, such as **priests, teachers, artists, scientists, etc.**
- However, Gramsci argued that **traditional intellectuals are actually aligned with the dominant class** and serve its interests by legitimising its worldview and values.
- **Organic intellectuals are those who emerge from within a specific class or social group** and articulate its interests and aspirations.
- They are **organically linked to the masses and mediate between their common sense and the ruling ideology**. They also help to organise and mobilise their class or group for political action.
- Gramsci argued that **every class or social group produces its own organic intellectuals, but not all of them are equally developed or effective**.
- He pays special attention to the **role of organic intellectuals in challenging capitalist hegemony** and building a counter-hegemonic bloc.

How do Organic Intellectuals Challenge Capitalist Hegemony?

- **Capitalist hegemony is not only based on coercion and violence, but also on consent and persuasion.**
- The dominant class uses various institutions and practices, such as **education, media, religion, culture, etc., to spread its ideology and values** among the subordinate classes and to incorporate them into its worldview.
- However, **hegemony is never complete or stable**. It is **always contested and resisted by alternative forms of consciousness and culture** that express the needs and demands of the oppressed classes and groups.
- This is where organic intellectuals play a crucial role. **They help to articulate these alternative forms of consciousness and culture into a coherent and comprehensive worldview that challenges the dominant one.**
- They **also help to connect different classes and groups that share common interests** and goals into a historical bloc that can act as a collective agent of historical change.
- Organic intellectuals **do not impose their ideas on the masses, but rather engage in a dialogical process with them.**
- They respect their common sense, but also critique its limitations and contradictions. They educate them, but also learn from them. **They inspire them, but also follow them.**



Educrat IAS
ACADEMY
India's Best Mentorship for Civil Services

Prelims Booster- The Hindu & Indian Express

1ST JUNE

1) **Grain Storage Plan:** The Union Cabinet has given its nod to the formation of an **Inter-Ministerial Committee (IMC) under the Chairmanship of Ministry of Cooperation** to facilitate the implementation of the **“World’s Largest Grain Storage Plan in Cooperative Sector.”**

- This transformative plan aims to converge the schemes of the Ministry of Agriculture, Ministry of Consumer Affairs, Food and Public Distribution, and Ministry of Food Processing .
- The plan entails setting up various types of agri-infrastructure, including **warehouse, custom hiring centre, processing units, etc. at the level of Primary Agricultural Credit Societies (PACS)**, thus transforming them into multipurpose societies.
- This ambitious scheme intends to **construct grain storage facilities in the cooperative sector**. Every block will have a dedicated godown with a capacity of 2,000 tonnes.

2) **CITIIS 2.0 Program:** The City Investments to Innovate, Integrate and Sustain 2.0 (CITIIS 2.0) program, developed by the **Ministry of Housing and Urban Affairs (MoHUA), in collaboration with the French Development Agency (AFD), the European Union (EU), and the National Institute of Urban Affairs (NIUA)**, will be implemented from 2023 to 2027.

- The funding for this program would include a loan from AFD and KfW and a technical assistance grant of Rs.106 cr from the EU.
- The program envisages supporting competitively selected projects promoting a **circular economy** with a focus **on integrated waste management at the city level, climate-oriented reform actions at the State level, and institutional strengthening**

and knowledge dissemination at the National level.

It has three major components:

- **Component 1:** Financial and technical support for developing projects focused **on building climate resilience, adaptation and mitigation** in up to 18 smart cities through a selection of competitively selected projects.
- **Component 2:** All States and UTs will be eligible for support on-demand basis.
- **Component 3:** Interventions at all three levels; **Centre, State and City to further climate governance in urban India** through **institutional strengthening, knowledge dissemination, partnerships, building capacity, research and development** to support scale-up across all States and Cities.

3) **Guarani tribe:** They are a tribe living majorly in **Brazil, Paraguay, Bolivia, and Argentina**.

- These people in Brazil are divided into three groups: **Kaiowá, Nandeva and M’byá**, of which the largest is the **Kaiowá which means ‘forest people’**.
- They are deeply spiritual people.

4) **Necrophilia:** Recently, the Karnataka High Court has recommended that the Union government amend the Indian Penal Code (IPC) to bring **necrophilia under the definition of an offense of unnatural sex** or introduce a new provision in IPC to make necrophilia an offense.

- Necrophilia is derived from the **Greek words philios (attraction to/love) and nekros (dead body)** and involves the sexual attraction to a dead body.
- The Bench pointed out that **sexual assault on dead bodies does not attract the provision of rape under Section 376 of IPC**.
- The court noted that in India, there is no specific legislation, including under the provisions of the Indian Penal Code for the purpose of upholding dignity and protecting rights and crime against the dead body of the woman unlike **the United**

Kingdom, Canada, New Zealand, and South Africa where necrophilia is an offense.'

5) **Himalayan Brown Bear:** It is a large carnivore found in North-western and central Himalaya, including **Pakistan, India, Nepal, the Tibetan Autonomous Region of China and Bhutan.**

- It is the **largest mammal in the region**, males reaching up to 2.2 m (7 ft) long, while females are a little smaller.
- The bears are **omnivorous** and hibernate in dens during the winter.
- It has thick fur which is most often sandy or reddish-brown in colour.
- **IUCN Red List:** Critically Endangered, Wildlife (Protection) Act of 1972: Schedule I, CITES – Appendix I

2ND JUNE

1) **Phukot Karnali Hydro Electric Project:** Recently, NHPC Limited and Vidhyut Utpadan Company Limited (VUCL), Nepal signed an MoU for development of **Phukot Karnali Hydro Electric Project (480MW) in Nepal.** It is conceived as a **Peaking Run-of-River (PRoR) type scheme.**

- The project will use the flow from the Karnali River for power generation and the generated power will be fed into integrated power system of Nepal
- **Other Hydropower project between India and Nepal:**
 - a. **Pancheshwar Multipurpose Project:** River Sarda
 - b. **Saptakoshi and Sun-Kosi Storage project:** River Kosi
 - c. **Naumere Multipurpose Project:** River Rapti
 - d. **Kamla Dam Multipurpose Project:** River Kamla
 - e. **Bagmati Multipurpose Project:** River Bagmati

2) **The Pandemic Fund:** It is a **multi-stakeholder global partnership officially established in November, 2022.** It is one of the Financial Intermediary Fund (FIF).

- It is a **collaborative partnership among donor countries, co-investors** (countries that are eligible to receive funding), **foundations and civil society organizations (CSOs).**
- **Objective** – It will provide a dedicated stream of additional, long-term financing to strengthen critical pandemic **Prevention, Preparedness, and Response (PPR) capabilities in low- and middle-income countries.** The financial volume depends upon contributions from donors.
- **Secretariat and Trustee** – The World Bank
- India is believed to have placed a funding request of around \$55 million in its first call with the Pandemic Fund of the World Bank.

3) **Joint Child Malnutrition Estimates (JME) 2023:** It is **jointly released by UNICEF, WHO and World Bank.**

- Prevalence of overweight children increased in India in 2022 compared to 2012.
 - India continues to show a reduction in stunted children under 5 years in 2022 compared to 2012.
 - In India **2/3rds of children at 12 or 24 months had wasting at birth or at one month of age.**
 - It is caused by **maternal malnutrition.**
- 4) **Myristica Swamps:** These swamps are found in the Sacred Groves or evergreen forest patches and are included in the littoral and swamp forest groups. **Kammadam Kavu is the largest in Kerala.**
- This species has **stilt roots, or knee roots that pop up above the water level** to breathe creating a varied habitat for many life forms.
 - These forests are characterized by trees with **large protruding roots jutting out of waterlogged soil which remains inundated throughout the year.**
 - In India, these unique habitats occur in the Western Ghats and a smaller distribution exists in the Andaman and Nicobar Islands.
 - Typically, Myristica swamps are seen next to rivers and **help in retaining water and act as a sponge, ensuring perennial water availability.**

- Climate change and human intervention threaten the Myristica swamps of Kerala.

5) **Agni-1 Missile:** It is a medium-Range Ballistic Missile having range 700–900 km.

- It is a **single-stage, solid-fuel missile**.
- It is capable of carrying a nuclear warhead with an estimated payload of 1,000 kg.
- It is **road-mobile**, which gives it a **high degree of mobility** and makes it difficult for an enemy to target.
- The latest upgrade to the Agni-1 missile includes a **new guidance system that makes it more accurate and a new warhead that increases its destructive power**.

3RD JUNE

1) **Apoptosis:** It is the **process of programmed cell death**. It is a mechanism that allows cells to self-destruct when stimulated by the appropriate trigger.

- It is used during **early development to eliminate unwanted cells**; for example, those between the fingers of a developing hand.
- In adults, **apoptosis is used to rid the body of cells that have been damaged beyond repair and have become a threat to survival**. EG: cancer cells
- Too much apoptosis in an otherwise normal human being will result in a number of so-called **neurodegenerative diseases** where cells die when they're not supposed to die.

2) **Sedition Law:** It states that anyone who attempts to **create hatred, contempt, or disaffection towards the government can be punished under the sedition law**.

- **Sedition is a non-bailable offence**. Punishment under the law varies from imprisonment up to three years to a life term and fine.
- **A person charged under this law can't apply for a government job**. They have to live without their passport and must present themselves in the court as and when required.

- **Section 124A** was drafted by **Thomas Babington Macaulay and included in the IPC in 1870**.
- The Law Commission recently recommended retention of the sedition law and enhancement of the minimum punishment to seven years in jail from the current three years.

3) **GAGAN satellite technology:** Recently, Asia's first demonstration of **Performance-Based Navigation for helicopters** for a flight **from Juhu to Pune** using GAGAN satellite technology was completed.

- It is an acronym for GPS Aided GEO Augmented Navigation.
- It is a **Space Based Augmentation System (SBAS) jointly developed by ISRO and AAI** to provide the best possible navigational services over Indian FIR (Flight Information Region) with the capability of expanding to neighbouring FIRs.
- GAGAN is a **system of satellites and ground stations that provide GPS signal corrections, giving you better position accuracy**.
- GAGAN corrects for **GPS signal errors caused by ionospheric disturbances, timing and satellite orbit errors** and also it provides vital information regarding the health of each satellite.
- There are only four Space-Based augmentation systems available in the world namely **India (GAGAN), US (WAAS), Europe (EGNOS) and Japan (MSAS)**.

4) **Kavach System:** Developed by the **Research Design and Standards Organisation (RDSO) under Indian Railway (IR)**, it is an **indigenously developed Automatic Train Protection (ATP) system**.

It is a **set of electronic devices and Radio Frequency Identification devices** installed in locomotives, in the signalling system as well the tracks, that talk to each other using ultra-high radio frequencies to control the brakes of trains and also alert drivers, all based on the logic programmed into them.

The system can alert the loco pilot, take control of the brakes and bring the train to a halt automatically

when it notices another train on the same line within a prescribed distance.

5) **Antibiotic Against a Superbug:** Superbugs are **strains of bacteria, viruses, parasites and fungi** that are resistant to most of the antibiotics and other medications commonly used to treat the infections they cause.

Acinetobacter Baumannii: it is one of the **world's most dangerous antibiotic-resistant bacteria and causes pneumonia, meningitis;** all of which can lead to death.

In a major breakthrough for the use of Artificial Intelligence (AI) in the field of medicine, scientists from **the United States and Canada have found a new antibiotic** – powerful enough to kill it.

5TH JUNE

1) **Fixed-Dose Combination (FDC) Drugs:** It includes **two or more active pharmaceutical ingredients (APIs) combined in a single dosage form**, which is manufactured and distributed in fixed doses.

- They have been shown to appreciably **reduce the risk of medication non-adherence**, which is particularly important in patients with chronic diseases.
- If the drugs combination is not appropriate, then it can lead to some patients getting too much of an ingredient and others getting too little. **FDCs "limit clinicians' ability to customize dosing regimens."**

2) **Adverse Possession:** The 22nd Law Commission has said in its recent report that there is no justification for introducing any change in the law relating to adverse possession.

- It is a **legal concept that allows a person who has unlawfully occupied someone else's land for a certain period of time to claim legal ownership of that land.**
- In India, **adverse possession has been a part of the legal framework** for a long time and is rooted in

the idea that land must not be left vacant and instead be put to judicious use.

- The law on adverse possession is contained in the **Limitation Act, 1963.**
- **Limitation Act, 1963** – Under the Act, **any person in possession of private land for over 12 years or government land for over 30 years** can become the owner of that property.

3) **Shanan Power Project:** Punjab and Himachal Pradesh are set for a face-off as the **99-year lease on the Shanan hydropower project situated on Uhl river in Himachal Pradesh.**

- **The first stage (48 MW) of the project was commissioned in 1932.** It was given to Punjab on 99-year lease by the then ruler of Mandi, Raja Joginder Singh Bahadur, which would end on **March 2, 2024.**
- The Shanan project was allocated to the State of Punjab in accordance with **the provisions of the Punjab Reorganisation Act, 1966.**
- Himachal Pradesh now wants the project handed over to the State expiry of the lease period.
- **The main attraction of the hydro project is the four-stage haulage trolley service.** It was basically constructed for **carrying construction material of Shanan powerhouse from Jogindernagar to Barot.** It is a unique type of trolley based on pulley system with no engine, steering wheel or no gears or brakes.

4) **World Environment Day:** It is **observed on the 5th of June every year since 1973 as part of the United Nations Environment Programme** to build awareness to save life on planet Earth.

- The event has been led by **the United Nations Environment Programme (UNEP) since its inception in 1973.**
- The theme of this year's World Environment Day will focus on **solutions to plastic pollution under the campaign #BeatPlasticPollution.**

- This year's event is hosted by **Côte d'Ivoire** in partnership with the **Netherlands**.

5) **Biochar**: It is a carbon-rich material that is made from biomass through a **thermochemical conversion process known as pyrolysis**.

- **Pyrolysis** – In this process, organic materials, such as **wood chips, leaf litter or dead plants, are burned in a container with very little oxygen**.
- Biochar is black, highly porous, lightweight, fine-grained and has a large surface area.
- Approximately **70% of its composition is carbon**.
- The remaining percentage consists of **nitrogen, hydrogen and oxygen** among other elements.
- **Biochar production is a carbon-negative process**, which means that it actually reduces CO₂ in the atmosphere.

6TH JUNE

1) National Institutional Ranking Framework (NIRF)

2023: Released by Ministry of Education, it is an effort to rank Higher Education Institutions (HEIs).

Launched in 2015 it was initially voluntary. It became obligatory for all government-run educational institutions in 2018.

- **IIT Madras retains its 1st position in Overall Category and Engineering**. IISC Bengaluru tops the Universities Category and stood first in Research Institutions Category. ★
- **Three distinct additions to the 2023 edition of India Rankings are as follows**:
 - Introduction of a new subject namely **Agriculture & Allied Sectors**.
 - Integration of the **"Innovation" ranking previously executed by the Atal Ranking of Institutions on Innovation Achievements (ARIIA)** into the India Rankings.
 - **Expansion of scope of "Architecture" to "Architecture and Planning"** to include institutions imparting courses in **Urban and Town Planning**.

- **Five broad categories of parameters are identified in the NIRF**: Teaching, learning and resources (TLR); research and professional practice; graduation outcome; outreach; and inclusivity and perception.

2) **Electronic interlocking (EI) System in Railways**: It is an **advanced signalling, computer-based system** that uses electronic components to manage the movement of trains and the configuration of tracks.

- The EI, which is based on software, is **designed to prevent 2 trains from running on the same track at the same time**. It ensures that a train gets a go-ahead only when the route is clear.
- The system is an **alternative to the conventional Relay Interlocking system**.
- All activities in the signalling system are recorded in a **microprocessor-based system called a data logger**. It acts like the black box of an aircraft and can store and process signal data to generate reports.

3) **Bitumen**: It is a **dense, highly viscous, petroleum-based hydrocarbon**.

- It is found in deposits such as **oil sands and pitch lakes (natural bitumen) or is obtained as a residue of the distillation of crude oil**.
- At the temperatures normally encountered in natural deposits, bitumen will not flow. In order to be moved through a pipe, it must be heated and, in some cases, diluted with a lighter oil. Bitumen can deform permanently under heavy loads. Continued stress on the material can result in cracking.
- Bitumen is known for **its waterproofing and adhesive properties** and is commonly used in the **construction industry, notably for roads and highways**.

4) **Exercise Ekatha**: Indian Navy and Marine Commandos of Maldives will conduct the **sixth edition of India-Maldives Exercise Ekantha**

- It is an exercise to **ensure interoperability** in diving and special operations between navies of two countries. **It is held annually.**
- Armies of India and Maldives also conducts **Exercise EKUVERIN**

5) **Trimbakeshwar Temple:** located in **Nashik City, Maharashtra**, it is **surrounded by 3 hills – Brahmagiri, Nilagiri and Kalagiri.**

- It was constructed by **3rd Peshwa Balaji Bajirao** also known as Nana Saheb, in the mid-18th century (1740-1760). The entire temple is built with black stone.
- **Trimbakeshwar Jyotirlinga** is only **one of the 12 jyotirlingas in India.**
- It not only honors Lord Shiva but the other two gods in the Holy Trinity – **Lord Vishnu and Lord Brahma as well.**
- The temple has a well called **Amritavarshini**, **believed to be the source of the Godavari.**

7TH JUNE

1) **Shangri-La Dialogue:** It is a **Track One inter-governmental security forum** held annually by an independent think tank, the **International Institute for Strategic Studies (IISS)** which is attended by defence ministers, permanent heads of ministries and military chiefs of 28 Asia-Pacific states.

- Originally known as **the Asia Security Summit**, **it was initiated in 2002.**
- The forum gets its name from **the Shangri La Hotel in Singapore** where it is held.
- While primarily **an inter-governmental meeting**, the summit is also attended by legislators, academic experts, business delegates, think tank analysts, media and other NGO personnel.

2) **Fattah Missile:** Iran claimed that it had created a **hyper-sonic missile** capable of travelling at 15 times the speed of sound.

- The new missile – called **'Fattah,'** means **'Conqueror' in Farsi.**
- The said missile can acquire **a speed of 5 times the speed of light** and has a **range of over 1400 kms.** It can travel at speeds of up to Mach 5.

3) **Prepaid Payment Instrument (PPI):** These are instruments that facilitate the purchase of goods and services, conduct of financial services and enable remittance facilities, among others, against the money stored in them. **PPIs can be issued as cards or wallets.**

- **There are two types of PPIs** – small PPIs and full-KYC (know your customer) PPIs.
- Further, **small PPIs are categorized as – PPIs up to Rs 10,000** (with cash loading facility) **and PPIs up to Rs 10,000** (with no cash loading facility).
- The cash loading of PPIs is limited to Rs 50,000 per month subject to the overall limit of the PPI. It can be issued by banks and non-banks after obtaining approval from the RBI.
- **PPIs can only be used in Indian rupees.**

4) **Commission of Railway Safety:** CRS is a government body that acts as the **railway safety authority in the country.**

- It deals with matters related to **safety of rail travel and operations, among some other statutory functions – inspectorial, investigatory, and advisory** – as laid down in **the Railways Act, 1989.** It is headquartered in **Lucknow, Uttar Pradesh.**
- It is under the administrative control of **the Ministry of Civil Aviation (MoCA)** instead of the Ministry of Railways.
- The reason behind this is to keep the **CRS insulated from the influence of the country's railway establishment and prevent conflicts of interest.**

5) **Kakhovka Dam:** Kakhovka dam in **southern Ukraine** was collapsed recently, causing extensive flooding

- The dam is built on **Ukraine's Dnipro River.**

- **Dnipro River** – It separates Ukraine into two parts — **east and west**.
- It flows north to south connecting the **capital, Kiev**, to the Black Sea.
- Water from the reservoir supplies water to the Crimean peninsula to the south, which was annexed by Russia in 2014, as well as the **Zaporizhzhia nuclear plant, Europe's largest, to the north**.

9TH JUNE

1) Centre Sets Minimum Support Price for Kharif Crops: The Indian government has approved the **Minimum Support Price (MSP) for kharif crops for the 2023-24 season**, aiming to provide fair remuneration to farmers.

However, concerns have been raised by farmers' organisations regarding the increase not keeping up with rising input costs.

Concerns of the Farmers:

- **Inadequate Cost Consideration:** Cost of production used by the CACP to calculate the MSP (A2+FL costs) does not include all the expenses incurred by the farmers such as **rent of land, interest on loans, family labour, etc.**
- **Lack of Market Reflection:** MSP does not reflect the actual market conditions and the inflationary trends.
- **Doubts over Procurement Mechanism:** doubts over the availability of adequate infrastructure and storage facilities.
- **Regional Disparities and Crop-Specific Issues:** MSP benefits only a few crops and a few states, while leaving out many other crops and regions.

2) Surplus Liquidity: Recently, the **net liquidity in the banking system in India increased to Rs 2.59 lakh crore on June 4, 2023**. However, the surplus liquidity in the banking system is likely to decline to around Rs 1.5 lakh crore over the next few days from the current level of Rs 2.1 lakh crore.

- Surplus liquidity occurs where **cashflows into the banking system persistently exceed withdrawals of liquidity** from the market by the central bank.
- **Causes:** Advance tax and goods and services tax(GST) payments, the deposit of withdrawn Rs 2,000 notes, redemption of government bonds, higher government spending, the sale of dollars by the RBI to defend the rupee from depreciation.
- **Impact:** It may lead to **increased levels of inflation, interest rates in the market will remain low**.
- **RBI's measures:** The RBI, under its **Liquidity Adjustment Facility**, infuses liquidity in the banking system via repos and sucks it out using reverse repos after assessing liquidity conditions.

3) India's Energy Transition Through States: India's **energy transition** through states plays a crucial role in achieving national targets and fulfilling global climate commitments. The **upcoming G20 forum** presents an opportunity for the country to propose a **multiple energy pathways approach** to accommodate diverse contexts.

Importance of states:

- **Implementing National Targets:** Tailoring strategies to local contexts, decentralized implementation.
- **Addressing Legacy Issues:** States play a pivotal role in addressing legacy issues plaguing the **electricity sector**.
- **Pioneering Policy Innovations:** Laboratories of innovation, influencing national policies.
- **Harnessing State Resources:** Leveraging localized resources, promoting distributed generation of renewable energy.
- **Importance of a State-level Framework:** Comprehensive understanding of energy transition plans, **evidence-based policy choices, inclusive stakeholder engagement**.

10TH JUNE

1) RBI Monetary Policy Committee: Policy Rates Unchanged: Recently, the **Reserve Bank of India's**

Monetary Policy Committee (MPC) has decided to keep the policy rates unchanged, taking into account the evolving **macroeconomic situation**.

Key Announcements:

- **Policy Rates Unchanged:** Repo rate, SDF rate, MSF rate and bank rate remained unchanged.
- **Emphasis on Inflation Management:** The MPC aims to **withdraw accommodation gradually** to align inflation with the target while supporting growth.
- **Inflation Outlook:**
 - The trajectory of **headline inflation** will likely be influenced by food price dynamics.
 - The forecast **by India Meteorological Department (IMD)** of a **normal southwest monsoon** is positive for **kharif crops**.
 - **Crude oil prices have eased**, but the outlook remains uncertain.
- **Inflation and Growth Projections:**
 - Assuming a normal monsoon, **CPI inflation is projected at 5.1% for 2023-24**.
 - **Real GDP growth for 2023-24 projected at 6.5%**.

2) Fermi Energy in Quantum Physics: Recently, **Fermi energy** has gained significant attention due to its wide range of **daily practical applications** in various fields, driven by the principles of **quantum physics**.

- Fermi energy is the energy of the highest occupied state of electrons in a material at **absolute zero temperature (-273° C or 0K)**.
- Fermi energy determines **electron velocity in conduction**, as only electrons with energies close to the Fermi energy can participate in the conduction process.
- Metals, such as **copper, aluminum, and silver**, exhibit **high Fermi energies**, even at extremely low temperatures.
- **Importance for Quantum Physics:** Fermi energy reveals the **wave nature and discrete energy levels of electrons in matter**; it determines various physical properties of materials,

including **electrical and thermal conductivity, heat capacity, magnetism, and superconductivity**.

3) Spotted Pond Turtles: Three persons engaged as mahouts (keepers and drivers of an elephant) in the **Kaziranga National Park and Tiger Reserve, Assam**, have been arrested for capturing and consuming **spotted pond turtles, a rare species of a freshwater turtle**.

- They are also known as **Black Pond Turtle, Black Spotted Turtle, Hamilton's Terrapin**.
- In India, the species is distributed across the **north, northeast and a few parts of central India**.
- Spotted pond turtles are **crepuscular**, meaning they are most active at twilight (dusk and dawn).
- **IUCN: Endangered.**
- **CITES: Appendix I.**

12TH JUNE

1) Delayed Monsoon: In 2023, the **monsoon** arrived over the Kerala coast on **June, 8th**, which is a delay compared to its **normal onset date of June, 1st**.

- Monsoons are **seasonal winds** (Rhythmic wind movements or Periodic Winds) **which reverse their direction** with the change of season.

Factors Influencing South-West Monsoon:

- **differential heating and cooling of land and water;**
- **shift of the position of Inter Tropical Convergence Zone (ITCZ);**
- presence of the **high-pressure area, east of Madagascar**, approximately at 20°S over the Indian Ocean;
- **Tibetan plateau gets intensely heated during summer**, which results in strong vertical air currents and the formation of low pressure over the plateau;
- **movement of the westerly jet stream to the north of the Himalayas** and the presence of the **tropical easterly jet stream** over the Indian peninsula;
- **Southern Oscillation (SO);**

➤ **Indian Ocean Dipole (IOD);**

2) Expected Credit Loss -Based Loan Loss Provisioning

Norms: Recently, the **Reserve Bank of India (RBI)** said that the banks will be given ample time to **implement Expected Credit Loss (ECL)-based loan loss provisioning norms.**

- The **RBI** had previously **proposed** the adoption of the **ECL approach for credit impairment**, and banks were given a one-year period for implementation once the final guidelines are released.
- Under this, banks will need to **classify financial assets** into one of three categories (**Stage 1, Stage 2, or Stage 3**), with **increasing probability of default.**
- The expected credit losses approach **will enhance the resilience of the banking system** in line with globally accepted standards.
- This new approach replaces the current **“incurred loss (IL)” model**, which delays loan loss provisioning, potentially increasing credit risk for banks.
- To prevent a capital shock, the RBI has proposed a **transitional arrangement for the introduction of ECL norms.**

3) Atlantic Declaration: The **United States and the United Kingdom** have announced the **Atlantic Declaration** for a **Twenty-First Century U.S.-UK Economic Partnership.**

Major Highlights:

- The Atlantic Declaration is focused on **building a resilient, diversified, and secure supply chain**, reducing strategic dependencies.
- The **Atlantic Declaration Action Plan (ADAPT)** sets forth a comprehensive strategy to enhance **economic growth, competitiveness, and resilience while prioritizing workers, businesses, climate, and national security.**
- **Five Pillars:**
 - Leadership in Critical and Emerging Technologies.

➤ Cooperation on **Economic Security and Technology Protection.**

➤ Partnering on an **Inclusive and Responsible Digital Transformation.**

➤ Building the **Clean Energy Economy of the Future.**

➤ Strengthening Alliance across Defense, Health Security, and Space.

13TH JUNE

1) Jal Jeevan Mission: Recently, the **World Health Organization (WHO)** in its study, it highlighted the potential impact of the **Jal Jeevan Mission (JJM)** including significant health and socio-economic benefits.

- Launched in 2019, it envisages supply of **55 litres of water per person per day** to every rural household through **Functional Household Tap Connections (FHTC)** by 2024.
- The mission ensures **functionality of existing water supply systems** and water connections, water quality monitoring and testing as well as sustainable agriculture.
- Creation of local infrastructure for source sustainability measures as mandatory elements, like **rainwater harvesting, groundwater recharge and management of household wastewater for reuse**, is undertaken in convergence with other government programmes/schemes.
- Paani Samitis plan, implement, manage, operate and maintain village water supply systems. These consist of 10-15 members, with at least 50% women members and other members from **Self-Help Groups, Accredited Social and Health Workers, Anganwadi teachers, etc.**
- The fund sharing pattern between the Centre and states is **90:10 for Himalayan and North-Eastern States, 50:50 for other states**, and 100% for Union Territories.

2) Electronically Transmitted Postal Ballot System for

NRIs: Recently, the **Chief Election**

Commissioner emphasised the need to facilitate

postal voting for **Non-Resident Indians (NRIs)**. It highlights the **Election Commission's proposal for Electronically Transmitted Postal Ballots (ETPBs) for NRIs**, which is **currently awaiting government approval**.

Challenges Related to ETPB for NRIs:

- **Eligibility and Verification:** Establishing accurate and reliable mechanisms to verify the **identity, residency status, and eligibility of NRIs** is crucial to maintain the integrity of the electoral process.
- **Time Constraint and Postal Delay:** There **may be postal delays or logistical issues in some countries that may prevent the ballot from reaching the returning officer on time**.
- **Security and Secrecy:** The ETPBs involves the transmission of sensitive electoral data through electronic means, which may pose a risk of **hacking, tampering or interception by malicious actors**.
- **Legal and Technical Challenges:** The ETPBs requires amendments to the **Representation of the People Act, 1950 and 1951, as well as the Conduct of Election Rules, 1961**, to enable overseas electors to vote through this system.

3) Arctic Sea Ice Melting: A recent study in the Nature journal suggests that the melting of Arctic Sea ice in summer is inevitable in the coming decades.

Arctic Amplification:

- **Arctic amplification refers to the phenomenon where changes in surface air temperature and net radiation balance produce larger effects at the poles**, specifically in the **Arctic region**.
- **Causes:** It is a **result of global warming caused by anthropogenic forces** or human activities since pre-industrial times, **leading to a 1.1-degree Celsius increase** in the Earth's average temperature.
- **Consequences:**
 - Weakening of Polar Jet Streams.
 - Melting of Ice.
 - Changes in Composition of Sea Water.

- Affects Arctic Fauna.
- Gaseous Emissions through permafrost thawing.

14TH JUNE

1) Tax Devolution: Recently, the Union government has released the 3rd Installment of **Tax Devolution** to state governments amounting to Rs 1,18,280 crore in June 2023, as against the normal monthly **devolution of Rs 59,140 crore**.

- **Article 280(3)(a)** of the Constitution of India mandates that the Finance Commission (FC) has the responsibility to **make recommendations regarding the division of the net proceeds of taxes** between the Union and the states.

Key Recommendations of 15th Finance Commission:

- **Share of States in Central Taxes (Vertical Devolution):** The share of states in the central taxes for the 2021-26 period is **recommended to be 41%**, same as that for 2020-21.
- **Horizontal Devolution (Allocation between the States):** For horizontal devolution, it has suggested **5% weightage to demographic performance, 45% to income, 15% each to population and area, 10% to forest and ecology and 2.5% to tax and fiscal efforts**.
- **Revenue Deficit Grants to States:** It has recommended **post-devolution revenue deficit grants amounting to about Rs. 3 trillion** over the five-year period ending FY26.
- **Performance Based Incentives and Grants to States:** These grants revolve around four main themes – **social sector, rural economy, governance and administration, and the power sector**.
- **Grants to Local Governments:** Along with grants for municipal services and local government bodies, it includes **performance-based grants for incubation of new cities** and health grants to local governments.

2) Governor's Role in State Legislature: Issues have recently emerged in several Indian states **regarding**

the interaction between Chief Ministers and Governors concerning the passing of bills. Chief Ministers have expressed concerns that **Governors have delayed acting on bills presented for their assent.**

- **Article 153** says that there **shall be a Governor for each State**. One person can be appointed as Governor for two or more States.
- The **Governor is appointed by the President by warrant under his hand** and seal and holds office under the pleasure of the President (**Article 155 and 156**).
- **Article 161** states that the **governor has the power to grant pardons, reprieves, etc.**
- **Article 163** states that **there is a council of ministers headed by the Chief Minister to aid and advise the Governor** in the exercise of his functions, except some conditions for discretion, such as **in case of failure of constitutional machinery in the State (Article 356)**.
- **Article 200 of the Indian Constitution outlines the process for a Bill passed by the Legislative Assembly of a State** to be presented to the Governor for assent, who may either **assent, withhold assent or reserve the Bill for consideration** by the President.
- Article 201 states that when a **Bill is reserved for the consideration** of the President, the President may assent to or withhold assent from the Bill.
- Under **Article 361 of the Constitution**, the **Governor has complete immunity from court proceedings** for any act done in the exercise of their powers.

3) Interlocking System in Indian Railways: An investigation is underway to determine the cause of a **devastating train crash in Odisha's Balasore district**. The incident has raised concerns about the electronic track management system used by the railways.

- **Interlocking System** refers to a crucial safety mechanism used to control train movements and

ensure safe operations at railway stations and junctions.

- **Electronic Interlocking (EI):** It employs **computer-based systems** and electronic equipment to control **signals, points, and level-crossing gates**.
- As of 2022, **2,888 stations in India were equipped with an electronic interlocking system** — comprising **5% of the Indian Railways network**.
- **Components of Electronic Interlocking:**
 - **Signal:** Signals use **light indicators to direct trains**.
 - **Point:** Points are **movable sections of tracks** that enable trains to change lines.
 - **Track Circuit:** Electrical circuits installed on tracks **detect the presence of a train between two points**.
 - **Additional Components:** Electronic systems, communication devices, and other equipment.
- **Functionality of the System:**
 - **Command Reception and Route Setting:** The electronic interlocking system receives **commands from operators or automated control systems**.
 - **Alignment and Interlocking:** Once the route is determined, the **system aligns the necessary track switches (points) and interlocks signaling devices**.
 - **Signal for Train Proceeding:** Trains are given **signals to proceed based on the track's direction and the absence of obstructions on diverging tracks**.
 - **Collision Prevention:** By monitoring track circuits, the **system prevents multiple trains from running on the same block or conflicting paths**.
 - **Point Locking:** Points (switches) remain locked in position until certain conditions are met, **such as the train crossing a specific section of the track or the signal to proceed being withdrawn**.
 - **Failure Indication:** In the event of a failure or malfunction, the system alerts operators or maintenance personnel using **red light signal**.

15TH JUNE

1) Compromise Settlement for Willful Defaulter:

RBI: Recently, The **Reserve Bank of India (RBI)** has introduced a circular allowing willful defaulters and companies involved in fraud to opt for compromise settlements or technical write-offs.

Non-Performing Asset:

- **NPA refers to a classification for loans or advances** that are in **default or are in arrears on scheduled payments of principal or interest.**
- **Gross NPA: sum of all the loans that have been defaulted by the individuals.**
- **Net NPA: amount that is realized after provision amount has been deducted from the gross non-performing assets.**
- **Bad Bank:** The bad bank in India is called **National Asset Reconstruction Ltd (NARC).**
- **The Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002:** The **SARFAESI Act allows banks and financial institutions** to take possession of collateral assets and sell them to recover outstanding dues without the intervention of the court.
- **The Insolvency and Bankruptcy Code (IBC), 2016:** The **IBC provides a comprehensive framework** for the insolvency and bankruptcy resolution process in India.
- **The Recovery of Debts Due to Banks and Financial Institutions (RDDBFI) Act, 1993:** The **RDDBFI Act establishes Debt Recovery Tribunals (DRTs)** for the expeditious adjudication and recovery of debts due to banks and financial institutions.
- **The Indian Contract Act, 1872:** The Indian Contract Act **governs the contractual relationship between lenders and borrowers.**

2) Indo-US Cooperation in Agriculture: Examining the historical involvement of the **United States** in the **agricultural progress of independent India** holds significance within the framework of Prime Minister of India's imminent visit to the US.

Role of US in the Agricultural Development of India:

- **Development of Universities:** Govind Ballabh Pant established the **first agricultural university in Pantnagar, Uttarakhand, based on the US land-grant model.**
- **Green Revolution's Seeds:** The **Green Revolution (started by Norman Borlough of US)** entailed breeding semi-dwarf varieties with strong stems that didn't lodge. These could **"tolerate" high fertilizer application.** The more the inputs (nutrients and water), the more the output (grain) produced. By 1966-67, **farmers were planting these in large scale and India,** from being an importer, turned **self-sufficient in wheat.**

3) Squash World Cup 2023: Recently, the **WSF (World Squash Federation)** board has decided the Venue for the 2023 **Squash World Cup** to be held in **Chennai, Tamil Nadu.**

- The Squash World Cup is an **International Tournament** in which national team squads **represented by two men and two women play** ties of four matches against each other.
- The first Squash World Cup took place in **1996 in Petaling Jaya, Malaysia,** with 16 teams participating.
- 2023's event has introduced some changes. Teams now have **gender parity, meaning equal representation** of male and female players. Additionally, the games are played to seven points, which is a **first in the history of the World Squash Federation.**

16TH JUNE

1) The Hiroshima AI Process for Global AI

Governance: Recently, the annual **G7 Summit** held in Hiroshima, Japan, initiated the **Hiroshima AI Process (HAP),** which is likely to conclude by **December 2023,** signaling a significant step towards regulating **Artificial Intelligence (AI).**

Role of HAP in resolving the issue of IPR in relation to Generative AI:

- Currently, there is ambiguity regarding the **relationship between AI and IPR (Intellectual Property Rights)**, leading to conflicting interpretations and legal decisions in different jurisdictions.
- The HAP can contribute by **establishing clear rules and principles regarding AI and IPR**, helping the G7 countries reach a consensus on this matter.
- One specific area that can be addressed is the application of the **“Fair Use” doctrine**, which permits certain activities such as **teaching, research, and criticism without seeking permission from the copyright owner**.
- By developing a common guideline for G7 countries, the **HAP can provide clarity on the permissible use of copyrighted materials** in machine learning datasets as fair use, with certain conditions. Additionally, it can **distinguish between the use of copyrighted materials for machine learning specifically** and other AI-related uses.

2) National Commission for Scheduled

Castes: The **National Commission for Scheduled Castes (NCSC)** has recently issued a notice to **Zomato**, regarding an advertisement that was deemed **“inhuman” and casteist**.

- The **NCSC is a constitutional body established with a view to provide safeguards against the exploitation of Scheduled Castes** and to promote and protect their **social, educational, economic and cultural interests**.
- Initially, the **constitution provided for the appointment of a Special Officer under Article 338**. The special officer was designated as the Commissioner for Scheduled Castes and Scheduled Tribes.
- **65th Amendment Act, 1990 amended Article 338 of the Constitution** and replaced the one-member system with a multi-member **National Commission for Scheduled Castes (SC) and Scheduled Tribes (ST)**.

- **89th Amendment Act, 2003 amended Article 338** and **separated** the erstwhile body into **NCSC and NCST**.
- The NCSC comprises a **Chairperson, a Vice-Chairperson, and three additional Members**. These positions are **filled through the President’s appointment, indicated by a warrant under his hand and seal**.

3) SIPRI Yearbook 2023: Recently, Stockholm International Peace Research Institute

(SIPRI) Yearbook 2023 revealed that China could potentially have as many **Intercontinental Ballistic Missiles (ICBMs) as U.S. or Russia by the end of the decade**.

