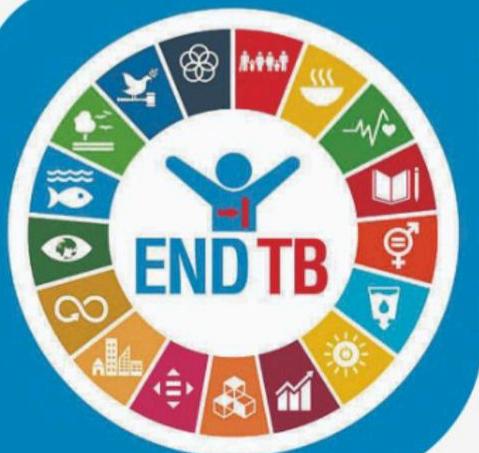


# CURRENT AFFAIRS MAGAZINE MARCH, 2023



**Educrat IAS**  
India's Best Mentorship for Civil Services

- > WILL ARTIFICIAL INTELLIGENCE LEAD TO JOB DISPLACEMENT?
- > VAIKOM SATYAGRAHA
- > SILICON VALLEY BANK (SVB) CRISIS
- > THE IDEAL TRACK TO RUN INDIA'S LOGISTICS SYSTEM
- > THE ROAD TO END TUBERCULOSIS (TB)



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# Mains Daily News Analysis

## GS1

### 1. Adopt a Heritage Scheme

#### Why in news?

Private firms, companies, and public sector units can enter into agreements with the Union Ministry of Culture to **adopt and maintain State-owned archaeological sites or monuments.**

#### What is Adopt a Heritage Scheme about?

- It is an **initiative of the Ministry of Tourism**, in collaboration with the **Ministry of Culture** and the **Archaeological Survey of India.**
- The government invites entities, including **public sector companies, private sector firms** as well as individuals, to develop selected monuments and heritage and tourist sites across India.
- It includes **providing and maintaining basic amenities**, including drinking water, ease of access for the differently abled and senior citizens.
- The sites/monument for this scheme will be selected on the **basis of tourist footfall and visibility.**
- Businesses that enter such agreements are going to be known as **Monument Mitras.**
- The Monument Mitras are selected by the **'oversight and vision committee,'** co-chaired by the Tourism Secretary and the Culture Secretary.
- The corporate sector is expected to use **Corporate Social Responsibility (CSR)** funds for the upkeep of the site.
- The Monument Mitras, in turn, will get limited visibility on the site premises and on the Incredible India website.
- The oversight committee also has the power to **terminate a memorandum of understanding (MOU)** in case of non-compliance or non-performance.

#### What are the issues with the scheme?

- **Lack of experience** – Permitting a watch company without expertise in bridge engineering to maintain a colonial era bridge in **Morbi, Gujarat**, possibly contributed to heart-wrenching tragedy.
- **Sarnath initiative** – The current plan also side lines the mandate of the Archaeological Survey of India (ASI) and abandons the Sarnath Initiative.

The Sarnath initiative is the **guidelines devised by the ASI, the Getty Trust, U.S., the British Museum, and National Culture Fund** to safe keep excavated objects and present them to visitors in an engaging manner.

- **Redundancy** – Monuments selected, such as, the **stupas at Sanchi, the Brihadeshwar temple in Thanjavur, and Akbar's palace city at Fatehpur Sikri**, already have tourist infrastructure.
- **Livelihood of local communities** – The scheme undermines the local communities and their relationships with historical sites.
- Guided tours led by employees of large businesses, may endanger livelihoods of those who have lived near the site and made a living by regaling visitors with stories of its colourful past.
- **Night tourism** – Keeping these spots open from dawn to dusk has limited footfall and thus preserved them from excessive wear and tear.
- **Monuments not adopted by Monument Mitras** – The Uttar Pradesh government has started turning over such monuments to the Tourism Department to convert them into hotels. They include **Chunar Fort, a citadel overlooking Barwasagar Lake**, and several residences built by **Awadh's Nawabs.**
- **Corporate interest over historical preservation** – The move by U.P government confirms that the scheme is continuing to place reckless tourism and corporate interests over historical preservation.

#### How can we overcome the challenges?

- **Schools** – Traders and shopkeepers can give funds to school libraries for collecting archival materials including **books, maps, and old photographs relevant to monuments.**
- **Universities** – Corporates can give them a **new lease of life to humanities and social sciences departments** by instituting fellowships, endowing professorships, and supporting research training programmes.
- **Building infrastructure** – The CSR funds can be used to **purchase new equipment** that protect the monuments from hazards created by pollution.
- **Expertise of the private sector** – The private sector’s resources and expertise may also help **the ASI and State Archaeology Directorates** to secure monuments from dams, mining projects, defacement, and looting.

## 2. International Women’s Day 2023: What is the gender gap in STEM?

### Why in News?

The United Nations has highlighted **the need for inclusive technology and digital education** to narrow the Gender gap in the domains of **Science, Technology, Engineering and Mathematics** – collectively termed the **STEM fields.**

### About

**Science, Technology, Engineering and Mathematics** – collectively termed the STEM fields – **continue to be dominated by men.** Given the pervasive influence of STEM fields in modern life, women's underrepresentation in these fields poses a major challenge. Recently, **International Women’s Day 2023 (IWD)** was commemorated under the theme **“DigitALL: Innovation and technology for gender equality”.**

### Gender Gap in STEM Field

#### Global Scenario:

- Globally, **18 percent of girls** in higher-level education are **pursuing STEM studies**, compared with **35 percent of boys.** Even within the STEM fields, there lies a gender divide, with similar numbers of boys and girls pursuing natural sciences while far more boys looked to engineering, manufacturing and construction.
- **The United Nations Educational, Scientific and Cultural Organization (UNESCO)** estimates that **41 percent** of women in developing countries are illiterate, compared with 20 percent of men.

#### Indian Scenario:

- In India, the **enrolment of girls in engineering programmes is significantly lower** when compared to their male counterparts.
- According to data from the **All India Survey of Higher Education for 2020-2021**, the overall in **UG, PG, MPhil and PhD engineering programmes**, the total enrolment is **36,86,291** where **71 percent** of enrolled students were **males** and **29 percent** were **females.**
- However, of all students enrolled in the STEM field, **women at 53 percent of enrolment outnumbered men** and some increases have been witnessed of late. These gains, though, don’t necessarily mean there will also be an increase in employment, because of multiple factors.

### What is the status of gender gap in STEM in various countries?

India	Europe
In India, more than <b>50% of illustrations in math and science</b> textbooks in primary show boys and only 6% show illustrations of girls.	Only <b>21% of tech founders</b> are female.

<p><b>The USA</b></p> <p><b>26% of tech start-ups</b> have at least <b>one female founder</b></p>	<p><b>The UK</b></p> <p>Over a quarter of girls say they have been put off a career in tech as it is <b>too male-dominated</b> and <b>only 22%</b> can name a <b>famous female working in the field.</b></p>
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### Reasons for Gender Gap

- **Societal attitudes:** Though the presence of existing resources such as mentors and programmes offering scholarships, the general societal attitudes on women's education do not encourage families to invest in it as much as they do for boys.  
**For example: Stereotypical gender roles like women work as housewives.**
- **Gender bias in curricula:** For instance, in **India**, more than **50 per cent of illustrations in math and science textbooks** in primary **show boys** and **only 6 percent show illustrations of girls.**
- **Discrimination in employment:** Women continue to face the same kind of discrimination at work as they face in society.
- **Timing in a scientists' career:** The prime time for a scientist in his/her career is also the time when women usually get married or have children. This puts a **lag on their career.** Even a six months delay in research in science, particularly experimental work, implies that your work gets left behind and your career suffers.
- **Lack of STEM Institutions:** STEM institutions and colleges dosent's established in the nearby area.
- **Cascading impact:** Lack of women in STEM to inspire other girls.

### Government Initiatives

The Government has implemented a slew of measures to encourage women in science. Some include:

- **Gender Advancement for Transforming Institutions (GATI):** It is a **pilot project** under the Department of Science and Technology to **promote gender equity in science and technology.**
- **Knowledge Involvement in Research Advancement through Nurturing (KIRAN):** It is a plan under the **Department of Science and Technology** to encourage women scientists and also prevent women scientists from giving up research due to family reasons.
- **SERB-POWER (Promoting Opportunities for Women in Exploratory Research):** SERB – POWER provides structured support in research to **ensure equal access and weighted opportunities for Indian women scientists** engaged in R&D activities.
- **Consolidation of University Research through Innovation and Excellence in Women Universities (CURIE) Programme:** Only women Universities are being supported for the development of research infrastructure and the **creation of state-of-the-art research laboratories** to enhance women's participation in the S & T domain.
- **Vigyan Jyoti Scheme:** It **encourages girl students of Class 9 to 12** to pursue education and career in S&T, particularly in the areas where women are underrepresented.
- **National Award for woman scientist:** To recognize the contribution of women scientists in the field of Earth System Sciences, **Ministry of Earth Sciences has initiated a special award called "National Award for woman scientist"** which is conferred to one-woman scientist each year on the Foundation Day.
- **Setting up of creches:** Some institutions are setting up creches so that the scientist mothers can carry on with their research work uninterrupted.

## 3. Vaikom, a satyagraha, and the fight for social justice

### Why in News?

As the year **2024** marks the **centenary of the Vaikom Satyagraha**, Chief Minister of Kerala and Tamil Nadu jointly inaugurated the centenary celebrations.

## What is Vaikom Satyagraha?

### Background:

- The princely state of **Travancore** had a **feudal, militaristic, and ruthless system of custom-ridden Government**, some of the most rigid, refined and ruthless social norms and customs were seen in Travancore.
- Lower castes like **the Ezhavas and Pulayas** were considered polluting and various rules were in place to distance them from upper castes.
- These included a **prohibition, not just on temple entry**, but even on walking on the roads surrounding temples.

### Contribution of Leaders:

- In **1923**, **Madhavan** presented the issue as a **resolution at the Kakinada meet of All India Congress Committee**. Subsequently, it was taken up by the **Congress Untouchability Committee** formed by the Kerala Pradesh Congress Committee in **January 1924**.
- **Madhavan, K.P. Kesava Menon** who was the then secretary of Kerala Pradesh Congress Committee and Congress leader and **educationist K. Kelappan** (also known as Kerala Gandhi) are considered the **pioneers of the Vaikom Satyagraha movement**.

### Factors Leading to Satyagraha:

- **Christian missionaries**, supported by the **East India Company**, had expanded their reach and many lower castes converted to Christianity to escape the clutches of an oppressive system that continued to bind them.
- **Maharaja Ayilyam Thirunal**, took many progressive reforms.
- Most important of these was the **introduction of a modern education system with free primary education for all – even lower castes**.
- Forces of capitalism and these reforms created new social hierarchies – which were not always congruent with traditional ones.

### Beginning of Satyagraha:

- On **March 30, 1924**, the Satyagrahis walked in procession towards the forbidden public roads. They were stopped 50 yards away from the place where a board cautioning the oppressed communities against walking on the roads (surrounding the **Vaikom Mahadeva temple**), was placed.
- Dressed in **khadi** and wearing **khadi caps**, **Govinda Panikkar (Nair)**, **Bahuleyan (Ezhava)** and **Kunjappu (Pulaya)**, defied the prohibitory orders.
- The police stopped them. In protest, the three men sat on the road and were arrested.
- Then on, every day, three volunteers from three different communities were sent to walk on the prohibited roads.
- Within a week, the leaders of the movement were all arrested.

### Role of Women:

Periyar's wife **Nagammai** and sister **Kannammal**, played an unprecedented role in the fight.

### Arrival of Gandhi:

- Gandhi arrived at **Vaikom in March 1925**, held a series of discussions with leaders of various caste groups and met **Maharani Regent** at her Varkala camp.
- The Vaikom Satyagraha was **officially withdrawn on November 30, 1925** after consultations between **Gandhi** and **W.H. Pitt (police commissioner of Travancore)**.
- A compromise was reached following the release of all prisoners and grant of access to roads.

### Temple Entry Proclamation:

In **1936**, the historic **Temple Entry Proclamation** was signed by the **Maharaja of Travancore** which removed the age-old ban on the entry of temples.

### Significance:

- Amidst rising nationalist sentiment and agitations across the country, it foregrounded social reform.
- For the first time, it brought **Gandhian methods of nonviolent protest to Travancore**.
- The movement continued for over **600 days**, non-stop, through social pressure, police crackdowns and even natural disaster in 1924, is admirable.
- The Vaikom satyagraha saw previously unseen **unity across caste lines**.

### Conclusion

Till **1917**, the Indian National Congress refused to take up **social reform**. But with the rise of Gandhi and increased activism within lower caste communities and untouchables, social reform soon found itself front and Centre of Congress's and Gandhi's politics.

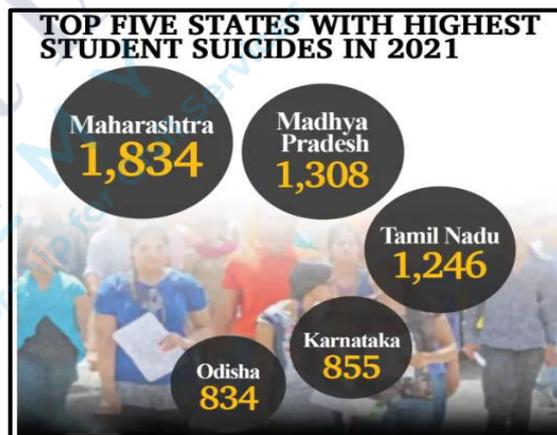
## 4. Increasing Student Suicides in Higher Education Institutions

### Why in News?

The **National Crime Records Bureau's (NCRB's) Accidental Deaths and Suicide in India (ADSI) report 2021** shows student suicides had gone up drastically during the **Covid-19 pandemic in 2020 and 2021** and have been steadily rising in the last five years.

### What is the Current Status of Suicides in Students?

Over **13,000 students died by in 2021** in India at the rate of **more than 35 every day**, a rise of 4.5% from the 12,526 deaths in 2020 with 864 out of 10,732 suicides being due to "**failure in examination**" according to the latest data as per NCRB's ADSI report 2021.



- Since 1995, **the country lost the highest number of students to suicides in 2021**, while nearly 2 lakh of them have died by suicide in the past 25 years.
- The death by suicide of students has **increased by 32.15% since 2017**, when 9,905 students died by suicide.
- **Maharashtra had the highest number of student suicides in 2021** with 1,834, followed by **Madhya Pradesh and Tamil Nadu**.
- The report also showed the **percentage of women student suicide was at a five-year low of 43.49%**, while men student suicides made up 56.51% of the total student suicides.
- In 2017, **4,711 women students died by suicide**, while in 2021 such deaths increased to 5,693.

As per Ministry of Education, **122 students from IITs, NITs, central universities and other central institutions died by suicide over 2014-21**. 68 of 122 belonged to the scheduled castes (SC), scheduled tribes (ST) or other backward classes (OBC).

### What are the Factors that Increase Suicide Risk?

- **Academic Pressure:** High expectations from parents, teachers and society can lead to excessive stress and pressure to perform well in exams. This pressure to succeed can be overwhelming for some students, leading to **feelings of failure and hopelessness**.
- **Mental Health Issues:** Mental health problems such as **depression, anxiety, and bipolar disorder can contribute to student suicides**. These conditions can be exacerbated by stress, loneliness, and lack of support.
- **Isolation and Loneliness:** Many students in educational hubs come from far away and live away from their families and friends. This can lead to **feelings of isolation and loneliness**, which can be particularly difficult to deal with in an **unfamiliar and competitive environment**.
- **Financial Concerns:** Financial difficulties, such as not being able to afford tuition fees or living expenses, can create a great deal of stress and worry for students. This can lead to feelings of hopelessness and desperation.

- **Cyber Bullying:** Cyber bullying and online harassment are becoming increasingly common and can contribute to student suicides.
- **Substance Abuse:** **Substance abuse and alcohol abuse** can contribute to student suicides. Substance abuse can lead to mental health problems, financial difficulties, and legal issues, all of which can be overwhelming for students.
- **Relationship Problems:** Relationship problems, such as break-ups, family conflicts, and friendship issues can also contribute to student suicides.
- **Lack of Support:** Many students in educational hubs are reluctant to reach out for help when they are struggling.

#### **What can be Done to Prevent Suicides?**

- **Improved Mental Health Services:** Providing students with access to mental health services and resources such as **counselling services, support groups, and psychiatric services** can help prevent suicides.
- **Embracing Positive Attitude towards Mental Health:** Positive attitudes towards mental health and help-seeking must also be promoted through open discussions about mental health and suicide.
- **Focus on Overall Personality Development:** By taking a holistic approach to personality development, **educational institutions can create a supportive and inclusive environment** that helps students thrive both **academically and emotionally**, and can play a critical role in preventing suicides.
- **Encouraging Participation in Sports:** Sports can play a role in preventing suicides in educational hubs by providing a **positive outlet for stress and emotions**, as well as **increase self-esteem and confidence**.
- **Addressing the Socio-economic Issues:** Socio-economic factors such as **poverty, homelessness, and unemployment** should be addressed to improve students' overall well-being and reduce stress, anxiety, and depression.
- **Stricter Cyber Bullying Policies:** Implementing stricter **cyber bullying policies and cracking down on online harassment** can help reduce the risk of student suicides.
- **Substance Abuse Prevention Programs:** Implementing substance abuse prevention programs can help reduce the risk of student suicides.
- **Building Positive Relationships:** Encouraging students to **build positive relationships and connections**, offering relationship counselling services, and encouraging students to reach out for help can help reduce the risk of suicide.
- **Family Support:** Providing students with support from their families can help reduce the risk of suicide.

#### **What are Related Initiatives to Reduce Suicides?**

##### **Global Initiatives:**

- **World Suicide Prevention Day (WSPD):** Observed on **10th of September every year**.
- **World Mental Health Day:** **10th October** is celebrated as **World Mental Health Day**, every year. The overall objective of World Mental Health Day is to **raise awareness of mental health issues** around the world and to mobilize efforts in support of mental health.

##### **Indian Initiatives:**

- **Mental Healthcare Act (MHA), 2017:** MHA 2017 **aims to provide mental healthcare services for persons with mental illness**.
- **KIRAN:** The Ministry of Social Justice and Empowerment has launched a **24/7 toll-free helpline "KIRAN"** to provide support to people facing anxiety, stress, depression, suicidal thoughts and other mental health concerns.
- **Manodarpan Initiative:** Manodarpan is an **initiative of the Ministry of Education under Atmanirbhar Bharat Abhiyan**. It is aimed to **provide psychosocial support to students, family members and teachers** for their mental health and well-being **during the times of Covid-19**.
- **National Suicide Prevention Strategy:** Announced in 2023, **National Suicide Prevention Strategy is the first of its kind in the country**, with time-bound action plans and multi-sectoral collaborations **to achieve reduction in suicide mortality by 10% by 2030**. The strategy is in line with the **World Health Organisation's South East-Asia Region Strategy for suicide prevention**.

## GS 2

### 1. The Supreme Court's new rules for the appointment of Election Commissioners by the President

#### Why in News?

A five-judge bench of the Supreme Court (SC) unanimously ruled that the **appointment of the Chief Election Commissioner and the Election Commissioners** shall be made by the **President** on the advice of a **Committee consisting of the Prime Minister, the Leader of the Opposition of the Lok Sabha and Chief Justice of India (CJI)**.

