

CURRENT AFFAIRS MAGAZINE

DECEMBER 2022

- Maharashtra-Karnataka Border Dispute over Belagavi
- China, West, G20 Presidency: Opportunities & Concerns for India in 2023
- How the RBI e-rupee will work?
- Wildlife (Protection) Amendment Bill 2022
- Need to Strengthen India's Cyber Security

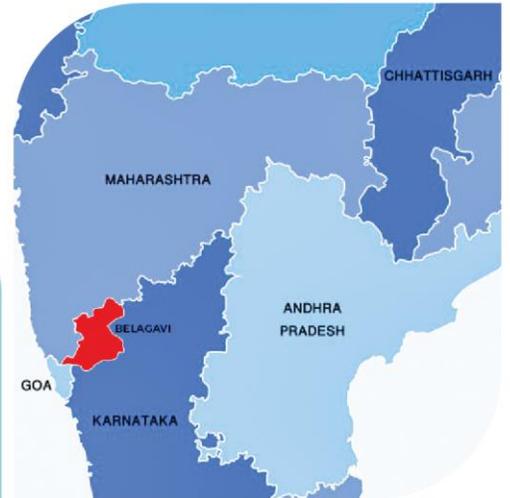
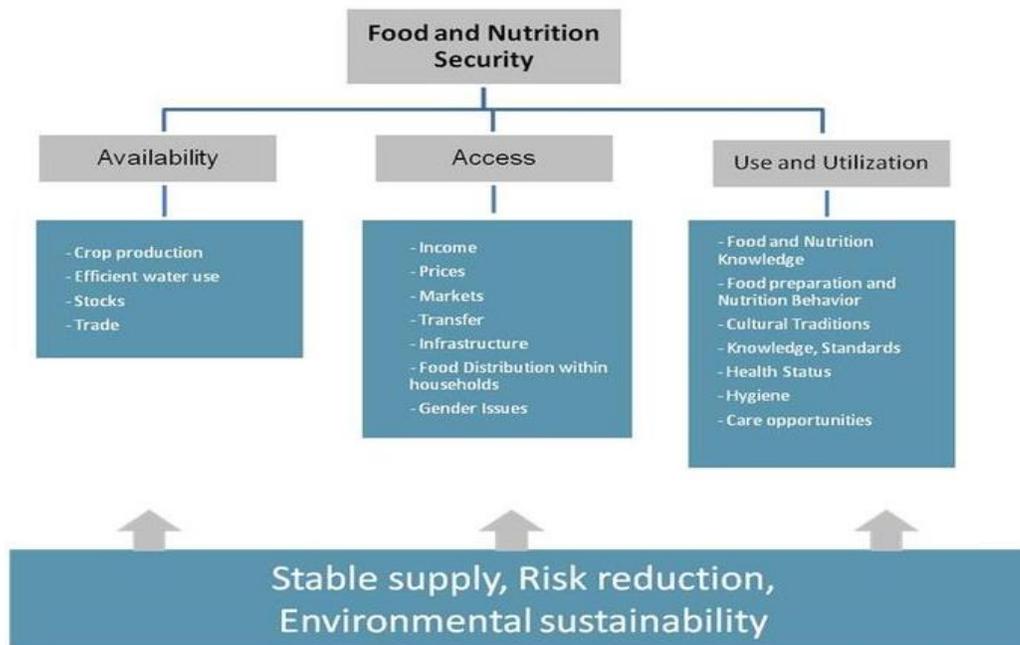


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Poor Soil Management Will Erode Food Security

World Soil Day (WSD) 2022, is annually observed on December 5. WSD 2022, has a guiding theme, 'Soils: Where food begins'.



What is soil degradation?

- Soil degradation is the physical, chemical and biological decline in soil quality.
- It can be the loss of organic matter, decline in soil fertility, and structural condition.
- Today, nutrient loss and pollution significantly threaten soils, and thereby undermine nutrition and food security globally.
- The main drivers contributing to soil degradation are industrial activities, mining, waste treatment, agriculture, fossil fuel extraction and processing and transport emissions.
- The reasons behind soil nutrient loss range from soil erosion, runoff, leaching and the burning of crop residues.
- Soil degradation in some form or another affects around 29% of India’s total land area. Nearly 3.7 million hectares suffer from nutrient loss in soil (depletion of soil organic matter, or SOM). Further, excessive use of fertilizers and pesticides, and irrigation with contaminated wastewater are also polluting soils.

What is India’s conservation strategy?

- The Government of India is implementing a five-pronged strategy for soil conservation.
- This includes making soil chemical-free, saving soil biodiversity, enhancing SOM, maintaining soil moisture, mitigating soil degradation and preventing soil erosion.
- **Soil Health Card (SHC) scheme (2015)** – to provide status of soil’s health to farmers
- **Pradhan Mantri Krishi Sinchayee Yojana** – to prevent soil erosion, regeneration of natural vegetation, rainwater harvesting and recharging of the groundwater table
- **National Mission for Sustainable Agriculture (NMSA)** – to promote traditional indigenous practices such as organic farming and natural farming, thereby reducing dependency on chemicals and other agri-inputs, and decreasing the monetary burden on smallholder farmers.

Role of Food and Agriculture Organization of the United Nations (FAO):

- FAO along with National Rainfed Area Authority (NRAA) and the Ministry of Agriculture and Farmers' Welfare (MoA&FW) to develop forecasting tools using data analytics that will aid vulnerable farmers in making informed decisions on crop choices, particularly in rainfed areas.
- FAO, in association with the Ministry of Rural Development: It supports the Deen Dayal Antyodaya Yojana-National Rural Livelihoods Mission's (DAY-NRLM) Community Resource Persons.
- It will increase their capacities towards supporting on-farm livelihoods for:
 - Adoption of sustainable and resilient practices
 - Organic certification
 - Agri-nutri-garden
 - FAO is partnering with the State government and the Indian Council of Agricultural Research (ICAR) in Andhra Pradesh: to support farmers in sustainable transitions to agro-ecological approaches and organic farming.

2. Women constitute one-third of Internet users in India: Study

As per a report titled 'India Inequality Report 2022: Digital Divide', Women constitute only one third of internet users in India. The report has been released by NGO Oxfam India. The report analyses primary data from the Centre for Monitoring Indian Economy's (CMIE) household survey from January 2018 to December 2021. CMIE is a leading business information company. It functions as both an economic think tank and a provider of business intelligence information.

Digital divide based on gender

- While 61 per cent of men owned mobile phones in 2021, their access remained limited to just 31 per cent women.
- Indian women are 15 per cent less likely to own a mobile phone and 33 per cent less likely to use mobile internet services than men.
- As per the report, in Asia-Pacific, India fares the worst with the widest gender gap of 40.4 per cent.

Digital divide based on employment status and caste

- 95 per cent of the salaried permanent workers have a phone whereas only 50 per cent of the unemployed (willing and looking for a job) have a phone in 2021.
- While 8 per cent of the general caste have access to a computer or a laptop, less than 1 per cent of the Scheduled Tribes (ST) and 2 per cent of the Scheduled Castes (SC) afford it.

Rural-urban digital divide

- Despite registering a significant digital growth rate of 13 per cent in a year, only 31 per cent of the rural population uses Internet compared to 67 percent of their urban counterparts.
- The report pointed out that contrary to popular belief, the use of computer devices has decreased in rural areas.
- Uneven distribution among states
- Among states, Maharashtra has the highest internet penetration, followed by Goa and Kerala, while Bihar has the lowest, followed by Chhattisgarh and Jharkhand.

India's growing inequality is accentuated due to the digital divide

- The use of digital technologies in delivering essential services such as education and health is further increasing the inequalities in India.
- During Covid-19 lockdown, many parents faced challenges in supporting their children's access digital education, with signal and internet speed becoming the biggest issues in private schools.
- In government schools, many parents reported that education was not delivered during lockdown.
- The report highlights how digital technologies are accessible to the rich and privileged.

- As a result, people without devices and the internet get further marginalised due to difficulties in accessing education, health, and public services.

India's rank in UN's e-participation index (2022)

- The report highlighted that India ranked 105 out of 193 nations in UN's e-participation index (2022). The index is a composite measure of three important dimensions of e-government, namely provision of online services, telecommunication connectivity and human capacity.

SUGGESTIONS

- The report urged the Union and state governments to ensure universal access to internet connectivity by investing in digital infrastructure to not only make the internet affordable but also push for greater accessibility to smartphones.
- The report also recommended that digital literacy camps be conducted, especially in rural India, to teach the use of technology in schools, and digitise panchayats.
- It further urged the govt to establish a responsive and accountable grievance redressal mechanism to handle edtech and healthtech-related complaints by parents, children, and other consumers
- Tech-based solutions do not always present the right answers, and governments need to consider low- or no-tech solutions, even in crises like a pandemic.

GS II

1. Maharashtra-Karnataka Border Dispute over Belagavi

The decades-old dispute between Karnataka and Maharashtra over the Belagavi or as Maharashtra likes to call it the Belgaum district, is back in the headlines. Belgaum or Belagavi is currently part of Karnataka but is claimed by Maharashtra

What are the claims of both states?

- In 1957, unhappy with the demarcation of boundaries, Maharashtra demanded realignment of its border with Karnataka. It invoked Section 21 (2) (b) of the Act, and submitted a petition to the Union Ministry of Home Affairs stating its objection to Marathi-speaking areas included in Karnataka.
- It claimed 814 villages, and three urban settlements of Belagavi, Karwar and Nippani, all part of Mumbai Presidency before independence. A petition by Maharashtra in the Supreme Court, staking a claim over Belagavi, is currently pending.
- Karnataka has consistently argued that inclusion of Belagavi as part of its territory is beyond dispute. It has cited the demarcation done on linguistic lines as per the Act and the later Mahajan Commission Report to substantiate its position.
- Karnataka has argued for the inclusion of areas in Kolhapur, Sholapur and Sangli districts (falling under Maharashtra) as its territory.
- In 1960, a four-member committee was formed by both States. The committee could not arrive at a consensus and respective representatives submitted reports to their government.

What were the terms of the Mahajan Commission?

- In 1966, at Maharashtra's insistence, then Prime Minister Indira Gandhi established a one-man commission, the Mahajan Commission (Mehr Chand Mahajan, third Chief Justice of India) a few months before the 1967 general elections and its report was released after the elections. It recommended that 264 villages be transferred to Maharashtra and that Belgaum and 247 villages remain with Karnataka.
- Maharashtra rejected the report, while Karnataka welcomed it. Karnataka argued that either the Mahajan Commission Report should be accepted fully or status quo maintained.

- The middle-class core areas and surroundings of the city are predominantly Kannada-speaking people. But in and around Belagavi a good number of people speak both Marathi and Kannada. Intercommunity marriages between the two linguistic groups exist.

2. India's G20 Presidency as a Watershed moment

India has formally assumed the presidency of G-20 on December 1, 2022. India will hold the presidency till 30th November 2023.

- India's theme as stated by the Prime Minister is — "One Earth, One Family, One Future".

India's G20 agenda – Inclusive, ambitious, action-oriented and decisive:

- **Inclusive:** India's G20 Presidency will work to promote the universal sense of one-ness. Hence, "One Earth, One Family, One Future" is the theme.
- **Ambitious:** The previous 17 Presidencies delivered towards ensuring macro-economic stability, rationalising international taxation, relieving debt burden on countries, etc. India will further work on the achievements of these.
- **Action-oriented:** India's G20 priorities will be shaped in consultation with not just G20 partners, but with the Global South, whose voice often goes unheard.
- **Decisive:** India will encourage sustainable and environment-friendly lifestyles, based on India's tradition of trusteeship towards nature.



Comparative advantage to India:

- Housing one-sixth of humanity and with its immense diversity of languages, religions, customs and beliefs, India is a mirror of the world.
- With the oldest-known traditions of collective decision-making, India contributes to the foundational DNA of democracy.
- Today, India is the fastest-growing economy, having a citizen-centric governance model – national development is a citizen-led "people's movement".
- None of the previous summits had the world's largest economies assembled in one place nor did they have the entire P-5 (permanent members of the UN Security Council) represented. In that sense, the G-20 summit would be the first of its kind in Indian history.
- India's Presidency of the G20, SCO and UNSC is a historic opportunity

How does the G20 forum work?

G20 Tracks: The processes under G20 are divided into two parallel tracks —

Finance Track: The finance track is led by Finance Ministers and central bank governors of member nations, who meet throughout the year.

Sherpas: Sherpas, who are personal emissaries of leaders, lead the sherpa track.

They oversee negotiations all through the year, discussing agenda items for the summit and coordinating the substantive work of the G20.

G20 Working Groups: Working groups designed around specific themes operate within both tracks.

These include representatives from relevant ministries of member nations and invited/guest countries too.

Various international organisations such as the United Nations, International Monetary Fund, and the Organisation for Economic Co-operation and Development also participate in working groups.

The logo reflects our idea of **Vasudhaiva Kutumbakam** (the whole earth is a family), because of which India has always believed in global harmony.

The lotus flower symbolises our Puranic heritage, our aashta (belief) and boddhikta (intellectualism). 7 petals represent the 7 continents.

The theme also spotlights **LiFE (Lifestyle for Environment)**, with its associated, environmentally sustainable and responsible choices, both at the level of individual lifestyles as well as national development, leading to globally transformative actions resulting in a cleaner, greener and bluer future.

Diversity: The G20 presidency is an opportunity to present the diversity that is India to the outside world.

Employment and environment: G20 can act as a forum to exchange experiences on **societal benefits and growth** as complementary goals would lead to fresh thinking on employment and environment.

Independent foreign policy: India's independent foreign policy, so visibly demonstrated in the ongoing NATO-Russia (Ukraine) war, has made the world sit up and take notice.

Management during pandemic: Among large democracies, India has by far been the best performer in handling the Covid-19 pandemic. For the world, the Indian public goods delivery mechanism, at a billion-plus scale, has set a new template

3. BIMSTEC as key to a new South Asian regional order

About SAARC: It is an intergovernmental organization and geopolitical union of 8 South Asian countries founded on December 8, 1985, in Dhaka, Bangladesh.

- SAARC also includes 9 formally recognized observers including the European Union, the US, Iran and China.
- **Secretariat:** The SAARC Secretariat is located in Kathmandu (Nepal) to promote economic growth in South Asia.
- **Objective:** The prime focus of SAARC is to work collectively to promote the welfare of people in the region and to improve their standard of living through social progress and economic development.
- **Summits:** The SAARC summits are usually held biennially and hosted by member states in alphabetical order. It has organised 18 summits since 1985 and the first SAARC Summit was held in Dhaka (Bangladesh).

About BIMSTEC:

- It is an intergovernmental organisation established in 1997, comprising 5 South Asian nations and 2 ASEAN countries, housing 1.73 billion people and having a combined GDP of USD 4.4 trillion (2022).
- BIMSTEC not only connects South and Southeast Asia, but also the ecologies of the Great Himalayas and the Bay of Bengal



- This sub-regional organization came into being in 1997 through the Bangkok Declaration.

Significance of SAARC for India

- Pan-South Asia outreach: SAARC is the only intergovernmental organisation with a pan-South Asia reach. Thus, India can judiciously employ it to serve its interests in the entire region.

<p>Issues with SAARC:</p> <p>Lack of political will: The lack of political will of India and Pakistan hinders progress and development of the regional grouping.</p> <p>Indo-Pak rivalry: SAARC’s functioning and activities have virtually stalled because of the strained relations between India and Pakistan. For instance, since 2014, no SAARC summit has taken place leaving the organisation practically expired.</p> <p>The 2016 SAARC summit that was to be hosted by Pakistan was also stalled after India pulled out of the summit in the aftermath of the Uri terror.</p> <p>Terrorism: SAARC Region is also one of the most terror prone regions of the world with frequent tensions and unrest within the member countries as well as amongst the members.</p> <p>Lack of economic integration: South Asian Free Trade Area (SAFTA) launched in 2006 has not been able to achieve success due to continued tension and cold Indo-Pak relations.</p> <p>With the gross GDP of SAARC nations being approx. US \$3 trillion, it is one of the most emerging development regions in the world.</p> <p>Recent developments in Afghanistan and Pakistan: For example, the evolving socio - economic situation in Afghanistan with the establishment of Taliban regime.</p> <p>Pakistan’s recurring economic crisis, continuation in FATF grey list etc.</p> <p>China’s diplomacy: China which earlier wanted to be a member of SAARC was prevented by India in becoming a member. Therefore, China never wants SAARC to be a strong organization. And is trying to establish relations with the member states of SAARC excluding India.</p>	<p>Opportunities offered by the BIMSTEC</p> <p>Link between South Asia and Southeast Asia: BIMSTEC can help India to accord primacy to her immediate neighborhood and connect it with Southeast Asia.</p> <p>For instance, India in recent years have been moving its diplomatic energy away from SAARC to BIMSTEC which resulted in BIMSTEC, finally adopting its Charter earlier this year.</p> <p>BIMSTEC also aligns with India’s ‘Act East’ policy for greater regional cooperation in Southeast Asia and provide a platform for intra-regional cooperation between SAARC and ASEAN members.</p> <p>Non-disruptive functioning: Pakistan not being a BIMSTEC member could help India bolster its regional ambitions in the grouping without any impediment as Pakistan routinely vetoes several regional integration initiatives in the SAARC.</p> <p>More accommodative grouping: Unlike the SAARC Charter, the BIMSTEC Charter talks about the <u>‘Admission of new members’</u> to the group, hence paving the way for the admission of countries such as the Maldives.</p>
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- Serve India’s national interest: Since South Asia is India’s immediate neighbourhood, it is important for India’s national interests as identified in the current regime’s ‘Neighbourhood First’
- Boost India’s soft power image: SAARC is critical in buttressing India’s soft power in the region.

Challenges within BIMSTEC

- No flexibility for bilateral negotiations: Despite the failure of SAARC, the BIMSTEC Charter does not contain the flexible participation scheme of the kind present in the ASEAN Charter.
- The flexible scheme in the ASEAN Charter, also known as the 'ASEAN Minus X' formula, allows two or more ASEAN members to initiate negotiations for economic commitments.
- Thus, no country enjoys veto power to thwart economic integration between willing countries.



Way forward

- **Updating BIMSTEC charter:** A flexible 'BIMSTEC Minus X' formula should be pressed by India so that BIMSTEC members can conduct their bilateral agreements under the broader BIMSTEC umbrella.
- For example, India and Bangladesh or India and Thailand conducting their ongoing bilateral Free Trade Agreement (FTA) negotiations under the broader BIMSTEC umbrella.
- **New regional economic order:** Based on ASEAN's spectacular success in regional integration, the concept of a new regional economic order could be explored by South Asian economies as well to usher prosperity and peace in the region.

4. India's Central Asia outreach

India was connected with Central Asia through the Silk Route. India also shares old and deep cultural ties with the region.

What is the strategic importance of Central Asia?

- Central Asia is extremely rich in mineral and natural resources. For example, Kazakhstan has one of the biggest reserves of uranium, the Kyrgyz Republic is rich in hydro-power while Turkmenistan has one of the world's largest reserves of natural gas.

India's engagement with the Central Asian countries is important because of – a) security cooperation after the Taliban takeover in Afghanistan, b) to counter China's influence in the region, c) plans for connectivity with Europe including the International North South Transport Corridor (INSTC), d) to meet its energy needs (Turkmenistan is part of the proposed TAPI gas pipeline), and e) for old cultural links and trade potential.

What are the challenges with the relations between India and Central Asia?

- **China** – China has a direct border with the Central Asian countries and has a bilateral trade of \$50 billion whereas India's trade with the region is only \$2 billion. China has also made major investments in these countries with its Belt and Road Initiative.
- **Lack of access to land transport** – India lacks land transport access with Central Asia due to the blockage by Pakistan. To overcome the issue, India wants to integrate the INSTC with Chabahar port in Iran to access the resource-rich region.
- **Security** – There are also security challenges such as extremism, terrorism, and radicalisation in the region. Central Asia shares a boundary with Afghanistan and the rise of Taliban in Afghanistan poses a serious security challenge for the countries in the region.

What interventions were made by India in Central Asia?

India formulated its **Connect Central Asia Policy** which is a broad-based approach including political, security, economic, and cultural connections

New Delhi signed the **Strategic Partnership Agreements (SPA)** with Kazakhstan, Tajikistan and Uzbekistan to stimulate defence cooperation and deepen trade relations.

India has supported efforts for a peaceful solution of the Nagorno-Karabakh conflict between Azerbaijan and Armenia.

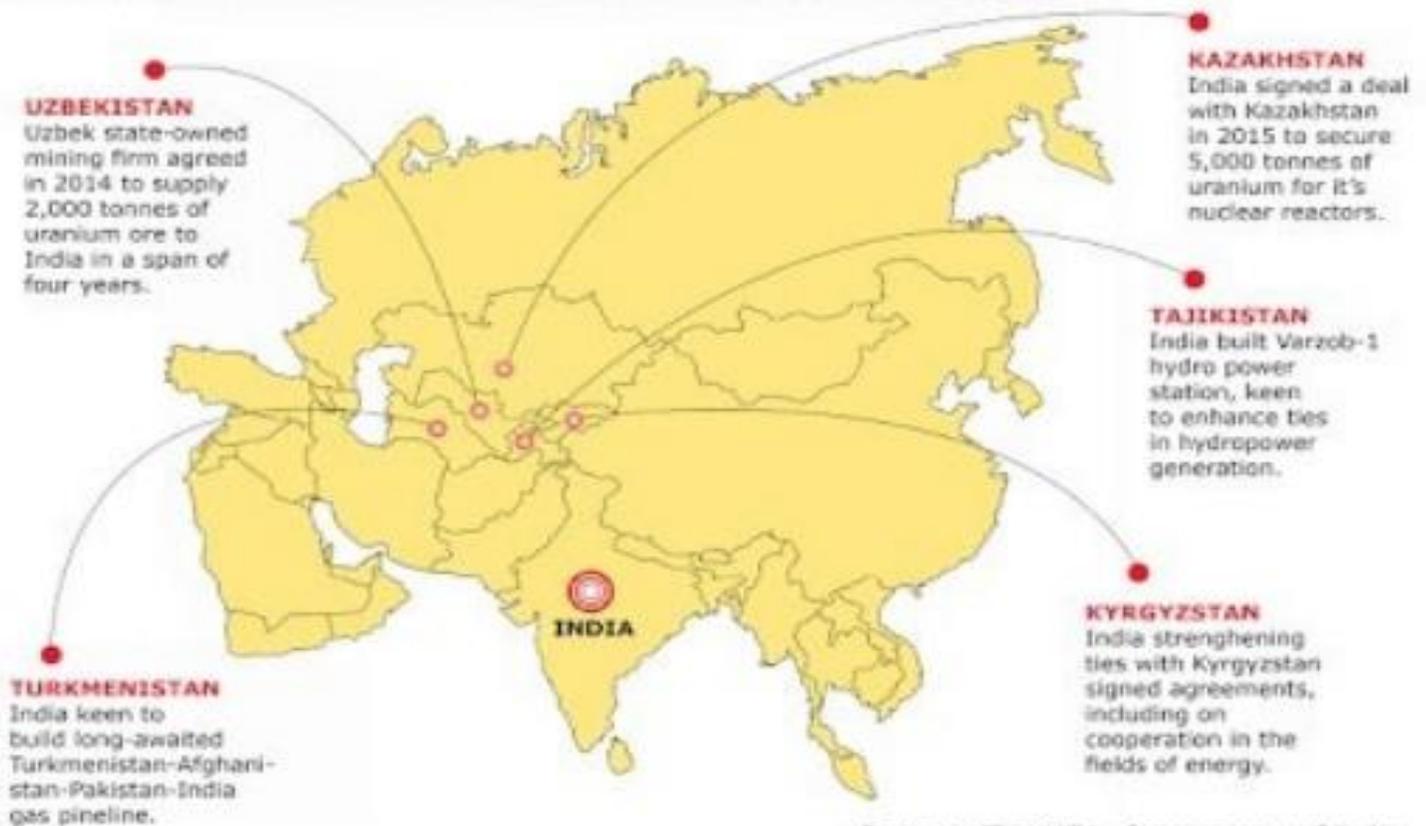
The government has also proposed to include the strategic Chabahar Port in the International North-South Transport Corridor(INSTC).

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India signed MoUs with Iran in 2015 to develop the **Chabahar port** in the Sistan-Baluchistan province to diversify the export markets and control China's ambitions.

INDIA'S FOOTPRINT IN THE CENTRAL ASIA

India has a special focus on the importance of energy diplomacy, specifically with reference to building relationship with the energy-rich region of the Central Asia.



5. The G-20 can be the UN Security Council alternative:

As India begins its presidency of the G-20, there is a certain reluctance on its part to try to end the Russian invasion of Ukraine. This position is because of the fear of failure, especially because of the position India has taken not to condemn Russia.

Why has UNSC proved to be a failure?	Why G20 can be an alternative to UNSC?
<p data-bbox="99 426 808 499">During the COVID-19 pandemic and the Russian invasion of Ukraine, the UNSC's credibility hit rock bottom.</p> <p data-bbox="99 583 808 772">Any reform of the UNSC, particularly the expansion of its permanent membership, will be strongly resisted. The permanent members and a large majority of the General Assembly will resist because it does not benefit anyone except those who aspire to be permanent members.</p> <p data-bbox="99 856 808 1003">Among the proposals made in the last three decades, there is none that can command the votes of the five permanent members as well as two-thirds of the members of the General Assembly.</p>	<p data-bbox="815 426 1524 541">G-20 addresses major issues related to the global economy, such as international financial stability, climate change mitigation and development.</p> <p data-bbox="815 625 1524 772">Its composition is such that it looks like it is an expanded Security Council. It is representative of all the significant countries of the 21st century. It is balanced between developed and developing countries.</p> <p data-bbox="815 856 1524 1077">The present permanent members and declared aspirants have been included while Africa and Latin America have also been represented. The EU represents a very important segment of the global power structure. A consensus decision of G-20 should be universally acceptable.</p>

How will the G20 be transformed?

- A gradual transformation of the G-20 from an economic body to a political body can be initiated on the basis of the Bali Declaration.
- Bali declaration constitutes the consensus in the group on the Russia-Ukraine war. If the G-20 emerges as a peacemaker in Europe, it will attain legitimacy as a group to promote international peace and security.
- Veto power: No one can prevent its meetings by use of the veto.
- Russia will have to reason out its behavior rather than threaten the use of the veto to intimidate the international community.

How can India contribute to strengthening the G20?

- India is best suited to promote this alternative as India was the author of several landmark resolutions of the UNSC on the question of Palestine. India was a part of efforts made to prevent the expulsion of Egypt from the Non-Aligned Movement at the Havana summit when the Arabs turned against Egypt.
- Considering that the Bali declaration which was virtually drafted by India, India has been recognised as a potential honest broker who may be able to end the devastating war.
- India should Highlight the Bali Declaration and to present a road map during the preparatory process for the G-20 and persuade the sherpas to take it on its agenda.

6. Curbing individualism in public health

There is a strong tendency in public health to prioritise individual-oriented interventions over societal oriented population-based approaches, also known as individualism in public health.

Recent evidences that show individualism is preferred over population-based approach:

Pradhan Mantri Jan Arogya Yojana (PMJAY): A nationwide publicly-funded insurance scheme, it falls under Ayushman Bharat.

- It is the largest health insurance scheme in the country covering hospitalisation expenses for a family for ₹5 lakh a year. The goal is to ensure 'free' curative care services for all kinds of hospitalisation services so that there is no financial burden to the beneficiary.
- Population based approach – Data from the 75th National Sample Survey Organisation show that on an average, 3%-5% across most Indian States had an episode of hospitalisation in a year.
- Ideally, the Government needs to ensure health-care facilities to only 3%-5% of the population to cover all the hospitalisation needs of a population. This is population-based health-care planning.
- Individualistic response – Giving an assurance of hospitalisation to every individual without ensuring the necessary health-care services to the population points to the low proportion of population that benefited from the scheme annually.

Vaccination for COVID-19

- It was evident that around 20% of the total COVID-19 positive cases needed medical attention, with around 5% needing hospitalisation.
- Population-based approach - There is a need to have primary, secondary, and tertiary health-care facilities to manage the above proportion of cases.
- Individualistic response - Instead, by focusing on a vaccination programme for the entire population, it is again an assurance to every individual that if you get COVID-19, you will not need hospitalisation.

What are the reasons for dominance of individualism in public health?

- **Dominance of biomedical knowledge and philosophy** – There is a misconception that what is done at an individual level, when done at a population level, becomes public health. This is against the contrasting philosophy and approaches of clinical medicine and public health and the evidence.
- **Visibility of health impacts among general public** - Health effects are more visible at the individual level, wherein improvements at the population level will be clear only after population-level analysis. The public health experts who take individual experiences at face value will judge a population's characteristics based on individual experiences.
- **Market's role and effect of consumerism in public health** - The beneficiaries for a programme become the maximum when 100% of the population is targeted. Propagating individualism has always been a characteristic feature of a consumerist society.

7. Indian and Chinese Troops Clash in Arunachal Pradesh

Recently, India and China troops clashed along the Yangste river in Tawang sector in Arunachal Pradesh. This was the first such incident involving the Indian soldiers and Chinese PLA troops since the Galwan Valley incident in 2020.

Background:

- According to the India Army, there are certain areas along the Line of Actual Control (LAC) in the Tawang Sector that are areas of differing perception.
- The LAC is divided into western (Ladakh), middle (Himachal Pradesh and Uttarakhand), Sikkim, and eastern (Arunachal Pradesh) sectors.
- India and China do not agree on the LAC. India considers the LAC to be 3,488 km long while the Chinese consider it to be only around 2,000 km.

In the Eastern Sector, the alignment of the LAC is along the McMahon Line, the border that was drawn between Great Britain, China, and Tibet at the 1914 Simla Convention.

- The line includes Tawang in the British Empire, which China disputes.
- In 1993, the two sides signed the Agreement on the Maintenance of Peace and Tranquility along the Line of Actual Control.
- However, the reference to the LAC was unqualified to make it clear that it was not referring to the LAC of 1959 or 1962 but to the LAC at the time when the agreement was signed.

Why China has opened new front in Tawang?

- **Status quo along the boundary are no longer going to be limited to the Western Sector:** China has traditionally been active in areas close to Ladakh given the significance of the Xinjiang-Tibet region in its domestic narrative. However, with its sights on an ageing Dalai Lama, and the issue of his succession, Beijing will want to bring into focus its claims on Tawang, and the rest of Arunachal Pradesh.
- **Huge investment in infrastructure in eastern sector:** China has invested in infrastructure in the Eastern Sector over many years. This includes rail, road, and air connectivity, better telecommunications, as well as improved capacity to station and supply troops and artillery.
- **Centrality of the boundary issue in the India-China relationship:** External Affairs Minister S Jaishankar has repeatedly asserted that it is no longer possible to separate the boundary question from the overall relationship and that peace and tranquillity on the LAC is the key to restoring relations

Importance of Arunachal Pradesh from an Indian/Chinese Perspective:

India:

- **Strategic Significance:** Arunachal Pradesh, known as the Northeast Frontier Agency (NEFA) until 1972, is the largest state in the northeast and shares international borders with Tibet to the north and northwest, Bhutan towards the west and Myanmar to the east. The state is like a protective shield to the northeast.
- **Bhutan Factor:** Taking control of Arunachal would mean that Bhutan would have Chinese neighbours on both its western and eastern borders if Beijing gained control.
- **Waterpower:** Since, China has control over India's water supply to the northeastern region, it has constructed several dams and can use water as a geo-strategic weapon against India by causing flooding or drought in the region. In 2000, a dam breach in Tibet caused floods that wreaked havoc in northeast India claiming 30 lives and leaving more than 100 missing.

China:

- **Strategic Importance:** China's interest in Tawang could be for tactical reasons as it provides a strategic entry into India's northeastern region.
- **Tawang Monastery:** Tawang, which also borders Bhutan, hosts the Galden Namgye Lhatse, the world's second-largest monastery of Tibetan Buddhism. China claims that the monastery is evidence that the district once belonged to Tibet. They cite historical ties between the Tawang monastery and the Lhasa monastery in Tibet to support their claim over Arunachal.
- **Political Significance:** When the Dalai Lama escaped Tibet in 1959 amid China crackdown, he entered India through Tawang and stayed in the Tawang monastery for some time.
- **Cultural Connections and China's Anxieties:** Tawang is an important center of Tibetan Buddhism and there are some tribes in the upper Arunachal region which have cultural connections to the people of Tibet.

Why India's China problem is worrying?

- Despite India's advancement in military capabilities in the past 60 years, China has seen **phenomenal economic, technological and military growth** and competes with the USA for the global "pole-position",
- **China has imposed a huge economic burden on India's defence budget** by forcing the "counter-mobilisation" of 50,000-60,000 extra Indian troops,

- India's **post-Covid financial situation** and depressed GDP growth rates will not permit any significant hike in defence expenditure,
- India's **liabilities with the "pay and pension" system** makes modernisation and re-equipment of the armed forces not possible,
- India's defence budget at present is 2.1% of the GDP. Schemes like Agnipath and bans on the import of military hardware do not save instant money and do not bring instant self-reliance, and
- India not only **lacks a China-specific strategy**, but also a National Security Strategy (NSS).

How India can solve India's China problem?

- **Resumption of robust economic growth** is the only solution for India's "guns vs butter" dilemma. For this, India should work on effective savings by cutting down on wasteful/non-essential government expenditure, reducing vote-garnering subsidies, or disinvesting/monetising idle assets
- India **must acquire absolute clarity about China's larger objectives** and work on **military to seek tactical advantage**,
- India's **diplomatic policy should shift from "reactive" to "proactive"** and start working on reducing Sino-Indian trade deficit of \$70 billion,
- India should **canvass international opinion via the UN, G20 and other international forums** to pressurize China to come to the negotiating table, and
- **The Sino-Indian Border Peace and Tranquility Agreement** is now 30 years old, so the government should rework on that agreement to control present aggression.

8. Is the RTI act fulfilling its purpose?

RTI is an act of the parliament that sets out the rules and procedures regarding citizens' right to information. It replaced the former Freedom of Information Act, of 2002.

Structural Issues

- Under the provisions of the RTI Act, any citizen of India may request information from a "public authority" (a body of Government or "instrumentality of State") which is required to reply expeditiously or within 30 days.
- In case of a matter involving a petitioner's life and liberty, the information has to be provided within 48 hours.
- The Act also requires every public authority to computerize their records for wide dissemination and to proactively publish certain categories of information so that the citizens need minimum recourse to request information formally.

Lack of awareness: The major impediment is the lack of awareness of the law and **lack of widespread adoption**.

Non-functionality of information commissions across the country: The **Satark Nagrik Sangathan** report says two out of 29 information commissions across the country are completely defunct.

Issues of vacancies and understaffing: According to a report by the **Transparency International**, one-fourth of Information Commissioner posts are vacant

Lack of Imposing of penalties: An analysis of penalties imposed shows that the commissions did not impose penalties in **95% of the cases** where penalties were potentially imposable.

Appeals are not addressed: 26 lakh second appeals are there before the commissions. Over 32,000 RTI appeals are pending with the Central Information Commission.

Lack of digitization: Only **11 information commissions out of 29** provide e-filing facility

Major institutions such as **political parties and judiciary have kept themselves out of the RTI** investigation and similarly the media is also out of ambit of the RTI Act.

Is the RTI Act fulfilling its purpose?

- The RTI Act empowers people because it puts an obligation on the government to respond to them in a time-bound manner.
- It has tilted the balance of power in favour of common people as they can hold the government accountable.
- People are extensively using the RTI Act to obtain information on rights and entitlements such as their rations, pensions, and medicines in hospitals or education in schools.
- People can hold high offices accountable and get information on a wide range of subjects including expenditure details of taxpayers' money.
- People have been tracking and exposing scams such as the Commonwealth Games and Vyapam scams.
- It has been able to expose human rights violations, and then force accountability in those cases.

Issues in implementation:

- Lack of awareness of this law and lack of widespread adoption.
- Some States with an RTI application within 150 words: Condensing the question, especially for those who might not have the benefit of a formal education.
- Within the government: asking for information is not encouraged
- Maintaining datasets and information: putting information in the public domain has become a big problem.
- Example: During COVID-19, when the government was asked how many people lost their lives due to lack of oxygen, about the number of migrant workers, on all of that the government said, we don't have any data.

Way Forward:

- Remove the existing impediments: There is a need to remove long waiting time for disposal, tardy disposal rates and the lack of transparency in their functioning.
- Curbing RTI misuse: As observed by Delhi High Court, misuse of the RTI Act has to be appropriately dealt with; otherwise the public would lose faith and confidence in this "sunshine Act".
- Improve governance and amend the act: A lot more needs to be done to usher in accountability in governance, including protection of whistleblowers, decentralization of power and fusion of authority with accountability at all levels.

9. Accepting the new normal in the Indo-Pacific Contestation

With tensions between China and India intensifying, there will be significant changes and challenges in the Indian Ocean and South Asian regions.

Significance of Indo-Pacific region

- **Trade and Economical Factors:** The Indo-Pacific Region makes up 65% of the global population, occupies 44% of the planet's surface area, generates 62% of global GDP, and supports 46% of global trade in goods.
- **Non- Traditional Threats:** Due to its size, the area faces a variety of risks that are challenging to identify and manage, including piracy, illegal fishing, human trafficking, terrorism, and environmental dangers.
- **Vast Natural Resources:** The immense quantities of marine resources found in the Indian and Pacific Oceans together include offshore hydrocarbons, methane hydrates, sea bed minerals, rare earth metals, fisheries, etc.
- **Historical importance:** The Indian Ocean has been one of the most important Sea Lane of Communication (SLOCs) for trade due to the faster development in the region since ancient times.

Challenges:

- **Chinese Influence:** South Asian countries are hesitant to completely move away from China as they hope to exercise their agency by balancing with China and India. And this trend will only increase with new players entering the region.

- **Economic and Political Turmoil in Region:** Nepal, the Maldives and Bhutan are struggling with depleting forex reserves. Bangladesh has reached a bailout agreement worth \$4.5 billion with the International Monetary Fund.
- **Inflation and Slow economic growth:** Energy shortages, inflation, and negative or slow economic growth are also disrupting day-to-day activities in these countries.
The COVID-19 pandemic and Russia’s invasion of Ukraine have continued to haunt the region with rising inflation, affecting the economies.
- **Different Capacities & Capabilities:** The region is highly heterogeneous in terms of economic size and level of development, with significant differences in security establishments and resources.
- There exists a **political rhetoric** describing the I.P as an **arc of prosperity** where everyone can work together. While political focus is centred on such opportunities, it often **detracts from the real issues** such as countering the Chinese assertion.
- Chinese policy is popular for **uncertainty and swinging from one extreme to another** swiftly, as evident from their slogan “**Let a hundred flowers bloom**” followed by a cultural revolution. In 2012, **Scarborough shoal** in the South China Sea was invaded and barricaded by China.

Steps taken by India:

In Maldives - New Delhi is reciprocating President Ibrahim Solih’s ‘**India First**’ policy with massive economic assistance, grants, and infrastructure projects and by also cooperating on maritime security.

In Nepal - Prime Minister Deuba’s government has attempted to improve Nepal’s overall bilateral relations with India.

In Sri Lanka - In 2022, India has provided economic and humanitarian assistance and investments worth 4 billion dollars.

Steps by Quad members – Quad members include Japan, Australia, and the United States. Close cooperation among these partners has ensued to offer genuine alternatives to the BRI such as assistance to Sri Lanka.

In Maldives, Australia and the U.S. have committed to opening their embassies and new areas of cooperation.

In 2020, the U.S. signed a defence and security framework with the Maldives.

Way ahead

- **Addressing China’s adventurism holistically:** There needs to be a unified strategy and a common agenda to contain Chinese expansionist strategy in the Indo-pacific region.
- **Capturing the Opportunity:** India to balance out Chinese hegemony in the region.
For e.g., smaller nations of South Asia, as well as, South East Asia are looking to counter Chinese influence by strengthening their own ties with India.
- **Upgrading the Indian navy to a blue-water navy:** With China’s increased assertiveness in the Indian Ocean and a scramble for bases (even Russia has acquired a base in Sudan recently), India needs to realise the inherent importance of the Indian Ocean region.
- **It is time to shed historical hesitation in allowing other like-minded nations to have**



deployments in the Indian Ocean Region: The flaw in the Indian foreign policy is that it is not letting its friend's aid itself in the Indian Ocean region as they are sensitive to Indian concerns, while at the same time, it is unable to stop its adversaries from dominating the region.