- **The nine nuclear-armed states**, including the **United States, Russia, and China**, continue to modernize and expand their nuclear arsenals, deploying **new nuclear-armed or nuclear-capable weapon systems in 2022**.
- **Russia and the United States possess almost 90% of all nuclear weapons**, with **relatively stable sizes** of their respective nuclear arsenals.
- Transparency and **dialogue regarding nuclear forces declined** between Russia and the United States following Russia’s invasion of Ukraine.
- India’s **nuclear arsenal also expanded**, increasing from **160 warheads in 2022 to 164 warheads in 2023** and that of Pakistan from 165 to 170 in the same period.
- China’s nuclear arsenal **grew from 350 warheads in January 2022 to 410 warheads in January 2023**, according to the SIPRI.

17TH JUNE

1) Transgenic Crops: Recently, Gujarat, Maharashtra and Telangana, have deferred a proposal, approved by the **Centre’s Genetic Engineering Appraisal Committee (GEAC)**, to test a new kind of **Transgenic Cotton Seed that contains a gene, Cry2Ai**.

- Transgenic crops are plants that have been modified **through genetic engineering techniques**.

These crops have had **specific genes inserted into their DNA** to give them new characteristics or traits that are not naturally found in the species through traditional breeding methods.

- There is a **slight difference between GMO and transgenic organism**. Although both have altered genomes, a transgenic organism is a **GMO containing a DNA sequence or a gene from a different species**. While a GMO is an animal, plant, or microbe **whose DNA has been altered** using genetic engineering techniques.
- In India, only **Cotton is currently commercially cultivated as a GM crop**. Trials are underway for other crops like brinjal, tomato, maize, and chickpea using transgenic technology.
- The GEAC approved the **environmental release of GM mustard hybrid DMH-11, bringing it closer to full commercial cultivation**.

2) Lingering Health Effects of Bhopal Gas

Tragedy: The **1984 Bhopal Gas Tragedy**, one of the world's worst industrial disasters, continues to cast a long shadow on the health of future generations, **even those who were not directly exposed to the toxic gas**.

- The **Bhopal gas tragedy** was one of the **worst industrial accidents in history that occurred on the night of 2-3 December 1984** at the **Union Carbide India Limited (UCIL) pesticide plant in Bhopal, MP**.
- The exact cause of the gas leak is still disputed between corporate negligence or employee sabotage. However, some of the factors that contributed to the disaster are:
 - The **UCIL plant was storing large quantities of MIC, a highly reactive and volatile chemical**, in poorly maintained tanks.
 - The plant was operating with **reduced staff and safety standards** due to financial losses and market competition.
 - On the night of the disaster, **a large amount of water entered one of the MIC storage tanks**

(E610), either due to a faulty valve or a deliberate act of sabotage by a disgruntled worker.

- A 2019 report by the **UN's International Labour Organization (ILO)** said at least 30 tonnes of the poisonous gas affected more than 600,000 workers and nearby inhabitants.

Laws Passed:

- Bhopal Gas Leak Disaster (Processing of Claims) Act, 1985.
- Environment (Protection) Act, 1986.
- Public Liability Insurance Act of 1991.
- Civil Liability for Nuclear Damage Act 2010.

3) Daitari Greenstone Belt: A recent research has unveiled remarkably well-preserved volcanic and sedimentary rocks in **Singhbhum craton, eastern India**, dating back 3.5 billion years.

- The study focused on volcanic and sedimentary rocks that **formed approximately 3.5 billion years ago** in the **Daitari greenstone belt** in the Singhbhum Craton in east India.
- The researchers discovered that the Daitari greenstone belt shares **similar geological characteristics** with the greenstones found in **South Africa's Barberton and Nondweni areas**, as well as those in **Australia's Pilbara Craton**.
- The study revealed that **sub-marine volcanic eruptions** were prevalent between **5 and 3.3 billion years ago**. These eruptions left behind **pillow lava formations** within the greenstone rocks of the **Singhbhum, Kaapvaal, and Pilbara cratons**.
- These sedimentary rocks provide valuable insights into sub-marine environments and were dated to approximately 3.5 billion years ago using precise **detrital U-Pb zircon data**.

19TH JUNE

1) Central Bureau of Investigation: Recently, the Tamil Nadu government has announced that it has withdrawn the general consent given to the **Central Bureau of Investigation (CBI)**, under Section 6 of

the **Delhi Special Police Establishment (DSPE) Act, 1946**.

Need for institutional reforms in the CBI:

- **Independence and Autonomy:** Establishing the **CBI as an independent investigative agency separate** from the administrative control of the Central Government.
- **Jurisdiction and Coordination:** **Clarifying its jurisdictional boundaries to avoid conflicts** with state police forces and ensuring smooth coordination and strengthening collaboration and information sharing with state agencies to streamline investigations.
- **Legal Framework:** **Reviewing and updating existing laws** to enhance its **investigative powers, providing statutory backing** to investigative techniques, and **streamlining legal procedures to expedite investigations and trials**.
- **Technological Upgradation:** Investing in **advanced technology and infrastructure** to equip the CBI with modern tools for digital forensics, data analysis, and crime mapping.

2) Ceiling on Stocks of Wheat and Pulses: Recently, the Ministry of Consumer Affairs, Food & Public Distribution has imposed **limits on Stock of Wheat** that can be held by traders, wholesalers, retailers, big chain retailers and processors to manage the overall **food security** and to **prevent hoarding and unscrupulous speculation**.

- The Ministry has also imposed stock limits on **Tur and Urad** by invoking the **Essential Commodities Act (ECA), 1955** due to same reasons.

Reasons for stock limits:

- **Concerns over Wheat Production:** Unseasonal rains, hailstorms, and higher temperatures in Feb 2023 raised **concerns about the overall wheat output**. There are indications of a **potential 20% decrease in wheat procurement** compared to initial estimate.

- **Invoking ECA 1955 for Tur and Urad:** Tur prices have risen **since mid-July 2022** amid slow progress in **Kharif sowing** as compared to 2021 due to **excess rainfalls and water logging conditions** in some parts of major Tur growing states of **Karnataka, Maharashtra and MP**.

3) Oslo Forum and Afghan Peace Talks: Recently, **for the first time, India participated in Norway's Oslo forum organized for peace talks on Afghanistan**.

How should India handle the situation:

- **Maintain a Balanced Approach:** India should adopt a balanced approach in its dealings with Afghanistan, avoiding excessive alignment or confrontation. While **expressing concerns about human rights, terrorism, and the treatment of minorities**, India can also explore areas of common interest such as **trade, cultural exchange, and regional connectivity**.
- **Support Afghan Reconciliation:** India can **actively support efforts for an inclusive and representative government** in Afghanistan. This involves advocating for an **inclusive political process** that accommodates **the interests of all ethnic and religious groups in the country**.
- **Engage with Regional Players:** India should engage with regional players, particularly neighbouring countries, to coordinate their efforts and ensure a collective approach to stability in Afghanistan.
- **Focus on Development Assistance:** India has been a significant contributor to Afghanistan's development, providing infrastructure projects, education, and humanitarian aid.
- **Strengthen International Partnerships:** India should work closely with international partners, including the **United States, European Union, United Nations, and regional organizations like the South Asian Association for Regional Cooperation (SAARC)**, to collectively address the evolving situation in Afghanistan. Collaborative efforts can help shape a more stable and secure environment in the country.

21ST JUNE

1) Remittance Inflow: According to the **World Bank's latest Migration and Development Brief**, India, which saw a record-high of **USD 111 billion in remittances in 2022**, is expected to experience **minimal growth of just 0.2% in remittance inflows in 2023**.

Factors Affecting Remittance Flows to India:

- **Top Sources of Remittances for India:** Approximately 36% of India's remittances originate from high-skilled Indian migrants in three high-income destinations: the **US, United Kingdom, and Singapore**.
- **Threats to Remittance Flows to India:**
 - **Slower Growth in OECD economies:** The **Organisation for Economic Co-operation and Development (OECD)** is a grouping of **38 high-income democratic countries**. These countries are **major destinations for high-skilled and high-tech Indian migrants, who account for almost 36% of India's remittances**.
 - **Lower Demand for Migrants in GCC countries:** **GCC** is a political and economic alliance of six Middle Eastern countries—**Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman**. These countries are the **single largest destination for less-skilled South Asian migrants, who account for about 28% of India's remittances**.

2) Addition of More Castes to Central OBC List: **National Commission for Backward Classes (NCBC)** is processing the request for the **approval of about 80 more castes in six States**, (Maharashtra, Telangana, Andhra Pradesh, Himachal Pradesh, Punjab, and Haryana) for the inclusion in the OBC list.

- The term OBC includes all classes of citizens who are socially and educationally backwards
- NCBC is a **constitutional body that examines requests** for inclusion of castes in Central OBC list.
- **Under Article 15(4)** of the Constitution, **the State has the power to make special provisions for the advancement of any socially and educationally backward class i.e., the OBC**.
- **Under Article 16(4)**, the state is empowered to enact laws **for the reservation of appointments or posts in favour of OBCs**.

- Union Government has added **16 communities to Central OBC list in Himachal Pradesh, Bihar, Jharkhand, Madhya Pradesh and Jammu and Kashmir** since 2014.

3) Miyawaki Plantation Method: Prime Minister of India in his recent episode of 'Mann ki Baat', **discussed the concept of Miyawaki plantation**. He **shed light on the Japanese technique of establishing dense urban forests in limited spaces**.

- It was named after Japanese botanist **Akira Miyawaki**, this method involves **planting two to four different types of indigenous trees** within every square meter.
- The **dense green cover of indigenous trees plays a key role in absorbing the dust particles of the area** where the garden has been set up. The plants also **help in regulating surface temperature**.

22ND JUNE

1) Bonn Climate Meet: Recently, Delegates to the **Paris Agreement** met in Bonn, Germany, paving the way to some key decisions for the **UN Climate Conference (COP 28)** in Dubai in 2023.

Key Highlights:

- **Global Stocktake:** Technical discussions were held on the **Global Stocktake (GST)**, producing a short Framework on the **elements to be included in the stocktake exercise**.
- **Advancing Post-2030 Ambition:** Parties and civil society representatives used the meeting to focus on post-2030 ambition, particularly through **advancing the work on the Global Stocktake**.
- **Funding Arrangements for Loss and Damage:** Discussions focused on implementing **balanced funding arrangements to address Loss and Damage (L&D)** caused by climate change, particularly for vulnerable communities.
- **Climate Finance Alignment:** The EU emphasizes the **need to align global financial flows** with the goals of the Paris Agreement.
- **Post-2025 Climate Finance Goal and Funding Arrangements:** Constructive and substantive

discussions took place in the technical expert dialogues regarding the new **post-2025 climate finance goal and funding arrangements**, including a fund for loss and damage.

- **Urgency of Adaptation:** Developed countries, including the EU, acknowledge the **urgency of addressing adaptation needs**.

2) Flaws In NIRF Ranking: The National Institution

Ranking Framework (NIRF), established by the Ministry of Education, recently announced its national rankings for universities which have been found flawed by various experts.

- The NIRF releases rankings across various categories: **'Overall', 'Research Institutions', 'Universities', and 'Colleges'**, and **specific disciplines** like engineering, management, pharmacy, law, etc.

NIRF ranks institutes by their total score; it uses five indicators to determine this score:

- Teaching, Learning & Resources (30% weightage).
- Research and Professional Practice (30%).
- Graduation Outcomes (20%).
- Outreach and Inclusivity (10%).
- Perception (10%).

- **Issues with NIRF Ranking:** Academic communities are worried about how the indicators are made and the methods used. The evaluation **focuses on research and professional practices, with attention to bibliometric measures** sidelining other forms of intellectual contributions, such as **books, book chapters, monographs, non-traditional outputs like popular articles, workshop reports, and other forms of grey literature**.

3) International Day of Yoga 2023: The 9th **International Day of Yoga (IDY)** was celebrated on June 21st with various events and initiatives taking place across the country.

Key Highlights:

- **Promoting Tribal Artisans:** **Tribal Cooperative Marketing Development Federation of India Ltd (TRIFED)** collaborated with the **Ministry of Ayush** to supply yoga mats exclusively **made by tribal artisans**.
- **Ocean Ring of Yoga:** Indian Navy and Merchant ships will organize **yoga demonstrations at ports** and vessels of friendly countries, fostering global participation.
- **Yoga from the Arctic to Antarctica:** Coordination between the Ministry of External Affairs (MEA) and the Ministry of Ayush to organize yoga events in countries along the **Prime Meridian line and UN member countries**, including **Himadri and Bharati** research stations.
- **Yoga Bharatmala and Yoga Sagarmala:** Indian armed forces, including **Indo-Tibetan Border Police (ITBP), Border Security Force (BSF), and Border Roads Organization (BRO)**, will form a chain of yoga demonstrations, including yoga demonstrations on flight deck of **INS Vikrant**.
- **National Level Initiatives:** The Prime Minister will **lead yoga at the United Nations Headquarters in New York**, demonstrating a global commitment to yoga.

23rd JUNE

1) Global Gender Gap Report 2023: WEF: Recently, 17th edition of the **Global Gender Gap Report 2023** has been released by the **World Economic Forum (WEF)**, evaluating the **status of Gender Parity** across 146 countries.

Status of India:

- **India's Rank:** India has made significant progress, **rising from 135th (in 2022) to 127th** out of 146 countries in the report's 2023 edition, indicating an improvement in its ranking.
- **Gender Parity in Education:** India has achieved **parity in enrolment across all levels** of education, reflecting a positive development in the country's education system.
- **Economic Participation and Opportunity:** India's progress in economic participation and

opportunity remains a challenge, **with only 36.7% gender parity achieved** in this domain.

- **Political Empowerment:** India has made strides in political empowerment, **achieving 25.3% parity** in this domain. Women represent **15.1% of parliamentarians**, which is the highest representation **since the inaugural report in 2006**.
- **Health and Survival:** There is a 1.9%-point improvement in India's sex ratio at birth, **after more than a decade of slow progress**.

2) **Anxiety Disorders:** Recently, there has been a growing recognition of the **impact of anxiety disorders** on individuals' **daily lives and overall well-being**. These common mental health conditions affect a significant portion of the population and can lead to persistent distress and impairment.

- Anxiety disorders are a **group of mental health conditions** that involve **excessive and irrational fear and worry** about various aspects of life.
- **Historical Context of Anxiety Disorders:** Anxiety disorders were historically **classified within mood disorders** until the late 19th century. **Sigmund Freud** introduced the concept of "**anxiety neurosis**" to differentiate **anxiety symptoms from depression**
- **Prevalence:** According to India's **National Mental Health Survey**, neurosis and stress-related disorders have a **prevalence of 3.5% in India**.
- **Causes for Anxiety Disorders:**
 - Genetics: **family history of anxiety**
 - Brain Chemistry: **imbalances in neurotransmitters**
 - Personality Traits: such as being **shy, perfectionistic, or prone to stress**
 - Life Events: **Traumatic or stressful experiences, such as abuse, violence, loss, or illness**
 - **Medical Conditions:** underlying **physical health issues**
- **Treating Anxiety Disorders:** Treatment decisions are based on the severity, persistence, and impact of symptoms, as well as patient preferences. **Evidence-based interventions** include **selective serotonin reuptake inhibitors (SSRIs) and cognitive-behavioral therapy (CBT)**

3) **Airlines' Greenwashing and Contributing to Carbon Pollution:** A lawsuit has been filed against **Delta Air Lines in the US**, accusing the company of engaging in **Greenwashing** by making false and misleading claims about its Sustainability Efforts and being a "Green" and carbon-neutral airline

Impact of Greenwashing on Carbon Credits:

- **Informal Markets:** There are credits available for all kinds of activities such as for growing trees, for planting a certain kind of crop, for installing **energy-efficient equipment in office buildings**. Greenwashing leads to transactions being flagged for **lack of integrity and double counting**
- **Credibility:** Countries like India or Brazil had accumulated **huge carbon credits under the Kyoto Protocol** and wanted these to be transitioned to the new market being set up under the **Paris Agreement**.
- **Lead to Lack of Transparency:** Greenwashing can lead to a **lack of transparency in the carbon offset market**
- **Diversion from Real Emission Reductions:** Greenwashing practices may divert attention and resources away from genuine efforts to reduce carbon emissions

24th JUNE

1) **India's Jet Engine Deal with the US:** Recently, India has announced a significant agreement between the American multinational corporation **General Electric (GE)** and **Hindustan Aeronautics Limited (HAL)**, during Indian PM's state visit to the US. The deal involves the transfer of critical jet engine technologies and the manufacturing of **GE's F414 engine** for India's **indigenous Light Combat Aircraft (LCA) Tejas Mk2**.

Significance of the Deal:

- **Self-reliance in Critical Technologies:** Manufacturing engines for combat aircraft requires advanced technology and metallurgy, which only **US, Russia, UK and France have mastered**.
- **A Significant Component of iCET:** The agreement for the transfer of technology was discussed in the talks between **India's Defence Minister and the US Secretary of Defence earlier in June 2023** and was a key highlight of **India's National Security Advisor's meeting with his US counterpart** when the **US-India iCET** was operationalized.
- **Development Efforts by DRDO:** The DRDO's **Gas Turbine Research Establishment (GTRE)** initiated

the development of the **GTX-37 engine for the LCA**, followed by the ambitious Kaveri engine project in 1989, but did not meet much success.

- **End of Technology Denial Regime:** This pact finally lays to rest what former PM of India (in 2008) had described in as the “**technology denial regime**” imposed on India by the West, led by the US.

2) Coal India and CCI: The **Supreme Court of India** has recently dismissed **Coal India Ltd (CIL)**'s appeal, which affirmed the **Competition Commission of India (CCI)**'s **authority to examine CIL's conduct under the Competition Act, 2002.**

- In 2017, the CCI imposed a penalty of Rs. 591 crores on CIL for imposing unfair and discriminatory conditions in **fuel supply agreements (FSAs)** with power producers.

CIL's Stance:

- **Principles of “Common Good”:** CIL operates based on the principles of promoting the “**common good**”.
- **Monopoly Status:** CIL refers to the **Nationalization Act of 1973** to assert its position as a “**monopoly**”.
- **Differential Pricing:** CIL implements **differential pricing to incentivize captive coal production.**
- **Implications for National Policies:** CIL's coal supply supports national policies.

CCI's Stance:

- **Raghavan Committee Report (2020):** The CCI referred to the **Raghavan Committee report (2020)**, which concluded that **state monopolies like CIL are not in the best interests of the nation.**
- **Non-Essential Commodity Classification:** The CCI emphasized that **coal is no longer classified as an “essential commodity” since 2007.**
- **Impact on Consumers:** The CCI highlighted the significant **impact of irregular**

prices and supply of coal on power generation companies.

- **Government Ownership and Supply Allocation:** CIL's significant coal supplies to power companies connect coal supply to the welfare of the nation.
- **Ruling of the Supreme Court:** The SC dismissed CIL's argument for **exemption based on the Nationalization Act of 1973**, ruled that it cannot be exempted from the Competition Act.

3) China Blocks Proposal to Blacklist Pakistan-Based Terrorist: China's recent move to block a **proposal at the United Nations (UN)** to designate a **Pakistan-based LeT terrorist as a global terrorist** has drawn attention and raised concerns among the international community.

1267 Al Qaeda Sanctions Committee:

- The committee is part of the **UN Security Council** and its job is to **implement international sanctions against terrorists.**
- The **Al Qaeda committee was established as the Al-Qaida and Taliban Sanctions Committee on October 15, 1999**, after Security Council Resolution 1267 **designated al-Qaeda and the Taliban as terrorist bodies.**
- Under the **Committee regime**, any UN member state can **propose the name of an individual or group to be designated as a terrorist. A committee member can block blacklisting proposals by raising objections or applying a “technical hold” on a proposal.**
- An individual or entity listed as a terrorist is subjected to an **assets freeze, travel ban, and arms embargo.**

26th June

1) UPI Payments: Empowering Users, Challenging Banks: The rapid rise in **United Payments Interface (UPI)** transactions in India has led to the introduction of **various daily limits** by banks and apps, creating a complex landscape of limitations in terms of value and volume.

Effects of these Trends for Users and Banks:

Positive Impacts:

- Convenience and Efficiency;
- Financial Inclusion;
- Reduced Cash Dependency;
- Enhanced Transparency;
- Boost to Digital Economy.

Negative Impacts for users:

- **UPI as an Alternative to Petty Cash:** Consumers are increasingly using UPI for **smaller transactions, replacing petty cash**. The **declining value per transaction** over time reflects this trend.
- **Limited Transaction Flexibility:** The complex web of limitations set by different apps and banks on UPI transactions creates confusion and **restricts users' flexibility in terms of transaction volume and value**.
- **Increased Transaction Failures.**

Negative Impacts for banks:

- **Infrastructure Challenges for Banks.**
- **Security and Fraud Prevention:** With the rise in UPI transactions, the risk of **cyber threats** and fraudulent activities also increases.

2) Face Authentication for PM-Kisan

Scheme: Recently, the Ministry of Agriculture & Farmers Welfare, Government of India has rolled out **Face Authentication Feature** in the **PM-Kisan app** to enhance the **efficiency and accessibility of welfare schemes**.

- Under the scheme, the **Centre transfers an amount of Rs 6,000** per year, in three equal installments, directly into the **bank accounts of all landholding farmers** irrespective of the size of their land holdings.
- It is a **Central Sector Scheme** with 100% funding from the Government of India.

- The entire responsibility of **identification of beneficiary farmer families rests with the State / UT Governments**.
- **Objective:** To supplement the **financial needs of the Small and Marginal Farmers** in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of each crop cycle.
- The PM-KISAN Mobile App developed and designed by the **National Informatics Centre** in collaboration with the **Ministry of Electronics and Information Technology** has been launched.
- Over 11 crore farmers across the country **have availed the PM-Kisan scheme**, indicating its widespread reach and impact.

3) Manipur Invokes RBI's Riot Provisions: Recently, the Manipur government has invoked the Riot Provision of the **Reserve Bank of India (RBI)** in response to a **Grave Situation in the State** marked by riots and violence.

- The Provisions are as per Chapter No. 7 of the **"Reserve Bank of India (Relief Measures by Banks in Areas Affected by Natural Calamities) Directions, 2018."** The Provisions specifically addresses **"Riots and Disturbances"**.
- The provisions of these Directions shall apply to **every Scheduled Commercial Bank** (including Small Finance Banks (SFBs) and **excluding Regional Rural Banks (RRBs)** licensed to operate in India by RBI.
- In the case of crop loans, if the **loss ranges between 33% and 50%**, borrowers are eligible for a maximum repayment period of two years. If the crop loss exceeds 50%, **the repayment period can be extended up to a maximum of five years**.
- If the crop is damaged without harm to productive assets, banks can **reschedule installment payments** for the affected year and extend the loan period by one year.
- Banks will evaluate borrowers' credit needs, **follow loan approval procedures**, and may offer

collateral-free consumption **loans up to Rs 10,000** to existing borrowers without personal guarantees, even if the value of assets is lower than the loan amount.

- For the people who have lost their documents due to the calamity of riots, **the banks need to open new accounts for such people.**

27th June

1) India-Egypt Relations: Recently, the Indian Prime Minister (PM) has visited Egypt for the **first time since 1997** to discuss bilateral relations between **India and Egypt.**

Opportunities for India:

- India aims to combat **Religious Extremism by supporting moderate countries** in the region and promoting social reforms.
- Egypt holds a strategically significant position with the **Suez Canal, through which 12%** of global trade passes.
- Egypt seeks investments in infrastructure — **Metro projects in Cairo and Alexandria, a Suez Canal economic zone, a second channel of the Suez Canal,** and a new administrative capital in a Cairo suburb.
- Egypt is a large country (population 105 million) and economy (USD 378 billion). It is politically stable, and its **socio-economic conditions are quite similar to India.**
- Moreover, the Egyptian government has an ambitious infrastructure development agenda, with 49 mega projects including the **construction of a New Cairo** (USD 58 billion), a USD 25 billion nuclear power plant and a USD 23 billion high-speed rail network.

Challenges for India:

- The huge financial commitments of the Egyptian economy have **coincided with a static economy,** pandemic, global slowdown and the **Ukraine conflict.**

- Egypt's foreign debt is over USD 163 billion (43% of the GDP) and its net foreign assets are minus USD 24.1 billion.
- India's concerns regarding China in Egypt revolve around China's growing economic influence, **its expanding presence in strategic areas,** its bilateral trade agreements, which can have potential implications for **India's regional interests and security.**

2) Shorter Medical Course to Address Rural Doctor Shortage: Recently, the West Bengal Chief Minister proposed a Shorter Medical Course for medical practitioners who would serve in **primary health centers (PHCs)** in rural areas.

- A shorter medical course proposed in India is a **three-year diploma course** for medical practitioners who would serve in primary health centers (PHCs) in rural areas. This course is different from the regular **MBBS course.**
- The shorter medical course focuses on providing **first-level care in rural areas,** while the regular MBBS course covers **all aspects of medical science and practice.**

Benefits:

- **Increased availability of medical professionals** in rural areas.
- Rapid response to healthcare needs and emergencies.
- Cost-effective solution for **resource-constrained regions.**
- Enhanced primary healthcare services in rural communities.

Drawbacks:

- **Limited specialization** in complex medical fields.
- Insufficient exposure to **rural healthcare conditions.**

- Potential dilution of **medical education standards**.
- Does not address underlying **structural issues contributing** to the shortage of doctors.

3) WHO Issues Alert for Substandard Cough Syrups

Produced in India: World Health Organization

(WHO) has raised concerns over substandard cough syrups made in India, **linked to 300 child deaths, containing high levels of diethylene glycol and ethylene glycol, posing health risks.**

- Ethylene glycol and diethylene glycol are **toxic alcohols with a slightly sweet taste**.
- Contamination of cough syrups with these glycols can occur, especially in products containing.
- **Diethylene glycol and ethylene glycol are adulterants** that are sometimes illegally used as solvents in liquid drugs as an alternative to non-toxic solvents such as **glycerin or propylene glycol to cut costs**.
- In addition to its use in **antifreeze, ethylene glycol is used as an ingredient in hydraulic fluids, printing inks, and paint solvents** and diethylene glycol is used in the commercial preparation of **antifreeze, brake fluid, cigarettes, and some dyes**.

29th June

1) Titan Tragedy Lessons for Proposed Indian

Submersible Dive: Scientists are preparing for a Deep Sea Dive with the Vehicle **Matsya-6000 in late 2024 similar** to the Titan **submersible**, which recently went missing.

- Matsya-6000 is an indigenous deep-sea dive submersible being developed by the **National Institute of Ocean Technology (NIOT)** in India. It is **designed to explore the depths of the Indian Ocean at a depth of about 6,000 meters**.
- The mission's primary objective is to **support India's energy requirements and explore ocean resources**.

- The submersible features a **spherical titanium hull**, which is crucial for withstanding the immense pressure at great depths.
- The recent incident has highlighted the **need for thorough safety evaluations** and repeated testing.

2) ART Regulations: Impact on Cost and Conception

Opportunities: Recently, industry insiders have raised concerns about the restrictions imposed by the provisions of the **Assisted Reproductive Technology (ART) Regulations Act, 2021** introduced by the Health Ministry.

Features of the ART Regulations Act, 2021:

- Every ART clinic and bank must be registered under the **National Registry of Banks and Clinics of India**, maintaining a central database.
- Registered ART banks can screen, collect, and store semen from **men aged 21-55 years**. Eggs can be stored from **women aged 23-35 years**.
- Oocyte donors must be **ever-married women with at least one living child of their own (minimum three years of age)**.
- An **ART bank cannot supply gametes from a single donor to more than one commissioning couple** (couple seeking services).
- Children born through ART are deemed the **couple's biological child**, and the **donor has no parental rights**.
- Written informed consent is required from both the couple and the donor for ART procedures.
- The National and State Boards formed under the **Surrogacy Act 2021** will regulate ART services.
- Parties seeking ART services must provide **insurance coverage in favor of the oocyte donor**, covering any loss, damage, or death of the donor.
- Clinics are prohibited from offering to provide a **child of pre-determined sex, ensuring non-discriminatory practices**.

- Offences include abandonment or exploitation of children born through ART, sale or trade of embryos, and exploitation of the couple or donor.

3) Indian Ocean Dipole: The Indian Monsoon is expected to be influenced by the **El Nino phenomenon in 2023**, there are also anticipations of a positive **Indian Ocean Dipole (IOD)** developing, which could potentially offset the **impact of El Nino**.

- IOD, sometimes referred to as the **Indian Nino**, is similar to the **El Nino** phenomenon, **occurring in the relatively smaller area** of the Indian Ocean between the **Indonesian and Malaysian coastline in the east and the African coastline near Somalia** in the west.
- In the Indian Ocean, IOD exhibits an **ocean-atmosphere interaction** that closely resembles the fluctuations observed during El Niño events in the **Pacific Ocean**. However, the IOD is considerably **less powerful compared to El Niño, resulting in relatively minimal impacts**.
- In 2019 the IOD event developed during the late monsoon but was **so strong that it compensated for the deficit rainfall** during the first month of the monsoon season (June had 30% deficiency that year).

30th June

1) Need for UCC in India: Indian Prime Minister in his recent address expressed his support for the **implementation of a Uniform Civil Code (UCC) in India**, stating that **India cannot function efficiently with a system of “separate laws for separate communities”**.

Arguments in Favour of UCC:

- It will promote **national integration and secularism** by removing the distinctions and contradictions based on religious personal laws and creating a common identity for all citizens.

- It would **ensure gender justice and equality by abolishing the discriminatory and oppressive practices** against women in various personal laws, such as **polygamy, unequal inheritance, etc.**
- A **UCC would simplify the legal framework** by consolidating and harmonizing various laws into a single code.
- A UCC is the sign of a modern progressive nation implying that it has **moved away from caste and religious politics**.

Arguments against the UCC:

- India’s strength lies in its diverse society, and personal laws have been developed to accommodate these diversities.
- India **already faces a significant backlog of cases**, and implementing a UCC could exacerbate the situation.
- **Goa’s implementation of a UCC has been praised by the Supreme Court in 2019**. However, the **ground reality reveals complexities and legal pluralities within the state’s UCC**.

2) Greedflation: Recently, there has been an increasing consensus in Europe and US that **Greedflation is driving the rising cost of living** rather than just **Inflation**.

- Greedflation refers to the situation where **corporate greed drives inflation**. Rather than a wage-price spiral, it is a **Profit-Price Spiral** where companies **exploit inflation by raising prices excessively**, going beyond covering their increased costs, and aiming to maximize their profit margins. **These further fuels inflation**.
- During crises like natural disasters or pandemics, prices often surge as businesses raise **them due to increased input costs**. However, in some cases, businesses exploit the situation by **making excessive profits through significantly higher price mark-ups**.
- Greedflation disproportionately **impacts low-income and middle-class individuals**, reducing

their consumption and lowering their standards of living.

3) India Removed from the Report on Children and Armed Conflict: First time since 2010, the **United Nations Secretary-General has removed India from the 2023 report on Children and Armed Conflict** in view of measures taken by the **Indian government to protect children.**

- 25 years ago, in December 1996, the **UN General Assembly (UNGA)** took the unprecedented decision to create a mandate to protect children

from hostilities and **adopted resolution 51/77 which created the CAAC mandate.**

- **Objective:** Strengthen the **protection of children affected by armed conflict**, raised awareness, promote the collection of information about the plight of children affected by war and **foster international cooperation** to improve their protection.
- **Recent Observations:** Among the various types of violations, **the highest numbers were reported for** the killing of 2,985 children and the maiming (wound or injured) of 5,655 children, totaling 8,631 affected children.



Educrat IAS
ACADEMY
India's Best Mentorship for Civil Services

Prelims Booster- Press Information Bureau (PIB)

1ST JUNE

1. Grain Storage Plan: Union Cabinet approved forming and empowering an **Inter-Ministerial Committee (IMC)** to create the **world's largest grain storage plan in the cooperative sector**.

In order to ensure time-bound and uniform implementation of the Plan in a professional manner, **the Ministry of Cooperation will implement a pilot project in at least 10 selected districts**. The Pilot would provide valuable insights into various regional requirements of the project, learnings from which will be suitably incorporated for country-wide implementation of the Plan. **An IMC will be formed under the chairmanship of the Minister of Cooperation**, with ministers of Agriculture and Farmer's Welfare, Consumer Affairs, Food and Public Distribution, Food Processing Industries, and secretaries as members "to modify guidelines/ implementation methodologies of schemes of the respective ministries as and when the need arises".

Aim: To address the shortage of agricultural storage infrastructure in the country by facilitating the establishment of godowns at the level of primary agricultural credit societies (PACS) and also enables PACS to undertake various other activities.

2. ATL Tinkerpreneur 2023: Atal Innovation Mission (AIM), NITI Aayog has opened registration for 'ATL Tinkerpreneur 2023' - a **flagship summer boot camp under AIM's Atal Tinkering Labs program**. ATL Tinkerpreneur is a **7-week long virtual summer bootcamp in which equips students with key digital skills and frameworks to create their own online venture by the end of the bootcamp**. The last edition of the bootcamp witnessed 5000+ team innovations, the top 100 of them got internship & funding opportunities from Indian School of Business. **The bootcamp is open to students from all schools (ATLs**

and non-ATLs). Students will receive certificates, internships, and other attractive opportunities.

3. Mission Vatsalya: It's an umbrella scheme for child protection services in the country.

Components under Mission Vatsalya include **improve functioning of statutory bodies; strengthen service delivery structures; Upscale institutional care and services; encourage non-institutional community-based care;** emergency outreach services; training and capacity building.

Objectives: To secure a **healthy and happy childhood for each and every child in the country**. To ensure opportunities to enable them to discover their full potential and assist them in flourishing in all respects, in a sustained manner, **foster a sensitive, supportive and synchronized ecosystem for development of children**, assist States and UTs in delivering the mandate of the Juvenile Justice Act, 2015 and achieve the Sustainable Development Goals (SDGs). **It promotes family-based non-institutional care of children.**

4. GOBAR-DHAN Scheme: The Ministry of Jal Shakti has launched the GOBAR (Galvanizing Organic Bio-Agro Resources) – DHAN scheme. **The scheme is being implemented as part of the Swachh Bharat Mission (Gramin).**The Swachh Bharat Mission (Gramin) comprises two main components for creating clean villages – **creating open defecation free (ODF) villages and managing solid and liquid waste in villages.**

Aim: Keeping villages clean, increasing the income of rural households, and generation of energy from cattle waste. The scheme also aims at creating **new rural livelihood opportunities** and enhancing income for farmers and other rural people.

2ND JUNE

1. Legal Framework for Women: Constitutional Safeguards: Fundamental Rights: It guarantees all Indians the **right to equality (Article 14)**, no discrimination by the State on the basis of gender

(Article 15(1)) and special provisions to be made by the State in favour of women (Article 15(3)).

Fundamental Duties: It ensures that **practices derogatory to the dignity of women are prohibited under Article 51 (A).**

Legislative Framework: Protection of Women from Domestic Violence Act, 2005, The **Dowry Prohibition Act, 1961, The Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013,** The Protection of Children from Sexual Offences (POCSO), 2012.

Women Empowerment Schemes: Beti Bachao Beti Padhao Scheme, One Stop Centre Scheme, UJJAWALA: A Comprehensive Scheme for Prevention of trafficking and Rescue, Rehabilitation and Re-integration of Victims of Trafficking and Commercial Sexual Exploitation, **SWADHAR Greh** (A Scheme for Women in Difficult Circumstances), **NARI SHAKTI PURASKAR, Mahila police Volunteers Mahila Shakti Kendras (MSK), NIRBHAYA.**

2. Sportech Industry: Ministry of Textiles conducts 'National Conclave on Sportech: The Future of Sport Textiles and Accessories Industry in India' under **National Technical Textiles Mission**. India is an emerging player in sports textiles, with tremendous scope for growth in the coming years. **Schemes such as Khelo India, Fit India Movement and Target Olympic Podium Scheme,** would support in enhancing the penetration of sports textiles in the country. **Government's flagship interventions such as NTTM, PLI & PM Mitra, are focused towards increasing the scale, size and integration of textiles and technical textiles in India.** PM Mitra presents a great opportunity for technical textiles companies to set-up their plants in plug-n-play mode. Focus required on developing sportech sector to meet entire domestic need with indigenously produced quality products. High time to foster synergy amongst various stakeholders in sportech sector.

3. National Startup Award: Designed by Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce & Industry.

Aim: To **recognize and reward outstanding Startups and ecosystem enablers** that are building innovative products or solutions and scalable enterprises, with high potential of employment generation or wealth creation, demonstrating measurable social impact. **Startup India, a flagship initiative of the Government of India under Department for Promotion of Industry and Internal Trade (DPIIT) conceived the National Startup Awards (NSA)** to recognize and reward outstanding startups that have exhibited excellence financially, socially, and economically.

4. INS Trishul: Trishul is the name of a short range **surface-to-air missile developed by India as a part of the Integrated Guided Missile Development Program.** It has a range of 12 km and is fitted with a 5.5 kg warhead. Designed to be used against low-level (sea skimming) targets at short range, the system has been developed to defend naval vessels against missiles.

The IGMDP was launched in 1982-83 by the India which saw the projects of: Prithvi (Short range surface to surface missile), **Trishul** (short range surface to air missile), **Aakash** (Medium range surface to air missile), **Nag** (Third generation anti-tank missile), **Agni-I** (Agni missile was later separated from the IGMDP due to its strategic importance).

3RD JUNE

1. GAGAN satellite technology: GAGAN is the acronym for GPS Aided GEO Augmented Navigation. It is jointly **developed by ISRO (Indian Space Research Organisation) and the Airports Authority of India (AAI).** It uses a system of ground stations to provide necessary augmentations to the GPS standard positioning service (SPS) navigation signal. **It is designed to provide the additional accuracy, availability, and integrity necessary to enable users to rely on GPS for all phases of flight.** In addition, GAGAN will provide benefits beyond aviation to all modes of

transportation, including maritime, highways, and railroads. **There are only four Space-Based augmentation systems available in the world namely India (GAGAN), US (WAAS,) Europe (EGNOS) and Japan (MSAS).**

2. Fairbank's Disease: This disease also known as **Multiple Epiphyseal Dysplasia (MED)**. It is a rare genetic disorder that affects the growing ends of bones. Bones usually elongate by a process that involves the depositing of cartilage at the ends of the bones, called ossification.

This cartilage then mineralizes and hardens to become bone. In MED, this process is defective. **Symptoms are joint pain in the hips and knees, early-onset arthritis, a waddling walk, and mild short stature as adults.** Most people are diagnosed during childhood, but mild cases may not be diagnosed until adulthood. MED patient usually requires management of pain and orthopedic procedures.

3. Performance Audit on Derailment in Indian Railways: According to the CAG Audit nearly three fourth of 217 consequential train accidents across the country between 2017-18 and 2020-21 were caused by derailments. **The focus of the audit was to ascertain whether measure to prevent derailments and collisions were clearly laid down and implemented by the Ministry of Railways. It also analysed the performance of Rashtriya Rail SanrakshaKosh (RRSK).** The RRSK was created in 2017-18 with a corpus of Rs 1 lakh crore over a period of five year.