In case no leader of Opposition is available, the **leader of the largest opposition Party in the Lok Sabha** in terms of **numerical strength** will be a part of such committee.

#### What are the Other Important Points of the Verdict?

##### SC Verdict:

- SC stated that a reading of the debates of the Constituent Assembly (CA) on the appointment of ECI makes clear that all the members were of the clear view that **elections must be conducted by an independent Commission**.
- The deliberate addition of the words "subject to the provisions of any law made in that behalf by Parliament" further indicates that **CA envisaged Parliament making norms to govern appointment to ECI**.
- While ordinarily, the court cannot encroach on a purely legislative power, but **in the context of the Constitution and inertia of the Legislature** and the vacuum created by it make it necessary for the court to intervene.
- On the question whether process of removal should be same for CEC and the ECs, **SC stated that it cannot be same as CEC has special position and Article 324 becomes inoperable without CEC**.
- SC left the question of funding the EC, Permanent secretariat and need for expenditure to be **charged on Consolidated Fund of India** for the government to decide.

##### Government Argument:

- The Government had argued that in the absence of such a law by parliament, **the President has the constitutional power and asked the SC to exhibit Judicial restraint**.

##### What is the Challenge?

As the constitution places the power to make any law on appointment of ECI in the hands of Parliament, **SC ruling on this issue poses a question of Separation of Power**. However, SC has stated that this **ruling will be subject to any law made by Parliament**, which means Parliament can bring a law to undo it.

Another view is that since there is no law made by Parliament on this issue, **the Court must step in to fill the "constitutional vacuum."**

##### What are the Existing Provisions for Appointment to ECI?

**Constitutional Provisions: Part XV (Article 324-329) of the Indian Constitution:** It deals with elections and establishes a commission for these matters.

##### Structure of ECI:

- Originally the commission had only one EC but after the Election Commissioner Amendment Act 1989, it was made a **multi-member body (1 CEC & 2 other ECs.)**.
- According to **Article 324**, the Election Commission shall consist of the CEC and such number of other election commissioners, if any, as the President may from time-to-time fix.

##### Appointment Procedure:

- **Article 324(2):** The **appointment of the CEC and other Election Commissioners** shall be made by the **President**, subject to the provisions of any law made in that behalf by Parliament.

- The Law Minister suggests a pool of suitable candidates to the Prime Minister for consideration. The President makes the appointment on the advice of the PM.
- The President determines the conditions of service and tenure of office of the Election.
- They have a **tenure of six years**, or up to the **age of 65 years**, whichever is earlier.

#### Removal:

- They can resign anytime or can also be removed before the expiry of their term.
- The CEC can be removed from office only through a **process of removal similar to that of a SC judge by Parliament**.
- Any other EC cannot be removed except on the recommendation of CEC.

#### Additional Information

- **Article 324:** Superintendence, direction and control of elections to be vested in an Election Commission.
- **Article 325:** No person to be ineligible for inclusion in, or to claim to be included in a special electoral roll on the ground of religion, race, caste or sex.
- **Article 326:** Elections to the Lok Sabha and Legislative Assemblies of States to be on the basis of adult suffrage.
- **Article 327:** Power of Parliament to make provision with respect to elections to legislature.
- **Article 328:** Power of Legislature of a State to make provision with respect to elections to such Legislature.
- **Article 329:** Bar to interference by courts in electoral matters.

## 2. Abolition is the way: On the higher judiciary's move on the death penalty

### Why in News?

The issue of the death penalty and its mode of execution has been a subject of debate in India for a long time. Recently, the Supreme Court of India has taken a significant step towards finding a more humane method to carry out death sentences.

### SC Judgements in the past:

- **Bachan Singh vs State of Punjab (1980) case:** The court upheld the death penalty, but limited it to the 'rarest of rare cases',
- **Deena Dayal vs Union of India And Others (1983) case:** The court upheld the executing method by ruling that **hanging is "as painless as possible"** and "causes no greater pain than any other known method".
- **Evolved clemency jurisprudence:** This makes decisions on **mercy petitions justiciable and penalises undue delay** in disposing of mercy pleas by commuting death sentences to life.

### Law commission's recommendations:

- **35th Report of the Law Commission (1967)** noted that while **electrocution, the use of a gas chamber, and lethal injection** were considered by some to be less painful, it refrained from recommending any change.
- **In its 187th report in 2003**, the Law Commission of India recommended that **Section 354(5) of the CrPC** should be amended by providing an alternative mode of execution of the death sentence by **"lethal injection until the accused is dead"**.

**Section 354(5) of the Code Of Criminal Procedure, 1973:** When any person is sentenced to death, the sentence shall direct that he be hanged by the neck till he is dead.

### The Supreme Court's Approach towards Death Penalty:

- Even though the Supreme Court has not favoured abolition, it has **developed a robust and humane jurisprudence** that has made it difficult for the executive to carry out death sentences.
- It has **restricted its use to the 'rarest of rare cases'**, mandated a balancing of aggravating and mitigating circumstances before sending someone to the gallows, and allowed a post-appeal review hearing in open court.

- At the same time, the Court has evolved a clemency jurisprudence that makes decisions on mercy petitions justiciable and penalizes undue delay in disposing of mercy pleas by commuting death sentences to life.

#### Centre's stand:

The Union government contends that **hanging should be retained as the mode of execution**, not only because it is not cruel or inhuman, but also because it accounts for the **least number of botched-up executions**.

#### Deepening Moral dilemma:

- Any form of execution is a fall from humaneness, offends human dignity, and perpetrates cruelty.
- Debating the mode of execution-only deepens the moral dilemma of whether the taking of life is the best response to the taking of life.

#### What is the practice in other countries?

- According to **Amnesty International**, **55 countries** around the world have the **death sentence on the books**.
- While **death by hanging is still the most prevalent form of execution**, especially in the former British colonies, other modes are followed in some countries.
- **United States**: An **intravenous lethal injection** is given in every state (27 states and American Samoa) that allows the death penalty. **Electrocution is a secondary method in some states**.
- **China**: Execution by **firing squad** is employed
- **Saudi Arabia** uses **beheading** apart from other methods.
- **India**: **The Air Force Act, 1950, The Army Act 1950, and The Navy Act 1957** say that execution has to be carried out either by **hanging by the neck until death or by being shot to death**.

#### Conclusion:

- The issue of the death penalty and its mode of execution is a complex one that requires a nuanced approach.
- While the Supreme Court has taken a significant step towards finding a more **humane method of execution**, the **real issue is the morality of the death penalty itself**.
- If the aim is to eliminate cruelty and indignity, then abolition is the only way forward.
- It is time for India to join the global trend toward the abolition of the death penalty and uphold it.

### 3. The Case of Defamation

#### Why in News?

Recently, an MP (Member of Parliament) was sentenced to two years in jail in a **2019 Defamation Case over his remarks about another political leader by the Surat Court**. The case was filed under **Indian Penal Code (IPC) sections 499 and 500**, dealing with defamation.

#### What do IPC sections 499 and 500 say?

**Section 499 of the IPC** elaborates on how defamation could be through **words – spoken or intended to be read, through signs**, and also through visible representations.

- These can either be published or spoken about a person with the intention of **damaging the reputation of that person**, or with the knowledge or reason to believe that the imputation will harm his reputation.

**Section 500 stipulates** imprisonment of up to two years, with or without a fine, for someone **held guilty of criminal defamation**.

#### What Is Defamation?

#### About:

- Defamation is the **act of communicating false statements** about a person **that injure the reputation of that person** when observed through the eyes of an ordinary man.
- **Any false and unprivileged statement published or spoken deliberately**, intentionally, knowingly with the intention to damage someone's reputation is **defamation**.
- History of defamation can be traced in **Roman law and German law**. Abusive chants were capital punishment in Roman.

#### **Defamation Law in India:**

- **Article 19 of the Constitution grants freedom of speech to its citizens**. However, Article 19(2) has imposed certain reasonable exemptions to this freedom such as - **Contempt of Court, defamation and incitement to an offense**.
- In India, **defamation can both be a civil wrong and a criminal offense**, depending on the objective they seek to achieve.
- A **Civil Wrong sees a wrong being redressed with monetary compensation**, while a **criminal law** seeks to **punish a wrongdoer** and send a message to others not to commit such acts, with a jail term.
- In a Criminal Offense, defamation has to be established beyond reasonable doubt but in a civil defamation suit, damages can be awarded based on probabilities.

#### **Free Speech v/s Defamation laws:**

- It is argued that the **defamation laws are a violation of Fundamental Rights** guaranteed under Article 19 of the constitution.
- The Supreme Court has ruled that the **criminal provisions of defamation are constitutionally valid** and are not in conflict with the right to free speech.
- The SC has also held that **it is valid to treat defamation as a public wrong and that criminal defamation is not a disproportionate restriction on free speech**, because protection of reputation is a fundamental right as well as a human right.
- The Court relied on the judgments of other countries and reaffirmed **the right to reputation as a part of the right to life under Article 21**.
- Using the principle of '**balancing of fundamental rights**', the court held that the right to freedom and speech and expression cannot be "allowed so much room that even reputation of an individual which is a constituent of Article 21 would have no entry into that area".

#### **What are the Previous Defamation Judgements?**

- **Mahendra Ram Vs. Harnandan Prasad (1958)**: A letter written in Urdu was sent to the plaintiff. Therefore, he needed another person to read it to him. It was held that since the defendant knew the plaintiff does not know Urdu and he needs assistance, the act of the defendant amounted to defamation.
- **Ram Jethmalani Vs. Subramanian Swamy (2006)**: The High Court of Delhi held Dr. Swamy for defaming Ram Jetmalani by saying that he received money from a banned organization to protect the then Chief Minister of Tamil Nadu from the case of assassination of Rajiv Gandhi.
- **Shreya Singhal Vs. Union of India (2015)**: It is a **landmark judgment regarding internet defamation**. It held unconstitutional **Section 66A of the Information Technology Act, 2000** which punishes for sending offensive messages through communication services.

#### **What Happens if a Lawmaker/MP is Convicted?**

- The conviction may disqualify an MP if the offense for which he is convicted is listed in **Section 8(1) of the Representation of the People (RPA) Act of 1951**.
- This section includes **offences such as Section 153A** (offence of promoting enmity between different groups on ground of religion, race, place of birth, residence, language, etc., and doing acts prejudicial to maintenance of harmony) or **Section 171E** (offence of bribery) or **Section 171F** (offence of undue influence or personation at an election) and a few others.

- **Section 8(3) of the RPA** mandates that an MP can be disqualified if convicted and sentenced to at least 2 years of imprisonment.
- **Section 8(4)** – The disqualification takes effect only after 3 months have elapsed from the date of conviction.

However, in the landmark 2013 ruling in ‘Lily Thomas V Union of India’, the Supreme Court made **Section 8(4) of the RPA as unconstitutional.**

#### Conclusion

- **Intentional acts of defamation are also punished** with imprisonment which prohibits defaming a person with malice intention. The **defamation law is also constitutional and is a reasonable restriction** on the right to free speech and expression.
- However, it is no defamation if the acts done fall within the exceptions provided. **Over the seventy-one years of Independence, there have been numerous cases of defamation and the court has interpreted each and every case with utmost care and they serve as precedents.**

#### 4. ‘Irregularities’ in NAAC functioning: What are the claims against India’s college accreditation body?

##### Why in news?

The chairperson of NAAC's executive committee, resigned after repeatedly demanding an independent inquiry into the functioning of the council.

##### What is the National Assessment and Accreditation Council (NAAC)?

- The **NAAC is an autonomous body set up in 1994** under the University Grants Commission (UGC).
- **Functions** – NAAC is entrusted with **assessing the quality of India’s higher educational institutions.**
- Following a multi-layered assessment process, it **awards grades to colleges and universities.**
- Its parameters include **curriculum, faculty, infrastructure, research and financial well-being.**
- The ratings of institutions range from **A++ to C** and **if an institution is graded D, it means it is not accredited.**

##### How is the accreditation process carried out?

- The first step involves an **institute approaching the NAAC for assessment.**
- Once the NAAC sets the process in motion, the **applicant has to submit a self-study report (SSR) containing information related to quantitative and qualitative metrics.**
- **Peer review** – The data is then validated by expert teams of the NAAC, followed by **spot visits by peer teams** comprising assessors drawn from universities across India.

GRADE-WISE				TOP FIVE STATES (Accredited)			
Grade	Universities	Colleges	Total	UNIVERSITIES		COLLEGES	
A	224	1,778	2,002	Tamil Nadu	43	Maharashtra	1,834
B	165	5,831	5,996	Uttar Pradesh	37	Karnataka	881
C	17	1,077	1,094	Maharashtra	35	Tamil Nadu	829
<b>Total</b>	<b>406</b>	<b>8,686</b>	<b>9,092</b>	Karnataka	33	Uttar Pradesh	604
				Rajasthan	31	Gujarat	492

##### Is a NAAC accreditation mandatory?

- **Voluntary** – While the UGC has over the years issued many circulars directing institutes to mandatorily undergo NAAC’s assessment, **the process still remains largely voluntary.**

- **NEP** – The National Education Policy (NEP) (2020) has set an **ambitious target of getting all higher educational institutes to obtain the highest level of accreditation over the next 15 years.**

#### **What are the allegations on the NAAC?**

- **Malpractices** – People with vested interests are indulging in malpractices, **leading to the awarding of questionable grades to some institutions.**
- **Input based** – The major problem with the ratings is the current approach of assessment is input-based, i.e., **the NAAC relies heavily on self-assessment reports of applicant institutions.**
- **Influence on the reviews** – The data is then validated by NAAC expert teams, followed by peer team visits to the institutions.
- It is alleged that the education institutions influence the peer review teams.

#### **Why are so few institutes accredited?**

- **Poor grades** – The fear of obtaining poor grades holds institutes back from applying.
- **Provisional Accreditation for Colleges (PAC)** – NAAC explored the possibility of **issuing PAC, under which 1 year old institutes could apply for accreditation with validity of 2 years.**
- **Difficult criteria** – Currently, **only institutes that are at least 6 years old, or from where at least 2 batches of students have graduated, can apply and the accreditation is valid for 5 years.**

#### **What are the Other Challenges in India's Higher Education System?**

- **Limited Access:** Despite efforts to increase access to higher education, many **students from marginalised communities still face barriers to entry**, including financial constraints and lack of educational opportunities.
- Especially, the **number of students in the Persons with Disabilities category** dropped in 2020-21 to 79,035 from 92,831 in 2019-20.
- **Gender Inequality:** Women continue to face significant barriers to accessing higher education in India, including **social and cultural biases and a lack of support systems.**
- According to **All India Survey on Higher Education (AISHE), 2020-2021**, the **female enrolment** in higher education programmes was **49% of total enrolments in 2020-21.**
- **Employability Issues:** Despite having a large number of graduates, many students in India struggle to find employment due to a **lack of practical skills and industry-relevant education.**
- Also, India lags behind many other countries in **terms of research output**, and there is a **lack of a research culture in many higher education institutions.**

#### **Way Forward**

- **Promote Digital Learning:** The **use of digital technology** can help make education more **accessible, cost-effective, and efficient.** Institutions should invest in digital infrastructure and provide training to students and faculty to adapt to new technologies.
- **Increase Accreditation:** The **accreditation process should be made more transparent and accessible to encourage more institutions to seek accreditation.** The government should also ensure that the accreditation process is fair and free from corruption.
- **Promote International Collaborations:** International collaborations can help improve the quality of education and research in India. **Institutions should partner with foreign institutions to exchange knowledge, expertise, and resources.**

## **5. A chance for India to shape a data governance regime**

### **Why in News?**

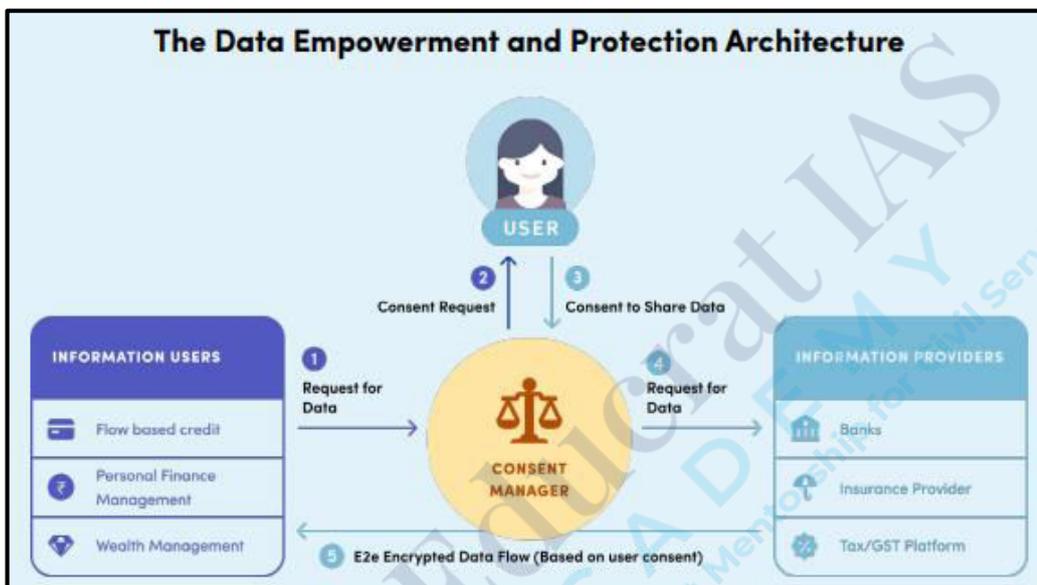
India's G-20 presidency has provided an opportunity for the country to ensure that its **digital strategies and data governance are inclusive, transparent, secure and conducive to sustainable development.**

### **Background:**

- In recent years, India has made great strides in its digital strategies/data governance → by **embracing technology (say, UPI) and digitalisation → driving economic growth → improving the lives of citizens**. However, the issues of ownership and governance of data generated and collected and data sovereignty have become increasingly important.
- **Data sovereignty** is the idea that **data is subject to the laws and governance structures of the nation** where they are collected.
- Given this, it is unreasonable to deny people control over their data and India's DEPA – a consent management tool, has generated both excitement and concern among stakeholders.

#### Data Empowerment and Protection Architecture (DEPA):

- It was launched by the **NITI Aayog in 2020** on the premise **that individuals themselves are the best judges of the 'right' uses of their personal data**.
- It is designed as an **evolvable/agile framework for good data governance** that empowers people to seamlessly and securely access their data and share it with third-party institutions.



#### Key building blocks of DEPA:

- Enabling regulations,
- Cutting-edge technology standards, and
- New types of public and private organisations with incentives closely aligned to those of individuals.

The Government has been trying to pass a **data protection law with multiple attempts in 2019 and another attempt in 2022**. The **2022 bill (the Digital Personal Data Protection Bill)** differs in many ways from its 2019 counterpart (the Personal Data Protection Bill) such as its **classifications of personal data, its consent frameworks and data localisation requirements**. However, there are still some challenges that need to be addressed.



- **Balance the Interests of all Stakeholders:** India needs to balance the interests of governments, businesses, and citizens to ensure that **data governance supports sustainable development and benefits all stakeholders.**
- **Promote Open-Source Solutions:** India can promote the development and implementation of open-source solutions to ensure that underlying **data architectures are a social public good, and to promote digital technologies** to become accessible and affordable for all.
- **Ensure Alignment with Broader Development Strategies:** India needs to ensure that its data governance regime is aligned with its broader development strategies and values, and that it supports the development of a secure, more egalitarian, and trustworthy digital future for all.
- **India Stack** can be designed and implemented in a way that is **consistent with India's broader development strategies.**
- **India Stack is a unified software platform** that provides digital public goods, application interfaces and facilitates digital inclusion.