- **Net security Provider:** India has traditionally been the power upon which small countries in the Indian Ocean Region have depended. For e.g. the Indian navy supplied fresh water to the Maldives when its Reverse Osmosis plant failed.
- **Peaceful resolution of disputes:** India has believed in resolving the disputes in a friendly manner as is manifested in its complete acceptance of the Permanent Court of Arbitration's award in favour of Bangladesh in the Indo-Bangladesh marine boundary arbitration.

Indo Pacific (I.P) is **interpreted differently** by different countries. There are mainly three versions to the interpretation:

- The **Indian version** views I.P as an **inclusive space** for all stakeholders based on **common responsibilities and common interests**.
- **US version** interprets a free and open I.P based on a rules based order.
- It is little different from the Indian version in such a way that it excludes any country which doesn't abide by certain rules and expected norms of conduct.
- Further, the US version of I.P extends from the Pacific shores of America to the Bay of Bengal only, while the Indian version includes the area up to the shores of Eastern Africa.
- **A third version is one which is interpreted by ASEAN, as a model based on consociation**, unlike the rules based order prescribed by the US and to some extent by India as well.
- Consociation refers to a political system formed by the cooperation of different and opposing social groups on the basis of power sharing.
- They argue for practical cooperation with China instead of merely treating it as any other stakeholder.

10. Alleviating the Scourge of Private Healthcare

In India, private healthcare needs to be made affordable alongside expanding public healthcare.

Key Indicators for Indian Health Sector

- **Poor Ranking:** India ranks poorly on multiple health financing indicators.
- **Meagre Public Health Expenditure:** Its public health expenditure as a percentage of its GDP (1.28%) and share of general government expenditure dedicated to health (4.8%) remain akin to the poorest countries.
- **Lower Per capita health spending:** Per capita, health spending growth has not kept pace with rising incomes.
- **Higher out-of-pocket Expenditure:** Higher Private spending still constitutes nearly 60% of overall expenditure on health.

Issues with Indian Health Sector

- **Dispersed Private Sector:** The private sector in India is inexorably dispersed, with significant inequities between rural and urban areas and widespread market failure.
- **Disproportionate Burden of Insurance Schemes on the Private Sector:** Public health insurance schemes impose unreasonable package rates on empanelled private providers with weak regard for actual costs of care. This deters the active participation of the private sector.
- **Lack of Infrastructure:** India has been struggling with deficient infrastructure in the form of a lack of well-equipped medical institutes and less-than-adequate human resources.
- **Shortage of Manpower:** Shortage of efficient and trained manpower and the situation remains worrisome in rural areas.
- **Lack of specific competencies:** It is common for heads of health services at national, state or district levels in India to be orthopaedic or cardiac surgeons or ophthalmologists who have no training in public health.

- **Huge Patient Load:** Even prior to the outbreak of the Covid-19 pandemic, healthcare facilities had been feeling the strain due to unmanageable patient load.

How to make private healthcare more affordable without affecting care quality?

- **Encompass a wide range of policy instruments** that alter the operating conditions of the private sector. Such policies have to be enshrined in our national health policy.
- **Need of overarching policies** that drive down private healthcare costs even for the self-paying consumer with little or no government subsidy.
- **Incentivising and propagating business process innovations (BPI):** such as the cost-reducing innovations by Aravind Eye Clinic and Narayana Hrudayalaya.
- **Creating affordable and effective private health insurance** products is another important option.
- **Task shifting in healthcare** is an evidence-backed instrument to hold down costs, especially in under-resourced settings. The National Commission for Allied and Healthcare Professions Act, 2021 can be a boost in this direction.
- **Global practice:** Canada has conceived regional health boards: They organize care equitably within regions, exploit economies of scale, and bring down healthcare costs.

Way Forward

- **Health Maintenance Organizations (HMOs):** Creating organized networks of providers like Health Maintenance Organizations (HMOs), which can be regulated easily, has been envisioned in recent policy pronouncements.
- **BPIs are confined to a few philanthropic organizations** and find little mainstream policy or research attention. Healthcare ecosystem does not naturally incentivize such innovations, regulatory and economic policy signals can be facilitative.
- **Widening the ambit of practice of nurses and allied personnel** with strong emphasis on health policy, along with concurrent mainstreaming of such practice roles across the private sector.
- **Multiple steps to reduce entry barriers in medical education** have been taken lately, medical education costs have sharply increased over the past decade or so.

11.A failed attempt at decriminalization

Recently, the Union Government tabled the Jan Vishwas Bill, 2022 in the Parliament.

- Tabled with the objective of: Decriminalising 183 offences across 42 legislations and enhancing the ease of living and doing business in India.
- Aim: It proposes to decriminalise many minor offences by replacing them with monetary penalties.
- A unique feature of the proposal is an increase of 10% of the minimum amount of fine and penalty levied after the expiry of every three years once the bill becomes a law.

Highlights of the Bill:

- **Decriminalizing Certain Offences:** Under the Bill, several offences with an imprisonment term in certain Acts have been decriminalised by imposing only a monetary penalty.
- **For example:** Under the Agricultural Produce (Grading and Marking) Act, 1937, counterfeiting grade designation marks is punishable with imprisonment of up to three years and a fine of up to five thousand rupees. Grade designation mark indicates the quality of an article under the 1937 Act. The Bill replaces this with a penalty of eight lakh rupees.
- In certain Acts, **offences have been decriminalised by imposing a penalty instead of a fine.** For instance, under the Patents Act, 1970, a person selling a falsely represented article as patented in India is subjected to a fine of up to one lakh rupees.

- **Revision of Fines and Penalties:** The Bill increases the fines and penalties for various offences in the specified Acts.
- **Appointing Adjudicating Officers:** As per the Bill, the central government may appoint one or more adjudicating officers for the purpose of determining penalties. The adjudicating officers may: (i) summon individuals for evidence, and (ii) conduct inquiries into violations of the respected Acts.
- **Appellate Mechanisms:** The Bill also specifies the appellate mechanisms for any person aggrieved by the order passed by an adjudicating officer. For instance, in the Environment (Protection) Act, 1986, appeals may be filed with the National Green Tribunal within 60 days from the order.

Ease of Doing Business:

- The fear of imprisonment for minor offences is a major factor hampering the growth of the business ecosystem and individual confidence.
- A web of outdated rules and regulations causes trust deficit.
- The bill needs to redefine the regulatory landscape of the country under the Ease of Living and Ease of Doing Business reforms.

Reversing Overcriminalization:

- This Bill is an attempt to reverse the trend of overcriminalization.
- However, there is much that needs to be done in order to institutionalise efforts aimed at decriminalisation.

Limited Deregulation of Offences:

- There are more than 26,134 imprisonment clauses in a total of 843 economic legislations, rules and regulations which seek to regulate businesses and economic activities in India.
- The number of offences deregulated under the Bill seems to be a mere drop in India's regulatory framework.

Undertakes Quasi-decriminalisation:

- The use of criminal laws in regulatory frameworks are particularly regrettable.
- There is a distinction between regulatory offences and penal offences and this should not be changed or diminished.
- Example, the functional distinction between a tax and a fine. While the purpose of a tax is primarily regulatory in nature, a fine carries with it an element of censure and stigma.

LIMITATIONS:

Issues with Overcriminalisation

- **Wrong Tool:** Criminal law is frequently used as a political tool and so the act of criminalisation often becomes a medium for governments to put across a strong image as opposed to punishing wrongful conduct.
- **Can lead to anarchy:** Governments offer little in the way of justifications to support such decisions.
- **Rising cases:** The growing number of pending criminal cases share a direct relation with the number of criminal laws. Also, the rise in the prison population is also proof of overcriminalization.
- **More fines than punishment can set wrong trend:** The intent of the Bill is merely to ensure that imprisonment is replaced with fines for as many offences as possible. The extent to which it succeeds in 'decriminalising' offences, however, is questionable.

Way Ahead

- The regulatory offences to be considered for 'decriminalisation' **need to be prioritised** not only from the point of view of the ease of doing business, but also from the points of view of the ills that plague our criminal justice system itself.
- If these faults are to be rectified, it is pertinent that a **more comprehensive exercise is undertaken** and that the government prioritise the needs and requirements of the criminal justice system.

12. Focus on Africa, the heart of the Global South

The second U.S.-Africa summit was held in Washington recently. The leaders of 49 countries and the chair of the African Union (AU) participated from Africa.

OUTCOMES:

Support for G20 membership:The U.S. announced its support for the AU to join the G20 as a permanent member.

Permanent representation for Africa at UNSC:

The U.S. said it “fully supports” reforming the UN Security Council (UNSC) to include permanent representation for Africa.

Supporting African resilience and recovery from the COVID-19 pandemic: The US plans to lend up to US\$21 billion through the International Monetary Fund (IMF) to low and middle-income countries, many of whom are located in Africa.

For example, The US Trade Representative signed a MoU with the **African Continental Free Trade Area (AfCFTA)** Secretariat to support institutions to accelerate sustainable economic growth across Africa.

Once implemented, the AfCFTA is touted to be the largest free trade area in the world, in terms of number of participating countries, and is set to create a combined continent-wide market of 1.3 billion people and **3.4 trillion GDP**.

The First Regional Multi-Sectoral Millennium Challenge Corporation (MCC) Compacts:

The MCC totalling US\$504 million was signed with the Governments of Benin and Niger to support regional economic integration, trade, and cross-border collaboration.

Digital Transformation with Africa initiative:

Under this initiative, the US intends to invest over US\$350 million and facilitate over US\$450 million in financing for the continent, in line with the African Union’s Digital Transformation Strategy.

21st Century Partnership for African Security (21PAS):

China’s Shadows:

Largest trading partner:China, on the other hand, has emerged as the largest trading partner and the fourth largest investor in the African continent, ahead of the U.S., through its steady diplomacy and extensive economic engagement.

Investment:The U.S. investment stock in Sub-Saharan Africa was \$30.31 billion last year, compared with China’s total investment in Africa of \$43.4 billion in 2020.

Forum on China-Africa Cooperation (FOCAC):

The FOCAC is composed of ministers and leaders of Africa and China who meet once in three years, alternately in Beijing and an African capital.

The Chinese president participates in **deliberations in person or digitally**.

The last meeting, held in Dakar in 2021, expressed support for the Chinese agenda: One-China Principle, **the Global Development Initiative**, the Belt and Road Initiative (BRI), and the vision of “a community with a shared future.”

Consistent attention to Africa: For years, the Chinese foreign minister begins his annual series of foreign visits by travelling to Africa.

However, US-Africa summits tend to be rather infrequent. The last summit took place back in 2014. Moreover, no U.S. president has visited Africa since 2015.

Under this partnership, the US plans to provide US\$100 million to incentivize and bolster African efforts to implement and sustain security sector capacity and forms.

Implications for India:

- India's equity in Africa is older and richer than that of China and the U.S., but that should not be a source of complacency.
- India has striven hard, in the past two decades, to strengthen its political and economic partnership with Africa at the continental, regional and bilateral levels.
- The government has created a special momentum in arranging high-level exchanges and forging cooperation initiatives during the 2015-19 period.
- The fourth India-Africa Forum Summit should be held in early 2024, lest the third summit held in 2015 becomes a distant memory.
- The G20 presidency is India's opportunity to ensure that the AU becomes a permanent member of this grouping and to reflect firmly Africa's Agenda 2063 for development.
- India and the U.S. should work closer together in Africa. The time is now for India and the US to demonstrate their sustained commitment to Africa and Africans.

13.COURT VACATIONS:

The Supreme Court has 193 working days a year for its judicial functioning, while the High Court's function for approximately 210 days, and trial courts for 245 days.

The Supreme Court takes two long vacations each year, the summer and winter breaks, but is technically not fully closed during these periods.

A **Vacation Bench** of the Supreme Court is a special bench constituted by the CJI.

Litigants can still approach the Supreme Court and, if the court decides that the plea is an "urgent matter", the Vacation Bench hears the case on its merits.

Cases such as bail, eviction, etc. often find precedence in listing before vacation benches

Under Rule 6 of Order II of The Supreme Court rules, 2013, the CJI has nominated the Division Benches for hearing of urgent miscellaneous matters and regular hearing matters during the summer vacation for the period.

The rule reads that CJI may appoint one or more Judges to hear during summer vacation or winter holidays all matters of an urgent nature which under these rules may be heard by a Judge sitting singly.

Criticism of the court vacations:

- **The colonial origins:** The European judges of the Federal Court of India found Indian summers too hot and took the winter break for Christmas.
- **Mounting pendency of cases:** The court's pendency as on December 1 is 69,598
The calendar for the year 2023 shows the court would not be fully functional for nearly 180 days.
- **Not Convenient for Justice Seekers:** The long vacation which the courts obtain is not very convenient for justice-seekers

Arguments in favour of court vacations:

- The judges do **not take leave of absence** (family tragedies, and health are rare exceptions) like other working professionals when the court is in session.
- In a profession that demands intellectual rigour and long working hours, vacations are needed for **rejuvenation**.
- The judges **utilise** the vacation to write judgments, read cases etc.
- Cutting the vacation period would be a solution to pendency that is **not backed by data**.
The issue of pendency relates largely to legacy cases that need to be tackled systemically.

Suggestions:

- **The Justice Malimath Committee:** Vacation period should be **reduced by 21 days** and the SC work for 206 days and HCs for 231 days every year.
- **The Law Commission of India:** Vacations in the higher judiciary are to be curtailed by at least 10 to 15 days and the working hours should be extended by at least half an hour.
- **Former CJI R M Lodha:** Keep the SC, HCs and trial courts **open around the year**.
- The **schedules of individual judges should be sought** at the beginning of the year, and the calendar should be planned accordingly

14.China, West, G20 Presidency: Opportunities & concerns for India in 2023

Our domestic efforts will need to be bolstered by smart partnerships with others. New relationships are necessary. But, there is a need to keep old partners like Russia by our side.

Six hard realities for the Indian strategic establishment:

Russia-Ukraine war:

- It has impacted the world's **food and energy security**. It can lead to **global economic recession**.
- The **nuclear threat** from Russian leaders is a cause of worry.
- The **Strategic alignment** between Russia and China is another concern.

China's aggression:

- **China's aggressive behaviour in the Indo-Pacific** may create disruptions. India is facing that **aggression** on its border.
- China is also constructing an island in the **South China Sea**.

Ties with the West being tested:

- Delhi is seen as following its interests and not being guided by "**shared values**". European partners have criticized India for buying cheap oil from Russia.

Pakistan turmoil:

- There has been no movement in **bilateral ties**.
- Towards the end of the year, Pakistan got a new Army chief. This is the **real transition of power** in this country.

Neighborhood in crisis:

- The Sri Lankan **economic and political crisis** was a major challenge in the neighborhood. India provided humanitarian aid, fuels and medicines.
- Engagement with Myanmar has continued in **low-key visits**. India has sought to not **isolate** the military regime, unlike the western partners.
- There is an absence of a full time **US ambassador** in India for two years.

Engagement with Taliban:

- Delhi had begun the process of **re-engaging** by sending **humanitarian aid**. It has made a commitment of USD 80 million for improving the lives of Afghans.
- But, India will not compromise on **extremism and rights of minorities and women**. The key impact has been the **influx of refugees** from Myanmar to the north-eastern states through the **porous borders**.

Six challenges and opportunities for 2023:

Engaging with Russia:

- Increasing closeness between Russia and China is a cause of worry for India. Economic relations have formed the “new strategic basis” for Sino-Russian relations.
- India will try to engage with both Russia and the West, and put its strategic defence and national security interests first.

Dealing with China: Beijing is challenging the status quo, not just in eastern Ladakh but in other sectors along the border like Arunachal.

- As China sees itself as a superpower, there will be more clashes. It will have to be resolved through negotiations.

Ties with the West: Delhi will have to address the concerns of European and American partners. In fact, the G20 preparations will give some opportunity to do that.

G20 as a global stage: New Delhi, has already positioned itself as the “voice of the Global South”. It will seek to put its priorities on the global forum.

- In this context, it will also seek to bring Russia and the West together and end the conflict in Europe. If it manages to do so, it can claim a diplomatic win.

Pakistan’s crucial year: Elections in Pakistan are scheduled for later in 2023. The new civilian government and the Army chief will shape their attitude towards India.

Challenge in the neighborhood: Sri Lanka will continue to demand India’s humanitarian, financial and political attention in the new year.

- India will also be part of political conversation in Maldives.
- In Nepal, Pushpa Kamal Dahal Prachanda has become the Prime Minister. Former PM Oli is holding the keys to the government. This will pose a significant challenge for Delhi. Beijing’s influence is growing in Kathmandu in recent years.

15. The rise of rural manufacturing

There is growing evidence that there has been a shift of manufacturing activity and employment from bigger cities to smaller towns and rural areas.

Evidence:

- Recent data from the Annual Survey of Industries for 2019-20, shows that the rural segment is a significant contributor to the manufacturing sector’s output. 42% of factories and 62% of fixed capital exists in the rural side. In terms of employment, it accounted for 44%.
- In terms of output and value addition, rural factories contributed to exactly half of the total sector.

Why is manufacturing shifting to rural areas?

- **Factory floor space supply constraints:** When locations get more urbanized and congested, the greater these space constraints are.

- **Continuing displacement of labor** by machinery as a result of the continuous capital investments in new production technologies.
- **Production cost differentials:** Many firms experience substantially higher operating costs in cities than in rural areas.
- **Possibility of capital restructuring** (approach advocated by radical and Marxist geographers): Big firms deliberately shift production from cities because: Availability of less skilled, Less unionized and Less costly rural labor.
- **Expansion of factories:** In cities, factories just cannot be expanded as opposed to rural areas. Thus, increased capital intensity of production is one reason for this trend.

What are the challenges faced by rural manufacturing?

- The **cost of capital seems to be higher** for firms operating on the rural side. This is evident from the shares in rent and interest paid. The rural segment accounted for only 35% of the total rent paid, while it had 60% of the total interest payments.
- There exists an **issue of “skills shortage”** in rural areas as manufacturing now needs higher skilled workers to compete in the highly technological global ‘new economy’.
- Manufacturers who depend only on low-wage workers simply cannot sustain their competitive edge for longer periods as this cost advantage vanishes over time.
- **Inadequate supply:** Manufacturers who need higher skilled labor find that rural areas cannot supply it in adequate quantities.

Way Forward

- **Balanced regional development:** Given the size of the Indian economy and the need for **balanced regional development**, the dispersal of manufacturing activities is a welcome sign.
- **The shift in manufacturing activities from urban to rural areas:** It has helped maintain the importance of manufacturing as a source of livelihood diversification in rural India.
- **A more educated and skilled rural workforce:** It will establish rural areas’ comparative advantage of low wages, higher reliability and productivity and hasten the process of the movement out of agriculture to higher-earning livelihoods.

GS III

1. India Q2 GDP Data (2021-22)

Ministry of Statistics and Programme Implementation (MoSPI) has released the GDP data for the second quarter (July, August and September) of the current financial year (2021-22).

What does the data say?

- **Gross Domestic Product (GDP)** - India’s GDP which measures economic activity from the demand side was 8.4% more than it was in the same quarter last year.
- **Gross Value Added (GVA)** - India’s GVA which measures economic activity from the supply side was 8.5% more than it was in the same quarter last year.
- The Indian economy clocked a **healthy growth rate of 8.4 %** in Q2 of FY 2021-22 due to increased vaccination and an uptick in agriculture, public administration and defence services sectors.
- **High frequency indicators** - All high-frequency indicators such as industrial production, vehicle sales, exports, port cargo and rail freight traffic, and GST e-way bills point to the economy growing faster in the second quarter.
- **Gross Fixed Capital Formation (GFCF)** - GFCF shows 1.5 % rise over July-September in the pre-pandemic year 2019-20.

Investments (I)

- The investments made by businesses (which is the second biggest engine of GDP growth, accounting for 33% of all GDP) grew by 11% in Q2 over last year.
- The firms made more investments in this Q2 than in any Q2 over the last five years which shows optimism on India's economic recovery.

Private consumption(C)

- Private consumption (which accounts for 55% of all GDP and is the biggest engine of growth) grew by 8.6% over Q2 of last year.
- But private consumption in Q2 this year was significantly lower than it was in the same quarter two years ago.

Government's expenditure (G)

- Except last year, the government's expenditure is the lowest in five years.
- This shows that at a time when private demand is struggling to recover, the government has not been able to plug the gap.

Key takeaways from GDP data:

Takeaways from GVA data:

- GVA is better in all sectors than it was in Q2 of last year except four key sectors that play a great part in creating fresh jobs: Mining & Quarrying, Construction, Services such as trade, hotels and financial services.
- Lower GVA levels would imply lower incomes for those employed in these sectors as well as lower employment opportunities in them.
- The manufacturing sector posted a growth of 5.5 % and the construction sector grew by 7.5 % in July-September than the same period last year.
- Agricultural growth increased to 4.5 % in the July-September quarter, while electricity, gas, water supply, and other utility services grew 8.9 % than the last year.
- In the services sector, the trade, hotels, transport sector grew at 8.2% in July-September as against a sharp 16.1 % contraction last year.

GDP DATA FOR JULY-SEPTEMBER 2021-22

	■ % change over July-September 2020-21	■ % change over July-September 2019-20
Agriculture, forestry, fishing	4.5	7.7
Manufacturing	5.5	3.9
Electricity, gas, water supply	8.9	11.4
Construction	7.5	-0.3
Trade, hotels, transport	8.2	-9.2
Private Final Consumption Expenditure	8.6	-3.5

Source: NSO, MoSPI

What are the policy implications?

- Although the economy is recovering from the recession it went into in Q2 of 2020, two data points put the recovery in perspective.
- India's recovery is still emerging and a V-shaped recovery would have required the Q2 GDP and GVA to be much higher. So, it may take another two years to cross those levels.
- The GVA and GDP are around 3.5% and 4.5% respectively, in the first half of the FY 2021-22, which is lower than the first half-year of 2019.

2. How the RBI e-rupee will work?

India launched its Central Bank Digital Currency (CBDC) or digital rupee or e-rupee on December 1, 2022. It is an electronic version of cash and will be primarily meant for retail transactions. The pilot will initially cover the four cities of Mumbai, New Delhi, Bengaluru, and Bhubaneswar.

How will the E-rupee be Circulated in the Market?

- E-rupees will be issued in the **same denominations** as paper currency and coins, and will be distributed through the intermediaries, that is banks.
- Transactions will be through a **digital wallet** offered by the participating banks and stored on mobile phones and devices.
- Transactions can be both **Person to Person (P2P) and Person to Merchant (P2M)**.
- For P2M transactions (such as shopping), there will be QR codes at the merchant location.
- Users will be able to withdraw digital tokens from banks in the same way they can currently withdraw physical cash.
- They will be able to keep their digital tokens in the wallet, and spend them online or in person, or transfer them via an app.

Types of e-rupee:

- **Retail e-rupee:** It is an electronic version of cash primarily meant for retail transactions, which can potentially be used by almost everyone, and can provide access to safe money for payment and settlements.
- **Wholesale-rupee:** Central Bank Digital Currency (CBDC) is designed for restricted access to select financial institutions. It has the potential to transform the settlement systems for financial transactions undertaken by banks in the Government Securities (G-Sec) segment and inter-bank market, and make the capital market more efficient and secure in terms of operational costs, use of collateral, and liquidity management.

RETAIL E-RUPEE:

- **Fungible legal tender:** It is a fungible legal tender, for which holders need not have a bank account. It is the same as the fiat currency, and is exchangeable one-to-one with the fiat currency; only its form is different i.e., it is not paper (or polymer) like physical cash. CBDC will appear as a 'liability' (currency in circulation) on the RBI's balance sheet.
- **Bearer-instrument:** A token CBDC is a "bearer-instrument" like a banknote, meaning whoever 'holds' the tokens at a given point in time will be presumed to own them. It can be transferred electronically from one holder to another.

Why is the RBI moving towards the e-Re?

- There is a cost incurred in printing, transporting, and storing currencies and coins that can be rationalised through e-Re.
- The larger use case envisaged by the government is financial inclusion and formalizing the digital consumption of the money.
- E-Re is also targeted at those who don't have a bank account, but can use digital currencies similar to a pre-paid mobile recharge card. Likewise, it is not aimed at just smartphone users, but every person with a mobile phone.
- Different from UPI: UPI-based apps like Google Pay and Paytm have a daily and per-transaction spending limit. The RBI has not fixed any limit on holding digital rupees in wallets. Digital rupee transactions above Rs 2 lakh are likely to be reported for tax matters.

ADVANTAGES :

Reducing Dependency on Dollar: India can establish **Digital Rupee as a superior currency for trade with its strategic partners**, thus reducing reliance on the dollar.

This occurs at a time when India is already in talks with Russia, UAE and Saudi Arabia to allow settlement of trade in the Indian rupee.

Cutting Cost of Maintaining Physical Currency: CBDC has the potential to **reduce dependency on cash.**

Regulated Intermediation: Along with reducing operational costs, it will offer the public the same features as any private virtual currency (cryptocurrency) without any risks associated with it.

Unlike crypto, **E-rupee has regulated intermediation and control arrangements** that plays the crucial role of ensuring **integrity and stability of the monetary and financial ecosystem.**

Globalisation of Payment System: CBDC can also enable a more real-time and **cost-effective globalisation of payment systems.** It could eliminate the **need for an expensive network of correspondent banks to settle cross-border payments.**

For Indians working abroad, sending money home will become simpler and cheaper resulting in huge savings for India, the world's top recipient of remittances.

ISSUES:

Privacy and Security Concern: E-rupee has the capacity to accumulate sensitive user and payment data on a massive scale. In the wrong hands, this data can be easily used to spy on the private transactions of citizens.

Digital Divide and Financial Illiteracy: High level of digital illiteracy is the biggest challenge and hindrance in the success of E-rupee in India. India ranked 73 out of 120 countries for internet literacy (2021).

Also, **digital services are not available** in local languages, which is a major barrier to financial literacy.

Acceptability Concern: Traceability of e-rupee transactions could become a deterrent to its uptake in India where cash transactions are still hugely popular, largely because of their anonymity. According to government data, the volume of bank notes in circulation rose 5% in fiscal year 2022.

Way forward:

- **Secured Digital Environment:** India's regulatory systems need to catch the evolving risks of data privacy and guide banking institutions to place appropriate safeguards and cushions to avoid any personal data breach.
- **Strict KYC Norms:** A digital rupee may well be a boon but there is a need to enforce strict compliance of Know Your Customer (KYC) norms to prevent the digital currency's use for terror financing or money laundering.

3. The lingering crisis of labour post-pandemic

The International Labor Organisation (ILO) has recently released two reports: *'Global Wage Report 2022-2023* and *'Asia-Pacific Employment and Social Outlook 2022*, highlighting the global employment scenario (post-pandemic).

What does the data show?

- According to the Ministry of Statistics and Programme Implementation, the nominal wages rose to ₹17,017 per month in 2021 from ₹4,398 in 2006.
- But when inflation is taken into account, real wage growth falls to -0.2% in 2021, down from 9.3% in 2006. (in contrast, real wage growth in China was around 2% (2019-2022)).
- **Negative Growth:** The negative growth in India started after the pandemic.
- **Neighboring Countries:** In China, the growth decreased from 5.6% in 2019 to 2% in 2022. In Pakistan, the growth is -3.8%
- **Impact on low earners:** The greatest impact was on lower-income earners as they have to spend most of their disposable income on essential goods and services.

Impact of job loss and decrease in wages:

- Millions of workers will be in a dire situation: The increasing cost of living has the greatest impact on lower-income earners.
- Income inequality will rise.
- Poverty will rise: 75 to 95 million people were pushed into extreme poverty during COVID-19.

What are the ILO's remedies?

- **Prudent price expectation:** It is crucial to safeguard the standard of living of low-income households against unexpected future inflation hikes.
- **Managing wage inflation:** The potential measures which are to be taken to safeguard the standard of living must not come from undesirable wage inflation.
- **Creation of decent formal wage employment:** It is a prerequisite for a more equitable distribution of wages and income, and is a key contributor to equitable and sustainable wage growth.
- **Focus on the gender pay gap:** The governments must focus on the gender pay gap as when women leave the labor market, they are less likely to return than men.
- **Collective Efforts:** Collective efforts are required to gain momentum for growth. The government has to strengthen labor market institutions and wage policies.
- **Multilateral approach:** There is an urgent need to address the negative effects of climate change; increasing inequalities; the poverty, discrimination, violence, and exclusion endured by millions of people.
- **Taking down Discrimination:** The discrimination that women and girls continue to suffer in many parts of the world must end.
- **Ensuring HealthCare:** Access to vaccines, adequate sanitation and essential healthcare for all must be ensured.
- **Reducing digital divide:** The growing digital divide between poor and wealthier countries needs to be reduced as it poses a potential speed-breaker when it comes to equitable growth.

4. Climate talks as short-changing international law

In the climate negotiations areas of interest to developing countries are not covered or sparsely covered, while other areas are over-regulated. For instance, in COP27, there seems to be a concerted effort to fraudulently change the basic structure of the Climate Treaty.

What are the problems with the current climate negotiation process?

- **Lack of awareness among developed countries:** Citizens in developed countries are not even aware that two-thirds of their national emissions of carbon dioxide come from their diet, transport, and residential and commercial sectors. All these together constitute a major share of the developed country's GDP.
- **Ignores global well-being:** Global well-being will require a) Urbanisation of the developing country's population, b) Fossil fuels for infrastructure and energy needs of developing countries to achieve global well-being.
- **Need essential supplies which emit CO2:** The developing countries need vast quantities of cement and steel for infrastructure as they urbanise.
- **Does not address the dilemma of developing countries:** Developing countries such as India are both victims and perpetrators of Climate Change. In such a scenario, separating their roles, especially in the context of financing is complicated. For instance, many nations have suggested that India and China should be part of the contributing list of nations to the L&D fund.

What are the reasons for climate injustice?

- Climate injustice flows from the negotiations and not from the text of the Climate Treaty
- First, the process adopted the structure of international law in a manner that rejected historical responsibility for a continuing problem, and steadily shifted the burden to China and India.
- Second, the agenda was set around globalised material flows described as global warming (the symptom), and not wasteful use of energy.
- Third, public finance is used as a means to secure a political objective, and not to solve the problem itself. For instance, the \$100 billion mitigation and adaptation fund promised in Paris has not materialised. Meanwhile, estimates suggest that about \$200 billion a year is needed now and that will rise to about \$300 billion a year by 2030.
- Fourth, the longer term trend has been ignored. Asia's emissions with half the world's population will rise to 40% in 2035. This will create pressure to further reduce emissions and displace their human rights.
- In the recent COP27, there has been no consensus on the obligation of industrial countries to compensate vulnerable countries for loss and damage fund.

The concept of "Carbon Budget" has progressively emerged from the work of the Intergovernmental Panel on Climate Change (IPCC),

Like a household budget, climate scientists define "Carbon budget" as the number of greenhouse gases that can be "spent" – or emitted, considering global warming. Exceeding this threshold could cause global temperatures to reach dangerous levels.

Therefore, carbon budget implies that a country must limit its carbon emissions, in order to meet its temperature reduction target. As a result, there cannot be a single universal deadline to phase out coal use.

What India can do to mitigate climate change when climate negotiations are poor?

India should a) Combine technology transfers and soft loans from multi-lateral institutions, b) Adopt market solutions for climate actions, c) Carefully design cess schemes to discourage GHG emissions, d) Improve the domestic fuel economy, e) Accelerate the adoption of electric vehicles, f) Levy a carbon tax at the point of emission, and g) Raise the economy's overall energy efficiency.

5. RBI's Monetary Policy Review

The Monetary Policy Committee (MPC) of the Reserve Bank of India (RBI) unveiled its latest review of the monetary policy.

What is the need for monetary policy reviews?

- In India, the RBI is entrusted with the responsibility of devising monetary policy "with the primary objective of maintaining price stability while keeping in mind the objective of growth"

- The central bank is supposed to target a 4% retail inflation level, although the RBI has the leeway of inflation going up to 6% or falling to 2% in any particular month.
- When inflation runs high, RBI raises the repo rate — the interest rate it charges banks when it lends them money. Doing this incentivises savings and disincentivises expenditure, thus curtailing overall demand and GDP. That, in turn, reduces the inflation rate.
- In times of weak economic activity, RBI cuts the repo rate and by the reverse logic, boosts demand and economic output.

What are the Highlights of the Review?

- The MPC slashed its Gross Domestic Product (GDP) growth estimate to 6.8% for the fiscal year 2022-23, from 7% earlier.
- This comes a day after the World Bank raised its growth forecast to 6.9% for financial year 2022-23 from a revised 6.5% accounted in October 2022.
- Real GDP growth is projected at 7.1% for Q1:2023-24 and at 5.9% for Q2.
- As the data shows, in September 2022, it cut the GDP forecast for the full year but raised the quarterly GDP forecast.

- The MPC has maintained the forecast for headline inflation (the total inflation in an economy) in the financial year 2022-23 at 6.7%.

HOW RBI'S GDP FORECAST HAS CHANGED			
GDP FORECAST	APRIL TO AUGUST	IN SEPTEMBER	IN DECEMBER
Q1 (April to June)	16.2%	13.5%(actual)	13.5%(actual)
Q2 (July to September)	6.2%	6.3%	6.3%(actual)
Q3 (October to December)	4.1%	4.6%	4.4%
Q4 (January 2023 to March 2023)	4%	4.6%	4.2%
Full year (2022-23)	7.2%	7%	6.8%

- RBI expects headline inflation to stay above the 6% mark for 15 straight months. Even after that, hitting the 4% level will likely take time.
- The MPC increased the repo rate by 35 basis points (bps) to 6.25%, and the Standing Deposit Facility (SDF) stands raised to 6%.

What is the significance of the latest policy review?

- Indian policymakers are facing an odd quandary. Over the past couple of years, India has had to deal with a scenario where inflation has been high even as economic output struggles to grow.
- This has happened for a variety of reasons. In particular, India was already experiencing a severe growth slowdown before the Covid pandemic.
- This was made worse by the lockdowns during Covid, while inflation shot up on account of supply disruptions, first due to the pandemic and then due to Russia's war in Ukraine.

Why is RBI's stance being called hawkish?

- The term "hawks" refers to central banks that have a very low threshold for tolerating variation from the targeted inflation level. What makes the RBI's current stance more "hawkish" is the RBI's reference to "core inflation"
- RBI traditionally targets the headline rate, which is moderating. Core inflation, on the other hand, is going up and thus, it may push the RBI to take a more hawkish stance from here on.
- The trouble is: if core inflation is high, it takes a while to come down, because it implies that inflation has become broad-based (i.e., higher prices have seeped through all parts of the economy).

6. The sustained growth in remittances

Remittances to India are set to touch a record \$100 billion in 2022, according to the World Bank's latest report titled 'Remittances Brave Global Headwinds'.

India received \$89.4 billion in 2021 — this is the first time a country will reach the \$100 billion mark

General trend in Remittances in 2022:

- World remittances are expected to touch \$794 billion in 2022, up from \$781 billion in 2021.
- This represents a growth of 4.9%, compared to 10.2% in 2021, which was the highest since 2010.
- Of the \$794 billion, \$626 billion went to Low- and Middle-Income Countries (LMICs).

The top five recipient countries this year are expected to be –

- **India (\$100 billion),**
- **Mexico (\$60 billion),**
- **China (\$50 billion),**
- **Philippines (\$38 billion)**
- **Egypt (\$32 billion)**

Reasons behind the sustained growth in Remittances to India:

- One of the main reasons is the gradual reopening of various sectors in host-country economies, following Covid-19 pandemic-induced closures and travel disruptions.
- Structural shift: It notes that remittances moved from largely low-skilled, informal employment in the GCC countries to a dominant share of high-skilled jobs in high-income countries such as the U.S., the U.K., and East Asia.
- In fact, between 2016-17 and 2020-21, while the remittances from the U.S., U.K. and Singapore increased from 26% to 36%, the share from five GCC countries dropped from 54% to 28%. In 2020-21, the U.S., with a share of 23%, surpassed Saudi Arabia to become India's top source country for remittances.
- The report also adds that Indian migrants may also have "taken advantage" of the depreciation of the Indian rupee vis-à-vis the U.S. dollar – it fell by 10% between January and September 2022 – to increase their remittances.

What does the report say about future trends?

- The report predicts that growth in remittances will fall to 2% in 2023 as the GDP growth in high-income countries continues to slow, eroding migrants' wage gains.
- For South Asia as a whole, the growth in remittances is expected to fall from 3.5% in 2022 to 0.7% in 2023.
- Nonetheless, remittances to India are forecast to grow by 4% next year, "supported by the large share of Indian migrants earning relatively high salaries in the U.S., the U.K. and East Asia".

When migrants send home part of their earnings in the form of either cash or goods to support their families, these transfers are known as workers' or migrant remittances.

It is a part of Current Account.

In the case of India, the largest sources of remittances have been from Indians working in the Gulf Cooperation Council.

Data from the RBI Remittances Survey, 2021 shows that the four leading countries in sending remittances to India are the US, the United Arab Emirates (UAE), the UK and Singapore.

7. Wildlife (Protection) Amendment Bill 2022

Rajya Sabha passed the Wildlife (Protection) Amendment Bill, 2022 which seeks to conserve and protect wildlife through better management of protected areas and rationalise schedules which list out species under the Wildlife (Protection) Act, 1972.

Issues with the Bill:

- The exemption given to 'live elephant' for commercial trade: Parliamentary Standing Committee headed by Jairam Ramesh objected to the blanket exemption, recommending to limit it only to temple elephants kept for religious purposes
- Protection of wild animals and birds is a subject under the Concurrent List of the Constitution. The proposed amendment bill renders the State Boards for Wildlife chaired by Chief Minister defunct.
- The elephant was given the highest legal protection in 1977. Currently, an elephant is the only animal in WLPA's Schedule-I that can still be owned legally by means of inheritance or gift. Since 2003, Section 3 of the WLPA
 - The central government can **designate a Management Authority**, which grants export or import **permits** for the trade of specimens.
 - Central Government can regulate or prohibit the import, trade, possession or proliferation of invasive alien species** (plant or animal species which are not native to India and whose introduction may adversely impact wildlife or its habitat)
 - The central government may also notify a **conservation reserve** (typically act as buffer zones to or connectors and migration corridors between established national parks, and wildlife sanctuaries)

Provides much more power at the hands of the Central Government:

States can declare areas adjacent to National parks and Sanctuaries as **Conservation Reserve**, for protecting flora and fauna, and their habitat.

For sanctuaries falling under Scheduled Areas (where Forest Rights Act FRA 2006 is applicable and comes under the 5th Schedule), the management plan must be prepared after due consultation with the **Gram Sabha concerned**

Exception for 'live elephant': The Bill allows for Commercial Trade In Live Elephants. The Bill, therefore, allows for commercial trade in elephants. This is contrary to the **previous act (Wildlife (Protection) Act, 1972)** which specifically prohibits trade in Wild Animals including captive and wild elephants

Voluntary surrender of captive animals: The bill provides for any person to voluntarily surrender any captive animals, without any compensation and consequent authority over the animal)

Registration certificate for live specimens of scheduled animals: People possessing live specimens of scheduled animals must obtain a registration certificate from the Management Authority.

Control of Sanctuaries to Chief Wildlife warden: The Act entrusts the Chief Wildlife Warden to control, manage and maintain all sanctuaries in a state. The Chief Wildlife Warden is **appointed by the state**

Reduces the number of schedules from Six (currently) to Four now: Currently, there are six schedules: protected plants (one), specially protected animals (four), and vermin species (one). The new bill removes the schedule for vermin species (Vermin refers to small animals that carry diseases and destroy food e.g. Monkeys, Nilgai)

prohibited trade in all captive wildlife and any (non-commercial) transfer across state boundaries without the permission of the respective chief wildlife warden.

.This started the unlawful trading of elephants and their commercial deals were fabricated as gift deeds to bypass the Amendment.

- Centre’s hold over ‘vermin’ declaration continues: Last year, Kerala’s requests for declaring wild boars as vermin have been turned down repeatedly by the Environment ministry.
- The bill severely curtailed the ability to graze across pastoral spaces in the conservation areas
- Impact on tribal communities: The Van Gujjars are a semi-nomadic pastoral community (Uttarakhand, Uttar Pradesh and Himachal Pradesh) that may be impacted.

8. How high the Centre’s subsidy bill could go this year

The Central Government has sought Parliament’s approval for fresh expenditure of Rs 2.14 lakh crore towards major subsidies, over and above the Rs 3.17 lakh crore budgeted for 2022-23. This 5.32 lakh crore spending on subsidy in 2022-23 would be the second highest after the Rs 7 lakh crore of 2020-21. However, there’s a difference between 2020-21 and 2022-23.