Classification of Train Accidents:

Consequential Train Accidents: Includes train accidents with serious repercussions in terms of either: **loss of human life/human injury/loss of Railway property/Interruption to railway traffic.** Out of 217 "consequential train accidents", 163 were due to derailments during 2017-18 to 2020-21. **This was followed by accidents due to fire in trains (20), accidents at unmanned level-crossings (13), collisions (11), accidents at manned level crossing (8).** The Major

Factors Responsible for Derailments: Maintenance of tracks (167 cases), Deviation of track parameters beyond permissible limits (149 cases), Bad driving/over speeding (144 cases).

4. Kavach System: It is an indigenously developed **Automatic Train Protection (ATP) system.** Kavach was developed by the Research Design and Standards Organisation (RDSO). It is a set of electronic devices and Radio Frequency Identification devices installed in locomotives, in the signalling system as well the tracks, that talk to each other using ultra-high radio frequencies to control the brakes of trains and also alert drivers, all based on the logic programmed into them.

Applications: It has been designed to assist locomotive pilots in avoiding Signal Passing At Danger (SPAD) and overspeeding the system can alert the loco pilot, take control of the brakes and bring the train to a halt automatically when it notices another train on the same line within a prescribed distance. The device also continuously relays the signals ahead to the locomotive, making it useful for loco pilots in low visibility.

5TH JUNE

1. World Environment Day: It is being celebrated across the globe on June 5 every year.

It is observed on the **5th of June every year since 1973 as part of the United Nations Environment Programme** to build awareness to save life on planet Earth. The event has been led by the **United Nations Environment Programme (UNEP) since its inception in 1973.** The theme of this year's World Environment Day will focus on **solutions to plastic pollution under the campaign #BeatPlasticPollution.** This year's event is hosted by Côte d'Ivoire in partnership with the Netherlands.

2. United Nations Environment Programme (UNEP): It is the leading global authority on the environment.

Mission: To inspire, inform, and enable nations and peoples to improve their quality of life without compromising that of future generations. It is driving transformational change by drilling down on the root causes of the triple planetary crisis of climate change, nature and biodiversity loss and pollution.

Headquarters: Nairobi, Kenya.

Reports published by UNEP: Emission Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet.

It provides secretariat functions for numerous multilateral environmental agreements (MEAs) and other entities as follows: **Convention on Biological Diversity (CBD), Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Minamata Convention on Mercury, Basel, Rotterdam and Stockholm Conventions, Vienna Convention for the Protection of Ozone Layer and the Montreal Protocol, Convention on Migratory Species.**

3. Nyaya Vikas Scheme: The Department of Justice has been implementing the **Centrally Sponsored Scheme (CSS) for Development of Infrastructure Facilities for Districts and Subordinate Judiciary** since 1993-94. Under the Scheme, central assistance is provided to the State Government / UT Administrations for **construction of court halls and residential units for Judicial Officers / Judges of District and Subordinate Courts.** The funds sharing pattern under **the Scheme for Center and State is 60:40** in respect of States other than North Eastern and Himalayan States. The funds sharing pattern is 90:10 in respect of North Eastern and Himalayan States; and 100% in respect of Union Territories. **Nyaya Vikas portal has been created for monitoring the implementation of this Scheme.**

4. The Third G20 International Financial Architecture Working Group (IFAWG) meeting: Under the Indian G20 Presidency the meeting is being organized in the vibrant state of Goa. **The discussions during the two-day meeting will be jointly steered by the Ministry of**

Finance and the Reserve Bank of India along with France and the Republic of Korea, who are the Co-chairs of the IFA WG. The discussions include **strengthening the Global Financial Safety Net (GFSN), addressing global debt vulnerabilities, strengthening the Multilateral Development Banks (MDBs) to address shared global challenges of the 21st century,** and strengthening financial resilience through sustainable capital flows, assessing the macro-financial implications of Central Bank Digital Currencies, among others. During these discussions, the Indian G20 Presidency strives to give a voice to low-income and developing countries that are not represented at the G20 table and highlight issues of key concern to the Global South.

6TH JUNE

1. Electronic Interlocking: It is an advanced signalling, computer-based system that uses electronic components to manage the movement of trains and the configuration of tracks.

The EI, which is based on software, is designed to prevent 2 trains from running on the same track at the same time. It ensures that a train gets a go-ahead only when the route ahead is clear. **The system is an alternative to the conventional Relay Interlocking system.**

The EI signal system comprises 3 crucial elements:

- **Signal** – Based on the status of the track ahead, signals are used to stop, proceed, or exercise caution.
- **Point switch** – A train can change its track using a point. These are movable sections of a track which guide the wheels towards either the straight or diverging track.
- **Track circuit** – These are electrical circuits on tracks to detect the presence of a vehicle or a train on a section of track. **Track circuits help to verify whether a particular route is clear or occupied and if it is safe for a train to proceed.**

Working Of EI: Two information points form the basis of the EI signal system. A signal to pass is given based

first on which direction the track is set. On whether the divergent track is free of obstruction. All activities in the signalling system are recorded in a microprocessor-based system called a data logger. It **acts like the black box of an aircraft and can store and process signal data to generate reports.**

2. Sunflower Consumption: Black Sea Grain Initiative led to the international vegetable oil prices falling. **Ukraine and Russia together accounted for nearly 58% of the world's production of oilseed in 2021-22.** As the war shut off their supplies through the Black Sea ports, prices skyrocketed. However, the situation changed with the **Black Sea Grain Initiative agreement between Russia and Ukraine signed on July 22.** The deal, **brokered by the UN and Turkey, facilitated the safe navigation of vessels carrying grain and foodstuffs.** It led to international vegetable oil prices falling below even pre-war levels. **Sunflower is the 4th largest consumed oil, behind mustard, soyabean and palm.** Both sunflower and palm oil are almost wholly imported.

This is unlike mustard and soyabean, where the share of domestic output are close to 100% and 30-32% respectively. The other locally produced oils — cottonseed, rice bran, groundnut, and coconut aren't big enough to influence prices. **Sunflower production in India – Sunflower is being traditionally grown in Karnataka, Telangana, and Maharashtra.** Roughly 70% of the country's sunflower oil consumption is in the Southern states with highest from Maharashtra and other states making up the rest.

3. Thermal Stratification: It occurs when the surface layer of water, warmed by the sun, becomes less dense than the water underneath it. **Pollution has badly affected the Schizothorax fish harvest** and has destroyed the breeding grounds of the native fish. **Data on harvest of Schizothorax, a local fish species known as Kashir gaad or Snowtrouts,** from the lake between 1989 to 2019, shows a downward trend. The study suggested that the lake's alkalinity has gone up. The

chloride content of the water has drastically increased due to drainage from catchment areas, raw sewage coming from houseboats and nearby settlements and organic runoff from floating gardens.

7TH JUNE

1. Kakhovka Dam: Kakhovka dam in southern Ukraine was collapsed recently, causing extensive flooding. **The dam is built on Ukraine's Dnipro River.** Dnipro River – It separates Ukraine into two parts — east and west. It flows north to south connecting the capital, Kiev, to the Black Sea.

It was built in 1956 as part of the Kakhovka hydroelectric power plant. The reservoir it contains holds water of about the same volume as the Great Salt Lake in Utah. Bursting the dam could send a wall of water flooding settlements below it, including Kherson. Water from the reservoir supplies the **Crimean peninsula to the south,** which was annexed by Russia in 2014, as well as the **Zaporizhzhia nuclear plant,** Europe's largest, to the north. It also **helps power the Kakhovka hydroelectric plant.**

2. The Energy Progress Report 2023: The World is still off-track from achieving universal energy access (SDG 7) to all, says UN report. Since 2018, the report envisages to track the SDG7.

Aim – It aims to ensure **access to affordable, reliable, sustainable, and modern energy for all.** It is produced annually by 5 of the custodian agencies responsible for tracking global progress toward SDG7. **Custodian Agencies –The International Energy Agency (IEA),The International Renewable Energy Agency (IRENA),The United Nations Statistics Division (UNSD),The World Bank and WHO.**

3. Self-Employment Scheme for Rehabilitation of Manual Scavengers (SRMS): Ministry – Ministry of Social Justice & Empowerment (MoSJE). **The scheme for rehabilitation of manual scavengers has now been merged with the NAMASTE scheme.** The FY 2023-24 Union Budget showed no allocation for the

rehabilitation scheme and Rs. 100 crore allocation for the NAMASTE scheme.

Manual Scavenging: Ministry of Social Justice and Empowerment report says that only **66% districts in country is free of manual scavenging.**

The ILO describes 3 forms of manual scavenging in India: Removal of human excrement from public streets and dry latrines (meaning simple pit latrines without a water seal, but not dry toilets in general), **Cleaning septic tanks, Cleaning gutters and sewers.** India banned the practice under the **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013 (PEMSR).** The Act bans the use of any individual for manually cleaning, carrying, disposing of or otherwise handling in any manner, human excreta till its disposal. **In 2013, the definition of manual scavengers was also broadened to include people employed to clean septic tanks, ditches, or railway tracks.**

4. National Action for Mechanized Sanitation Ecosystem (NAMASTE) Scheme: It is a central sector scheme for improving the living standards of sanitation workers in urban areas. It is a **joint initiative of Ministry of Social Justice and Empowerment (MoSJE), Ministry of Housing and Urban Affairs (MoHUA) and Department of Drinking Water and Sanitation.**

Objectives – It envisages **safety and dignity of sanitation workers** in urban India **by recognising sanitation workers as one of the key contributors in the maintenance of sanitation infrastructure.** Providing them with sustainable livelihood. **Enhancing their occupational safety through capacity building** and improved access to safety gear and machines. It aims at provide alternative livelihoods support and entitlements to reduce their vulnerabilities.

8TH JUNE

1. Antardrishti dashboard: RBI Governor launched 'Antardrishti'. It provides the **necessary knowledge to evaluate and track the development of financial inclusion by recording relevant data.** It will also make

it possible to assess the degree of financial exclusion at a local level across the nation so that such places may be addressed.

Financial Inclusion: It aimed to provide access to affordable and appropriate financial products and services, such as **savings accounts, credit, insurance, and payment systems.** The Reserve Bank has been promoting financial inclusion through various policy initiatives. **To measure the extent of financial inclusion the central bank had constructed the Financial Inclusion (FI) Index in 2021.** It is based on three dimensions of financial inclusion — '**Access**', '**Usage**' and '**Quality**'. The FI-Index has been conceptualised as a comprehensive index incorporating details of banking, investments, insurance, postal as well as the pension sector in consultation with the government and respective sectoral regulators. **The index captures information on various aspects of financial inclusion in a single value ranging between 0 and 100, where 0 represents complete financial exclusion and 100 indicates full financial inclusion.**

2. Food Safety Index: Recently, the union Health Minister released the **fifth State Food Safety Index in New Delhi.** The Index is an **annual assessment released by the Food Safety and Standards Authority of India (FSSAI).** It was **started in 2018-19** and serves as a tool to propel States and Union Territories to enhance their performance and establish robust food safety ecosystems within their jurisdictions. **This index is based on the performance of the State/ UT on five significant parameters, namely, Human Resources and Institutional Data, Compliance, Food Testing – Infrastructure and Surveillance, Training & Capacity Building and Consumer Empowerment.** The Index is a dynamic quantitative and qualitative benchmarking model that provides an objective framework for evaluating food safety across all States/UTs. Ranking of the States and Union Territories in the 2022 -23 Report Among the large state category: **Kerala is the top-ranking state followed by Punjab and Tamil Nadu.**

Among the small states category: **Goa is the top-ranking state followed by Manipur, and Sikkim in the Small States category.**

Among the Union Territories category: **Jammu and Kashmir, Chandigarh, and Delhi.**

3. MAHIR (National Mission on Advanced and High-Impact Research): Recently, the Ministry of Power and the Ministry of New and Renewable Energy have jointly launched MAHIR. **The mission aims to quickly identify emerging technologies in the power sector and develop them indigenously, at scale, for deployment within and outside India.** The Mission will be funded by pooling financial resources of the **Ministry of Power, Ministry of New and Renewable Energy and the Central Public Sector Enterprises under the two Ministries.** Additional funding will be mobilized from the Government of India's budgetary resources. **The mission is Planned for an initial period of five years from 2023-24 to 2027-28.** The Mission will have a two-tier structure – A Technical Scoping Committee: It will be **chaired by the Chairperson of the Central Electricity Authority.** It will identify ongoing and emerging research areas globally and recommend potential technologies for development under the Mission.

Apex Committee: It will be chaired by the Union Minister for Power & New and Renewable Energy. It will deliberate on the technology and products to be developed and approve the research proposal.

9TH JUNE

1. National Training Conclave: PM will inaugurate the **first National Training Conclave at the International Exhibition and Convention Centre Pragati Maidan, New Delhi.** The conclave is part of the **National Programme for Civil Services Capacity Building (NPCSCB) – 'Mission Karmayogi'.** To foster collaboration among civil services training institutes and strengthen the training infrastructure for civil servants across the country. **The Conclave is being hosted by the Capacity Building Commission.** More

than one thousand 500 representatives from various training institutes, including Central Training Institutes, State Administrative Training Institutes, Regional and Zonal Training Institutes, and Research institutes, will participate in the conclave. Civil Servants from the Central government departments, State governments, and local governments, as well as experts from the private sector, will take part in the deliberations. **The Conclave will have eight-panel discussions, each focusing on key concerns related to Civil services training institutes such as faculty development, training impact assessment, and content digitisation.**

2. Operation Amanat: The Railway Protection Force (RPF) conducted a successful operation named "Amanat," resulting in the **retrieval of lost or left-behind luggage and valuable articles.** Under the Operation Amanat initiative, the **RPF has taken a novel initiative to make it easier for the passengers to get back their lost luggage.** It helps to track lost belongings of passengers. Passengers can check whether their luggage which went missing or was lost in railway premises or trains is available at the Lost Property Office centers at stations.

3. World Food Programme: The UN World Food Programme has said it is temporarily suspending food aid to Ethiopia because its supplies are being diverted. It is **a branch of the United Nations that deals with hunger eradication and promotes food security in the world.** It is a member of the UNDP. It is **operating in more than 120 countries,** which provides food assistance during emergencies and works with communities to enhance nutrition and generate resilience. **It has been functioning in India since 1963.** WFP is funded by voluntary donations from governments, corporates and private donors. **Report released by the WFP is Global Report on Food Crisis.** The Global Report on Food Crises describes the scale of acute hunger in the world. It provides an analysis of the drivers that are contributing to food crises across the

globe. **The report is produced by the Global Network against Food Crises, an international alliance working to address the root causes of extreme hunger.**

4. Nutrient Based Subsidy scheme: CACP has recommended the Centre to bring urea under the nutrient-based subsidy (NBS) regime to address the problem of imbalanced use of nutrients. **It is being implemented in 2010 by the Department of Fertilizers, Ministry of Chemicals & Fertilizers.** A fixed amount of subsidy decided on annual basis, is provided on each grade of subsidized **Phosphatic & Potassic (P&K) fertilizers depending on its Nutrient Content.** In case of P and K Fertilizers, subsidy is fixed under this scheme by an inter-ministerial committee taking into account the benchmark international prices of finished fertilizers as well as raw materials. **The subsidy is given to registered P&K fertilizer manufacturers/importers which provides these fertilizers at subsidized rates to farmers.**

Benefits of the scheme It helps farmers in **ensuring availability of essential nutrients at subsidized prices.** It rationalizes the subsidy on P&K fertilizers, ensuring effective and efficient utilization of government resources.

10TH JUNE

1. Jal Jeevan Mission: It is envisioned to provide safe and adequate drinking water through individual household tap connections by 2024 to all households in rural India. It is based on a community approach to water and will include extensive Information, Education and communication as a key component of the mission. Department of Drinking Water and Sanitation under the Jal Shakti Mantralaya.

This Mission focuses on integrated demand and supply side management of water at the local level, including creation of local infrastructure for source sustainability like rainwater harvesting, groundwater recharge and management of household wastewater for reuse in agriculture. The Mission will converge with

other Central and State Government Schemes to achieve its objectives of sustainable water supply management across the country.

Funding Pattern: 50:50 between Centre and States, 90:10 for Himalayan and North-Eastern States, in case of UTs, 100% funding is provided by the Central government.

2. Sagar Samridhi: The Union Minister of Ports, Shipping, and Waterways recently launched an online dredging monitoring system called "Sagar Samridhi". It is an **online dredging monitoring system.** The new system aims to **tighten the monitoring regime for dredging contracts and also focus on monetizing dredged material.** It is part of the government's efforts to expedite the 'Waste to Wealth' initiative. This system has been developed by **National Technology Centre for Ports, Waterways and Coasts (NTCPWC)** the technological arm of MoPSW. The new technology brings marked improvement against the old system of the Draft and Loading Monitor (DLM) system. All future monitoring at the major ports in the country will be done through the Sagar Samridhi monitoring system, which will help in project implementation and cut costs. **The system will aid in daily and monthly progress visualization, monitor dredger performance and downtime monitoring, and keep track of location data.**

3. Agni Prime Missile: Recently, New Generation Ballistic Missile 'Agni Prime' was successfully flight-tested by DRDO from Dr. APJ Abdul Kalam Island. It is a **short-range ballistic missile that will have a range of 1000 km to 1500 km.** It is a surface to a surface missile that can carry a payload of around 1,000 Kg or a nuclear warhead. It incorporates new propulsion systems and composite rocket motor-casings as well as advanced navigation and guidance systems. **Ballistic Missiles are launched directly into the upper layers of the earth's atmosphere.** They travel outside the atmosphere, where the warhead detaches from the missile and falls towards a predetermined target. **They are rocket-**

propelled self-guided weapons systems which can carry conventional or nuclear munitions. They can be launched from aircraft, ships and submarines, and land.

4. Genetic Engineering Appraisal Committee (GEAC): It is a statutory committee constituted under the “Rules for the Manufacture, Use/Import/Export and Storage of Hazardous Micro Organisms/Genetically Engineered Organisms or Cells (Rules, 1989)” framed under the EPA 1986. **GEAC functions under the Ministry of Environment, Forest and Climate Change (MoEF&CC).** As per Rules, 1989, it is responsible for the appraisal of activities involving large scale use of hazardous microorganisms and recombinants in research and industrial production from the environmental angle. **GEAC is chaired by the Special Secretary/Additional Secretary of MoEF&CC and co-chaired by a representative from the Department of Biotechnology (DBT).**

12TH JUNE

1. Cyclone Biparjoy: A cyclonic storm, named Biparjoy, has developed in the Arabian Sea. **‘Biparjoy’ was suggested by Bangladesh and the word means ‘disaster’ or ‘calamity’ in Bengali.**

A cyclone is a low-pressure system that forms over warm waters. Usually, a high temperature anywhere means the existence of low-pressure air, and a low temperature means high-pressure wind. The naming of cyclones is done by countries on a rotational basis, following certain existing guidelines. **Worldwide, there are six regional specialised meteorological centres (RSMCs) and five regional Tropical Cyclone Warning Centres (TCWCs) mandated for issuing advisories and naming of tropical cyclones. IMD is one of the six RSMCs to provide tropical cyclone and storm surge advisories to 13 member countries** under the WMO/Economic and Social Commission for Asia-Pacific (ESCAP) Panel including Bangladesh, India, Iran, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi

Arabia, Sri Lanka, Thailand, United Arab Emirates and Yemen.

2. Exercise Ekuverin: The 12th edition of the joint military exercise “Ex Ekuverin” between the Indian Army & the Maldives National Defence Force has commenced at **Chaubatia, Uttarakhand.** Ekuverin meaning ‘Friends’ is a **bilateral annual exercise conducted alternatively in India and Maldives.** A platoon strength contingent from Indian Army and Maldives National Defence Force will be participating in 14 days long exercise. **The exercise is aimed at enhancing interoperability in Counter Insurgency/Counter Terrorism Operations under the UN mandate and carrying out joint Humanitarian Assistance and Disaster Relief operations.** The focus is to share best practices and enhance coordination and cooperation between both the forces at tactical level.

3. Pradhan Mantri Matru Vandana Yojana (PMMVY): It is a **maternity benefit programme being implemented in all districts of the country with effect from 1st January 2017.** It is a centrally sponsored scheme being executed by the Ministry of Women and Child Development.

Cash benefits are provided to pregnant women in their bank account directly to meet enhanced nutritional needs and partially compensate for wage loss. All Pregnant Women and Lactating Mothers (PW&LM), excluding those who are in regular employment with the Central Government or the State Governments or PSUs or those who receive similar benefits under any law for the time being in force. **All eligible Pregnant Women and Lactating Mothers who have their pregnancy on or after 1st January 2017 for the first child in the family.** Beneficiaries receive a cash benefit of Rs. 5,000 in three instalments on fulfilling the following conditions: **Early registration of pregnancy, Ante-natal check-up, Registration of the birth of the child and completion of the first cycle of vaccination for the first living child of the family.** The eligible

beneficiaries also receive cash incentives under Janani Suraksha Yojana (JSY). Thus, on average, a woman gets Rs. 6,000.

4. The Urban Learning Internship Program (TULIP):The program aims to **provide internship opportunities to 25,000 fresh graduates in all Urban Local Bodies (ULBs) and Smart Cities across the country.** The internship opportunities will be provided for 'Smart City' projects which range from positions in **urban planning, water supply, waste management, slum improvement and digital governance among others.** Applicants must be Indian citizens who have completed their final year of college within the last 18 months and have a degree of B. Tech, B planning, B. Arch, BA, BSc, BCom, or LLB. Internship durations can range from eight weeks to one year.

13TH JUNE

1. SANKALP Programme: Recently, the Ministry of Skill Development & Entrepreneurship (MSDE) certifies 98 trainers trained under the SANKALP programme. **The Skills Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP) programme was launched in 2018.** Ministry of Skill Development and Entrepreneurship (MSDE). **It is a World Bank loan-assisted project and is aligned with the overall objectives of the National Skill Development Mission (NSDM).** The project focuses on transforming the overall skilling ecosystem of India, covering both central and state-level agencies for improved outcomes.

It also **encourages innovative best practices at the local level,** resulting in enhanced access, quality and capacity in the skilling ecosystem and improved access to and completion of skills training for female trainees and other disadvantaged groups. **Under SANKALP four key result areas have been identified viz – Institutional Strengthening (at National, State & District level) Quality Assurance of skill development programs; Inclusion of marginalised population in skill**

development; and expanding Skills through Public-Private Partnerships (PPPs).

2. Supreme Audit Institutions (SAIs): They are **public oversight institutions that audit a government's use of public funds.** They are a critical link in a country's accountability chain.

By scrutinizing public financial management and reporting they assure that resources are used as prescribed. Most SAIs derive their mandate from the constitution and/or legislation. **SAIs undertake financial audits of organizations' accounting procedures and financial statements, and compliance audits reviewing the legality of transactions made by the audited body.** They also conduct performance audits to scrutinize the efficiency, effectiveness or economy of government's undertakings. **The Comptroller and Auditor General (CAG) of India is India's SAI.**

3. INTOSAI – International Organization of Supreme Audit Institutions: It is an autonomous, independent and non-political organization. **It operates as an umbrella organization for the external government audit community.** It has special consultative status with the Economic and Social Council (ECOSOC) of the United Nations. **It works to promote auditing standards, good governance of SAIs, and SAI independence, among other work.**

The International Congresses of Supreme Audit Institutions (INCOSAI) is the supreme organ of INTOSAI and is composed of all the members. On a triennial basis, it holds regular meetings, which are chaired by the hosting SAI. The INTOSAI Governing Board meets annually to provide strategic leadership, stewardship, and continuity of INTOSAI activities between INCOSAI. **The CAG of India is a member of the Governing Board of INTOSAI.**

4. Sanshodhak Ship: Sanshodhak', the fourth of four ships of the Survey Vessels Project, is being built by

L&T/ GRSE for the Indian Navy. **The ship named 'Sanshodhak', meaning 'Researcher', signifies the primary role of the ship as a Survey Vessel.** As per the contract signed between MoD and Garden Reach Shipbuilders & Engineers (GRSE), Kolkata, **the first ship was to be built at GRSE, Kolkata and the construction of the remaining three ships up to the outfitting stage.** The first three ships of the project, **Sandhayak, Nirdeshak and Ikshak were launched in 2021.** SVL ships will replace the existing Sandhayak Class survey ships, with new-generation hydrographic equipment, to collect oceanographic data.

15TH JUNE

1. VAIBHAV fellowships Programme: The fellowship would be awarded to outstanding scientists/technologists of Indian origin (NRI/OCI/PIO) who are engaged in research activities in their respective countries. **The VAIBHAV Fellow would identify an Indian Institution for collaboration and may spend up to two months in a year for a maximum of 3 years.** The government offers the researchers an amount of INR 4,00,000 per month for the entire period. Improving the research ecosystem of India's Higher Educational Institutions by facilitating academic and research collaborations between Indian Institutions and the best institutions in the world. This is done through the mobility of faculty/researchers from overseas institutions to India. **Researchers from institutions featuring in the top 500 QS World University Rankings will be eligible for the fellowship.** The applicant must have obtained Ph.D./M.D/M.S degree from a recognized University. It is implemented by the DST, Ministry of Science and Technology.

2. Global wind day: This event is celebrated across the world on June 15 every year. **This day is dedicated to discovering and identifying ways to incorporate wind energy into our daily lives.** It will help in making life on earth more sustainable, the contribution of states in the wind energy sector. **The states, especially**

Rajasthan, Gujarat and Tamil Nadu, were appreciated for their significant contribution to the promotion of wind energy. Rajasthan – for achieving the highest addition of wind capacity. Gujarat – for achieving the highest addition of wind capacity but through open access. Tamil Nadu – for its initiative to repower wind turbines.

The theme of the celebration was 'Pawan – Urja: Powering the Future of India'. A Wind Atlas was launched in this event. This wind Atlas is prepared by the National Institute of Wind Energy (NIWE).

3. Julley Ladakh Programme : Indian Navy is conducting "Julley Ladakh" (Hello Ladakh), an outreach programme to Ladakh to **increase awareness about the service in the pristine state and to engage with youth and civil society there.** The Navy had previously made a similar effort in the North East that was hugely successful. **The main objectives of the current initiative in the Northern Territory include: –**

- (a) Celebrate **Azadi ka Amrit Mahotsav** (75 years of Indian Independence).
- (b) Conduct Awareness drives at Schools/ Colleges in the Ladakh region about the career opportunities Indian Navy offers including the Agnipath Scheme.
- (c) Motivate Youth to join the Indian Navy.
- (d) **Showcase Nari Shakti**, an initiative of Prime Minister Shri Narendra Modi, by including Women Officers and spouses.
- (e) Interact with naval veterans and Veer Naris in the region.

4. National Time Release Study (NTRS) Report, 2023: The Central Board of Indirect Taxes and Customs (CBIC) released the **National Time Release Study (NTRS) Report, 2023.** Time Release Study (TRS) is a performance measurement tool that aims to present a quantitative measure of the cargo release time. It is defined as the time taken from the arrival of the cargo at the customs station to its out-of-charge for domestic

clearance in case of imports and arrival of the cargo at the customs station to the eventual departure of the carrier in case of exports.

NTRS 2023 presents port category-wise average release time for the current year, based on the sample period of January 1-7 2023 (both days included) and compares the same to the performance during the corresponding periods of 2021 and 2022.

16TH JUNE

1. Dugdh Sankalan Sathi App: This is designed and developed by **Rajasthan Electronics & Instruments Limited (REIL)**, a “Mini Ratna” Central Public Sector Enterprise under the Ministry of Heavy Industries. It aims to **improve the quality of milk, foster transparency among stakeholders, and streamline operations at the grassroots village level, including Milk Cooperative Societies.** This will inform all services to milk producers in English, Hindi, Punjabi, Telugu and other languages.

Key features: Increased transparency among stakeholders, Online monitoring of daily milk poured at Milk Cooperative Societies, Real-time milk price updates from the cloud server, Direct beneficiary transfers of milk payments and government subsidies to the milk producers’ bank accounts through the app, Push notifications for milk collection to the milk producers’ app.

2. GoI-UNSDC framework: Recently, NITI Aayog and the United Nations in India signed the Government of India – United Nations Sustainable Development Cooperation Framework 2023-2027. It represents the UN development system’s collective offer to the Government in line with the national vision for development, for the achievement of the SDGs **promoting gender equality, youth empowerment and human rights. It is built on four strategic pillars derived from the 2030 Agenda – People, Prosperity, Planet and Participation.** The four interlinked pillars have six outcome areas focusing on **Health and Well Being; Nutrition and Food Security; Quality Education;**

Economic Growth and Decent Work; Environment, Climate, WASH and Resilience; and Empowering People, Communities, and Institutions. It will have a specific focus on SDG localisation and South-South cooperation, in line with India’s leadership towards the implementation and acceleration of the SDGs; and India’s championing of South-South cooperation. **It will be co-led by the Government and the UNIndia through a Joint Committee.**

3. Bangkok Vision 2030: The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) summit end of this year will adopt a Bangkok Vision 2030. **Thailand presented “BIMSTEC Bangkok Vision 2030” aiming to build a Prosperous, Resilient, and Open (PRO) BIMSTEC by 2030.** The Vision sets a clear direction and priorities as well as a goal for BIMSTEC collaboration to tackle challenges and seize opportunities for the coming decade. **The document aims to further promote BIMSTEC as a region of peace, stability, and economic sustainability.** The goals found in the vision are also in line with the United Nations’ Sustainable Development Goals and Thailand’s bio-circular-green economic model.

2. Nehru Memorial Museum & Library (NMML): The Union Culture Ministry announced that the NMML would now be called the Prime Ministers’ Museum and Library Society. **The name change came nearly a year after a Pradhanmantri Sangrahalaya (Prime Ministers’ Museum) was inaugurated on the premises of the Teen Murti Bhavan, which also hosted the NMML.** The NMML was established in memory of Jawaharlal Nehru (1889-1964). It was named after Nehru almost six decades ago, after being turned into a memorial dedicated to him in 1964 by then President S Radhakrishnan. **It is an autonomous institution under the Ministry of Culture, Government of India. It is located in the majestic Teen Murti House, the official residence of the first Prime Minister of India. It has four**

major constituents, namely, a Memorial Museum, a library on modern India, a Centre for Contemporary Studies and the Nehru Planetarium.

17TH JUNE

1. Dickinsonia Fossil: Indian scientists have proved that the Indian Dickinsonia fossil that had been originally reported from UNESCO World Heritage Site Bhimbetka Cave Shelter in an earlier research in 2021, was a left-over impression of a fallen beehive, not a true fossil. The Vindhyan Supergroup, an archive of more than one billion years of history of the earth, is one the largest basins of the world and is the site of many discoveries of fossils that explain how earliest life originate and diversified on the earth. Ediacaran fossils were traced to be the earliest animals that existed on the earth around 550 million years ago and hence evoke much interest among evolutionary biologists and palaeontologists. Fossil discoveries in the Precambrian Era (4000-538 million years of the earth's history) claim to know about the evolutionary changes that occurred in life on the earth. Because of their implications on our understanding of the evolution of life on the earth, many of these discoveries are followed and scrutinized by some researchers.

2. Operation Ganga: It was an evacuation mission carried out by the Indian government to rescue its citizens stranded in neighbouring countries during the 2022 Russian invasion of Ukraine. The citizens were transported from Romania, Hungary, Poland, Moldova, and Slovakia to India with assistance from these countries. India maintained a neutral stance during the invasion, not supporting either Russia or Ukraine.

Planned by: Ministry of External Affairs and Indian Armed Forces.

3. 4th National Water Awards: The first edition of the National Water Awards was introduced by the Department of Water Resources, River Development and Ganga Rejuvenation in 2018. They have provided a

good opportunity for start-ups as well as leading organizations to engage and deliberate with senior policymakers on how to adopt the best water resources management practices in India.

These awards have been instituted to recognize and encourage exemplary work and efforts made by States, Districts, individuals, organizations, etc across the country in attaining the vision of a 'Jal Samridh Bharat'.

It covers 11 categories Best State', 'Best District', 'Best Village Panchayat', 'Best Urban Local Body' etc. The award winners in different categories will be given a citation, trophy and cash prize. The cash prizes for the 1st, 2nd, and 3rd rank winners are Rs.2 lakhs, Rs.1.5 lakhs, and Rs.1 lakh, respectively.

Nodal Ministry: Ministry of Jal Shakti.

4. Pradhanmantri Sangrahalaya (Prime Ministers' Museum): Inaugurated by PM Modi in April 2022, the Pradhanmantri Sangrahalaya is a tribute to every Prime Minister of India since Independence. It is a narrative record of how each PM has contributed to the development of our nation over the last 75 years. It recognises the contributions of all the 14 PMs so far, irrespective of ideology or tenure in office. It has ample space for future leaders as well.

Teen Murti House: Built in 1929-30 as part of Edwin Lutyens' imperial capital, Teen Murti House was then known as Flagstaff House. It was the official residence of the Commander-in-Chief of the British armed forces in India. In August 1948, it became the official residence of India's first Prime Minister, Jawaharlal Nehru.

19TH JUNE

1. Food and Agriculture Organization (FAO): According to the Food Outlook report of the Food and Agriculture Organization, food imports by vulnerable countries are expected to decline in 2023. It is a specialized agency of the United Nations that leads international efforts to defeat hunger and improve nutrition and food

security. Head Quarter: Rome (Italy). With 195 members – 194 countries and the European Union, FAO works in over 130 countries worldwide.

Its sister bodies are the World Food Programme (WFP) and the International Fund for Agricultural Development (IFAD).

Reports: The State of the World's Forests (SOFO), The State of World Fisheries and Aquaculture (SOFIA), The State of Agricultural Commodity Markets (SOCO), The State of Food Security and Nutrition in the World (SOFI).

Initiatives: The Codex Alimentarius Commission. Agricultural Heritage Systems of Global Importance (GIAHS). Monitors the status of Desert Locusts all over the world. The International Treaty on Plant Genetic Resources for Food and Agriculture.

2. International Fund for Agricultural Development (IFAD): It is an international financial institution and a specialised agency of the United Nations. It was established as an international financial institution in 1977 through United Nations General Assembly Resolution 32/107 (15 December 1977) as one of the major outcomes of the 1974 World Food Conference.

Headquarters: Rome, Italy. It is a member of the United Nations Development Group.

Governance: Its Governing Council, consisting of representatives of more than 160 member states, is the principal decision-making body.

Functions: It focuses exclusively on rural poverty reduction, working with poor rural populations in developing countries to eliminate poverty, hunger and malnutrition; raise their productivity and incomes; and improve the quality of their lives.

3. Tapas Unmanned Aerial Vehicle (UAV): It is known as Tapas-BH 201 (Tactical Airborne Platform for Aerial Surveillance-Beyond Horizon 201), formerly referred to as Rustom-II. It is a Medium Altitude Long Endurance (MALE) unmanned aerial vehicle. It is being developed by Aeronautical Development Establishment (ADE),

DRDO. It is capable of operating at altitudes of up to 28,000 feet with an endurance of over 18 hours. It can carry a variety of payloads up to a maximum of 350 kg. **It can be controlled remotely and also can execute pre-programmed flight plans autonomously with precision and flexibility.** Designed to fulfil the Intelligence, Surveillance, Target Acquisition, Tracking & Reconnaissance (ISTAR) requirements of the tri-services, the Tapas UAV can effectively operate in both day and night conditions. It is pre-designed to carry certain weapons and can be converted into an armed platform as and when required.

4. Gandhi Peace Prize: The Gandhi Peace Prize for 2021 will be conferred on Gita Press, Gorakhpur. It is an annual award instituted by the Government of India in 1995, **it was instituted on the occasion of the 125th Birth Anniversary of Mahatma Gandhi** as a tribute to the ideals espoused by Mahatma Gandhi. The award is open to all persons regardless of nationality, race, language, caste, creed or gender. The award carries an amount of 1 crore, a citation, a plaque and an exquisite traditional handicraft/handloom item. The prize can be given to institutions, individuals and organisations. **Recent awardees include Sultan Qaboos Bin Said Al Said, Oman (2019) and Bangabandhu Sheikh Mujibur Rahman (2020), Bangladesh.**

20TH JUNE

1. Drugs Technical Advisory Board: The Drugs Technical Advisory Board (DTAB) recommended banning the manufacture, sale and distribution of two non-steroid anti-inflammatory drugs (NSAIDs) **Ketoprofen and Aceclofenac.** It is the **highest statutory decision-making body on technical matters related to drugs in India.** It is established as per the **Drugs and Cosmetics Act, of 1940.** It is part of the Central Drugs Standard Control Organization (CDSCO).

Nodal Ministry: Ministry of Health and Family Welfare. It advises the Central Government and the State

Governments on technical matters arising out of the administration of the Drugs and Cosmetics Act, of 1940 and to carry out the other functions assigned to it by this Act.

Non-steroid Anti-inflammatory Drugs: These are medicines that are widely used to relieve pain, reduce inflammation, and bring down a high temperature. **These drugs block the production of certain body chemicals that cause inflammation.**

2. INS Vagir: It is a Kalvari-class submarine, which includes vessels, such as the **INS Kalvari, INS Khanderi, INS Karanj, INS Vela and INS Vagsheer. It is the fifth Scorpène-class submarine.** It is built under Project-75 by Mazgaon Docks Ltd, under technology transfer from the Naval Group of France signed in 2005. **It is capable of undertaking diverse missions including anti-surface warfare, anti-submarine warfare, intelligence gathering, mine laying and surveillance missions.** It has advanced stealth features and is also equipped with both long-range guided torpedoes and anti-ship missiles. It is having “superior stealth features” like advanced acoustic absorption techniques.

3. LEED Certification: Leadership in Energy and Environmental Design is the **world’s most widely used green building rating system in the world. It is available for virtually all building types.** This certification provides a framework for healthy, highly efficient, and cost-saving green buildings, which offer environmental, social and governance benefits. It is a **globally recognized symbol of sustainability achievement and leadership.** To achieve LEED certification, a project earns points by adhering to prerequisites and credits that address carbon, energy, water, waste, transportation, materials, health and indoor environmental quality. **Projects go through a verification and review process by GBCI and are awarded points that correspond to a level of LEED certification: Certified (40-49 points), Silver (50-59 points), Gold (60-79 points) and Platinum (80+ points).**

This rating system is developed by the United States Green Building Council (USGBC).

4. UN High Seas Treaty: **The world’s first international treaty to protect the high seas was recently adopted by the United Nations.** Nearly 200 nations signed the document, officially known as the Biodiversity Beyond National Jurisdiction Treaty, after agreeing to its terms in March following roughly 15 years. **It is the first-ever treaty to protect the world’s oceans that lie outside national boundaries. It is also known as the ‘Paris Agreement for the Ocean.’** It is a legally binding treaty that aims at protecting, caring for, and ensuring the responsible use of the marine environment, maintaining the integrity of ocean ecosystems, and conserving the inherent value of marine biological diversity.

The treaty is built on the legacy of the UN Convention on the Law of the Sea (UNCLOS), which is the last international agreement on ocean protection, signed 40 years ago in 1982. UNCLOS established an area called the high seas.