### Conclusion

It is important for **India to navigate a middle way between restrictive data sovereignty and limitless data flow** for the **development of ethical and responsible data governance practices.**

## 6. Are domestic workers legally protected in India?

### Why in news?

In recent times, the violence against domestic workers have increased drastically.

### Who are domestic workers?

- **Domestic workers** - According to **International Labour Organisation (ILO)**, domestic workers are those workers who **perform work in or for a private household or households.**
- They provide **direct and indirect care services**, and as such are key members of the care economy
- **Domestic work** - According to ILO, domestic work refers to housework such as sweeping, cleaning utensils, washing clothes, cooking, caring of children and such other work which is carried out for an employer for remuneration.
- **Status of domestic workers in India** - As of 2012, **39 lakh people** were employed as **domestic workers, of which at least 26 lakh were women**
- A Bengaluru-based study in 2016 found **75% of domestic workers were from Scheduled Castes, 15% from OBCs and 8% from Scheduled Tribes.**
- More than **12.6 million domestic workers** in the country are **minors**, with **86%** of them **being girls.**
- Moreover, **25% of underage domestic workers were below 14 years.**

### What are the issues faced by domestic workers?

- Informal in nature
- Unpaid and underpaid
- Have no legal contract
- Have ill-defined work hours
- Face discrimination and violence, sexual harassment, and exploitation
- Face discrimination at the hands of placement agencies (agencies recruiting domestic workers) and/or traffickers
- Violence against domestic workers
- Ambiguity over domestic worker's data

### What are the international measures to protect domestic worker?

- **Domestic Workers Convention (No. 189)** - ILO enacted Domestic Workers Convention (No. 189) in 2011 to protect domestic workers.
- **International Domestic Workers Day** - **June 16th**, celebrating the 2011 passage of the International Labor Organization Convention 189 for Decent Work for Domestic Workers.
- **Your Work Is Important** - ILO has launched a campaign "Your Work Is Important" to generate public awareness

**The ILO Forced Labour Convention, 1930** defines **forced labour** as work which is “exacted from any person under the menace of any penalty” and which is “not offered voluntarily”.

### What are the measures taken by Indian government?

- There is no dedicated law or policy to regulate people working in the domestic work sector.
- **Unorganized Sector Social Security Act, 2008** – The Act provided the **first legal recognition** meant to provide **social welfare to workers**—including domestic workers.
- **Code on Social Security, 2020** – The code replaced the **Unorganized Sector Social Security Act, 2008** and is yet to take effect.
- **Child Labour Act, 1986** - The Indian government **prohibited minors from entering domestic housework in 2006**, listing it as a form of “**hazardous child labour**”.
- **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013** - Includes **domestic workers as a specific category of workers** – with the house as a designated workplace.
- **Minimum Wages Act, 1948** – Only certain States such as **Andhra Pradesh, Jharkhand, Karnataka, Tamil Nadu and Tripura** have included **domestic workers in the schedule of Minimum Wages Act**.
- **Domestic Workers (Registration, Social Security and Welfare) Bill in 2008** - The National Commission of Women proposed the bill, **Domestic Workers’ Welfare Bill 2016 - Recognised a private household as a workplace, and broader definition of “wages”**.  
Both the 2008 and 2016 bill have not been passed yet.
- **National Domestic Worker Policy** - Proposed by the Labour Ministry in 2019 to regulate placement agencies and include domestic workers under existing laws.
- **India is a signatory to ILO’s 189th convention, known as Convention on the Domestic Workers but has not ratified it yet.**

### Way Forward

- The placement agencies need to be regulated.
- The government need to link up with social workers for protecting the domestic.
- The domestic workers protection act need to be passed.
- There is a need for authentic data for domestic workers.

## 7. The wide disparities in human development

Human development is **not solely focused on the pursuit of economic growth and maximizing wealth in the economy**. Instead, it is **centered around the idea of humanity**, which involves **expanding freedom, improving capabilities, promoting equal opportunities, and ensuring a prosperous, healthy, and lengthy life**.

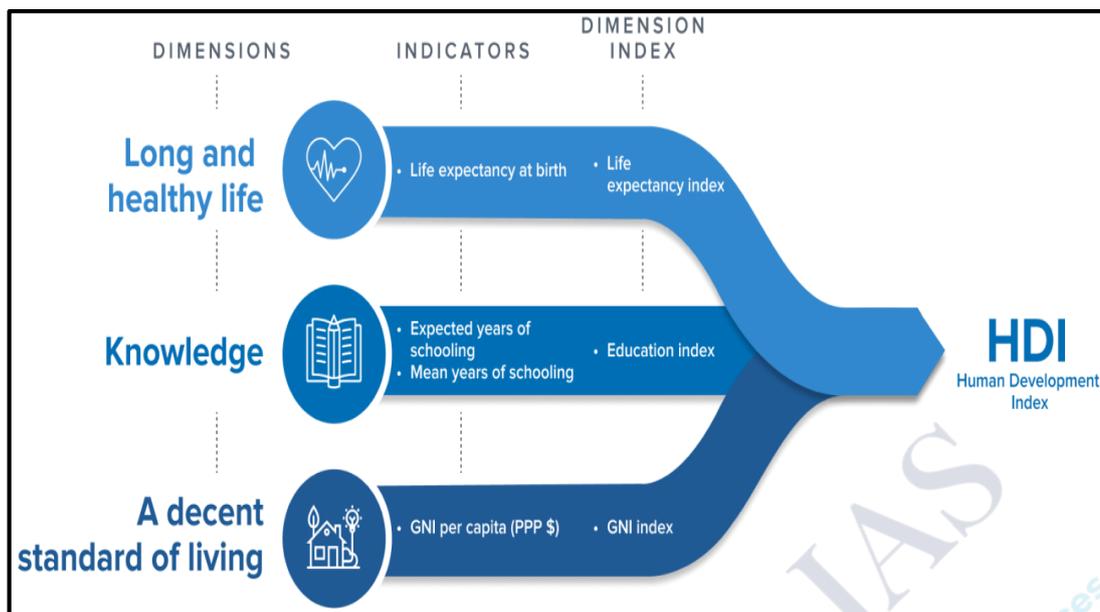
**India is now one of the fastest-growing economies globally**. However, this growth has not resulted in a corresponding increase in its Human Development Index (HDI). **According to the Human Development Report of 2021-22, India ranks 132 out of 191 countries, behind Bangladesh and Sri Lanka**.

Given India’s size and large population, **it is critical to address the subnational or State-wise disparities in human development**, which will help India realises its demographic dividend.

### What is HDI?

- The **HDI is a composite statistical measure created by the United Nations Development Programme** to evaluate and compare the level of human development in different regions around the world.
- It was **introduced in 1990 as an alternative to conventional economic measures such as Gross Domestic Product (GDP)**, which do not consider the broader aspects of human development.
- The HDI assesses a country’s average accomplishment **in three aspects: a long and healthy life, knowledge, and a decent standard of living**.

- The subnational HDI shows that while some States have made considerable progress, others continue to struggle.
- **Delhi occupies the top spot and Bihar occupies the bottom spot.**
- Nonetheless, it is worth noting that Bihar, unlike the previous HDI reports, is no longer considered a low human development State.



### What are the Obstacles that India Faces in Attaining Human Development?

- **Unevenly Distribution of Economic Growth:** One of the main reasons in achieving human development is that economic growth has been unevenly distributed. The top 10% of the Indian population holds over 77% of the wealth.
- **Low Quality of Services:** While India has made significant progress in reducing poverty and increasing access to healthcare and education, the quality of such services remains a concern. For example, while the country has achieved near-universal enrolment in primary education, the quality of education remains low.
- **Lack of Effective Educational Infrastructure:** India also faces challenges in providing quality education to its citizens. Many schools lack basic facilities such as adequate classrooms, clean water, and trained teachers.
- **Lack of Proper Nutrition: Malnutrition and undernourishment** are major problems in India, particularly among children. This can have long-term impacts on health, cognitive development, and overall well-being. Over 70% of India's population cannot afford a healthy diet as of 2020 despite the fact that the cost of food remains relatively low by comparison to other countries. Among all women aged 15-49, the prevalence of anaemia has risen to 57% in 2019-21 (NFHS-5) from 53% in 2015-16 (NFHS-4).
- **Lack of Social Security:** India also struggles with providing social security to its citizens, particularly those in the informal sector. Many workers lack access to basic benefits such as health care, retirement pensions, and job security.
- **Gender Inequality:** Despite progress in recent years, gender inequality remains a significant obstacle to human development in India. Women and girls face discrimination in areas such as education, employment, and access to health care, and are often subject to violence and abuse. Male-female ratio for Expected Years of Schooling (EYS) declined from 1.43 in 1990 to 0.989 in 2021 and for Mean Years of Schooling (MYS), it declined from 1.26 to 1.06. As per the World Economic Forum's Global Gender Gap Report 2022, women make up only 22% of the AI workforce.

### Way Forward

- Addressing Income Inequality and gender inequality: requires a multifaceted approach that involves both policy changes and cultural shifts. Here are some potential ways forward: **Equal Pay, Education and Skill Development, Affordable Childcare, Empowerment programmes for women etc can be helpful. Government can focus on**

promoting these schemes: **Beti Bachao Beti Padhao**, **National Skill Development Mission**, **Integrated Child Development Services (ICDS)**, **Mahila E-Haat**.

- **Invest in Education:** Invest in education by building schools, hiring teachers, providing scholarships and improving access to education for disadvantaged communities.
- **Providing Healthcare:** Access to **affordable healthcare services, including preventative care**, treatment for illnesses, and mental health support.
- **Government needs to focus on these schemes:** Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), Pradhan Mantri Swasthya Suraksha Yojana (PMSSY), National Urban Health Mission (NUHM), Mission Indradhanush.
- **Addressing Poverty:** Implementing social welfare programs, such as **unemployment benefits, food assistance, and housing subsidies**.
- **Promoting Gender Equality:** Implementing policies that ensure **equal opportunities for women and girls**, such as laws against gender discrimination in employment and education.
- **Protecting Human Rights:** Ensuring that citizens have the **right to free speech, freedom of religion, and freedom from discrimination**.
- **Building Infrastructure:** Improve access to basic services, such as clean water and electricity, and create job opportunities.
- **Fostering Innovation and Entrepreneurship:** Create policies that support innovation and entrepreneurship, such as tax incentives for small businesses and research grants for scientists and inventors.

## 8. The Road to End Tuberculosis (TB)

Why in news?

India's G20 presidency this year and the Varanasi Stop TB board meeting could provide a perfect platform to end TB.

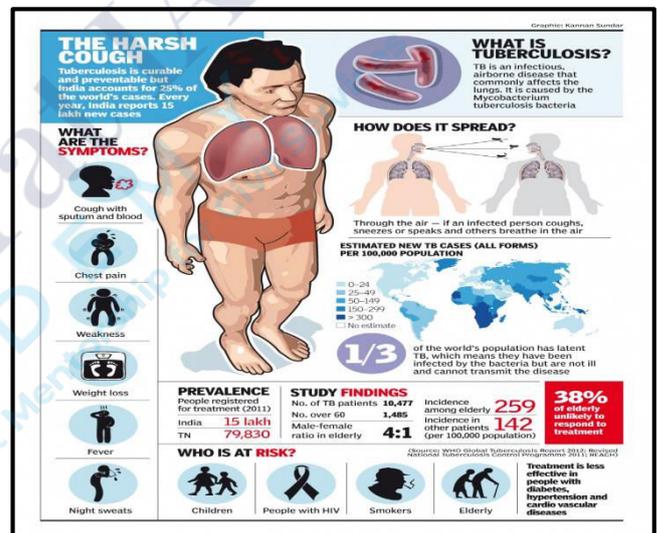
Status of TB in India

- Most of the TB statistics for India are collected by the **Government National Tuberculosis Elimination Program**
- The NTEP then passes their figures to the World Health Organisation (WHO).
- The **WHO TB statistics for India for 2021** give an **estimated incidence figure of 2,590,000 million cases**

An estimate of 2.8 million TB cases with TB killing more than 4,00,000 occur in India every year

What are the measures taken by India to eradicate TB?

- The **National Tuberculosis Elimination Programme (NTEP)** - Aims to strategically **reduce TB burden in India by 2025**.
- It was previously known as **Revised National Tuberculosis Control Programme (RNTCP)**.
- The Government reached over a billion people in 632 districts/reporting units.
- The **National Strategic Plan for TB Elimination** – It was launched to achieve the target of ending TB by 2025 in a mission mode.
- It is a **multi-pronged approach** which aims to detect all TB patients with an emphasis on reaching TB patients seeking care from private providers and undiagnosed TB in high-risk populations
- **Ni-kshay Poshan Yojana (NPY) (Nutritional Support to TB)** - It helps to **meet the nutritional requirements of TB patients, especially the underserved**
- From 2018 till present, around Rs. 1,707 crore has been disbursed to more than 65 lakh people on TB treatment across the country
- **Patient Provider Support Agencies (PPSA)** - To engage the private sector, **Patient Provider Support Agencies (PPSA) have been rolled out across 250 districts** through the domestic setup and JEET initiative
- **Universal Drug Susceptibility Testing (UDST)** - To ensure every diagnosed TB patient is tested to rule out drug resistance before or at the time of treatment initiation itself.



- **Pradhan Mantri TB Mukh Bharat Abhiyaan** - To bring together all community stakeholders to support those on TB treatment and accelerate the country's progress towards TB elimination.
- **Ayushman Bharat - Health and Wellness Centres** - To decentralize comprehensive primary healthcare including TB care services at the grassroots level.
- **Bedaquiline and Delamanid** - Newer drugs like **Bedaquiline and Delamanid** have also been made available for management of DRTB.

#### What are the global measures to eradicate TB?

- **End TB Strategy – by World Health Organization (WHO)**- It serves as a blueprint for countries to reduce TB incidence by 80%, TB deaths by 90%, and to eliminate catastrophic costs for TB-affected households by 2030.
- **World Development Report (1993) – Published by the World Health Organization (WHO)** - The 1993 World Development Report labelled **TB treatment for adults as the best buy among all developmental interventions.**
- **The Global Fund** - A worldwide movement to defeat HIV, TB and malaria and ensure a healthier, safer, more equitable future for all.
- **The Stop TB Partnership** - Brings together expertise from a broad spectrum of country, regional, and global partners in our shared mission to revolutionize the TB space and end TB by 2030
- **Sustainable Development Goal 3 - To end TB epidemic by 2030**

#### What are the challenges to eradicate TB?

- Lack of clarity on definitions of 'end' TB
- Poor primary health-care infrastructure in rural areas
- Unregulated private health care leading to widespread irrational use of first-line and second-line anti-TB drugs
- Unpasteurized milk or dairy products made from raw milk is another potential source of TB for humans
- Lack of awareness
- Multidrug-resistant TB (MDR TB)
- Multidrug-resistant TB (MDR TB) is caused by an organism that is resistant to at least isoniazid and rifampin, the two most potent TB drugs

#### What is the need of the hour?

- Development and wide use of an adult TB vaccine
- To lower production cost so as to make few available anti-TB drugs to everyone
- Inventing injection-free and oral pills for TB
- Use of AI-assisted handheld radiology with 90-second reporting and 95% accuracy for diagnosing TB.

## 9. Border troubles: On Brexit and the Northern Ireland protocol

### Why in news?

The UK government reached a landmark deal with the European Union (EU) on post-Brexit trade rules related to governing the Northern Ireland.

### About 'Windsor Framework'

The '**Windsor Framework**' will **replace the Northern Ireland Protocol**, which had proved to be among the thorniest of Brexit fall-outs, creating problems both economic and political.

### Crucial aspects

#### The introduction of a Green lane and Red lane system for goods

- **Green lane:** British goods meant for **Northern Ireland** will use the **green lane at the ports and will be allowed to pass with minimal paperwork and checks.** Physical checks will be conducted if the goods are deemed suspicious, in place of the routine checks now. Also, people in Northern Ireland can order goods online from Britain easily now.

- **Red lane:** Goods destined for Ireland or the rest of the EU will have to take the red lane, with the attendant customs and other checks.
- **The 'Stormont Brake':** It allows Northern Ireland lawmakers and London to veto any EU regulation they believe affects the region adversely. It means the democratically elected Northern Ireland Assembly can oppose new EU goods rules that would have significant and lasting effects on everyday lives in Northern Ireland. For this, they will need the support of 30 members from at least two parties. The British government can then veto the law.

### Objectives and Need

- The checks made trade between Great Britain and Northern Ireland cumbersome, with food products, especially, losing out on shelf life while they waited for clearance.
- Some taxation and spending policies of the UK government could not be implemented in Northern Ireland because of EU rules.
- The sale of medicines, too, was caught between different British and EU rules.
- With the Windsor Framework, **PM Sunak hopes to improve trade and other ties with the EU**, while keeping the hard Brexiter faction of his Conservative Party happy.

### Response of stakeholders

- Reactions to the new deal in political circles has been cautious, but not negative.
- Most leaders have said the agreement on the face of it looks promising, though they would properly comment only after studying it in detail.
- Industry associations have openly welcomed the deal.
- The US has also welcomed the deal.



### The Northern Ireland Protocol

- Northern Ireland is the only part of the U.K. that shares a land border with the EU, as the Republic of Ireland (or Ireland) is an EU member-state.
- Since the EU and the UK have different product standards, border checks would be necessary before goods could move from Northern Ireland to Ireland
- However, the two Irelands have had a long history of conflict, with a hard-fought peace secured only in **1998 under the Belfast Agreement, also called the Good Friday agreement.**
- It was decided the checks would be conducted between Great Britain (England, Scotland, and Wales) and Northern Ireland (which together with Great Britain forms the United Kingdom).
- This was called the **Northern Ireland Protocol.**
- Under the protocol, Northern Ireland remained in the EU single market, and trade-and-customs inspections of goods coming from Great Britain took place at its ports along the Irish Sea.

## 10. Intense engagement: On India-Germany ties

### Why in news?

Chancellor Scholz's 2 day visit to India, significantly coincided with the 1st anniversary of Russia's war on Ukraine.