Table 1: Centre’s major subsidies in Rs crore

	Food	Fertiliser	Petroleum	TOTAL
2014-15	117671.16	71075.62	60268.82	249015.60
2015-16	139419.00	72415.17	29999.00	241833.17
2016-17	110172.96	66312.94	27538.71	204024.61
2017-18	100281.69	87000.07	24460.48	211742.24
2018-19	101326.99	70604.80	24836.95	196768.74
2019-20	108688.35	81124.32	38528.78	228341.45
2020-21	541330.14	127921.74	36754.65	706006.53
2021-22*	288968.54	153658.11	3421.07	446047.72
2022-23**	206831.09	105222.32	5812.50	317865.91
Apr-Oct 2021	155166.39	53477.06	1272.31	209915.76
Apr-Oct 2022	135079.75	102721.44	1107.84	238909.03

*Provisional; **Budget Estimate.

2020-21:

In 2020-21, the spike in subsidies was on account of the Finance Minister making a one-time provision to clear all dues to the Food Corporation of India (FCI) and fertilizer companies.

In previous years, the Centre wasn’t providing full funds for subsidies arising from these entities selling grain and fertilizers at below cost to PDS (Public Distribution System) consumers and farmers respectively.

Not wholly funding the difference and on time forced them to borrow, with FCI alone availing loans from the National Small Savings Fund(NSSF) at 7.4-8.8% interest during 2016-17 to 2019-20.

2022-23:

The overshooting of subsidies in 2022-23 has been largely courtesy of Covid-19 and the Russia-Ukraine war.

The pandemic resulted in a record offtake of rice and wheat through the PDS under various welfare schemes notably the free-grain Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY).

In fertilizer and petroleum, the higher subsidy outgo has been due to surge in global prices – from September-October 2021 and, more so, after the Russian invasion of Ukraine.

Surge in prices has not been passed to farmers and consumers by the government, which led to an increase in subsidy bill.

It also led to compensating fertilizer and Oil Marketing Companies (OMCs) for selling below cost or under-recoveries.

What are the future prospects of subsidies?

- Some relief can be expected on all the “3F” subsidies – food, fuel and fertilizer.
- In food, the government is unlikely to extend PMGKAY beyond December 2022. This will help reduce the Centre’s food subsidy bill.

- In fuel, international prices of petrol and diesel have eased. There is also a reduction in the prices of imported fertilizers.
- Due to these positive future prospects, there could be subsidy savings of around Rs 150,000 crore assuming no new geopolitical, climate or pandemic shocks.

9. What is End-to-End Encryption and why are Tech Companies focusing on it

End-to-end encryption is a method of secure communication that prevents third parties from accessing data while it's transferred from one end system or device to another.

- It prevents third parties like cloud service providers, internet service providers (ISPs) and cybercriminals from accessing data while it is being transferred.
- The process of end-to-end encryption uses an algorithm that transforms standard text into an unreadable format.
- This format can only be unscrambled and read by those with the decryption keys, which are only stored on endpoints and not with any third parties including companies providing the service.

Where is it used?

- End-to-end encryption is used to secure communications.
- Many popular messaging service providers use end-to-end encryption, including Facebook, WhatsApp and Zoom.
- End-to-end encryption has long been used when transferring business documents, financial details, legal proceedings, and personal conversations.
- End-to-end encryption is used when data security is necessary, including in the finance, healthcare and communications industries.
- It is often used to help companies comply with data privacy and security regulations and laws.
- It is also used to secure passwords, protect stored data and safeguard data on cloud storage.

Advantages:

- **Security in transit:** Messages **can only be decrypted using these keys**, so only people with access to the endpoint devices are able to read the message.
- **Tamper-proof:** If a message encrypted with a public key gets altered or tampered with in transit, the recipient will not be able to decrypt it, so the tampered contents will not be viewable.
- **Compliance:** Many industries are **bound by regulatory compliance laws** that require encryption-level data security.
- End-to-end encryption can help organizations protect that data by making it unreadable.

Disadvantages:

➤ **Complexity in defining the endpoints:**

Some end-to-end encryption implementations **allow the encrypted data to be decrypted and re-encrypted at certain points** during transmission. This makes it important to clearly define and distinguish the endpoints of the communication circuit.

- **Too much privacy:** Government express **concern that end-to-end encryption can protect people sharing illicit content** because service providers are unable to provide law enforcement with access to the content.
- **Visible Metadata:** While end-to-end encryption protects the information inside a message, it does not conceal information about the message, such as the date and time it was sent or the participants in the exchange.
- **Endpoint Security:** If endpoints are compromised, encrypted data may be revealed.

Why are Tech Companies using it?

- The extra layer of protection would be valuable to targets of hacking attacks launched by well-funded groups.
- The focus on end-to-end encryption seems to stem from the company’s desire to position itself as a provider of secure data storage and transfer services.
- End-to-end encryption is also seen as a technology that secures users’ data from snooping by government agencies, making it a sought-after feature by activists, journalists, and political opponents.

10. Amendments to the Co-operative Societies Act

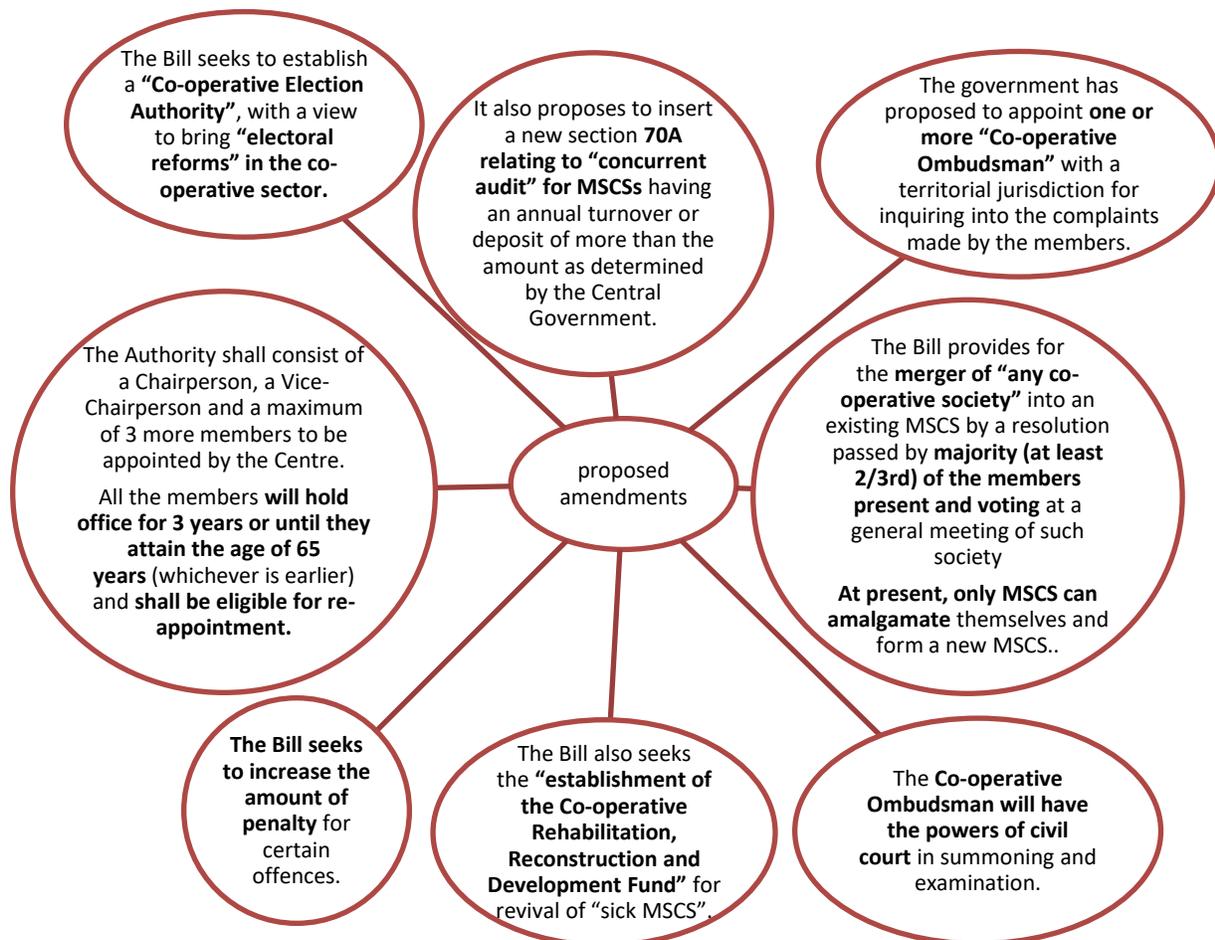
The Multi-State Co-operative Societies (Amendment) Bill 2022 is aimed at overhauling the Multi-State Cooperative Societies Act, 2002

Cooperatives are organizations formed at the grassroots level by people to harness the power of collective bargaining in the marketplace. It is a state subject.

- Cooperatives of more than one state are registered under the Multi-State Co-operative Societies Act (MSCS) of 2002 Act.
- Their board of directors has representation from all the states they operate in.
- Administrative and financial control of these societies is with the central registrar, with the law making it clear that no state government official can wield any control over them.

Federal Issues concerning the bill:

- No provision of the Constitution makes way for merging a cooperative society, which is incorporated under State law with a Multi-State Cooperative Society.



- The Centre is indirectly encroaching on the rights of State Co-operative Societies through the introduction of the clause concerning the merger.
- Beyond the legislative competence of the Union as State cooperative societies are within the exclusive jurisdiction of States.

11. Fusion energy Breakthrough

Recently, Scientists in the United States have achieved a net gain in energy for the first time from a nuclear fusion reaction which is considered as the most dependable source of energy in future.

Methods:

- a) The experiment forced a minuscule amount of hydrogen into a peppercorn-sized capsule, for which scientists used a powerful 192-beam laser that could generate 100 million degrees Celsius of heat. It is also called '**Inertial Fusion**'
 - The laser beam was hotter than the Sun's centre and helped to compress the hydrogen fuel to more than 100 billion times that of Earth's atmosphere.
 - Under the pressure of these forces, the capsule started imploding on itself and leading to the fusion of hydrogen atoms and the release of energy. At the international collaborative project in southern France called ITER in which India is a partner used very strong **magnetic fields** for the same purpose which is the second method of producing this energy.
 - It is relatively easier to attain break-even energy levels through inertial fusion compared to magnetic fusion.

Fusion: In fusion, nuclei of two lighter elements are made to fuse together to form the nucleus of a heavier atom.

- A large amount of energy is released in both these processes, but substantially more in fusion than fission.
- This is the process that makes the Sun and all other stars shine and radiate energy.

ITER (International Thermonuclear Experimental Reactor)

It is an international nuclear fusion research and engineering megaproject aimed at creating energy by replicating on Earth the fusion processes of the Sun.

When operational it would become the biggest machine anywhere in the world which would be more complex than the Large Hadron Collider at CERN or the LIGO project to detect gravitational waves.

Currently, the ITER reactor is in the machine assembly phase.

India joined the ITER project in 2005. The Institute for Plasma Research in Ahmedabad, a laboratory under the Department of Atomic Energy, is the lead institution from the Indian side participating in the project.

Advantages of Nuclear Fusion:	Major Challenge
<p>No CO₂: Fusion doesn't emit harmful toxins like CO₂ or other GHG. Its major by-product is helium: an inert, non-toxic gas.</p>	<p>Requirement of huge energy: Fusion reactions happen only at very high temperatures which is 10 times the temperature that exists at the core of the Sun and creating such an extreme environment in a laboratory requires huge amounts of energy.</p>
<p>No long-lived Radioactive Waste: produce no high activity, long-lived nuclear waste.</p>	<p>Lower energy in these experiments: The energy released in such experimental fusion reactions have been lower than what is consumed to create the enabling high temperatures.</p>
<p>Limited Risk of Proliferation: Fusion doesn't employ fissile materials like uranium and plutonium (Radioactive tritium is neither a fissile nor a fissionable material).</p>	<p>Future potential: Use of the fusion process for generating electricity at a commercial scale is still two to three decades away.</p>
<p>No Risk of Meltdown: if any disturbance occurs, the plasma cools within seconds and the reaction stops.</p>	<p>Shorter time for the experiment: The fusion reactions currently being run in labs last for barely a few seconds. Those based on laser beams run for even shorter times. It is difficult to sustain such extreme high temperatures for prolonged periods.</p>
<p>Sustainability: Fusion fuels are widely available. Deuterium can be distilled from all forms of water, while tritium will be produced during the fusion reaction</p>	
<p>Abundant Energy: Fusing atoms together in a controlled way releases nearly four million times more energy than a chemical reaction</p>	

Way forward

- **Obtaining net energy gain** is a very important step but we are still far away from reactor grade fusion reactions.
- **Several countries like:** China, Japan, UK and South Korea, are working on this technology separately as well, apart from collaborating at ITER.

12. The key is exports:

According to the Ministry of Commerce, India's exports declined by about 16.7 (sixteen point seven) % in October compared with the year earlier.

Challenges Related to Indian Export Growth:

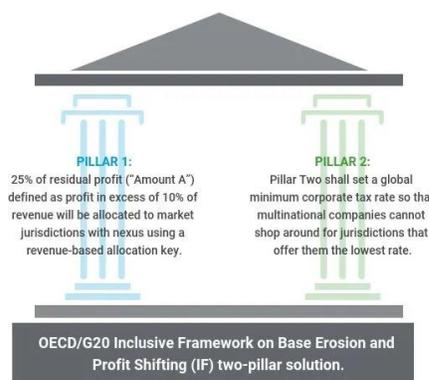
- **Rising Protectionism and Deglobalisation:** Countries around the globe are moving towards protectionist trade policies due to disrupted global political order (Russia-Ukraine War) and weaponization of supply chain, that is in way shrinking India's export capacities.
- **Lack of Basic Infrastructure:** India's manufacturing sector lacks sufficient manufacturing hubs, internet facilities and transportation are costly when compared to developed nations which is a huge deterrence to Industries.
- **Uninterrupted power supply is another challenge.**
- **Lack of Innovation Due to Low Spending on R&D:** Currently, India spends about 0.7% of GDP on research and development. This prevents the manufacturing sector from evolving, innovating and growing.
- **Specialisation versus Diversification:** Indian exports are characterised by high diversification combined with low specialisation, implying that India's exports are spread thin over many products and partners.

5. What India Exports -Commodity-wise Export Growth

What India Exports?	Value (in \$ Million)	Change YoY %
✓ Engineering Goods	9,322	32.0%
✓ Petroleum Products	4,649	88.1%
Gems & Jewellery	3,165	18.0%
✓ Organic & Inorganic Chemicals	2,420	25.4%
RMG of All Textiles	1,600	18.7%
Electronic Goods	1,486	34.5%
Cotton yarn/Fabs/Made-ups/ Handloom Products	1,260	33.0%
Plastic & Linoleum	798	26.5%
Leather & Leather Products	390	30.4%
Cereal Preparation, Misc. Processed Items	208	20.7%
Coffee	94	29.6%
Jute Mfg, including Floor Covering	49	17.9%
Drugs & Pharmaceuticals	1,960	-1.8%

Way Forward:

- **Joint Development Programmes:** India can explore joint development programmes with other countries in sectors like space, semiconductor, solar energy to improve India's medium-term growth prospects.
- **Dedicated Export Corridors:** The economic policy should also strive to promote export dynamism and product specialisation alongside product diversification through Dedicated Export Corridors to offer the best services.
- **Promoting Acquisitions Abroad:** Indian entrepreneurs can be incentivised to sign joint venture undertakings abroad for building up an export potential for their products.
- **Frontlining MSME Sector:** Ministry of Micro, Small and Medium Enterprises (MSMEs) account for 29% of GDP and 40% of international trade, making them key players in achieving ambitious export targets.
- It is important for India to **link Special Economic Zones with the MSME sector** and incentivize small businesses.
- **Filling Up Infrastructural Gaps:** A robust infrastructure network - warehouses, ports, testing labs, certification centres, etc. will help Indian exporters compete in the global market.
- It also needs to adopt modern trade practices that can be implemented through the **digitisation of export processes**. This will save both time and cost.



13. Global Minimum Tax

Recently, the Members of the European Union agreed in principle to implement a minimum tax of 15% on big businesses.

The global corporate minimum tax was approved at the G20 Leaders Summit in Rome in 2021.

Global minimum tax:

- It is a proposal to impose a minimum rate of taxation on corporate income in most countries of the world by international agreement.
- **OECD’s Plan:** EU members have agreed to implement a minimum tax rate of 15% on big businesses in accordance with Pillar 2 of the global tax agreement framed by the Organisation for Economic Cooperation and Development (OECD).

Need:

<u>Significance of the move</u>	<u>Major Challenges</u>
<p>Boost global tax revenues: It is estimated that the minimum tax rate would boost global tax revenues by \$150 billion annually.</p> <p>Ending tax havens: This is to ensure that big businesses with global operations do not benefit by domiciling themselves in tax havens to save on taxes.</p> <p>Taxing rights: The OECD plan tries to give more taxing rights to the governments of countries where large businesses conduct a substantial amount of their business.</p> <p>Countries both within and outside the cartel will have the incentive to boost investments and economic growth within their respective jurisdictions by offering lower tax rates to businesses.</p> <p>It tries to put an end to the “race to the bottom” which has made it harder for Governments to shore up the revenues required to fund their rising spending budgets.</p> <p>A race to the bottom refers to heightened competition between nations, states, or companies, where product quality or rational economic decisions are sacrificed in order to gain a competitive advantage or reduction in product manufacturing costs.</p>	<p>Denial by Tax Havens: Some Governments, particularly those of traditional tax havens, are likely to disagree and stall the implementation of the OECD’s tax plan.</p> <p>Issue for a developed country: Large U.S. tech companies may have to pay more taxes to governments of developing countries.</p> <p>Lack of compensation: Low tax jurisdictions are likely to resist the OECD’s plan unless they are compensated sufficiently in other ways.</p> <p>Formation of global tax cartel: the OECD’s plan essentially tries to form a global tax cartel; it will always face the risk of losing out to low-tax jurisdictions outside the cartel and cheating by members within the cartel.</p> <p>Developing countries are disproportionately affected because they tend to rely more heavily on corporate income taxes than advanced economies.</p> <p>It impinges on the right of the sovereign to decide a nation’s tax policy.</p> <p>A global minimum rate would essentially take away a tool country use to push policies that suit them.</p>

- **Deteriorating Fiscal Health:** The minimum tax proposal is particularly relevant at a time when the fiscal state of governments across the world has deteriorated as seen in the worsening of public debt metrics.
- **Decreasing taxes:** Corporate tax rates across the world have been dropping over the last few decades because of competition between governments to spur economic growth through greater private investments. Global corporate tax rates have fallen from over 40% in the 1980s to under 25% in 2020.

Way Forward/ Suggestions

- High tax jurisdictions like the EU are more likely to fully adopt the minimum tax plan as it saves them from having to compete against low tax jurisdictions.
- The plan will also help counter rising global inequality by making it tougher for large businesses to pay low taxes by availing the services of tax havens.
- Without tax competition between governments, the world would be taxed a lot more than it is today, thus adversely affecting global economic growth.

14. The Biodiversity Commitment

Recently, at the 15th Conference of Parties (COP15) to the UN Convention on Biological Diversity “Kunming-Montreal Global Biodiversity Framework” (GBF) was adopted.

- GBF includes 4 goals and 23 targets for achievement by 2030.
- The U.N. biodiversity conference concluded in Canada's Montreal.
- The first part of COP 15 took place in Kunming, China and reinforced the commitment to address the biodiversity crisis and the Kunming Declaration was adopted by over 100 countries.

CBD: was an outcome of the 1992 Rio Earth Summit, along with the UN Framework Convention on Climate Change (UNFCCC) and the UN Convention to Combat Desertification (UNCCD). CBD is a legally binding framework.

- In total, 196 countries, including India, have ratified the CBD and are, parties to the COP.

The US is a notable outlier as the only UN member state not to have ratified the treaty although it still has a presence at biodiversity COPs.

Decoding the 23 targets set at COP15

A total of 196 countries have signed a historic deal to protect 30% of the world for nature by 2030 in Montreal

REDUCING THREATS TO BIODIVERSITY	MEETING HUMAN REQUIREMENTS THROUGH SUSTAINABLE USE	TOOLS AND SOLUTIONS FOR IMPLEMENTATION AND MAINSTREAMING
<p>1) Halting biodiversity loss: Bringing the loss of areas of high biodiversity importance close to zero, while respecting the rights of indigenous people</p> <p>2) Effective restoration: At least 30% of areas of degraded terrestrial, inland water, and coastal and marine ecosystems are under effective restoration</p> <p>3) Mapping linkages: Sustainable use of above areas is consistent with conservation outcomes</p> <p>4) Saving endangered species: Urgent steps to halt human induced extinction of threatened species; maintain their diversity through in situ and ex situ conservation</p> <p>5) Protecting wild species: Sustainable, safe and legal use of wild species; preventing overexploitation</p> <p>6) Invasive alien species: Mitigating their impacts by reducing rates of introduction by 50%; controlling them in priority sites such as islands</p> <p>7) Tackling pollution: Reduce pollution risks to levels that are not harmful to biodiversity and ecosystem functions</p> <p>8) Climate crisis: Minimise impact of climate change and ocean acidification through nature-based solutions</p>	<p>9) Serving humans: Ensure use of wild species yields benefits for humans, especially for those most dependent on biodiversity</p> <p>10) Ecosystem productivity: Sustainable management of areas under agriculture, aquaculture, fisheries and forestry for resilience and long-term productivity</p> <p>11) Handling nature's contributions: Restore, maintain and enhance nature's contributions to people through regulation of air, water, and climate</p> <p>12) Biodiversity in urban fabric: Increase the area and quality and connectivity of, access to, and benefits from green and blue spaces in urban and densely populated areas</p> <p>13) Sharing genetic resources: Take effective legal, policy, administrative and capacity-building measures to ensure equal sharing of benefits of genetic resources</p>	<p>14) Policy-making: Integration of biodiversity and its values into policies across all levels of govt, other sectors</p> <p>15) Legal perils for businesses: Regular assessments by transnational firms of their risks, dependencies, impacts on biodiversity; report on compliance with regulations</p> <p>16) Making eco-friendly choices: Encouraging people to make sustainable consumption choices, reduce global footprint of consumption</p> <p>17) Biosecurity measures: Adopting such steps for handling of biotechnology and distribution of its benefits</p> <p>18) Removal of harmful incentives: Identify by 2025, and eliminate/reform incentives harmful for biodiversity; cut them by \$500 bn per year by 2030</p> <p>19) Biodiversity finance: Increasing financial resources, mobilising \$200 billion per year by 2030</p> <p>20) Technical cooperation: Strengthen capacity-building and development, access to and transfer of technology</p> <p>21) Sharing knowledge: Access to information by decision makers, practitioners and public; access to technologies of indigenous peoples only with their consent</p> <p>22) Equal representation: Ensuring equitable representation in decision-making</p> <p>23) Gender based review: A gender-responsive approach by recognising women's rights and access to natural resources</p>

- The CBD has given rise to two supplementary agreements: The Cartagena Protocol of 2003, The Nagoya Protocol of 2014

Need for a biodiversity framework:

- Estimates based on the IUCN Red List of Threatened Species tell us that 1 million species are currently threatened with extinction.
- Healthy ecosystems support 55% of global GDP, and the conservation and sustainable use of biodiversity underpins sustainable development.
- Healthy ecosystems protect communities from climate change impacts and nature-based solutions could provide up to 37% of our climate change mitigation needs as per the Paris Agreement.
- An ambitious new framework is therefore needed to achieve the UN Sustainable Development Goals, and the vision of living in harmony with nature by 2050.

Key Targets of the GBF:

Key takeaways from the COP15 biodiversity summit:

- **30x30 target** - Delegates committed to protect 30% of land and 30% of coastal and marine areas by 2030
- **Money for nature** - Signatories aim to ensure 200 billion per year is channeled to conservation initiatives, from public and private sources.
- Wealthier countries should contribute at least 20 billion dollars of this every year by 2025, and at least 30 billion dollars a year by 2030.
- **Reporting the impacts on biodiversity** - Companies should analyse and report how their operations affect and are affected by biodiversity issues.

30x30 Deal: Restore 30% degraded ecosystems globally (on land and sea) by 2030. Conserve and manage 30% areas (terrestrial, inland water, and coastal and marine) by 2030

Stop the extinction of known species, and by 2050 reduce tenfold the extinction risk and rate of all species (including unknown)

Reduce risk from pesticides by at least 50% by 2030

Reduce nutrients lost to the environment by at least 50% by 2030

Reduce pollution risks and negative impacts of pollution from all sources by 2030 to levels that are not harmful to biodiversity and ecosystem functions

Reduce global footprint of consumption by 2030, including through significantly reducing overconsumption and waste generation and halving food waste

Sustainably manage areas under agriculture, aquaculture, fisheries, and forestry and substantially increase agroecology and other biodiversity-friendly practices

Reduce the rate of introduction and establishment of invasive alien species by at least 50% by 2030

Secure the safe, legal and sustainable use and trade of wild species by 2030

- **Harmful subsidies** - Countries committed to identify subsidies that deplete biodiversity by 2025, and then eliminate, phase out or reform them. They agreed to slash those incentives by at least 500 billion dollars a year by 2030.
- **Pollution and pesticides** – It aims to reduce the risks associated with pesticides by at least half, and focus on other forms of pest management.
- **Monitoring and reporting progress** - National action plans will be set and reviewed, following a similar format used for greenhouse gas emissions under U.N.-led efforts to curb climate change.

What are the concerns?

- **Implementation** - A major issue is realization of targets contained within the framework because lack of implementation was the major factors behind the failure of the Aichi targets.
- **Finance** - Democratic Republic of Congo staunchly opposed the package, regarding the issues over financing.
- **New fund** - Demands from the global South for a new fund were only partially fulfilled, as it proposed to create the fund within the Global Environment Facility, the UN's existing biodiversity financing fund.
- **Eliminating harmful subsidies** - India's demand against a numerical target to eliminate harmful subsidies has been partially addressed.
- **Cutting pollution** - India was against a numerical goal of cutting pollution to zero.

INDIA'S ROLE:

- India called for an urgent need to create a new and dedicated fund to help developing countries successfully implement a post-2020 global framework to halt and reverse biodiversity loss.
- So far, the Global Environment Facility which caters to multiple conventions, including the UNFCCC and UN Convention to Combat Desertification, remains the only source of funding for biodiversity conservation.
- India also said that conservation of biodiversity must also be based on 'Common but Differentiated Responsibilities and Respective Capabilities' (CBDR) as climate change also impacts nature.
- The concept of Life style for environment was recognised for achieving the goals of biodiversity conservation.
- India was of the view that GBF should focus on an ecosystem-based approach rather than nature-based solutions.

15. Uncontrolled Re-entries of Satellites

Many dignitaries have signed an open letter published by the Outer Space Institute (OSI) calling for both national and multilateral efforts to restrict uncontrolled re-entries of Satellites back to earth.

- OSI is a conservation organization that seeks to preserve scenic, natural and historic landscapes for public enjoyment, conserve habitats while sustaining community character, and help protect the environment.

Background: different stages of rockets

- Rockets have multiple stages. Once a stage has increased the rocket's altitude and velocity by a certain amount, the rocket sheds it.
- Some rockets jettison (throw away) all their larger stages before reaching the destination orbit; a smaller engine then moves the payload to its final orbit.
- Others carry the payload to the orbit, then perform a deorbit maneuver to begin their descent.
- In both cases, rocket stages come back down — in controlled or uncontrolled ways.

Uncontrolled re-entry

- In an uncontrolled re-entry, the rocket stage simply falls. Ground stations usually lose control on such rockets.
- Its path down is determined by its shape, angle of descent, air currents and other characteristics. It will also disintegrate as it falls.

- As the smaller pieces fan out, the potential radius of impact will increase on the ground.
- Some pieces burn up entirely while others don't. But because of the speed at which they're travelling, debris can be deadly.
- Most rocket parts have landed in oceans principally because earth's surface has more water than land. But many have dropped on land as well.

Recent examples of uncontrolled re-entry

- Parts of a Russian rocket in 2018 and China's Long March 5B rockets in 2020 and 2022 striking parts of Indonesia, Peru, India and Ivory Coast, among others.
- In October 2022, ISRO's RISAT-2 satellite made an uncontrolled re-entry in the Indian Ocean near Jakarta.
- Parts of a SpaceX Falcon 9 that fell down in Indonesia in 2016 included two refrigerator-sized fuel tanks.

Associated dangers

- Any kind of re-entry will inevitably damage some ecosystem and there is also an associated risk of human casualties on the ground as well.
- conservative estimates place the casualty risk from uncontrolled rocket body re-entries as being on the order of 10% in the next decade.
- If re-entering stages still hold fuel, atmospheric and terrestrial chemical contamination is another risk.

International Regulations

- There is no international binding agreement to ensure rocket stages always perform controlled re-entries nor on the technologies with which to do so.
- These technologies include wing-like attachments, de-orbiting brakes, extra fuel on the re-entering body, and design changes that minimize debris formation.
- The Liability Convention 1972 requires countries to pay for damages, not prevent them.

16. Need to Strengthen India's Cyber Security

The reported illegal offer for sale of the private data of some 30 million railway passengers is the latest incident highlighting the dangers of an insecure, yet digitally enabled economy.

Present situation:

- According to a report by CERT-In (**India Ransomware Report**), there has been a 51% year-on-year increase in ransomware incidents. A majority of attacks are on data centers.
- **Large databases of personal data are sold regularly.** India has turned into a major hub for global cybercrime.
- The most serious problem comes from **organized cyberattacks** on large data repositories and critical public infrastructure such as AIIMS.
- This problem has also become **global in nature**. **For example**, last year Ireland was forced to shut down its public healthcare service for a while due to the ransomware attack.
- Moreover, **India is the cheapest place** in the world in terms of data tariff. It is also the nation with the highest per capita data consumption which allows it to generate a huge amount of data. The data generation is **likely to rise further** after the launch of 5G and satellite broadband.
- Digital platforms such as the **Digital India initiative, the Unified Payments Interface and the Open Network for Digital Commerce** have all caused an increase of the data online.

- Therefore, there is an urgent need to look into the issue and prevent citizen's data.

REASONS:

What can be the way ahead?

- First, a **personal data protection law** needs to be implemented at the earliest. It should – a) offer the citizens both adequate protection and the chance of recompense for damaging data leaks, b) limit the data collection by all regulated entities, especially the biometrics because the government organizations who collect it may not all have high standards of cybersecurity, c) limit the discretion enjoyed by the regulated entities in deciding the time to inform the victims of the data breaches.
- Second, **awareness programs** by agencies like the Indian Computer Emergency Response Team (CERT-In) should be made for individuals, government, and businesses.
- **Banning of potentially unsafe apps:** India had banned many apps (mostly of Chinese origin), which were found to be unsafe for usage by the Indian citizens.
- **Stage wise preparation:**

Cheap Accessibility of Data:

- India is famously the cheapest place in the world in terms of data tariff.
- It is also the nation with the highest per capita data consumption.

Increasing Dependency on Technology:

- As we grow faster, more and more systems are being shifted to virtual space to promote access and ease of use.
- However, the downside to this trend is the increased vulnerability of such systems to cyber-attacks.

Asymmetric and covert warfare:

- Unlike conventional warfare with loss of lives and eyeball to eyeball situations, cyber warfare is covert warfare with the scope of **plausible deniability**, i.e. the governments can deny their involvement even when they are caught.
- Therefore, cyber warfare has increasingly become the chosen space for conflict between nations.

Adverse relations with China:

- China is considered one of the world leaders in information technology. Therefore, it is expected to have capabilities to disable or partially interrupt the information technology services in another country.

Low digital literacy among the general public:

- It is often reported that people are duped easily by click-baiting them into clicking interesting content, which often has malware attached to itself.

Pre attack or Preparatory Phase:

- In this stage, the systems' gaps are identified and they are plugged in.
- The focus is on strengthening the defence mechanism and the firewalls and keeping the system up to date so that any potential threat is averted and the system is not compromised.

During the Attack:

- At the time of the attack, the focus is on stopping it as soon as possible and minimising the damage to the system.
- Also, it is to be ensured that the critical assets and data are not lost to the attack.
- When the attackers have been pushed out of the system, the focus shifts to restoring the services so that the consumers do not face long outages.

Post-Attack Phase:

- After the attack is over and the system is restored to normalcy, the focus is on identifying the loopholes or gaps in the system, understanding how the reaction could have been more swift and creating Standard Operating Procedure (SOPs) in case of similar future attacks.

GS IV

1. Contextualizing Ambedkar's Idea Of A Moral Democracy

There have been many studies on Dr B.R. Ambedkar's conceptualization of democracy, predominantly explained through the lens of social, political, and economic philosophies.

- Ambedkar's last work, **The Buddha and His Dhamma** shed light on how he understood democracy as a concept that affected every aspect of human life; it was essentially a way of life.
- Ambedkar's moral principles were **rooted in Buddhist philosophies**, he was also critical of extreme individualism that was a possible outcome of Buddhism, as such characteristics failed to engage in activism that challenged social order. Thus, he believed that there needed to be a balance between individualism and fraternity for a harmonious society.
- Ambedkar gave utmost **importance to practicality**. For him, concepts and theories needed to be tested as they were supposed to be practised in society. He used rationality and critical reasoning to analyze any subject matter, because he believed that a subject must first pass the test of rationality, failing which, it must be rejected, altered, or modified.

□ **Ambedkar divides morality into two categories: Social Morality and Constitutional Morality.**

- **Social Morality:** It was built through interaction, and that interaction was based on mutual recognition of human beings. However, due to the rigid systems of caste and religion, such interaction was not possible because one did not accept another person as a respectable human being because of their religion or caste background. Social morality was founded on human equality and respect.
- **Constitutional Morality:** It was a prerequisite for maintaining a democratic system in a country. He believed that only through a negation of hereditary rule, laws that represented all people, with people's representatives and a State which has the confidence of the people, can democracy be maintained. A single person or political party cannot represent the needs or desires of all people.
- Ambedkar realized that the caste system did not fit with his understanding of moral democracy. This was due to the traditional caste structure's hierarchical rule, with no mutual respect among individuals and complete subjugation of one group by another.

The Buddha and His Dhamma

- Ambedkar elaborates in *The Buddha and His Dhamma* on how the concepts of Dhamma, which include Prajna or thinking and understanding, Sila or good action, and finally Karuna or kindness, emerge as a morally transformative concept that dismantles regressive social relations.
- The incorporation of such rules aids in transforming the traditional approach to democracy in order to create a new form of democracy based on moral concepts.
- Thus, Ambedkar's concept of moral democracy rejects traditional caste-based religion that hinders social interaction and universalizes negative particularistic values, replacing them with positive particularistic values and moral orders that bind human beings together.

2. All hail the Vishwaguru

If you were ever confused by the question, "What are India's aspirations?" Help is at hand. Think of India as a Vishwaguru. Vishwagurus aspire to be teachers to the world. They point to the true spring of LIFE.

In 1999, one of the leaders of, Rashtriya Swayamsevak Sangh (RSS), wrote "people have to forego and limit their personal pleasure and work for the realisation of the dream of making Bharat the Vishwaguru again.

Great men such as Swami Vivekananda, Savarkar, Dr Hedgewar, Subhas Chandra Bose, Aurobindo Ghose, saw this dream and did wonderful work towards its realization

Vishwa Guru has to spread the light of knowledge. The quintessential message emanating from the idea of India is that civilisational cultures travel from the past through the present and to the future.

We can't break from our traditions but at the same time, we also can't be prisoners of them. India can set an example of how we can move towards modernity and still save ourselves from mindless Westernisation.



SPIRITUAL

This is the land of MENDICANTS — those selfless purveyors of knowledge, the gurus to the world who, discarding all possessions and ego, go forth and transform people's souls.

Vishwaguru signifies the MOTHER. It is associated with natality. Much that is good in the world was already born here. India is the mother of all democracies, the mother of all science, the mother of all ecology.

Vishwaguru signifies the comforting warmth of the MOTHERLAND. India that is Bharat is sacred territory. The territory itself washes off all sins.



MATERIAL

The Vishwaguru is also MATERIAL power, the factory of the world, a leader in manufacturing, the self-sufficient powerhouse in defence production, the land of abundance

The Vishwaguru, at its most useful, is a MEDIATOR. The world is wracked with conflicts: Russia versus the West, North versus South. The Vishwaguru is above all conflict, and is therefore the ideal mediator, the non-aligned that aligns the world



MODERN

The Vishwaguru is MODERNITY itself, the top of every index of development, cutting edge on every future trend.

The Vishwaguru is the idea of the MARVELLOUS itself: a riot of colour and culture like no other. Everything about it, its politics, its social idioms, defy classification. It is one of a kind.

Places in news:

- 1) **Srimukhalingam Temple:** Andhra Pradesh
 - It is dedicated to Lord Shiva, known as Sri Mukha Lingeswara Swamy, housing 3 Ancient Temples at one Location.
 - This temple is built in Kalinga architectural style on the banks of the Vamsadhara river.
- 2) **Great Lakes:** The Great Lakes of North America are five interconnected bodies of water straddling the US-Canada border. They are the largest group of freshwater lakes in the world.
 - The Great Lakes are **Superior, Michigan, Huron, Erie, and Ontario**. The US-Canada border passes through Lakes Superior, Huron, Erie, and Ontario. Lake Michigan lies entirely in the US. They drain into the Gulf of St Lawrence in the North Atlantic through the St Lawrence River. Formed due to melting of glaciers.



- 3) **Sun Temple at Modhera:** Two sites in Gujarat have recently made it to the tentative list of UNESCO World Heritage sites: **Vadnagar**, and **the Sun Temple of Modhera**, both in Gujarat.
 - It was built in 1026-27 CE during the reign of Bhima I of the Solanki dynasty
 - The temple complex is built in Maru-Gurjara style also known as Solanki style. This period was also known as the Golden Age of Gujarat.
 - In front of the temple is the Kunda (sacred pond) now called the Ramakunda. There are 108 miniature shrines between the kund and the temple.
 - Situated on the banks of Pushpavati River.
- 4) **Vainu Bappu Observatory:** is considered one of the most renowned observatories in India it is Located on Javadi Hills at Kavalur, Tamilnadu. The 40-inch telescope was installed in 1972.

- The telescope in the observatory is under the **Indian Institute of Astrophysics (IIA)**, an institute of the Department of Science and Technology (DST)
- **VainuBappu:** He has played a significant role in astronomy with major discoveries like the presence of rings around the planet Uranus, a new satellite of Uranus, and the presence of an atmosphere around Ganymede which is a satellite of Jupiter.

5) **Rock-cut relief sculptures of Unakoti:** In Tripura, built during 8th to 12th CE.

- The vertical surface of the Unakoti hills was used by the ancient people to carve various mythological scenes such as the different iconographic forms of **Siva, Ganesha, Uma-Maheshwara**.
- The images found at Unakoti can be classified into two categories:
- Majestic rock-cut images on the vertical surface of the hill and fallen boulders.
- Loose sculptures of smaller and medium sizes scattered on the hill.
- The influence of Buddhism is also seen in the sculptures of the region. There are various depictions of Boddhisattavas, Buddha and Buddhist motifs also found here.
- It has been added to the **UNESCO world heritage site** tentative list.

6) **Doklam:**

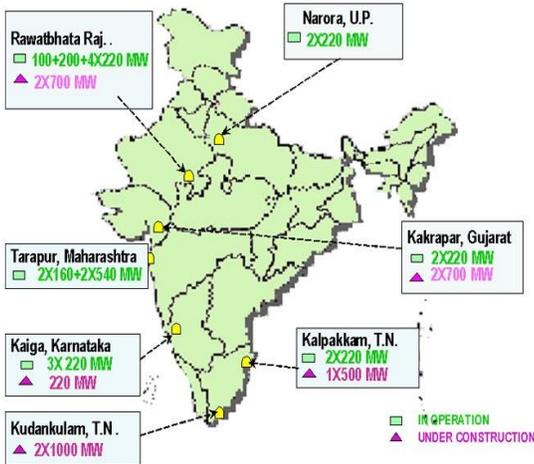


Donglang in Chinese, is an area spread over less than a 100 sq km comprising a plateau and a valley at the trijunction between **India, Bhutan and China**.

- It is surrounded by the Chumbi Valley of Tibet, Bhutan's Ha Valley and Sikkim.

- Doklam is strategically located close to the Siliguri Corridor, which connects mainland India with its north-eastern region.
- The corridor, also called Chicken’s Neck, is a vulnerable point for India.