22ND JUNE

1. Biodegradable Supercapacitor: Recently, scientists at Gujarat Energy Research and Management Institute (GERMI) have developed the **thinnest, lightweight and biodegradable paper-based supercapacitor. A supercapacitor is an electrochemical charge storage device with a fast charging/discharging cycle, high power density and a longer lifecycle.**

Features This supercapacitor which can fully charge a device within 10 seconds, has been **developed from seaweed (marine macroalgae).**

The device is **of high tensile strength and performance,** as well as cost-effective, according to the researchers. The product can be used in electronics, memory backup systems, airbags, heavy machines, electric vehicles, etc.; hence, it holds a huge business prospect.

2. Global Gender Gap Index: India was ranked 127 out of 146 countries in terms of gender parity — an improvement of eight places from last year, according to the recently published annual Gender Gap Report, 2023. **The Report is released annually by the World Economic Forum (WEF) since 2006. It measures gender parity in 146 countries and across four areas: economic participation and opportunity, educational attainment, health and survival and political empowerment.**

Highlights of Global Gender Gap Report 2023: India was ranked 127 out of 146 countries in terms of gender parity, an improvement of eight places from last year.

According to the report, India had attained parity in enrolment across all levels of education. India had closed 64.3% of the overall gender gap. However, it underlined that India had reached only 36.7% parity on economic participation and opportunity. **On political empowerment, India has registered 25.3% parity, with women representing 15.1% of parliamentarians** — the highest for the country since the inaugural report in 2006.

The index ranked India's neighbours Pakistan at 142, Bangladesh at 59, China at 107, Nepal at 116, Sri Lanka at 115 and Bhutan at 103. **Iceland is the most gender-equal country in the world for the 14th consecutive year and the only one to have closed more than 90% of its gender gap.** Overall, the Southern Asian region has achieved 63.4% gender parity, the second-lowest of the eight regions.

3. Sarmat Missile: The RS-28 Sarmat is Russia's new generation of intercontinental ballistic missiles. It is named after **the Sarmatian people of the fourth and fifth centuries BC.** It has also been referred to in the West as the "Satan II". It is capable of carrying 10 or more nuclear warheads. It is **designed and built by the Makeyev Rocket Design Bureau, in Russia.**

Features: It has a range of about 18,000 kilometres. It can travel at a maximum speed of 25,500kph.

Propulsion: Three-stage, liquid-fuelled

Launch weight: 208,100 kg can carry a 10-ton payload and can load a wide variety of warhead options. Sarmat can reportedly load up to 10 large warheads, 16 smaller ones, a combination of warheads and countermeasures, or hypersonic boost-glide vehicles. **While the Sarmat can be launched much like a regular ICBM, it is thought to be also capable of what is called fractional orbital bombardment.** A fractional orbital bombardment means firing an ICBM into a low orbit of the Earth – much lower than a conventional firing – potentially in the opposite direction to the target.

23RD JUNE

1. John Rice: Recently, scientists at the Institute of Advanced Study in Science and Technology (IASST), an autonomous institute of the Department of Science and Technology, explored the **nutraceutical properties of aromatic Joha rice. It is an indigenous rice of Assam.** It is unique in aroma and grain characteristics and distinct from other aromatic rice like Basmati. **It is grown in Sali/ Kharif season.** Major Joha varieties included in this are **Kola Joha, Keteki Joha, Bokul Joha and Kunkuni Joha.** This rice is also rich in **several antioxidants, flavonoids, and phenolics.** It has **got Geographical Indication (GI) tag.** A recent study revealed that; This rice variety has two unsaturated fatty acids, linoleic acid (omega-6) and linolenic (omega-3) acid. These essential fatty acids (which humans cannot produce) can help maintain various physiological conditions. Omega-3 fatty acid prevents several metabolic diseases such as diabetes, cardiovascular diseases, and cancer. It has also proved to be effective in lowering blood glucose and preventing diabetes onset in diabetic rats.

2. International Olympic Day 2023: World Olympic Day or International Olympic Day is observed globally on **June 23 to honour the establishment of the International Olympic Committee (IOC) and encourage the principles upheld by the Olympic**

Movement. The theme of this year's Olympic Day is **'Let's Move'** which aims to inspire people around the world to make time for daily physical activity. This 23 June is the start of a new global movement to make time to move. **The first-ever Olympic Day was celebrated on 23 June 1948.**

3. National Energy Data: Survey and Analysis 2021-22: The Union Ministry of Power has released a comprehensive energy sector report titled National Energy Data: Survey and Analysis 2021-22. **The report is the maiden report of the Energy Data Management Unit, set up under the Bureau of Energy Efficiency, Ministry of Power, Government of India.** The report provides granular information about energy supply and consumption patterns across various sectors of the Indian economy. **The report has been prepared by the Ministry of Power through the Bureau of Energy Efficiency in collaboration with NITI Aayog,** various line Ministries and Departments, institutions, and other stakeholders. The report contains extensive data compiled for the last six years, i.e., from FY 2016-17 to FY 2021-22, along with trends and analysis of fuel-wise energy consumption in major end-use sectors.

The Report Highlights: India conserved 249 billion units (BUs) of electricity to save Rs 1.60 lakh crore in bills for the 2021-22 financial year.

The total energy savings worth Rs 1,60,721 crore happened as an impact of various energy conservation policies.

4. Amendment to Electricity Rules 2020: The Government of India has introduced two changes to the prevailing power tariff system, through an amendment to the Electricity (Rights of Consumers) Rules, 2020. **The changes are the introduction of the Time of Day (ToD) Tariff and the rationalization of smart metering provisions.** Power Tariff to be 20% less during Solar Hours, and % Higher during Peak Hours; Consumers to benefit from effective utilization of ToD provision.

Time of Day Tariff A Win-Win: Enables Consumers to Reduce Electricity Bills, Helps Power System to Use Resources More Efficiently. Time of Day tariff shall be made effective immediately after installation of smart meters, for the consumers with smart meters.

24TH JUNE

1. INS SUNAYNA: INS Sunayna visited Mombasa, Kenya towards strengthening bilateral ties with maritime neighbours on the theme of the Ocean Ring of Yoga. It is a **Saryu class Offshore Patrol Vessel which was commissioned at Kochi.** It is based under Southern Naval Command and is built at Goa Shipyard Limited. **The warship is designed to undertake fleet support operations, coastal and offshore patrolling, ocean surveillance and monitoring of Sea Lines of Communications and offshore assets, and escort duties.** It can achieve speeds of 25 knots. The ship also has an automatic power management system. It is fitted with the latest Navigation, Communication and Electronic Support Systems. **Other Sarayu class includes the INS Sumitra and INS Sumedha.**

2. Mineral Security Partnership: India was recently inducted into the Mineral Security Partnership (MSP). It is an **ambitious new initiative to bolster critical mineral supply chains, announced by the United States (US) and key partner countries in June 2022.** The goal of the alliance is to ensure that critical minerals are produced, processed, and recycled in a manner that supports the ability of countries to realise the full economic development benefit of their geological endowments. The focus of the grouping would be on the supply chains of minerals such as **Cobalt, Nickel, Lithium and also the 17 "rare earth" minerals.**

Critical mineral: There is no global definition of critical minerals, but essentially, they are mineral deposits with high economic vulnerability and high global supply chain risk.

3. Kalasa-Banduri Project: The Karnataka government recently submitted a revised proposal to the National Wildlife Board (NWD) and the Ministry of Environment, Forest and Climate Change (MoEFCC) for the Kalasa-Banduri project. **The project involves the construction of dams and a canal system to divert water from the Mahadayi River**, located in Goa, to the Malaprabha River (a tributary of the Krishna River) basin in Karnataka.

The main goal of the project is to meet the drinking water needs of the districts of Belagavi, Dharwad, Bagalkot, and Gadag in Karnataka. Though the project was first proposed in the early 1980s, it has remained on paper owing to a dispute between Karnataka, Goa and Maharashtra. **As per plans, barrages are to be built against Kalasa and Banduri streams — tributaries of Mahadayi — and water will be diverted towards Karnataka's parched districts.**

4. Bureau of Indian Standards (BIS): BIS recently notified 31 Indian standards related to Ayush, which includes 30 herbs and 1 product (stainless steel neti pot). These standards were recently published through a gazette notification. **BIS is the National Standards Body of India established under the BIS Act 2016.**

Objective: Harmonious development of the activities of standardisation and quality assurance of goods and articles. **It works under the. BIS represents India in International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC).**

ISO: It is an independent, non-governmental international organisation with a membership of 167 national standard bodies. Through its members, it brings together experts to share knowledge and develop voluntary, consensus-based, market-relevant International Standards that support innovation and provide solutions to global challenges.

26TH JUNE

1. UTPRERAK: Union Minister of State for Power inaugurated UTPRERAK, a dedicated Centre of

Excellence, to accelerate industry adoption of clean technologies in New Delhi. **The Unnat Takniki Pradarshan Kendra (UTPRERAK) is the Centre of Excellence to Accelerate Adoption of Energy Efficient Technologies** and seeks to play a catalytic role in improving the energy efficiency of the Indian industry. **It is also named as Advanced Industrial Technology Demonstration Centre (AITDC).** It has been set up by the Bureau of Energy Efficiency (BEE), Ministry of Power. The Centre is mandated to become the key reference and resource institution on industrial energy-efficient technologies. **It will be a knowledge exchange platform where best practices from across various key sectors can be diffused among industry professionals through workshops and seminars.**

2. Scientist John B Goodenough: Goodenough, whose contribution to lithium-ion battery technology in 1980 helped him win the 2019 Nobel Prize in chemistry, died on June 25 at the age of 100. He became the oldest person to receive the Nobel Prize.

He had shared his Nobel with two other researchers: **Michael Stanley Whittingham, a British-American chemist, and Akira Yoshino, a Japanese chemist — Yoshino invented the first commercially viable lithium-ion battery, which began to be sold in 1991. His work transformed the tech world, sparking the wireless revolution that made portable electronics ubiquitous.**

3. World Competitiveness Index: The International Institute for Management Development (IMD) published the World Competitiveness Index. **The IMD World Competitiveness Yearbook (WCY), was first published in 1989. It is a comprehensive annual report and worldwide reference point on the competitiveness of countries.** It analyses and ranks countries according to how they manage their competencies to achieve long-term value creation. **It is based on 336 competitiveness criteria and four factors, namely Economic performance, Government efficiency, Business efficiency, and Infrastructure.**

Denmark, Ireland, and Switzerland have been named the top three among 64 economies measured for their global competitiveness.

India fell three rungs to finish 40th but is still in a better position than it was between 2019-2021 when it was placed 43rd three years in a row. India improved in government efficiency but fared slightly poorer than other countries in business efficiency, infrastructure, and economic performance. Specifically, the top three measures that helped India in its score are **exchange rate stability, compensation levels, and improvements in pollution control.**

4. NANDI Portal: It is developed by the Department of Animal Husbandry and Dairying (DAHD) in collaboration with the Central Drugs Standard Control Organization (CDSCO) through the Centre for Development of Advanced Computing (CDAC). It will **streamline the regulatory approval process for veterinary products.** It will **enhance transparency and efficiency in assessing and examining proposals for veterinary drugs and vaccines.** It will be more streamlined through seamless integration with the SUGAM portal of the Central Drugs Standard Control Organization. It will **promote the well-being of livestock and the livestock industry.** It will bring about growth and innovation by enabling quick and easy coordination between various Government departments and institutes.

27TH JUNE

1. National Sickle Cell Anaemia Elimination Mission: It was announced as part of the Union Budget 2023. **Vision: Eliminate sickle cell disease (SCD) as a public health problem in India before 2047.** The overall aim is to enable access to affordable and quality health care for all SCD patients and to lower the prevalence through awareness, change of practices and screening interventions. **The mission will entail awareness creation, universal screening of seven crore people in the 0-40 years age group in affected tribal areas and**

counselling through collaborative efforts of central ministries and state governments. Initially, the focus shall be on 17 states with higher prevalence of SCD, Gujarat, Maharashtra, Rajasthan, Madhya Pradesh, Jharkhand, Chhattisgarh, West Bengal, Odisha, Tamil Nadu, Telangana, Andhra Pradesh, Karnataka, Assam, Uttar Pradesh, Kerala, Bihar and Uttarakhand.

2. Sickle Cell Anaemia: It is an inherited blood disorder. It **affects haemoglobin, the molecule in red blood cells that delivers oxygen to cells throughout the body.** People with this disease have atypical haemoglobin molecules called haemoglobin S, which can distort red blood cells into a sickle, or crescent, shape. These sickle cells also become rigid and sticky, which can slow or block blood flow. **The cause of Sickle cell disease is a defective gene called a sickle cell gene.** A person will be born with sickle cell disease only if two genes are inherited—one from the mother and one from the father.

Early stage: Extreme tiredness or fussiness from anaemia, painfully swollen hands and feet, and jaundice.

Later stage: Severe pain, anaemia, organ damage, and infections.

Treatments: The only cure for this disease is **bone marrow or stem cell transplantation.** However, some treatments can help relieve symptoms, lessen complications, and prolong life.

3. CHAMPIONS 2.0 Portal: Champions portal is a **single-window grievance redressal portal for Micro, Small & Medium Enterprises.** The CHAMPIONS stands here for the **Creation and Harmonious Application of Modern Processes for Increasing Output and National Strength.** Accordingly, the name of the system is CHAMPIONS. **It was launched on June 1, 2020, by the Ministry of Micro, Small & Medium Enterprises. It is created in a Hub & Spoke Model.** The Hub is situated in New Delhi in the Secretary MSME's office. The spokes will be in the States in various offices and

institutions of the Ministry. **The revamped portal will now incorporate AI-driven chatbots and will be available in 11 languages, including Hindi, Gujarati, Bengali, and Kannada.** The portal will also have a real-time feedback mechanism for its analysis.

4. Report Fish Disease App: It will strengthen the farmer-based disease reporting system and for improving the reporting of aquatic animal diseases in the country. **The app has been developed by ICAR-NBFGR under National Surveillance Programme for Aquatic Animal Diseases (NSPAAD).** Funded under: Pradhan Mantri Matsya Sampada Yojana by the Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India. **It will help the farmers in reporting the incidence of diseases in finfish, shrimps, and molluscs on their farms with the field-level officers and fish health experts.** This shall help farmers in getting scientific advice for the efficient management of the disease. **The data regarding the diseases will be stored on temporal & spatial scales and can be used for mapping the disease cases.** It would support farmers in improving farmer-based reporting, getting scientific advice, and reducing losses due to diseases, thereby increasing farmers' income.

28TH JUNE

1. Giant Metrewave Radio Telescope (GMRT): GMRT is a low-frequency radio telescope that helps investigate various radio astrophysical problems ranging from nearby solar systems to the edge of the observable universe. **Located at Khodad, 80 km north of Pune, the telescope is operated by the National Centre of Radio Astrophysics (NCRA).** NCRA is a part of the Tata Institute of Fundamental Research (TIFR), Mumbai. **GMRT is a project of the Department of Atomic Energy (DAE), operating under TIFR.** It consists of 30 fully-steerable dish-type antennas of 45-meter diameter each, spread over a 25-km region. **GMRT is presently the world's largest radio telescope**

operating at a meter wavelength. GMRT is a very versatile instrument for investigating a variety of radio astrophysical problems. **Two of its most important astrophysical objectives are: to detect the highly red-shifted spectral line of neutral Hydrogen expected from proto-clusters or protogalaxies** before they condensed to form galaxies in the early phase of the Universe; **to search for and study rapidly rotating Pulsars in our galaxy.** Pulsars are rapidly rotating neutron stars with extremely high densities. A pulsar is like a cosmic lighthouse as it emits radio beams that flash by the Earth regularly akin to a harbour lighthouse.

2. PM-PRANAM scheme: It aims to reduce the use of chemical fertilisers by incentivising the state. The states which will adopt **alternative fertilisers will be incentivised with the subsidy that is saved by reducing the use of chemical fertilisers.** The main objective of the scheme is to **encourage the balanced use of fertilisers in conjunction with bio fertilisers and organic fertilisers.** It will not have a separate budget. It will be financed by the savings of existing fertiliser subsidies under schemes. Half of the subsidy savings will be passed on to the state that saves the money as a grant. Out of this grant, 70% can be used to create assets related to the technological adoption of alternate fertilisers and alternate fertiliser production units at the village block, and district levels. The remaining 30% of grant money can be used to reward and encourage farmers, panchayats, and other stakeholders involved in fertiliser reduction and awareness generation. The government will evaluate the utilisation of fertilisers in terms of increase or decrease in overall consumption in a year vis-a-vis consumption over the past three years. **The Integrated Fertilisers Management System (iFMS) is the platform envisaged to track the use of fertilisers.**

3. State of Armaments, Disarmament and International Security: It is an **annual assessment of**

the Sweden-based think tank **Stockholm International Peace Research Institute (SIPRI)**.

Highlights: As on January 2023, the world has 9,576 nuclear weapons in military stockpiles for potential use. That is 86 more than the number in January 2022.

Around 2,000 of these 'deployed' weapons — nearly all of which belonged to Russia or the USA. Nine nuclear-armed states — **the United States, Russia, the United Kingdom, France, China, India, Pakistan, North Korea and Israel — continue to modernise their nuclear arsenals** and have deployed several new nuclear-armed or nuclear-capable weapon systems in 2022. The estimate of the size of China's nuclear arsenal increased from 350 warheads in January 2022 to 410 in January 2023.

India was estimated to have a growing stockpile of about 164 nuclear weapons, up from 160 the previous year. These weapons were assigned to a maturing nuclear triad of aircraft, land-based missiles and nuclear-powered ballistic missile submarines (SSBNs).

Pakistan possessed approximately 170 nuclear warheads as of January 2023 — up from 165 from the previous year.

29TH JUNE

1. Open Market Sale Scheme (OMSS): Under the OMSS, the FCI from time to time sells surplus food grains from the central pool, especially wheat and rice in the open market to traders, bulk consumers, retail chains, etc., at predetermined prices. **The FCI does this through e-auctions where open market bidders can buy specified quantities.** States are also allowed to procure food grains through the OMSS without participating in the auctions, for their needs. This will be beyond what they get from the central pool to distribute to NFSA (National Food Security Act) beneficiaries.

The OMSS aims to enhance the supply of food grains (ensuring food security) during the lean season and thereby moderate the open market prices (controlling inflation), especially in deficit regions. In this year's

OMSS, a total quantity of 33.7 LMT wheat was offloaded and the price of wheat came down by 19%.

2. Important Judgements w.r.t. appointment/removal of Council of Ministers:

- **Shamsher Singh & Anr vs State Of Punjab (1974) –** The Supreme Court held that the President and Governor shall exercise their formal constitutional powers only upon and by the advice of their Ministers except in a few well-known exceptional situations. The Court also added that even in case the Prime Minister/Chief Minister ceases to command a majority in the House OR the government loses the majority but refuses to quit office OR for "the dissolution of the House where an appeal to the country is necessitous" – The Head of the State (President/Governor) should avoid getting involved in politics and must be advised by his Prime Minister (Chief Minister) who will eventually take the responsibility for the step.

- **Nabam Rebia, Etc. vs Deputy Speaker And Ors (2016) –** The Supreme Court cited the observations of B R Ambedkar – "The Governor under the Constitution has no function which he can discharge by himself; no functions at all. While he has no functions, he has certain duties to perform, and I think the House will do well to bear in mind this distinction."

3. Gravitational Waves: Gravitational waves are ripples in space-time caused by some of the most violent and energetic processes in the Universe. **Albert Einstein predicted the existence of gravitational waves in 1916 in his general theory of relativity.** Einstein's mathematics showed that massive accelerating objects would disrupt space-time in such a way that waves of undulating space-time would propagate in all directions away from the source. **These massive objects include things like neutron stars or black holes orbiting each other.** These cosmic ripples would travel at the speed of light, carrying with them information about their origins, as well as clues to the nature of gravity itself. **The strongest gravitational**

waves are produced by cataclysmic events such as **colliding black holes, supernovae (massive stars exploding at the end of their lifetimes), and colliding neutron stars**. They are incredibly weak and difficult to detect because they interact very weakly with matter. However, extremely sensitive instruments called interferometers have been developed to detect these waves.

The most famous example is the Laser Interferometer Gravitational-Wave Observatory (LIGO), which made the first direct detection of gravitational waves in 2015.

30TH JUNE

1. Just Energy Transition Partnership (JET-P): It is a mechanism for multilateral financing by developed countries to support an energy transition in developing countries. It **aims to reduce emissions in the energy sector and accelerate the coal phase-out**. Transition describes the gradual movement towards lower carbon technologies, while 'Just' qualifies that this transition will not negatively impact society, jobs and livelihoods. **It was launched at the COP26 in Glasgow with the support of the UK, US, France, Germany, and the EU. Senegal has become the fourth country after South Africa, Indonesia and Vietnam to sign the JET-P deal, with the International Partners Group comprising France, Germany, the European Union, the United Kingdom and Canada. India refused to give its consent, saying that coal cannot be singled out as a polluting fuel and that energy transition talks need to take place on equal terms.**

2. Aspartame: The artificial sweetener called aspartame, found in many soft drinks, is set to be declared carcinogenic by the WHO cancer research unit. **It is the world's most commonly used low-calorie artificial sweetener, which is approximately 200 times sweeter than sucrose (common sugar) It was discovered by James M. Schlatter, a chemist, in 1965 and was introduced to replace sucrose.** The U.S. Food and Drug Administration (FDA) approved aspartame for use in some dry foods in 1981 and for carbonated beverages in 1983. **It is made up of two amino acids:**

aspartic acid and phenylalanine, which are naturally occurring amino acids in many protein-rich foods. In the body, aspartame is metabolised into its constituent components, aspartic acid, phenylalanine, and a small amount of methanol.- **It is used worldwide as a sugar substitute in thousands of foods and drinks, including cereals, sugar-free chewing gum, low-calorie fruit juices and diet sodas.** Around 100 countries around the world, including India, permit the use of aspartame.

3. World Asteroid Day: It is observed on June 30 every year. **The day aims to raise awareness about asteroid impact hazards and crisis communication actions in case of a credible asteroid threat to planet Earth.** The day also aims to educate people about the latest and upcoming asteroid research and technology through numerous events and activities held by organisations across the globe. **The United Nations General Assembly (UNGA) passed a resolution in December 2016, designating June 30 as International Asteroid Day.** The UNGA adopted the resolution based on the proposal made by the Association of Space Explorers, endorsed by the Committee on the Peaceful Uses of Outer Space (COPUOS). **The date was chosen to commemorate the anniversary of the Tunguska asteroid's impact over Siberia on June 30, 1908.**

4. Intergovernmental Negotiations Framework (IGN): IGN is a group of nation-states working within the UN to further reform the United Nations Security Council (UNSC). **The IGN is composed of several different international organisations, namely: The African Union; The G4 nations (India, along with Brazil, Japan and Germany are pressing for a permanent seat in the reformed UNSC); The Uniting for Consensus Group (UfC), also known as the "Coffee Club"; The L.69 Group of Developing Countries; The Arab League; and The Caribbean Community (CARICOM).** The group's conversations are considered "informal" in nature due to the lack of single text, and thus, UNGA rules of procedure don't apply. But in 2015, a framework document was agreed when it comes to the reform, which can be the basis for future talks.

Places in News

1. Senegal (Capital: Dakar)

- Clashes in Senegal kill at least 9.
- **Political Boundaries**
 - Bounded by **Sénégal River** (north and northeast), which separates it from **Mauritania**; **Mali** (east); **Guinea and Guinea-Bissau** (south); and **Atlantic Ocean** (west).
 - Located at westernmost point of the continent.
- **Geographical features**
 - **Major rivers:** Sénégal, Saloum, Gambia (Gambie), and Casamance rivers.
 - **Highest point:** Nepen Diakha Mountains.
 - It is a flat country that lies in depression known as **Senegal-Mauritanian Basin**.



2. Comoros (Capital: Moroni)

- As part of Indian Navy's long-range deployment, **INS Trishul visited port Anjouan, Comoros**.
- **Political Boundaries**
 - They are a **group of islands at northern end of Mozambique Channel of Indian Ocean**, between Madagascar and southeast African mainland.
 - The islands from northwest to southeast include **Grande Comore, Mohéli, Anjouan and Mayotte**.
 - Three of Comoro Islands in Indian Ocean, off the coast of East Africa.
 - Fourth island Mayotte, is claimed by country of Comoros but administered by France.
- **Geographical features**
 - Islands emerged from floor of Indian Ocean as a result of volcanic activity.
 - **Grande Comore is the largest and loftiest island.**
 - **Mohéli is the smallest island of the group.**



3. Serbia (Capital City: Belgrade)

- The President is on a state visit to Serbia. **The visit is the first by an Indian President to Serbia.**
- **Political features:**
 - **Location:** A **landlocked country** in South East Europe which **covers part of the Pannonian Plain** and Central and Western Balkan Peninsula.
 - **Border countries:** Hungary, Romania, Bulgaria, North Macedonia, Kosovo, Croatia, Bosnia and Herzegovina, and Montenegro.
- **Geographical features:**
 - **Climate:** Continental, with a gradual transition between the four seasons.
 - **Rivers:** Danube, Sava and Tisa etc.
 - **Highest Point:** Daravica



4. Fiji (capital: Suva)

- Fiji reconsiders security ties with China amid Pacific tensions.
- **Political Boundaries:**
 - Fiji is an **archipelago in the South Pacific Ocean**.

- It surrounds the Koro Sea about 1,300 miles (2,100 km) north of Auckland, New Zealand.
- **Geographical Features:**
- The Fiji islands are **largely the product of volcanic action**, sedimentary deposit, and formations of coral.
- Of the 300 islands, about 100 are inhabited.
- **Highest point:** Tomanivi
- **Largest Island:** Viti Levu (“Great Fiji”)



5. Colombia (Capital: Bogotá)

- Four siblings found alive after surviving Amazon plane crash and 40 days alone in jungle.
- **Political boundaries:**
- It is a **north-western South American country** with a coastline on Atlantic Ocean as well as the Pacific Ocean.
- Bordered by Panama, Venezuela, Brazil, Peru and Ecuador.
- **Geographical features:**
- The Andean cordillera, one of the world’s great mountain ranges, dominates the landscape of the western part of the country.
- **Highest Point:** Pico Cristóbal Colón
- **Important Rivers:** Amazon, Caquetá, Negro, Orinoco, Putumayo, Magdalena



6. Cuba (Capital: Havana)

- US confirmed that China has had a spy base in Cuba since at least 2019.
- **Political Boundaries**
- Country of West Indies, the largest single island of the archipelago.
- Situated just **south of Tropic of Cancer at intersection of Atlantic Ocean** (north and east), Gulf of Mexico (west), and Caribbean Sea (south).
- Neighbouring country includes **Haiti** (east); **Jamaica** (south); **Bahamas archipelago** (northern coast); and **US** (north across the Straits of Florida).
- **Geographical features**
- **Major river:** Cauto (longest), Guantanamo.
- **Highest Peak:** Turquino Peak in Sierra Maestra range.
- **Important cities and places:** Santiago, Trinidad, Guantanamo Bay.



7. Belarus (Capital-Minsk)

- Russia plan to deploy Russian Nuclear Weapons in Belarus.
- **Political boundary:**
- It is a **landlocked country in eastern Europe**.
- It is bordered by Lithuania and Latvia to the northwest, by Russia to the north and east, by Ukraine to the south, and by Poland to the west.
- **Geographical features**
- **Major river:** Dnieper, Byarezina, Pripet, Mukhavyets .
- **Highest point:** Dzyarzhynskaya Hill
- **Lakes:** Narach, Osveyskoye, and Drysvyaty.



8. Nagorno-Karabakh

- Armenia accuses **Azerbaijan of 'ethnic cleansing'** in Nagorno-Karabakh.
- Nagorno-Karabakh, known as **Artsakh by Armenians**, is a landlocked mountainous area in South Caucasus.
- It was **claimed by both Azerbaijan and Armenia** after the fall of Russian Empire in 1917 and has remained a point of tension ever since.
- **Territory is internationally recognised as part of oil-rich Azerbaijan**, but its inhabitants are predominantly ethnic Armenians



9. Belize (Capital: Belmopan)

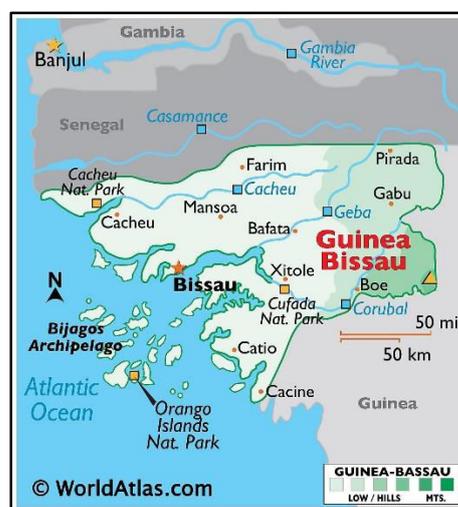
- World Health Organization (WHO) has certified **Belize as malaria-free**.
- **Political Boundaries**
 - Country located on **northeast coast of Central America**.
 - Situated south of Yucatán Peninsula.
 - Bounded by **Mexico** (north), **Guatemala** (west and south), and **Caribbean Sea** (east).
- **Geographical features**
 - **Belize Barrier Reef Reserve System**, inscribed as a UNESCO World Heritage Site in 1996.

- Belize is a land of **mountains, swamps, and tropical jungle**.
- **Highest point:** Doyle's Delight.
- **Major Mountain ranges:** Maya Mountain.
- **Major Rivers:** Belize River, Hondo River.



10. Guinea-Bissau (Capital: Bissau)

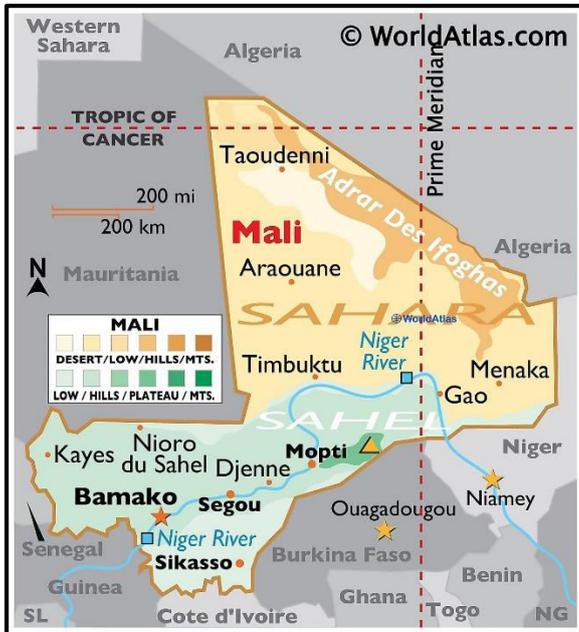
- Guinea-Bissau exports almost the entire cashew crop (around 98 percent) to India for processing.
- **Political Boundaries**
 - Bounded by **Senegal** (north), **Guinea** (east and south), and **Atlantic Ocean** (west).
 - It includes **Bijagós (Bissagos) archipelago** and other islands that lie off the coast.
- **Geographical features**
 - **Major River:** Geba, Corubal.
 - **Highest point:** Dongol Ronde.



11. Mali (Capital: Bamako)

- UN Mission backs constitutional referendum in Mali.
- **Political Boundaries**

- **Landlocked country of western Africa.**
- Bounded by **Algeria** (north), **Niger and Burkina Faso** (east), **Côte d'Ivoire and Guinea** (south), and **Senegal and Mauritania** (west).
- **Geographical features**
- Landscape is largely flat and monotonous.
- **Major River:** Niger, Sénégal.
- **Terrain:** Savannah and desert.
- **Highest point:** Hombori Tondo.



- It is bounded by **Uganda and Kenya** (north), **Indian Ocean** (east), **Mozambique, Malawi, and Zambia** (south and southwest), and **Burundi and Rwanda** (west).
- It also shares a border with famous lakes such as **Victoria, Nyasa and Tanganyika** (world's second deepest lake).
- **Geographical features**
- **Major River:** Rufiji River.
- **Highest point:** Kilimanjaro.
- East African Rift System runs in two north-south-trending branches through mainland Tanzania.



12. Tanzania (Capital: Dodoma)

- **Political Boundaries**

Edufacts

1st June

1. UAE withdraws from US led 38 nation Combined Maritime Forces in the Gulf.
2. Amend law to make **necrophilia an offence**: High court

2nd June

1. Sedition law can be retained but with safeguards: Law Commission
2. Half of electricity to be from renewable sources by 2027
3. More than 46 lakh small loans have been given to vendors under **PM SVANidhi**; about 40% repaid: MoHUA

6th June

1. Working to turn **Capital into a 'City of lakes'**- Delhi government
2. Indian railways has witnessed on an average 80 accidents per year in the past decade with derailment causing 70% of such incidents
3. Delhi is expected to become **the world's largest agglomeration around the year 2028**: according to a UN survey

7th June

1. China overtakes US in scientific research output
2. **508 districts** in India have become free from manual scavenging
3. India urges Germany to invest in **defence corridors in UP, Tamil Nadu**

9th June

1. In India 11% of the total population are diabetic while 15% are pre diabetic
2. Goa has the highest prevalence of diabetes while UP has lowest

12th June

1. WHO estimates Lifestyle diseases could cost India \$6 trillion by 2030. Examples of lifestyle diseases - **Diabetes, Hypertension, High Cholesterol**
2. For the 1st time since Covid 19, share of urban consumers pessimistic about Indian economy declined to below 50%- RBI
3. More than 50000 people have been displaced in the ongoing Manipur ethnic clashes
4. About **41% beneficiaries of SVANidhi scheme are women**; Southern states performed much better (70% women beneficiaries in Andhra)
5. UAE emerges as the **4th largest investor in India in FY23**

13th June

1. Right to life includes the **right not to be tied down by casteism**: High court
2. 7500 people displaced due to cyclone Biparjoy
3. India-UAE target \$100 bn in non oil trade by 2030

15th June

1. Everyday 808 women die due to complications in pregnancy and childbirth: WHO
2. Proportion of cess and surcharges in the Centre's total tax revenue has increased from 10% in 2011-12 to 20.2% in 2019-20.
3. All the 20 Eurozone countries slipped into recession in the 1st 3 months of 2023
4. 20000 people affected by floods in Assam in last few days

19th June

1. 2 million people lost their lives between 1970-2019 due to extreme weather
2. Climate change amounts to \$6.5 trillion worth of economic loss between 1970-2019

20th June

1. **India is a home to 250000 refugees**, half of them being women and children

2. **Europe**, the **world's fastest warming continent**, is hotter by 2.3 degrees celcius than 1850-1900 levels

21st June

1. The Hind Kush himalayan region is expected to lose 80% of its ice by 2100 due to climate change
2. International Day of Yoga is celebrated on **21st June since 2015**

22nd June

1. **6-7% of India's population** suffers from mental disorders: National Health Mission estimates
2. Diseases which affect women more receive less funding. Also women are underrepresented in clinical trials

3. Odisha seeks inclusion of tribal language **Saura as an official language in the 8th schedule.**

27th June

1. Caste will have no role to play in appointment of temple priests: High court
2. Between 2011-2022, 70000 people surrendered their passports as India doesn't allow for dual citizenship

28th June

1. **Operation Sarp Vinash** by counter insurgency force called **Romeo** resulted in elimination of 65-70 terrorists in Jammu.



Educrat IAS
ACADEMY
India's Best Mentorship for Civil Services

Practice MCQs on Current Affairs- June 2023

1. Consider the following statements with reference to Human immunodeficiency virus (HIV):

1. HIV belongs to the retrovirus family with DNA as its genetic material.
2. HIV primarily targets white blood cells in the human body.
3. In some cases, vector transmission of HIV is possible.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option A

- HIV (human immunodeficiency virus) is an **RNA virus**. It belongs to the **retrovirus family, which is characterized by the presence of RNA as its genetic material**.
- HIV primarily **targets CD4 cells**, which are a **type of white blood cell**, essential for the proper functioning of the immune system.
- Mosquitoes or any other insect vector cannot transmit HIV, unlike malaria. **HIV cannot live in mosquito blood and can survive only in human blood**.

2. Consider the following statements with reference to Tele-Law Programme:

1. The Tele-Law programme comes under Ministry of Social Justice
2. Legal advice is made available to everyone under Tele-Law service.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option B

- The Tele-Law programme comes under the **Department of Justice, Ministry of Law and Justice and was launched in 2017**.
- The programme **connects needy and marginalised people in need of legal aid with the Panel Lawyers via video conferencing/telephonic**

facilities available at Common Service Centres (CSCs) situated at the panchayat level. In addition, the service can also be accessed through the Tele-Law Mobile App.

- Legal advice is made available to everyone under Tele-Law service. Advice is free of Cost to those who are eligible for free legal aid under **Section 12 of LSA Act, 1987**.
- For all others, a nominal fee of Rs. 30/- is charged for each consultation.

3. Consider the following countries:

1. Russia
2. Pakistan
3. India
4. Turkmenistan
5. Kazakhstan

How many of the above countries are members of Shanghai Cooperation Organisation (SCO)?

- (a) Only two
- (b) Only three
- (c) Only four
- (d) Only five

Ans:- Option C

Recently, the Union Ministry of External Affairs announced that **India will host the annual summit of the Shanghai Cooperation Organisation (SCO) in the virtual format on July 4, 2023**.

- It will be held in the virtual format.
- All the SCO Member States, China, Russia, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan and Uzbekistan have been invited to attend the Summit.
- **Iran, Belarus and Mongolia have been invited as Observer States**.

4. Consider the following statements with reference to Purana Qila:

1. It is one of the oldest forts in Delhi and built on the banks of river Ganga
2. The present citadel at Purana Qila started its construction in the reign of Humayun and was completed by Sher Shah Suri
3. All of the gates are double-storeyed

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

- It is located on **the South Eastern part of the present city of New Delhi.**
- It is **one of the oldest forts in Delhi and built on the banks of river Yamuna.**
- The present citadel at Purana Qila started its construction in the reign of Humayun and was completed by Sher Shah Suri ('The Lion King').
- **An amazing feature of the Purana Qila are the three gates** that are a display of a happy blend of Hindu and Muslim styles of architecture. – **Bara Darwaza or the Big Gate facing west, the Humayun Gate facing south, and the Talaqqi Gate, which is often referred to as the forbidden gate.** All of the gates are double-storeyed and comprise of huge semi-circular bastions flanking either of their sides.

5. Consider the following with reference to Global Greenhouse Gas Watch (GGGW):

1. It is a new greenhouse gas (GHG) monitoring initiative of the World Meteorological Organisation (WMO).
2. GGGW predicts a top-down approach to the flux evaluation, which builds on existing capabilities

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option C

- It is a **new greenhouse gas (GHG) monitoring initiative of the World Meteorological Organisation (WMO).**
- GGGW will fill critical information gaps, providing an integrated, operational framework under all space-based and surface-based observing systems under one roof, along with modelling and data assimilation capabilities.
- It will **build on WMO's experience in coordinating international collaboration in predicting the weather and analysing climate** on long-standing activities in greenhouse gas monitoring and research under the **guidance of the Global Atmosphere Watch, established in 1989.**

6. With reference to the CITIIS 2.0 Program, consider the following statements:

1. It is an initiative of the Union Ministry of Housing and Urban Affairs and the World Economic Forum.

2. Under this program cities will be given financial and technical support for developing projects focused on building climate resilience, adaptation and mitigation.
3. The program will run for four years, i.e., from 2023 to 2027.