### What is the history of India-Germany relations?

- **Political relations** – India is one of the 1st countries to end the state of war with post-war Germany in 1951 and recognize the Federal Republic of Germany (FRG).
- **Germany and India cooperate closely on the issue of UN Security Council expansion within the framework of G-4.** The G4 formed in 2005 is a group of 4 countries such as Brazil, Germany, India, and Japan, aspiring to become permanent members of the United Nations Security Council (UNSC).
- **Defence relations** – High Defence Committee (HDC) meetings at the Defence Secretary level take place annually, alternately in New Delhi and Berlin. **India-Germany Defence Cooperation Agreement (2006) provides a framework for bilateral defence cooperation**
- **Economic relations** – Germany is India's largest trading partner in Europe and 2nd most important partner in terms of technological collaborations. **Germany is the 8th largest foreign direct investor in India since 2000.**
- **Cultural relations** – The Indo-German Society is engaged in promoting inter-cultural activities of both countries by conveying information about modern India to the German public. **Max Mueller was the first scholar of Indo-European languages to translate and publish the Upanishads and the Rigveda.**
- **Strategic relations** - India and Germany have a "Strategic Partnership" since 2001. India is amongst a select group of countries with which Germany has Inter-Governmental Consultations at the level of Head of Governments (German Chancellor and PM).
- **Parliamentary Exchanges** – There is an **Indo-German Parliamentary Friendship Group** where visit by Parliamentarians from both sides take place regularly
- **Institutional Cooperation Arrangements** – Includes High Defence Committee, Indo-German Energy Forum, Indo-German Environment Forum, etc.
- Intergovernmental S&T Cooperation Agreement was signed for fostering research projects and direct partnerships between Universities of both countries



### What is the impact of Russia-Ukraine war and Russia-China nexus on India-Germany ties?

- **Russia-Ukraine war** – The war has been a **watershed moment in Germany's security policy**, resulting in the abandonment of decades of post-war pacifism towards strategic matters. **This is evident in Germany's pledge to boost defence spending to 2% of GDP** and provide special funding to bolster the country's military.
- **China factor** – China's assertive posturing have brought into question **Germany's approach of Wandel durch Handel (change through trade).**
- Europe's increasing prioritisation of values-based partnerships with like-minded countries can advance India-German cooperation.
- **Trade routes** – For Germany, the stability of supply chains and trade routes linking Asia to Europe is of critical importance given its status as Europe's economic powerhouse and its reliance on exports.

### What are the recent developments between the two countries?

- **Military dependence** – As New Delhi attempts to diversify from its military dependence on Russia, Berlin reassesses its long-standing arms exports policy and could become an important defence partner for India.
- **Military exercise** – The **first ever France-India-Germany military exercise drill is slated to take place in 2024** towards enhanced security and defence collaboration.
- **Trade & technologies** – Collaboration in clean energy and green technologies has emerged as the central pillar in the partnership.
- This lead to the launch of a **Green and Sustainable Development Partnership.**

### Change of policy towards Asia:

- Departure from previous Asia policy that centered around China. **Scholz first visited Japan after assuming office in 2021.** Invited Indian PM for the 6th Intergovernmental Consultations to Berlin.

- Germany's overall strategy for the Indo-Pacific region which mentions **India as a key partner**.
- For Germany, the stability of supply chains and trade routes linking Asia to Europe assumes critical importance given its status as Europe's economic powerhouse and its reliance on exports.
- Germany's intent to enhance its **strategic involvement in the region through greater military deployment**.
- **Germany's symbolic gesture of sending its frigate Bayern to the Indo-Pacific in 2021, with a stopover in Mumbai (January 2022), was a demonstration of this.**
- Recent agreement on India-Germany triangular cooperation involving development projects in third countries is also an important step in this direction.

#### Defense links

- Germany reassesses its long-standing arms exports policy
- Germany could become an important defense partner for India.
- Discussions around co-development of military hardware and tech transfers
- **Deal worth \$5.2(five point two) billion:** Germany would jointly build six conventional submarines in India could be underway.
- France-India-Germany military exercise drill is slated to take place in 2024 towards enhanced security and defense collaboration.

#### Issues:

- Despite their common concerns regarding stability in the Indo-Pacific, Germany does not share a border with China
- Despite the lack of German trust in China, Scholz's visit in 2022 demonstrated how intertwined German industry is with Chinese markets.
- Germany emphasizes the difficulties in 'decoupling' from China.

#### Trade and technologies

- **Germany is India's largest economic partner** in the European Union (EU).
- Trade figured high on the agenda boosted by the **re-launch of the India-EU free-trade agreement negotiations**
- Collaboration in clean energy and green technologies has emerged as the central pillar in the partnership,
- Launch of a **Green and Sustainable Development Partnership** last year and cooperation in the area of green hydrogen.
- The subject of **mobility and migration** is under focus given Germany's shortages of skilled manpower.

#### Way Forward

- Europe's increasing prioritization of values-based partnerships with like-minded countries can advance India-German cooperation.
- **Discussions on the Russia-Ukraine conflict and its global repercussions were centre stage as the war continued.** The Prime Minister has reiterated India's commitment to contribute to any peace process.
- India and Germany cooperate in multilateral forums, as part of the G-4 group pushing for United Nations Security Council reform, and as evident in Germany's invitation to PM to attend last year's G-7 summit.
- It is refreshing to witness relations steadily evolve into a more wholesome partnership.
  - Divergent positions on the war have not undermined India's regular political engagements with Europe.
  - Convergence in areas such as the Indo-Pacific that are cementing the strategic dimension of the partnership.
  - Intensification of the Russia-China axis could further embolden this alignment.

**Against the backdrop of volatile geopolitical shifts, emerging multipolarity, and Europe's enhanced courtship of India, India's ties with Germany could be vital in shaping a new global order.**

## 11. The India-Australia relationship: Strategic and trade ties; the China factor

### Why in News?

Australian Prime Minister is visiting India for **India-Australia Summit in March 2023**, seeking to strengthen the new momentum in ties between the two countries through **deeper trade, investment and defence relations**.

### Historical Perspective

- Australia and India for the first time established diplomatic relations in the pre-Independence period, when the **Consulate General of India was first opened as a Trade Office in Sydney in 1941**.
- India-Australia relations touched a historic low when the **Australian Government condemned India's 1998 nuclear tests**.
- **In 2014, Australia signed a Uranium supply deal with India**, the first of its kind with a country that is a non-signatory to the Nuclear Non-Proliferation Treaty, **in recognition of India's "impeccable" non-proliferation record**.
- At the **India-Australia Leaders' Virtual Summit in June 2020**, Indian Prime Minister and Australian Prime Minister elevated the bilateral relationship from the Strategic Partnership concluded in 2009 to a Comprehensive Strategic Partnership (CSP).
- At the **2nd India-Australia Virtual Summit in March 2022**, several key announcements were made, including on a **Letter of Intent on Migration and Mobility Partnership Arrangement to foster the exchange of skills, and a Letter of Arrangement for Educational Qualifications Recognition** to facilitate the mobility of students and professionals.
- **Common Trait in Relationship:** Shared values of **pluralistic, Westminster-style democracies, Commonwealth traditions, a free press, an independent judicial system**, and English language serve as the foundation for closer co-operation.



### India-Australia Cooperation

- **Economic cooperation:** The Economic Cooperation Trade Agreement (ECTA) entered into force in **December 2022**, and has resulted in an **immediate reduction of duty to zero on 96% of Indian exports to Australia in value** (that is 98% of the tariff lines) and zero duty on 85% of Australia's exports (in value) to India.
  - Bilateral trade was US\$ 27.5 billion in 2021; with ECTA, there is potential for it to reach around US\$ 50 billion in five years.
  - **India is Australia's sixth largest trading partner.**
- **People-to-people ties: India is one of the top sources of skilled immigrants to Australia.**
  - As per the 2021 Census, around 9.76 lakh people in Australia reported their ancestry as Indian origin, making them the **second largest group of overseas-born residents in Australia**.
- **Education:** The **Mechanism for Mutual Recognition of Educational Qualifications (MREQ)** was signed on **March 2 this year**. This will facilitate mobility of students between India and Australia.
  - More than 1 lakh Indian students are pursuing higher education degrees in Australian universities, making **Indian students the second largest cohort of foreign students in Australia**.
- **Australia-India Education Qualification Recognition Mechanism:** It means that degrees obtained in Australia will now be recognised in India, and, vice-versa.
  - **Deakin University, one of Australia's top educational institutions, will be the first foreign university to set up an international branch campus at GIFT (Gujarat International Finance Tec) City in Gandhinagar.**
- **Defence cooperation:** The **2+2 Ministerial Dialogue** was held in **September 2021**.
- **Mutual Logistics Support Agreement (MLSA)** was concluded during the **Virtual Summit in June 2020**, and the two militaries held several joint exercises in 2022.

CHEAPER FOR CONSUMERS	GAINS FOR PROFESSIONALS AND STUDENTS
<p>Oz wines priced above \$5 which have a 150% duty now</p> <p><b>Oranges, mandarins, almonds, pears, cotton</b></p> <p><b>Cherries, shelled pistachios, avocados, some types of pasta, crispbread</b></p> <p><b>Duties to be halved to 15% on apricots, and strawberries in 7 years</b></p>	<p><b>4-year visa for 1,800 qualified chefs, yoga teachers every year</b></p> <p><b>Post-study work visa of 2-4 years; over 1 lakh students to benefit</b></p> <p><b>STEM, ICT students gain from post-study work rights</b></p> <p><b>Additional 10 lakh jobs in India</b></p> <p><b>Work &amp; holiday visa arrangements for young pros</b></p>
CHEAPER INPUTS AND MARKET FOR INDUSTRY	CURRENT STATUS
<p><b>Duty free export of textiles, leather, furniture, sports goods, jewellery</b></p> <p><b>No duty on rail wagons, electrical goods exports</b></p> <p><b>Steel, aluminium, garments sector to gain from cheap raw material import</b></p> <p><b>Cheap coal, alumina, metallic ores, cobalt, lithium imports to push manufacturing</b></p>	<p><b>Apr-Sep FY23</b></p> <p><b>India's Exports: \$4.18 b</b></p> <p><b>India's Imports: \$11.01 b</b></p> <p><b>Key goods</b></p> <p><b>Petroleum products</b></p> <p><b>Pearls, precious &amp; semi precious stones</b></p> <p><b>Drug formulations, biologicals</b></p> <p><b>Iron &amp; steel products</b></p> <p><b>Cotton readymade garments &amp; accessories</b></p> <p><b>India's Imports: Key goods</b></p> <p><b>Coke, coal, briquettes</b></p> <p><b>Gold</b></p> <p><b>Petroleum products</b></p> <p><b>Bulk minerals &amp; ores</b></p> <p><b>Aluminium &amp; products</b></p>

- **Australia will host military operations with India, Japan, and the US in the “Malabar” exercises** off the coast of Perth in August, and has invited India to join the Talisman Sabre exercises later this year.
- Security and defence cooperation between New Delhi and Canberra is increasingly aimed at upholding freedom of navigation and creating a “strategic equilibrium” in the Indo-Pacific maritime space.
- **Clean energy:** The countries signed a **Letter of Intent on New and Renewable Energy in February 2022** which provides for cooperation towards bringing down the cost of renewable energy technologies, especially ultra low-cost solar and clean hydrogen.
- In **March 2022, India announced matching funds of AUD 10 million for Pacific Island Countries under Infrastructure for Resilient Island States (IRIS)** and of AUD 10 million for Pacific Island Countries under International Solar Alliance (ISA).
- **China factor:** Both Australia and India support a **rules-based international order** and are partners in seeking to forge regional institutions in the Indo-Pacific which are inclusive, promote further economic integration. **Both have been assessing the Chinese challenge since 2013.**
- **Australia in 2018 banned Chinese telecom firm Huawei from the 5G network.**
- It called for an **inquiry into the origins of Covid-19, and slammed China’s human rights record in Xinjiang and Hong Kong.**
- India has been facing an aggressive Chinese military along the border.

### Way Forward

- The **India-Australia relations** have strengthened in recent years due to shared values, interests, geography, and objectives.
- Both countries envision a **free, open, inclusive, and rules-based Indo-Pacific region**, unilateral or coercive actions are not preferred and are to be avoided in resolving any disagreements or conflicts.
- Renewed relationship between India- Australia through initiatives such as **India Australia bilateral Summits give an opportunity to further strengthen the ties between the two countries to play an active role in ensuring rule-based order in the Indo-Pacific.**

## 12. Safe harbour at risk: On the impact of the proposed Digital India Act, 2023

### Why in News?

The Government is reconsidering a key aspect of cyberspace — ‘safe harbour’, which is the principle that allows social media platforms to avoid liability for posts made by users. **The Ministry of Electronics and Information Technology will soon come up with the Digital India Act, 2023 which will replace the Information Technology Act (IT Act) of 2000.**

The Indian Parliament plans to **implement the Digital India Act alongside the Digital Personal Data Protection Bill, 2022**, proposed in November 2022, where the two legislations will work in tandem with each other.

### What is the Need for a New Act?

- Since the IT Act of 2000 was enacted, there have been many revisions and amendments (IT Act Amendment of 2008, IT Rules 2011) in attempts to define the digital space in which it regulates while trying to put more emphasis on the data handling policies.
- However, because **the IT Act was originally designed only to protect e-commerce transactions and define cybercrime offenses**, it did not deal with the nuances of the current cybersecurity landscape adequately nor did it address data privacy rights.
- Without a complete replacement of the governing digital laws, the IT Act would fail to keep up with the growing sophistication and rate of cyber-attacks.
- **The new Digital India Act envisages to act as catalysts for Indian economy** by enabling more innovation, more startups, and at the same time **protecting the citizens of India in terms of safety, trust, and accountability.**

### What are the Likely Provisions under Digital India Act 2023?

### Freedom of Expression:

- Social media platforms' own moderation policies may now be reduced to constitutional protections for freedom of expression and Fundamental speech rights.
- An October 2022 amendment to the IT Rules, 2021 says that **platforms must respect users' free speech rights**.
- **Three Grievance Appellate Committees** have now been established to take up content complaints by social media users.
- These are now likely to be subsumed into the Digital India Act.

### Online Safety:

- The Act will cover **Artificial Intelligence (AI), Deepfakes, cybercrime, competition issues among internet platforms, and data protection**.
- The Government put out a **draft Digital Personal Data Protection Bill in 2022**, which would be **one of the four prongs of the Digital India Act**, with the National Data Governance Policy and amendments to the Indian Penal Code being others, along with rules formulated under the Digital India Act.

### New Adjudicatory Mechanism:

- A new **"Adjudicatory Mechanism" for criminal and civil offenses** committed online would come into place.

### Safe Harbour:

- The Government is reconsidering a key aspect of cyberspace — **'safe harbour', which is the principle that allows social media platforms to avoid liability for posts made by users**. The term has been reined in recent years by regulations like the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, which require platforms to take down posts when ordered to do so by the government, or when required by law.

### What Data Protection Laws are there in other Nations?

#### European Union Model:

- The General Data Protection Regulation focuses on a comprehensive data protection law for processing of personal data.
- In **the EU, the right to privacy is enshrined as a fundamental right** that seeks to protect an individual's dignity and her right over the data she generates.

#### US Model:

- There is **no comprehensive set of privacy rights or principles in the US** that, like the EU's GDPR, addresses the use, collection, and disclosure of data.
- Instead, there is **limited sector-specific regulation**. The approach towards data protection is different for the public and private sectors.
- The activities and powers of the Government vis-a-vis personal information are well-defined and addressed by broad legislation such as the **Privacy Act, the Electronic Communications Privacy Act, etc.**
- For the private sector, there are some sector-specific norms.

#### China Model:

- New Chinese laws on data privacy and security issued over the last 12 months include the **Personal Information Protection Law (PIPL), which came into effect in November 2021**.
- It gives Chinese data principals new rights as it seeks to prevent the misuse of personal data.
- The **Data Security Law (DSL), which came into force in September 2021**, requires business data to be categorized by levels of importance, and puts new restrictions on cross-border transfers.

### 13. New reality: On Saudi Arabia-Iran reconciliation and China's role

#### Why in News?

Saudi Arabia and Iran, two of West Asia's major powers that have been at odds with each other for decades, agreed to restore diplomatic relations in an agreement brokered by China.

#### What is the history of the ties?

- **Islamic sectarianism** – The rivalry between Saudi Arabia and Iran is rooted in Islamic sectarianism. While Iran is the foremost Shia state in the world, Saudi Arabia is considered to be the religious home of Sunni Islam. In modern times, this sectarian rivalry has translated into a tussle for regional hegemony. In both the wars in Yemen and Syria, Iran and Saudi Arabia find themselves on opposite sides.
- **US factor** – Iran is highly critical of Saudi Arabia's closeness with the United States. The US has crippled Iranian economy with its sanctions regime for decades.
- **Militancy** – Saudi Arabia is worried of the large network of armed militias across West Asia that Iran funds and backs, a threat to its own sovereignty as well as the regional balance of power.

#### What is the agreement about?

Iran and Saudi Arabia will patch up a 7 year split by reviving a security cooperation pact, reopening embassies in each other's countries, resuming trade, investment and cultural accords.

#### Why was the agreement signed now?

##### Saudi Perspective

- **Vision 2030** – Regional peace will be crucial to turning Saudi Arabia into the global hub that Vision 2030 envisions.
- This has led to Saudi Arabia making concerted efforts to end long-standing conflicts with powers across the region, with the Iran deal the latest such move.
- **Away from US** – Furthermore, it has also led to Saudi Arabia slowly moving away from the singular influence of the United States in its foreign policy.

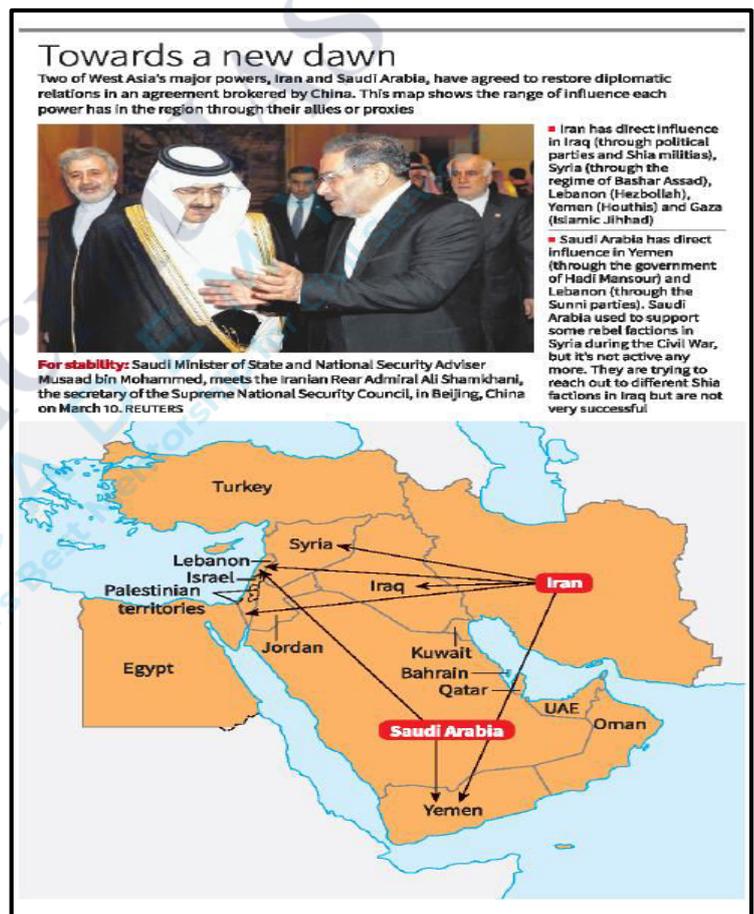
While the US continues to be Saudi Arabia's biggest military supplier, in recent years, the desert kingdom has courted various powers including Russia, China and now, Iran.

##### Iran Perspective

- **Nuclear deal** – The agreement comes as Iran accelerates its nuclear program after 2 years of failed U.S. attempts to revive a 2015 deal that aimed to stop Tehran from producing a nuclear bomb. However, a brutal sanctions regime and internal tensions have made it difficult for Iran to achieve its goals.
- **Regional allies** – Finding allies in the region is of utmost importance to Iran when the Khomeini regime is perhaps at its weakest since the revolution.