7) Nuclear power plants in India:



Nuclear Power plants in Operation	Nuclear Power Plants under Construction	Planned Nuclear Power Plants
<ul style="list-style-type: none"> ▪ Rawatbhata (Rajasthan) ▪ Tarapur (Maharashtra) ▪ Kudankulam (Tamil Nadu) ▪ Kakrapar (Gujarat) ▪ Kalpakkam (Tamil Nadu) ▪ Narora (Uttar Pradesh) ▪ Kaiga (Karnataka) 	<ul style="list-style-type: none"> ▪ Kakrapar 3&4 (Gujarat) ▪ Rawatbhata (Rajasthan) ▪ Kudankulam 3&4 (Tamil Nadu) ▪ Kalpakkam PFBR (Tamil Nadu) 	<ul style="list-style-type: none"> ▪ Jaitapur (Maharashtra) ▪ Kovvada (Andhra Pradesh) ▪ Mithi Virdi (Gujarat) ▪ Haripur (West Bengal) ▪ Gorakhpur (Haryana) ▪ Bhimpur (Madhya Pradesh) ▪ Mahi Banswara (Rajasthan) ▪ Kaiga (Karnataka) ▪ Chutka (Madhya Pradesh) ▪ Tarapur (Maharashtra)

- 8) Koundinya Wildlife Sanctuary:** It is located in Andhra Pradesh.
- This Sanctuary comes under **Project elephant** - a Country wide Elephant Conservation Project taken up by Government of India.
 - The only home for Asiatic elephants in the State of Andhra Pradesh.
 - An 18-member herd of all female elephants from the forests of Gudiyattam and Pernambattu of Tamil Nadu are currently on the prowl in the Koundinya wildlife sanctuary zone in Chittoor district, apparently “in search of mates”.

- 9) Kumbhalgarh Fort:** Kumbhalgarh is the second most important citadel after Chittorgarh in the Mewar region.
- The fort was built in the 15th century AD by Rana Kumbha and it surrounds Udaipur.
 - It is the second-longest wall of the world after the Great Wall of China.
 - The fort has also been designated a UNESCO World Heritage Site as part of the group of Hill Forts of Rajasthan. It is strategically located on the western Aravalli hills.
 - The fort contains seven fortified gateways and several Jain temples, as well as the Lakhola Tank, the most famous tank within the fort, which was built by Rana Lakha.

- 10) Kanger Valley National Park:** It is located in the state of Chhattisgarh. The name of Kanger Ghati National Park is derived from the Kangar river.
- The most popular species in this area is Bastar Maina (The state bird of Chattisgarh). Bastar Maina, is a type of Hill maina which is capable of emulating the human voices.
 - This National Park is home to three exceptional caves – famous for their amazing geological structures of Kutumbasar, Kailash and Dandak-Stellagmites and Stalactites.
 - Tirathgarh Waterfall is located in Kanger Valley National Park.

- 11) Sri Venkateswara temple:** It is a **Vaishnavite temple** in Andhra Pradesh.
- The temple is also known by other names like Tirumala Temple, Tirupati Temple, Tirupati Balaji Temple. The Temple is constructed in Dravidian architecture.
 - The Temple is dedicated to **Lord Sri Venkateswara, an incarnation of Vishnu**, who is believed to have appeared here to save mankind from trials and troubles of Kali Yuga.
 - It is one of the richest temple in the world in terms of donations received and wealth.
 - **Tirupati Laddu:** The renowned sweet, Tirupati Laddu which is enriched with dried fruits and nuts is a registered Geographical Indicator (GI).

12) Mount Semeru Volcano: Erupted recently triggering top alert status.

- It is located in **Indonesia** and is one of **East Java Island's tallest volcano**.
- Semeru's last major eruption was in December 2021.
- Semeru, also known as Mahameru, has erupted numerous times in the past 200 years.

13) Samruddhi Corridor: The Expressway will reduce the time taken to 839-km distance between Nagpur and Mumbai, to seven hours. This currently takes at least 17 hours.

- It passes through three wildlife sanctuaries: **Katepurna wildlife sanctuary in Akola, Karanja-Sohol Black Buck sanctuary in Washim;** and **Tansa wildlife sanctuary in Thane.**

14) SERBIA KOSOVO TENSIONS: Kosovo is a mainly ethnic Albanian territory that declared independence from Serbia in 2008.

- The Serbian government has refused to recognize Kosovo's statehood and still considers it part of Serbia, even though it has no formal control there.



- Over 100 countries have recognized Kosovo's independence, including the United States and most Western countries. Russia, China and five European Union nations have sided with Serbia.

15) Kanheri Caves: they are a group of caves and rock-cut monuments located within the forests of the Sanjay Gandhi National Park, Mumbai.

- The name Kanheri is derived from 'Kanhagiri' in Prakrit and occurs in the Nasik inscription of the Satavahana ruler VasisthiputraPulumavi.
- The Kanheri caves comprise more than 110 different rock-cut monolithic excavations and is one of the largest single excavations in the country.
- These excavations were primarily undertaken during the Hinayana phase of Buddhism but also has several examples of the Mahayana stylistic architecture as well as few printings of the Vajrayana order.

16) Red sea: Bordering Countries: Egypt, Saudi Arabia, Yemen, Sudan, Eritrea and Djibouti.

- Connected to the Indian ocean in south through the Bab el Mandeb strait and the Gulf of Aden.
- Gulf of Aden is located in the Arabian Sea between Yemen and Somalia.



17) Pennaiyar River Dispute:

DISPUTE SO FAR

1892 | State of Madras and Mysore entered into an agreement on use, control and distribution of waters of the inter-state river. It was modified and amended in 1933

2012 | Tamil Nadu objects to Karnataka's plan to divert Pennaiyar waters to about 160 tanks in Malur taluk

2013 | TN gets to know Karnataka proposed a check dam across river Markandeya, a tributary of Pennaiyar. Communications followed since then



A tributary of Pennaiyar in Kelavarpalli, Krishnagiri district

2018 | TN moves SC to declare the unilateral action of Karnataka illegal

Dec 2018 | Centre says no request for appointment of arbitrator under the agreement was received from either state

Mar 2019 | Karnataka argues that consent of TN government not required

April | TN blames Centre for failing to initiate action to stop the unauthorized diversions

July | TN files interlocutory petition against construction of dam across river Markandeya

Nov 14 | Court dismissed the petition and posted the original suit for hearing on January 10

Prelims Booster

1.12.22

1) **Great Indian Bustard (GIB):** It is one of the largest flying birds in the world, and India's heaviest flying bird. It is the **State bird of Rajasthan**.

- Rajasthan accounts for 95% of its total world population. They are mainly in Jaisalmer district of Rajasthan, including the Desert National Park.
- Grasslands of Kutch in Gujarat which is home to second-largest bustard population in India.
- Listed in: Schedule I of the Indian Wildlife (Protection) Act, Appendix I of CITES, **Critically Endangered** on the IUCN Red List.
- They feed on grass seeds, insects like grasshoppers and beetles, and sometimes even small rodents and reptiles.

2) **Zombie Virus:** The term is used for those viruses, which have been dormant for thousands of years. The virus emerged due to the thawing of permafrost as the global temperature is rising.

- All of the “**zombie viruses**” have the potential to be infectious and hence pose a “health danger”.
- The oldest Zombie virus is **Pandoravirus yedoma**, named after the mythological character Pandora. Pandoravirus was discovered in a lake in Yukechi Alas in Yakutia, Russia.
- French scientists have warned of the onset of another outbreak after they revived a 48,500-year-old zombie virus.

3) **Wildlife Trust of India (WTI):** it is non-profit nature conservation organisation.

- It was formed in **1998** in response to the many crises confronting India's wildlife and wild habitats. WTI is a registered charity in India (under **Section 12A of the Income Tax Act, 1961**)
- It is dedicated to the conservation of India's wildlife, which it accomplishes by collaborating with local communities and governments on a variety of projects ranging from species rehabilitation to the prevention of illegal wildlife trade.

4) **UNIVERSAL FLU VACCINE:** The experimental flu vaccine relies on mRNA. It is in early stages — tested only in mice and ferrets — but the vaccine provides

important proof that a single shot could be used against an entire family of viruses.

- If the vaccine succeeds in people, the approach could be used against other virus families, perhaps including the coronavirus.
- The vaccine would not replace annual flu shots but would provide a shield against severe disease and death from potential pandemic threats.

5) **Wassenaar Arrangement:** It has been established in order to contribute to regional and international security and stability, by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilising accumulations.

- The body came into being in **1996** to succeed the Cold War-era Coordinating Committee for Multilateral Export Controls. Members: 42. India joined in 2017 as its 42nd state.
- The Arrangement is based on **five crucial principles:** It contributes to regional and international security. It promotes transparency and responsibility in transfers of conventional arms and dual-use goods and technologies, It complements and reinforces the export control regimes for weapons of mass destruction, It is not directed against any state or group of states. It uses export controls as a means to combat terrorism.

2.12.22

1) **Personality Rights:** It refers to the right of a person to protect his/her personality under the right to privacy or property. It is necessary for renowned personalities/celebrities to register their names to save their personality rights like voice, name etc.

- Personality rights consist of **two types of rights:**
- Firstly, **the right of publicity**, or the right to keep one's image and likeness from being commercially exploited without permission or contractual compensation, which is similar (but not identical) to the use of a trademark; and Secondly, **the right to privacy** or the right to not have one's personality represented publicly without permission.
- However, under common law jurisdictions, publicity rights fall into the realm of the 'tort of passing off'. Passing off takes place when someone intentionally or unintentionally passes

off their goods or services as those belonging to another party.

- Publicity rights are governed by statutes like the Trade marks Act 1999 and the Copyright Act 1957.

2) **Central Adoption Resource Authority (CARA):** It is a statutory body of **Ministry of Women & Child Development, Government of India**. CARA is designated as the Central Authority to deal with inter-country adoptions in accordance with the provisions of the Hague Convention on Inter-country Adoption, 1993, ratified by Government of India in 2003.

- CARA primarily deals with adoption of orphan, abandoned and surrendered children through its associated /recognised adoption agencies.

3) **UNESCO Intangible Cultural Heritage:** Baguette (French loaf) makes it to UNESCO's intangible cultural heritage list.

- Intangible cultural heritage refers to "traditions or living expressions inherited from our ancestors and passed on to our descendants, such as oral traditions, performing arts, social practices, etc." This list is published by the Intergovernmental Committee for the Safeguarding of Intangible Cultural Heritage.
- Members of the committee are elected by State Parties meeting in a General Assembly.
- In India, Sangeet Natak Akademi is the nodal body coordinating with UNESCO.
- **14 Intangible Cultural Heritage (ICH) elements from India.**

4) **Where did the Earth's oxygen come from:** A recent study has shown that a part of oxygen in primordial earth came from a tectonic source via the movement and destruction of the Earth's crust.

- Currently, 21% of the atmosphere consists of Oxygen. But 2.8 to 2.5 billion years ago — this oxygen was almost absent.
- During subduction, magmas are formed when oxidised sediments and bottom waters — cold, dense water near the ocean floor — are introduced into the Earth's mantle. This produces magma with high oxygen and water content.

5) **Natovenatorpolydontus:** World's First Swimming Dinosaur was Discovered in Mongolia.

- A newly described dinosaur from Mongolia called Natovenatorpolydontus lived about 72 million years ago during the Cretaceous Period.

Built like a diving bird with a streamlined body while possessing a goose-like elongated neck and a long flattened snout with a mouth bearing more than 100 small teeth.

5.12.22

1) **Elaliite and Elkinstantonite:** Researchers in Canada have discovered two new minerals in a meteorite that landed in **Somalia**. The 15-tonne El Ali meteorite was unearthed in Somalia in 2020.

- The meteorite came from an asteroid in the Asteroid Belt between Mars and Jupiter.
- The 2-metre-wide meteorite has been well known to generations of people who live in the area, where it was named Nightfall.

2) **China-Indian Ocean Region Forum:** China's top development aid agency convened the first "China-Indian Ocean Region Forum" in the southwestern Chinese city of Kunming.

- The forum was "the first high-level official development cooperation forum jointly held by China and countries in the Indian Ocean Region". The forum underlines China's growing strategic interests in a region where its economic footprint has been deepening.
- During the forum, China "proposed to establish a marine disaster prevention and mitigation cooperation mechanism between China and countries in the Indian Ocean region".
- All parties agreed to strengthen policy coordination, deepen development cooperation, increase resilience to shocks and disasters etc.
- The meet was organised by the China International Development Cooperation Agency (CIDCA).

3) **Strep A bacterial infection:** also known as **Group A Streptococcus**, is a bacterium found in the throat and on the skin. These are communicable and can spread through coughs, sneezes.

- These infections usually tend to be fairly harmless but in very rare circumstances when the bacterium produces a toxin it can gain access to the bloodstream and cause really serious illness.
- Antibiotics are usually effective at treating Strep A or iGAS infections. Currently, there is no vaccine available to prevent them.

4) **Oceansat-3**: ISRO's PSLV-C54 rocket launched the Oceansat-3 along with eight nano satellites, including the Bhutan-SAT, from Sriharikota.

- Oceansat-3 is the third in its set of ocean satellites that are part of India's ocean observation programme. It is a multi-sensor observation satellite, which is expected to operate till 2027.
- The Oceansat-3 is envisaged to observe ocean colour data, Sea Surface Temperature (SST) and wind vector data to use in oceanography, climatic and meteorological applications. It also supports value-added products such as potential fishing zones.

5) **First Loss Default Guarantee (FLDG) system**: is a lending model between a fintech and a regulated entity in which a third party guarantees to compensate up to a certain percentage of default in a loan portfolio of the Regulated Entities (RE).

- Under these agreements, the fintech originates a loan and promises to compensate the partners up to a pre-decided percentage in case customers fail to repay.
- The bank/NBFC partners lend through the fintech but from their own books. FLDG helps expand the customer base of traditional lenders but relies on the fintech's underwriting capabilities. A report by an RBI-constituted working group on digital lending has laid down risks of FLDG agreements with unregulated entities. The other concern is that FLDG costs are often passed on to customers.

6.12.22

1) **Social Hostilities Index (SHI)**: The Washington-based think tank Pew Research Centre has recently come out with a study that puts India at the top of its index of social hostilities involving religion in 2020 in the context of the impact of Covid restrictions.

- India's SHI in 2020 was worse than neighbouring Pakistan and Afghanistan
- The report covered **198 countries**. The SHI measures acts of religious hostility by private individuals, organizations or groups. The index comprises 13 metrics, including religion-related armed conflict or terrorism and mob or sectarian violence.
- Among the most populous countries, **India, Nigeria, Pakistan, Egypt and Bangladesh** had "very high" social hostilities involving religion.

2) **National Bamboo Mission (NBM)**: The Restructured National Bamboo Mission is a centrally sponsored scheme (CSS).

- It aims to increase the area under bamboo plantation in non forest Government and private lands, improve post-harvest management, to promote product development keeping in view market demand, by assisting R&D, entrepreneurship etc.
- Implementation: It is being implemented through the **state nodal department** which is nominated by the State/UT governments concerned.

3) **Lusophone world**: India is strategically engaging with a new geopolitical grouping: the **Lusophone** (Portuguese-speaking countries). In line with it, India is hosting the International Lusophone Festival in Goa. Portuguese ruled over Goa between 1510 till 1961.

- The Lusophone world is spread over nine countries across four continents, and Portuguese is the most widely-spoken language in the Southern Hemisphere.

4) **Paris Club**: it is a group of officials from major creditor countries whose role is to find coordinated and sustainable solutions to the payment difficulties experienced by debtor countries.

- Founded in **1956** with headquarters in Paris (France)
- **India** is not a member of the club and acts as an **ad-hoc participants**

5) **World Soil Day 2022**: It is observed every year on **December 5**, to highlight the value of healthy soil and to promote the sustainable management of soil resources since **2014 (first official soil day)**

- **Regenerative agriculture**: It is a conservation and rehabilitation approach to food and farming systems. It focuses on topsoil regeneration, increasing biodiversity and improving the water cycle
- Reversative agriculture (organic or natural farming) — a low-cost approach to reducing greenhouse gas emissions.
- Organic farming does not use chemicals, but it does increase organic matter content, microorganism population and plant availability of both micro- and macro-nutrients.

7.12.22

1) **Language Model**: A language model is a software that prints out a sequence of words as output that are

related to some words given as input with appropriate semantic relation; in practical terms, it means that it can perform tasks like answering questions and carrying on a conversation with humans. It is often used in Natural Language Processing (NLP) applications, such as speech recognition, automatic translation, and text generation.

- There are a few other language models like: BERT (Bidirectional Encoder Representations from Transformers) from Google.
- ChatGPT is what is called a Language Model, rather than a chat bot. It has been developed by OpenAI, a research institute founded in 2015.

2) **Calling Name Presentation (CNAP)**: The feature would provide an individual with information about the calling party (similar to 'Truecaller' and 'Bharat Caller ID & Anti-Spam').

- The idea is to ensure that telephone subscribers are able to make an informed choice about incoming calls and curb harassment by unknown or spam callers.

3) **eSanjeevani**: e-health initiative of the Ministry of Health and Family Welfare, it strives to provide an alternative to conventional physical consultation via the digital platform.

- It has garnered the distinction of being the world's largest government-owned telemedicine platform. It consists of two verticals
- 1st vertical strives to bridge the rural-urban digital health divide by providing assistance to Ayushman Bharat (AB) scheme. 2nd vertical is the eSanjeevani OPD which uses technology via smartphones, tablets and laptops to get doctor consultations inhouse.
- eSanjeevani is a part of the Ayushman Bharat Digital Health Mission. More than 45000 IDs have been generated via the eSanjeevani application.

4) **UN Groundwater Summit 2022**: Organised by UN-Water, UNESCO and the International Groundwater Resources Assessment Centre.

- **Aim**: To raise awareness on groundwater conservation, focus on groundwater management.
- To mark the completion of the "Groundwater: Making the invisible visible" campaign run by UN-Water throughout 2022.

- Main themes of the discussions: The 5 pillars of the SDG 6 Global Acceleration Framework – data and information, capacity development, innovation, finance and governance.
- **"Groundwater: Making the invisible visible"** campaign: It highlighted the role of groundwater in alleviating poverty, food and water insecurity and socio-economic development hurdles.
- Groundwater is India's most used water resource, accounting for a quarter of total global groundwater extraction.
- According to the **2021 CAG report**, groundwater extraction in India has exceeded the recharge rate, threatening 80% of potable water over the next two decades.

5) **Drones**: A **drone** or **UAV** (Unmanned Aerial Vehicle) is a remotely controlled flying device.

- Drones have been divided into **five categories** based on their weight (existing rules) –
- **Nano**: Less than or equal to 250 grams, **Micro**: From 250 grams to 2kg, **Small**: From 2 kg to 25kg, **Medium**: From 25kg to 150kg, **Large**: Greater than 150kg.
- In India, the **Directorate General of Civil Aviation (DGCA)** governs the use of all (manned or automated) aerial vehicles. 'The Drone Rules, 2021', to regulate the use and operation of Drones or Unmanned Aerial Systems.

8.12.22

1) **Conjugal visits for prisoners**: It refers to the concept of allowing a prisoner to spend some time in privacy with his spouse within the precincts of a jail.

- Conjugal visits are considered a fundamental right of the spouses of the prisoners
- Recognized as prisoner rights (by UN and International Covenant on Civil and Political Rights). Part of a prisoner's right to life and inherent dignity
- Madras HC (in Meharaj vs State (2022)): There have to be differential standards in the enforcement of Article 21 for law abiders and law violators.

2) **SpaceTech Innovation Network (SpIN)**: ISRO has signed a MoU with Social Alpha to launch SpaceTech Innovation Network

- India's first dedicated platform for innovation, curation and venture development for the

blooming space entrepreneurial ecosystem. It is a one-of-a-kind PPP for start-ups and SMEs in the space industry. Provides a level playing field for all stakeholders to contribute.

- The 1st SpIN innovation challenge was launched to develop solutions in areas like urbanisation, mapping, natural resources management etc. Selected start-ups can access ISRO and Social Alpha's infrastructure and resources

3) **Arctic Landscape:** Scientists have found the oldest (at least 2 million years old) known fragments of DNA, just 600 miles from the North Pole that reveals that the region was once covered by a forest of poplar and birch trees inhabited by mastodons, caribou and Arctic hares

- The Arctic sea ice is seasonal. It forms in the winter when seawater freezes into massive floating ice blocks and thaws during the summer.
- Understanding the timings of thawing and freezing is crucial in knowing the heat budget of the 'Atmospheric-ice-ocean' system
- The surface and bottom of the Arctic sea ice often do not melt and freeze simultaneously
- The study is crucial to study the impact of climate change on the Arctic Ocean, as past reports show us temperatures in the Arctic are rising four times as fast as in the rest of the world.

4) **Nature Positive Fund:** Nature-positive is the term used to describe a world where nature – species and ecosystems – is being restored and is regenerating rather than declining

- It gives a Monetary valuation of nature's ecological functions.
- If the total monetary value remains constant, it means that nature remains stable.
- Ex – Carbon Trading was introduced in Kyoto to monetise carbon emissions
- More than 100 experts have rejected the idea of this fund at the CoP15 on Convention on Biological Diversity in Montreal, Canada.

5) **Gamma-Ray bursts (GRBs):** GRBs are powerful astronomical cosmic bursts of high-energy gamma-ray. GRB emits more energy in a few seconds than our Sun will emit in its lifetime and has two distinct emission phases:

- the short-lived prompt emission (the initial burst phase that emits gamma-rays), followed

by a long-lived multi-wavelength afterglow phase

- The prompt emission (initial gamma-ray emission) of GRBs are automatically discovered by space-based gamma-ray missions such as NASA's Fermi Gamma-ray Space Telescope, Neil Gehrels Swift Observatory, and India's AstroSat.

9.12.22

1) **National Party (ECI Criteria):** At present, there are eight national political parties in India. They are;

- Bharatiya Janata Party, Communist Party of India, Communist Party of India (Marxist), Indian National Congress, Nationalist Congress Party, National People's Party, All India Trinamool Congress, Bahujan Samaj Party
- It is 'recognised' in at least four states; OR
- if its candidates polled at least 6% of valid votes in any four or more states in the last Lok Sabha or Assembly elections and have at least four MPs in the last LS polls; OR
- if it has won at least 2% of the total seats in LS from not less than three states.

2) **EAGLE ACT:** In USA, currently there is a cap of per-country limit of 7% from a single country for green cards.

- The act will eliminate a per-country cap on employment-based green cards — a policy that disproportionately affects Indian immigrants. If passed, this legislation would phase out the per-country caps over the course of nine years
- A Green Card, known officially as a Permanent Resident Card, is a document issued to immigrants to the US as evidence that the bearer has been granted the privilege of residing permanently.

3) **Kilonova:** Kilonova explosions take place during the merger of two neutron stars or a neutron star and a black hole releasing Gamma-Ray Bursts (GRB)

- Stellar black holes are made when the centre of a very big star falls in upon itself or collapses. When this happens, it causes a supernova — an exploding star that blasts part of the star into space.
- Both kilonova and supernova produce GRBs (Kilonova – short duration, and Supernova- long duration). However, a new event (from a Kilonova), generated a GRB that lasted roughly 50 seconds (long-duration), puzzling scientists.

4) **Krishi Udan Scheme 2.0:** launched in 2021, the main objective of the Krishi Udan Scheme 2.0 is to increase share of air carriage in the modal mix for transportation of Agri-produce, which includes horticulture, fishery, livestock and processed products.

- The scheme assists farmers in transporting agriculture products so that it improves their value realisation.
- There is no specific budget allocation under Krishi Udan Scheme. It is a convergence scheme where eight Ministries/Departments
- The Ministry of Civil Aviation (MoCA) is also developing an online platform named E-Kushal (Krishi Udaan for Sustainable Holistic Agri-Logistics). It will facilitate information dissemination to all stakeholders regarding the transportation of agricultural produce.

5) **Share Buyback:** When a listed company buys its own shares from the existing shareholders, it's known as a share buyback, which is also called a share repurchase. The process reduces the number of outstanding shares in the open market over a period of time.

- The maximum limit of any buy-back is 25 per cent or less of the aggregate of paid-up capital and free reserves of a company. To be eligible to participate in the share repurchase process, a shareholder needs to hold the shares of the company, which has announced the buyback, before the record date declared in the announcement, in demat form.

10.12.22

- 1) A) The Chief Justice of India and the Judges of the Supreme Court are appointed by the President under clause (2) of Article 124 of the Constitution.
 - The names are recommended by the Collegium.
 - The collegium sends its final recommendation to the President of India for approval. The President can either accept it or reject it. In the case it is rejected, the recommendation comes back to the collegium. If the collegium reiterates its recommendation to the President, then he/she is bound by that recommendation.
 - Appointment to the office of the Chief Justice of India should be of the senior most Judge of the Supreme Court considered fit to hold the office.

- Whenever there is any doubt about the fitness of the senior most Judge to hold the office of the Chief Justice of India, consultation with other Judges as envisaged in Article 124 (2) of the Constitution would be made for appointment of the next Chief Justice of India.

- 2) A) Net metering is a billing mechanism that credits solar energy system owners for the electricity they add to the grid, if you generate more energy (from household solar rooftops) than you consume at home.
- 3) B) Base erosion and profit shifting (BEPS) refers to tax avoidance strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations. Under the inclusive framework, over 100 countries and jurisdictions are collaborating to implement the BEPS measures and tackle BEPS. Double-tax avoidance treaties and tax-information exchange between member nations are used to curb this practice.
- 4) C) **Foreign direct investment (FDI)** is an investment from a party in one country into a business or corporation in another country with the intention of establishing a lasting interest.
 - With FDI, foreign companies are directly involved with day-to-day operations in the other country.
 - FDI enters in India through either of the two routes:
 - Automatic route
 - The non-resident or Indian company does not require prior nod of the RBI or government of India for FDI.
 - Government-approval route
 - The government's approval is mandatory and the company will have to file an application through Foreign Investment Facilitation Portal.
- 5) A) An 18-member herd of all female elephants from the forests of Gudiyattam and Pernambattu of Tamil Nadu are currently on the prowl in the Koundinya wildlife sanctuary zone in Andhra Pradesh apparently "in search of mates".

- This Sanctuary comes under Project elephant - a Country wide Elephant Conservation Project taken up by Government of India. The only home for Asiatic elephants in the State of Andhra Pradesh.

11.12.22

1) **Cyclone Mandous:** it is a severe cyclonic storm in the Bay of Bengal

- Cyclones are caused by atmospheric disturbances around a low-pressure area distinguished by swift and often destructive air circulation.
- Cyclones are known as typhoons in the China Sea and Pacific Ocean; hurricanes in the Caribbean Sea and Atlantic Ocean; tornados in the Guinea lands of West Africa and southern USA; willy-willies in north-western Australia and tropical cyclones in the Indian Ocean.

2) **Himalayan Medicinal Plants:** Meizotropispellita, commonly known as Patwa, is a perennial shrub with restricted distribution that is endemic to Uttarakhand. It is 'critically endangered'. The leaves possess strong antioxidants, promising a natural substitute for synthetic antioxidants in pharmaceutical industries.

- Fritillaria cirrhosa (Himalayan fritillary) is a perennial bulbous herb. In China, the species is used for the treatment of bronchial disorders and pneumonia. The plant is also a strong cough suppressant. It is listed as vulnerable.
- Dactylorhiza hatagirea (Salampanja) is extensively used in Ayurveda, Siddha, Unani and other alternative systems of medicine. It is listed as endangered.

3) **Trisonic Wind Tunnel:** it is a system to aid aerodynamic design of rockets and re-entry spacecrafts by characterising a scaled model by evaluating forces, moments, load distribution, unsteady pressures, acoustic levels etc.

- The tunnel can be used for testing various space vehicles in three flight regimes —subsonic, transonic and supersonic. The tunnel can simulate flight conditions from 0.2 times the speed of sound (68 m/s) to 4 times the speed of sound (1360 m/s).
- The trisonic wind tunnel was implemented through M/s Tata Projects India Ltd with the assistance of industries across the country.

- It is inaugurated at Vikram Sarabhai Space Centre (VSSC) which is already equipped with a hypersonic wind tunnel

4) **Air-Breathing Scramjet Engine:** ISRO successfully conducted the hot test of scramjet engine.

- In an air-breathing scramjet engine, air from the atmosphere is rammed into the engine's combustion chamber at a supersonic speed of more than Mach two.
- In the chamber, the air mixes with the fuel to ignite a supersonic combustion but the cruiser's flight will be at a hypersonic speed of Mach six to seven.
- So it is called supersonic combustion ramjet or Scramjet.

5) **Changes in tribe status, names etc:**

- Narikoravan and Kuruvikkaran community: demanding ST status in Tamil Nadu
- Betta-Kurubato be used as a synonym for the already categorised Kadu kuruba in the ST list of Karnataka.
- BhariyaBhumia tribe in the ST list of Chhattisgarh: add synonyms in devnagri script.

12.12.22

1) **Meitei script:** Newspapers in Manipur will be replacing the Bengali script with the Meitei script

- Patronised by Meitei rulers fell into disuse after the advent of Hinduism and eventually disappeared, as Bengali script became popular. A movement to revive the Meitei Mayek started in the the 1930s and gathered strength in the 1950s.
- The Manipur Official Language Act, 1979, was enacted with the definition of Manipuri language as "Meiteilon written in Bengali script and spoken by the majority of Manipuri population".
- By an Amendment Act of 2021, the definition of "Manipuri language" in the Official Language Act was modified as "Meiteilon in Meitei Mayek and spoken by the majority of the Manipur population"

2) **Kochi-Muziris Biennale:** The Kochi Muziris Biennale was founded in 2011 by Kerala-born, Mumbai-based artists Bose Krishnamachari and Riyas Komu.

- A biennale is an international large-scale showcase of art that takes place every two years at a particular site, centred around a curatorial theme.

- The theme for 2022: “In Our Views Flow Ink and Fire”.

3) **IND-INDO CORPAT Exercise:** India and Indonesia have been carrying out CORPATs twice a year since 2002.

- Aim: Keeping the vital part of the Indian Ocean Region (IOR) safe and secure for commercial shipping, international trade and conduct of legitimate maritime activities.
- CORPATs help build understanding and interoperability between navies, and facilitate institution of measures to prevent and suppress Illegal Unreported Unregulated (IUU) fishing, drug trafficking, maritime terrorism, armed robbery and piracy.

4) **Grey-bellied Wren Babbler:** It is a specie of songbird named after the Lisu, the local community.

- This is mostly found in Myanmar with some birds occurring in adjoining China and Thailand.
- IUCN Status: Least Concern
- Habitat: Subtropical moist montane forest.
- Features: Dark edges to its back and crown feathers give it a scaly-looking quality.
- Forages on ground and in undergrowth, almost always under heavy cover and rarely emerging into the open.

5) **NVS-01 onwards:** ISRO is introducing the L1 frequency in all its future satellites with an aim to promote the civilian use of NAVigation with the Indian Constellation (NavIC).

- The seven satellites in the NavIC constellation so far use two frequencies for providing positioning data — L5 and S band.
- The next satellites, starting from NVS-01 onwards, will have an L1 band for civilian navigational use.
- The L1 frequency is one of the most commonly used frequencies in the Global Positioning System (GPS),
- It will increase the use of the regional navigation system in wearable devices and personal trackers that use low-power, single-frequency chips.

13.12.22

1) **L1 Frequency:** Radio-frequency communication refers to wireless communication through the air with electromagnetic wave frequencies ranging from 3 kHz to 300 GHz. L1 frequency is the most commonly used and oldest frequency in GPS, which even the less

sophisticated, civilian-use devices such as smartwatches are capable of receiving.

- Thus, with this band, the use of NavIC in civilian-use gadgets can go up
- ISRO plans to set up ground stations in Japan and France to better triangulate the entire area under NavIC coverage.

2) **Stiff-Person Syndrome:** It is a rare autoimmune neurological condition that affects the central nervous system and can cause rigidity throughout the body and painful muscle spasms.

- It frequently affects women with a median onset of 35 to 40 years of age.
- The cause behind SPS is not fully understood yet. Several symptoms improve with oral diazepam (an anti-anxiety and muscle relaxant drug) or with drugs that alleviate muscle spasms, such as baclofen or gabapentin.
- Treatment involves the use of both symptomatic agents to enhance GABAergic influences and Immuno modulating treatment aimed at the autoimmune basis of the disease except Corticosteroids because of a high incidence of concurrent diabetes mellitus.

3) **Arab-Built Lunar Spacecraft:** A SpaceX Falcon 9 rocket recently carried into space the first ever Arab-built lunar spacecraft. It was launched from the Cape Canaveral Space Force Station in Florida.

- The mission is taking a low energy route to the moon and is due to arrive around April 2023.
- It was built by Dubai’s Mohammed bin Rashid Space Centre (MBRSC), in the United Arab Emirates (UAE), and is being delivered by the HAKUTO-R lander, engineered by Japanese lunar exploration company ispace
- If the landing is successful, HAKUTO-R will also become the first commercial spacecraft ever to make a controlled landing on the moon.
- Scheduled to touch down in the Atlas crater the northeast part of the moon, the rover has been designed to withstand the lunar night, when temperatures can reach as low as -183°C, or -297.4°F.

4) **“Holy Grail” of Energy Production:** Scientists have been able to generate higher energy in a fusion experiment than the energy applied for causing the fusion reaction.

- Nuclear fusion is described as the "holy grail" of energy production, as it is almost limitless, requires no fossil fuels, and leaves behind no hazardous waste or GHG emissions.
- It is the process that powers the Sun and other stars. It works by taking pairs of light atoms and forcing them together - this "fusion" releases a lot of energy.
- For example, the fusion of two nuclei of a heavier isotope of hydrogen, called tritium
- Issue: forcing and keeping the elements together in fusion requires very high temperatures and pressures.

5) **Nirbhaya Fund:** For implementation of initiatives aimed at enhancing the safety and security for women in the country. Established in: 2013 by Union Finance Ministry.

- Type: It is a non-lapsable corpus fund. It was a 10 billion corpus
- The fund is administered by the Department of Economic Affairs of the finance ministry.

14.12.22

1) **Environment Education, Awareness and Training (EEAT):**

it is a Central Sector scheme implemented by MoEFCC to promote environmental awareness and mobilize students' participation for environment conservation through two major programmes namely Green Corps (NGC) Programme and National Nature Camping Programme (NNCP)

- NGC Programme: Under this scheme more than 1 lakh Eco-clubs have been formed in schools and colleges to educate and aware students. A financial assistance of Rs 5,000/- per Eco-club used to be provided.
- NNCP: Under this scheme, organization of field visits/ nature camps in different Protected Areas/ Nature Parks/ Tiger Reserves of the country for students were supported.

2) **Geminids Meteor Shower:** Geminids comes from the constellation Gemini, from whose location in the sky the meteor shower appears to originate. The constellation is not the source of the meteors.

- The Geminids are unique because unlike most meteor showers, they originate not from a comet, but from an asteroid, the 3200 Phaethon.

3) **Base Editing:** For the first time, a new gene editing technology called base editing was used to modify

immune cells and successfully treat a teen with treatment-resistant leukemia.

- Base Editing treatment is a modification of chimeric antigen receptor, or CAR, T-cell therapy.
- But instead of using the CRISPR gene editing technique, the clinicians used the more precise base editing technique to alter donor immune cells which allows to zoom into a precise part of the genetic code to alter the molecular structure of just one base.
- Those edited cells are given to the patient to "rapidly find and destroy T-cells in the body, including leukemic T-cells.
- Base editing is an even more precise gene editing technique than CRISPR and has fewer risks of unwanted effects on the chromosomes and thus less risk of side effects.

4) **T-cell acute lymphoblastic leukaemia (T-ALL):** T-ALL affects the stem cells in the bone marrow that produce a particular kind of white blood cells (WBC) called T lymphocytes (T cells).

- These cells provide a person immunity by killing cells carrying infections, activating other immune cells, and regulating the immune response.
- At least 20% of these WBC are atypical— as they accumulate in the bone marrow, they crowd out "good" WBCs and hence weaken the immune system.
- While found in both children and adults, T-ALL's incidence decreases with age.
- Typical treatment for T-ALL is similar to that of any leukaemia— chemotherapy and stem cell/bone marrow transplant.

5) **Forabot:** The Fossil sorting robot: Foraminifera (forams) are very simple microorganisms that secrete a tiny shell. They have existed on the ocean floor for more than 100 million years.

- They leave behind their shells when they die. Examining these shells gives scientists an insight into the characteristics of the oceans from a time when the forams were alive.
- Different types of foram species thrive in the ocean environment and physical inspection and sorting of forams require human time and effort.
- With an accuracy rate of 67%, Forabot automates this tedious process.

15.12.22

1) **Aeronomy**: It refers to the scientific study of the upper atmospheric regions of the Earth and other solar system bodies.

- It includes the distribution of temperature, density, and chemical constituents, and the chemical reactions that occur.
- It also includes the studies of aurora, airglow, the ionosphere, Van Allen radiation belts, cosmic rays, and radiative and photochemical phenomena.

2) **Orcas**: They are toothed whales and are generally found in temperate and tropical waters (from the Arctic to the Antarctic). They have long life spans and are highly social

- Orcas are found across the world and are also known as “killer whales”. Technically, killer whales are the largest member of the dolphin family. So, really, they’re killer dolphins. But because of their size, the word “whale” is used in their name
- As the top ocean predator, they kill other animals to make a living
- IUCN: Data deficient

3) **Exercise “SURYA KIRAN”**: It is an Indo-Nepal joint army training exercise.

- It is conducted annually between India and Nepal with the aim to enhance inter-operability in jungle warfare and counter-terrorism operations in mountainous terrain and Humanitarian Assistance and Disaster Relief (HADR) under UN mandate.

4) **Krishi-Decision Support System (Krishi-DSS)**: The Ministry of Agriculture and Department of Space signed a Memorandum of Understanding (MoU) to Krishi-DSS using satellite data.

- This will enhance the evidence-based decision-making capability of all the stakeholders in the agriculture sector by way of integration with MOSDAC and BHUVAN (Geo-platform) of ISRO and systems of ICAR.
- Krishi-DSS is being developed on the lines of Gati Shakti, using RISAT-1A and VEDAS of the Department of Space.

5) **Bhuvan Portal**: It is a type of web portal used to find and access geographic information (geospatial information) and associated geographic services (display, editing, analysis, etc.) via the Internet. Developed by ISRO and MapmyIndia.

- Its services will reflect the true borders of the country as per the information available from Government of India. By using MapmyIndia maps and applications instead of the foreign map apps, users can better protect their privacy.
- VEDAS is Visualisation of Earth observation Data and Archival System.
- It is an online geo-processing platform using optical, microwave, thermal and hyperspectral data covering applications particularly meant for academia, research and problem solving.
- MOSDAC (Meteorological and Oceanographic Satellite Data Archival Centre) is a data repository for all the meteorological missions of ISRO.
- It deals with weather-related information, oceanography and tropical water cycles.

16.12.22

1) **Agni V**: India has successfully conducted night trials of nuclear-capable ballistic missile Agni V.

- It has been indigenously developed by DRDO. It is a surface-to-surface Nuclear Capable Ballistic missile. It can carry both nuclear and traditional weapons.
- Range: Agni-V, with a range of over 5,000 km, is India’s longest-range ballistic missile and can reach most parts of China
- Agni-V is the most advanced missile in the Agni series featuring many new technologies, including the very high accuracy Ring Laser Gyro based Inertial Navigation System (RINS) and Micro Navigation System (MINS) which improves the accuracy of the missile.
- With the Agni-V, India joins an elite club of countries like US, Russia, the UK, France and China, which boast Inter-Continental Ballistic Missile (ICBM) capabilities.

2) **Social Progress Index (SPI)**: The report has been prepared by Institute for Competitiveness, and the Social Progress Imperative. It was mandated by Economic Advisory Council to the Prime Minister of India. The report aims to provide a systematic account of the social progress made at all levels in the country with state and district-wise rankings and scorecards.

- SPI assesses the performance of states and districts on three dimensions of social progress: Basic Human Needs, Foundations of Wellbeing,

and Opportunity. Within each dimension, there are four components.

3) IUCN Updated Red List of Threatened Species: IUCN Red List or Red Data Book, founded in 1964, is the world's most comprehensive inventory of the global conservation status of biological species. It has 9 categories

- White-Cheeked Dancing Frog: Endangered. It is Found only in the Western Ghats of Karnataka
- Andaman Smoothhound Shark: Vulnerable. Only found in the Andaman Sea (Endemic to India)
- Yellow Himalayan Fritillary plant: Vulnerable. Threats - It is harvested and traded in disguise with a new trade name 'Janglilehsun'

4) Thoracic Aortic Aneurysm: An aneurysm is a localised weakening of the wall of a blood vessel, which causes the vessel to bulge in that area — as a result of which the vessel may widen to more than 50 percent of its usual diameter. Aneurysms are more commonly seen in arteries than in veins.