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

Ans:- Option B

- It is a program conceived by the **Ministry of Housing and Urban Affairs (MoHUA) in partnership with the French Development Agency (AFD), the European Union (EU), and National Institute of Urban Affairs (NIUA).**
- The program will run for **four years, i.e., from 2023 to 2027.**
- **Objective:** The program envisages supporting competitively selected projects **promoting a circular economy with a focus on integrated waste management at the city level**, climate-oriented reform actions at the State level, and institutional strengthening and knowledge dissemination at the National level.

7. With reference to the Electronics Repair Services Outsourcing (ERSO) initiative, consider the following statements:

1. It is an initiative of the Union Ministry of Electronics & Information Technology.
2. Under this initiative repaired goods will be permitted to be sold in the domestic market as well as international markets.

Which of the statements given above is/are correct?

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option A

- Recently, the Union Ministry of Electronics & IT launched the ERSO Pilot initiative to validate certain transformational policy and process changes **to make India the Repair Capital of the World.**
- It aims to **promote India as a hub for repairing electronic goods** and to assess the feasibility and potential of capturing 20% of the global repair service market within five years.

- **India's e-waste policy will be modified to enable repair companies to domestically recycle 5% of imported goods by weight on a trial basis.**
- The repaired goods will not be permitted to be sold in the domestic market.

8. With reference to the large Grain Storage Plan initiative of India, consider the following statements:

1. It will be implemented by the Union Ministry of Food Processing.
2. It aims to address the shortage of agricultural storage infrastructure at the level of primary agricultural credit societies.
3. It is expected to be world's largest grain storage plan

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

Ans:- Option B

- In order to ensure time-bound and uniform implementation of the Plan in a professional manner, **the Ministry of Cooperation will implement a pilot project in at least 10 selected districts.**
- **Aim:** To address the shortage of agricultural storage infrastructure in the country by **facilitating the establishment of godowns at the level of primary agricultural credit societies (PACS)** and also enabling PACS to undertake various other activities.

9. Consider the following statements regarding Ordinances.

1. Rejection of an Ordinance would imply the government has lost majority.
2. If an Ordinance makes a law that Parliament is not competent to enact under the Constitution, it shall be considered void.
3. If an Ordinance lapses, then it cannot be reissued for a period of 1 year.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

- The Ordinance may lapse earlier if **the President withdraws it — or if both Houses pass resolutions disapproving it.** (Rejection of an Ordinance would, however, imply the government has lost majority.)
- If an Ordinance makes a law that Parliament is not competent to enact under the Constitution, it shall be considered void.
- **If, for whatever reason, an Ordinance lapses, the only option for the government is to reissue or repromulgate it.**

10. Consider the following statements regarding East Asia Summit.

1. All the members of ASEAN are members of East Asia Summit.
2. India is a member of East Asia Summit.
3. All the members have a chance to host the summit on a rotation basis

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

Beginning in 2005, **16 participating countries comprised this grouping, with their first meeting in Kuala Lumpur, Malaysia.** These members were the 10 ASEAN countries, Australia, China, India, Japan, New Zealand, and the Republic of Korea. ASEAN's 10 member countries are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. **It is an ASEAN-centred forum so it can only be chaired by an ASEAN member.**

11. Consider the following statements regarding Higgs Boson:

1. It is one of the elementary particles that make up the Standard Model of particle physics.
2. It is positively charged with mass less than of a proton
3. The Higgs Boson is the only elementary particle with no spin.

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

- It is the fundamental force-carrying particle associated with the Higgs field, a field that gives mass to other fundamental particles such as electrons and quarks.
- **Higgs boson plays such a fundamental role in subatomic physics that it is sometimes referred to as the "God particle."**
- The Higgs boson has a mass of 125 billion electron volts — meaning it is 130 times more massive than a proton, according to CERN.
- It is also **chargeless with zero spin** — a quantum mechanical equivalent to angular momentum.
- The Higgs Boson is the only elementary particle with no spin.

12. Phukot Karnali Hydro Electric Project is located in which state?

- Myanmar
- Nepal
- Bhutan
- Thailand

Ans:- Option B

- It is located in **Kalikot district, Karnali Province of Nepal.**
- The project will use the flow from the **Karnali River for power generation** and the generated power will be fed into integrated power system of Nepal.
- Recently, NHPC Limited and Vidhyut Utpadan Company Limited (VUCL), Nepal signed an MoU for **development of Phukot Karnali Hydro Electric Project (480MW) in Nepal.**

13. Consider the following statements with reference to Mission Vatsalya:

1. It aims to achieve development and child protection priorities aligned with the Sustainable Development Goals (SDGs).
2. It is implemented by the Ministry of Social Justice.
3. The Scheme is implemented as a Central Sector Scheme since 2021-22.

Which of the statements given above is/are correct?

- Only one
- Only two
- All three
- None

Ans:- Option A

- Mission Vatsalya Scheme is a roadmap to **achieve development and child protection priorities aligned with the Sustainable Development Goals (SDGs).**
- It lays **emphasis on child rights, advocacy and awareness along with strengthening of the juvenile justice care and protection system with the motto to 'leave no child behind'.**
- The Scheme is implemented as a Centrally Sponsored Scheme since 2021-22.
- **Nodal Ministry:** The Ministry of Women and Child Development.

14. TP Rajendran Committee was recently constituted for which of the following purposes?

- Reviewing to the objections of industry on the ban of harmful pesticides
- Recommendation on Sunrise Sector development
- Recommendation on sub categorisation of OBC
- To prepare the professional engineers bill

Ans:- Option A

- Rajendran said that **all chemicals and pesticides including the toothpaste we use is harmful for human health.**
- What matters is the dosage, the formulation composition and the way humans have been asked to use the product.
- All pesticides have a label in them **specifying good agriculture practices, with right dosage, time of application, precautions to be taken and so on.**
- If somebody violates that, it is that individual's problem and not a national or a government issue.

15. Consider the following statements with respect to Zardosi Embroidery

1. Zardozi embroidery is a metal embroidery, which once used to embellish the attire of the Kings and the royals in India.
2. It has been in existence in India since the times of Rig Veda
3. The Geographical Indication tag for zardozi to Lucknow is still pending

Which of the statement(s) given above is/are correct?

- Only One
- Only Two
- Only Three
- None

Ans:- Option B

- Zardozi embroidery has been in existence in India from the time of the Rig Veda.
- **Zardozi embroidery is a metal embroidery**, which once used to embellish the attire of the Kings and the royals in India.
- **Zardozi embroidery work involves making elaborate designs, using gold and silver threads.**
- Further adding to the magnificence of the work are the **studded pearls and precious stones.**
- **Lucknow has received GI tag.**

16. Consider the following statements with respect to University Grants Commission Act, 1956

Statement – I- It empowers the Governor of a State to declare any institution to a status of Institution deemed to be University.

Statement – II- In most cases, the Governor of the state is the ex-officio chancellor of the universities of that state.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans:- Option D

The **UGC Act 1956** provides for Central Government to declare any institution other than a University to a **status of Institution Deemed to be University**

17. Consider the following locations of Strategic Petroleum Reserves (SPR):

1. Chandikhol – Odisha
2. Padur – Andhra Pradesh
3. Mangaluru - Karnataka

Which of the above are correctly matched?

- (a) Only One
- (b) Only Two
- (c) Only Three
- (d) None

Ans:- Option B

Currently, India has 3 strategic oil storage facilities at

- Mangaluru - Karnataka
- Padur - Karnataka

- Visakhapatnam - Andhra Pradesh
- India is also in the process of expanding its SPR capacity at two locations**
- **Chandikhol – Odisha**
- **Padur – Karnataka**

18. With reference to the Salt Cavern, consider the following statements:

1. It is developed by the process of solution mining by pumping water into geological formations with large salt deposits to dissolve the salt.
2. The process is complex and cost-intensive

Which of the statements given above is/are correct?

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option A

- Salt caverns are developed by the **process of solution mining**, which involves pumping water into geological formations with large salt deposits to dissolve the salt.
- After the brine (water with dissolved salt) is pumped out of the formation, the space can be used to store crude oil.
- The **process is simpler, faster, and less cost-intensive than developing excavated rock caverns.**
- The salt that lines the inside of these caverns has **extremely low oil absorbency, which creates a natural impermeable barrier against liquid and gaseous hydrocarbons**, making the caverns apt for storage.
- **Rajasthan**, which has the bulk of requisite salt formations in India, is **seen as the most conducive for developing salt cavern-based strategic storage facilities.**
- India has three existing strategic oil storage facilities — at **Mangaluru and Padur in Karnataka, and Visakhapatnam in Andhra Pradesh.**

19. Porpanaikottai Excavation Site recently seen in the news is located in which of the following states?

- (a) Kerala
- (b) Tamil Nadu
- (c) Karnataka
- (d) Andhra Pradesh

Ans:- Option B

- It is situated in the **Pudukottai town, Tamilnadu.**

- It is a **Sangam Age site** with a big fort and habitation.
- The fort has 3 entrance gates

20. With reference to the Myristica swamps, consider the following statements:

1. In India these are mainly found in the Western Ghats region.
2. Myristica swamps are typically seen next to rivers and help in retaining water and act as a sponge, ensuring perennial water availability.
3. Kammadam Kavvu, the largest sacred grove in Kerala is home to this Myristica Swamps.

Which of the statements given above is/are correct?

- (a) Only One
- (b) Only Two
- (c) Only Three
- (d) None

Ans:- Option C

- Myristica swamps are **freshwater swamps** predominated by members of the **Myristicaceae family**.
- These swamps are found in the **Sacred Groves or evergreen forest patches** and are included in the **littoral and swamp forest groups**.
- **Kammadam Kavvu is the largest in Kerala**.
- This species has **stilt roots, or knee roots** that pop up above the water level to breathe creating a varied habitat for many life forms.
- These forests are characterized by trees with large protruding roots jutting out of waterlogged soil which remains inundated throughout the year.

21. Consider the following sectors:

1. Touchscreens
2. Defence and aerospace
3. Super capacitors
4. Environmental monitoring

In how many of the above areas, graphene is used?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans:- Option D

- **Graphene:** It is an **allotrope of carbon** consisting of a single layer of atoms arranged in a hexagonal lattice nanostructure.

- It is the **world's thinnest, strongest, and most conductive material of both electricity and heat**. Properties - It is 200 times stronger than steel but 6 times lighter.
- It is **almost perfectly transparent** as it absorbs only 2% of light.
- It is **impermeable to gases**, even those as light as hydrogen and helium.
- It has the potential to absorb and dissipate electromagnetic waves.
- **It is highly sensitive to environmental changes**

22. Consider the following statements:

Statement – I: It is a legal concept that allows a person who has unlawfully occupied someone else's land for a certain period of time to claim legal ownership of that land.

Statement – II: In India, it is legal under the Properties Act.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement - I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans:- Option C

- In India, **adverse possession has been a part of the legal framework** for a long time and is rooted in the idea that land must not be left vacant and instead be put to judicious use.
- To claim adverse possession, **the occupier must prove that they have been in continuous, uninterrupted possession of the land for at least 12 years** and that their possession was open, notorious, and hostile to the true owner.
- The law of Adverse Possession in India is governed by the **principle of The Limitation Law of 1963**.
- As per adverse possession under limitation act, if over a due course of time or period, if an appeal is not made to revise any limitation, the current scenario of titles continues.

23. Consider the following statements regarding National Centre for Disease Control (NCDC):

1. It is the nodal agency in the country for disease surveillance, facilitating prevention and control of communicable diseases.

2. It functions under the administrative control of the Indian Directorate General of Health Services, Ministry of Health and Family Welfare.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option C

- The National Centre for Disease Control (NCDC) recently alerted states about smaller outbreaks for five diseases—**typhoid, malaria, dengue, scrub typhus and hepatitis A.**
- It is an institute under the **Indian Directorate General of Health Services, Ministry of Health and Family Welfare.**
- The Director, an officer of the Public Health sub-cadre of Central Health Service, is the administrative and technical head of the Institute.

24. Consider the following statements:

Statement – I: In India, a tribal woman was not treated on par with a non-tribal woman in case of inheritance of properties.

Statement – II: Hindu Succession Act, 1956 explicitly exempts tribes under section 2(2) of the act.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement - I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans:- Option A

- Inheritance rights of tribal women is neither covered under the Hindu Succession Act, 1956 nor under the Indian Succession Act, 1925.
- **The Scheduled Tribes of India are governed by customary laws in matters of inheritance, marriage and succession.**
- The customary tribal laws continue to discriminate against tribal women in the matter of succession.
- **Hindu Succession Act, 1956 explicitly exempts tribes under section 2(2) of the act.**

- Similarly, the Hindu Adoptions and Maintenance Act, 1956 and the Hindu Marriage Act, 1955 are also not applicable to the STs, unless extended by the central government or otherwise directed

25. Which one of the following countries is not a member of the Organization of the Petroleum Exporting Countries (OPEC) Plus?

- 1. Azerbaijan
- 2. Bahrain
- 3. Brunei
- 4. Singapore

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans:- Option A

- The non-OPEC countries which export crude oil are termed as **OPEC plus countries.**
- OPEC plus countries include **Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan.**

26. Consider the following statements:

Statement – I: The deputy chief minister is equivalent to the rank of a Council of Minister and enjoys the status on par with them.

Statement II: like the posts of chief minister, deputy chief minister is also a constitutional post.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- (b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement - I
- (c) Statement-I is correct but Statement-II is incorrect
- (d) Statement-I is incorrect but Statement-II is correct

Ans:- Option C

- Unlike the posts of chief minister and cabinet ministers, **a deputy chief minister is not a constitutional post.**
- It is **equivalent to the rank of a cabinet minister** (in the state) and enjoys the pay and perks that a cabinet minister is entitled to

27. Nyaya Vikas portal, often seen in the news recently, is associated with which of the following?

- (a) Promote free legal aid
- (b) Digitisation of judicial proceedings
- (c) Judicial Infrastructure
- (d) Setting up Arbitration courts

Ans:- Option C

- Nyaya Vikas portal was created **for monitoring the implementation of Centrally Sponsored Scheme for Judicial Infrastructure.**
- It aims for the **Development of Infrastructure Facilities for Judiciary** by providing financial assistance to State Governments / UTs in the prescribed fund sharing pattern between Centre and States.
- It covers the construction of court buildings and residential accommodations for Judicial Officers of District and Subordinate Judiciary.
- **Outlay** - Centrally Sponsored Scheme (CSS)
- **Ministry** - Ministry of Law and Justice
- **Year** – The scheme **being implemented since 1993-94.**

28. Consider the following statements regarding Norovirus:

- 1. It is a common and highly contagious virus that causes nausea, vomiting and diarrhea.
- 2. No vaccines are currently available to prevent norovirus.
- 3. People of all ages can get infected and sick with norovirus, which spreads very easily and quickly.

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option C

- It is a **common and very contagious virus.** It causes nausea, vomiting and diarrhea.
- It is also **sometimes referred to as the 'stomach flu' or the 'winter vomiting bug'.**
- People of all ages can get infected and sick with norovirus, which spreads very easily and quickly.
- They commonly spread through food or water that is contaminated during preparation or through contaminated surfaces

29. With reference to the Mahua Tree, consider the following statements:

- 1. It is native to the evergreen forests of South Asia.

- 2. It requires sandy-loamy soil with good drainage for its growth.
- 3. It is a frost-resistant species

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

- Mahua is mainly cultivated or harvested in the wild in South Asia countries for **its edible flowers and oil seeds.**
- It is a **frost-resistant species** that can grow in **marginal areas of dry tropical and subtropical forests up to an altitude of 1200-1800 m.**
- It can be found scattered in pastures, in crop fields in central India, and on river banks in semi-evergreen forests.

30. Which of the following countries borders Black sea

- 1. Turkey
- 2. Bulgaria
- 3. Romania
- 4. Azerbaijan
- 5. Moldova

Which of the statements given above is/are correct?

- (a) two only
- (b) three only
- (c) four only
- (d) five only

Ans:- Option B



31. Consider the following statements about Trimbakeshwar Temple

1. It was constructed by 3rd Peshwa Balaji Bajirao also known as Nana Saheb.
2. The entire temple is built with black stone.
3. The Jyotirlinga here has three faces embodying Indra, Agni and Varuna.

How many of the statements given above are correct?

- (a) Only One
- (b) Only Two
- (c) All Three
- (d) None

Ans:- Option B

- The entire temple is **built with black stone**.
- Trimbakeshwar Jyotirlinga is **only one of the 12 jyotirlingas in India**.
- Trimbakeshwar – It not only honor Lord Shiva but the other two gods in the Holy Trinity – **Lord Vishnu and Lord Brahma as well**.

32. Consider the following statements regarding Homo Naledi:

1. It is a previously-unknown species of extinct hominin.
2. They had human-like hands and feet but a much smaller brain.
3. Homo naledi appears to have lived near the same time as early ancestors of modern humans.

Which of the statements given above is/are correct?

- (a) Only One
- (b) Only Two
- (c) All Three
- (d) None

Ans:- Option B

- Homo naledi is a previously-unknown species of extinct hominin.
- **Fossil of Homo Naledi were first discovered in the Dinaledi Chamber** of the Rising Star Cave system in South Africa during an expedition led by Lee Berger beginning October 2013.
- **This excavation remains the largest collection of a single hominin species that has been found in Africa**.
- Homo naledi's shoulders — which were oriented for better climbing — and teeth shared similarities with earlier hominins like Australopithecus.
- They had human-like hands and feet but a brain a third of the size of humans.

33. With reference to the Securities Appellate Tribunal, consider the following statements:

1. It is a statutory body established under the Securities and Exchange Board of India Act, 1992.
2. It hears and disposes of appeals against orders passed by the Securities and Exchange Board of India, the Pension Fund Regulatory and Development Authority (PFRDA) and the Insurance Regulatory Development Authority of India (IRDAI).
3. It has the same powers as vested in a civil court under the code of civil procedure while trying a suit.

Which of the statements given above is/are correct?

- (a) Only One
- (b) Only Two
- (c) All Three
- (d) None

Ans:- Option C

- It consists of a **Presiding Officer & Two other members**.
- The Presiding officer shall be appointed by the **Central Government in consultation with the Chief Justice of India or his nominee**.
- It has the same powers as vested in a civil court under the code of civil procedure while trying a suit

34. Which of the following are matched correctly with respect to dispute over the sharing of river water

1. Helmand River: Iran and Afghanistan
2. Ilisu Dam and the Tigris River: Iran and Iraq
3. Ethiopian Renaissance Dam and the Nile River: Ethiopia and Djibouti

Which of the statements given above is/are correct?

- (a) Only One
- (b) Only Two
- (c) All Three
- (d) None

Ans:- Option A

- **Ethiopia-Egypt:** Grand Ethiopian Renaissance Dam and the Nile River
- **Turkey-Iraq:** Ilisu Dam and the Tigris River
- Iran and Afghanistan are locked in a long-standing dispute over the sharing of water from the Helmand River.
- **The Helmand is Afghanistan's longest river**. It originates near Kabul in the western Hindu Kush mountain range and flows in a southwesterly

direction through desert areas for a total of about 1,150 kilometers (715 miles) before emptying into Lake Hamun, which straddles the Afghanistan-Iran border.

35. Consider the following statements.

1. The weight of an aircraft does not have any impact on its takeoff and landing speed.
2. If an aircraft is overloaded, it would lead to a longer takeoff run and landing roll

Which of the above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option B

- The weight of an aircraft is a crucial component that governs the choices a pilot has to make while operating the flight. **The pilot has to intricately balance the weight of passengers, baggage and fuel to ensure that the aircraft is not overloaded.**
- If an aircraft is overloaded, it **would need a higher takeoff and landing speed, which, in turn, calls for a longer takeoff run and landing roll.** It would also reduce the manoeuvrability of the aircraft and place excess pressure on landing gear, resulting in wear and tear.
- The maximum weight an aircraft can carry is also significantly impacted by the length of the runway at the departure and arrival airports and whether there is wet grass or water on the runway.

36. Consider the following statements with respect to Coral Bleaching.

1. Due to warming of water, corals expel the algae living in their tissues, causing the coral to bleach.
2. Corals are the only living structure to be visible from space.
3. Corals cannot survive bleaching events.

Which of the statement(s) given above is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

Ans:- Option B

- Corals are **invertebrate animals** belonging to a large group of colourful and fascinating animals called **Cnidaria**.

- **Corals can survive bleaching events** but can't effectively support marine life, threatening the populations that depend on them.
- **Coral reefs are the largest living structure on the planet and the only living structure to be visible from space.**

37. 'Operation Amanat', recently seen in the news, is a novel initiative of which one of the following agencies?

- (a) Indian Air Force
- (b) Directorate of Revenue Intelligence
- (c) Railway Protection Force (RPF)
- (d) Indian Coast Guard

Ans:- Option C

- Under the Operation Amanat initiative, **the Railway Protection Force** has taken a novel initiative to make it easier for the passengers to get back their lost luggage.
- **It helps to track lost belongings of passengers.**

38. With reference to the Dimethyl Ether, consider the following statements:

1. Under normal atmospheric conditions, DME is a colorless gas.
2. It has a very high cetane number.
3. It can be a viable alternative fuel and engine technology

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

Ans:- Option C

- Dimethyl Ether is a **synthetically produced alternative to diesel** for use in specially designed compression ignition diesel engines.
- **The DME-fuelled engine emitted extremely low particulate and soot emissions** and almost no smoke without using expensive exhaust gas after-treatment devices and advanced engine technologies.
- It can be a **viable alternative fuel and engine technology to adapt to conventional diesel engines** used in India's economy's agricultural and transport sectors.
- It has a **very high cetane number**, which is a measure of the fuel's ignitability in compression ignition engines.

- Under normal atmospheric conditions, **DME is a colorless gas.**

39. About 2,300 years ago, a village, located in the northern banks of the river Noyyal, a tributary of the Cauvery, prospered as an industrial and trade centre that made iron and steel, bangles out of shells and exquisite beads. It was also known for its gemstone industry. A megalithic cairn circle was also excavated from this site.

Identify the site using the description given above:

- (a) Keezhadi
- (b) Brahmagiri
- (c) Kodumanal
- (d) Tekkalakotta

Ans:- Option C

- Recently Tamil Nadu Department of Archaeology has declared **five 'menhir' (single stone) and megalithic burial sites at Kodumanal in Erode district as protected monuments.**
- Menhir and megalithic burial sites at Kodumanal is in erode district of Tamil Nadu.
- **Kodumanal** is located in the **northern banks of the river Noyyal, a tributary of the Cauvery.**
- Potsherds containing names inscribed in **Tamil-Brahmi script** were found in a large number, apart from Roman silver coins, precious stones and quartz.

40. Consider the following statements with respect to Diabetes in India.

1. It occurs only when the body cannot effectively use the insulin it produces.
2. The increased medical infrastructure in recent times especially in rural India have resulted in decreased rate of diabetes in India.
3. India has the 8th largest number of diabetics worldwide.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option D

- Diabetes is a chronic disease that occurs either when the **pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces.**

- Prediabetes is a serious health condition where blood sugar levels are higher than normal, but not high enough yet to be diagnosed as type 2 diabetes.
- **India has the 2nd largest number of diabetics worldwide.**
- The high rates of diabetes in rural India, coupled with a lack of infrastructure, could accelerate the ongoing obesity and prediabetes epidemic.
- **Over 11 % of Indians are diabetic, and 35.5% suffer from hypertension.**

41. Consider the following pairs

Lunar Missions	Countries
Danuri Mission	– Japan
Hakuto R Mission	– South Korea
Luna 25	– Russia
Artemis	– USA

How many of the pairs given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans:- Option B

 South Korea Danuri mission Mission: Orbiter will study moon from January 2023 after entering lunar orbit Launch: Aug. 2022	 Japan ispace's Hakuto-R Mission Mission: UAE rover and Japanese payload on a lander; crash-landed Launch: Dec. 2022	 India Chandrayaan-3 Mission: Lunar exploration with a landing module and rover Launch: June 2023
 Russia Luna 25 Mission: Sample gathering from southern pole Launch: July 2023	 U.S.A Artemis II Mission: Crewed mission to the moon Launch: 2024	 China Unnamed Mission: Crewed mission to the moon Launch: By 2030

42. Consider the following statements with respect to Agni Prime

1. It is a two stage cruise missile that uses liquid propellant.
2. It has a range of around 9000 kilometres and is capable of carrying a nuclear warhead.
3. It is equipped with advanced ring-laser gyroscopes for accuracy.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two

- (c) All Three
- (d) None

Ans:- Option A

- The Agni P missile is **developed by India's DRDO**.
- It is a **two-stage ballistic missile** that uses solid propellant and is stored in a canister, which means that it can be stored in a canister and transported by road or rail.
- It has a **range of 2,000 kilometres** and can carry a nuclear warhead.

43. Consider the following statements regarding Neanderthals:

1. They lived throughout Europe and parts of Asia from about 400,000 until about 40,000 years ago.
2. They deliberately buried their dead and occasionally even marked their graves

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option C

- **Neanderthals are our closest extinct human relative.** They lived throughout Europe and parts of Asia from about 400,000 until about 40,000 years ago.
- Some defining features of their skulls include the large middle part of the face, angled cheek bones, and a huge nose for humidifying and warming cold, dry air.
- **Their bodies were shorter and stockier than modern humans**, another adaptation to living in cold environments.
- But their brains were just as large as modern humans and often larger - proportional to their brawnier bodies. Their bones reveal that they were extremely muscular and strong.

44. Consider the following statements regarding Kosovo:

1. It is a mainly ethnic Albanian populated territory that was formerly a province of Serbia.
2. Kosovo's independence has been recognized by about 100 countries including the United States.
3. Serbia has agreed to recognize Kosovo's statehood for the next 100 years.

Which of the statements given above is/are correct?

- (a) Only one

- (b) Only two
- (c) All Three
- (d) None

Ans:- Option B

- Kosovo is a mainly ethnic Albanian populated territory that was formerly a province of Serbia. **It declared independence in 2008.**
- Serbia has refused to recognize Kosovo's statehood and still considers it part of Serbia, even though it has no formal control there.
- **Kosovo's independence has been recognized by about 100 countries, including the United States.**
- Russia, China and five EU countries, most of them with separatist regions of their own, have sided with Serbia.

45. Sunda Strait, which was recently seen in the news, is between which two Islands?

- (a) Java and Sumatra
- (b) North and South Andaman
- (c) Corsica and Sicily
- (d) None of the above

Ans:- Option A

- Recently, Indonesia's Anak Krakatau volcano has erupted, spewing ash as high as 3 kilometres into the air.
- This volcano island is **located in Indonesia's Sunda Strait** between the main Java and Sumatra islands.
- **Anak Krakatau, which means "child of Krakatau," is the offspring of the famous Krakatau**, whose monumental eruption in 1883 triggered a period of global cooling.
- It was the **longest eruption since the explosive collapse of the mountain caused a deadly tsunami in 2018.**
- The Sunda Strait is the strait between the Indonesian islands of Java and Sumatra. It connects the Java Sea to the Indian Ocean.

46. With reference to the Poshan Tracker App, consider the following statements:

1. This application provides a 360-degree view of the activities of the Anganwadi Centre.
2. It was launched by the Union Ministry of Women and Child Development (MoWCD).
3. It also digitizes and automates physical registers used by workers to help improve the quality of their work.

Which of the statements given above is/are correct?

- (a) only one
- (b) only two
- (c) only three
- (d) none

Ans:- Option C

This application provides a **360-degree view of the activities of the Anganwadi Centre** (child care centres), service deliveries of Anganwadi Workers and complete beneficiary management for pregnant women, lactating mothers and children under six

47. Consider the following statements regarding Chikungunya:

1. It is a parasitic disease caused by bites of sandfly
2. There is currently no approved vaccine or specific treatment for chikungunya virus infections.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option B

- According to a recently published research paper, **a human clinical trial of a vaccine candidate to prevent chikungunya has returned a 99% immune response.**
- It is a viral disease transmitted to humans through the bites of mosquitoes infected with the chikungunya virus.
- **The word comes from the African Makonde language and means "bent over in pain."**
- It is most commonly transmitted by **mosquitoes, Aedes (Stegomyia) aegypti and Aedes (Stegomyia) albopictus**, which can also transmit dengue and Zika viruses.

48. Which of the following countries are neighbors of Afghanistan

1. Turkmenistan
2. Uzbekistan
3. Tajikistan
4. Kyrgyzstan
5. Iraq

Which of the statements given above is/are correct?

- (a) only three
- (b) only four
- (c) all five
- (d) only two

Ans:- Option A

To the south and east, **Afghanistan shares a border with Pakistan; to the west, it shares a border with Iran**, and its northern border touches the Central Asian countries of **Turkmenistan, Uzbekistan, and Tajikistan**. In the far northeast, it shares a border with China.



49. It is a chemical decomposition achieved by passing an electric current through a liquid or a solution that contains ions. Depending on the solution and the materials in use, the process can release gases, form solids or even leave behind a completely new solution. It also has applications in producing green hydrogen.

Identify the technique/process described in the above paragraph:

- (a) Zone refining
- (b) Electrolysis
- (c) Liqutation
- (d) Galvanoluminescence

Ans:- Option B

- Electrolysis is a chemical decomposition achieved by passing an **electric current through a liquid or a solution that contains ions.**
- Electrolysis requires an **electrolytic cell that consists of positively and negatively charged electrodes submerged in a solution containing particles of the opposite charge.**
- As the electric current passes through the solution, the negatively charged electrode (cathode) attracts the positively charged ions, while the positively charged electrode (anode) attracts the negatively charged ions.

- Depending on the solution and the materials in use, the process can **release gases, form solids, or even leave behind a completely new solution.**

50. How many of the following museum-city pairs are matched correctly

- 1) Salar Jung museum: Hyderabad.
- 2) National Museum and National Gallery of Modern Art : Bangalore
- 3) Indian Museum: Delhi

Which of the statements given above is/are correct?

- (a) only one
- (b) only two
- (c) only three
- (d) none

Ans:- Option A

- **Salar Jung museum**, Hyderabad.
- **National Museum and National Gallery of Modern Art** in New Delhi.
- **Indian Museum and Victoria Memorial** in Kolkata.
- Recently Minister for Culture and Tourism launched Museums of India mobile application as a part of JATAN project. **Jatan Virtual Museum Builder is the software being used for digitizing records of antiquities** in the various collections that are displayed in a common portal for the public view.
- **Jatan can create 3D virtual galleries and provide public access through web, mobile or touch screen kiosks.**

51. 'Consider the following statements regarding Gravitational Lensing:

1. It occurs when a massive celestial body causes a sufficient curvature of spacetime for the path of light around it to be visibly bent.
2. An important consequence of this lensing distortion is magnification, preventing us to observe objects.
3. Gravitational Lensing was first predicted in 1915 by Albert Einstein, which involves the bending of light by objects of great mass.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option B

- It occurs when a massive celestial body, such as a galaxy cluster, causes a sufficient curvature of spacetime for the path of light around it to be visibly bent, as if by a lens.
- **The body causing the light to curve is accordingly called a gravitational lens.**
- **An important consequence of this lensing distortion is magnification**, allowing us to observe objects that would otherwise be too far away and too faint to be seen.
- **Gravitational Lensing was first predicted in 1915 by Albert Einstein**, which involves the bending of light by objects of great mass.
- According to Einstein's general theory of relativity, time and space are fused together in a quantity known as spacetime.

52. Cholederm, often seen in the news, is associated with which of the following?

- (a) heart disorder treatment using Alge
- (b) A wound healing material
- (c) Plant based protein food
- (d) It is class B medical device approved recently by CDSCO

Ans:- Option B

- Cholederm is a **wound healing material** which was recently **approved by Central Drugs Standard Control Organisation (CDSCO) as a Class D medical device.**
- Cholederm is a wound healing material derived from the **extracellular matrix of de-cellularised gall bladder of pig and tissue engineered as membrane forms of scaffold.**
- **It is the first indigenously developed product to meet all regulatory requirements.**
- It healed different types of skin wounds including burn and diabetic wounds in rats, rabbits or dogs faster than similar products currently available in the market.

53. Consider the following pairs

Cyclones		Region of formation
Asani	–	Arabian sea
Mocha	–	Bay of Bengal
Biparjoy	–	Arabian sea
Sitrang	–	Bay of Bengal

How many of the pairs given above are correct?

- (a) Only one
- (b) Only two

- (c) Only three
(d) All four

Ans:- Option C

- **Cyclone Asani:** Bay of Bengal.
- The name was suggested by **Sri Lanka** meaning **“wrath” in Sinhala.**
- **Cyclone Mocha:** Bay of Bengal. The name was suggested by **Yemen.**
- **Cyclone Biparjoy:** Arabian Sea. It will be the **first cyclone about to cross Gujarat coast in 25 years.** The name was suggested by **Bangladesh.**
- **Cyclone Sitrang:** Bay of Bengal. The name was suggested by **Thailand.**

54. With reference to the Kanya Shiksha Pravesh Utsav initiative, consider the following statements:

1. It was launched by the Ministry of Women and Child Development (MoWCD) in partnership with World Health Organisation.
2. The objective of this initiative is to enhance the enrolment of girls in higher studies.
3. In the new scheme, a new category is created in which adolescent girls between 14 and 18 years are covered.

How many of the statements given above are correct?

- (a) Only one
(b) Only two
(c) All Three
(d) None

Ans:- Option A

- It was launched by the **Ministry of Women and Child Development (MoWCD), in partnership with the Ministry of Education and UNICEF.**
- **Objective:** Enhancing enrolment and retention of girls between 11-14 years of age in school.
- The initiative intends to build on the **existing schemes and programmes like Schemes for Adolescent Girls (SAG), BetiBachaoBetiPadhao (BBBP) and National Education Policy (NEP)** to work on a comprehensive system for out-of-school girls.
- Now Ministry of Women and Child Development has decided to club together three programmes under a new scheme — **Anganwadi services, poshan Abhiyan and scheme for adolescent girls** — since all these had the same nutritional targets.”

- In the new scheme, a new category is created in which **adolescent girls between 14 and 18 years are covered.**

55. Which one of the following best describes ‘Anjadip’, recently seen in the news?

- (a) It is a torpedo launch and recovery vessel.
(b) It is an anti-submarine warfare shallow watercraft.
(c) It is a diesel- electric submarine.
(d) It is a supersonic torpedo.

Ans:- Option B

- It is an anti-submarine warfare shallow watercraft vessel built for the Indian Navy.
- It was built by the **Kolkata-based Garden Reach Shipbuilders and Engineers (GRSE).**
- **Anjadip is the third of the eight ships of the contract** that was signed between Garden Reach Shipbuilders and Engineers, Kolkata and the Ministry of Defence in April 2019.

56. Consider the following statements:

1. Pradhan Mantri Primitive Vulnerable Tribal Groups (PM-PVTG) Development Mission aims to provide basic government service to all PVTG villages.
2. A fund of Rs 15,000 crore for the next three years has been allocated for this mission.
3. Pradhan Mantri Adi Adarsh Gram Yojana aims at integrated development of villages in which the population of Scheduled Castes is above 10%.

How many of the statements given above are correct?

- (a) Only one
(b) Only two
(c) All three
(d) None

Ans:- Option B

- It is a **2023-24 Budget scheme to connect all 22,544 PVTG villages to basic government services** like communications, electricity, public education, healthcare, water supply, and connectivity.
- A fund of Rs 15,000 crore for the next three years has been allocated for this mission.
- **Mission will be launched as part of ‘Reaching The Last Mile- Leaving No Citizen Behind’** as there are 75 PVTG groups spread across 18 states and the UT of Andaman & Nicobar Island in India.
- **Pradhan Mantri Adi Adarsh Gram Yojana:** The Scheme aims at integrated development of

villages in which the population of Scheduled Castes is above 50%.

- Under this scheme over 36,000 tribal villages are being developed to become model villages.

57. It is a mosquito-borne viral disease, caused by RNA virus, and transmitted to humans by mosquitoes, most commonly Aedes (Stegomyia) aegypti and Aedes (Stegomyia) albopictus, which can also transmit dengue and Zika viruses. There is no commercial vaccine available to protect against this virus infection.

Identify the disease using the description given above:

- (a) Polio
- (b) Measles
- (c) Meningitis
- (d) Chikungunya

Ans:- Option D

- The recent Lancet study represents the results of the first Phase III trial conducted for a vaccine against the Chikungunya disease.
- According to the study, **28 days after a single vaccination with “VLA1553”, the vaccine resulted in virus-neutralizing antibody levels lasting up to 180 days in 98.9% of study participants.**
- The vaccine contains a modified, live version of the chikungunya virus that can replicate in the body without causing severe illness.
- **Live vaccines closely mimic natural infections, triggering a robust immune response that provides long-lasting and broad protection.**

58. With reference to the National Supercomputing Mission (NSM), consider the following statements:

1. National Supercomputing Mission (NSM) is an initiative of ISRO.
2. Under NSM, till date 15 supercomputers have been installed across the nation with compute capacity of 24 petaflops.
3. All these supercomputers have been manufactured in India

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

- National Supercomputing Mission (NSM) is a **joint initiative of Ministry of Electronics and Information Technology (MeitY) and Department of Science and Technology (DST).**
- Under NSM, till **date 15 supercomputers have been installed across the nation with compute capacity of 24 petaflops.** All these supercomputers have been manufactured in India and operating with indigenously developed software stack.
- **PARAM PORUL, a state-of-the art Supercomputer at NIT Tiruchirappalli** was dedicated to the nation under Phase 2 of the National Supercomputing Mission (NSM)

59. How many of the following countries border Caspian Sea?

1. Kazakhstan
2. Tajikistan
3. Iraq
4. Azerbaijan
5. Russia

Which of the statements given above is/are correct?

- (a) two only
- (b) three only
- (c) four only
- (d) all five

Ans:- Option B

The Caspian Sea is bordered by five countries: **Kazakhstan, Turkmenistan, Iran, Azerbaijan, and Russia**



60. Consider the following statements:

1. The Supreme Court has directed that police should neither interfere nor take criminal action against adult and consenting sex workers.
2. According to Supreme Court a child of a sex worker should not be separated from the mother merely on the ground that she is in the sex trade.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option C

61. Consider the following statements with respect to Bhimbetka Rock Shelter

1. The Bhimbetka Rock Shelter is situated in the foothills of the Vindhyan Range.
2. The Bhimbetka rock shelter have inscriptions only till Mesolithic Period.
3. The cave also has a small inscription of the Maurya/Sunga period.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option B

- The Rock Shelters of Bhimbetka are in the foothills of the **Vindhyan Mountains** on the southern edge of the central Indian plateau.
- They are situated in south of **Bhopal of Madhya Pradesh**.
- The shelters were designated a **UNESCO World Heritage site in 2003**.
- The continuity of human evolution in this site is noticed from the **Lower Palaeolithic Period**.
- The cave also has a **small inscription of the Maurya/Sunga period**.