#### What is the role of China in this agreement?

- **China's role as peace broker** is yet another sign of changing currents in the region.



- China has historically maintained ties with both countries and the latest deal points to China's growing political and economic clout in the region.

#### What are the concerns for the United States?

- The United States has for a long time wielded great influence in West Asia.
- It has been the **predominant global power** that has had influence over geopolitics in the conflict-ridden region.
- Crucially, this deal and China brokering it, does not portend well for the United States.

#### What is the impact on the agreement on other stake holders in West Asia?

- **Israel** – The move has ushered in a wave of anxiety in Israel which shares no **formal diplomatic ties with either nation**. While Israeli leaders see **Iran as an enemy and an existential threat**, they consider **Saudi Arabia a potential partner**.
- **Yemen** – Riyadh intervened in Yemen against the Houthi movement after the Iran-aligned group ousted the internationally recognized government from power. Restored ties between Riyadh and Tehran could facilitate agreement between Saudi and the Houthis.
- **Syria** – **Iran has offered military, economic and diplomatic support to President Bashar al-Assad** since his **crackdown of protests in 2011** left him isolated. The Saudi-Iranian deal comes as a step towards Syria's return to the Arab League.
- **Lebanon** – Lebanese politics have been broadly split for years between a **pro-Iran alliance led by powerful armed group Hezbollah and a pro-Saudi coalition**. The agreement between Tehran and Riyadh has sparked hope that paralysis could end.
- **Iraq** – After the **toppling of Saddam Hussein, Iran deepened its political, security and economic influence in Iraq, sparking Saudi alarm**. Iraqis hope for a general regional detente that would allow their country to rebuild.

#### Way Forward

- The agreement is welcome in context of the human toll that the Saudi-Iran rivalry has taken.
- However, this does not mean that all problems will be immediately resolved.
- While Iran and Saudi Arabia may still fall out, for the time being, this diplomatic agreement has ushered in major change in geopolitical dynamics in West Asia.
- The agreement could be the start of a **greater global geopolitical realignment**.
- The announcement could not only lead to a major realignment in West Asia, it also poses a major geopolitical threat to the United States, with China acting as peace broker for the historic deal.

## 14. India and Italy: Friends in a turbulent world

### Why in News?

On the **75th anniversary of diplomatic relations between Italy and India**, the summit between the Italian Prime Minister and Indian Prime Minister was held on **March 2**.

### What were major developments during the summit?

- The Joint Declaration approved in the Summit affirms the commitment of the two Governments to **develop a strategic partnership**. It will also focus on sectors such as **defence, cybersecurity, space and energy**.
- A connection was also identified between the **Indo-Pacific and Mediterranean**. India plays a leading role in the Indo-Pacific. **Italy is a front-line player in the enlarged Mediterranean in terms of energy security, investments and commerce**.
- The link between the two areas will be strengthened in the fields of **maritime and digital connectivity and security**.
- Finally, **Italy announced its full support to the Indian Presidency of the G20**. It will contribute to the issues that were at the centre of Italy's G20 Presidency in 2021. This includes debt service suspension, special drawing rights, finance and health track, and balance sheet optimisation of multilateral banks
- Prime Minister Meloni and Prime Minister Modi have also expressed their commitment to enhancing the European-Indian strategic partnership.

- They also supported the **ongoing negotiations for Free Trade Agreements** and agreements on investment protection and geographical indication protection.

#### **What is the history of India-Italy relationship?**

- **Political Relations** - Political relations between India and Italy were established in 1947. **A total of 15 MoUs** covering areas like energy, media, finance, ship building **were signed in the 2020 Summit**.
- **Economic Relations** - **Italy is among India's top 5 trading partners in the EU**. Italy ranks 18th in FDI inflows in India during April 2000 to December 2020 with FDI inflow of US \$ 3.02 billion during this period.
  - Italy and India have already intensified their collaboration, bringing bilateral trade to a record figure of around 15 billion euros in 2022, doubling the figure recorded in 2020.
  - **India ranks 19th as country of origin of Italian imports**, accounting for 1.2% of Italian imports.
- **Defence - Milan – a biennial naval exercise between India and Italy**.
  - Indian Naval Ship (INS) Tabar, the Navy's Talwar-class Russian built frigate, has just concluded a two-day naval exercise with the Italian Navy in the Tyrrhenian Sea.
  - **India - Italy Military Cooperation Group (MCG) is a forum established to boost defence cooperation between India and Italy**.
- **Cultural Exchange** - The agreement for cultural cooperation was signed in 1976.
- There are around **10 Universities/higher education institutions in Italy with highly qualified faculties which conduct courses in Indian art, history and languages**.
- Science and Technology - An **Agreement on S&T Co-operation exists since 1978**.
- A significant **bilateral initiative under the S&T Cooperation Agreement is the India-Trento Programme for Advanced Research (ITPAR)**
- **Indian Community in Italy** - The Indian community in Italy (estimated at 2.5 lakhs including PIOs) is the third largest community of Indians in Europe after UK and the Netherlands.
  - **Indian community is the 5th largest foreign community in Italy**.

#### **What are the recent developments in India-Italy relationship?**

- The elevation of bilateral relations to a strategic partnership has been established for the first time in 2023.
- In recent years, **Italy has joined all the multilateral initiatives promoted by India, from the Indian Ocean Rim Association (IORA) to the Coalition for Disaster Relief Infrastructure (CDRI), to the International Solar Alliance .**
- **European-Indian strategic partnership aims to support the ongoing negotiations for Free Trade Agreements** and agreements on investment protection and geographical indication protection.
- In scientific research and technology, the partnership between the two countries has registered the **launch of 13 new joint projects**.
- **Mobility:** There is a **significant increase in the flow of Indian students and workers in Italy** with Indian community exceeding a figure of 2,00,000 — **the highest in the European Union**.

## GS 3

### 1. International courts and climate change

#### Why in news?

A group of 16 countries has launched a gallant effort to fight the problem of climate change at the United Nations (UN).

#### What is the issue?

- Led by Vanuatu, an island country in the South Pacific Ocean, the group seeks an advisory opinion from the International Court of Justice (ICJ) on the issue of climate change.
- In the 27th UN Climate Change Conference (COP-27), countries failed to narrow their differences on critical issues such as reducing greenhouse gas emissions.
- This perfectly exemplifies the failure of the international community to get its act together on the issue of climate change.

#### What is the initiative taken by Vanuatu?

- Small Island Developing (SID) states such as Vanuatu are most vulnerable to rising temperatures and sea levels.
- Small Island Developing States (SIDS) are a distinct group of 38 UN Member States and 20 Non-UN Members/Associate Members of United Nations regional commissions that face unique social, economic and environmental vulnerabilities.
- Vanuatu launched an initiative, through the UNGA, which seeks advisory opinion from the ICJ to clarify the legal obligations of all countries to prevent the adverse effects of climate change.
- Since then, the initiative has gathered momentum with reportedly more than 100 countries backing the idea.

#### What are the legal questions arising out of the initiative?

If Vanuatu's request for an advisory opinion goes through, the ICJ will have multiple questions to address regarding climate change and reparations.

- **International Obligations** – There comes a question on the international obligations of countries toward the protection of the climate system from anthropogenic emissions of greenhouse gases.
- The ICJ will interpret and clarify the existing international climate change law enshrined in various international environmental treaties.
- It will also use the **general and customary international law (CIL)** to fill the gaps in these treaties.
- Thus, the ICJ can use the **'no-harm' principle**, an important part of CIL, to shed light on unclear provisions of the Paris Agreement.

**No-harm principle** – states are under an obligation that activities within their jurisdiction do not damage other countries.

- **Legal Consequences** – Another question is regarding the legal consequences for states that have caused significant harm to the climate system.
- The rich countries that have historically caused maximum greenhouse gas emissions should compensate the developing countries bearing a disproportionate brunt of climate change.
- At COP-27, while it was agreed to establish a "loss and damage" fund to financially assist vulnerable developing countries, there is little clarity on which countries will provide the funding.
- Moreover, the connection between funding and the historical responsibility of developed countries in emissions is yet to be determined.
- **Role of ITLOS** – The International Tribunal for the Law of the Sea (ITLOS) has been requested to determine the specific obligations of the countries about preventing, controlling, and reducing pollution of the marine environment.

### What is the way forward?

- The challenges of **ocean warming, sea level rise and ocean acidification are all linked to the marine environment.**
- As part of a multi-pronged approach to save our planet, one should welcome the **role of international courts.**
- Developed countries and groupings like the G-20 should support these laudable initiatives of the SID states.
- India, as the president of the G-20, should take a lead given its relentless emphasis on **LiFE campaign.**

## 2. Combining social welfare and capital markets through SSE

### Why in News?

**Securities and Exchange Board of India (SEBI)** has given approval to the National Stock Exchange of India to set up a Social Stock Exchange (SSE). **SSE was presented in the Union Budget 2019.**

### What is a Social Stock Exchange?

- The **SSE would function as a separate segment** within the existing stock exchange and help social enterprises raise funds from the public through its mechanism.
- It would **serve as a medium for enterprises to seek finance for their social initiatives**, acquire visibility and provide increased transparency about fund mobilisation and utilisation.
- Retail investors can only invest in securities offered by **for-profit social enterprises (FPSEs)** under the Main Board.
- In all other cases, only institutional investors and non-institutional investors can invest in securities issued by SEs.

### What about eligibility?

- **Social Intent** – Any non-profit organisation (NPO) or FPSEs that establishes the **primacy of social intent would be recognised as a social enterprise.**
- Those recognised will make it eligible to be registered on the SSE.
- Dependent on Corporates – **NPOs that are dependent on corporates for more than 50% of its funding are considered ineligible.**

### How do NPOs raise money?

- **Zero Coupon Zero Principal (ZCZP)** – NPOs can raise money either through **issuance of ZCZP instruments** from private placement or **public issue, or donations from mutual funds.**
- ZCZP bonds differ from conventional bonds in the sense that it **entails zero coupon and no principal payment at maturity.**
- The **minimum issue size** is presently prescribed as **Rs 1 crore** and **minimum application size** for subscription at **Rs 2 lakhs for ZCZP issuance.**
- The NPO may choose to register on the SSE and not raise funds through it but via other means, however, they would have to make necessary disclosures about the same.

### What about on completion of projects?

- **Development Impact Bonds** – It is another structured finance product available for NPOs.
- Upon the completion of a project and having delivered on pre-agreed social metrics at pre-agreed costs/rates, a grant is made to the NPO.
- The donor who makes the grant upon achieving the social metrics would be referred to as **Outcome Funders.**
- Since the **payment above is on post facto basis**, the NPOs would have to also raise money to finance their operations.
- This is done by a **Risk Funder** who alongside enabling the financing of operations on a pre-payment basis, also bears the associated risk with non-delivery of social metrics.

### How do FPOs raise money?

- For-Profit Enterprises (FPEs) need not register with social stock exchanges before it raises funds through SSE.
- However, it must comply with all provisions of the ICDR Regulations when raising through the SSE.

- It can raise money through issue of equity shares to an Alternative Investment Fund including Social Impact Fund or issue of debt instruments.

#### What disclosures need to be made?

- **Annual impact report** – SEBI’s regulations state that a **social enterprise should submit an annual impact report in a prescribed format.**
  - The report must be audited by a social audit firm and has to be submitted within **90 days** from the end of the financial year.
- **Money raised** – Listed NPOs, on a quarterly basis, are specifically required to furnish details about the money they have raised category-wise.

### 3. Cotton: Crying out for change

#### Why in news?

Cotton farmers in Northern India suffered heavy losses in the **last kharif season.**

#### Cotton Production in India

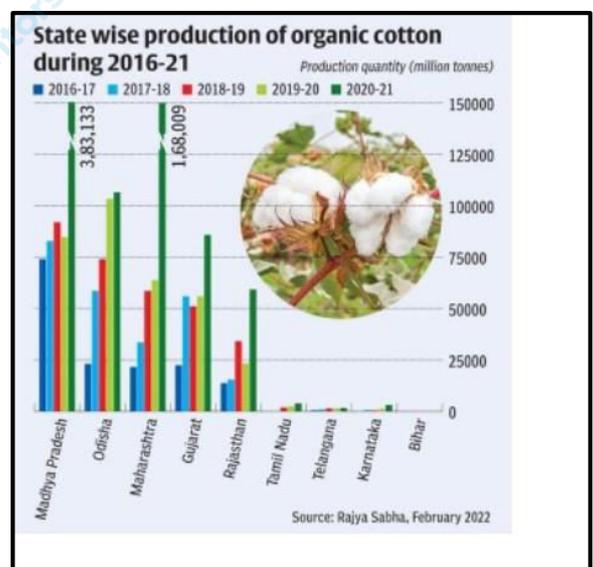
- Cotton output is estimated at 322 lakh bales (of 170 kg each), down by 48 lakh bales from the target of 370 lakh bales in 2022-23.
- **Cotton productivity:** It peaked at 566 kg lint per hectare in 2013-14. 2021-22: It reduced to 445 kg lint per hectare, down by 121 kg lint per hectare.
- This **dip in cotton production has forced the textile industry to rely on imports**, which increased to 35.3 lakh bales worth ₹8,339.26 crore in 2018-19.
- The **relaxation in import duty structure would hit the balance of trade in cotton**, which remained favourable over the last two decades.
- **Cotton exports:** It peaked at 116.96 lakh bales worth ₹23,153.24 crore in 2014-15, have since declined to 47 lakh bales worth ₹8,731.32 crore in 2020-21.

#### What are the reasons for less cotton productivity?

- The cotton productivity estimate was reported to be at its **lowest in the North zone comprising of Punjab, Haryana and Rajasthan.**
- **North zone cotton**, which recorded the **highest cotton yield in 2019-20** is now down by over 30%.
- **Reasons** – The losses are mounting due to the **rising cost of cultivation, climate induced change in pest dynamics and rampant sale of unauthorised seeds and unchecked pesticides sprays.**
- **Health & Environment** – The boom and tractor mounted sprayers are back with unimaginable consequences on human health and environment.
- **Climate Change** – **Climate change induced weather aberration, widespread infestation of boll devouring pink bollworm, new tobacco streak virus disease and boll rot** have recently threatened cotton farmers.
- **Crop diseases** – The **white fly transmitted severe cotton leaf curl virus and sudden outbreak of para wilt** have worsened the situation for North zone farmers.
- **Lack of infrastructure** – The cotton sector seems to be dogged by some serious structural deficiencies.

#### What is the impact of low cotton productivity?

- **Imbalance in demand-supply** – Cotton productivity, has continuously been decelerating, causing **imbalance in demand-supply of cotton** and uncertainty in the cotton textile industry.



- **Increase in imports** – This dip in cotton production has forced the textile industry to rely on imports, which increased to 35.3 lakh bales worth ₹8,339.26 crore in 2018-19.
- The relaxation in import duty structure would hit the balance of trade in cotton, which remained favourable over the last two decades.
- **Decrease in exports** – On the other hand, cotton exports, which peaked in 2014-15, have since declined.

#### What are the strategies used to overcome the challenges?

- **HDPS** – The cropping system of cotton must gradually undergo a systematic change to high density planting system (HDPS).
  - The HDPS is a new cropping system of accommodating more plants per unit area supported by technological inputs for weed management, defoliation and mechanical picking.
- **Dibbling** – Our farmers practice dibbling based sowing of bushy-type, long duration hybrid cotton seeds at a large spacing accommodating fewer plants per acre.
  - The farmers harvest seed cotton 3-4 times in a season spanning 180 to 280 days in different cotton growing zones.
- **Hybrid Cotton** – New erect type hybrid cotton genotypes have been introduced to optimise plant population.
  - However, but this forms just one-fourth of what is being practiced under HDPS in countries with high cotton yield.

#### Way forward

- **Policies** – The government-led policy paradigm on cotton must give way to **progressive evidence-based policies on pricing of seeds and safeguarding intellectual property.**
- **Intellectual Property Rights** – Enforcement of IPR on new varieties suitable for HDPS while ensuring farmers' rights must be strengthened to attract investment in R&D and breeding of high-density suitable genotypes.
- **Transfer of Seeds** – Exchange of pre-breeding germplasm under material transfer agreement (MTA) and access and benefit sharing (ABS) mechanism for cross border material transfer must be prioritised.
- **Price Control** – The price control of cotton seeds under the Cotton Seed Price (Control) Order, 2015 has discouraged breeding activities and stalled introduction of much needed technologies for weed management.
- This has also fuelled the growth of illegal market for herbicide tolerant (HT) cotton.

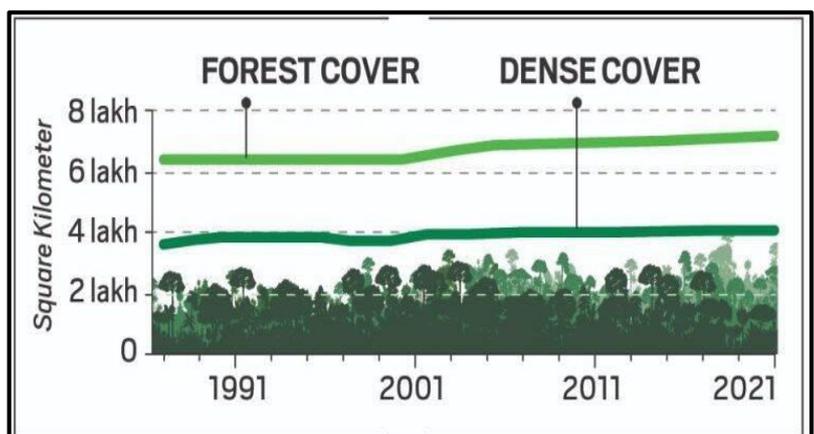
### 4. The problems with Compensatory Afforestation in India

#### Why in news?

India's target of increasing its forest and tree cover absorb an additional amount of **2.5 billion to 3 billion tonnes of carbon dioxide equivalent by 2030** is a relatively difficult one to achieve.

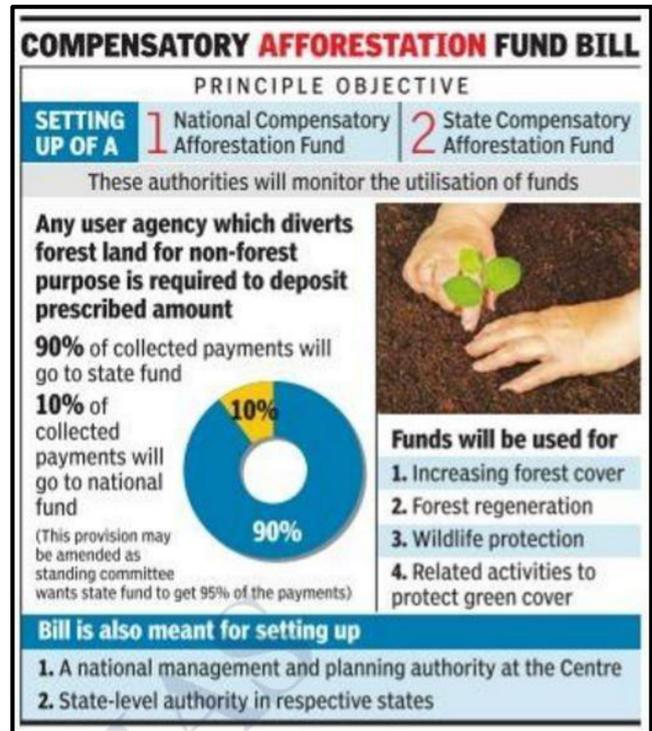
#### What is the issue?