- The aorta is the main artery that carries oxygenated blood from the heart to the rest of the body; it is also the body's largest blood vessel.
- An aortic aneurysm is a weakening and bulging in a portion of the aorta; "thoracic" refers to that section of the blood vessel that passes through the chest.

5) Vacation Benches of the Supreme Court: A Vacation Bench of the Supreme Court is a special bench constituted by the Chief Justice of India. The Supreme Court takes two long vacations each year, the summer and winter breaks, but is technically not fully closed during these periods.

- Litigants can still approach the Supreme Court during vacations and, if the court decides that the plea is an "urgent matter", the Vacation Bench hears the case on its merits.
- While there is no specific definition as to what is an "urgent matter", during vacations the court generally admits writs related to habeas corpus, certiorari, prohibition and quo warranto matters for enforcement of any fundamental right.

17.12.22

1) Panini: the 'father of linguistics, he probably lived in the 4th century BC, the age of the conquests of Alexander and the founding of the Mauryan Empire,

even though he has also been dated to the 6th century BC, the age of The Buddha and Mahavira. He likely lived in Salatura (Gandhara)

- Ashtadhyayi', or 'Eight Chapters', an ancient text written by the scholar Panini towards the end of the 4th century BC. It is a linguistics text that set the standard for how Sanskrit was meant to be written and spoken and laid down more than 4,000 grammatical rules.
- Later Indian grammars such as the Mahabhasya of Patanjali (2nd century BC) and the Kasika Vritti of Jayaditya and Vamana (7th century AD), were mostly commentaries on Panini.

2) Ikki Jathre (or the Festival of Rice): Wayanad rice festival, Kerala, promotes climate-resilient crops

- The initiative aims to sensitise people to the significance of conserving traditional crops that have the ability to withstand harsh climatic conditions.
- Knowledge sharing and co-creation of knowledge between tribal farmers and experts e.g. Rice Diversity Block (RDB) were launched (under the Save our Rice campaign, 2009) to collect traditional varieties of rice.

3) Doxxing: it is the revealing of someone's intimate information with harassment as the intent. It is a popular and controversial tactic used against those with opposing political views. Even celebrities and influencers have been doxxed with real-life consequences.

- In the process of doxxing, personal information is circulated in the public sphere without the knowledge of the victim, and in some cases, causing real-life consequences.

4) Geographical Indication (GI) Tag: Kerala's five agricultural products recently got GI Tag.

- Attappady Attukombu Avara (beans), Attappady Thuvara (red gram), Onattukara Ellu (sesame), Kanthalloor-Vattavada Veluthulli (garlic), and Kodungalloor Pottuvellari (snap melon) are the latest Geographical Indications that have been registered.
- The unique features of the products, imparted by the agro-climatic conditions of the geographical area of their production, are the basis for getting geographical indication tag.
- The Geographical Indications of Goods (Registration and Protection) Act, 1999 seeks to provide for the registration and better

protection of geographical indications relating to goods in India.

- This tag is valid for a period of 10 years following which it can be renewed.

5) **Group of Friends:** India has recently launched a 'Group of Friends' to promote accountability for crimes against peacekeepers. Bangladesh, Egypt, France, India, Morocco and Nepal have joined the group.

- It will act as a platform to promote accountability for all acts of violence against the United Nations peacekeepers by facilitating support to the host state, creating awareness, exchanging information, sharing best practices, supporting initiatives, and mobilizing resources.
- It seeks to implement Resolution 2589 which had called upon member states, hosting or having hosted United Nations peacekeeping operations, to take all appropriate measures to bring to justice perpetrators of the killing of, and all acts of violence against United Nations personnel, including, but not limited to, their detention and abduction.

19.12.22

1) **Water Worlds:** Two alien planets about 218 light years away from Earth have found a twin in the ocean worlds of Europa and Enceladus- moons orbiting Jupiter and Saturn.

- The exoplanets, Kepler-138 c and Kepler-138 d, are likely water worlds a feature that scientists have theorised for a long time.
- It is in the habitable zone, meaning it is located in an orbit that receives just the right amount of heat from its star to allow water to exist in a liquid form.
- The volume of the two alien worlds was three times that of Earth and mass twice as big.
- The Kepler- 138 c and d are made up of ingredients lighter than rock (rocky planets like Earth) but heavier than hydrogen or helium (gas-giant planets like Jupiter).

2) **Deepfakes:** China recently issued new guidelines to companies and platforms using the deep synthesis technology.

- Deepfakes are a compilation of artificial images and audio put together with machine-learning algorithms to spread misinformation and replace a real person's appearance, voice, or both with similar artificial likenesses or voices.

- It can create people who do not exist and it can fake real people saying and doing things they did not say or do.

3) **INS Mormugao:** it is the second of the four 'Visakhapatnam' class destroyers, project P15B indigenously designed by the Indian Navy's in-house organization Warship Design Bureau and constructed by Mazagon Dock Shipbuilders Limited (MDL), Mumbai

- INS Mormugao is equipped with Anti-Submarine Warfare capabilities and is equipped to fight under Nuclear, Biological, and Chemical warfare
- The ship's firepower consists of vertically launched Barak-8 surface-to-air missiles and BrahMos surface-to-surface cruise missiles for long-range engagement of shore- and sea-based targets. It can operate two multi-role helicopters — Sea King or HAL Dhruv.
- Presently, under the P-15B (Visakhapatnam Class), a total of four warships (Visakhapatnam, Mormugao, Imphal, Surat) were planned and Visakhapatnam and Mormugao are already commissioned in the Indian Navy.

4) **Odd Radio Circles (ORC):** Odd Radio Circle (ORC) is a very large, (Over 50 thousand times the diameter of our very own Milky Way ~ 3 Million Light-years) unexplained astronomical object that, at radio wavelengths, is highly circular and brighter along its edges.

- They were 1st discovered in 2019 using Australian Square KM Array Pathfinder (ASKAP). However, the ORCs have not been found in visible, Infrared and X-ray telescopes.

5) **Tal Chhapar Sanctuary:** The Tal Chhapar Sanctuary is known as the home of blackbuck and a variety of birds in Rajasthan.

- The sanctuary is flanked by the Great India Desert, Thar and boasts a unique ecosystem and is an important birdwatching destination in India.
- Fauna: Desert fox and desert cat can be spotted in the sanctuary.

20.12.22

1) **Stem cell scaffolding:** Stem cells are the body's raw materials — cells from which all other cells with specialized functions are generated. Under the right conditions in the body or a laboratory, stem cells divide to form more cells called daughter cells.

- Developing a stem cell scaffolding architecture (temporary platform to build tissues) supports vascular cell ingrowth, and promotes wound healing and regenerative medicine that is effective in treating bone, cartilage, blood vessel, skin, tendon, and nerve damage.
- Using a bio-printer, a stem cell scaffold is made to repair abnormalities to valves in blood vessels and to mend holes between the two main pumping chambers of the heart.

2) **Bullock's Heart Tree:** International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) recently won the prize for developing a cost-effective bio-insecticide from the leaves of bullock's heart tree (*Annona reticulata*), popularly known as Ramphal.

- Bullock heart tree's extracts have traditionally been used to cure conditions including dysentery and pediculosis (louse infestation). Extracts from its leaves may be useful against three destructive pests — Pod borer, Green peach aphid and fall armyworm. It is best known for its fruit, called custard apple.

3) **Betta-Kuruba tribe:** lives in the hilly regions of Karnataka and is one of the few indigenous communities of the Nilgiris. They belong to the Hindu caste native to the Indian states of Karnataka, Tamil Nadu, Andhra Pradesh and Telangana.

- Traditionally, the Kuruba people drew sustenance from hunting, gathering and collecting wild honey. They are generally believed to be the descendants of the Pallavas.
- Consanguineous marriages like cross-cousin marriages are preferred among the Kurumbas.
- The Lok Sabha passed the Constitution (Scheduled Tribes) Order (Fourth Amendment) Bill, 2022 to include Betta-Kuruba in the Scheduled Tribes (STs) list of Karnataka as a synonym for the already categorised Kadu-Kuruba tribe in the State.

4) **Commission for Air Quality Management (CAQM):**

The Commission is a statutory body which was first formed by an ordinance in October 2020.

- The erstwhile Environment Pollution (Prevention and Control) Authority, or EPCA had been dissolved to make way for the Commission.
- it will supersede bodies such as the central and state pollution control boards of Delhi, Punjab, Haryana, UP and Rajasthan.

- Chairperson: To be chaired by a government official of the rank of Secretary or Chief Secretary. He will hold the post for three years or until s/he attains the age of 70 years.
- It will have experts from CPCB, ISRO, Civil Society and NCR states.

5) **Hooch:** It is a commonly used term for poor quality alcohol, derived from Hoochinoo, a native Alaskan tribe that was known to produce very strong liquor.

- Unlike branded liquor which is produced in factories with sophisticated equipment and rigorous quality control, hooch is made in more crude settings without any quality checks.
- Alcohol is produced using two basic processes: fermentation and distillation
- When heated, yeast reacts with sugar (from grain, fruits, sugarcane, etc.) to ferment and produce a mixture containing alcohol. Distillation is the process of physically separating the alcohol from the rest of the mixture using evaporation and condensation.

21.12.22

1) **Genome Sequencing:** A genome is an organism's complete set of DNA, including all of its genes.

- Genome sequencing is figuring out the order of DNA nucleotides, or bases, in a genome—the order of As, Cs, Gs, and Ts that make up an organism's DNA.
- The human genome is made up of over 3 billion of these genetic letters.
- In more simple terms, Sequencing a gene is like reading a book one letter at a time to look for any spelling mistakes.
- The Central government has recently asked States and Union Territories to increase genome sequencing of positive samples amid a rise in COVID cases in China.

2) **Keki Mistry Committee:** SEBI accepted the Keki Mistry committee proposals towards gradually phasing out open market share buybacks

- SEBI decided to increase the minimum utilisation of the amount for buyback via stock exchanges to 75% vs 50%. It will also create a separate window on stock exchanges for share buyback.
- The committee also proposed reducing the cooling-off between buybacks. In a consultation paper, the committee had asked for wider powers for SEBI to levy penalties and take other

disciplinary actions such as suspension of directors

3) **Frozen coral:** Scientist recently freeze Great Barrier Reef coral in world –first trial.

- The Great Barrier reef coral has suffered four bleaching events in the last seven years including the first ever bleach during a La Nina phenomenon
- Cryomesh is a specially fabricated mesh used as substrate in cryopreservation. This is lightweight and can be manufactured cheaply. It better preserves coral and has the properties of cryoplates. The mesh technology will help store coral larvae at -196°C (-320.8°F).
- Cryogenically frozen coral can be stored and later reintroduced to the wild. This could eventually help to rewild reefs threatened by climate change.

4) **Asian Giant Tortoise:** The soft release of Asian Giant Tortoise in Intanki National Park of Ngaland, is an attempt to boost conservation and repopulating the species. The soft release is a process of gradually releasing captive-raised species into the wild.

- They are found in Bangladesh, India, Indonesia, and Malaysia and other places.
- IUCN: Critically Endangered, CITES :Appendix II, WPA of 1972 : Schedule IV
- Threats: Hunting for consumption, habitat loss, anthropogenic activities like construction and slash and burn.

5) **Rule 267:** The Rajya Sabha defines Rule 267, under ‘suspension of rules’, as an instance where “any member, may, with the consent of the Chairman, move that any rule may be suspended in its application to a motion related to the business listed before the Council of that day and if the motion is carried, the rule in question shall be suspended for the time being.”

- Therefore, it is simply the provision for a House member to request the Chairman to suspend issues listed out for discussion on a particular day in order to deliberate a separate issue.
- The rule shall not apply where a specific provision already exists for suspension of a rule under a particular chapter of the Rules.

22.12.22

1) **Dokra Metal Crafts:** Lalbazar, on the boundary with Jharkhand, is becoming a hub for dokra metalcraft, which is about 5000 years old. it is a form of ancient bell metal craft practiced by the Ojha metal smiths living in

states like Jharkhand, Chhattisgarh, Odisha, West Bengal and Telangana.

- Making dokra art is a difficult process. Each figurine takes about a month to make.
- Dokra artifacts are mainly made in brass and are highly unique wherein the pieces do not have any form of joints. The whole object is fully handcrafted.
- The method of making Dokra is done by combining the metallurgical skills with that of the lost wax technique.
- There are two process of lost wax casting. The first one is Solid casting which is the method followed in the South and hollow casting, practiced in other states.

2) **Chillai Kalan:** One of the harshest winter periods of 40 days, called Chillai Kalan, has begun in Kashmir. It is a Persian term that means ‘major cold’. Use of Pheran (Kashmiri dress) and a traditional firing pot called Kanger increases during this time.

3) **BF.7 variant:** The BF.7 sub-variant has a 4.4-fold higher neutralisation resistance than the original D614G variant — meaning that in a lab setting, antibodies from a vaccinated or infected individual were less likely to destroy BF.7 than the original Wuhan virus that spread worldwide in 2020.

- BF.7 is a sub-lineage of the Omicron variant BA.5 and has the strongest infection ability since it is highly transmissible, has a shorter incubation period, and a higher capacity to cause reinfection or infect even those vaccinated.

4) Acclimatization vs Adaptation:

Adaptation vs Acclimatization		
	Adaptation	Acclimatization
DEFINITION	Adaptation is a permanent and long term adjustment shown by living organisms to changing environment	Acclimatization is a temporary and short term adjustment shown by living organisms to the changing environment
TIME TAKEN	Takes a long time to appear	Only takes a short time to appear
CHANGE	In both physical and chemical composition of an organism	Only a physical change occurring in the organism
EVOLUTIONARY IMPORTANCE	Adaptation is a part of the evolution process	Does not affect the evolutionary process
SPEED OF THE PROCESS	Gradual process	Rapid process
PERMANENT OR TEMPORARY	Permanent	Temporary
REVERSIBLE OR IRREVERSIBLE	Reversible	Irreversible
OCCURRENCE	Takes place over many generations	Occurs within the life time of an organism

5) **Samudrayaan Mission:** It is aimed to develop a self-propelled manned submersible to carry three human beings to a water depth of 6,000 meters in the ocean with a suite of scientific sensors and tools for deep ocean exploration. The manned submersible vehicle is called 'MATSYA 6000'.

- This vehicle is being designed and developed by the National Institute of Ocean Technology (NIOT), Chennai under the Ministry of Earth Sciences.
- With the launch of 'Samudrayaan' in October 2021, India joined the elite club of nations such as the US, Russia, Japan, France, and China to have niche technology and vehicles to carry out subsea activities.
- Manned submersible provides a feel of direct physical presence for researchers and has better intervention capability.

23.12.22

1) **Gelbots:** Gelbots are made out of gelatin, capable of moving without requiring an extra power source because of the way their shape, dimensions and patterning of gel are designed and are reportedly a significant advance in the world of soft robotics.

- They are created by 3D printing and would be easy for mass production.
- The gels swell or shrink in response to temperature.
- They can be used for moving on surfaces through the human body to deliver targeted medicines. They could also be deployed as marine robots, patrolling and monitoring the ocean's surface.

2) **Urban-20:** It is a city diplomacy initiative launched on December 12, 2017, at the One Planet Summit in Paris.

- Urban-20 (U20) provides a platform for cities from G20 countries to facilitate discussions on various important issues of urban development including climate change, social inclusion, sustainable mobility, and affordable housing, and propose collective solutions.
- C40 Cities (C40) and United Cities and Local Governments (UCLG) convene the U20 under the leadership of a Chair city that rotates annually, based in the G20 host country.
- The U20 2023 Cycle will be chaired by the City of Ahmedabad

3) **Sahitya Akademy Awards:** it is a literary honour in India, which the Sahitya Akademi, India's National Academy of Letters, annually confers on writers of the most outstanding books of literary merit published in any of the 22 languages of the 8th Schedule to the Indian constitution as well as in English and Rajasthani language.

- Akademi gives 24 awards annually to literary works in the languages it has recognized and an equal number of awards to literary translations from and into the languages of India.
- The Sahitya Akademi award is the second-highest literary honour by the Government of India, after the Jnanpith award.
- Criteria: The author must be of Indian Nationality, Book/work eligible for the award must be an outstanding contribution to the language and literature to which it belongs.

4) **UNSC resolution 2593:** United Nations Security Council Resolution 2593 was adopted on 30 August 2021, following the Fall of Kabul and subsequent Taliban takeover in Afghanistan.

- According to the resolution, the Security Council demands that Afghan territory not be used to threaten or attack any other country or to shelter and train terrorists.

5) **The Urban Learning Internship Program (TULIP):**

TULIP is a programme for providing internship opportunities to fresh graduates in all Urban Local Bodies (ULBs) and Smart Cities across the country.

- The Ministry of Housing & Urban Affairs (MoHUA) in collaboration with the Ministry of Education (MoE) and All India Council of Technical Education (AICTE) has developed this programme.
- At the State level, TULIP will be supported by the Urban Development departments in providing a clear roadmap for the ULBs/smart cities to adopt TULIP in their respective organisations.
- Duration: Internship durations can range from eight weeks to one year.

24.12.22

1) **'KAVACH' System:** indigenously developed as an automatic train protection system to prevent accidents due to human error, by Indian Railways.

- 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.

- One of its features is that by continuously refreshing the movement information of a train, it is able to send out triggers when a loco pilot jumps signal, called Signal Passed at Danger (SPAD), a grave offence in railway operations with respect to safety, and the key to accidents like collision.

2) **Rashtriya Gokul Mission (RGM)**: The Department of Animal Husbandry and Dairying is implementing RGM for development and conservation of indigenous bovine breeds since 2014.

- The scheme is important for enhancing milk production and productivity of bovines to meet the growing demand of milk and making dairying more remunerative
- All the components of Scheme will be implemented on 100% grant-in-aid basis except the components of: accelerated breed improvement programme, promoting sex sorted semen and establishment of breed multiplication farm

3) **Green Wall/ Bengal Barrier**: West Bengal Pollution Control Board (WBPCB) has decided to set up 800 km Bio-Shield along its western fringe to stop pollutants from entering the State.

- Bio-Shield – A wall of Mega Plantations
- The Great Green wall of Sahel Region: It is an initiative to increase the amount of arable land in the Sahel, the region bordering Africa's Sahara Desert.
- Eleven nations are investing in projects as varied as agroforestry to sustainable development – Djibouti, Eritrea, Ethiopia, Sudan, Chad, Niger, Nigeria, Mali, Burkina Faso, Mauritania, and Senegal. Organisations involved – GEF, WB, UNFCCC

4) **Moa Makers of Joynagar**: Said to date back to 1904, the moais made of aromatic khoi — popped rice — that is mixed with jaggery, sugar, cashew nuts and raisins.

- It has a short shelf life, lasting not more than five days without refrigeration.
- The high perishability has prevented it from being shipped abroad all these decades, and its export began, on a very small scale, only in 2020.

- GI tag for Joynagar Moa has been extended for 10 years.

5) **Avian Flu**: Avian influenza or bird flu is a highly contagious viral disease caused by Influenza Type A viruses which generally affects poultry birds such as chickens and turkeys.

- AI viruses are broadly classified as low pathogenic AI (LPAI) and highly pathogenic AI (HPAI) viruses, based on their pathogenicity. H5N1 strains come under HPAI viruses.
- The most common route of virus transmission is direct contact with infected birds but Human-to-human transmission is very rare.
- Avian influenza Type A viruses are classified based on two proteins on their surfaces – Hemagglutinin (HA) and Neuraminidase (NA). There are about 18 HA subtypes and 11 NA subtypes.

26.12.22

1) **Veer Baal Diwas**: Guru Gobind Singh ji had four sons – Sahibzada Ajit Singh, Sahibzada Jujhar Singh, Sahibzada Zorawar Singh and Sahibzada Fateh Singh.

- All four of his sons were initiated into the Khalsa and all were executed by Mughal forces before the age of 19. Sikhism honors the illustrious martyred sons as 'Char Sahibzade', that is the four princes of the Khalsa warrior order.
- In 2022, the Centre announced that December 26 would be observed as 'Veer Bal Diwas'.
- Sikhs are demanding that this day be called 'Sahibzade Shaheed Diwas'.

2) **Dark Patterns**: It is a user interface that has been crafted to trick or manipulate users into making choices that are detrimental to their interests. They endanger the experience of internet users and make them more vulnerable to financial and data exploitation by BigTech firms.

- EG: introduce online obstacles, make simple tasks time-consuming, etc.
- Drip pricing: It is a pattern when the total price is only revealed at the very end of the buying process.
- Bait and switch: It is a pattern that occurs when a user takes an action expecting one outcome, but instead is served an outcome they didn't want.
- False urgency: It is a dark pattern that refers to misleading information on quantities of a particular product.

- Disguised advertising: It is a pattern when an advertisement mimics editorial content.

3) **Central Pollution Control Board (CPCB):** A recent reportsaid that the number of polluted stretches in India's rivers has fallen from 351 in 2018 to 311 in 2022. The number of polluted river stretches categorised in 'Priority 1 to 5.

- Priority 1: River stretches with a BOD exceeding 30 mg/L are considered the most polluted and thus need the most urgent remediation.
- Priority 2: Indicating a BOD of 20-30 mg/L.
- Priority 3: BOD between 10-20 mg/l
- Priority 4: BOD between 6-10 mg/l.
- Priority 5: Indicating 3-6 mg/L.
- While Gujarat and Uttar Pradesh had the maximum number of 'Priority 1' river stretches (6), Maharashtra had the maximum number of polluted river stretches i.e. 55, followed by Madhya Pradesh (19), Bihar (18)

4) **Bomb cyclone:** A bomb cyclone is a mid-latitude storm in which the central pressure drops fast at one millibar per hour for at least 24 hours. However, the millibar readings can change based on where the storm is forming.

- This quickly increases the pressure difference, or gradient, between the two air masses, making the winds stronger. A bomb cyclone is formed when the air of different air masses (cold, dry) comes together. This process of rapid intensification has a name: bombogenesis.
- As the winds blow, the rotation of the Earth creates a cyclonic effect. The direction is counterclockwise in the Northern Hemisphere

5) **Kala Azar Disease:** It is a disease caused by infection with Leishmania parasites. It is transmitted by female sandfly. It is also known as visceral leishmaniasis or black fever or Dum-Dum fever.

- This disease is the second-largest parasitic killer in the world. Elimination is defined as reducing the annual incidence of Kala Azar (KA) to less than 1 case per 10,000 people at the sub-district level.
- Treatment of Kala Azar is done through liposomal AmB – this is the drug of choice for immunocompetent patients.

27.12.22

1) **Cold Wave:** The IMD records a cold wave when the minimum temperature is equal to or less than 10 degree Celsius at a weather station in the plains, and is

5 degrees to 6.4 degrees below the normal temperature for that period.

- A cold wave may also be recorded at a station in the plains when the minimum temperature is less than or equal to 4 degree Celsius.
- For hilly regions, a cold wave is declared when the minimum temperature is less than or equal to 0 degree Celsius and the minimum temperature is 4.5 degrees to 6.4 degrees below the normal.
- The 'normal' temperature is calculated for every five days by taking the average temperature for these days over the past 30 years.

2) **Trademark:** It is a distinctive sign or indicator used by a business organisation to distinguish its products or services from those of other entities.

- Trademark infringement is the unauthorised usage of a sign that is identical or deceptively similar to a registered trademark.
- strong trademark: A mark is said to be strong when it is well-known and has acquired a high degree of goodwill.
- The degree of the protection of any trademark changes with the strength of the mark; the stronger the mark, the higher the requirement to protect it.

3) **National Mobile Monitoring System (NMMS):** NMMSApp was launched by the Ministry of Rural Development in 2021. It aimed at bringing more transparency and ensuring proper monitoring of the schemes.

- The NMMS App permits taking real time attendance of workers at Mahatma Gandhi NREGA worksites along with geo-tagged photographs.
- The app helps in increasing citizen oversight of the programme.

4) **Scheme for Economic Empowerment of DNTs (SEED):** Under the scheme, the government seeks to provide free coaching to students for civil services examinations, competitive exams for admission to professional courses; health insurance; livelihood support and housing.

- It has been formulated for families having income from all sources of Rs.2.50 lakh or less per annum and not availing any such benefits from similar Scheme of Centre/State Government.

- The Scheme will be implemented through a portal, developed by the Department of Social Justice & Empowerment.
- The other implementing agencies are Ministry of Rural Development, National Rural Livelihood Mission (NRLM) and National Health Authority (NHA).

5) **De-notified Tribes:** The term 'De-notified Tribes' stands for all those communities which were once notified under the Criminal Tribes Acts, enforced by the British Raj between 1871 and 1947.

- These Acts were repealed after Independence in 1952, and these communities were "De-Notified".
- The DNTs (of whom most are the medieval period Banjaras) are the most neglected, marginalized, and economically and socially deprived communities.

28.12.22

1) **Primary Amebic Meningoencephalitis (PAM):**

Recently, South Korea reported its first case of the rare yet fatal infection - *Naegleria fowleri* or "brain-eating amoeba".

- *Naegleria fowleri*: It is a single-celled organism which can infect humans. It was first discovered in Australia in 1965 and is commonly found in warm freshwater bodies, such as hot springs, rivers and lakes.
- The amoeba enters the human body through the nose and then travels up to the brain. Once it goes to the brain, it destroys brain tissues and causes a dangerous infection known as PAM

2) **E-sports:** The President of India, amended the regulations governing eSports in accordance with the authority "conferred by clause (3) of Article 77 of the Constitution" and requested the Sports Ministry and the Ministry of Electronics and Information Technology to include "Esports as part of multi-sports events."

- E-Sports will now be a part of the "multisports event" category in India. E-Sports will be taken care of by Department of Sports under the Ministry of Youth Affairs and Sports. Meanwhile, 'Online Gaming' will be under MEITY (Ministry of Electronics and Information Technology).

3) **Solar Geo-engineering:** It involves spraying substances into the atmosphere that form reflective aerosols and bounce sunlight back into space.

- This could stop global temperatures from increasing, but temperatures locally or regionally might continue to increase over the following few years, new research shows.
- Project ICARUS: It involves shooting reflective particles into the stratosphere to deflect the rays of the Sun and help bring down territorial temperature.
- However, last time in 1991, the eruption of Mount Pinatubo (Phillippines) brought about a 'volcanic winter', with global temperature cooling by 0.4 degrees Celcius, leading to the issue of food scarcity.

4) **Ru-Fc (Ruthenium–Ferrocene) hybrid:** A newly found bimetallic highly potent antitumor agent that inhibits new blood vessel development (antiangiogenic) can help treat cancer cases that become resistant to platinum drugs commonly used for tackling the disease.

- Several platinum-based anticancer drugs, including cisplatin, carboplatin etc are the frontline treatment options for various cancers.
- However, the acquired or intrinsic resistance significantly limits the uses of platinum-based treatment. Ruthenium–Ferrocene Bimetallic agent shows a highly potent antitumor effect in platinum-resistant cancers.

5) **Polar Bear:** Polar bears in Canada's Western Hudson Bay, an inland sea connected to the Arctic Ocean, are dying at a fast rate, especially females and younger polar bears.

- Polar bears are one of the most significant predators in the Arctic region and they keep biological populations in balance.
- The polar bear is classified as "vulnerable" on the IUCN Red List.

29.12.22

1) **Omega Centauri:** A strange class of high-temperature stars detected in the globular cluster Omega Centauri, the largest-known globular cluster in the Milky Way may provide clues to its formation.

- Detected by AstroSat (India's first dedicated space observatory, which has been operating since 2015).
- Globular clusters are spherical aggregates of several thousand to millions of stars bound by gravity. These systems are thought to have formed early on in the Universe and can serve as perfect astrophysical laboratories for

astronomers to understand how stars evolve through various phases

2) **Coking coal:** Coal is a fossil fuel and is the altered remains of prehistoric vegetation that originally accumulated in swamps and peat bogs.

- Coking coal is a high-quality coal that is low in impurities and has a high carbon content, which makes it ideal for use in the metallurgical process.
- It is used to produce coke, which is a porous, solid carbon material that is used as a fuel and a reducing agent in the production of iron and steel.
- Largest coal-producing countries in the world: China, India, United States

3) **Sammakka Saralamma Jatara:** also known as Medaram Jatara is the second-largest fair of India, after the Kumbh Mela, celebrated by the second-largest Tribal Community of Telangana- Koya tribe

- It is a tribal festival honoring the fight of a mother and daughter, Sammakka and Saralamma, with the reigning rulers against an unjust law.
- Koya tribe is the largest adivasi tribe of Telangana and listed as Scheduled Tribe in Telangana.
- Koyas perform a robust colourful dance called Permakokata (Bison horn dance) and are settled cultivators.

4) **Triple test formula:** The 'triple test' formula was suggested by the Supreme Court in 2010 to provide OBC reservation in urban local body (ULB) elections. According to the formula:

- it is necessary to set up a special commission to collect data on the conditions (economic and educational), nature and impact of backwardness of OBCs in local body elections.
- On the basis of these recommendations, the state government will have to give reservations on a proportional basis in municipal and municipal elections.
- The state government will also have to keep in mind that the number of seats reserved for SC-ST or OBC should not go beyond the total reservation limit of 50 per cent.

5) **Dhanu Yatra:** it is an annual drama-based open-air theatrical performance celebrated in Bargarh, Odisha. It is considered the largest open-air theatre in the world

where the entire town of Bargarh turns into a stage for the yatra.

- The 'Dhanu Yatra' which marks the victory of good over evil, came into existence in Bargarh in 1947-48 as part of the celebration of the country's Independence and is held annually.
- Theme: The plays in the festival start with the dethroning of Emperor Ugrasen of Mathura by angry Kansa over the marriage of his sister Devaki with Vasudev. The festival will conclude with the death of demon king Kansa and restoration of the throne to Ugrasen.

30.12.22

1) **Ramappa Temple:** also known as the Rudreshwara temple, is a Kakatiya style Hindu temple dedicated to the god Shiva, in Telangana.

- Constructed in 1213 AD by Recherla Rudra, a general of Kakatiya king Ganapati Deva. It is known as the Ramappa temple, after the sculptor. In 2021, the temple was inscribed as a UNESCO World Heritage.
- Earthquake-proof: Made out of clay mixed with acacia wood, chaff and myrobalan fruit, the bricks used in building the gopuram of the temple are light enough to float on water.
- Sandbox technique: the foundation pit is filled with a mixture of sand-lime, jaggery and black myrobalan fruit. This mix acts as a cushion in case of earthquakes.
- The temple's many carved pillars which when gently hit, produces musical notes.

2) **Prahari App:** launched by Home Affairs ministry for BSF jawans, it is a great example of Proactive Governance. Now Jawans can get personal and service related information, housing, Ayushman-CAPF and leave related information on their mobile.

- **Border Security Force (BSF):** It is India's border guarding organisation on its border with Pakistan and Bangladesh. It is one of the seven Central Armed Police Forces (CAPF) of India, and was raised in the wake of the 1965 war on 1 December 1965.
- It comes under the Ministry of Home Affairs .BSF contributes its personnel every year for UN Missions.

3) **Pralay Missile:** It is an indigenous short-range ballistic surface-to-surface missile. The missile will be India's first tactical quasi-ballistic missile and will give the

armed forces the capability to hit enemy positions and key installations in actual battlefield areas.

- The solid-fuel, battlefield missile developed by DRDO is based on Prithvi Defence Vehicle from the Indian ballistic missile programme.
- it has a range of 150-500 km and is capable of carrying a conventional warhead of about 350 kg to 700 kg
- The advanced missile has been developed in a way to be able to defeat interceptor missiles. It has the ability to change its path after covering a certain range mid-air.

4) **Ethylene glycol:** it is a colourless and odourless alcoholic compound that can be fatal if consumed.

- It is mostly used as an automotive antifreeze and as a raw material for manufacturing polyester fibres. Diethylene glycol and ethylene glycol may be used by pharma companies as an

alternative to non-toxic solvents such as glycerine or propylene glycol to cut costs.

- Uzbekistan's health ministry has recently claimed India-made cough syrups contained ethylene glycol which led to the death of at least 18 children

5) **Jupiter Icy Moons Explorer (Juice):** it will be Europe's first dedicated robotic mission to Jupiter and is due to reach the planet in July 2031.

- The mission will enter into orbit around Jupiter and perform numerous flybys of its large icy moons: Europa, Ganymede and Callisto.
- After four years of moon flybys, Juice will then enter into orbit around Ganymede, the largest moon in the Solar System — becoming the first spacecraft ever to reach orbit around the moon of another planet.

PIB

1.Hornbill Festival: It is one of the largest indigenous festival organised by the state government of Nagaland to promote tourism in the state. The festival is celebrated annually in the first week of December in order to preserve, protect and revive the uniqueness and richness of the Naga heritage.

The festival is considered the “Festival of Festivals” in Nagaland. The festival is named after the bird – Hornbill which is the most revered and admired bird for the Nagas.

The festival is a tribute to this bird, known for its qualities of grandeur and alertness.

2.Election Commission Of India: The Election Commission of India is an autonomous constitutional authority responsible for administering Union and State election processes in India. The body administers elections to the Lok Sabha, Rajya Sabha, and State Legislative Assemblies in India, and the offices of the President and Vice President in the country. Under Part XV from Article 324 to 329 of the Indian constitution deals with elections, and establishes a commission for these matter. The President appoints Chief Election Commissioner and Election Commissioners. They have a fixed tenure of six years, or up to the age of 65 years, whichever is earlier.

3.Digi Yatra: It is a project conceived to achieve contactless, seamless processing of passengers at Airports, based on Facial Recognition Technology (FRT).

The project envisages that any traveller may pass through various checkpoints at the airport through a paperless and contactless processing, using facial features to establish the identity which would be linked to the boarding pass. It provides a decentralized mobile wallet-based identity management platform which is cost effective and addresses privacy/data protection issues in implementation of Digi Yatra.

4.Exercise Agni Warrior: The 12th Edition of Exercise Agni Warrior, a bilateral exercise between the Singapore & Indian Army concluded recently.

Exercise Agni Warrior, involved showcasing joint firepower planning, execution and use of New Generation Equipment by the Artillery arm of both armies. The exercise achieved its aim of enhancing mutual understanding of drills & procedures and improving interoperability between the two armies. Held in India since 2004, It is conducted under the ambit of the Army Bilateral Agreement.

5.INCOVACC (BBV 154): World’s first intra-nasal vaccine for COVID developed by India has got approval from the Central Drugs Standard Control Organisation (CDSCO) for restricted use in emergency situations in the age group of 18 and above. It is developed by Bharat Biotech International Limited (BBIL). This vaccine has the double benefit of enabling faster development of variant-specific vaccines and easy nasal delivery that enables mass immunization to protect from emerging variants of concern

6.National Commission For Backward Classes: The 102nd Constitution Amendment Act, 2018 provides constitutional status to the NCBC. It has the authority to examine complaints and welfare measures regarding socially and educationally backward classes. Previously NCBC was a statutory body under the Ministry of Social Justice and Empowerment. The Commission consists of five members including a Chairperson, Vice-Chairperson and three other Members appointed by the President by warrant under his hand and seal. The conditions of service and tenure of office of the Chairperson, Vice-Chairperson and other Members is determined by President.

7.Swar Dharohar Festival: Ministry of Culture, Government of India in collaboration with “Swar Dharohar Foundation,” inaugurated three day “Swar Dharohar Festival” under Kalanjali. “Swar Dharohar Festival” is a Music, Art & Literature Festival to showcase the iconic art and culture of India and, the rich literary Art & Heritage of Indian States.

8. Draft National Tourism Policy: The Government has prepared the Draft National Tourism Policy focusing on Green, and digital tourism.

To promote investment in the tourism sector, the document mentions granting of industry status to the sector, along with formally granting infrastructure status to hotels.

Five key areas would be given significant focus in the next 10 years — green tourism, digital tourism, destination management, skilling the hospitality sector and supporting tourism-related to Micro, Small and Medium Enterprises (MSMEs).

9.SHRESHTA Scheme: The Scheme for Residential Education for Students in Targeted Areas (SHRESHTA) has been conceived to provide access to high quality residential education to the meritorious poor students from Scheduled Caste communities, whose parental annual income is up to Rs. 2.5 Lakh per annum, at free of cost from class 9th to class 12th. Under this, each year a specified number of meritorious SC students are selected through a transparent mechanism of a National Entrance Test for SHRESHTA (NETS) , conducted by the National Testing Agency. Selected students are admitted in the Best Private Residential Schools, affiliated by CBSE, in classes 9th and 11th for completion of education till 12th standard.

10.National Disaster Response Force: NDRF comes under Ministry of Home Affairs. It is the only dedicated disaster response force in the world. It works under National Disaster Management Authority (NDMA) which lays down policies, plans and guidelines for disaster management. The Disaster Management Act has made the statutory provisions for constitution of National Disaster Response Force (NDRF) for the purpose of specialized response to natural and man-made disasters.

Established in 2006 HQ: New Delhi

11.Pamban Rail Bridge: The re-construction work on the new 2.05 km Pamban railway bridge which will connect Rameswaram island to the mainland in Tamil Nadu has gathered pace. This state-of-the-art bridge will be the country's first vertical lift railway sea bridge and is expected to be completed by March 2023. The sea bridge is being executed by Rail Vikas Nigam Limited (RVNL).

The existing Pamban Rail Bridge is 105 years old. The original bridge was built in 1914 to connect Mandapam to the Rameswaram island situated in the Gulf of Mannar. It was the only link connecting the two locations until a new road bridge was built parallel to the sea link in 1988.

12.Dr. Rajendra Prasad: He was a conspicuous leader of the Indian National movement and the first President of the Republic of India. He gave up his professional career in law to side with the Indian freedom movement. An adherent to Mahatma Gandhi, he took part in the Salt Satyagraha , Non-cooperation movement, and served as a leader in Bihar and Maharashtra.

He has also worked as a political activist, journalist, and scholar at different points of time. He was elected as the President of the Bombay session of the INC in October 1934. He was elected President for a second time in 1939 when Subhash Chandra Bose resigned from the post. His contributions to the freedom struggle and framing the constitution of India are apparent and inextirpable.

13.International Day Of Persons With

Disabilities: Every year on 3rd December, International Day of Persons with Disabilities is observed. The annual observance of this day began in 1992 after it was proclaimed by the United Nations General Assembly resolution 47/3. The day is observed to promote the rights and well-being of people with disabilities at every level of society and development.

It also aims to raise awareness of the situations of persons with disabilities in all aspects of political, social, economic and cultural life.

14.SHE STEM Event: As part of the Sweden India Nobel Memorial Week, SHE STEM, the annual event to celebrate women in the fields of science, technology, engineering, mathematics, and sustainability, was successfully held for the third year in a row.

The annual event is organised by the Embassy of Sweden in India in partnership with the Atal Innovation Mission, NITI Aayog, Government of India and the German Centre of Innovation and Research (DWIH New Delhi). SHE STEM 2022 encourages students to 'Unleash their imagination' and the need for women in fields of STEM to bring

in their unique perspectives to problem-solving for a sustainable future.

15.Archaeological Survey of India (ASI): ASI, under the Ministry of Culture, is the premier organization for the archaeological research and protection of the cultural heritage of the nation. It administers more than 3650 ancient monuments, archaeological sites and remains of national importance. Its activities include carrying out surveys of antiquarian remains, exploration and excavation of archaeological sites, conservation and maintenance of protected monuments etc. It was founded in 1861 by Alexander Cunningham- the first Director-General of ASI. Alexander Cunningham is also known as the "Father of Indian Archaeology".

16.Agriculture Investment Portal: Union Agriculture Minister Shri Tomar inaugurates the setting up of "Agriculture Investment Portal". Krishi Nivesh Portal will prove to be a milestone in terms of investment in the agriculture sector, which will be a centralized one stop portal for agri-investors to avail benefits of various government schemes implemented by various departments related to agriculture and allied sectors. In view of which the government has initiated many reforms, incorporated technology in agriculture and to ensure the eligible farmers are provided aid with transparency, the portal would provide mechanism for safe investment.

17.The Tribal Cooperative Marketing Development Federation of India (TRIFED): It came into existence in 1987. It is a national-level apex organization functioning under the administrative control of Ministry of Tribal Affairs. TRIFED has its Head Office located in New Delhi and has a network of 13 Regional Offices located at various places in the country. The ultimate objective of TRIFED is socio-economic development of tribal people in the country by way of marketing development of the tribal products such as metal craft, tribal textiles, pottery, tribal paintings and pottery on which the tribals depend heavily for major portion of their income.