62. With reference to the Geminid meteor shower, consider the following statements:

1. It originates from a comet known as 3200 Phaethon.
2. It is visible most prominently during the month of mid-December.
3. The Parker data indicates that a powerful event such as a high-speed collision or a gaseous explosion likely caused the creation of the Geminid stream.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three

(d) None

Ans:- Option B

- Unlike most meteor showers that originate from comets, **the Geminid stream appears to originate from an asteroid known as 3200 Phaethon**.
- Phaethon is an asteroid, but as it flies by the Sun, it seems to have some kind of **temperature-driven activity**.
- The Parker data indicates that a powerful event such as a high-speed collision or a gaseous explosion likely caused the creation of the Geminid stream.

63. Consider the following statements with respect to key outcomes of the Bonn Climate Change Conference, 2023

1. Agreement on a work plan for the global stocktake
2. Progress on adaptation
3. Discussions on loss and damage
4. Agreement to phase out all fossil fuel use by 2050

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans:- Option C

- Bonn Climate Change Conference 2023 was concluded recently which is an important step in the fight against climate change.
- The conference was **co-chaired by the United Nations Framework Convention on Climate Change (UNFCCC) and the Government of Germany**.
- It **meets at least twice a year** to advise the COP on matters of science, technology and methodology.
- **Agreement to phase out all fossil fuel use by 2050** was not a key outcome of Bonn Climate Change Conference 2023.
- **The key outcomes of the Bonn Climate Change Conference 2023 includes**
 - Agreement on a work plan for the global stocktake,
 - Progress on adaptation and
 - Discussions on loss and damage

64. Consider the following statements regarding Cerebellum:

1. It accounts for around 90% of total brain weight and contains more than 10% of all neurons in the brain.
2. It coordinates muscle actions so that the body can move smoothly.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option B

- The cerebellum, which **stands for “little brain”**, is a structure of the central nervous system.
- **Location:** It is a part of your brain located at the back of your head, just above and behind, where your spinal cord connects to your brain itself.
- **It only accounts for around 10% of total brain weight** but contains as many as 80% of all neurons in the brain.

Functions: Maintaining balance: The cerebellum has special sensors that detect shifts in balance and movement. **It sends signals for the body to adjust and move.**

65. Also called Friendly Islands, it is a country in the southwestern Pacific Ocean.

1. It is an archipelago of more than 170 islands. it has no direct neighbours. Nearby countries include 2. Fiji to the west, the Cook Islands to the east and Samoa north. An earthquake of magnitude 7.2 struck it recently, according to the US Geological Survey (USGS).

Which of the statements given above is/are correct?

- (a) Tonga islands
- (b) Cuba
- (c) Madeira islands
- (d) Aleutian islands

Ans:- Option A

66. Consider the following statements regarding the ‘Soul of Steel Himalayan Challenge’:

1. The challenge supported by the Indian Army
2. It was based on the lines of the ‘Ironman triathlon’, a long-distance triathlon held in Europe which tests an individual's physical capabilities.
2. The challenge opens the domain of niche military skills to an average person, who wishes to challenge their physical and psychological limits.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option C

- The initiative is aimed at **enabling life skill training and youth development**. It is also expected to boost global promotion of adventure tourism in Uttarakhand.
- It was a unique blend of specialised skills, including **high altitude mountaineering, extreme cold survival, psychological and physical endurance**

67. Consider the following statements

1. United Nations Convention to Combat Desertification (UNCCD) is the world’s highest level decision making body on the environment.
2. Great Green Wall is an initiative of United Nations Convention to Combat Desertification.
3. The UNCCD is a convention and hence non binding

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option A

- The United Nations Convention to Combat Desertification (UNCCD) **was established in 1994 to protect and restore our land and ensure a safer, just, and more sustainable future.**
- UNCCD promote practices **that avoid, reduce and reverse land degradation and are the driving force behind Sustainable Development Goal 15 and Land Degradation Neutrality.**
- **UNCCD is the only legally binding framework set up to address desertification and the effects of drought.**
- UN Environment Assembly is the **world’s highest level decision making body on the environment. The flagship initiatives of UNCCD includes**
 - Great Green Wall Initiative
 - Changwon Initiative

68. Consider the following statements with respect to Miyawaki Forests

1. It is a Korean method of creating dense urban forests in a small area.
2. This type of forest method majorly helps in recovering indigenous trees.
3. It requires regular maintenance like manuring and watering.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option A

- Miyawaki plantation is the **Japanese method of creating dense urban forests in a small area.**
- It is named after **Japanese botanist Akira Miyawaki**, this method involves planting two to four different types of indigenous trees within every square metre.
- **Miyawaki plantation helps to preserve indigenous trees.**
- The plants used in the Miyawaki method are mostly self-sustaining and don't require regular maintenance like manuring and watering.
- **Miyawaki technique can be used to transform a barren land into a mini forest.**

69. With reference to the Food and Agriculture Organization, consider the following statements:

1. It is a specialized agency of the United Nations which leads international efforts to defeat hunger.
2. It publishes the State of the World's Forests report.

Which of the statements given above is/are correct?

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option C

70. How many of the following folk dances are correctly matched with their corresponding states:

1. Chhapeli: Himachal Pradesh
2. Kaikottikali: Tamil Nadu
3. Pung Cholom: Mizoram
4. Ghumara: Odisha

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two

- (c) only Three
- (d) all four

Ans:- Option B

- **Manipur:** Dol Chalam, Thang Ta, Lai Haraoba, Pung Cholom
- **Odisha:** Savari, Ghumara, Painka, Munari
- **Kerala:** Ottam Thullal, Kaikottikali
- **Himachal Pradesh:** Jhora, Jhali, Chharhi, Dhaman, Chhapeli, Mahasu

71. Which of the following is the only paramilitary force with a dual control structure?

- (a) Central Reserve Police Force (CRPF)
- (b) Border Security Force (BSF)
- (c) Indo-Tibetan Border Police (ITBP)
- (d) Assam Rifles

Ans:- Option D

The dual control structure: Its uniqueness lies in the fact that **Assam Rifles is the only paramilitary force with a dual control structure.** While the **administrative control of the force is with the MHA, its operational control is with the Indian Army**, which is under the Ministry of Defence (MoD). This means that salaries and infrastructure for the force is provided by the MHA, but the deployment, posting, transfer and deputation of the personnel is decided by the Army.

72. Consider the following statements with respect to Phonons

1. Phonon is a unit of vibrational energy that arises from oscillating atoms within a crystal.
2. Phonons and photons are the two main types of elementary particles in solids.
3. Phonons are essential particles in the phenomenon of superresistivity.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option A

- Phonon is a **unit of vibrational energy** that arises from oscillating atoms within a crystal.
- Each phonon is the collective vibration of around one quadrillion atoms.

- A phonon is a definite discrete unit or quantum of vibrational mechanical energy just as a photon is a quantum of electromagnetic or light energy.
- **Phonons and electrons are the two main types of elementary particles or excitations in solids.**
- It determine such things as the speed of sound within a material and how much heat it takes to change its temperature.
- **It is essential in the phenomenon of superconductivity.**
- **Acoustic beam-splitter is a tiny device which can be used to emit and detect individual phonons.**

73. Consider the following statements regarding Energy Efficiency Services Limited (EESL):

1. It is promoted by the Ministry of Power
2. It was formed to create and sustain market access to energy efficient technologies
3. EESL is leading the market-related activities of the National Mission for Enhanced Energy Efficiency (NMEEE).

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option C

74. How many of the following military exercises are correctly matched

1. Khaan Quest: Mongolia and India.
2. GARUDA SHAKTI: India and Indonesia
3. Prabal Dostyk: India and Kyrgyzstan
4. Khanjar: India and Kazakhstan

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans:- Option B

- **India and Kazakhstan** Army PRABAL DOSTYK
- **India and Kyrgyzstan** Army KHANJAR

75. Consider the following statements with respect to Hawkish Pause and Dovish Pause in economy

1. A hawkish pause is a situation in which a central bank decides to raise interest rates, but still committed to fight inflation.
2. A dovish pause is a situation in which a central bank decides to stop raising interest rates because they are worried about slowing economic growth.

Which of the following statement(s) is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option B

- The term "pause" is used to describe **the temporary nature of the decision to stop raising interest rates.**
- **A hawkish pause is a situation in which a central bank decides to temporarily stop raising interest rates, but makes it clear that they are still committed to fighting inflation and may resume raising rates in the future.**
- A dovish pause is a situation in which a central bank decides to stop raising rates because they are worried about slowing economic growth.
- **The Federal Reserve and the RBI have both implemented hawkish pauses in recent months.**

76. Consider the following statements with respect to International Centre for Integrated Mountain Development (ICIMOD)

1. It is a subsidiary organ of UN Environment Programme (UNEP).
2. It develops and shares research and innovations to empower people in the 8 regional member countries of the Hindu Kush Himalayan (HKH).
3. India, Kazakhstan and Afghanistan are part of it

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option A

- ICIMOD is an **intergovernmental knowledge and learning centre**
- It develops and shares research, information, and innovations to empower people in the **eight regional member countries of the Hindu Kush Himalayan (HKH).**

- **It is based at Kathmandu, Nepal.**
- Himalayan glaciers disappeared 65% faster since 2010 than in the previous decade and reducing snow cover due to global warming will result in reduced fresh water for people living downstream.
- 200 glacier lakes across Hindu Kush Himalayan are deemed dangerous, and the region could see a significant spike in glacial lake outburst floods by the end of the century.



77. Consider the following statements with reference to UN High Seas Treaty:

1. It is the first-ever treaty to protect the world's oceans that lie outside national boundaries.
2. It aims to place 60% of the seas into protected areas by 2030.
3. It is a legally binding treaty

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option B

- It is the **first-ever treaty to protect the world's oceans that lie outside national boundaries.**
- It is also known as the **'Paris Agreement for the Ocean.'**
- It is a **legally binding treaty** that aims at protecting, caring for, and ensuring the responsible use of the marine environment, **maintaining the integrity of ocean ecosystems,** and conserving the inherent value of marine biological diversity.
- **It aims to place 30% of the seas into protected areas by 2030** (a pledge made by countries at the UN biodiversity conference in 2022).

78. Consider the following statements.

1. Long period average (LPA) is an average level of rainfall received by an area and its calculation is based on data over many decades.

2. In India, monsoon is considered normal only when rainfall is above 100% of the Long period average (LPA).
3. In the last 10 years, the onset of monsoon over Kerala has not happened on the normal date.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option A

- The LPA of rainfall, according to the India Meteorological Department (IMD), "is the rainfall recorded over a particular region for a given interval (like month or season) average over a long period like 30 years, 50 years etc." In other words, **the LPA is an average level of rainfall received by an area and its calculation is based on data over many decades.** The LPA acts as a benchmark while forecasting or assessing the rainfall in a particular season.
- **A monsoon is considered "normal" when rainfall falls between 96% and 104% of the LPA.**
- In the past five years, only once has the onset over Kerala happened on the normal date, in 2020.

79. Which of the following statements is related to C+1 Strategy?

- (a) Strategy to avoid investing only in China and diversify business into other countries
- (b) Strategy to reduce CO2 emissions and shift to renewables
- (c) China's strategy to create a bipolar world order
- (d) China's strategy of engagement with Central Asian countries to boost trade

Ans:- Option A

- C+1 Strategy also known as **China Plus One** or just Plus One is a **Strategy followed by companies to avoid investing only in China and diversify business into other countries.**
- The driving factors C+1 Strategy includes China's cost advantage diminishing in recent years to growing geopolitical distrust between China and the West.

80. INS Kirpan, which was recently seen in the news, belongs to which class of warship?

- (a) Shivalik Class
- (b) Khukri class

- (c) Kolkata class
- (d) None of the Above

Ans:- Option B

- It is an indigenously-built in-service missile.
- It is a **Khukri class missile** corvette commissioned into **the Navy on January 12, 1991**.
- It has a displacement displacing capacity of close to 1,400 tonnes.
- **It is capable of a speed of more than 25 knots.**
- The Khukri class are equipped with **Diesel Engines assembled in India.**

81. Consider the following statements with respect to Black Cocaine

1. Black cocaine is a mixture of regular cocaine base with various substances to camouflage typical appearance.
2. Pure cocaine is recovered from the black cocaine by extraction using methylene chloride or acetone.
3. It can be detected by sniffer dogs.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option A

- Black cocaine is rare drug, which is typically **white in colour** but it is the additional substance that makes it black in colour.
- **It is a designer drug** wherein **cocaine is mixed with charcoal** and other chemicals to give it black rubbery appearance.
- **It cannot be even detected by sniffer dogs.**
- South American countries where coca plants grow are major suppliers of cocaine to India

82. Consider the following statements.

1. The Department of Animal Husbandry and Dairying (DAHD) comes under the Ministry of Agriculture and Farmers Welfare.
2. The present law that regulates import of live-stock is 300 years old.
3. The National Programme for Dairy Development (NPDD) scheme focuses on creating infrastructure for quality milk testing SHGs/Milk Producer Companies/Farmer Producer Organizations.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option A

- The Centre has withdrawn the proposed draft of the Live-stock and Live-stock Product (Importation and Exportation) Bill, 2023.
- **The Bill is meant to replace the Live-stock Importation Act, 1898, and the Live-stock (Amendment) Act, 2001.**
- The Department of Animal Husbandry and Dairying (DAHD) comes under the **Ministry of Fisheries, Animal Husbandry and Dairying.**
- The present law that regulates import of live-stock is 125 years old. "The Live-stock Importation Act, 1898, being the pre-constitutional/pre-independence Central Act.

83. Consider the following statements regarding the Einstien Telescope:

1. It is an advanced gravitational-wave observatory, currently in the planning stage.
2. It will make it possible, for the first time, to explore the Universe through gravitational waves along its cosmic history up to the cosmological dark ages

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option C

- It is an **advanced gravitational-wave observatory, currently in the planning stage.**
- It builds on **the success of current, second-generation laser-interferometric detectors Advanced Virgo and Advanced LIGO**, whose breakthrough discoveries of **merging black holes (BHs) and neutron stars over the past 5 years** have ushered scientists into the new era of gravitational-wave astronomy.
- It will make it possible, for the first time, to **explore the Universe through gravitational waves along its cosmic history up to the cosmological dark ages**, shedding light on open questions of fundamental physics and cosmology.
- It will probe the physics near black-hole horizons (from tests of general relativity to quantum gravity), help understand the nature of dark

matter, and the nature of dark energy and possible modifications of general relativity at cosmological scales.

- Its low-frequency sensitivity will allow us to detect intermediate-mass black holes.

84. Consider the following statements with respect to Global Gender Gap Index, 2023

1. It is an annual report published by the World Bank.
2. In 2023 report, India was ranked below Sri Lanka and Bangladesh.
3. India has attained parity in enrolment across all levels of education.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option B

- The Global Gender Index, also known as **Global Gender Gap Index** was first introduced by the **World Economic Forum in 2006**.
- The Global Gender Gap Index annually benchmarks the current state and evolution of gender parity across four key dimensions: **Economic Participation and Opportunity, Educational Attainment, Health and Survival, and Political Empowerment**.
- India has closed 64.3% of the overall gender gap, ranking **127th on the global index**.
- The country has attained parity in enrolment across all levels of education.
- **Iceland is the most gender-equal country in the world** for the 14th consecutive year and the only one to have closed more than 90% of its gender gap.

85. How many of the following theatre forms have been correctly matched:

1. Bhand Pather: Kashmir
2. Ankyaa Naat: Assam
3. Ramman: Uttarakhand
4. Bhavai: Rajasthan

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans:- Option D

86. kar-e-kalamdani, often seen in the news, is associated with which of the following?

- (a) Kangra art of Himachal
- (b) Painted Papier Mache
- (c) Name for lab grown diamonds
- (d) A form of painting by charcoal pens

Ans:- Option B

- Recently Prime Minister Narendra Mod gifted **lab grown diamonds** in papier mache box known as **kar-e-kalamdani to the U.S. First Lady Jill Biden**
- kar-e-kalamdani is a **Kashmir's exquisite Papier Mache**, a technique to make gift products
- Art of painted papier-mâché in Kashmir was originally confined to **making Kalamdan or the pen-case only and got to be known as Kari-Kalamdani**.
- The craft of Kari-kalamdani was popularly known as **papier-mâché painting in Europe**.
- **It involves sakhsazi** or meticulous preparation of Paper Pulp and Naqqashi.
- **It has a GI (Geographical Indication) tag**.

87. Consider the following statements regarding Lab-Grown Diamonds:

1. They are produced using specific technology which mimics the geological processes that grow natural diamonds.
2. The Diamond simulants such as Moissanite and White Sapphire are used to make them look like natural diamonds.
3. High pressure, high temperature" (HPHT) method is the most common yet expensive method.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option B

- High pressure, high temperature" (HPHT) method:
- **It is the most common and cheapest method**.
- In this method, extremely heavy presses that can produce up to 730,000 psi of pressure under extremely high temperatures of at least 1500 celsius are applied.

- Usually, graphite is used as the “diamond seed” and when subjected to these extreme conditions, the relatively inexpensive form of carbon turns into one of the most expensive carbon forms.
- Chemical Vapor Deposition (CVD) and explosive formation create what is known as detonation nanodiamonds.

88. Consider the following statements regarding Delhi’s geography and weather conditions that contributes to air pollution.

1. During the southwest monsoon, the prevalent direction of the wind is easterly.
2. Once the monsoon withdraws, the predominant direction of the winds changes to north-westerly.
3. The fall in temperature also contributes to increased pollution levels.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option C

The fall in temperature also contributes to increased pollution levels. As it gets cooler, the inversion height — which is the layer beyond which pollutants cannot disperse into the upper atmosphere — comes down. When that happens, larger concentrations of pollutants in the air hang closer to the surface, and lead to worsening AQIs.

89. Consider the following statements regarding the Mineral Security Partnership:

1. The members of the initiative include the P5 countries plus India, Brazil, Japan and Germany.
2. The focus of the grouping would be on the supply chains of minerals such as Cobalt, Nickel, Lithium and also the 17 “rare earth” minerals.
3. The major producers of critical minerals globally are Chile, Indonesia, Congo, China, Australia

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

- India was recently inducted into the Mineral Security Partnership (MSP).

- It is an ambitious new initiative to bolster critical mineral supply chains, announced by the United States (US) and key partner countries in June 2022.
- Besides the US, the MSP includes Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, UK, the European Commission, Italy and India.
- The focus of the grouping would be on the supply chains of minerals such as Cobalt, Nickel, Lithium and also the 17 “rare earth” minerals.

90. Consider the following statements regarding East Asia Summit (EAS).

1. It is a forum for strategic dialogue and cooperation on political, security and economic issues.
2. EAS is an initiative of SASEC and is based on the premise of the centrality of ASEAN.
3. India is a member of the forum.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option A

- EAS is an initiative of ASEAN and is based on the premise of the centrality of ASEAN.
- India has been participating in the EAS since its very inception in 2005.
- EAS has evolved as a forum for strategic dialogue and cooperation on political, security and economic issues of common regional concern and plays an important role in the regional architecture.

91. Consider the following statements with respect to Artemis Accords

1. It is a set of principles designed to guide civil space exploration and use in the 21st century.
2. This treaty has 113 parties which includes India.
3. It act as a soft-law alternative to the Moon Agreement.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All Three
- (d) None

Ans:- Option B

- Artemis Accord is a non-binding set of principles designed to guide **civil space exploration and use in the 21st century.**
- **It is an accord by USA to return humans to the moon by 2025,** with the ultimate goal of expanding space exploration to Mars and beyond.
- **This treaty has 113 parties which includes India.**
- Parties to the Accord gain greatly from **the exchange of information and gain access to NASA's Artemis programme, which would greatly help India's own Gaganyaan mission**
- It act as a soft-law alternative to the Moon Agreement.
- **India is signatory to the Moon Agreement but it has not ratified it yet.**

92. With reference to Egypt, consider the following statements:

1. It is a transcontinental country situated in northeastern Africa and the Sinai Peninsula in Western Asia.
2. Nile is the only river that flows in Egypt throughout the year.
3. Christianity is the dominant religion in Egypt

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

- The country borders the Mediterranean Sea to the north and the Gulf of Suez and the Red Sea to the east.
- **Population:** With 12 million inhabitants (2021), **Egypt is the most populous country in the Arab world.**
- **Religion:** Islam is the dominant religion in Egypt with an estimated 85-90% of the population is Sunni Muslim.
- **Major rivers:** The famous River Nile is the only river that flows in Egypt throughout the year. Around 98% of the country's population resides in the Nile River Valley.

93. Consider the following statements regarding Mucormycosis.

1. The disease is caused by a group of moulds that live throughout the environment including in soil and on plants.
2. Moulds can get into sinuses and deposit there and they can get into the air spaces in the head.

Which of the above statements is/are incorrect?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option D

The disease is caused by a **group of moulds, called mucormycetes**, that live throughout the environment including in soil and on plants. Mucormycosis is seen throughout the world. **It can be acquired in hospitals – most commonly by vulnerable transplant patients – when the moulds get on hospital linens, travel through ventilation systems, or are transmitted on adhesives. They're a family of fungus that gets into your sinuses and deposit there, and they can get into the air spaces in your head.**

94. How many of the following awards and honours are correctly matched with their country:

1. Order of the Druk Gyalpo: Bhutan
2. Legion of Merit: France
3. King Hamad Order of the Renaissance: Bahrain
4. Order of St. Andrew award: USA

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans:- Option B

- **Order of the Druk Gyalpo:** Bhutan
- **Legion of Merit:** USA
- **King Hamad Order of the Renaissance:** Bahrain
- **Order of the Distinguished Rule of Nishan Izzuddin:** Maldives
- **Order of St. Andrew award:** Russia
- **The Order of Nile Award was recently awarded to PM Narendra Modi by Egypt**
- The award is Egypt's highest state honour

95. It is built on the Brahmani River. It is a major multipurpose river valley Project. It is a composite structure of earth, concrete and masonry. It is the longest major earthen dam in India. The above

statement is referring to which of the following dams:

- (a) Hirakud dam
- (b) Arikul dam
- (c) Aradei dam
- (d) Hadagarh dam

Ans:- Option A

96. With reference to the Liberalised Remittances Scheme (LRS), consider the following statements:

1. Individual Indian residents, Corporates and partnership firms are permitted to remit funds under LRS.
2. There are no restrictions on the frequency of remittances under LRS.
3. If any profit is made on foreign investments made under LRS, it is non taxable

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option A

- **LRS allows Indian residents to freely remit up to USD \$250,000 per financial year for current or capital account transactions or a combination of both.** Any remittance exceeding this limit requires prior permission from the RBI.
- Only individual Indian residents, including minors, are permitted to remit funds under LRS.
- **Corporates, partnership firms, HUF, trusts, etc., are excluded from its ambit.**
- There are no restrictions on the frequency of remittances under LRS.
- If any profit is made on foreign investments made under LRS, it is taxable in India based on how long the investment was held.

97. Consider the following statements with respect to Human Shield Effect

1. It refers to the concept of a mesopredator using human activity to protect themselves from its predators.
2. This effect resulted in the reduction of mortality due to large predators but increased mortality from human activity.

Which of the following statement(s) is/are correct?

- (a) 1 only

- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option C

- The human shield effect has been observed in a variety of animals, including **samango monkeys, zebras, and moose.**
- But researchers highlighted that mesopredator's behavior is antithetical.
- Because it leads to a **reduction in mortality from large predators but increases mortality from human activity.**
- Humans are often more of a danger to them than their natural predators.

98. Consider the following statements regarding Flash floods.

1. Flash floods occur in a shorter span of time, and are highly localised.
2. In India, Flash floods are often associated with cloudbursts.
3. Flash flooding commonly happens more where rivers are narrow and steep, so they flow more quickly.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option C

99. Which of the following countries are member of the South African Customs Union?

- (a) South Africa, Namibia, Nigeria.
- (b) Namibia, Zimbabwe, Kenya
- (c) Namibia, Botswana, Kenya
- (d) South Africa, Namibia, Botswana.

Ans:- Option D

- It is the **world's oldest customs union** which was established in 1910.
- **Member countries:** South Africa, Namibia, Botswana, Lesotho, and Eswatini (formerly Swaziland).
- **Head Quarter:** Windhoek (Namibia)
- It was **administered by South Africa**, through the 1910 and 1969 Agreements.
- The customs union collected duties on local production and customs duties on members'

imports from outside SACU, and the resulting revenue was allocated to member countries in quarterly instalments utilizing a revenue-sharing formula.

100. Consider the following statements with respect to Greedflation

1. Greedflation is when corporates raise prices more than necessary to cover costs, which can lead to even higher inflation.
2. It is driven by wage-price spiral.

Which of the following statement(s) is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option A

- Greedflation is a situation where **corporate greed is fuelling inflation**.
- It is **driven by profit-price spiral** instead of wage-price spiral.
- Wages and Prices are feeding on each other and likely to accelerate over a sustained period known as a wage-price spiral.

101. Consider the following statements regarding Sickle Cell Anaemia:

1. It is a contagious parasitic disease.
2. It affects hemoglobin, the molecule in red blood cells that delivers oxygen to cells.
3. The only cure for this disease is bone marrow or stem cell transplantation.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option B

- It is an **inherited blood disorder**.
- It **affects hemoglobin**, the molecule in red blood cells that delivers oxygen to cells throughout the body.
- People with this disease have atypical hemoglobin molecules called **hemoglobin S, which can distort red blood cells into a sickle, or crescent, shape**.
- These sickle cells also become **rigid and sticky**, which can slow or block blood flow

102. Consider the following Pairs:

Geographical Indications		Types
1. Baghpat	-	Weaving
2. Amroha Dholak instrument	-	Musical
3. Kalpi	-	Stone craft
4. Mahoba Gaura Patthar Hastashlip	-	Paper

How many of the above pairs are correctly matched?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans:- Option B

Geographical Indications	Uses
Amroha Dholak	A <i>musical instrument</i> made of natural wood. Mango, jackfruit and teakwood is preferred for making the dholak's.
Baghpat Home Furnishings	Exclusive <i>handloom home furnishing product</i> and running fabrics in cotton yarn since generations. Only cotton yarn are used in the handloom weaving process.
Barabanki	It is <i>handloom product</i> from barbanki. There are around 50,000 weavers and 20,000 looms at Barabanki and adjoining area.
Kalpi Handmade Paper	The <i>handmade paper</i> -making cluster at Kalpi is a huge cluster, engaging more than 5,000 craftsmen and approximately 200 units.
Mahoba Gaura Patthar Hastashlip	It is a <i>stone craft</i> . It is a very unique and soft stone with scientific name, the 'Pyro Flight Stone'. It is cut into several pieces, which are then used for making various craft items.

103. Consider the following statements regarding Indian Ocean Dipole (IOD).

1. The IOD is an ocean-atmosphere interaction very similar to the El Nino fluctuations in the Pacific Ocean.
2. It is also a much weaker system than El Nino, and thus has relatively limited impacts.
3. A positive IOD have the potential to offset the impacts of El Nino to a small measure in neighbouring areas.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option C

104. How many of the following terms are correctly matched:

- 1) Unicorn: a privately held startup company with a value of over \$10 billion.
- 2) Cheetahs: those start-ups that have the potential to go Unicorn in 2 years.
- 3) Gazelles: those start-ups that have the potential to go Unicorn in 4 years.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans:- Option D

- According to a recent report, new additions to the unicorn list declined sharply in 2023, indicating a slowdown in the Indian startup ecosystem.
- **The term unicorn refers to a privately held startup company with a value of over \$1 billion.**
- **Gazelles:** They are those **start-ups founded after the year 2000 and have the potential to go**

Unicorn in 2 years. Their valuation ranges from US\$500mn to US\$1bn.

- **Cheetahs:** They are those **start-ups founded after the year 2000 and have the potential to become a Unicorn in the next four years.**
- Their estimated valuation ranges between US\$200mn to US\$500mn

105. High Burden to High Impact (HBHI) Initiative, sometime seen in the news, is related to

- (a) Initiative to reduce TB cases by 30% by 2030
- (b) Increase in finance to developing countries by 2050
- (c) Initiative of WHO to reduce malaria cases in high burden countries
- (d) None of the above

Ans:- Option C

WHO initiated the High Burden to High Impact (HBHI) initiative in some of the high malaria burden countries, including India.



Educrat IAS
ACADEMY
India's Best Mentorship for Civil Services

Practice MCQs on Conventional Subjects- June 2023

1. With reference to Sovereign Wealth Funds (SWFs), how many of the following statements is/are correct?

1. It is a state-owned investment fund.
2. China's Investment Cooperation fund is the largest of any sovereign wealth fund in the world.
3. India also holds SWF for making investments outside India.

Select the correct answer using the code given below:

- (a) None
- (b) One
- (c) Two
- (d) Three

Ans B

Statement 1 is correct: SWFs is a fund of foreign currency to be invested in global assets. It is owned by the State and setup and managed by the Central Bank or a special purpose vehicle (SPV) of the government. Many SWFs have been outsourcing themselves. A July 2010 report on Global Sovereign Wealth Funds from Cerulli Associates found that the Abu Dhabi Investment Authority outsourcing 80% of its assets, while the Korea Investment Corporation outsources around one-third its assets and Norway's Pension Fund – Global just 13%.

Statement 2 is incorrect. The Norwegian Government Pension Fund is the largest of any sovereign wealth fund in the world. According to data from the SWF Institute, the fund contained more than \$1.1 trillion as of January 2021. Second is China's Investment Cooperation fund, which also manages a similarly large amount of assets of just above \$1 trillion.

Statement 3 is correct. India doesn't have an external SWF because our reserves are not adequate for our needs and contingencies. At end-September 2020, India's external debt was placed at US\$ 556.2 billion and our forex reserves are \$585.324 billion in the week of January 1, 2021. **National Investment and Infrastructure Fund (NIIF) is India's SWF focused on Indian infrastructure with a focus on transportation (roads, ports and airports), energy, urban planning and other infrastructure and allied segments.**

2. With respect to Elephant Bond, consider the following statement:

1. It's a 5-year sovereign bond.

2. The fund will be utilised for infrastructure projects only.

Which of the above statement is/are correct?

- (a) Statement I is correct, Statement II is incorrect
- (b) Statement I is incorrect, Statement II is correct
- (c) Statement I and II are correct and correctly correlated
- (d) Statement I and II are incorrect and not interrelated

Ans B.

Statement 1 is incorrect: It's a 25-year sovereign bond. It is an avenue for people to bring their money stashed offshore without fear of being prosecuted. Once they declare their offshore money, they will be asked to invest 40 per cent of that amount in these elephant bonds.

Statement 2 is correct: The fund will be utilised for infrastructure projects only.

Statement 3 is correct: It was issued on the recommendation of Surjit Bhalla committee. The Committee has recommended "Elephant Bonds" as(a) specialised security product providing funds towards Long Term Infrastructure.

3. Which one of the following statements best describe 'investment'?

- (a) It is defined as the accumulation of money for future use
- (b) It is a mechanism used for generating future income without any risk.
- (c) It is the act of leveraging money for a potential future gain and it entails some risk
- (d) It is an attempt to capitalize on market inefficiencies for short-term profit.

Ans C.

Statement a is incorrect. The accumulation of money for future use is not investment. **Instead it is actually saving.**

Statement b is incorrect. Saving does not carry risk while **investment entails some risk.**

Statement c is correct. An investment is an asset or item that is purchased with the hope that it will generate income or appreciate in value at some point in the future. It is the **act of leveraging money for a potential future gain and it entails some risk.**

Statement d is incorrect. The attempt to **capitalize on market inefficiencies for short-term profit is not investment.** Basically, it is speculation.

4. With respect to net interest margin of a financial institution which of the following statement is incorrect?

- (a) It is a measurement comparing the net interest income with the outgoing interest of a financial institution.
- (b) If demand for savings account increases compared to loans, then net interest margin may decrease.
- (c) Monetary policy has no affect on the net interest margins of a financial institution.
- (d) It acts as an indicator to investors while investing in a financial services firm

Ans C

Statement a is correct. Net interest margin is a measurement comparing the net interest income a financial firm generates from credit products like loans and mortgages, with the outgoing interest it pays holders of savings accounts.

Statement b is correct. If there's a large demand for savings accounts compared to loans, net interest margin decreases, as the bank is required to pay out more interest than it receives.

Statement c is incorrect. Monetary policies set by central banks heavily influence a bank's net interest margins because they play a pivotal role in governing the demand for savings and credit. **When interest rates are low, consumers are more likely to borrow money and less likely to save it leading to higher net interest margins and vice-versa.**

Statement d is correct. This metric helps prospective investors determine whether or not to invest in a given financial services firm by providing visibility into the profitability of their interest income versus their interest expenses.

5. With reference to Indian economy, which of the statements given below regarding bond yield is correct?

- (a) Bond yield is the return the government gets on the bond issued by it.
- (b) Bond yield is not affected by the monetary policy of the Central Bank.
- (c) A rise in interest rates cause bond yields to rise.
- (d) If the bond yield goes up, it results in capital inflows into equities.

Ans C

Bond yield is the return an investor gets on that bond or on a particular government security.

Option b is incorrect. The major factors affecting the yield is the **monetary policy of the Reserve Bank of India, especially the course of interest rates, the fiscal**

position of the government and its borrowing programme, global markets, economy, and inflation.

Option c is correct. A rise in interest rates cause bond prices to fall, and bond yields to rise. Whereas a fall in interest rates makes bond prices rise, and bond yields fall. **In short, a rise in bond yields means interest rates in the monetary system have fallen, and the returns for investors (those who invested in bonds and govt securities) have declined.**

Option d is incorrect. When bond yields go up, investors start reallocating investments away from equities and into bonds, as they are much safer. **As bond yields rise, the opportunity cost of investing in equities goes up, and equities become less attractive.**

6. Which of the following statements is/are correct regarding the Over the Counter Exchange of India (OTCEI)?

- 1. Large firms are not allowed to be listed on OTCEI.
- 2. Stocks listed on the OTCEI cannot be listed on other exchanges.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans C

Statement 1 is correct. The Over-The-Counter Exchange of India (OTCEI) is an **electronic stock exchange based in India that consists of small- and medium-sized firms** aiming to gain access to overseas capital markets, including electronic exchanges in the U.S. such as the NASDAQ.

Large Company Restrictions: Companies with issued equity capital of more than 25 crore rupees (\$3.3 million) are not allowed to be listed on OTCEI.

Statement 2 is correct. Stocks that are listed on other exchanges will not be listed on the OTCEI and, conversely, stocks listed on the OTCEI will not be listed on other exchanges.

7. Consider the following pairs:

Terms: Description

- 1. Certificate of deposit: A negotiable money market instrument issued against funds deposited for specified term in a financial institution
- 2. Commercial bill : an unsecured promissory note issued by a corporate for short term loans.
- 3. Commercial paper: Written acknowledgement of debt to pay a specified sum of money to a particular person.

How many of the pairs given above is/are correctly matched?

- (a) 1 only
- (b) 2 only
- (c) 3 only
- (d) None

Ans A

Pair 1 is correctly matched: Certificate of Deposit (CD) is a **negotiable money market instrument** and issued in dematerialized form or as a **Usance Promissory Note** against funds deposited at a bank or other eligible financial institution for a specified time period.

8. Consider the following statement with reference to Exchange Traded Funds (ETFs):

1. It is a basket of securities that trade on an exchange just like stocks.
2. Like mutual funds, they only trade once a day after the market closes.
3. An ETF have upper limit of twenty units in the basket of securities.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Ans A

Statement 1 is correct: An exchange traded fund (ETF) is a type of security that tracks an **index, sector, commodity, or other asset**, but which can be purchased or sold on a stock exchange the same way a regular stock.

Statement 2 is incorrect: ETF share prices fluctuate all day as the ETF is bought and sold; this is **different from mutual funds that only trade once a day after the market closes.**

Statement 3 is incorrect: There is **no upper limit on units in the basket of securities.** An ETF can own hundreds or thousands of stocks across various industries, or it could be isolated to one particular industry or sector.

9. Which of the following statements regarding Alternative Investment Funds (AIF) in India, is/ are correct?

1. They are regulated by both Securities and Exchange Board of India and Reserve Bank of India.
2. UbharteSitaare fund a kind of AIF launched by Ministry of Finance.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans B

Alternative Investment Fund or AIF means any **fund established or incorporated in India which is a privately pooled investment vehicle which collects funds from sophisticated investors**, whether Indian or foreign, for investing it in accordance with a defined investment policy for the benefit of its investors.

Statement 1 is incorrect: Alternative Investment Funds (AIFs) are **solely regulated by the Securities & Exchange Board of India (SEBI)** and not by Reserve Bank of India. They are regulated by the **SEBI via the Securities and Exchange Board of India (Alternative Investment Funds) Regulations, 2012** (also called AIF Regulations).

10. With reference to the Call Money Market, which of the statements given below is/are correct?

1. Payments Banks are eligible to participate in the Call money market both as borrowers and lenders.
2. Higher call rate indicates liquidity stress in the economy.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans C

The call money is usually availed for one day. If the bank needs funds for more days, it can avail money through notice market. Here, **the loan is provided from two days to fourteen days.**

Statement 1 is correct. Participants in the call money market are **banks and related entities specified by the RBI.** Scheduled commercial banks (excluding RRBs), co-operative banks (other than Land Development Banks) and Primary Dealers (PDs), are permitted to participate in call/notice money market both as borrowers and lenders.

11. Consider the following laws related to the environment:

1. Indian Forest Act, 1927.
2. Wildlife Protection Act, 1972.
3. Forest Act (Conservation), 1980.
4. Environment (Protection) Act, 1986.

5. Public Liability Insurance Act, 1991.
6. Biological Diversity Act, 2002.
7. Forest Rights Act, 2006

How many of the above acts have some bearing on the authority of National Green Tribunal (NGT)?

- (a) Four
- (b) Five
- (c) Six
- (d) All of the above

Ans A.

The National Green Tribunal (NGT) resolves various civil cases under the following seven laws that are related to the environment:

- Water (Prevention and Control of Pollution) Act, 1974
- Water Cess (Prevention and Control of Pollution) Act, 1977
- Forest (Conservation) Act, 1980
- Air (Prevention and Control of Pollution) Act, 1981
- Environment (Protection) Act, 1986
- Public Liability Insurance Act, 1991
- Biological Diversity Act, 2002

The following acts have been kept out of the purview of NGT:

1. The Indian Forest Act, 1927
2. The Wildlife (Protection) Act, 1972
3. Forest Rights Act, 2006

12. With reference to the Environment Protection Act, 1986, consider the following statements:

1. The genesis of the act is in Article 48A and Article 51A (g) of the Indian Constitution.
2. The Act empowers the Civil Courts to entertain any suit or proceeding in respect of an action or order issued by the Central Government.

Choose the correct statement given below:

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans C

Statement 1 is correct: The genesis of the Environmental (Protection) Act, 1986, is in **Article 48A**

(Directive Principles of State Policy) and Article 51A(g) (Fundamental Duties) of the Indian Constitution.

Statement 2 is incorrect: The Act debars the Civil Courts from having any jurisdiction to entertain any suit or proceeding in respect of an action, direction, order issued by the Central Government, or other statutory authority under this Act.

13. "The Critical Wildlife Habitats (CWHs)" are defined as areas that are required to be kept as inviolate for the purposes of wildlife conservation. They are so defined under which of the following acts?