- **Threat to forests** – Forests are under stress due to the need for rapid industrial and infrastructure development, and accompanying urbanisation.
- **Government initiatives** – Green India Mission, national afforestation programme, and the tree plantation exercises along the highways and railways, help improve forest cover.
- The **National Rural Employment Guarantee Scheme (MGNREGS)** and **Namami Ganga** also have significant afforestation components.



## What Is Compensatory Afforestation?

- **Afforestation** – It seeks to ensure that **forest lands getting diverted for non-forest purposes**, like industrial development, is mandatorily accompanied by afforestation effort.
- **Legal mandate** – It made a **legal requirement through the Compensatory Afforestation Fund Act of 2016**, does ensure that newer parcels of land are earmarked for developing them as forests.
- **Funding** – Project developers, public or private, are required to fund the entire afforestation activity on these new lands.
- **Goods & Services** – Newly afforested land cannot be expected to immediately start delivering the range of goods and services that the diverted forests were providing.
- **Net Present Value (NPV)** – Project developers are asked to pay for the NPV of the forests being cleared, based on a calculation decided by an expert committee.



## What are the problems associated with the compensatory afforestation practice?

- **No suitable land** – Besides the low utilisation of funds, **lack of availability of suitable land remains the biggest problem for compensatory afforestation.**
- **Distributed land** – While the law mandates at least an equal area of land to be provided for compensatory afforestation, rarely is a contiguous stretch of land made available for this purpose. The total area of land is often distributed over 20 or more different locations.
- **Monocultures** – Companies often indulge in planting plantations in the available land, which is critical because plantations are monocultures, meaning they contain only one species of plants. A key element of any forest is biodiversity.
- **Biotic Pressure** – Forest officials point to biotic pressures, the challenge the plantations face from nearby human habitations and cattle.
- **Greenwashing** – Critics say **compensatory afforestation had legitimised clearing of forests, and see it as an example of Greenwashing.** However, clearing of forests for other purpose cannot be entirely eliminated, compensatory afforestation is a good mechanism for attempting to make up for these losses to some extent.

## Conclusion

What is required is actually an **ecosystems approach with focus on climate justice and the rights and role of local communities.** It should also **address biodiversity and poverty** effectively and challenge the underlying causes of deforestation directly, resolving governance, poverty and land tenure issues.

## 5. How to become a green hydrogen superpower

### Why in News?

The 2023 Union Budget has allocated ₹19,700 crore for the National Green Hydrogen Mission. This could help **India establish itself as a green H2 superpower.**

### What is green hydrogen?

- It is a **type of hydrogen produced by splitting water through electrolysis**, using electrolyser powered entirely by renewable power sources.

- **Advantages** – It could replace fossil fuels and decarbonize a range of sectors such as **petroleum refining, fertiliser production, steel production, chemicals, transport, etc.**
- **Disadvantages** – It is **not commercially viable** at present and is expensive to be manufactured.

**What is the National Green Hydrogen Mission?**

- The **National Green Hydrogen Mission** was first announced by the Prime Minister in his **Independence Day speech in 2021.**
- **Objectives** – The mission is aimed at making **India a global hub** for the production of green hydrogen.
- **The mission also aims to:**
  - Creation of export opportunities for green hydrogen.
  - Decarbonisation of the energy sector.
  - Development of indigenous manufacturing capacities.

**Importance of Green H2 for India:**

- India has committed to 50% electricity capacity from non-fossil sources by 2030.
- An energy transition in the industry (most GHG emissions come from steel, cement, fertilizers, and petrochemicals) is needed at the same time.
- **Green H2 can serve as an energy source** (heavy industry, mobility, and power storage) and an **energy carrier** (as green ammonia/blended with natural gas). It holds the promise of fuelling industrial growth while simultaneously reducing industrial emissions.
- With abundant sunshine and wind energy resources, **India is geographically blessed to become one of the lowest-cost producers of green H2.**

**Priorities to convert the vision into reality:**

**Government and industry must act in sync for –**

- Becoming a **big player domestically** – a necessity to be a major player in the international market.
- The mission introduces a **Strategic Interventions for Green Hydrogen Transition (SIGHT) fund** (₹13,000 crores) to support heavy industries to increase demand, offering economies of scale, etc.
- Blending mandates for refineries can be another demand trigger.
- As the **second-largest steel producer in the world, India can aspire to become the largest green steel producer.**
- Costs of green steel, made from green H2, could be reduced with economies of scale and changes in production technologies.
- **India can be an attractive destination for domestic and foreign investment.**
- A mission secretariat can ensure project clearance is streamlined and reduce financial risks.

**GH<sub>2</sub>: promises**

**NATIONAL GREEN HYDROGEN MISSION**  
**Total outlay approved: ₹ 19,744 crore**  
**EXPECTED OUTCOMES BY 2030**

- Hydrogen produced is said to be 'green' if all its inputs are green. Decarbonisation plans of many countries include green hydrogen (GH<sub>2</sub>) because combusting hydrogen releases only heat and steam
- 60% of India's energy comes from fossil fuel sources
- The production mode of choice of green hydrogen is through the electrolysis of water
- India currently lacks the required electrolyzers and needs cheaper renewable energy
- Technologies to adapt hydrogen fuel cells for use in vehicles are largely immature in India
- Hydrogen leaks easily and liquid hydrogen reacts explosively with air, incurring significant storage and transport costs

- > Development of green hydrogen production capacity of at least 5 MMT (million metric tonne) per annum
- > An associated renewable energy capacity addition of about 125 GW
- > Over ₹8 lakh crore in total investments

- > Creation of over 6 lakh jobs
- > Cumulative reduction in fossil fuel imports by over ₹1 lakh crore
- > Abatement of nearly 50 MMT of annual greenhouse gas emissions

	Terminology	Technology	Feedstock/ Electricity source	GHG footprint*	
PRODUCTION VIA ELECTRICITY	Green Hydrogen	Electrolysis	Wind   Solar   Hydro Geothermal   Tidal	Minimal	
	Purple/Pink Hydrogen		Nuclear		
	Yellow Hydrogen		Mixed-origin grid energy		
PRODUCTION VIA FOSSIL FUELS	Blue Hydrogen	Natural gas reforming + CCUS Gasification + CCUS	Natural gas   coal	Low	
	Turquoise Hydrogen				Pyrolysis
	Grey Hydrogen	Natural gas reforming	Medium		
	Brown Hydrogen			Brown coal (lignite)	
	Black Hydrogen	Gasification	Black coal		

\* GHG footprint given as a general guide but it is accepted that each category can be higher in some cases.

- Becoming more competitive (with targeted public funding) in manufacturing the most critical and high-value components of electrolysers in India.
- The SIGHT fund offers ₹4,500 crores to support electrolyser manufacturing under the performance-linked incentive scheme.
- The mission allocates ₹400 crores for R&D, which can be leveraged to crowd in private capital into technology co-development
- **Establishing bilateral partnerships to develop resilient supply chains.**
- Indian companies should consider joint projects in countries with good renewable energy resources and cheap finance to become export competitive.
- India must coordinate with major economies to develop rules for a **global green H2 economy.**
- **India's G20 presidency** is an opportunity to craft rules, addressing operational threats, industrial competitiveness and strategic threats.
- India should promote a **global network of green hydrogen** via which companies could collaborate.

### Way Forward

- **G20** – India's G20 presidency is an opportunity to craft rules for a global green hydrogen economy. These rules must address operational threats, industrial competitiveness and strategic threats.
- **Global network** – India should promote a **global network on green hydrogen** via which companies could collaborate.
- **India's geography** – With **abundant sunshine and significant wind energy resources**, India is geographically blessed to become **one of the lowest-cost producers of green hydrogen.**
- India is well-positioned to show leadership, in our collective interest and that of the planet.

### Conclusion

**Green hydrogen will be a critical industrial fuel of the 21st century.** India is well-positioned to show leadership, which is in India's and the planet's collective interest.

## 6. What are 'bio-computers' and what can they tell us about the human brain?

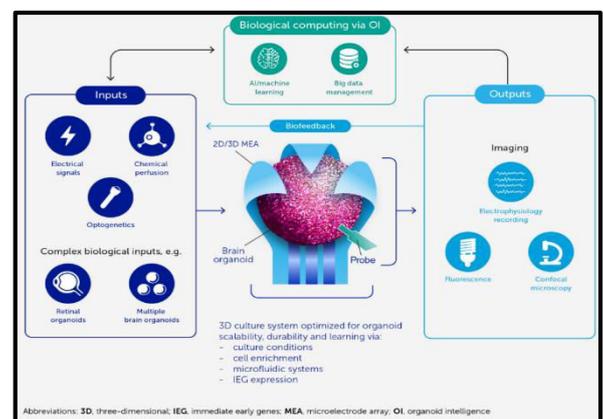
### Why in News?

Recently, Scientists have outlined a plan for a **potentially revolutionary new area of research called "organoid intelligence"**, which aims to create **"biocomputers"**, where 3D brain cultures grown in the lab are coupled to real-world sensors and input/output devices.

Technology is expected to harness the processing power of the brain and understand the **biological basis of human cognition, learning, and various neurological disorders.**

### What is this Technology?

- These **"mini-brains"** (with a size of up to 4 mm) are built using **human stem cells and capture many structural and functional features of a developing human brain.** It is used to study human brain development and test drugs to see how they respond.
- However, **Brain organoids** developed in the lab are not advanced enough as they **lack the required sensory inputs and blood circulation** that are necessary for the development of a complex organ like the human brain.



- Moreover, Scientists **transplanted human brain organoid cultures into rat brains** and observed that they formed connections with the rat brain and showed functional activity.

- This system could provide a way to study brain diseases in a human context.
- However, the organoids are still in the rat-brain microenvironment, which may not be representative of the human brain.

### What is the New 'Bio-computer'?

- Researchers plan to combine brain organoids with modern computing methods using machine learning to create "bio-computers".
- They will grow organoids inside structures with multiple electrodes that can record the firing patterns of neurons and mimic sensory stimuli.
- Machine-learning techniques will then be used to analyse the effect of neuron response patterns on human behavior or biology.
- Scientists have already grown human neurons on a microelectrode array and trained them to generate electrical activity similar to what electrons would generate while playing table tennis.

### What are the Opportunities for 'Bio-Computers'?

- Brain organoids developed using stem cells from individuals with diseases like Parkinson's disease and microcephaly can aid drug development for these conditions.
- These organoids can provide insights into the biological basis of human cognition, learning, and memory by comparing the data on brain structure, connections, and signaling between healthy and patient-derived organoids.
- While human brains are slower than computers at simple arithmetic, they outshine machines at processing complex information.

### Way Forward

- Currently, brain organoids have a diameter of less than 1 mm, roughly three-millionth the size of an actual human brain. So, scaling up the brain organoid is key to improving its computing capacity.
- Neural recordings from each neuron and connection will be needed to store and analyse using 'Big Data' infrastructure.
- Researchers will also have to develop microfluidic systems to transport oxygen and nutrients, and remove waste products.
- There is also a need to identify, discuss, and analyse ethical issues as they arise in the course of this work.

## 7. Is India reverting to the Hindu rate of growth?

### Why in news?

India's gross domestic product (GDP) data for the third quarter received a word of caution from the former Reserve Bank of India (RBI) Governor Raghuram Rajan.

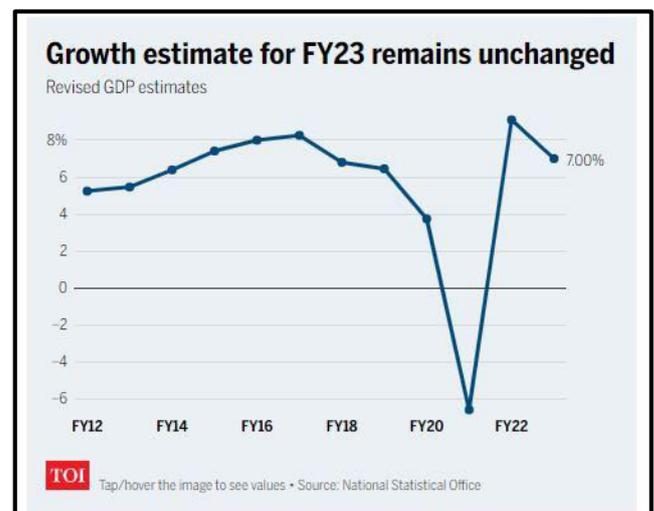
### What is the issue?

India's GDP for Q3 slowed to 4.4%, and for Q1, it grew by 13.2%, this slowdown in growth was termed as worrying by Raghuram Rajan.

A report by the State Bank of India (SBI), dismissed arguments that India is dangerously close to Hindu rate of growth.

### What is meant by Hindu rate of growth?

- It was coined by late economist Raj Krishna in 1978.
- It describes the slow growth in the country, which basically refers to the low pace of economic growth rates during 1950s to 1980s.



- During this period, the **Indian economy averaged 3.5%**.
- Only if the rate of growth is persistently slow and accompanied by low per-capita GDP, then it will be known as **Hindu rate of growth** but it has to factor in population growth as well.

#### When did India outgrow the Hindu rate of growth?

- The GDP growth rate data suggests that **India started growing faster than the Hindu rate of 3.5% long before the crisis and reforms of 1991**.
- India's average annual GDP growth rate between 1956 and 1975 was 3.4% almost exactly the Hindu rate of growth.
- However, between 1981 and 1991 that is, a full decade before the crisis and reforms, India's growth averaged 5.8%.

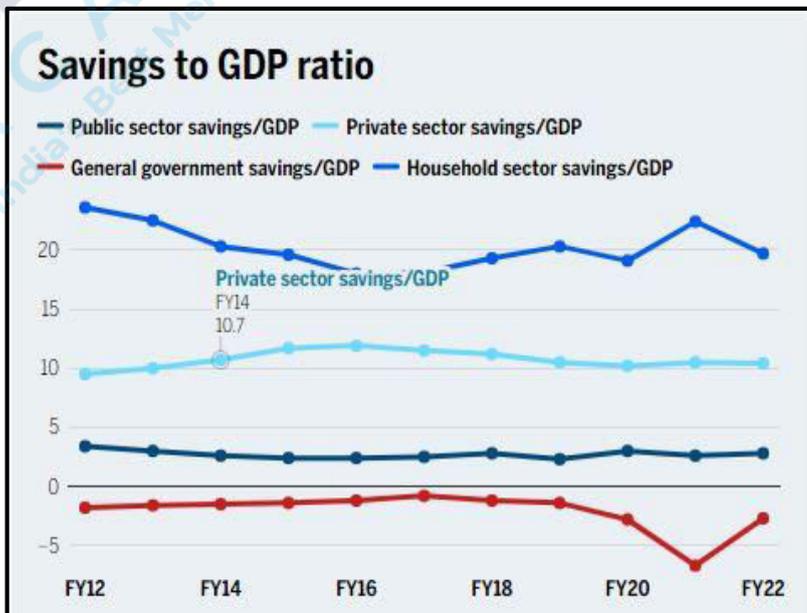
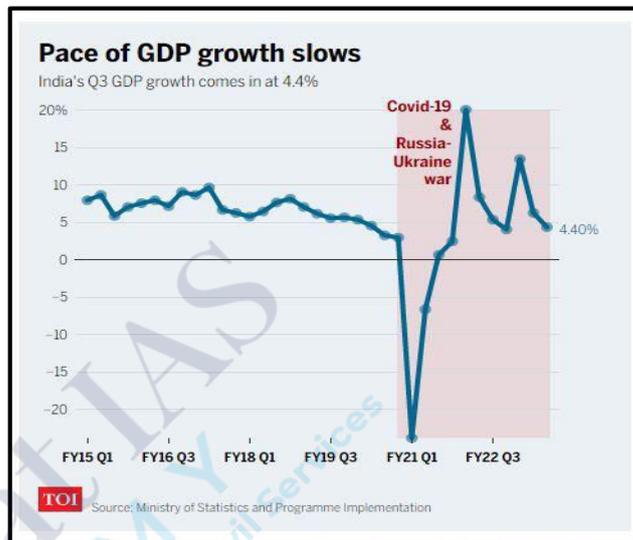
#### How India's GDP has been growing?

**GDP** – It shrunk by **unprecedented 23.8% in the first quarter of the financial year 2020-2021**, due to the pandemic. As lockdowns started to ease and business activities resumed, India's GDP also started rising.

**Russia-Ukraine** – **FY22-23** brought fresh economic challenges in the form of **war, impacting almost all major economies of the world**, slowing the pace of growth, pushing inflation to record highs.

#### What SBI report said on savings and investment?

- **Gross capital formation (GCF)** – The GCF of the government touched a high of 11.8% in 2021-22, up from 10.7% in 2020-21.
- **Private sector investment** – This also had **domino effect on private sector investment** that jumped from 10% to 10.8% over the same period.
- **Gross savings** – In 2021-22, gross savings have risen to 30% from 29% in 2020-2021.
- **Household savings** – It increased sharply during the pandemic on account of sharp accretion in financial savings such as deposits.
- **Incremental Capital Output Ratio (ICOR)** – It measures additional units of capital investment needed to produce additional units of output.
- Reducing ICOR in the current years reflects a relatively increasing efficiency of capital and shows that the economy is on a sound footing.
- From that point of view, future GDP growth rates even at 7% could still mean a decent number by any standards.



#### What is the conclusion?

- The country is making rapid progress in all fields and willing to compete with the best in almost all spheres.
- In a world where each country is taking care of its own, India too has learnt to do the same.
- As things stand today, **India is still far from the 3.5% level that is associated with the Hindu rate of growth**.
- However, it is noteworthy that India had been decelerating in the 3 years leading up to the pandemic and grew by just 3.9% in the year just before Covid.

## 8. Will artificial intelligence lead to job displacements?

### Why in news?

Artificial Intelligence can galvanise, turbo-charge, and trigger new avenues of intelligence in human minds.

### What is Artificial Intelligence?

- It is an area of computer science that **emphasizes the creation of intelligent machines that work and react like humans.**
- It uses computers to **mimic human cognitive processes** for decision-making.
- AI is designed to perform various activities which **include speech recognition, learning, planning, problem solving.**

### What is the difference between Artificial General Intelligence (AGI) and Artificial Narrow Intelligence (ANI)?

#### AGI

- It is the **representation of generalized human cognitive abilities** in software so that, faced with an unfamiliar task, the AGI system could find a solution.
- **Intellectual task** – AGI is envisioned as having the ability to perform any intellectual task that a human can do, and to apply knowledge learned in one context to new, unfamiliar situations.
- **Unpredictable** – The fear emanates from the very real possibility that an AGI system continues to learn and make decisions that even its creators cannot possibly predict.
- **Human like** – AGI is designed to learn and reason like humans, meaning it should pull knowledge and inputs from experience, and make decisions based on incomplete or uncertain information.
- The difference between AGI and ANI lies in their scope of intelligence and their ability to generalise knowledge across different contexts.

#### ANI

- It is a **type of AI** designed to **perform a single or a narrow set of related tasks** at a high level of proficiency.
- **Predictable** – ANI, by contrast, is designed to perform a specific task or set of tasks and is not capable of generalising knowledge or skills to new situations outside of its programmed domain.
- **Simple** – ANI is typically trained using machine learning algorithms such as **supervised learning, unsupervised learning, or reinforcement learning.**
- Not human like – These algorithms are designed to optimise the AI system's performance on a specific task or set of tasks, but they are not necessarily capable of reasoning or learning in the way that humans do.