18.Dr BR Ambedkar: December 6 is observed as the Mahaparinirvan Diwas, or the death anniversary, of Dr BR Ambedkar, the Father of the Indian Constitution. 'Parinirvan' can be translated as 'nirvan' after death, or freedom from the cycles of life and death.

He was independent India's first Minister of Law and Justice. He was also the chief architect of the Constitution of India. He established the Bahishkrit Hitakarini Sabha to promote education and socio-economic improvement of the untouchables. He led the Mahad Satyagrah or Chavdar Tale Satyagraha to fight for the right of the untouchable community. In 1930, Ambedkar launched Kalaram Temple movement. In 1932 he signed Poona pact.

19.National Crisis Management Committee (NCMC): It is a committee set up by the Government of India in the wake of a natural calamity for effective coordination and implementation of relief measures and operations. It has been constituted in the Cabinet Secretariat. Objectives: To oversee the Command, Control and Coordination of the disaster response. To give direction to the Crisis Management Group (CMG) as deemed necessary. Composition: Cabinet Secretary (Chairperson).

20.G20 Sherpas Meeting: With India assuming the G20 Presidency, the Indian Sherpa is at work to make India's G20 Presidency most fruitful for both India and the World. Recently, the 1st Sherpa Meeting of India's G20 Presidency commenced in Udaipur Rajasthan.

1st Sherpa Meeting of India's G20 Presidency is a four-day gathering of the Sherpas of G20 Members, invited countries and International Organizations. Amitabh Kant is the India's G20 Sherpa for India's G20 Presidency. The agenda and work are coordinated by representatives of the G20 countries, known as 'Sherpas', who work together with the finance ministers and governors of the central banks.

21.G20 Countries: The G20 was formed in 1999 in the backdrop of the financial crisis of the late 1990s that hit East Asia and Southeast Asia in particular. It aims to secure global financial stability by involving middle-income countries.

Together, the G20 countries include 60% of the world's population, 80% of global GDP, and 75% of global trade.

Members: Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, the United States and the EU.

22. Food and Agriculture Organization: FAO is a specialized agency of the United Nations that leads international efforts to defeat hunger.

World Food Day is celebrated every year on 16th October to mark the anniversary of the founding of the FAO in 1945.

It is one of the UN food aid organisations based in Rome (Italy). Its sister bodies are the World Food Programme and the International Fund for Agricultural Development (IFAD).

FAO Supported India in endorsing the proposal for an International Year of Pulses which was celebrated in 2016 and for declaring 2023 as the International Year of Millets.

23. One District One Product Initiative: ODOP initiative is operationally merged with 'Districts as Export Hub (DEH)' initiative of the DGFT, Department of Commerce, with the Department for Promotion of Industry and Internal Trade (DPIIT) as a major stakeholder.

Central Government has initiated One District One Product (ODOP) in all States/UTs of the country, as a transformational step towards realizing the true potential of a district, fueling economic growth, generating employment and rural entrepreneurship, taking us to the goal of Aatmanirbhar Bharat.

The objective is to focus on District of the country as unit for converting into a manufacturing and export hub by identifying products with export potential in the District.

24. International Atomic Energy Agency: Set up as the world's "Atoms for Peace" organization in 1957 within the United Nations family.

Reports to both the United Nations General Assembly and Security Council.

Headquarters in Vienna, Austria.

Functions: Works with its Member States and multiple partners worldwide to promote the safe,

secure and peaceful use of nuclear technologies. It seeks to promote the peaceful use of nuclear energy, and to inhibit its use for any military purpose, including nuclear weapons.

25. Corporate social responsibility: CSR is a type of self-regulation that demonstrates a company's accountability and commitment to advancing the social and environmental well-being of communities and society.

In India, the concept of CSR is governed by clause 135 of the Companies Act, 2013. India is the first country in the world to mandate CSR spending along with a framework to identify potential CSR activities.

According to the Act, businesses should devote 2% of their average net earnings over the previous three years to CSR initiatives.

26. UDAN Scheme: The scheme is aimed at enhancing connectivity to remote and regional areas of the country and making air travel affordable. It is a key component of Centre's National Civil Aviation Policy led by Prime Minister Narendra Modi and launched in June 2016. Under the scheme, nearly half of the seats in Udan flights are offered at subsidised fares, and the participating carriers are provided a certain amount of viability gap funding (VGF) – an amount shared between the Centre and the concerned states. The scheme will be jointly funded by the central government and state governments. The scheme will run for 10 years and can be extended thereafter.

27. GAGAN (GPS Aided Geo Augmented Navigation) system: It is a Space Based Augmentation System (SBAS), developed jointly by AAI and ISRO. GAGAN is a part of Global Navigation Satellite System (GNSS), which takes the input from the core GPS (Global Positioning System) constellation and augments navigation data through the GEO stationary satellites for providing better accuracy, integrity and continuity of service for its application in civil aviation. It has benefits in aviation as well as in non-aviation fields. It helps in Disaster Management. It helps in designing more efficient routes which can result in fuel savings.

28. Museum Grant Scheme: During the last two years 8 museums have been funded under Museum Grant Scheme for development/modernization of existing museums. The scheme was launched in 2013.

The Ministry of Culture provides financial assistance under the Scheme to the State Governments and Societies, Autonomous bodies, Local Bodies and Trusts registered under the Societies Act 1860, for setting up new Museums. It aims to strengthen and modernize the existing museums at the Regional, State and District level. The scheme also aims to develop at least 1 Central / State Government Museum located in the State Capital each year.

29. GHAR Portal: National Commission for Protection of Child Rights (NCPCR), has developed and launched a portal namely GHAR - GO Home and Re-Unite (Portal for Restoration and Repatriation of Child). The GHAR portal has been developed to digitally monitor and track the restoration and repatriation of children according to the protocol. The following are the salient features of the portal :

Digital tracking and monitoring of children who are in the Juvenile Justice system and have to be repatriated to another Country/State/District. Digital transfer of cases of children to the concerned Juvenile Justice Board/Child Welfare Committee of the State.

30. FAME India scheme: FAME-India Scheme is implementing by Department of Heavy Industry in order to promote manufacturing of electric and hybrid vehicle technology and to ensure sustainable growth of the same. FAME India is a part of the National Electric Mobility Mission Plan. Main thrust of FAME is to encourage electric vehicles by providing subsidies.

It is being implemented in two phases: Phase-I [Faster Adoption and Manufacturing of (Hybrid) & Electric Vehicles in India] from 1st April 2015.

The Phase-II of the Faster Adoption and Manufacturing of (Hybrid) & Electric Vehicles.

31. Pradhan Mantri Surakshit Matritva Abhiyan” (PMSMA) : Government of India launched “Pradhan

Mantri Surakshit Matritva Abhiyan” (PMSMA) with an aim to provide fixed-day, free of cost, assured, comprehensive and quality antenatal care on the 9th day of every month universally to all pregnant women in their 2nd / 3rd trimesters of pregnancy. Since inception, more than 3.6 crore pregnant women have received comprehensive ANC under this programme across all States and UTs. As per the report of National Family Health Survey (NFHS), the percentage of mothers who had at least 4 antenatal care visits has increased from 51.2 % in NFHS-4 (2015-16) to 58.1% in NFHS-5 (2019-21).

32. Lumpy Skin Disease: LSD is caused by infection of cattle or water buffalo with the poxvirus Lumpy Skin Disease Virus (LSDV). The mortality rate is less than 10%. It was first seen as an epidemic in Zambia in 1929.

LSD is primarily spread between animals by biting insects (vectors), such as mosquitoes and biting flies. It primarily consists of fever, fluid excretion from eyes and nose, dribbling of saliva from the mouth and blisters on the body.

The animal stops eating and faces problems while chewing or eating, resulting in reduced milk production. There are no specific antiviral drugs available for the treatment of lumpy skin disease.

33. Technology Development Fund (TDF): The TDF scheme was started by Defence Research and Development Organisation (DRDO). It supports indigenous development of components, systems, products, and technologies by start-ups and micro, small and medium enterprises (MSMEs). It facilitates up to 90 per cent of the total project cost. The scheme was launched with the aim of providing a major boost to defence manufacturing sector.

34. National Human Rights Commission: NHRC of India is an independent statutory body established in 1993 as per provisions of Protection of Human Rights Act, 1993, later amended in 2006. It is a multi-member body consisting of a chairperson, five full-time Members and seven deemed Members. A person who has been the Chief Justice of India or a judge of the Supreme Court can become a chairman.

Appointment: The chairman and members are appointed by the President on the recommendations of a six-member committee consisting of the Prime Minister as its head, the Speaker of the Lok Sabha, the Deputy Chairman of the Rajya Sabha, leaders of the Opposition in both the Houses of Parliament and the Union Home Minister.

Tenure: The chairman and members hold office for a term of three years or until they attain the age of 70 years, whichever is earlier.

35.Swahid Diwas: The Prime Minister Shri Narendra Modi has paid homage to the martyrs of the Assam Movement on Swahid Diwas observed on 10th December.

Assam has been paying tribute to the martyrs who had made supreme sacrifice in the historic Assam Movement from 1979 to 1985.

The Assam Movement (1979-1985) was a popular uprising in Assam, that demanded the Government of India to detect illegal immigrants and deport them. The movement ended in 1985 with the Assam Accord.

It was led by All Assam Students Union and All Assam Gana Sangram Parishad, an umbrella organization of different political groups.

36.Sports Authority Of India: Recently the Sports Authority of India has approved the establishment of 7 Khelo India Centers under the Khelo India Scheme in Chhattisgarh. These seven centers will be opened for one sport each in different districts. It is the apex national sports body of India, established in 1982 by the Ministry of Youth Affairs and Sports of Government of India for the development of sports in India.

37.IND-INDO CORPAT: The 39th edition of India-Indonesia Coordinated Patrol (IND-INDO CORPAT) between the Indian Navy and the Indonesian Navy is being conducted from 08 – 19 December 2022. Indian Naval Ship (INS) Karmuk, an indigenously built Missile Corvette participated in the pre-deployment briefing at Belawan, Indonesia. The CORPAT will be executed along the International Maritime Boundary Line (IMBL).

India and Indonesia have been carrying out CORPATs twice a year since 2002, with an aim of

keeping this vital part of the IOR safe and secure for commercial shipping, international trade and conduct of legitimate maritime activities.

38.Airport Authority Of India: This authority is responsible for providing safe and efficient air traffic services, along with aeronautical communication services for effective control of air traffic in the entire Indian air space and manages the entire Indian space even beyond the territorial limits of the country, in accordance with the norms set by International Civil Aviation Organisation. The International Airports division of AAI, operates and develops international Airports and manages the same.

The headquarters of the Airports Authority of India is in New Delhi.

39. Pradhan Mantri Adi Adarsh Gram Yojna: Ministry of Tribal Affairs has revamped the existing Scheme of 'Special Central Assistance to Tribal Sub-Scheme' with nomenclature 'Pradhan Mantri Adi Adarsh Gram Yojna (PMAAGY)', for implementation during 2021-22 to 2025-26, which aims at transforming villages with significant tribal population into model village (Adarsh Gram) covering about 40% of the total Tribal Population.

The main objective of this scheme is to achieve integrated socio-economic development of selected villages through convergence approach. It includes preparing Village Development Plan based on the needs, potential, and aspirations.

40.Tourist Police Scheme: The Ministry of Tourism, in collaboration with the Bureau of Police Research and Development (BPRD), organised a conference for effective implementation of Uniform Tourist Police Scheme.

The Tourist Police Scheme - As many as 25 popular tourist spots have been identified in the country where the tourist police necessarily need to be deployed to help foreigners. The gender ratio of Policemen in Tourist Police is proposed to be 50:50. The deputation term should last from 2 to 3 years. As an incentive, 30% deputation allowance has been recommended for the police personnel who joins the tourist police on deputation.

41. India International Science Festival (IISF):

IISF-2022 will be held in Bhopal in January 2023 and incidentally, it is one of the major events to be held after India took over G-20 Presidency. It is a festival to celebrate the achievements of India's scientific and technological advancements with students, innovators, craftsmen, farmers, scientists and technocrats from India and abroad.

IISF is the initiative of the Ministry of Science & Technology and Ministry of Earth Science of Government of India in association with Vijnana Bharati which is a science movement with swadeshi spirit led by eminent scientists of the country.

44. Sand Mining: The Ministry of Mines has prepared a 'Sand Mining Framework' incorporating best practices amongst States with the objectives of sustainability, availability, affordability, and transparency in sand mining.

Sand is a minor mineral under Mines and Minerals (Development & Regulation) Act, 1957 (MMDR Act). The MMDR Act empowers the State Governments for making rules for regulating the grant of quarry leases, mining leases or other mineral concessions in respect of minor minerals. Hence, the regulation of minor minerals comes under the legislative and administrative domain of the State Governments. Further, the Act empowers the States to make rules for preventing illegal mining, transportation and storage of minerals. Hence, control of illegal mining comes under the legislative and administrative purview of the State Governments.

45. India Global Forum: MoS for Electronics and Information Technology to visit Dubai to attend the India Global Forum. IGF is the agenda-setting forum for international business and global leaders. IGF, offers a selection of platforms that corporates and policymakers can leverage to interact with stakeholders in their sectors and geographies of strategic importance. It has an unparalleled track record around the world to convene leaders from across large corporates, multilateral institutions and national Governments.

46. SEED scheme: The Scheme for Economic Empowerment of

Denotified/Nomadic/SemiNomadic (SEED) communities was launched in February 2022 by the Ministry of Social Justice & Empowerment.

It aims to provide free competitive exam coaching to these students, to provide health insurance to families, to uplift clusters of these communities through livelihood initiatives, and to provide financial assistance for housing. It ensures expenditure of Rs.200 crore to be spent over five years beginning 2021-22. The DWBDNCs (Development and Welfare Board for De-notified, Nomadic and Semi-Nomadic Communities) has been tasked with the implementation of this scheme.

47. Atal Vayo Abhyuday Yojana (AVYAY): It is under the Ministry of Social Justice & Empowerment.

Type: Central Sector Scheme

Aim: To improve the quality of life of the Senior Citizens by providing basic amenities like shelter, food, medical care and entertainment opportunities and by encouraging productive and active ageing through providing support. Basic amenities are provided free of cost to indigent senior citizens.

48. Barak River: Barak River is one of major rivers of South Assam. The river is part of Surma-Meghna River System. The Barak River originates in Manipur and flows 900 kilometres through the states of Manipur, Nagaland, Mizoram and Assam in India.

It later enters Bangladesh where it forks into Surma and Kushiara rivers which converges again to become the Meghna river before forming the Ganges Delta with the Ganga and the Brahmaputra rivers and flowing into the Bay of Bengal. The sixth national waterway stretch is on this river. Tipaimukh Dam is a proposed dam on the river.

49. Deen Dayal Upadhyaya Gram Jyoti

Yojana: The Ministry of Power, Government of India has launched Deen Dayal Upadhyaya Gram Jyoti Yojana for rural areas with the following objectives:

- To provide electrification to all villages
- Feeder separation to ensure sufficient power to farmers and regular supply to other consumers

- Improvement of Sub-transmission and distribution network to improve the quality
- Metering to reduce the losses.

Rural Electrification Corporation is the Nodal Agency for implementation of DDUGJY.

50.Sri Aurobindo Ghosh:The Prime Minister, Shri Narendra Modi addressed a programme celebrating Sri Aurobindo's 150th birth anniversary. Aurobindo Ghosh was born in Calcutta on 15th August 1872. He was a yogi, seer, philosopher, poet, and Indian nationalist who propounded a philosophy of divine life on earth through spiritual evolution. From 1902 to 1910 he partook in the struggle to free India from the British. As a result of his political activities, he was imprisoned in 1908 (Alipore Bomb case).

Literary Works:An English newspaper called Bande Mataram (in 1905),Bases of Yoga,Bhagavad Gita and Its Message,The Future Evolution of Man,Rebirth and Karma,

Savitri: A Legend and a Symbol and Hour of God.

51. Fisheries and Aquaculture Infrastructure

Development Fund (FIDF):The FIDF scheme provides concessional finance to the State Governments/Union Territories and State entities for development of identified fisheries infrastructure facilities through the interest subvention up-to 3% per annum. The objectives of FIDF are; (i) Creation and modernization of capture & culture fisheries infrastructure, (ii) Creation of Marine Aquaculture Infrastructure, (iii) Creation and modernization of Inland Fisheries Infrastructure, (iv) Reduce post-harvest losses and improve domestic marketing facilities through infrastructure support, (v) To bridge the resource gap and facilitate completion of ongoing infrastructure projects.

52.National Creche Scheme: Under the newly approved Mission Shakti, the National Creche Scheme has been revised and subsumed as Palna scheme to provide day-care facilities for children (6 months to 6 years) of working mothers and to improve nutrition and health status of children. It is a centrally sponsored scheme being implemented by the Ministry of Women and Child Development. The fund sharing pattern under National Creche Scheme amongst Centre, States/UTs & Non

Governmental Organisations/Voluntary Organisations is in the ratio of 60:30:10 for States, 80:10:10 for North Eastern States and Himalayan States and 90:0:10 for UTs.

53.Silk Samagra Scheme: It is a Central Sector Scheme for the development of sericulture in the country.The scheme is being implemented by the Central Silk Board (CSB).

It focuses on improving the quality and productivity of domestic silk thereby reducing the country's dependence on imported silk.

There are five major types of silk:Mulberry, Oak Tasar & Tropical Tasar, Muga and Eri.

Except mulberry, other non-mulberry varieties of silks are wild silks, known as vanya silks.

South India is the leading silk producing area of the country and is also known for its famous silk weaving enclaves like Kancheepuram, Dharmavaram, Arni, etc.

54.Exercise KAZIND-22: The 6th Edition of Indo - Kazakhstan joint training exercise "KAZIND-22" is scheduled to be conducted at Umroi (Meghalaya) from 15 to 28 December 2022. Joint annual training exercise with the Kazakhstan Army was instituted in 2016 as Exercise Prabal Dostyk, which was later upgraded to a company level exercise and renamed as Ex Kazind in 2018.

The scope of this exercise involves a Command Post Exercise (CPX) at the Battalion level and Company level Field Training Exercise (FTX) on sub-conventional operations.

55.Rare Earth Minerals:They are a set of seventeen metallic elements. These include the fifteen lanthanides on the periodic table in addition to scandium and yttrium that show similar physical and chemical properties to the lanthanides. The 17 Rare Earths are cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm), samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), and yttrium (Y).These minerals have unique magnetic, luminescent, and electrochemical properties.They are called 'rare earth' because earlier it was difficult to extract them from their oxides forms technologically.

56. Regional Anti Terrorist Structure(RATS):

SCO-RATS is a permanent body of the Sanghai Cooperation Organization (SCO).

It is promoting coordination and interaction between the SCO member states as per as fight against terrorism, extremism and separatism are concern. The main functions of SCO-RATS are information sharing. As a member, India has actively participated in the activities of RATS. India's permanent membership would enable it to generate greater understanding among members for its perspective. India has chaired the Council of RATS SCO. It's Member States are Kazakhstan, China, Kyrgyz Republic, Pakistan, Russian Federation, Tajikistan, Uzbekistan and India.

57. Social Progress Report: Economic Advisory Council (PM) will release the Social Progress Index (SPI) for states and districts of India. The report has been prepared by Institute for Competitiveness and the Social Progress Imperative.

SPI is a comprehensive tool intended to be a holistic measure of the Social Progress made by the country at the national and sub-national levels. SPI assesses the performance of states and districts on three dimensions of social progress: Basic Human Needs, Foundations of Wellbeing, and Opportunity.

58. Kasturi Cotton India: MoU signed between Cotton Corporation of India (CCI) Limited and TEXPROCIL on Branding, Traceability and Certification of "Kasturi Cotton India".

This mechanism will provide complete traceability of Cotton from the origin farm level, QR Code based Certification technology to validate "KASTURI Cotton India" at each stage and will Promote "KASTURI Cotton India" as a premium brand by enhancing international perception & valuation of Indian Cotton. This will make Indian cotton as a reliable quality product in the domestic and global markets.

Additionally, Ministry of Textiles had announced the "Kasturi Cotton India", Brand of cotton on the eve of World Cotton Day on 7th October 2020 by which Indian cotton was endowed with a brand and a logo that represents Whiteness, Softness, Purity, Lusture and Indianness.

59. Longest Escape Tunnel: The USBRL (Udhampur Srinagar Baramulla Rail Link) is a National project undertaken by the Indian Railways for construction of broad-gauge railway line through the Himalayas, with the aim of connecting the Kashmir region with rest of the country. Recently a major milestone has been achieved by executing the breakthrough of Escape Tunnel T-49 on the Katra –Banihal section of the USBRL project. The length of the escape tunnel is 12.895 km. This is the longest escape tunnel of India. It is a modified horseshoe shape tunnel.

The tunnel has been constructed by the New Austrian Tunnelling Method (NATM), which is a modern technique of drill and blast processes.

60. PM VIKAS Scheme: The Pradhan Mantri Kaushal Ko Kaam Karyakram (PMKKK) has now been named as Pradhan Mantri Virasat Ka Samvardhan (PM VIKAS) Scheme. PM VIKAS aims to improve livelihoods of the minorities, particularly the artisan communities, using the components of skill development, education, women leadership & entrepreneurship. These components compliment each other in the ultimate objective of the scheme to increase the incomes of the beneficiaries and provide support by facilitating credit and market linkages.

Nodal Ministry: Minister of Minority Affairs.

61. Ayushman Bharat Digital Mission: ABDM is the initiative started by the Government to digitalise health records across the country and includes QR code-based patient registration, Health Management Information System (HMIS) a software to manage data in any Hospital. It aims to provide digital health IDs for all Indian citizens to help hospitals, insurance firms, and citizens access health records electronically when required. The pilot project of the Mission had been announced by the Prime Minister on 15th August 2020. The project is being implemented in the pilot phase in six States & Union Territories. It is with the help of Ayushman Bharat Health Account (ABHA) card, patients can access their medical records anywhere, anytime without losing them all over India.

62. INS Mormugao: Indian Naval Ship (INS) Mormugao (D67), second warship of the P15B

class of stealth guided-missile destroyers, was commissioned at Naval Dockyard, Mumbai recently.

INS Mormugao as one of the most powerful indigenously-built warships which will significantly enhance the country's maritime capabilities and secure national interests. INS Mormugao is one of the world's most technologically-advanced missile carriers. With over 75% indigenous content, it is a testimony to India's excellence in design and development of warships and a shining example of our growing indigenous defence production capabilities.

63. Hanukkah Festival: Hanukkah is the festival of lights. It is a Jewish festival. The festival is celebrated to commemorate the recovery of Jerusalem. Also, the festival commemorates the rededication of the Second Temple. The festival is observed for eight nights. The festival is celebrated lighting the candles. A unique candle called SHAMASH is lit.

64. FIFA World Cup 2022: Argentina became the champion of FIFA World Cup 2022. FIFA (Fédération Internationale de Football Association) is an international governing body of association football, beach football and futsal. It was founded in 1904 to oversee international competition. Headquartered in Zürich, Switzerland, its membership now comprises 211 national associations across all continents. FIFA exists to govern football and to develop the game around the world.

The FIFA World Cup Qatar 2022 is the 22nd edition of the quadrennial international men's football championship, which will be contested by national teams from FIFA member countries.

65. North Eastern Council: The North Eastern Council is the nodal agency for the economic and social development of the North Eastern Region. The Council is an advisory body. Headquarter : Shillong
Chairman : Union Minister, Ministry of Development of North Eastern Region
Constituted : By an Act of Parliament in 1971 i.e it is an statutory body. The NEC act has been amended in 2002 to add Sikkim and restructure it

as the regional planning body for the North Eastern Region.

Consists of : Eight states of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The chief ministers and governors represent them.

66. Surety Bond: Union Minister for Road Transport and Highways launched one of India's first-ever Surety Bond Insurance product from Bajaj Allianz.

A surety bond can be defined in its simplest form as a written agreement to guarantee compliance, payment, or performance of an act. Surety is a unique type of insurance because it involves a three-party agreement. The three parties in a surety agreement are:

Principal – the party that purchases the bond and undertakes an obligation to perform an act.

Surety – the insurance company that guarantees the obligation will be performed. Obligee - the party who requires, and often receives the benefit of. For most surety bonds, the obligee is a local, state or federal government organization.

Surety bond is provided by the insurance company on behalf of the contractor to the entity which is awarding the project.

67. Black Carbon: Black carbon is a kind of an aerosol.

An aerosol is a suspension of fine solid particles or liquid droplets in the air.

Among aerosols (such as brown carbon, sulphates), Black Carbon (BC) has been recognized as the second most important anthropogenic agent for climate change and the primary marker to understand the adverse effects caused by air pollution.

It gets emitted from gas and diesel engines, coal-fired power plants, and other sources that burn fossil fuel. It comprises a significant portion of particulate matter or PM, which is an air pollutant.

68. Ocean Sailing Expedition: Indian Naval Sailing vessel (INVS) Tarini has set sail for an expedition to Cape Town, South Africa for participating in the 50th edition of Cape to Rio Race 2023. The race is one of the most prestigious Trans-Atlantic ocean races. The expedition is being undertaken by an

Indian Navy crew of five officers including two women officers.

The expedition aims to train the crew onboard, in essential seamanship skills including Navigation, Communication, Technical, Planning, etc. Ocean sailing is an extremely tough adventure sport. Accordingly, Indian Navy has been regularly participating in sailing expeditions like Sagar Parikrama, IONS 10th anniversary and Bay of Bengal sailing expeditions.

69.National Informatics Centre:NIC provides network backbone and e-Governance support to the Central Government, State Governments and UT Administrations.NIC has been closely associated with the Government in different aspects of Governance besides establishing a Nationwide State-of-the-Art information and communication technology (ICT) Infrastructure.It is under the aegis of the Ministry of Electronics and Information Technology
It was established in 1976 and is located in New Delhi.

70.Climate Change Performance Index: The Climate Change Performance Index 2023 report was released recently and India secured 8th position in the index which is 2 positions up from the last edition. The top three places i.e 1-3 are vacant.Thus India's rank is the best amongst the G20 countries. Published by:Germanwatch, the New Climate Institute and the Climate Action Network annually since 2005.Denmark, Sweden, Chile and Morocco were the only four small countries that were ranked above India as 4th, 5th, 6th and 7th respectively.

The ranking given by CCPI places India as the only G-20 country in the top 10 rankers.

71. National Waterway 2: The Sadiya-Dhubri stretch of the Brahmaputra river (891 Km) declared as National Waterway-2 in 1988 is located in the state of Assam.

As per the National Waterways Act, 2016, 111 waterways have been declared as NWs. National Waterway-1 (Prayagraj-Haldia) with length 1620 km is the longest National waterway in India.Ministry of Ports, Shipping & Waterways has a Central Sector Scheme (CSS) under which 100

% grant is provided to North Eastern States for development of Inland Water Transport.

72,AYURSWASTHYA Yojana: Currently, the Ministry of Ayush is running a Central Sector Scheme namely, AYURSWASTHYA Yojana with two components (i) AYUSH and Public Health (PHI) and (ii) Centre of Excellence (CoE) from the Financial Year 2021-22.

Under the Centre of Excellence component of AYURSWASTHYA Yojana, financial assistance is provided to eligible individual organizations/institutes for establishing and upgrading their functions & facilities and/or for research & development activities in AYUSH.The projects are sanctioned and funds are released directly to the eligible individual organizations/institutes.There is no provision for State/UT-wise sanction/allocation of funds under the Centre of Excellence component.

73.India-Maldives Bilateral Relations: 6th Joint Staff Talks (JST) between India and the Maldives were held recently.Discussions focused on the ongoing and new initiatives under the ambit of existing bilateral defence cooperation mechanism of all the three services and further strengthening the engagements.The JST is a forum established to boost defence cooperation between India and the Maldives through annual talks at the strategic and operational levels.

74.Submarine Vagir: The fifth submarine of the Project – 75, Kalvari Class submarines ,the Vagir was delivered. Project – 75 includes indigenous construction of six submarines of Scorpene design. These submarines are being constructed at Mazagon Dock Shipbuilders Limited (MDL) Mumbai, under collaboration with M/s Naval Group, France. Vagir commenced the sea trials and it is a matter of great pride that she has completed all major trials including the weapon and sensor trials in the shortest time in comparison to the earlier submarines.The submarine would shortly be commissioned into the Indian Navy and enhance the Indian Navy's capability.

75.Urban-20(U20): Under the G20 presidency of India from December 01, 2022 to November 30,

2023, the Ministry of Housing and Urban Affairs is organizing Urban 20 event. Urban-20 (U20), one of the Engagement Groups of G20, provides a platform for cities from G20 countries to facilitate discussions on various important issues of urban development including climate change, social inclusion, sustainable mobility, affordable housing, and financing of urban infrastructure and propose collective solutions. Under the G20 presidency of India, Ahmedabad, a UNESCO World Heritage city, will host the U20 cycle.

76. Samarthya Scheme: The need for a single window system for inter- sectoral convergence of schemes and programs meant for women, the Government is setting up Hub for Empowerment of Women (HEW) at National, State and District levels under 'Samarthya' sub-scheme of 'Mission Shakti, an Umbrella Scheme for safety, security and empowerment of women. The Hubs aim to facilitate women's access to various institutional and schematic set ups for information dissemination and availing services pertaining to healthcare, quality education, career and vocational counseling/ training, financial inclusion, entrepreneurship, backward and forward linkages, health and safety for workers, social security and digital literacy etc.

77. Dedicated Freight Corridor (DFC): It is a high speed and high capacity railway corridor that is exclusively meant for the transportation of freight, or in other words, goods and commodities. DFC consists of two arms:
Eastern Dedicated Freight Corridor (EDFC): It starts at Sahnewal (Ludhiana) in Punjab and ends at Dankuni in West Bengal. The EDFC route covers Punjab, Haryana, Uttar Pradesh, Bihar, Jharkhand and West Bengal. The World Bank is funding a majority of the EDFC.
Western Dedicated Freight Corridor (WDFC): The other arm is the around 1,500-km WDFC from Dadri in Uttar Pradesh to Jawaharlal Nehru Port Trust in Mumbai. The WDFC covers Haryana, Rajasthan, Gujarat, Maharashtra and Uttar Pradesh. It is being funded by the Japan International Cooperation Agency.

78. Mining Surveillance System: Ministry of Mines through Indian Bureau of Mines (IBM) have developed the Mining Surveillance System (MSS) with the assistance of Bhaskaracharya Institute for space applications and Geo-informatics (BISAG-N), Gandhinagar for identification of illegal mining around Major Mineral Leases. Mining Surveillance System (MSS) is a satellite-based monitoring system which aims to detect illegal mining activity beyond the lease area through use of satellite images. In pursuance of the provisions of Section 23(C) of the Mines and Minerals Act, 22 State Governments including Odisha have framed rules to curb illegal mining.

79. Semiconductors: Any of a class of crystalline solids intermediate in electrical conductivity between a conductor and an insulator. Semiconductors are employed in the manufacture of various kinds of electronic devices, including diodes, transistors, and integrated circuits. Such devices have found wide application because of their compactness, reliability, power efficiency, and low cost. The Government of India has launched the Indian Semiconductor mission in 2021 under the aegis of the Ministry of Electronics and IT (MeitY). It is part of the comprehensive program for the development of sustainable semiconductor and display ecosystem in the country.

80. International Crops Research Institute for the Semi-Arid Tropics (ICRISAT): It was founded in 1972 by a consortium of organizations convened by the Ford and the Rockefeller Foundations. ICRISAT is a non-profit, non-political organization that conducts agricultural research for development in the drylands of Asia and sub-Saharan Africa. Headquarter: Hyderabad, Telangana. ICRISAT and its partners help empower these poor people to overcome poverty, hunger, and a degraded environment through better agriculture.

81. Kavach System: The Kavach system was announced in the 2022 Union Budget as a part of the Atmanirbhar Bharat initiative. It is India's own automatic protection system, which is in development since 2012, under the name Train Collision Avoidance System (TCAS), which got rechristened Kavach or "armour". It is a set of

electronic devices and Radio Frequency Identification (RFID) devices installed in locomotives, in the signalling system as well as the tracks.

82.Adjournment Sine Die: The Winter Session, 2022 of Parliament which commenced on 7th of December, 2022 has been adjourned sine die on the 23rd of December, 2022. The term "adjournment sine die" refers to the dismissal of a Parliamentary session for an undefined amount of time. In other terms, is when the House is adjourned without setting a date for resumption. The presiding officer of the House has the ability to adjourn sine die.

A House's presiding officer can call a meeting of the House before the day or time set for suspension, or at any time after the House has been adjourned sine die.

83.FAME Scheme: The Faster Adoption and Manufacturing of Electric Vehicles (FAME) scheme was launched in April 2015 under the National Electric Mobility Mission, to encourage electric and hybrid vehicle purchase by providing financial support. Its first phase ran for four years until 2019. The second phase (FAME II) is a 3-year subsidy programme. It aims at supporting the electrification of public & shared transportation. Vehicles, fitted with only advanced chemistry battery, meeting with minimum Technical Criteria and registered as "Motor Vehicle" as per CMVR shall be eligible for incentive under the scheme. Scheme will be applicable mainly to vehicles used for public transport or those registered for commercial purposes. However, privately owned registered e-2Ws are also covered under the scheme as a mass segment.

84.Pradhan Mantri Formalisation Of Micro Food Processing Enterprise Scheme: PMFME Scheme was launched by the Ministry of Food Processing Industries, under the Aatmanirbhar Bharat Abhiyan. The aim is to empower the unorganized Micro Enterprises and to fulfill the aim of formalising the food processing sector.

Aim is to promote formalisation of the sector and provide support to Farmer Producer Organisations, Self Help Groups, and Producers Cooperatives

along their entire value chain. It will be implemented over a period of five years from 2020-21 to 2024-25.

It is a centrally sponsored scheme.

85.Pradhan Mantri Matsya Sampada Yojana: The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India under Pradhan Mantri Matsya Sampada Yojana (PMMSY) implemented with effect from 2020-21 inter-alia provides insurance coverage to fishers which includes fish workers, fish farmers and any other categories of persons directly involved in fishing and fisheries related allied activities. The insurance coverage provided under the PMMSY includes (i) Rs.5,00,000/- against accidental death or permanent total disability, (ii) Rs.2,50,000/- for permanent partial disability and (iii) hospitalization expenses in the event of accident for a sum of Rs. 25,000/-.

86. e- HRMS Portal: e-HRMS was launched by Minister for Personnel, Public Grievances and Pensions on 25th December, 2017 and it had 25 applications of 5 modules of the system. e-HRMS is also known as Manav Sampada (appropriately name for Human Capital, being the most important factor for the success of any Government, Organisation or Company). It is a standard ICT solution for the Government sector, addressing maximum requirements of State Governments related to personnel management. Union Minister will launch the revamped e-HRMS 2.0 which would be the first digital system in Govt. of India to provide end-to-end HR Services. Presently, no other Government Service Cadre System in India is as advanced in its reach and applications.

87.Pradhan Mantri Gram Sadak Yojana: It was launched on 25th December, 2000. Objective: To provide connectivity, by way of an all-weather road to unconnected habitations. PMGSY - Phase I was launched in December, 2000 as a 100 % centrally sponsored scheme. The Government of India subsequently launched PMGSY-II in 2013 for upgradation of 50,000 Kms of existing rural road network to improve its overall

efficiency. The cost was shared between the centre and the states/UTs.

PMGSY - Phase III was approved by the Cabinet during July 2019. Under the PMGSY-III Scheme, it is proposed to consolidate 1,25,000 Km road length in the States. The duration of the scheme is 2019-20 to 2024-25.

Nodal Ministry: Ministry of Rural Development.

88.MSP for Copra: The Cabinet Committee on Economic Affairs chaired by Hon'ble Prime Minister Shri Narendra Modi has approved Minimum Support Prices (MSPs) for copra for 2023 season. The approval is based on recommendations of the Commission for Agricultural Costs and Prices and views of major coconut growing states. National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) and National Cooperative Consumers' Federation (NCCF) will continue to act as Central Nodal Agencies (CNAs) for procurement of copra and de-husked coconut under Price Support Scheme (PSS).

89.GM Mustard: Dhara Mustard Hybrid (DMH-11) is an indigenously developed transgenic mustard. It is a genetically modified variant of Herbicide Tolerant (HT) mustard.

It contains two alien genes ('barnase' and 'barstar') isolated from a soil bacterium called *Bacillus amyloliquefaciens* that enable breeding of high-yielding commercial mustard hybrids. It has been developed by the Centre for Genetic Manipulation of Crop Plants (CGMCP) at Delhi University. In 2017, the GEAC recommended the commercial approval of the HT Mustard crop. However, the Supreme Court stayed its release and asked the central government to seek public opinion.

90.One Rank One Pension Scheme: One Rank One Pension (OROP) implies the payment of the same pension to armed forces personnel for the same rank and the same length of service, irrespective of the date of retirement.

Before this system, the prevailing system for calculating the personnel's pension was based on the last salary drawn.

The demand for OROP by ex-servicemen was to get rid of this disparity in pensions

91. Veer Baal Diwas: The Prime Minister of India has declared that 26th December shall be marked as "Veer Baal Diwas" to pay homage to the courage of the "Sahibzades", four sons of Guru Gobind Singh, the last Sikh guru.

While all four were martyred, the date has been chosen as it was the day observed as the martyrdom day of the Sahibzadas Zorawar Singh and Fateh Singh, who were killed at the tender age of six and nine in Sirhind (Punjab) by Mughal forces.

Sahibzada Jorawar Singh and Sahibzada Fateh Singh are among the most revered martyrs in Sikhism. A combination of Mughals soldiers besieged Anandpur Sahib on the orders of emperor Aurangzeb (1704).

92.Pradhan Mantri Kisan Sampada Yojana: The Central Sector Scheme – SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) was approved by the cabinet in May 2017 for the period of 2016-20 coterminous with the 14th Finance Commission cycle. The scheme has now been renamed as the "Pradhan Mantri Kisan Sampada Yojana (PMKSY)".

It is an umbrella scheme incorporating ongoing schemes of the Ministry like Mega Food Parks, Integrated Cold Chain and Value Addition Infrastructure, Food Safety and Quality Assurance Infrastructure, etc. The objective of PMKSY is to supplement agriculture, modernize processing and decrease Agri-Waste.

93.Rastriya Gokul Mission: The Department of Animal Husbandry and Dairying is implementing Rashtriya Gokul Mission (RGM) for development and conservation of indigenous bovine breeds since December 2014. The scheme is important for enhancing milk production and productivity of bovines to meet the growing demand of milk and making dairying more remunerative for the rural farmers of the country. The scheme is continued under revised and realigned scheme of the Department from 2021-22 to 2025-26.

94.Facial Recognition Technology: It is a biometric technology that uses distinctive features of the face to identify and distinguish an individual.

Over a period of almost 6 decades, it has evolved in many ways- from looking at 3D contours of a face to recognizing skin patterns.

The facial recognition system works primarily by capturing the face & its features through the camera and then using various kinds of software to reconstruct those features.

The captured face along with its features is stored into a database, which can be integrated with any kind of software that may be used for security purposes, banking services, etc.

95. Aero India 2023: The 14th edition of 'Aero India 2023' will be held at Air Force Station, Yelahanka, Bengaluru (Karnataka) in February 2023. The five-day event will combine a major trade exhibition of the aerospace and defence industries as well as aerial display by IAF. Besides global leaders and big investors in aerospace industry, the show will also see participation by think-tanks from across the world.

Aero India will provide a unique opportunity for exchange of information, ideas and new developments in the aviation industry. In addition to giving a fillip to the domestic aviation industry it would further the cause of Make in India.

96. Amrit Bharat Station: Ministry of Railways has formulated a new policy for modernization of stations named "Amrit Bharat Station" scheme. Amrit Bharat Station scheme envisages development of stations on a continuous basis with a long term vision. It is based on Master Planning for long term and implementation of the elements of Master Plan as per the needs and patronage of the station.

Broad objectives: The scheme aims at preparation of Master Plans of the Railway stations and implementation of the Master Plan in phases to enhance the facilities including and beyond the Minimum Essential Amenities (MEA) and aiming for creation of Roof Plazas and city centres at the station in the long run.

97. Central Drugs Standard Control

Organisation: CDSCO under Ministry of Health & Family Welfare is the National Regulatory Authority (NRA) of India.