- (a) Scheduled Tribes and Other Traditional Forest Dwellers Act, 2006
- (b) Wildlife Protection Act, 1972
- (c) Environment Protection Act, 1986
- (d) Prevention of Cruelty to Animals Act, 1960

Ans A

Section 2(b) of the **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006** defines "critical wildlife habitat" as such areas of **National Parks and Sanctuaries** where it has been specifically and clearly established, case by case, on **the basis of scientific and objective criteria**, that such areas are required to be kept as inviolate for the purposes of wildlife conservation. Although the **Ministry of Tribal Affairs is the nodal ministry for the Forest Rights Act, 2006**, the **CWHs are determined and notified by the Central Government in the Ministry of Environment and Forests.**

14. Consider the following statements:

1. There are more community reserves than conservation reserves in India.
2. Any community or private land may be designated by the State Government as a Community Reserve with a few conditions.

Choose the correct statement given below:

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans A

Any community or private land may be designated by the State Government as a Community Reserve provided the inhabitants of that community or the person concerned consent to provide such areas for

the preservation of the local flora and fauna as well as their customs, cultures, and practises. **There are 105 existing Conservation Reserves in India** covering an area of 44483 km², which is 0.14% of the geographical area of the country (National Wildlife Database, Jan. 2023). **There are 220 existing Community Reserves in India** covering an area of 1302 km², which is 0.04% of the geographical area of the country (National Wildlife Database, Jan. 2023)

15. Consider the following statements regarding the biomedical waste management rules 2016:

1. Rules cover the vaccination camps, blood donation camps, and surgical camps.
2. The State Government provides the land for setting up a common bio-medical waste treatment and disposal facility.

Choose the correct statement given below:

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans A

Definition: Biomedical waste is defined as **human and animal anatomical waste**, treatment apparatus like needles, syringes and other materials used in health care facilities in the process of treatment and research.

16. What do you understand by the term “grandfathering” in economics?

- (a) It is an act of providing exemptions to certain class of people from capital gains tax.
- (b) It is an act of adjusting the price of bonds with respect to inflation to act as a hedge against inflation.
- (c) It is a set of tax exemptions for startup companies for a period of 3 years.
- (d) It is an act of taxing gains with prospective effect not with retrospective effect

Ans D

Grandfather clause (or policy) is a provision in which an **old rule continues to apply to some existing situations while a new rule will apply to all future cases.**

17. In the context of taxation in India, consider the following statements regarding the ‘Cess’:

1. Proceeds from cess is initially credited to the Consolidated Fund of India.

2. If cess collected in a particular year goes unspent, it can be allocated for purposes other than the purpose for which it was collected.

Choose the correct statement given below:

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans C

Statement 1 is correct. The Centre collects **cess and deposits it in the Consolidated Fund of India.** However, the money is then supposed to be transferred to a segregated fund to be used for specific purpose..

Statement 3 is incorrect. If the cess collected in a particular year goes unspent, it cannot be allowed for other purposes. The amount gets carried over to the next year and can only be used for the cause it was meant for.

18. Which of the following best describes “Tax Expenditure”?

- (a) Revenue foregone on account of the incentives and exemptions that are given to taxpayers.
- (b) The expenditures incurred by the government on the collection of taxes.
- (c) The proportion of income that households pay as taxes.
- (d) The expenditure incurred by the government in meeting claims of Input Tax Credit under GST.

Ans A

Tax expenditure is the **revenue foregone on account of the incentives and exemptions that are given to taxpayers.** But rather than viewing them as waivers, they may be interpreted as incentives given to certain sectors to enable them to come up.

19. Consider the following statements with reference to the Equalisation Levy:

1. It is an indirect tax, first introduced in 1996.
2. It applies to resident Indian entities only.
3. It is imposed on the online sale of goods and services by e-commerce companies.

How many of the statements given above is/are correct?

- (a) One
- (b) Two

- (c) Three
(d) None

Ans A

Statement 1 is incorrect. Equalisation levy is a type of direct tax, that was **first introduced in 2016**.

Statement 2 is incorrect. An Equalisation levy of **6%** was introduced in **2016** on payment exceeding Rs 1 lakh a year to a non-resident service provider for online advertisements.

Statement 3 is correct. The **Finance Act 2020 amended the Finance Act 2016**, introducing a **new Equalisation Levy at 2%** on the online sale of goods and provision of services by a non-resident e-commerce company.

20. It is a tax imposed on the basis of the monetary value of the taxed item. The most common example of such taxes are property taxes levied on real estate. Most suitable option of the tax mentioned here is:

- (a) Tax Collected at Source (TCS)
(b) Capital gain tax
(c) Sales Tax
(d) Ad valorem Tax

Ans D

An ad valorem tax is a tax based on the assessed value of an item, such as **real estate or personal property**. The most common ad valorem taxes are property taxes levied on real estate. However, ad valorem taxes may also extend to a number of tax applications, such as **import duty taxes on goods from abroad**.

21.

Tiger Reserves	Characteristics
1. Nagarahole	A. endangered species of Mouse deer was re-introduced here.
2. Amrabad	B. Three large cats- Bengal tiger, Indian leopard and clouded leopard are found.
3. Pakhui	C. home to 45 tribal settlements locally known as "Haadis".

How many of the pair(s) given above is/are correctly matched?

- (a) One Only
(b) Two Only
(c) Three Only
(d) None

Ans D.

None of the Pairs are correctly matched.

Pair 1-C: Nagarahole TR in Karnataka is a **home to 45 tribal settlements locally known as "Haadis"** having 1703 families with a population of 6579 nos. These are **indigenous Dravidian adivasi (Tribals) belonging to Jenukuruba, Bettakuruba, Yerava, Paniya and soliga communities**.

Pair 2-A: Amrabad tiger reserve- endangered species of Mouse deer was re-introduced here for the first time in a country.

Pair 3-B: Pakhui tiger reserve- **Three large cats - the tiger, leopard and clouded leopard**, share space with two canids – the wild dog and Asiatic jackal in this tiger reserve.

22.

Species	Location
1. Kolar Leaf Nosed Bat	A. Rajasthan
2. Caracal	B. Ladakh
3. Seabuckthorn	C. Karnataka

How many of the pair(s) given above is/are correctly matched?

- (a) One Only
(b) Two Only
(c) Three Only
(d) None

Ans D.

None of the pairs correctly matched.

Pair 1-C is incorrectly matched. Kolar Leaf Nosed Bat is endemic to India It is found **only in one cave in Hanumanahalli village in Kolar district**, Karnataka. It is critically endangered as per IUCN red list.

Pair 2-A is incorrectly matched. Caracal is a medium-sized wildcat found in parts of Rajasthan and Gujarat. **The National Board for Wildlife and Union Ministry of Environment, Forest and Climate Change included the caracal in the list of endangered species under the scheme 'the recovery programme for critically endangered species'.**

Pair 3-B is incorrectly matched. Seabuckthorn is a shrub which produces an orange-yellow coloured edible berry. In India, it is found above the **tree line in the Himalayan region**, generally in dry areas such as the cold deserts of Ladakh and Spiti. In **Himachal Pradesh, it is locally called chharma** and grows in the wild in Lahaul and Spiti and parts of Kinnaur.

23. Consider the following statements regarding Himalayan Mountain Forests:

1. The vegetation in the Himalayan regions changes with changes in altitude.

2. The northern slopes of the Himalayas carry a thicker vegetation cover than the south-facing slopes.
3. The forests are dominated by coniferous species.
4. There is a complete absence of temperate grasslands.

How many of the statements given above are correct?

- (a) One
- (b) Two
- (c) Three
- (d) Four

Ans B

Statement 1 is correct – The Himalayan ranges show a **succession of vegetation from the tropical to the tundra**, which changes with altitude.

Statement 2 is incorrect – The southern slopes of the Himalayas carry a thicker vegetation cover because of **relatively higher precipitation than the drier north-facing slopes**.

Statement 3 is correct – Moist Temperate type Forests are extensively found in **Himalayan forests**. The forests are mainly **composed of coniferous species**.

Statement 4 is incorrect – At many places in this zone, temperate grasslands are also found. But in the higher reaches, there is a **transition to Alpine forests and pastures**.

24. Consider the following statements about a forest vegetation in India:

These forests are found in the western slope of the Western Ghats and the Andaman and Nicobar Islands. Forests are well stratified covered with shrubs and creepers. These forests contain several tree species of great commercial significance e.g. Indian rosewood, Malabar Kino, teak and Indian laurel. Which type of vegetation has been described above?

- (a) Tropical thorn forests
- (b) Montane forests
- (c) Moist deciduous forests
- (d) Tropical evergreen forests

Ans A

Tropical evergreen forests are found in **warm and humid areas with an annual precipitation of over 200 cm and mean annual temperature above 22 degrees Celsius**. Tropical evergreen forests are well stratified, with layers closer to the ground and are covered with shrubs and creepers, with short structured trees followed by tall variety of trees. **They are found in the western slope of the Western Ghats, hills of the north-eastern region and the Andaman and Nicobar Islands**.

25. With reference to the tropical deciduous forest, consider the following statements:

Statement 1- They are called monsoon forests.

Statement 2- The moist deciduous forests are found largely in the plains of Uttar Pradesh and Bihar.

Which of the statements given above is/are correct?

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans C

Statement 1 is correct. Tropical deciduous forests are the most widespread forests in India. They are **also called the monsoon forests**, spread over regions which receive rainfall between 70-200 cm.

Statement 2 is incorrect. The **moist deciduous forests are found in the north-eastern states along the foothills of Himalayas**, eastern slopes of the Western Ghats and Odisha. Dry deciduous forest covers vast areas of the country - found in rainier areas of the Peninsula and the plains of Uttar Pradesh and Bihar.

26. Consider the following statements with reference to distribution of minerals resources in India:

1. Most of the metallic minerals in India occur in the peninsular plateau region in the old crystalline rocks.
2. Most of the coal reserves of India occur in the valleys of Narmada.
3. Petroleum reserves are located in the sedimentary basins of Assam, Gujarat and Mumbai High.

How many of the above statements is/are correct in the above context?

- (a) One
- (b) Two
- (c) Three
- (d) None

Ans B

Statement 1 is correct. Most of the metallic minerals in India occur in **the peninsular plateau region in the old crystalline rocks**.

Statement 2 is incorrect. Over 97 per cent of coal reserves occur in the valleys of **Damodar, Sone, Mahanadi and Godavari**.

Statement 3 is correct Petroleum reserves are located in the sedimentary basins of Assam, Gujarat and Mumbai High i.e., off-shore region in the Arabian Sea.

New reserves have been located in the Krishna-Godavari and Kaveri basins. Most of the major mineral resources occur to the east of a line linking Mangaluru and Kanpur. Minerals are generally concentrated in three broad belts in India

27.

Mines	Minerals they are famous for
1. Badampahar	Iron
2. Lohardaga	Bauxite
3. Jhunjhunu	Copper

How many of the above pairs is/are correctly matched?

- (a) One
- (b) Two
- (c) Three
- (d) None

Ans C

Pair 1 is correct. In Odisha, iron ore occurs in a series of hill ranges in **Sundergarh, Mayurbhanj and Jhar**. The important mines are **Gurumahisani, Sulaipet, Badampahar (Mayurbhaj), Kiruburu (Kendujhar) and Bonai (Sundergarh)**.

Pair 2 is correct. Bauxite is found mainly in tertiary deposits and is associated with laterite rocks occurring extensively either on the plateau or hill ranges of peninsular India and also in the coastal tracts of the country. **Odisha happens to be the largest producer of Bauxite. Lohardaga in Jharkhand have rich Bauxite deposits.** Gujarat, Chhattisgarh, Madhya Pradesh and Maharashtra are other major producers. **Bauxite is the ore, which is used in manufacturing of aluminium.**

Pair 3 is correct. The Copper deposits mainly occur in **Singhbhum district in Jharkhand, Balaghat district in Madhya Pradesh and Jhunjhunu and Alwar districts in Rajasthan.** Minor producers of copper are Agnigundala in Guntur District (Andhra Pradesh), Chitradurg and Hasan districts (Karnataka) and South Arcot district (Tamil Nadu)

28. How many of the following are the advantages of Zero Budget Natural Farming (ZBNF):

- 1. Eco-friendly
- 2. Improves soil fertility
- 3. Less water intensive
- 4. Reduces input cost
- 5. No livestock requirement

Select the correct answer from the codes given below:

- (a) Three

- (b) Two
- (c) Four
- (d) Five

Ans C

Only Option 5 is incorrect – Livestock requirement is necessity for ZBNF. **Application of Jeevamrutha — a mixture of fresh desi cow dung and aged desi cow urine.** This requires atleast one cow for 30 acres of land with the caveat that it must be a local Indian breed — not an imported Jersey or Holstein.

29. How many of the following is/are the main reason(s) for the growth of fishing industry in Japan?

- 1. Shallow continental shelf along its coast.
- 2. Presence of Oyashio & Kuroshio Ocean currents
- 3. Around 80 % of the land is not suitable for agriculture

Select the correct answer using the code given below:

- (a) One Only
- (b) Two Only
- (c) Three Only
- (d) None

Ans C

Statements 1, 2 and 3 are correct. A combination of warm (Kuroshio) and cold (Oyashio) currents flows along the coasts, creating one of the most abundant fishing grounds in the world.

Other reasons for growth of fishing industry in Japan include:

- (i) Japan has a large population which provides ready local market for fish.
- (ii) Japanese have a **long history of sea faring** thus are highly experienced in fishing.
- (iii) The shallow continental shelf allows light to the sea bed for growth of micro-organisms which are food for fish.
- (iv) Japan has developed unique marketing and distribution system of fish and fishery products to meet domestic demand and earn revenue from fisheries export.
- (v) Japan is also not endowed with natural resources, for as much as **80% of the land is not suitable for agriculture. Thus, it heavily depends on the sea to survive.**

30. Consider the following statements with reference to Vanadium:

- 1. In India, concentration of Vanadium is found in Central India.
- 2. China is the world's largest Vanadium producing country.

3. Vanadium alloys are corrosion-resistant.
4. It increases fuel-efficiency in automotive and aviation industries.

How many of the statements given above is/are correct?

- (a) Two
- (b) Three
- (c) Four
- (d) None

Ans B

Statement 1 is incorrect. Promising concentrations of vanadium in the **palaeo-proterozoic carbonaceous phyllite rocks** have been found in the **Depo and Tamang areas of Arunachal Pradesh's Papum Pare district.**

Statement 2 is correct. **China was the world's top vanadium-producing country** in 2019 with output of 40,000 MT. China, which produces 57% of the world's vanadium, consumed 44% of the metal. **The largest deposits are also in China, followed by Russia and South Africa.**

Statement 3 is correct. Vanadium alloys are durable in extreme temperature and environments, and are **corrosion-resistant.** Its addition improves the **tensile strength of steel and of reinforcing bars used for buildings, tunnels and bridges.**

Statement 4 is correct. It **increases fuel-efficiency in automotive and aviation industries due to its high strength-to-weight ratio.** Vanadium also forms the integral part of vanadium redox batteries that have the least ecological impact in energy storage.

31. Which of the following statements correctly defines 'Evergreen Revolution'?

- (a) It is to increase the production of crops, double farmer's incomes, and maintain environmental sustainability by using high-yielding seeds whilst educating the farmers about informative and communicative technologies (ICT).
- (b) Revolution refers to the significant changes in agriculture when there are inventions, discoveries or new technologies implemented.
- (c) It refers to productivity improvement in perpetuity without ecological and social harm
- (d) It is the second Green Revolution with higher impetus in technological advancement for increase in crop production.

Ans C

The Evergreen revolution refers to **productivity improvement in perpetuity without ecological and**

social harm. The evergreen revolution involves the integration of ecological principles in technology development and dissemination. **Dr.M.S.Swaminathan coined the term "Evergreen Revolution"** to highlight the pathway of increasing production and productivity in a manner such that short- and long-term goals of food production are not mutually antagonistic. **The logic is to produce more from less- less land, less pesticide, less water** and it must be an evergreen revolution to get sustainable agriculture.

32. Consider the following statements with reference to 'Horticulture Cluster Development Programme (CDP)':

1. It is a central sector programme.
2. It is under Ministry of Commerce aimed at growing and developing identified horticulture clusters to make them globally competitive.
3. Turmeric from West Jaintia Hills (Meghalaya) is one of the identified products for development under this programme at the pilot phase.

How many of the above statements is/are correct?

- (a) One Only
- (b) Two Only
- (c) Three only
- (d) None

Ans B

Horticulture Cluster Development Programme (CDP) is a **central sector programme implemented by the National Horticulture Board (NHB) of the Ministry of Agriculture and Farmers' Welfare.** It aims at growing and developing identified horticulture clusters to make them globally competitive. **In a pilot phase, the programme will be implemented in 12 horticulture clusters out of the total 53 clusters selected for the programme.** The programme is designed to leverage geographical specialization and promote integrated and market-led development of horticulture clusters. **The Ministry of Agriculture and Farmers' Welfare (MoA&FW) has identified 53 horticulture clusters, of which 12 have been selected for the pilot launch of the programme.**

33. Which of the following statements is correct with reference to Entomopathogenic fungi?

1. Entomopathogenic fungi are a group of fungi living in soil that infect insects by penetrating their cuticle to penetrate their bodies to eventually kill them and feed on them.

2. The application of entomopathogenic fungi in myco-biocontrol of insects in the agriculture sector is of immense significance because of environmental and food safety concerns.

3. Entomopathogenic fungi are currently used worldwide for control of a wide range of arthropod pests, particularly pests in protected crops or field crops.

How many of the above statements is/are correct?

- (a) One Only
- (b) Two Only
- (c) Three only
- (d) None

Ans C

All the statements are correct. An entomopathogenic (causing disease to insects) fungus as the name itself suggests is a fungus that can act as a parasite of insects and killed or seriously disables them. **Entomopathogenic fungi (EPF) are common in terrestrial environments** and can be important natural regulators of insect and arachnid populations.

- Entomopathogenic fungi, unlike other groups of insect pathogenic microorganisms, infect their hosts directly through the exoskeleton.

34. The Food and Agricultural Organization assisted project named “Technical Assistance for Development of Sustainable Agricultural Value Chains in Mizoram” is related to?

- (a) Cultivation of Birds eye chilies.
- (b) Increase the production of Ginger in the state.
- (c) Assistance to Integrated Crop Livestock Farming Systems
- (d) To support local communities in improved jhum management.

Ans D

Technical Assistance for Development of Sustainable Agricultural Value Chains in Mizoram: - Project is **implemented in the State of Mizoram to strengthen capacities of government institutions and extension services in Mizoram** to support local communities in improved jhum management, sustainable value chain development, and exposure of project staff to best agro-ecological practices.

35. Which of the following statements correctly defines ‘Agricultural yield’?

- (a) Quantity of a crop produced per unit of land.
- (b) Total quantity of crop harvested under favorable and controlled conditions.

(c) The weight of grain or other agricultural product, at some agreed standard moisture content, per unit of land area harvested per crop

(d) It is the yield measured in money produced per unit of land

Ans A

Yield potential is defined as the yield of a cultivar when grown in environments to which it is adapted, with nutrients and water non-limiting and with pests, diseases, weeds, lodging, and other stresses effectively controlled.

- **'Crop yield' is the weight of grain or other economic product, at some agreed standard moisture content, per unit of land area harvested per crop** (usually metric tons per hectare¹, or here abbreviated to t/ha).
- **Agricultural productivity is measured in money produced per unit of land**, but yields are measured in the weight of the crop produced per unit of land.

36. With reference to new definition of MSME which of the following pairs is/are correctly matched?

Unit	Characteristic
1. Micro-Units	Companies with Investments up to Rs 1 crore & Turnover of below Rs 5 crore.
2. Small Units	Companies with Investments up to Rs 100 crore & Turnover of below 500 crore.
3. Medium Units	Companies with Investments of up to Rs 500 crore & Turnover of below 2500 crore.

How many of the above statements is/are correct?

- (a) One Only
- (b) Two Only
- (c) Three Only
- (d) None

Ans A

Pair 1 is correctly matched. Micro units: MSMEs will now be called **Micro units if they have investments upto Rs 1 crore and turnover of less than Rs 5 crore.** The definition earlier was on investment criteria of up to Rs 10 lakh for Service MSMEs earlier and Rs 25 lakh or manufacturing.

Pair 2 is incorrectly matched. Small units: For an MSME to be defined as a Small unit, its **investment limit has been raised from Rs 5 crore to Rs 10 crore**

with a turnover of less than 50 crore. This applies to all MSMEs including the Service enterprises which earlier came under investment of up to Rs 2 crore.

Pair 3 is incorrectly matched. Medium units: Enterprises with investments up to Rs 20 crore with a turnover of less than Rs 100 crore will now be called **Medium units**. Earlier, the investment limit for Medium units was up to Rs 10 crore and Service enterprises up to Rs 5 crore.

37. With reference to Multi-Modal Logistics Park (MMLP) in India, consider the following statements:

1. Multi-modal logistics park (MMLP) is developed under the Bharatmala Pariyojana.
2. Country's first Multimodal Logistics Park (MMLP) is developed at Jaipur, Rajasthan.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans A

Statement 1 is correct. Multi-modal logistics park (MMLP) is developed under the Bharatmala Pariyojana of the Government of India. Bharatmala Pariyojana is an umbrella program for the highways sector envisaged by the Ministry of Road Transport and Highways. In order to reduce congestion on proposed economic corridors, enhance logistic efficiency and reduce logistics costs of freight movements, 35 locations have been identified for development of Multi-Modal Logistics Parks.

Statement 2 is incorrect. Country's first Multimodal Logistics Park (MMLP) is developed at Jogighopa in Assam. It will have direct connectivity with National Highway 17, the proposed Jogighopa waterway terminal on Brahmaputra, the newly constructed Rupsi and Guwahati airports as well as the main railway route. India will be able to establish trade with Bangladesh through the Jogighopa waterway terminal.

38. How many of the following activities comes under the definition of secondary sector?

1. Animal husbandry
2. Mining and quarrying
3. Transport sector
4. Textile industry
5. Fishing

Select the correct answer using the code given below:

- (a) One Only

- (b) Two Only
- (c) Three Only
- (d) All of the above

Ans A

Option 1, 2 and 5 are incorrect. Animal husbandry, Mining and quarrying, fishing is included in primary activities as it makes utilisation of earth's resources such as land, water, vegetation, building materials and minerals.

Option 3 is incorrect. Tertiary activities include both production and exchange. So, Exchange, involves trade, transport and communication facilities that are used to overcome distance and are included in Tertiary activities.

Option 4 is correct. Goods produced by exploiting natural resources come under the category of secondary activities. Activities associated with the secondary sector include metal working and smelting, automobile production, textile production, chemical and engineering industries, aerospace manufacturing, energy utilities, engineering, breweries and bottlers, construction, and shipbuilding.

39. Which of the following statements best define the term 'Blue Chip' companies, as often heard in the news?

- (a) Top-performing stocks of only IT companies.
- (b) Top companies involved in the fabrication of semiconductor chips.
- (c) Those companies that deal with commercial naval ships and trading.
- (d) Large and well-recognized companies with a

Ans D

Blue chip stocks are shares of very large and well-recognised companies with a long history of sound financial performance and such companies are called 'Blue Chip' companies. These stocks are known to have capabilities to endure tough market conditions and give high returns in good market conditions. Blue chip stocks generally cost high, as they have good reputation and are often market leaders in their respective industries.

40. Which among the following statements is incorrect with reference to FDI reforms in India?

- (a) A country, which shares a land border with India, can invest only under the Government route.
- (b) Investments of up to 74 per cent in the Defence manufacturing sector are allowed under the automatic route.

(c) FDI cap on e-commerce activities under market place model is 49 per cent through the automatic route.

(d) 100% FDI for Food Processing sector is permitted under the automatic route.

Ans C

The FDI Policy allows 100% FDI (not 49%) under the automatic route for **the marketplace model of e-commerce activities**.

Option d is correct: As per FDI policy, **100% FDI for Food Processing sector is permitted under the automatic route** implying that no prior approval of the Government or RBI is required.

41. Consider the following statements:

1. Bauxite is found mainly in tertiary deposits and hill ranges of peninsular India.
2. Copper deposits are found in Jharkhand and Madhya Pradesh region.
3. Mica is produced in the areas of Andhra Pradesh and Tamil Nadu.

How many of the statements given above is/are correct?

- (a) One Only
- (b) Two Only
- (c) Three Only
- (d) None

Ans C

Statement 1 is correct. Bauxite is the ore which is used in manufacturing of aluminium. **Bauxite is found mainly in tertiary deposits** and is associated with laterite rocks occurring extensively either on the plateau or hill ranges of peninsular India and also in the coastal tracts of the country.

Statement 2 is correct. Copper is an indispensable metal in the electrical industry for making wires, electric motors, transformers and generators. **It is alloyable, malleable and ductile.** It is also mixed with gold to provide strength to jewellery. **The Copper deposits mainly occur in Singhbhum district in Jharkhand, Balaghat district in Madhya Pradesh and Jhunjhunu and Alwar districts in Rajasthan.**

Statement 3 is correct. Mica is mainly used in the electrical and electronic industries. It can be split into very thin sheets which are tough and flexible. **Mica in India is produced in Jharkhand, Andhra Pradesh, Telangana and Rajasthan followed by Tamil Nadu, West Bengal and Madhya Pradesh.** In Jharkhand high quality mica is obtained in a belt extending over a

distance of about 150 km, in length and about 22 km, in width in lower Hazaribagh plateau.

42. With reference to the Coal Sector in India, consider the following statements:

1. India is the world's largest producer of coal.
2. India is the 5th largest country in terms of coal deposits.
3. Total quantity of coal import has steadily increased in the past decade.

How many of the statements given above is/are correct?

- (a) One
- (b) Two
- (c) Three
- (d) None

Ans A

Statement 1 is incorrect: India is the second largest producer of coal in the world, after China. India is currently producing about 729 million tonnes of coal. However, the domestic production is not able to meet the demand of coal in the country.

Statement 2 is correct: India is world's 5th largest country in terms of coal deposits, with coal reserves which may last at least 100 years more.

Statement 3 is incorrect: Total quantity of coal imported by India has not steadily increased in the past decade. It witnessed a dip in 2014-15.

43. Consider the following mining regions:

1. Kudremukh
2. Bellary
3. Singrauli
4. Bailadila
5. Malanjkhand
6. Mayurbhanj

Which of the above regions are related to commercial Iron ore mining?

- (a) 1, 2, 3 and 5 only
- (b) 1, 2, 4 and 6 only
- (c) 2, 3, 4 and 5 only
- (d) 1, 4, 5 and 6 only

Ans B

India has the largest reserve of iron ore in Asia. In India, about 95 per cent of total reserves of iron ore is located in the States of Orissa, Jharkhand, Chhattisgarh, Karnataka, Goa, Andhra Pradesh and Tamil Nadu.

Option 1 and 2 are correct. Iron ore deposits are found in following areas of Karnataka state

1. Sandur-Hospet area of Bellary district
2. Baba Budan hills and Kudremukh in Chikmagalur district
3. Parts of Shimoga, Chitradurg and Tumkur districts.

Option 4 is correct. In Chhattisgarh, iron ore deposits are found in Durg, Dantewada and Bailadila area. Bailadila is one of the largest mechanized mine in Asia.

Option 6 is correct.

1) In Orissa, iron ore occurs in a series of hill ranges in Sundergarh, Mayurbhanj and Jhar.

2) The important mines are Gurumahisani, Sulaipet, Badampahar (Mayurbhanj), Kiruburu (Kendujhar) and Bonai (Sundergarh).

Option 3 is incorrect. Singrauli is the largest coal field of Madhya Pradesh.

Option 5 is incorrect. Malanjkhand is the largest copper mine of India, located in Madhya Pradesh. It contains nearly 70% of the India's reserve.

44. The data collected through the census is used for

1. Administration
2. Demarcation of Constituencies
3. Allocation of representation to the local bodies
4. Planning and policy-making

How many of the options given above is/are correct?

- (a) One
- (b) Three
- (c) Four
- (d) Two

Ans C

The data collected through the census is used for

1. Administration,
2. Planning and policy-making as well as management and evaluation of various programmes run or to be introduced by the government, NGOs, researchers, commercial and private enterprises, etc.
3. Demarcation of constituencies
4. Allocation of representation to the Parliament
5. Allocation of representation to State legislative assemblies
6. Allocation of representation to Local bodies

45. Consider the following statements regarding the economic reforms of 1990s:

1. Balance of payment crisis was the immediate reason for introducing market deregulation reforms.
2. It led to de-reservation of all industries except Railways and Atomic energy.

3. Post 1991 reforms, growth rate of industrial sectors has continuously increased.

Which of the statements given above is/are correct?

- (a) Statement 1 and 3 are correct, Statement 1 is correct explanation of Statement 3
- (b) Statement 1 is correct, Statements 2 and 3 are incorrect
- (c) Statement 1 and 2 are correct, Statement 1 is correct explanation of statement 2, 3 is incorrect
- (d) Statement 2 and 3 are correct, Statement 1 is incorrect.

ANS B

Statement 1 is correct: Economic reforms of 1991 were introduced in the wake of balance of payment crisis and increased inflation rate. Foreign exchange reserves were dropped to levels that were not sufficient for even a fortnight. The government was not able to repay its borrowings from abroad. All these issues lead to adopting the measures to reform the economy.

Statement 2 is incorrect: Economic reforms of 1991 leads to dismantling of license raj and deregulation of industries so as to promote growth of a more efficient and competitive industrial economy. It allowed the entry of private companies in previously reserved sectors i.e. de-reservation of all industries except three industries like Defence, Railways and Atomic energy.

Statement 3 is incorrect: Post economic reforms of 1991, the growth of agriculture sector has declined. While industrial sector reported fluctuation in growth rate. Whereas the growth rate of service sector has gone up.

46. With reference to the Start-up India Seed Fund (SISF) Scheme, consider the following statements:

Statement 1. The fund will be disbursed to eligible start-ups through eligible incubators across India.

Statement 2. It aims to provide funding to start-ups only after the 'proof of concept' has been provided.

Which of the statements given above is/are correct?

- (a) Both Statements 1 and 2 are true and Statement 1 is the correct explanation of 2.
- (b) Both Statements 1 and 2 are true but Statement 1 is not the correct explanation of 2
- (c) Statement 1 is true but 2 is false.
- (d) Statement 1 is false but 2 is true.

Ans C

The Start-up India Seed Fund Scheme (SISFS) will provide financial assistance to start-ups for Proof of

Concept, prototype development, product trials, market entry, and commercialization. SISFS provides financial assistance to early-stage start-ups when there are very few angel investors and venture capitalists are available.

Statement 2 is correct: The fund will be disbursed to eligible start-ups through **eligible incubators across India.**

47. With reference to the National Language Translation Mission (NTLM), which one of the following statements is incorrect?

- (a) It aims to make progress in science and technology accessible in regional languages.
- (b) It is aimed to create an inclusive knowledge society via machine-aided translation.
- (c) It aims to provide a link between start-ups and scientists to build innovative solutions.
- (d) It is launched by the Department of Science and Technology

Ans D

Statement d is incorrect: It is launched by the **Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC)** (and not by the Department of Science and Technology).

48. Which one of the following statements correctly describes the objective of "SWAYATT" initiative?

- (a) To generate self-employment opportunities in the non-farm sector by providing credit-linked subsidy.
- (b) To provide collateral free working capital loans to street vendors in the urban areas.
- (c) To promotes women and young entrepreneurs through e-transactions on the Government e-Marketplace (GeM).
- (d) To provide skill-based training to tribal entrepreneurs from North-eastern states of India.

Ans C

SWAYATT stands for Start-ups, Women and Youth Advantage Through eTransactions on Government e Marketplace (GeM). It is **an initiative to promote MSMEs, women and young entrepreneurs through e-transactions on the Government e-Marketplace (GeM).** It was **launched by the Ministry of Commerce and Industry.** This will bring together the key stakeholders within the Indian entrepreneurial ecosystem to Government e-Marketplace, the national procurement portal.

49.

Programme	Objective
-----------	-----------

1. Sahakar Mitra	To provide easy loans to start-ups in the cooperative sector.
2. YuWaah	To facilitate youth to gain 21 st century skills for productive lives.
3. Chunauti	To provide seed funds to startups in certain identified areas.

How many of the above pairs is/are correctly matched

- (a) One
- (b) Two
- (c) Three
- (d) None

Ans B.

Pair 1 is incorrectly matched: Sahakar Mitra is a **scheme on Internship Programme for young professionals in cooperative sector.** The programme aims at providing an opportunity to professional graduates to get experience in areas of functioning of National Cooperative Development Corporation (NCDC) and related aspects of cooperatives. **Yuva Sahakar scheme, on the other hand, encourage young entrepreneurs into start-ups in the cooperative sector by providing them cheaper loans.**

Pair 2 is correctly matched: Generation unlimited (GenU) called YuWaah in India is a **global multisector and multi-stakeholder alliance.** It aims to facilitate youth to gain relevant skills for productive lives and work. **The target age group of YuWaah includes adolescent girls and boys (10-24 years).** The mission is to promote access to foundational, transferable and 21st century skills for youth inside and outside formal education systems. **YuWaah- (Generation Unlimited India) is launched by the United Nations Children's Fund (UNICEF) and the Ministry of Women and Child Development.**

Pair 3 is correctly matched: Chunauti programme aims **to identify around 300 startups working in identified areas** and provide them seed funds of upto Rs. 25 Lakh and other facilities through **Software Technology Parks of India centers across India.**

50.

Initiative	Government Agency
1. Swasth Vayu	National Aerospace Laboratory
2. Dekho Apna Desh	Ministry of External Affairs
3. Shram Saathi	Ministry of Tribal Affairs

How many of the above pairs is/are correctly matched

- (a) One
- (b) Two
- (c) Three
- (d) None

Ans B

Pair 2 is incorrectly matched. Dekho Apna Desh is an initiative of the Ministry of Tourism (and not Mo External Affairs) launched in 2020. It aims to promote domestic tourism in India which is intended to enhance tourist footfalls in places of tourist interest so as to help develop the local economy.

51. If you visit the famous Kaziranga national park, which of the following wildlife you may see?

- 1. One horned rhino
- 2. Bengal tiger
- 3. Golden Langur
- 4. Swamp deer
- 5. Feral horse
- 6. Wild water buffalo

How many of the options given above is/are correct?

- (a) Two
- (b) Three
- (c) Four
- (d) Six

Ans C

The Kaziranga National Park hosts two thirds of the world's greater one horned rhinoceros. Kaziranga has the largest population of the Wild water buffalo anywhere, accounting for about 57% of the world population. **Kaziranga has one of the highest densities of tigers in the world (1 per 5 km².) There are 118 Royal Bengal Tigers, according to the latest census. It is also an important breeding ground of Swamp Deer.** The One-Horned rhinoceros, Royal Bengal Tiger, Asian elephant, wild water buffalo and swamp deer are collectively known as the 'Big Five' of Kaziranga.

- Feral or wild horses are found only in the **Dibru-Saikhowa National Park in India.**
- **Golden Langur is endemic to western Assam, India, and southern Bhutan.** Their habitat is restricted to the region surrounded by four geographical landmarks: the foothills of Bhutan (North), Manas River (East), Sankosh river (West), and Brahmaputra River (South). It is not found in Kaziranga National Park.

52. With reference to biodiversity, Ball python, Scarlet Macaw, sugar glider (Petaurus breviceps), marmoset are:

- (a) Listed in Appendix I of CITES.
- (b) Exotic animals.
- (c) Migratory species.
- (d) Amphibians.

Ans B

Some of the most sought-after exotic species in India are **Ball python, Scarlet Macaw, sugar glider (Petaurus breviceps), marmoset and grey African parrots.** The Union Government has issued an advisory to streamline the process for import and possession of exotic live species in India

53. The species selected to act as an ambassador, icon or symbol for a defined habitat, issue, campaign or environmental cause and by focusing on them, their habitat and other species which share the same habitat can also be conserved

Above statement represents which of the following?

- (a) Umbrella Species
- (b) Iconic Species
- (c) Flagship Species
- (d) Guilds

Ans C

Flagship Species: The species selected to act as an ambassador, icon or symbol for a defined habitat, issue, campaign or environmental cause and by focusing on them, their habitat and other species which share the same habitat can also be conserved.

54. Human activity along with Natural cycles over the past few centuries has led to the extinction of several hundred species. In that Reference, consider the following species:

- 1. Steller's Sea Cow
- 2. Quagga
- 3. Caspian tiger
- 4. Sloth bear
- 5. Thylacine
- 6. Bali Tiger
- 7. Himalayan Quail

How many of the above species are extinct?

- (a) Two
- (b) Four
- (c) Six
- (d) All of the above

Ans C

Some examples of recent extinctions include the **dodo (Mauritius), quagga (Africa), Himalayan Quail, Thylacine (Australia), Steller's Sea Cow (Russia) and three subspecies (Bali, Javan, Caspian) of tiger.**

The sloth bear is a myrmecophagous bear species native to the Indian subcontinent. It is **listed as Vulnerable on the IUCN Red List.**

55. With reference to National Park and wildlife sanctuary, consider the following statements:

1. Grazing activity is not permitted in National Park.
2. Wildlife sanctuary is formed for particular Species whereas National Park may or may not be for particular Species.
3. National Park can be downgraded to wildlife sanctuary.

Which of the above statements is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans A

Statement 3 is Incorrect: National Park cannot be downgraded to the status of a 'sanctuary'. **The International Union of Conservation of Nature, IUCN, has grouped wildlife sanctuaries in Category IV of protected areas.** Hence National Park, since accorded a higher degree of Protection, can't be downgraded.

56. Consider the following statements with reference to the Office of the Speaker.

1. She holds office during the pleasure of the President.
2. She need not be a member of the House at the time of her election.
3. She is elected jointly by both the Lok Sabha and Rajya Sabha.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans D

Speaker holds office as long as she enjoys the confidence of the house. She can **be removed only by the Lok Sabha through impeachment.** The Speaker is elected from among its members by a simple majority of members present and voting in the House. As such, no specific qualifications are prescribed for being

elected the Speaker. **The Constitution only requires that Speaker should be a member of the House.**

57. Article 110 of the Constitution deals with the definition of money bills. It states that a bill is deemed to be a money bill if it contains 'only' provisions dealing with all or any of which of the following matters?

1. Abolition of a tax by a local authority
2. Appropriation of money out of the Consolidated Fund of India
3. Regulation of the borrowing of money by the Union government

Select the correct answer code:

- (a) 1, 2
- (b) 2, 3
- (c) 1, 3
- (d) 1, 2, 3

Ans B

A bill is not to be deemed to be a money bill by reason only that it provides for:

- the imposition of fines or other pecuniary penalties, or
- the demand or payment of fees for licenses or fees for services rendered; or
- the imposition, abolition, remission, alteration or regulation of any tax by any local authority or body for local purposes.

58. The Speaker of Lok Sabha can be removed on

1. A resolution passed by majority of all the then membership of Lok Sabha
2. A resolution passed by special majority in Lok Sabha
3. An enquiry by the Supreme Court
4. An order of the President

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Ans A

The Speaker's term is coterminous with the term of the Lok Sabha i.e. 5 years. However, the constitution has given the Lower House authority to remove the Speaker if needed. The House can remove the Speaker through a resolution passed by an **effective majority (more than 50% of the total strength of the house present and voting) as per Articles 94 and 96 of the Indian Constitution.**

59. Consider the following statements.

1. A Bill originating in the Lok Sabha and pending in the Lok Sabha lapses.
2. A bill passed by the Lok Sabha but pending in the Rajya Sabha does not lapse.