While **AGI** is still largely in the realm of **theoretical research and development**, **ANI** is already in widespread use in a variety of **industries and applications.**

### What is the future of jobs?

#### Negative impact

- ANI products like **ChatGPT** have taken the world by storm, besides its technological prowess, it is also a matter of right place and right time.
- **ChatGPT**, and such solutions, are particularly adept at automating routine and repetitive tasks, such as **data entry and customer service** which could perhaps replace low-skill level workers.
- In **industries like healthcare**, for example, **AI can optimise transportation networks, develop new materials, and even simplify manufacturing processes.**
- In the case of **AI**, workers in **low-wage and low-skill occupations may be more vulnerable to job loss** than those in high-wage and high-skill occupations.

#### Positive Impact

- AI may create demand for workers with expertise in machine learning, data science and natural language processing, and project management.
- It may also create opportunities for workers to specialise in areas where human judgement and creativity will remain critical.
- The impact of AI on jobs and industries is likely to be uneven, with some workers and industries experiencing greater disruption than others.

### Way Forward

- The lack of control of AI is what leads to the overarching fear of AI.
- As AI continues to transform the job market, workers may need to acquire new skills and knowledge in order to remain employable.
- While there is still much uncertainty about the impact of AI on jobs and industries, it is evident that the technology is likely to have significant implications on the future of work.
- It will be important for policymakers, businesses, and workers to take proactive steps to manage this transition and ensure that the benefits of AI are shared widely across society.

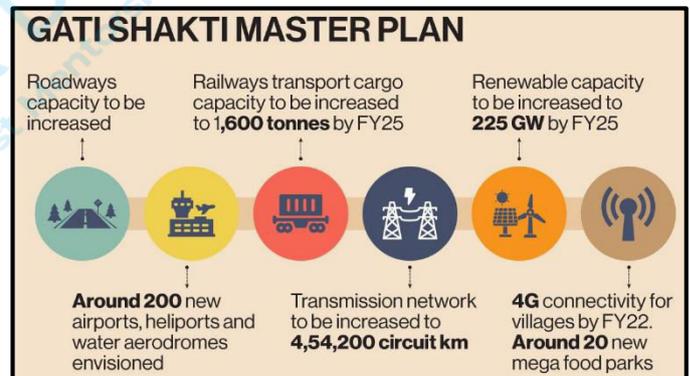
## 9. The ideal track to run India's logistics system

### Why in News?

The Union Budget 2023 has doubled the **PM Gati Shakti National Master Plan to States from ₹5,000 crore to ₹10,000 crore**, and has announced an outlay of ₹2.4 lakh crore for the Indian Railways. This will help **Railways to play an important role in enabling a coordinated and integrated logistics system**. Providing the right platform to address the infrastructure challenges that have hindered the movement of freight by rail, **PM Gati Shakti sets the goal of increasing rail freight movement from 27% to 45% by 2030 and freight movement from 1.2 billion tonnes to 3.3 billion tonnes by 2030**.

### What are the Issues with India's Logistics System?

- **Skewed Modal Mix:** The modal mix in India's freight movement is heavily skewed towards road transport, with 65% of freight being moved by road. This has led to increased congestion, pollution, and logistics cost escalation on roads.
- **Loss of Rail Freight Share:** Despite being a more cost-effective mode of transportation, **railways have been losing freight share to more flexible modes, due to the convenience of road transport**.
  - The **Indian Railways face infrastructural challenges** such as the lack of necessary terminal infrastructure, maintenance of god sheds and warehouses, and uncertain supply of wagons, absence of all-weather roads as a substantial part of the country is out of reach for railways.
  - **This results in high network congestion, lower service levels, and increased transit time.**
- **Dominance of Bulk Commodities:** Coal, iron ore, cement, food grains, and fertilizers account for a significant share of India's freight movement, while non-bulk commodities have a very small share in rail freight movement.
  - In 2020-21, **coal constituted 44% of the total freight movement** of 1.2 billion tonnes, followed by iron ore (13%), cement (10%), food grains (5%), fertilizers (4%), iron and steel (4%), etc.
  - Transportation of non-bulk commodities accounts for a very small share in the rail freight movement.
- **Operational and Connectivity Challenges:** **Increased transit time by rail, pre-movement and post-movement procedural delays, multi-modal handling, and the absence of integrated first and last-mile connectivity** by rail are some of the operational and connectivity challenges faced by India's logistics system.
- **Lack of Skilled & Specialist Personnel:** It has emerged as one of the most prominent concerns, especially in the face of increasing volumes, complex operations, and increasing work pressure with multi-tasking.



- Availability of experienced human resources for mostly labor-intensive processes, demanding higher skills and expertise is a challenge for logistics companies.
- **Warehousing & Taxation Discrepancies:** Logistics companies generally opt for warehousing because it enables them to store goods and move them closer to the customer when demand occurs. It helps to **reduce the transit time**. However, warehousing is not free of cost and needs proper planning for optimum use.
- **Fragmentation:** The logistics industry in India is highly fragmented, with many small and medium-sized players operating independently, leading to suboptimal utilization of resources and higher costs.
- **Inefficient Supply Chain Management:** The lack of coordination between various players in the supply chain, including manufacturers, distributors, and retailers, leads to inefficiencies, delays, and increased costs.

### Way Forward

- **Need for Investment:** India needs to heavily invest in advanced rail infrastructure for quick and low-cost container movement, like China, to improve its logistics competitiveness.
- The **upcoming Dedicated Freight Corridors along India's eastern and western corridors** and multimodal logistics parks will ease the oversaturated line capacity constraints and improve the timing of trains.
- **Encouraging Private Participation:** Indian Railways should **encourage private participation** in the operation and management of terminals, containers, and warehouses to **enhance the efficiency of the logistics system**.
- **Establishment of a Special Entity:** Indian Railways should establish a special entity in partnership with the private sector to handle **intermodal logistics, which could function as a single window for customers for cargo movement and payment transactions**.
- **Integrated Logistics Infrastructure:** **An integrated logistics infrastructure with first and last-mile connectivity** is essential to make rail movement competitive with roads and facilitate exports by rail to neighbouring countries such as **Nepal and Bangladesh**.
- **Collaboration with Neighbouring Countries:** India should collaborate with neighbouring countries to develop a seamless logistics network that facilitates the efficient movement of goods across borders.
- Examples: **Bangladesh-India can collaborate in the Petrapole-Benapole integrated check post (ICP)** which has already improved trade facilitation between the two countries.
- **The Kaladan Multi-Modal Transit Transport Project between India-Myanmar** aims to connect the Indian ports of **Kolkata and Haldia with the Sittwe port in Myanmar, is a good example of such collaboration**.
- **Adoption of Digital Technologies:** Adoption of digital technologies such as **blockchain, Internet of Things (IoT), and Artificial Intelligence** can help in enhancing the efficiency of the logistics system and reducing operational costs.
- **Skilling and Training:** Skilling and training of the workforce in the logistics industry is crucial to ensure the smooth functioning of the logistics system.
- **Regulatory Reforms:** India needs to undertake regulatory reforms to simplify the regulatory framework and remove barriers to the growth of the logistics sector.

## 10. Let water credits flow

### Why in News?

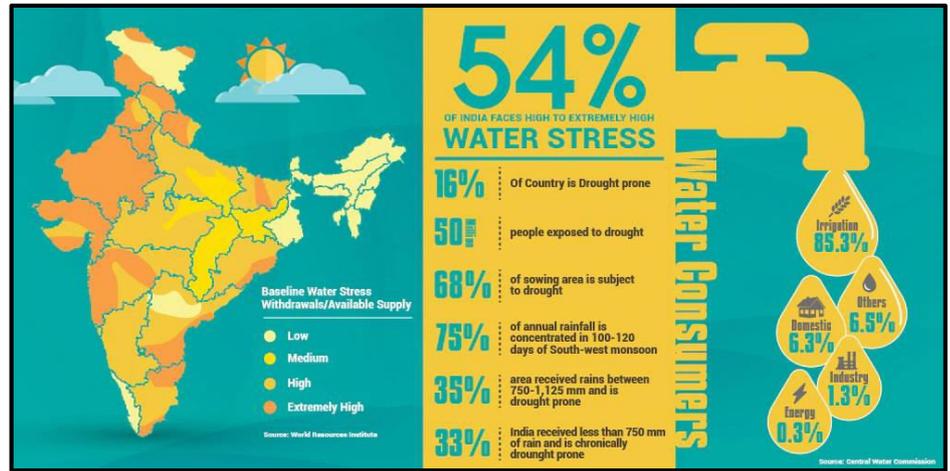
India's water resources are under tremendous pressure. There are wide temporal and spatial variations in the distribution of water.

**One of the major barriers to safe water and sanitation is affordable financing.**

The **WaterCredit Initiative loan program by water dot org** tries to address this barrier as it helps bring small loans to those who need **access to affordable financing and expert resources to make household water and toilet solutions a reality**.

### Key Highlights:

- India receives **more than 80 per cent of the rainfall during four months of the year.**
- As regards unequal spatial distribution, the **Barak and Brahmaputra basins have a per capita water availability that is more than that of the Ganga basin.**
- India's per capita water availability has touched the **water-stressed benchmark**, and is likely to reach the **water-scarce scenario by 2050.**



### Water Credits:

- Water credits deal with the **transaction between water deficit and water surplus entities within a basin.**
- It represents a fixed quantum of water that is conserved or generated. It is **almost a mirror image of the concept of carbon credits.**
- However, unlike carbon credits, the spatial limits for transactions are confined to **hydrological boundaries — that is, river basin or watershed.**

### Water Credit Initiative Loan Program:

It is an initiative by water.org which helps to bring small loans to those who need access to affordable financing and expert resources to make household water and toilet solutions a reality.

### How does it work?

- A region is identified where people need access to water and sanitation and that is ready for a **microfinance solution.**
- Partnership is made with carefully selected institutions to provide **affordable financing for water and sanitation to families in need.**
- These microfinance partners establish **water and sanitation loans in their portfolio of offerings.** They are supported by providing technical assistance, connections and resources to get them started.
- People in need use these small, affordable loans to put a tap or toilet in their homes and access local resources to do the work.
- Every repaid loan can be lent to another family in need of safe water or sanitation.

### Water Credit System Between Municipalities And Industries:

- Industries can buy **water credits from water-rich municipalities** that are crunched to **finance large-scale floodwater harvesting or wastewater treatment projects**, which aid in conserving water.
- Thus, the **multiplayer approach is essential for the water credit system.**

### Best Global Practices:

- India should learn from global water trading successes, like that of **Australia (for example, the Murray-Darling basin), to lay a roadmap for water trading and also ensure water regulation** by setting up related authorities.
- Another notable success story comes from **Chicago Mercantile Exchange**, where participation is seen from **actual users such as farmers and municipalities and financial investors.**

### Trading Of Water And Tradable Water Licenses In India:

- NITI Aayog is contemplating draft recommendations on future trading of water and tradable water licenses.
- With the effective implementation and stringent regulatory standards, **water trading also paves way for water quality standards.**

- This makes **water “quality” a tradable commodity.**
- Under such a system, a source pollutant (industry) having controlled pollutant levels “sells credits” to another source pollutant (industry), which can use these credits to enhance their level of treatment in order to comply with the regulatory requirements.
- This further **promotes growth in the recycle and reuse markets** through the utilisation of heavy metals/trace organics released in the water from both the industrial and agricultural sectors.

#### Challenges Of Water Credit System:

- An innate flaw of this water credit system is that the market is **dominated by a small number of rich institutions or sellers.**
- Due to this market domination, **rich sellers can control the market by buying credits from the poor, and continue to misuse the shared water resources.**
- The market competition among sellers is further reduced due to the **lack of awareness about the water credit concept.**
- In such a case, a regulatory body must be in place to facilitate and successfully maintain free market conditions.
- Experts have raised some concerns about the awareness among water users and water suppliers on water trading.
- It is anticipated that **India could face opposition if water is made a tradable commodity.**

#### Way Ahead:

- The credit system can be used to **highlight the water quality merits and strengthen economic relations both at a global as well as regional level.**
- Such a system can substantially reduce the burden of the government that releases funds towards mitigation as well as **post-disaster events such as floods and droughts.**
- The markets can even ‘insure’ irrigated and rain-dependent agriculture against droughts by locking in water prices.
- There has been no strong dialogue on the implementation of a water credit system, so far. Thus, India needs to aggressively alter and adopt practices to expand finance opportunities within the water sector.

## 11. Finance Ministry brings crypto assets under Prevention of Money Laundering Act:

### What are the implications?

#### Why in News?

The Government has recently imposed money laundering provisions on cryptocurrencies.

#### Significance

- **In line with the global trend:** The move is in line with the global trend of requiring digital-asset platforms to follow **anti-money laundering standards similar to those followed by other regulated entities like banks or stock brokers.**
- **Filling the policy vacuum:** Digital currency and assets like NFTs (non-fungible tokens) have gained traction globally over the last couple of years.
  - Trading in these assets has increased manifold with **cryptocurrency exchanges** being launched.
  - However, India, till last year, did not have a clear policy on either regulating or taxing such asset classes.

#### What is Cryptocurrency?

- It is a **digital currency** that can be used in place of conventional money.
  - In cryptocurrencies, **cryptography is used to secure and verify transactions.** It is also used to control the supply of cryptocurrencies.
  - It is supported by a **decentralized peer-to-peer network called the blockchain.**
  - **The first cryptocurrency: Bitcoin,** was launched in **2009** by **Satoshi Nakamoto.**

#### Features of Cryptocurrency

- **Cheaper to transfer:** Some coins are used to **transfer value** (measured in a currency like dollars) **cheaper and faster** than using credit or conventional means.
  - Meaning the cost to send someone crypto, which can be converted into regular currency, is cheaper than something like a check or wire transfer.
- **No physical form:** Cryptocurrency **does not exist in physical form** (like paper money) and is typically **not issued by a central authority**.
  - However, it can be and many Governments are working to **create a crypto coin version of its respective fiat currency**.
- **Decentralised:** Cryptocurrencies typically use decentralized control as opposed to a central bank digital currency.
  - When created with decentralized control, each cryptocurrency works through what is called **distributed ledger technology**, which is typically a blockchain, that serves as a public financial transaction database.

### Challenges

While the supposed potential benefits from crypto assets have yet to materialize, significant risks have emerged.

- **Undermining the monetary policy & international monetary system:** The widespread adoption of crypto assets could undermine the effectiveness of monetary policy, circumvent capital flow management measures, and exacerbate fiscal risks.
- **Security Risks:** Cyberattacks on wallets, exchange mechanism (Cryptojacking).
  - They are prone to issues like **Hijacking, Routing Attacks, Distributed Denial of Service (DDoS) attacks**.
- **Shield to Crime:** Used for illicit trading, criminal activities and organised crimes.
- **Lack of Liquidity and Lower Acceptability:** Outside the traditional banking systems.
- **Price Volatility:** Prone to price fluctuations and waste of computing power.
- **Threat to the Indian rupee:** If a large number of investors invest in digital coins rather than rupee-based savings like provident funds, the demand of the latter will fall.
- **Consumer protection and enforcement:** Due to the decentralised nature of digital instruments of bitcoins, any regulatory regime over crypto assets is challenging.

### Indian Government's stand on Cryptocurrency

- The **Reserve Bank of India (RBI)**, has long recommended a **complete ban on all crypto**, warning that it has the potential to destabilize the country's monetary and fiscal stability.
- Despite having no regulatory framework for crypto, the Indian government had introduced a new tax regime last year, **taxing crypto income at 30% and a 1% tax deducted at source (TDS) on crypto transactions**.

### Prevention of Money Laundering Act (PMLA) 2002

- **About:**
  - It was enacted in **January 2003** and the Act along with the **Rules** framed thereunder has come into force **with effect from 1st July 2005**.
  - The Parliament enacted the PMLA as a result of **international commitment** to sternly deal with the **menace of money laundering** of proceeds of a crime having **transnational consequences** and on the financial systems of the countries.
- **Objectives:**
  - The **PML Act** seeks to combat money laundering in India and has three main objectives:
    - To prevent and control money laundering
    - To confiscate and seize the property obtained from the laundered money; and
    - To deal with any other issue connected with money laundering in India.
- **Definition of money laundering:**
  - **Sec. 3 of PMLA** defines offence of money laundering as whosoever **directly or indirectly** attempts to **indulge or knowingly assists** or knowingly is a party or is actually involved in any process or activity connected with the proceeds of crime and projecting it as untainted property shall be **guilty** of offence of money-laundering.

## 12. Why do so many waste-to-energy plants fail?

### Why in News?

The **Kerala Government** recently announced the **State's first Waste-To-Energy project in Kozhikode**. The planned facility is expected to be **built in two years** and generate about **6 MW of power**.

There are around **100 waste-to-energy projects** around the country but only a handful of them are operational, thanks to various production and operation challenges.

### What do Waste-to-Energy Projects do?

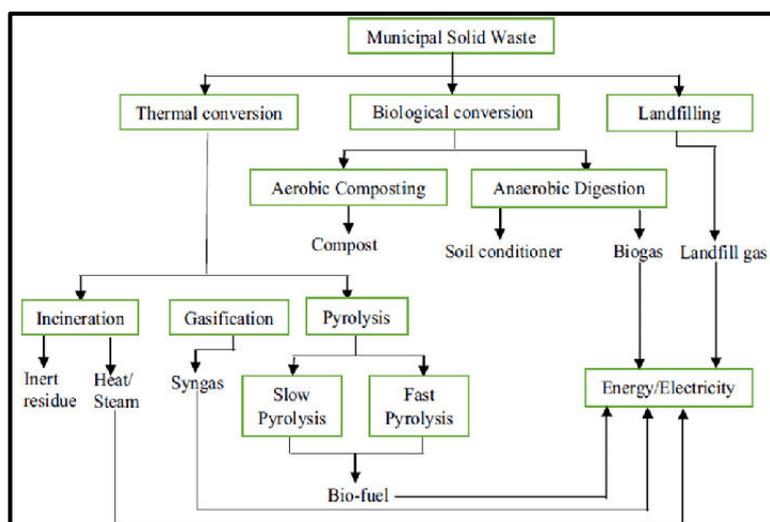
- **Waste-to-energy projects use non-recyclable dry waste to generate electricity** and ease the Solid Waste Management (SWM) burden.
- **Solid waste in India is 55-60% biodegradable organic waste**, which can be converted into organic compost or biogas; 25-30% non-biodegradable dry waste; and around 15% silt, stones, and drain waste.
- Of the non-biodegradable dry waste, **only 2-3%** – including hard plastics, metals, and e-waste – **is recyclable**.
- The **remainder consists of low-grade plastic, rags, and cloth that can't be recycled**.
- **This fraction of the non-recyclable dry waste is the most challenging portion of the present SWM system**; the presence of these materials also reduces the efficiency of recycling other dry and wet waste.
- Waste-to-energy plants use this portion to generate power. The waste is combusted to generate heat, which is converted into electricity.