Functions: Under the Drugs and Cosmetics Act, CDSCO is responsible for approval of New Drugs,

Conduct of Clinical Trials, laying down the standards for Drugs, control over the quality of imported Drugs in the country and coordination of the activities of State Drug Control Organizations by providing expert advice. CDSCO along with state regulators, is jointly responsible for grant of licenses of certain specialized categories of critical Drugs such as blood and blood products, I. V. Fluids, Vaccine and Sera.

98. Pt. Madan Mohan Malviya: Recently, the Prime Minister has paid tributes to Pt. Madan Mohan Malaviya on his Jayanti.

He was born on 25th December 186 in UP.

He was a great educationist, pioneer and a national leader. He was given the title of 'Mahamana' by Mahatma Gandhi and Dr. S. Radhakrishnan gave him the status of a 'Karmayogi'.

Role in Congress: He was elected as the President of the Congress committee (four times) in 1909, 1918, 1932 and 1933.

As a journalist, he started a Hindi weekly, Abhyudaya in 1907 and also Hindi monthly, Maryada in 1910. He started an English daily-Leader in 1909. Malaviya was the editor of Hindi weekly, the Hindustan and Indian Union.

99. Asian Development Bank: The Government of India and Asian Development Bank (ADB) today signed a \$125 million loan to develop climate-resilient sewage collection and treatment, and drainage and water supply systems in three cities in the state of Tamil Nadu.

The Asian Development Bank (ADB) is a regional development bank established in 1966. The bank admits the members of the United Nations Economic and Social Commission for Asia and the Pacific and non-regional developed countries.

Type: Multilateral Development Bank

Legal status: Treaty

Purpose: Social and Economic Development

Headquarters: Mandaluyong, Philippines

Region served: INDO- PACIFIC

Membership: 68 countries

100. PRASHAD (National Mission on Pilgrimage Rejuvenation and Spiritual Heritage Augmentation Drive) Scheme: Launched in the year 2014-15, the scheme aims to provide

integrated infrastructure development to pilgrimage and heritage tourism destinations in the country.
Nodal Ministry: Ministry of Tourism.

101. Online Request Transfer Portal: The Department of Posts under Ministry of Communications has launched an 'Online request Transfer Portal' for Gramin Dak Sevaks (GDS), today. The entire transfer process, from the stage of seeking applications from GDS to the stage of approval and issuing transfer orders, has now been made paperless and simple through the above portal. The launch of online request transfer portal is a huge step in bringing transparency and accountability in the governance processes by leveraging technology. The online process would also result in saving of the time and resources.

102. Spectrum Auction: A spectrum auction is a process whereby a government uses an auction system to sell the rights (licences) to transmit signals over specific bands of the electromagnetic spectrum and to assign scarce spectrum resources. Spectrum auctions make use of natural resources for revenue raising and ensuring economic development.
Energy travels in the form of waves known as electromagnetic waves, these waves differ from each other in terms of frequencies, and this whole range of frequencies is called the spectrum.

103. G20 Digital Innovation Alliance: As part of India's G20 presidency, the Minister for Electronics & Information Technology, Communications and Railways, has launched the "Stay Safe Online" campaign and the "G20 Digital Innovation Alliance" (G20-DIA).

The objective of the 'Stay Safe Online Campaign' is to raise awareness among citizens to stay safe in the online world due to the widespread use of social media platforms and the rapid adoption of digital payments. The objective of the G20-DIA is to identify, recognize, and enable the adoption of innovative and impactful digital technologies developed by startups, which can address the needs of humanity in the critically important sectors of Agri-tech, Health-tech, Ed-tech, Fin-tech, Secured Digital Infrastructure, and Circular Economy.

104. Initiative for Urban Rejuvenation: Ministry of Housing and Urban Affairs launches 2 key initiatives to take India's Urban Rejuvenation journey to next level.

'City Finance Rankings' launched to evaluate, recognize and reward ULBs on basis of their strength across key financial parameters viz. resource mobilization, expenditure performance and fiscal governance systems.
'City Beauty Competition' aims to encourage and recognize the transformational efforts made by cities and wards in India to create beautiful, innovative and inclusive public spaces. Wards and public places of cities would be judged against the five broad pillars (i) accessibility (ii) amenities (iii) activities (iv) aesthetics and (v) ecology.

105. Lumpi-ProVacind: An MoU for production of Goat Pox vaccine and "Lumpi-ProVac" vaccine was signed. ICAR has developed the indigenous vaccine Lumpi-ProVac for LSD. Lumpi-ProVacind is safe in animals and induces LSDV-specific antibody- and cell-mediated immune response, besides providing complete protection against lethal LSDV challenge. Lumpi-ProVacind is used for the prophylactic immunization of animals against Lumpy Skin Disease, which illicit protection for about one year.

The Lumpy Skin Disease has been reported in India from 2019 while first case was reported in the state of Odisha. The disease has high morbidity rate. The disease has been controlled and contained with the available Goatpox vaccine in the country.

106. PM Mitra Parks: The Ministry of Textiles is the Nodal Agency for the PM Mega Integrated Textile Regions and Apparel (PM MITRA) Parks Scheme. The MITRA park aims to integrate the entire textile value chain from spinning, weaving, processing/dyeing, printing to garment manufacturing at one location.

Parks will be developed by a Special Purpose Vehicle which will be owned by the Central and State Government and in a Public Private Partnership (PPP) Mode. Each Park will have an incubation centre, common processing house and a common effluent treatment plant and other textile

related facilities such as design centres and testing centres.

The centre will provide development capital support for the development of common infrastructure of Rs 500 crore for each greenfield MITRA park and upto Rs 200 crore for each brownfield park.

107.Udyami Bharat Programme: Udyami Bharat is reflective of the continuous commitment of the government, to work towards empowerment of MSMEs.

Under this Government has launched several initiatives like MUDRA Yojana, Emergency Credit Line Guarantee Scheme, Scheme of Fund for Regeneration of Traditional Industries (SFURTI) etc. to provide necessary and timely support to the MSME sector, which has helped benefit crores of people across the country.

PM will also launch the 'Raising and Accelerating MSME Performance' (RAMP) scheme, 'Capacity Building of First-Time MSME Exporters' (CBFTE) scheme and new features of the 'Prime Minister's Employment Generation Programme' (PMEGP) for MSME sector.

108.e-Shram Portal:The Ministry of Labour and Employment has launched the e-Shram Portal for creating a National Database of Unorganized Workers (NDUW), which will be seeded with Aadhaar.

Every registered unorganised worker shall be issued an eSHRAM card with a unique Universal Account Number (UAN) and will be able to access the benefits of the various social security schemes through this Card anywhere anytime.It is the first-ever national database of unorganised workers including migrant workers, construction workers, gig and platform workers, etc.

Aim: To register 38 crore unorganised workers such as street vendors, domestic workers, among others.

109. Vande Bharat Express: The Prime Minister, Shri Narendra Modi flagged off the Vande Bharat Express, connecting Howrah to New Jalpaiguri in West Bengal. In the Union Budget for 2022-2023, the Finance Minister has proposed the development and manufacture of 400 new Vande Bharat trains in the next three years.

It is an indigenously designed and manufactured semi high speed, self-propelled train.The first Vande Bharat was manufactured by the Integral Coach Factory (ICF), Chennai, as part of the 'Make in India' programme.The Vande Bharat was India's first attempt at adaptation of the train set technology.

110.CPI for Industrial Workers (CPI-IW): It tries to measure the alterations over a time period on the prices of a fixed basket of goods and services utilised by Industrial Workers.

The target group would be an average working-class family from any of these seven sectors of the economy ranging from factories, mines, plantation, motor transport, port, railways to electricity generation and distribution.It is Compiled by the Labour Bureau, an attached office of the Ministry Labour and Employment, has been compiling CPI-IW every month on the basis of retail prices collected from 317 markets spread over 88 industrially important centres in the country.

111.Employees' State Insurance Scheme:

Employees' state Insurance Corporation of India is a multidimensional social system which provides socio-economic protection to the worker population and immediate dependent or family covered under the ESI scheme.

The Employees' State Insurance Scheme (ESI) is an integrated measure of social Insurance embodied in the Employees' State Insurance Act, 1948.The ESI Scheme applies to factories and other establishment's viz. Road Transport, Hotels, Restaurants, Cinemas, Newspaper, Shops, and Educational/Medical Institutions wherein 10 or more persons are employed.

Employees of the aforesaid categories of factories and establishments, drawing wages upto Rs. 15,000/- a month, are entitled to social security cover under the ESI Act.

112.Prajjwala Challenge: With an aim to invite ideas, solutions and actions that can transform rural economy, the Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) has launched the Prajjwala Challenge. It is one of the platforms where ideas are invited from individuals, Social Enterprises, Start up, Private

Sector, Civil Society, Community Based Organization, Academic Institution, Start-ups, Incubation centres, Investors etc having potential to transform the rural economy.

The Mission is looking for ideas and solutions around Innovative Technology Solution, Inclusive Growth etc.

113.Indian Council Of Medical Research:Indian Council of Medical Research (ICMR) is India'

supreme body to formulate, coordinate and promote biomedical research. It was formed in 1911 when it was known as Indian Research Fund Association. The Government of India funds ICMR. It comes under the Department of Health Services (DHS), Ministry of Health and Family Welfare (MoH&FW). The headquarters of ICMR is in New Delhi. It is neither a statutory body nor a regulatory body.

MCQ

1) The 'Semi-Automated Offside Technology', was in news recently, is adopted in which of the following fields?

- (a) Metro parking
- (b) Traffic management
- (c) Sports
- (d) Construction and Engineering

Ans: C) FIFA is using SAOT for offside decisions in the ongoing football world cup.

- There are two parts to the technology — a sensor inside the match ball that is held using suspension technology, and existing tracking tools that are part of the VAR system.
- Every time the ball is hit, data is sent in real-time (at a whopping 500 frames per second) to a network of antennae installed around the playing field. Additionally, there are 12 Hawk-Eye cameras set up around the turf that shadow both the ball and the players, with as many as 29 separate points in the human body tracked.
- The coming together of the ball sensor and the Hawk-Eye cameras is in effect SAOT, which allows for decisions that are highly accurate and quick. These two data sets are run through artificial intelligence software which generates automated alerts about offsides to the match officials

2) Consider the following statements about Himalayan Yaks:

1. Currently, it is considered to be Critically Endangered by IUCN.
2. Changpas and Dokpas are the predominant nomadic communities engaged in Yak rearing.

Which of the given above statements is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans: B) Himalyan Yaks: IUCN status is 'Vulnerable'.

- Changpas and Dokpas are the predominant nomadic communities engaged in Yak rearing.
- FSSAI has approved the Himalayan Yak as a 'food animal'.

- The Yak belongs to the Bovini tribe, which also includes bison, buffaloes, and cattle. It can tolerate temperatures as low as -40 degrees Celsius.
- They are endemic to the Tibetan Plateau. In India: Arunachal Pradesh, Sikkim, Uttarakhand, Himachal Pradesh and Jammu & Kashmir.
- Yaks are traditionally reared under a transhumance system which is primitive, unorganised and full of hardship.
- The drastic decline in the population could be attributed to less remuneration from the bovid as yak milk and meat are not a part of the conventional food industry, their sale is limited to local consumers.

3) Human capital formation as a concept is better explained in terms of a process which enables

1. Individuals of a country to accumulate more capital.
2. Increasing the knowledge, skill levels and capacities of the people of the country.
3. Accumulation of tangible wealth.
4. Accumulation of intangible wealth.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 2 only
- (c) 2 and 4 only
- (d) 1, 2, 3 and 4

Ans: C) S1: This is Gross Capital Formation (GCF) representing physical capital.

- S2: According to the OECD, human capital is defined as: "the knowledge, skills, competencies and other attributes embodied in individuals or groups.
- S3: Tangible capital is also GCF as it involves largely infrastructural components.
- S4: Intangible wealth of a nation is the skilled population, human resource base, culture ETC.

4) With reference to the Re-Hab Project, consider the following statements:

1. It is an initiative under NITI Aayog.
2. Under this project fencing of bee boxes is installed in such areas from where elephants move towards the human settlements and farmers' agriculture.

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) It is an initiative under Khadi & Village Industries Commission (KVIC).

- Under this project fencing of bee boxes is installed in such areas from where elephants move towards the human settlements and farmers' agriculture to prevent them from attacking humans and destroying farmers' crops.
- National Honey Mission: Project RE-HAB is a sub-mission of KVIC's National Honey Mission.
- The Honey Mission is a programme to increase the bee population, honey production and beekeepers' income by setting up apiaries.

5) Harike wetland, recently seen in news, is located in:

- (a) Punjab
- (b) Himachal Pradesh
- (c) Gujarat
- (d) Kerala

Ans: A) Harike Wetland also known as "Hari-ke-Pattan", with the Harike Lake in the deeper part of it, is the largest wetland in northern India. The wetland and the lake were formed by constructing the headworks across the Sutlej river in 1953. It has been designated as one of the Ramsar sites in India.

6) Consider the following pairs:

Wildlife	Naturally found in
1. Hangal	Keibul Lamjao National Park
2. Feral Horses	Kanha National Park
3. Lion tailed macaque	Silent Valley National Park

Which of the pairs given above are correctly matched?

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Ans: B) The Kashmir stag (Cervus hanglu), also called hangul, is a subspecies of Central Asian red deer endemic to Kashmir, India.

- The sangai is an endemic and endangered subspecies of Eld's deer found only in Manipur, India.

- Feral Horses are free roaming horse also known as wild horses, found only in the DibruSaikhowa National Park of Assam. DibruSaikhowa Biosphere reserve in north east has herd of approximately 79 bright coloured wild horses in India.
- The lion-tailed macaque, or the wanderoo, is an Old World monkey endemic to the Western Ghats of South India.
- Silent Valley has the largest number of lion tailed macaque in South India. Other protected areas in Kerala include Neyyar Wildlife Sanctuary, Peppara Wildlife Sanctuary, Shendurney Wildlife Sanctuary, Periyar Tiger Reserve and its premises (Gavi and Konni), Eravikulam National Park, Pambadum Shola National Park, Parambikulam Tiger Reserve, Annaimalai Tiger Reserve, New Amarambalam Reserved Forest, Aralam Wildlife Sanctuary and Chimmony Wildlife Sanctuary and Wayanad region.

7) With reference to the Wildlife Trust of India (WTI), consider the following statements:

1. It is an autonomous organization under the Ministry of Environment and Forests.
2. It strives to conserve nature through action-based research, education, and public awareness.
3. It organizes and conducts nature trails and camps for the general public.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Ans: C) The Wildlife Trust of India (WTI) is an Indian nature conservation organization.

- It was formed in 1998 in response to the many crises confronting India's wildlife and wild habitats.
- WTI is a registered charity in India (under Section 12A of the Income Tax Act, 1961)

8) Consider the following statements about Rooibos tea:

1. It is endemic to India.
2. It was introduced to the Nilgiri Mountains by the British in 1835 from seeds shipped from China.

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) COP15- Indigenous group to benefit from Rooibos tea. It is endemic to South Africa.

- It is a natural herb unique to the South African Cedarberg Mountains.
- The natural herb is then processed into a naturally soothing drink, sweet in taste, naturally caffeine free, additive free, preservative free, colourant free and very low in tannin.
- The San and Khoi communities were the first to learn about the health benefits.

9) **With reference to the Wassenaar Arrangement, consider the following statements:**

1. The body came into being in 1996 to succeed the Cold War-era Coordinating Committee for Multilateral Export Controls.
2. India joined the Wassenaar Arrangement in December 2017 as its 52nd participating state.

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) The Wassenaar Arrangement has been established in order to contribute to regional and international security and stability, by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilising accumulations.

- The body came into being in 1996 to succeed the Cold War-era Coordinating Committee for Multilateral Export Controls.
- Members: 42. India joined the Wassenaar Arrangement in December 2017 as its 42nd participating state.

10) **Exercise Agni Warrior is a bilateral exercise between Indian Army and:**

- A. Singapore
- B. Australia
- C. U.K

D. France

Ans: A) It is a bilateral exercise between the Singapore & Indian Army.

- Exercise Agni Warrior, involved showcasing joint firepower planning, execution and use of New Generation Equipment by the Artillery arm of both armies.
- Exercise also included participation by both sides in a joint computer war-game as part of joint planning process.
- Both sides utilised niche technology and Artillery Observation Simulators as part of joint training phase.

11) **Which of the following are the Geoengineering techniques designed to tackle the effects of climate change?**

1. Artificial trees that pull the CO₂ from the atmosphere using plastic polymers.
2. Adding large quantities of lime to the Ocean water to increase the amount of CO₂ absorption by the oceans.
3. Using unmanned ships to increase above-ocean cloud cover by spraying sea water into the air.
4. Floating thousands of tiny mirrors in space between Earth and the sun.

Select the correct answer using the code below:

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1, 2 and 4 only
- (d) 1, 2, 3 and 4

Ans: D) Geoengineering schemes are projects designed to tackle the effects of climate change directly, usually by removing CO₂ from the air or limiting the amount of sunlight reaching the planet's surface.

- The first category of scheme – those designed to remove CO₂ from the air – include machines (sometimes called “artificial trees”) that pull the gas from the atmosphere using plastic polymers. Other proposals seek to increase the amount of CO₂ absorbed by the oceans – for example by adding large quantities of lime to the water.
- In the second category – schemes designed to reduce the amount of sunlight reaching Earth – proposals include firing sulphate aerosols into the stratosphere to reflect sunlight back to space; using unmanned ships to increase above-

ocean cloud cover by spraying sea water into the air; painting the world's roofs white to increase reflectivity; and even floating thousands of tiny mirrors in space between Earth and the sun.

12) Which of the following statements is/are correct regarding the Monkeypox?

1. Monkeypox is a viral zoonotic disease.
2. It occurs primarily in tropical rainforest areas of Central and West Africa.
3. Monkeypox is less contagious than smallpox and causes less severe illness.

Select the correct answer using the code below:

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: D) Monkeypox virus is transmitted from one person to another by close contact with lesions, body fluids, respiratory droplets and contaminated materials such as bedding.

- It is a viral zoonotic disease that occurs primarily in tropical rainforest areas of central and west Africa and is occasionally exported to other regions. It is less contagious than smallpox

13) With reference to the Swar Dharohar Festival, consider the following statements:

1. It is organised by NITI Aayog.
2. The festival aims at showcasing the iconic art, culture and heritage of the country.

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 festival aims at showcasing the iconic art, culture and heritage of the country.

- It is organised by Ministry of Culture, Government of India in collaboration with "Swar Dharohar Foundation.
- The program will facilitate the upcoming local artists to perform with renowned artists on the same platform.
- The national, as well as local poets, will also exhibit their artistry through Kavi Sammelan.

14) Swargadeo Saulung Sukapha was first king of which of the following kingdom?

- A. Ahom
- B. Vijayanagara
- C. Chalukya
- D. None of the above

Ans: A) On the occasion of Assam Day, or "Asom Diwas", celebrated every year on December 2, tributes poured in for Swargadeo Chaolung Sukapha.

- The Assam day is also known as "Sukapha Diwas" in honour of the founder of the Ahom kingdom. He was a 13th-century ruler who founded the Ahom kingdom that ruled Assam for six centuries.
- Sukapha's significance lies in his successful efforts towards assimilation of different communities and tribes. He is widely referred to as the architect of "Bor Asom" or "greater Assam".
- Sukapha developed very amiable relationships with the tribal communities living in Assam — especially the Sutias, the Morans and the Kacharis. Inter-marriage also increased assimilation processes.

15) Red Sand Dunes is/are present in which of the following states?

1. Andhra Pradesh
2. Tamil Nadu
3. Sikkim

Select the correct answer using the code given below:

- A. 3 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Ans: B) The city of Visakhapatnam is blessed with a number of sites that have geological importance. One among them is the coastal red sand dunes, popularly known as Erra Matti Dibbalu. Such sand deposits are rare and have been reported only from three places in the tropical regions in south Asia such as Teri Sands in Tamil Nadu, Erra Matti Dibbalu in Visakhapatnam and one more site in Sri Lanka. They do not occur in equatorial regions or temperate regions due to many scientific reasons.

16) Consider the following statements:

1. Bharat Interface for Money (BHIM) is a payments application and wallet, which allows users to make instant bank transfers.
2. National Payments Corporation of India (NPCI) charges user for transacting on BHIM.
3. BHIM features can be availed without the internet on any mobile phone.

Which of the given above statements is/are not correct?

- (a) 1 and 2 only
- (b) 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: A) BHIM is not a wallet. It is a payments application which allows users to make instant bank transfers.

- S2: NPCI does not charge any user for transacting on BHIM. S3: Dial *99# to avail features of BHIM without internet on any mobile phone.

17) The Intergovernmental Negotiating Committee (INC-1) was convened and managed by the

- (a) UNEP
- (b) IUCN
- (c) WB
- (d) WTO

Ans: A) The INC-1 was convened and managed by the United Nations Environment Programme (UNEP).

- The INC-1 came after a landmark resolution was endorsed at the United Nations Environment Assembly (UNEA), calling for the international legally binding instrument to promote sustainable production and consumption of plastics.
- According to the OECD, global plastic production was 460 million tonnes (Mt) in 2019 (234 Mt in 2000) and during the same period, plastic waste doubled to 353 Mt from 156 Mt.

18) With reference to Homo Erectus, Consider the following statements

1. It is an extinct species of the human genus.
2. They had a similar range of body sizes to modern humans, and it is the first human ancestor to have similar limb and torso proportions to those seen in modern humans.

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: C) Homo erectus or 'upright man' is an extinct species of the human genus.

- They most likely originated in Africa or Eurasia.
- Fossils connected with this species have been found ranging from Africa all the way to Southeast Asia.
- H. erectus had a similar range of body sizes to modern humans, and it is the first human ancestor to have similar limb and torso proportions to those seen in modern humans.
- Homo erectus' ability to make complex tools was possible because of the strength and dexterity in its hands, which it owes to a certain hand-bone projection called a "styloid process".
- H. erectus appears to have been the first human species to control fire, some 1,000,000 years ago.
- The species seems to have flourished until some 200,000 years ago (200 kya) or perhaps later before giving way to other humans including Homo sapiens.

19) Consider the following statements:

1. EQUULEUS Spacecraft is a water-powered CubeSat spacecraft.
2. It was developed by Japan Aerospace Exploration Agency (JAXA).

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: C) World's first steam-propelled spacecraft heads to the moon and beyond. EQUULEUS Spacecraft is a water-powered CubeSat spacecraft. It was developed by Japan Aerospace Exploration Agency (JAXA). Launched from NASA's Orion spacecraft.

20) Identify the correct statements with respect to New Indian Navy Crest

1. The new design of the President's Standard and Colour comprises three main constituents – National Flag, State Emblem underscribed and Navy Blue – Gold Octagon below the Golden State Emblem
2. The Indian Navy Crest has been amended to replace the fowl anchor with a Clear Anchor

- a) 1 only
- b) 2 only
- c) Both
- d) None

Ans: C) President of India has approved the introduction of a new design for the President's Standard and Color and Indian Navy Crest for the Indian Navy on Navy Day on 04 Dec 2022.

- The new design of the President's Standard and Colour comprises three main constituents –
- National Flag in the upper left canton adjacent to the staff,
- State Emblem underscribed with 'Satyamev Jayate' in Golden Colour on the upper right canton on the fly side, and
- Navy Blue – Gold Octagon below the Golden State Emblem.
- The Indian Navy Crest has been amended to replace the fowl anchor with a Clear Anchor.

21) The term 'Panchteerth' includes which of the following places are associated with B R Ambedkar?

1. Janma Bhoomi, Ambedkar's birthplace
2. Shiksha Bhoomi, the place in London where Ambedkar stayed while studying
3. Deeksha Bhoomi, where Ambedkar embraced Buddhism
4. Chaitya Bhoomi, the place of Ambedkar's demise
- Mahaparinirvan Bhoomi, the place of Ambedkar's cremation

Which of the above statements are correct?

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 1, 2, 3 and 4 only
- (d) 1, 2, 3, 4 and 5

Ans: B) The government had first proposed the Ambedkar Circuit, or Panchteerth, in 2016. Panchteerth would include Janma Bhoomi, Ambedkar's birthplace in Madhya Pradesh's Mhow; Shiksha Bhoomi, the place in London where he stayed while studying in the UK; Deeksha Bhoomi in Nagpur where he embraced Buddhism; Mahaparinirvan Bhoomi or the place of his demise in Delhi; and Chaitya Bhoomi, the place of his cremation, in Mumbai.

22) Which of the following statements is/are correct regarding the Biological Diversity Act, 2002?

1. The main intent of this legislation is to protect India's rich biodiversity and associated knowledge against their use by foreign individuals.
 2. It seeks to check biopiracy, protect biological diversity and local growers through a three-tier structure of central and state boards and local committees.
 3. It provides for setting up of a National Biodiversity Authority (NBA) and State Biodiversity Boards (SBBs).
- Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

Ans: D) Enacted for the conservation of biological diversity and fair, equitable sharing of the monetary benefits from the commercial use of biological resources and traditional knowledge.

- The main intent of this legislation is to protect India's rich biodiversity and associated knowledge against their use by foreign individuals.
- It seeks to check biopiracy, protect biological diversity and local growers through a three-tier structure of central and state boards and local committees.
- The Act provides for setting up of a National Biodiversity Authority (NBA), State Biodiversity Boards (SBBs) and Biodiversity Management Committees (BMCs) in local bodies.
- The NBA will enjoy the power of a civil court.

23) Mount Semeru Volcano is located in:

- A. Indonesia
- B. Japan
- C. Sudan
- D. Vietnam

Ans: A) Mount Semeru volcano erupted recently triggering top alert status. It is located in Indonesia. It is one of the East Java Island's tallest volcano.

- Semeru's last major eruption was in December 2021.
- Semeru, also known as Mahameru, has erupted numerous times in the past 200 years.

24) With reference to International Civil Aviation Organisation (ICAO), consider the following statements:

1. It was established by the Brasilia Declaration.

2. It develops standards for global air transport.

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) ICAO is funded and directed by 193 national governments to support their diplomacy and cooperation in air transport as signatory states to the Chicago Convention (1944).

- 'Chicago Convention' established the core principles permitting international transport by air, and led to the creation of the specialized agency which has overseen it ever since – the International Civil Aviation Organization (ICAO).
- ICAO develops standards for global air transport and assists its 192 Member States in sharing the world's skies to their socio-economic benefit.
- Headquarters: Montreal, Canada

India is among the top 50 countries with best aviation safety in the latest ICAO rankings

25) With reference to Kaziranga National Park, consider the following statements:

1. It is inhabited by the world's largest population of one-horned rhinoceroses.
2. It is recognized as an 'Important Bird Area' by BirdLife International for the conservation of avifaunal species.

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: C) Located in the State of Assam it is the single largest undisturbed and representative area in the Brahmaputra Valley floodplain.

- It is inhabited by the world's largest population of one-horned rhinoceroses, as well as many mammals, including tigers, elephants, panthers and bears, and thousands of birds.
- Protection status:
- It was declared a national park in 1974.
- UNESCO declared it a world heritage site in 1985.
- It became a Tiger Reserve in 2006.
- It is also recognized as an 'Important Bird Area' by BirdLife International for the conservation of avifaunal species

26) Bazball method, that was recently in news is related to which sport?

- a) Football
- b) Cricket
- c) Tennis
- d) Golf

Ans: B) Test cricket is a conservative game that often rewards patience, defensive technique and temperamental fortitude over flair, bravado and innovation.

- Bazball is a novel approach that tries to shed some of cricket's long-standing assumptions on how to play, specifically the approach to batting.
- Instead of trying to preserve wickets, Brendon McCullum directed the English players to "go for it," scoring as quickly as possible.

27) Which of the following pairs is/are correctly matched?

1. Black hydrogen : Produced by use of fossil fuel
2. Pink hydrogen : Produced through Natural Gas
3. Grey hydrogen : Produced through electrolysis, but using energy from nuclear power sources.

Select the correct answer code:

- (a) 1 only
- b) 1, 2
- (c) 1, 3
- (d) 1, 2, 3

Ans: A) Black hydrogen is produced by use of fossil fuel, whereas pink hydrogen is produced through electrolysis, but using energy from nuclear power sources.

- Grey hydrogen is produced from natural gas.
- 'Green hydrogen', the emerging novel concept, is a zero-carbon fuel made by electrolysis using renewable power from wind and solar to split water into hydrogen and oxygen.

28) With reference to the SHE STEM 2022, consider the following statements:

1. It is a flagship event of the Nobel Memorial Week and aims to amplify the contribution of women innovators, technologists, scientists, and founders in the fields of STEM and sustainability.
2. The annual event is organised by DRDO.

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) SHE STEM is a flagship event of the Nobel Memorial Week and aims to amplify the contribution of women innovators, technologists, scientists, and founders in the fields of STEM and sustainability.

- The annual event is organised by the Embassy of Sweden in India in partnership with the Atal Innovation Mission, NITI Aayog and the German Centre of Innovation and Research (DWIH New Delhi).

29) With reference to the National Bamboo Mission (NBM), consider the following statements:

1. It is a central sector scheme.
2. It aims to increase the area under bamboo plantation in non-forest Government and private lands to supplement farm income.

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 Restructured National Bamboo Mission is a centrally sponsored scheme (CSS).

- Under the Mission, steps have been taken to increase the availability of quality planting material by supporting the setting up of new nurseries and strengthening of existing ones.
Objectives:
- To increase the area under bamboo plantation in non-forest Government and private lands to supplement farm income.
- To improve post-harvest management through establishment of innovative primary processing units near the source of production.
- To promote product development keeping in view market demand, by assisting R&D, entrepreneurship etc.
- Implementation: It is being implemented through the state nodal department which is nominated by the State/UT governments concerned.
- The selection of beneficiaries: The selection of beneficiaries and delivery of assistance are being carried out by the State Bamboo Mission/State Bamboo Development agency

stationed at the State/UT nodal department for implementing the National Bamboo Mission.

30) The 'Boao Forum for Asia (BFA)' is China's equivalent of

- a) United Nations Industrial Development Organisation
- b) International Transport Forum
- c) Organisation for Economic Cooperation and Development
- d) World Economic Forum

Ans: D) The Boao Forum for Asia (BFA) is a non-profit organisation that hosts high-level forums for leaders from government, business and academia in Asia and other continents to share their vision on the most pressing issues in this region and the world at large. BFA is modelled on the World Economic Forum held annually in Davos.

31) Consider the following statements regarding appointment of Supreme Court judges.

1. The Chief Justice of India and the Judges of the Supreme Court are appointed by the President of India.
2. Whenever there is any doubt about the senior most Judge to hold the office of the Chief Justice of India, the matter is decided by the Parliament.
3. For appointing Judges of the Supreme Court, the recommendation of collegium to the President is binding during the first instance.

Which of the above statements is/are correct?

- (a) 1 only
- (b) 1 and 3 only
- (c) 2 only
- (d) 1 and 2 only

Ans: A) The Chief Justice of India and the Judges of the Supreme Court are appointed by the President under clause (2) of Article 124 of the Constitution.

- The names are recommended by the Collegium.
- The collegium sends its final recommendation to the President of India for approval. The President can either accept it or reject it. In the case it is rejected, the recommendation comes back to the collegium. If the collegium reiterates its recommendation to the President, then he/she is bound by that recommendation.
- Appointment to the office of the Chief Justice of India should be of the senior most Judge of the Supreme Court considered fit to hold the office.

- Whenever there is any doubt about the fitness of the senior most Judge to hold the office of the Chief Justice of India, consultation with other Judges as envisaged in Article 124 (2) of the Constitution would be made for appointment of the next Chief Justice of India.

32) 'Net metering' is sometimes seen in the news in the context of promoting the

(a) production and use of solar energy by the households/consumers

(b) use of piped natural gas in the kitchens of households

(c) installation of CNG kits in motor-cars

(d) installation of water meters in urban households

Ans: A) Net metering is a billing mechanism that credits solar energy system owners for the electricity they add to the grid, if you generate more energy (from household solar rooftops) than you consume at home.

33) The term 'Base Erosion and Profit Shifting' is sometimes seen in the news in the context of

(a) mining operation by multinational companies in resource-rich but backward areas

(b) curbing of the tax evasion by multinational companies

(c) exploitation of genetic resources of a country by multinational companies

(d) lack of consideration of environmental costs in the planning and implementation of developmental projects

Ans: B) Base erosion and profit shifting (BEPS) refers to tax avoidance strategies that exploit gaps and mismatches in tax rules to artificially shift profits to low or no-tax locations. Under the inclusive framework, over 100 countries and jurisdictions are collaborating to implement the BEPS measures and tackle BEPS. Double-tax avoidance treaties and tax-information exchange between member nations are used to curb this practice.

34) With reference to the Foreign Direct Investment (FDI), consider the following statements:

1. It is an investment from a party in one country into a business or corporation in another country with the intention of establishing a lasting interest.
2. In Government-approval route the government's approval is mandatory and the company will have to file an application through Foreign Investment Facilitation Portal.

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: C) Foreign direct investment (FDI) is an investment from a party in one country into a business or corporation in another country with the intention of establishing a lasting interest.

- With FDI, foreign companies are directly involved with day-to-day operations in the other country.
- FDI enters in India through either of the two routes:
 - Automatic route
 - The non-resident or Indian company does not require prior nod of the RBI or government of India for FDI.
 - Government-approval route
 - The government's approval is mandatory and the company will have to file an application through Foreign Investment Facilitation Portal.

35) Which of the following pairs is/are correctly matched?

Protected areas States

1. Koundinya Wildlife Sanctuary-Kerala
2. Bhadra Wildlife Sanctuary-Karnataka
3. Dandeli Wildlife Sanctuary-Odisha

Select the correct answer using the code given below:

- A. 2 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2 and 3

Ans: A) An 18-member herd of all female elephants from the forests of Gudiyattam and Pernambattu of Tamil Nadu are currently on the prowl in the Koundinya wildlife sanctuary zone in Andhra Pradesh apparently "in search of mates".

- This Sanctuary comes under Project elephant - a Country wide Elephant Conservation Project taken up by Government of India. The only home for Asiatic elephants in the State of Andhra Pradesh.

36) Consider the following statements.

1. Several autonomous bodies within the Ministry of Culture actively function towards promoting and preserving intangible cultural heritage within India.
2. Sangeet Natak Akademi files nominations of intangible cultural entities from India to UNESCO's Representative List of Intangible Cultural Heritage.
3. The Ministry of Culture launched the Scheme for Safeguarding the Intangible Cultural Heritage and Diverse Cultural Traditions of India that aims to enhance "awareness and interest" in the safeguarding, promotion and propagation of intangible cultural heritage.

Which of the above statements is/are correct?

- a) 1, 2
 - b) 1, 3
 - c) 2, 3
 - d) 1, 2, 3
- D. Neither 1 nor 2

Ans: D) According to a press release by PIB, several autonomous bodies within the Ministry of Culture actively function towards promoting and preserving intangible cultural heritage within the country.

- The Ministry of Culture has appointed the Sangeet Natak Akademi, an autonomous organisation under the Ministry of Culture, as nodal office for matters relating to the intangible cultural heritage including for preparation of the nomination dossiers for the Representative List of UNESCO.
- The Ministry of Culture also launches regular schemes, in an attempt to preserve, protect and promote intangible cultural heritage in the country. Among them, the "Scheme for Safeguarding the Intangible Cultural Heritage and Diverse Cultural Traditions of India" aims to "professionally" enhance "awareness and interest" in the safeguarding, promotion and propagation of ICH.

37) Consider the following statements regarding Compressed Natural Gas (CNG).

1. CNG is comprised mostly of methane gas.
2. CNG engines run more quietly due to the higher octane rating of CNG over gasoline.
3. CNG vehicles reduce Harmful emissions such as carbon monoxide (CO), carbon dioxide (CO₂) and nitrous oxide (N₂O) by more than 90% when compared to gasoline powered vehicles.

Which of the above statements is/are correct?

- a) 1, 2
- b) 1, 3
- c) 1, 2, 3
- d) 2, 3

Ans: C) Compressed natural gas, or CNG, is natural gas under pressure which remains clear, odourless, and non-corrosive – and can be used as a cheaper, greener, and more efficient alternative to the traditional petrol and diesel fuels for vehicles.

- CNG is comprised mostly of methane gas which, like gasoline, produces engine power when mixed with air and fed into your engine's combustion chamber.
- CNG engines run more quietly due to the higher-octane rating of CNG over gasoline and they produce less exhaust emissions. Harmful emissions such as carbon monoxide (CO), carbon dioxide (CO₂) and nitrous oxide (N₂O) can be reduced by as much as 95% when compared to gasoline powered vehicles.

38) With reference to the Pradhan Mantri Surakshit Matritva Abhiyan programme (PMSMA), consider the following statements:

1. It has been launched by the Union Ministry of Home Affairs,
2. It guarantees a minimum package of antenatal care services to women in their 2nd / 3rd trimesters of pregnancy at designated government health facilities.

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 Pradhan Mantri Surakshit Matritva Abhiyan has been launched by the Ministry of Health & Family Welfare (MoHFW), Government of India.

- The program aims to provide assured, comprehensive and quality antenatal care, free of cost, universally to all pregnant women on the 9th of every month.
- It guarantees a minimum package of antenatal care services to women in their 2nd / 3rd trimesters of pregnancy at designated government health facilities.
- The programme follows a systematic approach for engagement with private sector

39) **Meizotropis pellita is a perennial shrub with restricted distribution that is endemic to Uttarakhand.**

It is listed as which of the following category on IUCN?

- A. Vulnerable
- B. Critically Endangered
- C. Extinct
- D. None of the above

Ans: B) Three medicinal plant species found in the Himalayas have made it to IUCN Red List of Threatened Species following a recent assessment.

- Meizotropispellita has been assessed as 'critically endangered', Fritilloriacirrhosa as 'vulnerable', and Dactylorhizahatagirea as 'endangered'.

40) **With reference to the Trisonic Wind Tunnel, consider the following statements:**

1. The tunnel can be used for testing various space vehicles in three flight regimes, below the speed of sound (subsonic), at the speed of sound (transonic) and above the speed of sound (supersonic).
2. The tunnel can simulate flight conditions from 0.2 times the speed of sound (68 m/s) to 4 times the speed of sound (1360 m/s).

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2

Ans: C) Trisonic Wind Tunnel is a system to aid aerodynamic design of rockets and re-entry spacecrafts by characterising a scaled model by evaluating forces, moments, load distribution, unsteady pressures, acoustic levels etc.

- The tunnel can be used for testing various space vehicles in three flight regimes —
- below the speed of sound (subsonic), at the speed of sound (transonic) and above the speed of sound (supersonic). The tunnel can simulate flight conditions from 0.2 times the speed of sound (68 m/s) to 4 times the speed of sound (1360 m/s).

41) **Consider the following statements about Convention on Biological Diversity:**

1. The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993.

2. The United States is the only UN member state which has not ratified the Convention.

3. It has two supplementary agreements, the Cartagena Protocol and Nagoya Protocol.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

- Ans: C) The Convention on Biological Diversity (CBD), known informally as the Biodiversity Convention, is a multilateral treaty. The Convention has three main goals: the conservation of biological diversity (or biodiversity); the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources. Its objective is to develop national strategies for the conservation and sustainable use of biological diversity, and it is often seen as the key document regarding sustainable development. The Convention was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992 and entered into force on 29 December 1993. It has two supplementary agreements, the Cartagena Protocol and Nagoya Protocol.
- Only four member states of the United Nations are not Parties to the CBD, namely: Andorra, South Sudan, United States of America and the Holy See (the Vatican).

42) **The PathoDetect Kit is designed to identify**

- (a) Covid-19
- (b) Tuberculosis
- (c) Malaria
- (d) Dengue

Ans: B) It is India's 1st indigenous TB detection kit produced by Pune-based Mylab. Using a single test, it can detect tuberculosis and multi-drug resistance (against Isoniazid and Rifampicin). The test kit is low-cost and can be stored at room temperature.

43) **With reference to Meitei script, consider the following statements:**

1. It was patronised by the Meitei rulers.
2. During the reign of Meidingu Pamheiba, it was expanded to the 36-letter script.

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: C) The Meitei script was once patronised by Meitei rulers but which fell into disuse with the advent of Hinduism and eventually disappeared.

- The Meitei Mayek or Meitei script evolved with time and this led to conflict between various proponents. The inscriptions on the coins of the 7th and 8th Century were perhaps in the 18-letter script, which, with the advent of Hinduism in the 17th century during the reign of Meidingu Pamheiba (1709-1748), was perhaps expanded to the 36-letter script.
- With the advent of Hinduism, Bengali scripts became so popular that stone inscriptions in the 18th and 19th century were in Bengali script.

44) Lecanemab drug recently seen in the news is used for treating which of the following disease?