Which of the above statements is/are incorrect?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans B

A bill passed by the Lok Sabha but pending in the Rajya Sabha lapses.

60. Consider the following statements regarding Lok Sabha.

Statement 1 - the work and conduct of the Speaker cannot be discussed and criticized in the Lok Sabha except on a substantive motion.

Statement 2- The office of the Speaker is vested with great prestige, position and authority.

Which of the above statements is/are correct?

- (a) Statement- 1 and Statement- 2 are true, and statement- 2 is the correct explanation of Statement- 1.
- (b) Statement- 1 and Statement- 2 are true but Statement- 2 is not the correct explanation of Statement- 1.
- (c) Statement- 1 is true and Statement- 2 is false.
- (d) Statement- 1 is false and Statement- 2 is true.

Ans A

The work and conduct of the Speaker cannot be discussed and criticized in the Lok Sabha **except on a substantive motion: This is done with a view to safeguard the independence and impartiality of the office of the Speaker** as it is vested with great prestige, position and authority.

61. The terms like Reinforcement Learning, sentiment analysis, Natural language processing are associated with which of the following fields?

- (a) Artificial Intelligence
- (b) Education
- (c) Stock Markets
- (d) Linguistics

Ans A

Option A is correct: Reinforcement learning: A method of teaching AI without specific metrics,

encouraging the model to test different scenarios rather than find a single answer. Based on human feedback, the model can then manipulate the next scenario to get better results.

62. Consider the following pairs:

Name Vaccine: Type

1. Moderna: viral vector vaccine
2. Johnson & Johnson: mRNA vaccine
3. Covaxin: inactivated Virus vaccine
4. Corbevax: recombinant protein vaccine

How many pair given above are correctly matched?

- (a) Only one pair
- (b) Only two pairs
- (c) Only three pairs
- (d) All four pairs

Ans B

Pair 3 is correct: Bharat Biotech's Covaxin is an inactivated vaccine. In this type, an inactivated live virus is used to create an immune response against the disease.

Pair 4 is correct: Corbevax is a recombinant protein subunit vaccine. It is made up of a specific part of SARS-CoV-2 — the spike protein on the virus's surface to trigger an immune response.

63. Beamforming and Carrier Aggregation are terms associated with which of the following Industries?

- (a) Military Applications
- (b) Telecommunications
- (c) Agriculture
- (d) Consumer goods

Ans B

Beamforming and Carrier Aggregation are terms associated with telecommunications. Beamforming refers to usage of increased number of antennas to aim signals directly toward a specific device, group of devices or location

64. Consider the following statements:

1. Isoniazid, rifampicin and Bedaquiline are used in the treatment of Leprosy.
2. India has the National TB Elimination Programme to meet the goal of ending the TB epidemic by 2030.

Which of the statements given above is/are not correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2

(d) Neither 1 nor 2

Ans C

Statement 1 is not correct: *Mycobacterium tuberculosis*, the bacteria that cause tuberculosis (TB) can develop resistance to the antimicrobial drugs used to cure the disease. **TB is initially treated with isoniazid and rifampicin.** If the bacteria develops resistance to them, then Bedaquiline is used.

Statement 2 is not correct: **National TB Elimination Programme is to meet the goal of ending the TB epidemic by 2025 in India**, five years ahead of the Sustainable Development Goals (SDG) for 2030.

65. Consider the following statements with reference to the Marburg virus disease:

Statement 1- Marburg is a highly virulent disease that causes hemorrhagic fever.

Marburg is a member of the Filoviridae family.

Statement 2- Disease has a case fatality ratio of up to 88%. It is similar to Ebola Virus disease.

Which of the above statements is/are correct?

- (a) Statement- 1 and Statement- 2 are true, and statement- 1 is the correct explanation of Statement- 2.
- (b) Statement- 1 and Statement- 2 are true but Statement- 1 is not the correct explanation of Statement- 2.
- (c) Statement- 1 is true and Statement- 2 is false.
- (d) Statement- 1 is false and Statement- 2 is true.

Ans A

Statement 1 is correct: Marburg is a highly virulent disease that causes **hemorrhagic fever, with a fatality ratio of up to 88%**. It is in the same family as the virus that causes Ebola virus disease and they show similar symptoms.

66. Which of the following are close to direct democracy?

- 1. Decisions taken by the Gram Sabha
- 2. Decisions taken by the legislative Assembly of a state
- 3. Decisions taken in the Board of Directors of a corporation

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

Ans A

Only Statement 1 is correct.

The Board of directors consist of either direct representatives or nominees. So it is an example of indirect democracy. Same can be said of the legislative Assembly of a state. In the case of **Gram Sabha**, it is the **most direct decision-making directly by the people**

67. Article 142 of the Indian Constitution is related to

- (a) Original jurisdiction of the Supreme Court
- (b) Measures taken by the Supreme Court to do complete justice.
- (c) Appellate jurisdiction of Supreme Court in appeals from High Courts
- (d) Conferment on the Supreme Court of powers to issue certain writs

Ans B

Article 142 "provide(s) a unique power to the Supreme Court, to do **"complete justice" between the parties**, i.e., where at times law or statute may not provide a remedy, the Court can extend itself to put a quietus to a dispute in a manner which would benefit the facts of the case.

68. Consider the following statements about Double Jeopardy.

- 1. It means that no person shall be prosecuted and punished for the same offence more than once.
- 2. The Constitution bars double punishment for the same offence.
- 3. A partial protection against double jeopardy is a Fundamental Right.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans C

Article 20(2) says that no person shall be prosecuted and punished for the same offence more than once. This is called **Doctrine of Double Jeopardy**. The objective of this article is to avoid harassment, which must be caused for successive criminal proceedings, where the person has committed only one crime.

69. Consider the following statements

- 1. Beginning of Parliamentary System in India can be traced back to Indian Council Act, 1861
- 2. Charter Act of 1833 recommended for the appointment of Macaulay Committee on Indian Civil Service.

3. Charter Act of 1833 deprived the governor of Bombay and Madras of their legislative powers. The Governor General of India was given exclusive legislative powers for the entire British India.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans A

Beginning of Parliamentary System in India can be traced back to Charter Act of 1853. It separated, for the first time, the legislative and executive functions of the Governor General's council. It provided for addition of six new members called legislative councillors to the council. **Charter Act of 1853 recommended for the appointment of Macaulay Committee on Indian Civil Service.**

70. Consider the following statements about the office of the governor as mentioned in the constitution of India:

1. His office is constitutionally under the control and subordinate to the Central government.
2. The Governor of a particular state should not belong to that state.
3. The President of India must consult the Chief Minister of the concerned state before making the appointment of the Governor of that state.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Ans D

The Constitution lays down only two qualifications for the appointment of a person as a governor. These are:

- He should be a **citizen of India**.
- He should have **completed the age of 35 years**.

71. Which of the following statements regarding Amukthamalyada is correct?

- (a) Account of the ruling history of the Mauryas written by Chandragupta Maurya himself
- (b) Story of a Pallava ruler who sacrificed his kingdom to win back his subjects
- (c) Epic poem in Telugu composed by Krishnadevaraya
- (d) Segment of Arthashastra that became popular for its dictats on foreign policy

Ans C

Amukthamalyada describes the story of wedding of **the Hindu Lord Vishnu and Andal the Tamil Alvar poet and daughter of Periyalvar, at Srirangam**. It is basically an **epic poem in Telugu composed by Krishnadevaraya** of the Vijayanagara dynasty. Krishnadevaraya was a great patron of arts and a great scholar himself.

72. At places like Tekkalkota in Karnataka and Andhra Pradesh, rock paintings from Neolithic age are often found. Which of the following can be the appropriate reason for it?

- (a) There were lack of deep caves, so rock paintings became abundant.
- (b) Granite rocks found in Karnataka and Andhra Pradesh are suitable for rock paintings.
- (c) Paintings existed in other regions too, but these regions were one of the most excavated regions which made it easier to find rock paintings.
- (d) None of the above

Ans B

The granite rocks of Karnataka and Andhra Pradesh provided suitable canvases to the Neolithic man for his paintings. There are several such sites but more famous among them are **Kupgallu, Piklihal and Tekkalkota**. Three types of paintings have been reported from here— **paintings in white, paintings in red ochre over a white background and paintings in red ochre**.

73. Consider the following statements regarding the paintings found at Ajanta Caves?

1. Figures in these caves are painted with over-stylisation, with less importance to naturalism.
2. The themes of the paintings are the events from the life of the Buddha,
3. The other important paintings are the famous Padmapani and Vajrapani.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) None

Ans B

Statement 1 is incorrect.- The themes of the paintings are the events from the **life of the Buddha, the Jatakas and the Avadanas**. Some paintings such as **Simhala Avadana, Mahajanaka Jataka and Vidharpundita Jataka** cover the entire wall of the cave.

74. Consider the following statements regarding Warli painting:

1. Warli painting derives its name from a small tribe inhabiting the remote, tribal regions of Maharashtra.
2. These paintings are made mostly by the women as part of their routine at auspicious celebrations.
3. Marriage is the most recurring theme of Warli paintings.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Anc C

Warli painting derives its name from a small tribe inhabiting the remote, tribal regions of Maharashtra. **These are decorative paintings on floors and walls of 'gond' and 'kol' tribes' homes and places of worship.** Trees, birds, men and women collaborate to create a composite whole in a Warli painting. **These paintings are made mostly by the women as part of their routine at auspicious celebrations.**

75. In literature, the first references to dance and music in India can be found in

- (a) Nandikesvara
- (b) Natyadharmi
- (c) Natyashastra
- (d) Vedas

Ans D

The first references to dance come from the Vedas where dance and music have their roots. **The history of dance can be reconstructed from the epics, several Puranas and rich body of dramatic and poetic literature known as the nataka and the kavya in Sanskrit.**

76. Consider the following statements regarding incremental capital-output ratio (ICOR).

Statement 1 - The incremental capital-output ratio (ICOR) is the amount of capital required to produce one unit of output.

Statement 2- The lower the ICOR, the less efficient we are in the use of capital.

Which of the above statements is/are correct?

- (a) Statement- 1 and Statement- 2 are true, and statement- 1 is the correct explanation of Statement- 2.

(b) Statement- 1 and Statement- 2 are true but Statement- 1 is not the correct explanation of Statement- 2.

(c) Statement- 1 is true and Statement- 2 is false.

(d) Statement- 1 is false and Statement- 2 is true.

Ans C

The incremental capital-output ratio (ICOR) is the amount of capital required to produce one unit of output. **The higher the ICOR, the less efficient we are in the use of capital.** ICOR is determined by a variety of factors including **technology, skill of manpower, managerial competence and also macroeconomic policies.** Thus, delays in the completion of projects, lack of complementary investments in related sectors and the non-availability of critical inputs can all lead to a rise in ICOR.

77. In India, Microcredit is delivered through which of the following channels?

1. Microfinance institutions (MFIs) registered as NBFCs
2. Non-banking financial companies (NBFCs)
3. Scheduled commercial banks including small finance banks (SFBs).
4. Cooperative banks

Select the correct answer code:

- (a) 1, 2
- (b) 1, 2, 3
- (c) 2, 3, 4
- (d) 1, 2, 3, 4

Ans D

Microfinance is a **form of financial service which provides small loans and other financial services to poor and low-income households.** Microcredit is delivered through a variety of institutional channels viz., (i) **scheduled commercial banks (SCBs) (including small finance banks (SFBs) and regional rural banks (RRBs))** lending both directly as well as through business correspondents (BCs) and **self-help groups (SHGs)**, (ii) **cooperative banks**, (iii) **non-banking financial companies (NBFCs)**, and (iv) **microfinance institutions (MFIs)** registered as NBFCs as well as in other forms.

78. Consider the following statements.

1. The Reserve Bank of India (RBI) normally pays the dividend to the Central Government from the surplus income it earns on investments and valuation changes on its dollar holdings and the fees it gets from printing currency.

2. The Reserve Bank of India (RBI) has developed an Economic Capital Framework (ECF) for determining the allocation of funds to its capital reserves so that any risk contingency can be met.
3. The RBI cannot bank on the Contingency Fund in case of any emergency requirement.

How many of the above statements is/are correct?

- (a) One only
(b) Two only
(c) All three
(d) None

Ans B

The RBI can bank on the Contingency Fund in case of any emergency requirement. The RBI normally pays the dividend from the surplus income it earns on investments and valuation changes on its dollar holdings and the fees it gets from printing currency, among others.

79. Consider the following statements regarding loan write-off.

1. Writing off a loan essentially means it will no longer be counted as an asset, by the bank.
2. The amount so written off reduces the bank's tax liability.
3. After the write-off, banks are not supposed to continue their efforts to recover the loan.

Which of the above statements is/are correct?

- (a) 1, 2
(b) 1 only
(c) 1, 3
(d) 1, 2, 3

Ans A

Writing off a loan essentially means **it will no longer be counted as an asset. By writing off loans, a bank can reduce the level of non-performing assets (NPAs) on its books.** An additional benefit is that the amount so written off reduces the bank's tax liability

80. Keki Mistry committee, that was recently in news was related to

- (a) Armed Forces Special Powers Act
(b) GM crops in India
(c) Review the share buyback regulations
(d) Reforms in the criminal Justice System.

Ans C

Keki Mistry-headed committee was set up by **Sebi to review the share buyback regulations.**

81. The Multi-dimensional Poverty Index developed by Oxford Poverty and Human Development Initiative with UNDP support covers which of the following? [UPSC CSE Pre. 2012]

1. Deprivation of education, health, assets and services at household level
2. Purchasing power parity at national level
3. Extent of budget deficit and GDP growth rate at national level

How many of the options given above is/are correct?

- (a) One only
(b) Two only
(c) All Three
(d) None

Ans A

Statement 1 is correct. Multi-dimensional Poverty Index (MPI) **identifies multiple deprivations at the household and individual level in health, education and standard of living.** Each person in a given household is classified as poor or non-poor depending on the weighted number of deprivations his or her household, and thus, he or she experiences. **The MPI reflects both the incidence of multidimensional deprivation (a headcount of those in multidimensional poverty) and its intensity** (the average deprivation score experienced by poor people). The MPI offers a valuable complement to income-based poverty measures.

The following indicators are included to calculate MPI:

- **Health** - Child mortality, Nutrition
- **Education** - Years of schooling, School attendance
- **Standard of living** - Cooking fuel, Sanitation, Drinkingwater, Electricity, Housing and assets.

82. Consider the following statements on 'Pradhan Mantri Jan-Dhan Yojana' [Theme- UPSC CSE Pre. 2015]

How many of the following is/are correct?

- (1) It was launched initially for a period of 4 years starting from 2014.
- (2) Aimed at promoting women's Self-Help Groups in backward areas
- (3) It envisages universal access to banking facilities with at least one basic banking facility for each household
- (4) providing financial help to the marginalized communities.
- (5) PMJDY has provided a platform for social security schemes like Pradhan Mantri Jeevan Jyoti Bima

Yojana (PMJJBY), Atal Pension Yojana (APY) and PradhanMantri Mudra Yojana (PMMY).

How many of the options given above is/are correct?

- (a) four only
- (b) Two only
- (c) Three only
- (d) All five

Ans C

“Pradhan Mantri Jan-Dhan Yojana (PMJDY)” under the **National Mission for Financial Inclusion was launched initially for a period of 4 years (in two phases) on 28th August 2014.** It envisages universal access to banking facilities with at least one basic banking account for every household, financial literacy, access to credit, insurance and pension.

PMJDY has provided a platform for the three social security schemes viz. Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Atal Pension Yojana (APY) and Pradhan Mantri Mudra Yojana (PMMY).

83. Consider the following statements: [UPSC CSE Pre. 2015]

1. The Accelerated Irrigation Benefits Programme was launched during 1996-97 to provide loan assistance to poor farmers.
2. The Command Area Development Programme was launched in 1974-75 for the development of water-use efficiency.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans B

The Accelerated Irrigation Benefits Programme was launched during 1996-97 to provide financial assistance, to expedite completion of on-going Major/Medium Irrigation (MMI) including Extension, Renovation and Modernization (ERM) of irrigation projects. It was not for providing loan assistance to poor farmers. **The Command Area Development Programme was launched in 1974-75 for the development of water-use efficiency and speedier utilization of irrigation potential.**

84. What is/are the purpose/purposes of Government's 'Sovereign Gold Bond Scheme' and 'Gold Monetization Scheme'? [UPSC CSE Pre. 2016]

1. To bring the idle gold lying with Indian households into the economy.
2. To promote FDI in the gold and jewellery sector.
3. To reduce India's dependence on gold imports.

How many of above is/are correct:

- (a) One only
- (b) Two only
- (c) All Three
- (d) None

Ans B

Statement 1 is correct. Sovereign Gold Bond Scheme and Gold Monetization Scheme were **launched by Central Government in 2015.**

Statement 2 is incorrect. It not impacts FDI in the gold and jewellery sector.

Statement 3 is correct. The primary purpose to launch these schemes was to **reduce dependence on imported gold (India is the largest consumer of gold in the world)** and streamline the gold business in the country. **Gold Monetization Scheme pays interest on gold deposits thus mobilising the idle gold lying in households, institutions, corporates & temple trusts of the country** and facilitate its use for productive purposes, and in the long run, to reduce country's reliance on the import of gold.

85. Which one of the following is a purpose of 'UDAY', a scheme of the Government? [UPSC CSE Pre. 2016]

- (a) Providing technical and financial assistance to start-up entrepreneurs in the field of renewable sources of energy
- (b) Providing electricity to every household in the countries by 2018
- (c) Replacing the coal-based power plants with natural gas, nuclear, solar, wind and tidal power plants over a period of time
- (d) Providing for financial turnaround and revival of power distribution companies

Ans D

The UDAY scheme was **launched in 2015**, under the Government of India for **operational and financial turn around of the Power Distribution Companies (DISCOMs) owned by any state.** UDAY scheme also aims in providing a solution for revenue-side efficiency as well as cost-side efficiency

86. Consider the following statements: [Theme- CSE Pre. 2007]

1. The annual range of temperature is greater in the Atlantic Ocean than that in the Pacific Ocean.
2. The annual range of temperature is greater in the Northern Hemisphere than that in the Southern Hemisphere.

Which of the statements given above is/are correct?

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans B.

The size of the oceans and the seas affects annual range of temperature e.g., bigger the size, lower the annual range and vice versa. **The Atlantic Ocean records relatively higher annual range of temperature than the Pacific Ocean due to this reason.**

Statement 2 is correct. The temperature of ocean water varies in the northern and the southern hemispheres because of dominance of land in the former and water in the latter. The oceans in the northern hemisphere receive more heat due to their contact with larger extent of land than their counterparts in the southern hemisphere and thus the temperature of surface water is comparatively higher in the former than the latter.

87. Between India and East Asia, the navigation-time and distance can be greatly reduced by which of the following? (Theme CSE Pre. 2011)

1. Deepening the Malacca straits between Malaysia and Indonesia.
2. Opening a new canal across the Kra isthmus between the Gulf of Siam and Andaman Sea.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans B

Statement 1 is incorrect. The current depth of Strait of Malacca is 25 metres, which prohibits entry of some of the biggest ships in the world. However, deepening it will not reduce navigation-time and distance to be travelled.

Statement 2 is correct. The Kra Isthmus is the narrowest part of the Malay Peninsula. Kra canal is a

proposed canal which would reduce the travel time by eliminating need of going around the Malay peninsula, and reducing a distance of nearly 1,200 kilometres.

88. La Nina is suspected to have caused recent floods in Australia. How is La Nina different from El Nino? [UPSC CSE Pre. 2011]

1. La Nina is characterised by unusually cold ocean temperature in equatorial Indian Ocean whereas El Nino is characterised by unusually warm ocean temperature in the equatorial Pacific Ocean.
2. El Nino has adverse effect on south-west monsoon of India, but La Nina has no effect on monsoon climate.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans D

Statement 1 is incorrect. La Nina is characterised by **unusually cold ocean temperatures in the Equatorial Pacific compared to El Nino Whereas El Nino is characterized by unusually warm ocean temperatures in the Equatorial Pacific.**

Statement 2 is incorrect. La Nina is favourable to Indian monsoon whereas, El Nino has adverse effect on south-west monsoon

89. Consider the following factors: [Theme CSE Pre. 2012]

1. Rotation of the Earth
2. Air pressure and wind
3. Density of ocean water
4. Revolution of the Earth
5. Heating by solar energy
6. Gradient variation.
7. Shape of ocean basins.

How many of the above factors influence the ocean currents?

- (a) Three only
- (b) Four only
- (c) Six only
- (d) All of the above

Ans C

Option 4 is incorrect. Revolution of Earth does not influence the movement of Ocean Currents. Insolation, Planetary winds, Gravity, Salinity of ocean water, Shape of coastline are some other important

factors which influence the movement of ocean currents.

90. Consider the following pairs: [UPSC CSE Pre. 2018]

Regions sometimes mentioned in news	Country
1. Catalonia	Spain
2. Crimea	Hungary
3. Mindanao	Philippines
4. Oromia	Nigeria

How many of the pairs given above is/are correctly matched

- (a) Two only
- (b) Three only
- (c) All of the above
- (d) None

Ans: A

Option a is correct. Catalonia is an autonomous region in Spain. They are seeking complete independence.

Option b is incorrect. Till 2014, Crimea was part of Ukraine. **Following pro-Russian demonstrations, it was annexed by Russia.**

Option c is correct. Mindanao is an Island in Philippines. Centuries of conquest first by Spanish and American colonial forces that had ruled the Philippine archipelago followed by Filipino Christian settlers have gradually turned Muslims into a minority group in Mindanao, triggering conflict over land, resources and sharing of political power.

Option d is incorrect. Oromia is a state in Ethiopia, which has seen struggle for autonomy in the past by the Oromo people.

91. In India, markets in agricultural products are regulated under the [UPSC CSE Pre. 2015]

- (a) Essential Commodities Act, 1955
- (b) Agricultural Produce Market Committee Act enacted by States
- (c) Agricultural Produce (Grading and Marking) Act, 1937
- (d) Food Products Order, 1956 and Meat and Food Products Order, 1973

Ans B

An Agricultural Produce Market Committee (APMC) is a **marketing board established by state governments in India to ensure farmers are safeguarded from exploitation by large retailers**, as well as ensuring the farm to retail price spread does not reach excessively high levels. APMCs are regulated by states through

their adoption of a Agriculture Produce Marketing Regulation (APMR) Act.

92. Which one of the following best describes the main objective of 'Seed Village Concept'? [UPSC CSE Pre. 2015]

- (a) Encouraging the farmers to use their own farm seeds and discouraging them to buy the seeds from others
- (b) Involving the farmers for training in quality seed production and thereby to make available quality seeds to others at appropriate time and affordable cost
- (c) Earmarking some villages exclusively for the production of certified seeds
- (d) Identifying the entrepreneurs in villages and providing them technology and finance to set up seed companies

Ans B

A village, wherein **trained group of farmers are involved in production 'of seeds of various crops** and cater to the needs of themselves, fellow farmers of the village and farmers of neighbouring villages in appropriate time and at affordable cost is called "a seed village".

93. Which of the following is/are the advantage/advantages of practicing drip irrigation? [Theme CSE Pre. 2016]

- 1. Reduction in weed
- 2. Reduction in soil salinity
- 3. Reduction' in-soil erosion
- 4. Low cost investment
- 5. Free from clogging

Select the correct answer using the code given below.

- (a) Two only
- (b) Three only
- (c) All of the above
- (d) None of the above is an advantage of practising drip irrigation

Ans A

Statement 2 is incorrect. Drip irrigation systems **distribute water through a network of valves, pipes, tubing, and emitters.** This practice **helps to save water and fertilizer.** Water logging due to irrigation is a major cause of soil salinity, hence it cannot be an advantage of drip irrigation

94. With reference to foreign-owned e-commerce firms operating in India, which of the following statements is/are correct? [Theme CSE Pre. 2022]

1. They can sell their own goods in addition to offering their platforms as market-places.
2. The degree to which they can own big sellers on their platforms is limited.

Choose the correct statement given below:

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans D

Statement 1 is incorrect: First, foreign firms are prevented from holding inventory or selling their own goods, which both Amazon and Walmart do in other markets. **They can offer their platforms only as “marketplaces” for other buyers and sellers.**

Statement 2 is correct: Second, the degree to which they can own big sellers on their platforms is limited, to prevent those sellers acting covertly on their behalf

95. Which of the following correctly describes the impediments faced by the Steel Industry in India?

1. Saturation of the consumer demand in all steel categories
2. Large amount of NPAs and stressed assets in the industry
3. Large scrap imports
4. High power costs

Choose the correct answer using the options given below:

- (a) One Only
- (b) Two only
- (c) Three only
- (d) All of the above

Ans C

Statement 1 is incorrect - According to Indian Steel Association (ISA) the finished steel demand in India is expected to be up by around 16.7 per cent to reach around 104 million tonnes in the coming year and by the end of next year, it will be at 111 million tonnes. **As per the National Steel Policy 2017, the government has set a target to ramp up the country’s crude steel production output to 300 million tonnes (MT) by 2030.**

Statement 2 is correct - Out of the total loans to the industry, the steel sector has a share of 10.24% (Rs 3.1 lakh crores). It is reported that the stressed assets

of steel sector out of the gross NPAs comprise around 29.38% of the total and stands at Rs 1.5 lakh crores. **In China the financial liabilities of the banks and financial institutions to the steel sector consisting of SOEs and SMEs is also enormous.**

Statement 3 is correct - Availability of ferrous scrap in India is very limited—around 25 million tonnes annually from domestic sources. In 2018-19 and 2019-20, the country imported nearly 6.5 million tonnes of scrap each year and thus large forex spending was incurred.

Statement 4 is correct - The power cost in India as compared with other nations is very much higher. This has slowed down the progress of steel making in the country. The future, however, looks brighter since several power generating projects are under active planning and implementation.

96. Rayagajakesari and Dayagajakesari are titles associated with which of the following dynasties?

- (a) Vijayanagara
- (b) Rashtrakuta
- (c) Kakatiya
- (d) Gajapati

Ans C

Rayagajakesari and Dayagajakesari are titles of the Kakatiya dynasty. The title Daya Gaja Kesari was given to the first Kakatiya king Prataparudra. In the Kakatiya dynasty coins were inscribed with this title. **Raya-gajakesari title belongs to Rudrama Devi**, she inherited this title from her father. This title was also inscribed on the coins.

97. Name the location of the musical inscription containing groups of musical notes arranged for the benefit of his pupils by a king in the 7th or 8th century CE.

- (a) Uttaramerur
- (b) Ennayiram
- (c) Siyyamangalam
- (d) Kudumiyanmalai

Ans D

Much before modern musical notations took roots in the West, **classical ragas were inscribed in Kudumiyanmalai temple in Pudukottai.** The inscriptions from the 7th century AD carved on hard rocks of the cave temple contain classical ragas.

98. In the context of 18th century India, what was ‘Dastak’?

- (a) Tax on textiles

- (b) Land document
- (c) Trade Permit
- (d) Signature

Ans C

Dastak, in 18th-century Bengal, a permit exempting European traders, mostly of the British East India Company, from paying customs or transit duties on their private trade. **The name came from the Persian word for "pass." The practice was introduced by Robert Clive**, one of the creators of British power in India, when he had **Mir Jafar installed as nawab of Bengal in 1757**. The attempt of Mir Ja'far's successor, Mir Qāsim, to annul the use of dastaks led to his overthrow in 1763–64 and the exercise of overt control of Bengal by the British.

99. Consider the following statements regarding Raja Rammohan Roy and Brahma Samaj.

1. Raja Rammohan Roy, the founder of Brahma Samaj was called the father of Indian Renaissance.
2. Rammohan Roy translated into Bengali the Vedas and the five Upanishads.
3. Brahma Samaj aimed to purify Hinduism
4. The aim was to preach monotheism and establish a new religion which was not successful

How many of the above statements is/are correct?

- (a) one
- (b) two
- (c) three
- (d) all of the above are correct

Ans C

Raja Rammohan Roy (1772-1833), often called the father of Indian Renaissance and the maker of Modern India. Rammohan Roy believed in the modern scientific approach and principles of human dignity and social equality. He put his faith in monotheism. **He wrote Gift to Monotheists (1809)** and translated into Bengali the Vedas and the five Upanishads to prove his conviction that ancient Hindu texts support monotheism. **Raja Rammohan Roy founded the Brahma Sabha in August 1828; it was later renamed Brahma Samaj.** Rammohan Roy did not want to establish a new religion. He only wanted to purify Hinduism of the evil practices which had crept into it.

100. Earliest Viharas were built for Buddhist monks and nuns. Consider the following:

1. It served as a permanent shelter for the wandering monks and nuns during rainy season.

2. It was planned to serve as a centre for propagation of Buddhism.

Which of the statements given above is/are correct?

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans C

Buddhist monks went from place to place throughout the year, teaching people. The only time they stayed in one place was during the rainy season, when it was very difficult to travel. Then, their **supporters built temporary shelters for them in gardens**, or they lived in natural caves in hilly areas. As time went on, many supporters of the monks and nuns, and they themselves, felt the need for more permanent shelters and so monasteries were built. **These were known as viharas.** There was no Buddhism when the earliest Viharas were made. **Buddhism, as an organized religion, came into being after the death of the Buddha.** So, the purpose of preaching dhamma was a later purpose, and not the reason for establishing viharas.

101. In the context of independent India's economy, which one of the following was the earliest event to take place? [Theme CSE Pre. 2009]

- (a) Nationalization of Insurance companies
- (b) Nationalization of State Bank of India
- (c) Enactment of Banking Regulation Act
- (d) Introduction of First Five-Year Plan

Ans C

- **Nationalization of State Bank of India – 1955;**
- **Introduction of First Five-Year Plan – 1951;**
- **Enactment of Banking Regulation Act – 1949;**
- **Nationalization of Insurance Companies – 1955-**
56

102. Which one of the following statements appropriately describes the "fiscal stimulus"? [Theme CSE Pre. 2011]

- (a) It is a massive investment by the Government in manufacturing sector to ensure the supply of goods to meet the demand surge caused by rapid economic growth
- (b) It is an intense affirmative action of the Government to boost economic activity in the country

- (c) It is Government's intensive action on financial institutions to ensure disbursement of loans to agriculture and allied sectors to promote greater food production and contain food inflation
- (d) It is an extreme affirmative action by the Government to pursue its policy of financial inclusion

Ans B

Fiscal stimulus is an **action taken by government to increase aggregate demand in the economy. It can be in form of tax cuts or increased public spending.** Fiscal stimulus also refers to policy measures undertaken by a government that typically reduce taxes or regulations—or increase government spending—in order to boost economic activity.

103. Why is the Government of India disinvesting its equity in the Central Public Sector Enterprises (CPSEs)? (theme CSE Pre. 2011)

1. The Government intends to overcome the problem of political involvements in PSUs
2. The Government no longer intends to retain the management control of the CPSEs.

Which of the statements given above is/are correct?

- (a) Statement-1 is True, Statement-2 is True; Statement-2 is a correct explanation for Statement-1
- (b) Statement-1 is True, Statement-2 is True; Statement-2 is NOT a correct explanation for Statement-1
- (c) Statement-1 is True, Statement-2 is False
- (d) Statement-1 is False, Statement-2 is True

Ans C

The salient feature of disinvestment is that at **least 51 percent of the shareholding and management control should rest with the government.**

The main objectives of disinvestment are:

- (i) To **improve performance of units**
- (ii) To reduce **budgetary deficits**
- (iii) To overcome the **problem of political involvements** in PSUs
- (iv) Enable government to concentrate on Social development.

104. With reference to Union Budget, how many of the following is/are covered under Non-Plan Expenditure? [Theme CSE Pre. 2014]

1. Defence expenditure
2. Interest payments
3. Salaries and pensions
4. Subsidies

Select the correct answer using the code given below.

- (a) One
- (b) Two
- (c) All of the above
- (d) None

Ans C

All of the above form part of non-plan expenditure of the Union Budget.

105. With reference to 'Financial Stability and Development Council', consider the following statements: [Theme CSE Pre. 2016]

1. It is an organ of NITI Aayog.
2. It is headed by the Union Finance Minister.
3. It monitors macroprudential supervision of the economy.

How many of the statements given above is/are INCORRECT?

- (a) One
- (b) None
- (c) Two
- (d) All of the above

Ans A

Statement 1 is incorrect. Financial Stability and Development Council is **an apex-level body constituted by the government of India. It is not an organ of NITI Aayog.**

Statement 2 is correct. FSDC is **headed by the Union Finance Minister.** The secretariat of the council would be in the Department of Economic Affairs, Ministry of Finance.

Statement 3 is correct. Financial Stability and Development Council (FSDC) **functions to promote inter-regulatory coordination along with monitoring macro-prudential regulation of economy.**

106. Consider the following pairs:

Lakes	Formed by
1. Kettle lakes	Glaciation
2. Tarns	Volcanic activity
3. Karst lakes	Erosion

How many of the pairs given above is/are correct?

- (a) One only
- (b) Two only
- (c) All of the above
- (d) None of the options

Ans B

Pair 1 is correctly matched. Kettle lakes are **depressions in the outwash plain** left by melting of masses of stagnant water. They are **formed by glaciation**.

Pair 2 is incorrectly matched. **Cirque lakes or tarns are formed by glaciation.** A glacier on its way down the valley leaves behind circular hollows in the heads of the valleys up in the mountains. Such hollows are cirques or corries. **Their over deepened floor may be filled with water to form cirque lake or tarns.**

Pair 3 is correctly matched. The solvent action of rain water on lime stone carves out solution hollows. When these become clogged with debris, karst lakes may form in them. They are **formed by erosion**.

107. Consider the following statements regarding the 'Desert' ecosystem:

1. Most of the animals in the hot desert ecosystem are diurnal.
2. Playas are temporary lakes formed in arid and semi-arid areas.
3. Many of the hot deserts of the world are located on the western coasts of continents.

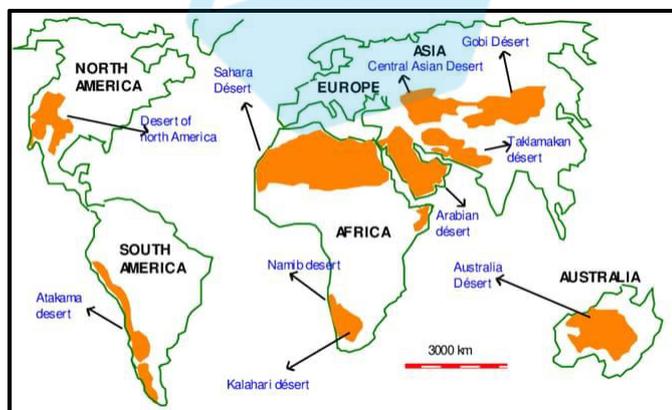
How many of the statements given above is/are correct?

- (a) One only
- (b) Two only
- (c) All of the above
- (d) None of the options

Ans B

Statement 1 is incorrect. Desert habitats are difficult to live in. **Most of the animals living in deserts are nocturnal (active during night).** They hide underground during the day when it is very hot and emerge at night.

Statement 2 and 3 are correct.



108. Which of the following pairs are correctly matched?

List I	List II
--------	---------

1. Ventifacts	These are pebbles faceted by sand-blasting and thoroughly polished by wind abrasion.
2. Yardangs	These are vertical bands of rocks usually parallel to the prevailing wind direction.
3. Bajadas	These are narrow water channels found in polar regions.

How many of the pairs given above is/are correct?

- (a) One only
- (b) Two only
- (c) All of the above
- (d) None of the options

Ans B

Pair 3 is incorrect. Bajada is the gently sloping depositional plain between pediments and playa. **Bajadas are common in arid climates (and not in polar regions).** Bajada is formed due to coalescence of several alluvial fans. Thus, bajada is a wholly depositional feature

109. With reference to ocean currents, consider the following pairs:

Current	Characteristics
1. Canaries current	Cold current of Atlantic Ocean
2. Agulhas current	Warm current of Southern Indian Ocean
3. Irminger current	Cold current of Southern Pacific

How many of the pairs given above is/are correct?

- (a) One only
- (b) Two only
- (c) All of the above
- (d) None of the options

Ans B

Pair 1 is correct. Canary Current is a cold current and a part of a clockwise-setting ocean-current system in the North Atlantic Ocean.

Pair 2 is correct. Agulhas current is a warm current of southern hemisphere. It flows south along the east coast of Africa in Indian Ocean.

Pair 3 is Incorrect. Irminger current is a cold current and a part of northern Atlantic Ocean (not southern).

110. Consider the following pairs of different canals/straits and seas connected by them.

Straits/canals	Oceans/seas
1. Seuz Canal	Connects Red Sea to Gulf of Aden

2. Bosphorus strait	Connects Sea of Marmara to Aegean Sea
3. Bab-el-Mandeb	Connects Red Sea to Mediterranean Sea
4. Strait of Hormuz	Connects Persian Gulf with Indian Ocean

How many of the pairs given above is/are correct?

- (a) One only
- (b) Two only
- (c) All of the above
- (d) None of the options

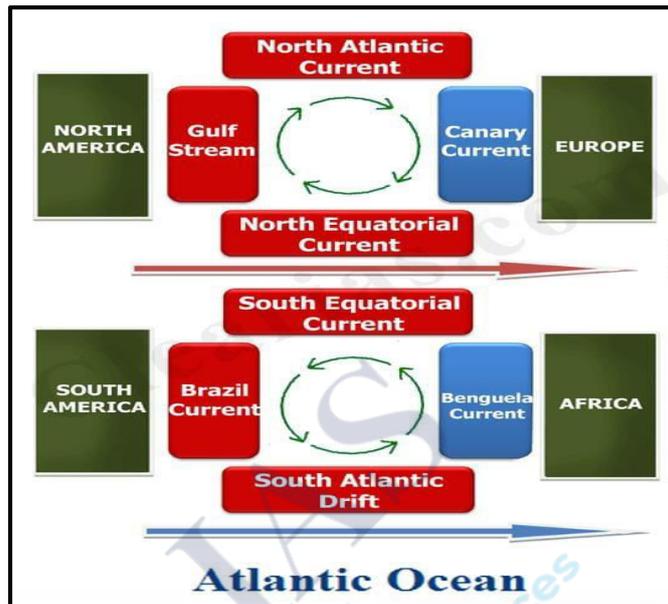
Ans A

Pair 1 is incorrect. Seuz canal connects Port Said on the Mediterranean Sea with the Gulf of Suez, an arm of the Red Sea.

Pair 2 is incorrect. Bosphorus strait connects Black Sea to Sea of Marmara.

Pair 3 is incorrect. Bab-el-Mandeb connects red sea to Gulf of Aden and Arabian sea.

Pair 4 is correct. Strait of Hormuz connects the Persian Gulf to the Arabian Sea, part of the northern Indian Ocean.



Educrat
ACADEMY
India's Best Mentorship for Civil Services