- A. Alzheimer's
- B. Avian Influenza
- C. Tuberculosis
- D. HIV/AIDS

Ans: A) Lecanemab belongs to a class of drugs called monoclonal antibodies. These antibody-mediated drugs target beta amyloid, the protein deposition that is seen in patients with Alzheimer's disease, and disrupts cells function. It is a progressive neurologic disorder that causes the brain to shrink (atrophy) and brain cells to die. It involves parts of the brain that control thought, memory, and language. It can seriously affect a person's ability to carry out daily activities.

45) With reference to Circular Trading, consider the following statements:

1. It refers to fraudulently availing input tax credit by traders by issuing of invoices without availing any real goods or service.
2. The main objective of circular trading is inflating turnover of the business.

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: C) Circular trading refers to fraudulently availing input tax credit by traders by issuing of invoices without

availing any real goods or service. In simple words, circular trading refers to the transaction of selling and buying of goods (without actual movement of goods) through shell companies.

- Circular trading is a circular which is being formed by a group of companies engaging themselves in fake sales transaction by producing fake sale invoices.
- The main objective of circular trading is inflating turnover of the business.

46) With reference to chemical fertilizers in India, consider the following statements:

1. At present, the retail price of chemical fertilizers is market-driven and not administered by the Government.
2. Ammonia, which is an input of urea, is produced from natural gas.
3. Sulphur, which is a raw material for phosphoric acid fertilizer, is a by-product of oil refineries.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: B) The Union Government subsidizes the urea manufacturing units for the cost of transportation to facilitate the availability of urea at the same maximum retail price all over the country. Also, the Government is subsidizing fertilizers for their availability at reasonable prices for agricultural purposes.

- S3: Sulphur is a by-product of processing natural gas and refining high-sulphur crude oils. Even if they use low sulphur crude oil, there is still sulphur emission, so S3 is correct.
- The primary sources of sulfuric acid emissions are combustion of coal, and the industries that manufacture or use it in production, including metal smelters, phosphate fertilizer producers, oil refineries, the chemical industry, battery manufacturers, manufacturers of fabricated metal products, manufacturers of electronic components, and manufacturers of measuring and controlling devices.

47) "It is categorized as 'critically endangered' in the International Union for Conservation of Nature (IUCN) Red Data Book and is listed in Schedule IV in the Wildlife

Protection Act, 1972. It is one of the rarest birds in the world and is found only in Bhutan, Myanmar and the Namdapha Tiger Reserve in Arunachal Pradesh. It had also been recorded in the adjacent Kamlang Tiger Reserve in Lohit district in camera trap images.”

Which one of the following species is being described in the above paragraph?

- (a) Dark-Eyed Juncos
- (b) Cryo Drakon Boreas
- (c) White-Bellied Heron
- (d) Himalayan Quail

Ans: C) Loss of habitat is forcing the White-bellied Heron to lead an isolated lifestyle deep inside forests, and further pushing this critically endangered bird towards extinction, scientists have found in a new study.

- The white-bellied heron is categorised as ‘critically endangered’ in the International Union for Conservation of Nature (IUCN) Red Data Book and is listed in Schedule IV in the Wildlife Protection Act, 1972. It is one of the rarest birds in the world and is found only in Bhutan, Myanmar and the Namdapha Tiger Reserve in Arunachal Pradesh. It had also been recorded in the adjacent Kamlang Tiger Reserve in Lohit district in camera trap images.

48) In India, markets in agricultural products are regulated under the

- (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) Agricultural Markets in most parts of the Country are established and regulated under the State APMC Acts. The whole geographical area in the State is divided and declared as a market area wherein the markets are managed by the Market Committees constituted by the State Governments. Once a particular area is declared a market area and falls under the jurisdiction of a Market Committee, no person or agency is allowed freely to carry on wholesale marketing activities.

49) With reference to the Grey-bellied wren babbler, consider the following statements:

1. It is listed as a critically endangered species in the IUCN list of threatened species.
2. Its natural habitat is subtropical moist montane forests.

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) Recently new species of wren babblers found in Arunachal Pradesh.

- Grey-bellied wren babbler is a specie of songbird named after the Lisu, the local community.
- This is mostly found in Myanmar with some birds occurring in adjoining China and Thailand.
- IUCN Status: Least Concern. Habitat: Subtropical moist montane forest.
- Features: Dark edges to its back and crown feathers give it a scaly-looking quality. Forages on ground and in undergrowth, almost always under heavy cover and rarely emerging into the open.

50) With reference to the Nirbhaya Fund, consider the following statements:

1. It was established in 2020.
2. It is a non-lapsable corpus fund.

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) Union Minister for Women and Child Development Smriti Irani has recently said that the government has set up over one thousand fast track courts in the country with the help of Nirbhaya Fund.

- Objective: For implementation of initiatives aimed at enhancing the safety and security for women in the country.
- Established in: 2013 by Union Finance Ministry.
- Type: It is a non-lapsable corpus fund.

51) Consider the following statements about Central Bureau of Investigation:

1. It operates under the jurisdiction of the Ministry of Home Affairs.

2. It is exempted from the provisions of the Right to Information Act.
3. It is India's officially designated single point of contact for liaison with the Interpol.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Ans: C) The Central Bureau of Investigation (CBI) is the premier investigating agency of India.

- It operates under the jurisdiction of the Ministry of Personnel, Public Grievances and Pensions.
- CBI is exempted from the provisions of the Right to Information Act.
- CBI is India's officially designated single point of contact for liaison with the Interpol.

52) With reference to ISRO'S NavIC, consider the following statements:

1. It is designed with a constellation of 7 satellites.
2. It covers India and a region extending 1500 km² around it.
3. NavIC-based trackers are compulsory on commercial vehicles in India.

Which of the statements given above is/are correct?

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2 and 3

Ans: A) NavIC is designed with a constellation of 7 satellites and a network of ground stations operating 24x7.

- S2: It covers India and a region extending 1,500 km (930 mi) around it, with plans for further extension. not 1500 km²
- S3: In April 2019, the Union Ministry of Road Transport and Highways made NavIC-based vehicle trackers mandatory for all commercial vehicles in the country. In August 2021, DGCA updated the drone rules for India under which it became mandatory to use made-in-India technologies, including NavIC.

53) In the context of the developments in Bioinformatics, the term 'transcriptome', sometimes seen in the news, refers to

- (a) a range of enzymes used in genome editing
- (b) the full range of mRNA molecules expressed by an organism
- (c) the description of the mechanism of gene expression
- (d) a mechanism of genetic mutations taking place in cells

Ans: B) A transcriptome is the full range of messenger RNA, or mRNA, molecules expressed by an organism.

- The term "transcriptome" can also be used to describe the array of mRNA transcripts produced in a particular cell or tissue type.
- In contrast with the genome, which is characterized by its stability, the transcriptome actively changes.
- In fact, an organism's transcriptome varies depending on many factors, including stage of development and environmental conditions.

54) With reference to the Pradhan Mantri Adi Adarsh Gram Yojana, consider the following statements:

1. It aims to transform villages with significant tribal population into model village (Adarsh Gram) covering about population of 4.22 crore.
2. The identification of needs or Gaps with regard to the 'Monitorable Indicators' are based on a Need Assessment exercise.

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: C) Recently, Ministry Of Tribal Affairs has revamped the existing Scheme of 'Special Central Assistance to Pradhan Mantri Adi Adarsha Gram Yojana.

- Aim: Transforming villages with significant tribal population into model village (Adarsh Gram) covering about population of 4.22 crore (About 40% of the total Tribal Population)
- Objective: To achieve integrated socio-economic development of selected villages through convergence approach.
- Improving the infrastructure in vital sectors like health, education, connectivity and livelihood.

- It includes maximizing the coverage of individual / family benefit schemes of the Central / State Governments.
- The scheme envisions to mitigate gaps prominently in 8 sectors of development viz. Road connectivity, Telecom connectivity, School, Anganwadi Centres, Health Sub-Centre, Drinking water facility.

55) With reference to the Environment Education, Awareness and Training (EEAT), consider the following statements:

1. It is a centrally sponsored scheme.
2. It is implemented by Ministry of Environment, Forest and Climate Change.

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) It is a Central Sector scheme implemented by Ministry of Environment, Forest and Climate Change.

- Objective: To promote environmental awareness and mobilize students' participation for environment conservation. Under this Scheme there are two major programmes namely Green Corps (NGC) Programme and National Nature Camping Programme (NNCP)

56) Consider the following statements:

The Chambal River is a tributary of the Ganga. It flows through the states of Madhya Pradesh, Rajasthan and Uttar Pradesh.

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 Chambal River is a tributary of the Yamuna River in Central and Northern India, and thus forms part of the greater Gangetic drainage system.

- The river flows through the states of Madhya Pradesh, Rajasthan and Uttar Pradesh in north-northeast direction

57) The term "aeronomy," refers to the scientific study of the/a/an

- (a) aircraft and associated economy
- (b) air and bubble
- (c) upper atmospheric regions of the Earth
- (d) none of the above

Ans: C) ISRO has taken initiatives for feasibility studies on missions to Venus as well as Aeronomy studies

- The term "aeronomy," coined and introduced about 60 years ago, refers to the scientific study of the upper atmospheric regions of the Earth and other solar system bodies. It covers the chemistry, dynamics and energy balance of both neutral and charged particles.

58) Which of the following statements is/are correct?

1. A Bill pending in the Lok Sabha lapses on its prorogation.
2. A Bill pending in the Rajya Sabha, which has not been passed by the Lok Sabha, shall not lapse on dissolution of the Lok Sabha.

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) Prorogation does not affect the bills or any other business pending before the House.

- It is the pending notices (other than those for introducing bills) lapse on prorogation and fresh notices have to be given for the next session. So, 1 is incorrect.
- Statement 2: A bill pending in the Lok Sabha lapses (whether originating in the Lok Sabha or transmitted to it by the Rajya Sabha).
- A bill passed by the Lok Sabha but pending in the Rajya Sabha lapses.
- A bill pending in the Rajya Sabha but not passed by the Lok Sabha does not lapse.
- A bill passed by both Houses but pending assent of the president does not lapse

59) With reference to the E-20 Fuel, consider the following statements:

1. The E20 fuel is a twenty percent blend of Ethanol and eighty percent of fossil based fuel.
2. Flex engines are those that can run at any ratio of ethanol blending from E20 to E100.

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: c) Union Petroleum and Natural Gas Minister has recently said that India will soon launch E-20 fuel with 20% blending of ethanol.

- The E20 fuel is a twenty percent blend of Ethanol and eighty percent of fossil based fuel.
- The introduction of E20 fuel has the motive of reducing the reliance on fossil based fuels for building a more sustainable society for the future and to reduce vehicular emissions.
- Flex engines are those that can run at any ratio of ethanol blending from E20 to E100.
- These types of engines and cars are not new

60) With reference to the Glyphosate, consider the following statements:

1. It was first developed in 2001.
2. It is scientifically N-(phosphonomethyl) glycine under the IUPAC system of nomenclature.

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) Glyphosate is a widely used herbicide that can kill certain weeds and grasses.

- Glyphosate works by blocking an enzyme essential for plant growth.
- First developed in 1970, glyphosate is scientifically N-(phosphonomethyl) glycine under the IUPAC system of nomenclature.
- In India, glyphosate use was approved only for tea crop and non-crop areas for control of weeds.
- Assam, West Bengal, Tamil Nadu and Kerala are the major tea plantation states in India.
- In India it goes by various brand names, including Roundup, Glycel, and Brake.
- But glyphosate consumption is higher in states that do not have tea crops.
- It is being widely and indiscriminately used in paddy fields by farmers.

61) Consider the following statements.

1. The process of copying genetic information from one strand of the DNA into RNA is termed as transcription.
2. Bacteria contain only mRNA (messenger RNA) and do not have any tRNA (transfer RNA).

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) The process of copying genetic information from one strand of the DNA into RNA is termed as transcription.

- In bacteria, there are three major types of RNAs: mRNA (messenger RNA), tRNA (transfer RNA), and rRNA (ribosomal RNA). All three RNAs are needed to synthesise a protein in a cell. The mRNA provides the template, tRNA brings amino acids and reads the genetic code, and rRNAs play structural and catalytic role during translation. There is single DNA-dependent RNA polymerase that catalyses transcription of all types of RNA in bacteria. RNA polymerase binds to promoter and initiates transcription (Initiation).

62) Consider the following statements about Nirbhaya fund:

1. It is a non-lapsable corpus fund of Rs 10000 crores given by the Centre and utilized by States to ensure women's safety.
2. The Ministry of Women and Child Development is the nodal ministry involved in appraising, reviewing, and monitoring the progress of those schemes sanctioned under the Nirbhaya Fund.

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) It is a non-lapsable corpus fund of Rs 1000 crores given by the centre and utilized by states to ensure women's safety.

- Nodal Agency for the administration of funds: Department of Economic Affairs under the Ministry of Finance
- Nodal Agency for expenditure: Women and Child Development (WCD) Ministry

- The schemes being implemented by WCD under this fund are:- One Stop Centre; Universalisation of Women Helpline; Mahila Police Volunteer
- The schemes being implemented by Home Ministry under this fund are: Emergency Response Support System; Central Victim Compensation Fund

63) **With reference to the Football World Cup, consider the following statements:**

1. The first official World Cup was played in Brazil 1930.
2. The tournament is the first to be held in the Arab world and only the second to take place in Asia, after Japan and South Korea joint-hosted the event in 2002.

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 first official World Cup was played in Uruguay 1930.

- The tournament is the first to be held in the Arab world and only the second to take place in Asia, after Japan and South Korea joint-hosted the event in 2002.
- This edition will be the last to feature just 32 teams, with the tournament being expanded from 2026 onwards in order to feature 48 nations.

64) **'Prashasan Gaon ki Ore' Campaign, recently seen in news, is an initiative of:**

- A. NITI Aayog
- B. Union Ministry of Home Affairs
- C. Union Ministry of Finance
- D. None of the above

Ans: D) Union Minister for Personnel, Public Grievances, and Pensions will inaugurate the Prashasan Gaonki Ore (governance towards village) on December 19, 2022. It is a nationwide campaign under the Good Governance Week 2022.

- The Nationwide campaign for Redressal of Public Grievances and Improving Service Delivery will be held in all Districts, States and Union Territories of the country.
- The good governance week, or SushasanSaptah, will witness the nation's grievance redressal

platforms functioning in unison — grievances received on Centralised Public Grievance Redress and Monitoring System (CPGRAMS) will be redressed along with grievances received on State portals.

65) **With references to the autism spectrum disorder, consider the following statements**

1. It is a developmental disability caused by differences in the brain.
2. The Right of Persons with Disabilities Act, of 2016 doesn't include autism spectrum disorder.

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) Autism spectrum disorder (ASD) is a developmental disability caused by differences in the brain. People with ASD may behave, communicate, interact, and learn in ways that are different from most other people.

- ASD begins before the age of 3 years and can last throughout a person's life, although symptoms may improve over time.
- The Right of Persons with Disabilities Act, 2016 increased the types of disabilities from 7 to 21. It also added autism spectrum disorder among others, which were largely ignored in earlier Act.

66) **Consider the following statements about Global Methane Initiative:**

It was launched at COP26 in November 2021 to catalyze action to reduce methane emissions.

India is not a part of this initiative.

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) Global Methane Initiative: (Not to be confused with Global Methane Pledge, of which India is not a part)

- The Global Methane Initiative (GMI) is an international public-private partnership focused on reducing barriers to the recovery and use of methane as a valuable energy source.

- In 2004, 14 countries launched the original initiative. As of 2015, 41 countries, including India and the European Commission, are part of the initiative.

67) Why is Bharat (BH) Series Registration Mark introduced in India?

- (a) address the vehicle pollution
- (b) prevent car registration theft
- (c) to make the re-registration of the vehicles a hassle-free process
- (d) increasing the vehicle fitness fees and penalties

Ans: C) The Government of India introduced the BH Number Plate or Bharat Series Registration Number for non-transport vehicles in August 2021. The BH Series number plate removes the obligation of transferring vehicle registration after moving from one state to the other.

68) With reference to the North Eastern Council (NEC), consider the following statements:

1. It is under the administrative purview of The Ministry of Home Affairs.
2. It comprises Governors and Chief Ministers of constituent States and three members nominated by the President.

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) North Eastern Council (NEC) is under the administrative purview of Ministry of Development of the North-Eastern Region (MDoNER).

- NEC is not a constitutional body, but a statutory organization established under the North Eastern Council Act, 1971, as amended in 2002.
- It is the nodal agency for the economic and social development of the North Eastern Region which consists of the eight States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- The Council comprises Governors and Chief Ministers of constituent States and three members nominated by the President.

69) With references to the Surface Water and Ocean Topography (SWOT) consider the following statements

1. It is launched by the Indian Space Research Organisation (ISRO).
2. It will help in surveying water bodies around the globe.

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) SWOT is being jointly developed by NASA with contributions from the Canadian Space Agency (CSA) and United Kingdom Space Agency.

- The advanced radar satellite is designed to give an unprecedented view of the life covering 70% of the planet, shedding new light on the mechanics and consequences of climate change. It will conduct a comprehensive study of Oceans, rivers and Lakes around the world.
- It sweeps of the planet at least twice every 21 days, will enhance Ocean circulation models bolster weather and climate forecasts and aid in managing scarce freshwater supplies in drought-stricken regions.
- It is equipped to observe the entire length of nearly all rivers wider than 330 feet and more than 1 million lakes and reservoirs larger than 5 acres.

70) With references to the Raktsey Karpo Apricots, consider the following statements

1. This is being promoted under One District One Product for Kargil.
2. This is the first-ever ever Geographical Indication Tag from the Ladakh region.

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: C) Recently, Ladakh got its first ever Geographical Indication Tag to Raktsey Karpo Apricot.

- Ladakh grows more than thirty types of Apricots, but the Raktsey Karpo variety is unique to the region.
- Apricot is the major fruit of Ladakh with large-scale cultivation in both Leh and Kargil Districts among the nine fruits grown in Ladakh.

- Apricot is also being promoted under One District One Product for Kargil.

71) Consider the following statements.

The hippopotamus is a large semiaquatic mammal native to sub-Saharan Africa.

Hippopotamus is the largest land mammal on Earth.

Convention on International Trade in Endangered Species (CITES) has banned international export/import of body parts of Hippopotamus.

Which of the above statements is/are correct?

- 1, 2
- 1 only
- 1, 3
- 2, 3

Ans: B) The hippopotamus is a large semiaquatic mammal native to sub-Saharan Africa.

- Aside from elephants and rhinos, the hippopotamus is the largest land mammal. Hippos inhabit rivers, lakes, and mangrove swamps.
- The species is included in Appendix II of the Convention on International Trade in Endangered Species (CITES) meaning international export/import (including in parts and derivatives) requires CITES documentation to be obtained and presented to border authorities.

72) Consider the following statements.

1. Six Scorpene submarines are being built under Project-75 by Mazagon Dock Shipbuilders Limited (MDL) under technology transfer from Naval Group of France.

2. All the Scorpene submarines have Air Independent Propulsion (AIP) modules included in them.

3. INS Arihant is India's first indigenous nuclear ballistic missile submarine.

Which of the above statement is/are correct?

- 1, 2
- 1, 3
- 2, 3
- 1, 2, 3

Ans: B) Six Scorpene submarines are being built under Project-75 by MDL under technology transfer from Naval Group of France. The first submarine INS Kalvari was commissioned in December 2017, second submarine INS Khanderi in September 2019, third one INS Karanj

in March 2021 and the fourth one INS Vela joined service in November 2021.

- The Navy has drawn up plans to install Air Independent Propulsion (AIP) modules on all Scorpene submarines as they go for their refit beginning with INS Kalvari in the next couple of years to enhance their endurance.

73) Joint Finance and Health Task Force (JFHTF), was recently seen in news, is an initiative of which of the following organization?

- G20
- BRICS
- SAARC
- None of the above

Ans: A) The first Joint Finance and Health Task Force (JFHTF) meeting under India's G20 Presidency was held in virtual mode on December 20.

- The meeting was co-chaired by Italy and Indonesia.
- The Bali Leaders' Declaration 2022 extended the mandate of the Task Force to continue the collaborations between Finance and Health Ministries for Pandemic Prevention, Preparedness, and Response.

74) With reference to the Environmental-Social-Governance (ESG), consider the following statements:

1. It is a term that has been coined to refer to specific data designed to be used by investors for evaluating the material risk that the organization is taking on based on the externalities it is generating.

2. ESG reporting in India commenced in 2009 with the Ministry of Corporate Affairs (MCA) issuing the Voluntary Guidelines on Corporate Social Responsibility.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

Ans: C) Indian Institute of Corporate Affairs, an autonomous institution under the aegis of the Ministry of Corporate Affairs, Government of India recently launched a programme to create 'impact leaders' in the areas of Environmental-Social-Governance (ESG).

- ESG (Environmental, social, and corporate governance) is a term that has been coined to refer to specific data designed to be used by

investors for evaluating the material risk that the organization is taking on based on the externalities it is generating.

- Environmental aspect: Data is reported on climate change, greenhouse gas emissions, biodiversity loss, deforestation, pollution, energy efficiency and water management.
- Social aspect: Data is reported on employee safety and health, working conditions, diversity, equity, and inclusion, conflicts and humanitarian crises
- Governance aspect: Data is reported on corporate governance such as preventing bribery, corruption, diversity of Board of Directors, executive compensation, cybersecurity etc.

75) With reference to the Sun Temple of Modhera, consider the following statements:

1. It is built in Maru-gurjara architecture style.
2. It is the only temple dedicated to Sun god.

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) The Sun Temple, Modhera dedicated to Surya dev (The Sun God), is one of the remarkable gems of temple architecture in India.

- It is an exemplary model of Maru-gurjara architecture style of the 11th century of western India under the patronage of the Solanki dynasty. The age of the temple may be inferred from its style belonging to the reign of Bhimadeva I (1022-1063 CE).
- This east facing temple is built of bright yellow sandstone.

Other sun temples in India are 8th century CE Martand Sun Temple in Kashmir and the 13th century CE Sun temple at Konark.

76) With reference to the temples at Khajuraho, consider the following statements

1. The site of Khajuraho belonged to the Chandela Kings who ruled over Central India from the 9th to 13th 2. centuries.
2. The monuments at Khajuraho are a group of Hindu and Jaina temples.

3. The Brahma temple is the only temple at Khajuraho completely built of soapstone and has a four-faced lingam in its sanctum sanctorum.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

Ans: C) The site of Khajuraho belonged to the Chandela Kings who ruled over Central India from the 9th to 13th centuries. Initially, this group of monuments were a total of eighty-four temples out of which only twenty-five remain intact today. The monuments at Khajuraho are a group of Hindu and Jaina temples. Khajuraho was declared a World Heritage Site by UNESCO in the year 1986. The temples are grouped into three categories; the Western Group, the Eastern Group and the Southern Group.

- western group is known worldwide with the Kandariya Mahadev Temple, Lakshmana Temple, Visvanatha Temple, Chausath Yogini and Chitragupta Temple being a part of it. They are considered to be some of the best representations of a typical Khajuraho temple
- Eastern Group is dominated by the Jaina Temples out of which the Parsvanath Temple is the largest. The Brahma temple is the only temple at Khajuraho completely built of granite and has a four-faced lingam in its sanctum sanctorum.
- The Southern Group of temples is situated slightly away from other groups and consists of the Duladeo Temple, Chaturbhuj Temple and the Beejamandal Temple.

77) AYURSWASTHYA Yojana is run by the

- (a) Ministry of Health and Family Welfare
- (b) National Health Authority
- (c) Medical Council of India
- (d) none of the above

Ans: D) Ayurswasthya Yojana is an umbrella scheme under AYUSH ministry to roll out authentic classical Ayush interventions for promoting community health care.

- It has two components: AYUSH and Public Health (PHI) and Centre of Excellence (CoE)
- Under the CoE scheme, financial assistance is provided to eligible individual organizations/institutes for establishing and

upgrading their functions & facilities and/or for research & development activities in AYUSH.

- The maximum admissible financial assistance under the CoE component, to an organization/institute, is 10.00 crores for a maximum period of three years

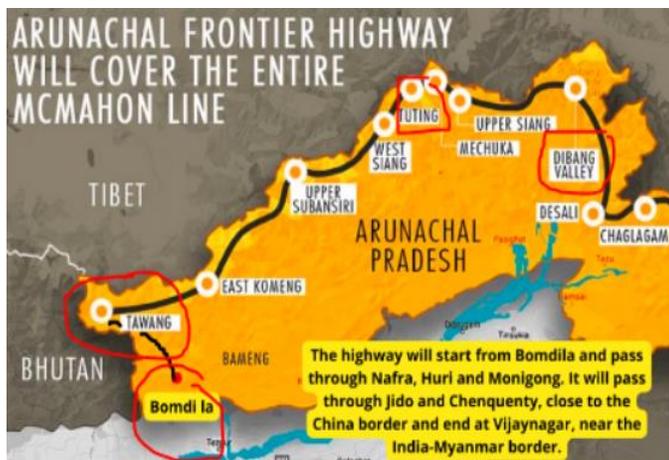
78) Arrange the following locations in the direction of East to West:

1. Tawang
2. Bomdi la
3. Tuting
4. Dibang Valley

Select the correct answer using the code below:

- (a) 4-3-2-1
(a) 4-3-2-1
(c) 2-3-4-1
(d) 4-1-3-2

Ans: A)



79) With references to the INSV Tarini, consider the following statements:

1. It is participating in the 50th edition of Cape to Rio Race 2023.
2. It is the second sailboat of Indian Navy after INSV Mhedi.

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: C) INSV Tarini: It is the second sailboat of Indian Navy after INSV Mhedi.

- It is known for circumnavigating the globe with an all-women officer crew in the historic

expedition titled 'Navika Sagar Parikrama' in 2017.

80) With reference to the Surety Bond Insurance, consider the following statements:

1. It involves a three-party agreement.
2. It will act as a security arrangement for infrastructure projects and will insulate the contractor as well as the principal.

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: C) Surety bond can be defined in its simplest form as a written agreement to guarantee compliance, payment, or performance of an act. Surety is a unique type of insurance because it involves a three-party agreement. The three parties in a surety agreement are:

- Principal: The party that purchases the bond and undertakes an obligation to perform an act as promised.
- Surety: The insurance company or surety company that guarantees the obligation will be performed. If the principal fails to perform the act as promised, the surety is contractually liable for losses sustained.
- Obligee: The party who requires, and often receives the benefit of the surety bond. For most surety bonds, the obligee is a local, state or federal government organization.

81) Consider the following statements regarding Psychoactive drugs/substances.

1. Psychoactive drugs are substances that, when taken in affects how the brain works and causes changes in consciousness, awareness and emotions.
2. The Single Convention on Narcotic Drugs, an international treaty signed by India, is concerned with the control of production and distribution of psychoactive drugs.
3. WHO does not recognise alcohol and caffeine as Psychoactive substances.

Which of the above statement sis/are correct?

- a) 1, 2
b) 1, 3
c) 2, 3
d) 1, 2, 3

Ans: A) Psychoactive drugs are substances that, when taken in or administered into one's system, affect mental processes, e.g. perception, consciousness, cognition or mood and emotions. Psychoactive drugs belong to a broader category of psychoactive substances that include also alcohol and nicotine.

- However, in recent years, the most influential document regarding the legality of psychoactive drugs is the Single Convention on Narcotic Drugs, an international treaty signed in 1961 as an Act of the United Nations. India has signed the convention.

82) Consider the following statements.

1. As a mark of cooperative federalism, the GST Council shall, unanimously or through a majority of 75% of weighted votes, decide on all matters pertaining to GST and recommend such decisions to the Union and State governments.
2. The recommendations of the GST Council are not binding on either the Union or the States Governments.

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: C) The Supreme Court of India has ruled that, The recommendations of the GST Council are not binding on either the Union or the States.

- Article 279A stipulates the creation of the GST Council and its functions. The Council has to function as a platform to bring the Union and State governments together, and as a mark of cooperative federalism, the Council shall, unanimously or through a majority of 75% of weighted votes, decide on all matters pertaining to GST and recommend such decisions to the Union and State governments.

83) With reference to Eco-Sensitive Zones, consider the following statements:

1. It includes land within 50 km of the boundaries of national parks and wildlife sanctuaries.
2. Agricultural or horticultural practices, rainwater harvesting and organic farming are strictly prohibited in Eco-Sensitive Zones.

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) As per the National Wildlife Action Plan (2002-2016), issued MoEFCC, land within 10 km of the boundaries of national parks and wildlife sanctuaries is to be notified as eco-fragile zones or Eco-Sensitive Zones (ESZ).

- These areas are meant to act as a transition zone from areas requiring higher protection to those requiring lesser protection.
- Commercial mining, saw mills, commercial use of wood, etc., apart from regulated activities like felling of trees.
- permitted activities: Ongoing agricultural or horticultural practices, rainwater harvesting, organic farming, among others.

84) With reference to Committee on Content Regulation in Government Advertising (CCRGA), consider the following statements:

1. It is set up to regulate the content of Central and State government advertisements in all media platforms.
2. It is a six-member body.

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) Committee on Content Regulation in Government Advertising (CCRGA): It is a three-member body.

- It was formed by the Union Ministry of Information and Broadcasting in April, 2016, on the directions of the Supreme Court in its judgment in the Common Cause vs. Union of India case in May, 2015.
- The body is set up to regulate the content of Central and State government advertisements in all media platforms.
- The SC had also mandated States to constitute their own respective bodies.
- While some States have set up committees to regulate public advertising content, some have given consent to the CCRGA to monitor their advertisements.

- The SC, in its order had also issued a set of guidelines for public-funded advertising by governments.

85) Consider the following statements:

1. Mudumalai Tiger Reserve is located at the tri-junction of three states, viz, Karnataka, Kerala and Tamil Nadu.
2. Nilgiris Biosphere Reserve is the first Biosphere Reserve in India.

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: C) Mudumalai Tiger Reserve located: It is located in the Nilgiris District of Tamil Nadu.

- It is at the tri-junction of three states, viz, Karnataka, Kerala and Tamil Nadu and it plays an unique role by forming part of the Nilgiris Biosphere Reserve.
- Nilgiris Biosphere Reserve is the first Biosphere Reserve in India, declared during 1986.

86) Consider the following statements regarding Bomb cyclone.

1. Bomb cyclones form when air near Earth's surface rises quickly in the atmosphere, triggering a sudden drop in barometric pressure.
2. Bomb cyclones arise in mid-latitudes, where fronts of warm and cold air might collide.
3. All bomb cyclones are hurricanes.

Which of the above statements is/are correct?

- a) 1 only
- b) 1, 2
- c) 1, 3
- d) 2, 3

Ans: B) A bomb cyclone is simply a storm that intensifies very rapidly. Bomb cyclones form when air near Earth's surface rises quickly in the atmosphere, triggering a sudden drop in barometric pressure.

- All bomb cyclones are not hurricanes. But sometimes, they can take on characteristics that make them look an awful lot like hurricanes, with very strong winds, heavy precipitation and well-defined eye-like features in the middle.
- Hurricanes tend to form in tropical areas and are powered by warm seas. For this reason,

they're most common in summer or early fall, when seawater is warmest.

- In contrast, bomb cyclones don't need balmy ocean waters in order to form. While they sometimes arise over the ocean, they can also appear over land.

87) Consider the following statements regarding Live-attenuated Vaccines.

1. Live vaccines use a weakened form of the germ that causes a disease.
2. They are used against Rotavirus and Smallpox.
3. They are generally given to people with weakened immune systems.

Which of the above statement sis/are correct?

- a) 1 only
- b) 1, 2
- c) 1, 3
- d) 2, 3

Ans: B) Live vaccines use a weakened (or attenuated) form of the germ that causes a disease.

- Because these vaccines are so similar to the natural infection that they help prevent, they create a strong and long-lasting immune response.
- The limitation of this approach is that these vaccines usually cannot be given to people with weakened immune systems.

Live vaccines are used against: Measles, Mumps, Rubella (MMR combined vaccine), Rotavirus, Smallpox among others.

88) With reference to the Gujarat's Vadnagar, consider the following statements:

1. It has recently made it to the tentative list of UNESCO World Heritage sites
2. The town represents a continuously evolving historic urban landscape/area which played a major role in the hinterland trade network of Western India.

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: C) Two sites in Gujarat have recently made it to the tentative list of UNESCO World Heritage sites: Vadnagar, and the Sun Temple of Modhera.

- Vadnagar also called Vridhanagar, Anandapur, Anantapur and Nagar, is said to have been

inhabited uninterruptedly for over 2,700 year and represents a continuously evolving historic urban landscape.

- Architecture: fortified town, arched gateways (toranas), temples, residential structures (kothis) and excavated sites like Buddhist monasteries, extensive water management system
- The study of the historical geography of ancient India reveals Vadnagar was situated at a strategic location of two major ancient trade routes:
- one joining central India with the Sindh and further northwest regions, while another connected the port towns on Gujarat's coast to northern India.
- Excavated cowry shells traced to the Maldives further imply involvement in overseas trade.

89) With reference to the Urban Learning Internship Program (TULIP), consider the following statements:

1. It is developed by the All India Council of Technical Education (AICTE).
2. It provides internship opportunities to graduates.

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) TULIP is a programme for providing internship opportunities to fresh graduates in all Urban Local Bodies (ULBs) and Smart Cities across the country.

- The Ministry of Housing & Urban Affairs (MoHUA) in collaboration with the Ministry of Education (MoE) and All India Council of Technical Education (AICTE) has developed this programme.
- Duration: Internship durations can range from eight weeks to one year.

90) With reference to the Green Rating for Integrated Habitat Assessment (GRIHA), consider the following statements:

1. It is the national rating system of India.
2. It was jointly set up by The Energy and Resources Institute (TERI) and the Ministry of New and Renewable Energy.

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: C) GRIHA: It is the national rating system of India for any completed building construction.

- It was jointly set up by The Energy and Resources Institute (TERI) and the Ministry of New and Renewable Energy. Objective: To help design green buildings and help evaluate the 'greenness' of the buildings.

91) Consider the following statements.

1. Direct Tax revenue is charged against services provided by the government.
2. Non-tax revenue includes interest charged on loans advanced by the government for various purposes.

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: A) Tax revenue is charged on income earned by an individual or an entity (direct tax) and on the value of transaction of goods and services (indirect tax). On the other hand, non-tax revenue is charged against services provided by the government. It also includes interest charged on loans advanced by the government for various purposes.

92) Consider the following statements about the Emperor Penguin (*Aptenodytes forsteri*):

1. It is the tallest and heaviest of all living penguin species in the world.
2. It is endemic to Antarctica.

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: C) Emperor Penguin: It is the largest member of the penguin order (Sphenisciformes). It is also the tallest and heaviest of all living penguin species.

- Geographical Presence: Endemic to Antarctic. IUCN Status: Near threatened.

93) With reference to the Startup India Seed Fund Scheme, consider the following statements:

1. It is under the Ministry of Commerce & Industry.

2. Individual entrepreneurs are not eligible to apply for support under this scheme.

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: C) SISFS: Aims to provide financial assistance to startups for proof of concept, prototype development, product trials, market-entry, and commercialization.

- Nodal Department: Department for Promotion of Industry and Internal Trade, under the Ministry of Commerce & Industry.
- Individual entrepreneurs are not eligible to apply for support under the scheme. Only DPIIT-recognized startups can apply for this scheme.
- Shareholding by Indian promoters in the startup should be at least 51% at the time of application to the incubator for the scheme.
- A startup, recognized by DPIIT, incorporated not more than 2 years ago at the time of application. Startups should not have received more than Rs.10 lakh of monetary support under any other Central or State Government scheme.

94) With reference to the Nasal vaccine, consider the following statements:

1. It targets immune cells present in the mucosal membrane and tissue.
2. It causes immune system to make proteins in the blood and in the nose that help to fight the virus.

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: C) An effective nasal dose targets immune cells present in the mucosal membrane and tissue- which provides systematic as well as mucosal immunity present in other sites such as lungs and the intestines. Hence, a nasal vaccine may be more capable of inoculating crowds against the deadly infection and prevent even mild symptoms from developing.

- An intranasal vaccine will not only be simple to administer but reduce the use of medical consumables such as needles, syringes, etc.,

significantly impacting the overall cost of a vaccination drive.

- The ability to accomplish effective immunization with a single nasal dose is a major advantage, offering broader reach and easier administration.

95) With reference to Pradhan Mantri Matsya Sampada Yojana (PMMSY), consider the following statements:

1. It focuses on activities with potential to generate employment such as seaweed and ornamental fish cultivation.
2. It will be implemented in all the States and Union Territories for a period of 5 (five) years from FY 2020-21 to FY 2024-25.

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

- C) PMMSY was launched in September 2020 with an aim to double the income of fish farmers and fishers in the country. It focuses on activities with potential to generate employment such as seaweed and ornamental fish cultivation. It also emphasises on the breeding technique for quality brood, seed & feed and species diversification.
- It is an umbrella scheme with two separate Components namely (a) Central Sector Scheme (CS) and (b) Centrally Sponsored Scheme (CSS).
- The CSS Component is further segregated into Non-beneficiary oriented and beneficiary orientated subcomponents/activities under the following three broad heads:
 - Enhancement of Production and Productivity, Infrastructure and Post-harvest Management, Fisheries Management and Regulatory Framework.

PMMSY will be implemented in all the States and Union Territories for a period of 5 (five) years from FY 2020-21 to FY 2024-25.

96) In a tropical cyclone, as you move from the edges towards the center, air pressure

- (a) remains constant
- (b) increases significantly
- (c) decreases significantly

(d) varies depending on the wind speed and direction

Ans: C) Tropical cyclone is a rapidly rotating storm system characterized by a low-pressure center.

- On Earth, the pressures recorded at the centers of tropical cyclones are among the lowest ever observed at sea level.
- At the center of a mature tropical cyclone, air sinks rather than rises. For a sufficiently strong storm, air may sink over a layer deep enough to suppress cloud formation, thereby creating a clear “eye”.
- If the air pressure is high at the center and low at the edges, an anti-cyclone is formed.

97) **Losar festival is celebrated in which one of the following states?**

- (a) Gujarat
- (b) Odisha
- (c) Tamil Nadu
- (d) None of the above

Ans: D) PM extended his greetings on the occasion of the Losar festival (the beginning of the Tibetan new year)

- It consists of the offering of prayers, dances, and songs in the honor of Ibex and the pilgrimage of Mount Kailash.
- Losar is the Tibetan word for ‘new year’
- Ladakhi Buddhists make a religious offering before their deities in the domestic shrines or in the Gompas
- History: It was developed in the pre-Buddhist era, during the 4th century AD. The Bon religion (indigenous religious tradition of Tibet) practices the burning of incense. When Lord Buddha arrived in Tibet, this ritual was combined with the harvest celebration, and the Losar festival was born.

98) **With reference to Pandit Madan Mohan Malaviya, consider the following statements:**

1. He was given the title of 'Mahamana' or great soul by Mahatma Gandhi.
2. He was the President of Indian National Congress for four sessions.

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: C) Pandit Madan Mohan Malviya is known for his contribution to India's education system and his role in the Indian Independence movement.

- Pandit Madan Mohan Malviya was given the title of 'Mahamana' or great soul by Mahatma Gandhi, who considered him as an elder brother.
- In 2014, Pandit Malviya was posthumously conferred with Bharat Ratna, the country's highest civilian award.
- He played a key role in the Indian independence struggle against British rule and founded the Banaras Hindu University (BHU) in 1916.

99) **With reference to the Central Pollution Control Board (CPCB), consider the following statements:**

1. It is a statutory organisation under the Ministry of Environment, Forest and Climate Change.
2. It was established under the Air (Prevention and Control of Pollution) Act, 1981.

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) The Central Pollution Control Board (CPCB) of India is a statutory organization under the Ministry of Environment, Forest and Climate Change.

- It was established in 1974 under the Water (Prevention and Control of Pollution) Act, 1974. CPCB was entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.

100) **With reference to the Srimukhalingam temple, consider the following statements:**

1. It is built in Kalinga architectural style.
2. It is located on the banks of the Vamsadhara River.

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: C) Recently, the Srimukhalingam temple chief priest urged the Archaeological Survey of India (ASI) to get the historic Siva temple included in UNESCO's list of World Heritage Sites.

- Srimukhalingam temple is dedicated to Lord Shiva, known as Sri Mukha Lingeswara Swamy, housing 3 Ancient Temples at one Location built by Ganga dynasty.
- The Trinity of Madhukeswara, Someswara and Bheemeswara Temples are a testimony to the magnificent architectural skills of Kalinga Kings.
- This temple is built in Kalinga architectural style on the banks of the Vamsadhara River.