### What is Waste-to-Energy Technologies?

- **Biological Treatment Technologies (BTT):** BTT are designed and engineered for **natural biological processes working with the organic rich fraction of Municipal Solid waste**. These treatments are divided into two different processes:
  - The **aerobic process or composting** (in the presence of oxygen) and the **anaerobic process** (in the absence of oxygen).
- **Thermal Treatment Technologies:** The thermal treatment of hazardous waste involves **pyrolysis, gasification, and incineration techniques**, depending upon the nature of the waste and the end-product application.
  - **Pyrolysis is the heating of an organic material, such as biomass, in the absence of oxygen**. Biomass pyrolysis is usually conducted at or above 500 °C, providing enough heat to deconstruct the strong biopolymers.
  - **Gasification is a process that converts organic or fossil-based carbonaceous materials at high temperatures (>700°C), without combustion**, with a controlled amount of oxygen and/or steam into carbon monoxide, hydrogen, and carbon dioxide.
  - Incineration is a **rapid oxidation process**, which is used to **convert VOCs (Volatile Organic Compounds) and other gaseous hydrocarbon pollutants to carbon dioxide and water**.
  - Torrefaction **converts biomass in the absence of oxygen** at a temperature of 200–300°C to **produce torrefied materials, bio-oils, biochar, etc.**

### What are the Challenges Related to Such Plants?

- **Low Calorific Value:** The low calorific value of solid waste in India due to **improper segregation**. The calorific value of mixed Indian waste is about 1,500 kcal/kg, which is not suitable for power generation.
- **The calorific value of segregated and dried non-recyclable dry waste is much higher, at 2,800-3,000 kcal/kg, sufficient to generate**



**power.** However, segregation should be streamlined to ensure the waste coming to the facility has this calorific value.

- **High Costs of Energy Production:** The cost of generating power from waste is around Rs 7-8/unit, while the cost at which the States' electricity boards buy power from coal, hydroelectric, and solar power plants is around Rs 3-4/unit.
- **Improper Assessments:** Many waste-to-energy projects have failed because of improper assessments, high expectations, improper characterisation studies, and other on-ground conditions.

#### What can be the Solution?

- While State electricity boards are considering purchasing power from **newer renewable energy sources like waste-to-energy**, the price of the power generated needs to halve.
- Setting up **waste-to-energy projects** is complex and **needs the full support of the municipality, the State and the people.** To overcome its various challenges, the municipality must ensure that only non-biodegradable dry waste is sent to the plant and separately manage the other kinds of waste.
- Importantly, the municipality or the department responsible for SWM should be practical about the high cost of power generation, and include the State electricity department, perhaps as a tripartite agreement between the municipality, the plant operator, and the power distribution agency.
- It is also crucial to conduct **field studies and learn from the experience of other projects.**
- Without all these efforts, the project may not be a success, which in turn will stress the State Government to manage all the accumulated waste, which can be a costly mistake.

### 13. Plastics and its Problems

#### Why in news?

Plastic recycling could be a solution to growing problems of plastics.

#### What are plastics?

- Plastics are a group of materials, either synthetic or naturally occurring, that may be shaped when soft and then hardened to retain the given shape.
- **Plastics are polymers.** A polymer is a substance made of many repeating units
  - Plastics can be divided into two general categories—**thermoplastics and thermosets.**
  - Thermoplastics are defined as **polymers that can be melted and recast almost indefinitely.**
  - Thermosets is a **polymer that irreversibly becomes rigid when heated**

POLYMER TYPES	EXAMPLES OF APPLICATIONS	SYMBOLS
Polyethylene Terephthalate (PET)	Fizzy drink and water bottles. Salad trays.	 PET
High Density Polyethylene (HDPE)	Milk bottles, bleach, cleaners and most shampoo bottles.	 HDPE
Polyvinyl Chloride (PVC)	Pipes, fittings, window and door frames (rigid PVC). Thermal insulation (PVC foam) and automotive parts.	 PVC
Low Density Polyethylene (LDPE)	Carrier bags, bin liners and packaging films.	 LDPE
Polypropylene (PP)	Margarine tubs, microwaveable meal trays, also produced as fibres and filaments for carpets, wall coverings and vehicle upholstery.	 PP
Polystyrene (PS)	Yoghurt pots, foam hamburger boxes, plastic cutlery, protective packaging for electronic goods and toys. Insulating material in the building and construction industry.	 PS
Unallocated references	Any other plastics that do not fall into any of the above categories - for example polycarbonate which is often used in glazing for the aircraft industry.	 0

#### What are the disadvantages of plastics?

- Plastics manufacturing also involves the addition of potentially hazardous compounds like **stabilizers or colorants.**
- Most plastics are **non-biodegradable** and they might take a long time to decompose
- Plastic materials clog waterways, oceans, seas, lakes etc.
- **1 in 3 species of marine mammals have been found entangled in marine litter.**
- Eating food out of plastic containers may cause cancer.
- Many animals eat plastic materials and die
- **Few additives such as phthalates** etc. which are added in plastics to prevent its structure may cause serious **hormonal imbalance in males and females.**

#### What is recycling of plastics?

- Plastic recycling has been described as the **process of recovering scrap or waste plastics and reprocessing the material into useful products**
- The two methods of recycling of plastics are
- **Traditional Recycling** - The traditional recycling method involves **melting plastics and processing them into new plastic products**
- **Advanced Recycling** - Advanced recycling is a process through which **the effect of chemicals breaks down plastic material.**
- This method consists of three other techniques. These techniques include **pyrolysis, chemical recycling, and gasification**

#### **What are the reasons for low rate of plastic recycling?**

- **Segregation** - Unsegregated plastic waste being ended up in landfills and water systems.
- **Lack of segregation of plastic waste** at a local community level.
- **Segregation of plastic at household level** has remained largely **unsuccessful.**
- **No market** - For plastics recycling for 5 types of plastics except Polyethylene terephthalate, high-density Polyethylene (HDPE).
- **Virgin plastics** - Being cheaper than recycled plastics
- **Multi-layered plastics** - The plastics having multilayer are hard for recycling
- **Lightweight flexible packaging** – This industry is booming but it is non-recyclable

#### **What are the efforts taken by India to mitigate plastics pollution?**

- Since **July 1, 2022**, India has **banned the manufacture, import, stocking, distribution, sale, and use of single-use plastic items** with low utility and high littering potential.
- Plastic Waste Management Amendment Rules, 2021 - prohibits identified single use plastic items by 2022
- Thickness of plastic carry bags increased from 50 to 75 microns from 2021 and to 120 microns with effect from the 2022
- **Plastic Waste Management Amendment Rules, 2022-** The guidelines provide a framework to Strengthen the circular economy of plastic packaging waste
- Promote the development of new alternatives to plastic packaging
- Provide the steps for moving towards sustainable plastic packaging by businesses

#### **Way Forward**

- To create a viable market for plastics other than
- To use eco-friendly products like bamboo, jute, coconut etc.. to replace plastics
- Use of circular model economy

## **14. Silicon Valley Bank (SVB) Crisis**

### **Why in news?**

Silicon Valley Bank collapsed with astounding speed, leaving investors on edge about whether its demise could spark a broader banking meltdown, like the **2008 financial crisis.**

### **Silicon Valley Bank (SVB)**

- Established in **1983**, it is a **California based bank** that lends to early stage technology and biotech start-ups, and manages funds of venture capitalists.
- Just before collapsing it was **America's 16th largest commercial bank.**

### **SVB collapse**

- **Monetary Policy** – The era of easy monetary policy has enabled tech companies of all sizes to raise and deploy funds, and SVB benefited from this boom.
- **Global Inflation** – The recent Ukraine war fuelled global inflation levels and that led central banks to tighten monetary policy aggressively.
- **Government Bonds** – SVB ploughed billions into US government bonds during the era of near-zero interest rates.
- **Interest rate hike** – The Federal Reserve hiked interest rates aggressively to tame inflation.
- **Fall in bond price** – When interest rates rise, bond prices fall, so the jump in rates eroded the value of SVB's bond portfolio.
- **High borrowing costs** – At the same time, the Fed's hiking sent borrowing costs higher, meaning tech start-ups had to channel more cash towards repaying debt.
- **Withdrawal of deposits**– The start-ups struggled to raise new venture capital funding which forced companies to withdraw deposits held by SVB to fund their operations and growth.

**The Silicon Valley Bank (SVB) crisis explained**

**WHAT IS SVB?**  
The 1983-founded California-based SVB focusses on serving Silicon Valley startups  
"IT PROVIDES MULTIPLE SERVICES TO VENTURE CAPITAL, PRIVATE EQUITY FIRMS IN ADDITION TO OFFERING PRIVATE BANKING SERVICES FOR HIGH NET-WORTH INDIVIDUALS"

**HOW BIG IS IT?**  
SVB has business with nearly half of all the US venture-backed startups, and 44% of the US venture-backed tech, healthcare firms that went public last year  
As of December 31, SVB had \$212 billion in assets  
The bank's clients includes household names like Shopify, Pinterest, etc

**WHAT WENT WRONG AT SVB: A TIMELINE**

- During the funding boom of 2021, SVB amassed large deposits – \$189 billion in 2021, which later peaked to \$198 billion
- It later invested heavily in bonds, which were being issued in a low-interest rate scenario. SVB's balance sheet for 2022-end showed \$91.3 billion of securities
- In 2022, the US Federal Reserve started raising interest rates, which drove down the value of bond holdings issued at lower rates
- Rising interest rates also led to venture capital firms cutting fewer and smaller cheques to startups triggering a funding winter
- As funding depleted, deposits made by startups in institutions such as SVB also started declining, forcing the bank to sell securities at a loss to cover up
- On Wednesday, SVB announced it had sold \$21 billion worth of bond assets at a loss of \$1.8 billion
- It also said it was raising \$2.25 billion via a share sale

### Impact of the crisis

- **Dump bank stocks** – Shock from Silicon Valley's miseries echoed through parts of the banking sector, and investors started to dump bank stocks. **However, the nation's largest banks appeared insulated from the fallout.**
- **Strong buffer** – Most analysts point out that US and European banks have much stronger financial buffers now than during the global financial crisis.
- **Unique existence** – SVB was large but had a unique existence by servicing nearly exclusively the technology world and VC-backed companies.
- **Affects start-ups** – At a time the start-ups needed financial backing, one of its biggest supporters has collapsed.
- **Balance sheets** – If central banks become concerned that SVB's problems are indicative of a broader weakness in corporate balance sheets, they can raise the rates.
- **Survive recession** – The stress tests of the largest banks and financial institutions showed that all of them would survive a deep recession and a significant rise in unemployment.
- **Impact on US dollar rates** – Both US economy and the US currency is expected to face investors' anger in near term.

### Response from the US Government

- **Prompt interventions** – The SVB's fallout was followed by regulatory interventions involving coordination between the Treasury Secretary, the banking regulator and the resolution authority.
- **FDIC** – The bank was closed by the **California banking regulator and placed under the receivership of Federal Deposit Insurance Corporation (FDIC).**
- **Bridge bank** – The FDIC seized the assets of the bank, created a bridge bank called **the Deposit Insurance National Bank of Santa Clara** and transferred all insured deposits of SVB to the bridge bank.
  - **Bridge bank** is an entity to **temporarily take over the liabilities and operations of a failed bank till a buyer is found.**
  - The bridge bank, in this case, will ensure continuity of all banking activities.
- **BTFP** – To prevent the run on banks and meet the demands of depositors, **the US Fed has set up an additional funding facility for banks called the Bank Term Funding Program (BTFP).**
  - Under this facility, **loans of up to 1 year will be provided to banks and other depository institutions.**
  - Those taking advantage of the facility will be asked to pledge high-quality collateral such as **treasuries, agency debt, and mortgage-backed securities.**
- **Exchange stabilisation Fund** – The Department of the Treasury will make available up to \$25 billion from the Exchange Stabilisation Fund as a backstop for the BTFP.

- All insured depositors have access to their insured deposits.
- The uninsured depositors will receive their pay-outs as the FDIC sells the assets of the SVB.

#### What led to the collapse of Signature Bank?

- **Signature Bank** – It is a **New York financial institution** with a big real estate lending business and had recently made a move towards cryptocurrency deposits.
- That ended up being a fateful decision because the bottom fell out of crypto assets after the collapse of FTX.
- **Another cryptocurrency-focused bank, Silvergate Bank**, was forced to voluntarily close, leading to the fallout of SVB.
- To some extent, **Signature Bank is a victim of the panic around Silicon Valley Bank.**

#### What is the impact of the Signature & SVB crisis on India?

- **Most preferred by Indians** – The collapse of the bank triggered a nerve wracking crisis for Indian start-ups that preferred SVB to park their funds.
- **Loss of employment** – Not having access to money would mean firing a large number of employees.
- **Recession in West** – If the West slips into a recession, it will impact Indian financial markets and growth rates.
- **Regulated by RBI** – This crisis won't have much impact on Indian treasuries, since they are regulated by Reserve Bank of India.
- **Forex market** – Those who have position in dollar may have to face the beating, since US dollar has retraced from 3-month highs.
- **Mutual funds** – Debt funds won't have much impact unlike for Indian mutual fund investors who have exposure in international mutual funds and international hybrid mutual funds.
- **India better placed** – Unlike the concentration of deposits of SVB, 60% of deposits of Indian banks are held by households.
- **Asset side** – On the asset side, 60% are held in the form of loans and investments constitute 25% of the assets.

#### Way Forward

- **Need for counter-cyclical tools** – The SVB saga underscores the need to have adequate countercyclical macro prudential tools to provide a buffer against losses on account of rising interest rates.
- **Resolution Corporation** - The legal framework should provide for oversight of the bank by the RBI and a Resolution Corporation.
- It should have the authority to monitor risks, intervene early and resolve through the globally-recognised resolution tools such as sale of business and bridge institutions.
- **Need for framework** – Important lesson emerging from the SVB crisis is the need to enact pending banking reforms & for a prompt resolution framework so depositors don't face a moratorium on their deposits.
- **FRDI Bill** – The Financial Resolution and Deposit Insurance (FRDI) Bill that provides for establishing a resolution authority, which would have powers to undertake prompt resolution for banks need to be reintroduced.

## 15. India-US Pact on Semiconductor

### Why in News?

Recently, India and the US have signed **Memorandum of Understanding (MoU) on establishing the Semiconductor Supply chain during India – USA 5th Commercial Dialogue 2023**, which can help India realize its long-nurtured dream of becoming a hub for electronic goods.

The MoU seeks to **establish a collaborative mechanism between the two governments on semiconductor supply chain resiliency** and diversification in view of US's CHIPS and Science Act and India's Semiconductor Mission.

### What is the Significance of the Deal?

1. **Commercial Opportunities:** The **US and China are giants in chip manufacturing**. So, this pact with the US to strengthen cooperation in the semiconductor sector to facilitate commercial opportunities and development of innovation ecosystems is likely to help India immensely.
2. **Electronics Supply Chain:** It can help India get aligned into a more **central role in the global electronics supply chain**.
3. **Can Address Semiconductor Crunch:** The crunch in semiconductors supply began during the Covid-19 and went on to intensify in 2021. A **Goldman Sachs report suggested that at least 169 industries had been impacted by the global chip supply shortage in 2021**. The crunch has eased now but some disruptions in the supply chain still exist.
4. **Realignment towards Chip Manufacturing:** From a domestic perspective, this could also prompt a potential realignment of India's current policy approach on chip manufacturing: which is currently focused, almost entirely, on the manufacture of mature nodes – generally defined as chips that are 40 nanometres (nm) or above and find application in sectors such as the automotive industry – before trying to attempt an entry into the more advanced nodes (smaller than 40nm), which are far more strategic, but require exceptional manufacturing capabilities and project execution skills.

### What are the Challenges for India?

1. **High Investments Required:** Semiconductors and display manufacturing is a very complex and **technology-intensive sector involving huge capital investments, high risk, long gestation and payback periods**, and rapid changes in technology, which require significant and sustained investments.
2. **Minimal Fiscal Support from Government:** The level of fiscal support currently envisioned is minuscule when one considers the scale of investments typically required to set up manufacturing capacities in the various sub-sectors of the semiconductor industry.
3. **Lack of Fabrication Capacities:** India has a decent chip design talent but it never built-up chip fab capacity. The ISRO and the DRDO have their respective fab foundries but they are primarily for their own requirements and are also not as sophisticated as the latest in the world. India has only government-owned semiconductor fabrication unit- can be added as there might be other private fabs old fab which is located in Mohali, Punjab.
5. **Extremely Expensive Fab Setup:** A semiconductor fabrication facility (or fab) can cost multiples of a billion dollars to set up even on a relatively small scale and lagging by a generation or two behind the latest in technology.
6. **Resource Inefficient Sector:** Chip fabs are also very thirsty units requiring millions of litres of clean water, an extremely stable power supply, a lot of land and a highly skilled workforce.

### Where does India Stand in the Semiconductor Market?

India currently imports all chips and the market is estimated to touch USD 100 billion by 2025 from USD 24 billion now. However, for the domestic manufacturing of semiconductor chips, **India has recently launched several initiatives:**

- a. The Union Cabinet has allocated an amount of Rs 76,000 crore in 2021 for supporting the **development of a 'semiconductors and display manufacturing ecosystem'**. Consequently, a significant number of incentives would be provided to design companies to design chips.
- b. has also launched the **Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors (SPECS)** for manufacturing of electronics components and semiconductors.
- c. In **2021, India announced its roughly USD 10 billion-dollar Production-Linked Incentive (PLI) scheme** to encourage semiconductor and display manufacturing in the country.
- d. In 2021, **the MeitY also launched the Design Linked Incentive (DLI) Scheme** to nurture at least 20 domestic companies involved in semiconductor design and facilitate them to achieve a turnover of more than Rs.1500 Crore in the next 5 years. India's own consumption of semiconductors is expected to cross USD 80 billion by 2026 and to USD 110 billion by 2030.

### What are the Top 5 Countries Producing Semiconductors?

Top 5 Countries that produce the most semiconductors are **Taiwan, South Korea, Japan, United States, China**. **Taiwan and South Korea make up about 80% of the global foundry base for chips**. TSMC, the world's most advanced chipmaker, is **headquartered in Taiwan**. Currently, **foundries in Taiwan account for over 70% of the chips that mobile devices made in India** utilise, according to industry estimates by the Indian Cellular and Electronics Association.

### **Way Forward**

It is likely that India will achieve its long-nurtured dream of becoming an electronics hub and help ensure that there is no demand-supply gap in semiconductors.

It is also likely that buyers won't ever have to wait for the second key to their vehicles.



## GS 4

### 1. Icmr release guidelines for ai use in the health-sector

#### Why in News?

The Indian Council of Medical Research (ICMR) has released **Ethical Guidelines for AI in Healthcare and Biomedical Research** to guide the effective, safe development/deployment/adoption of AI-based technologies.

#### Background:

- India has a host of frameworks which marry technological advances with healthcare. These include
- The **Digital Health Authority for leveraging Digital health Technologies** under the National Health Policy (2017),
- The Digital Information Security in Healthcare Act (DISHA) 2018 and
- The Medical Device Rules, 2017.
- **Artificial Intelligence (AI) has made inroads into every sector and healthcare is no exception.**
- Diagnosis and screening, therapeutics, preventive treatments, clinical decision-making, public health surveillance, etc., are among the recognised applications of AI in healthcare.
- Since AI cannot be held accountable for the decisions it makes, **an ethically sound policy framework is essential to guide AI technology development.**

#### Highlights of the guidelines:

- It **outlined 10 key patient-centric ethical principles for AI application** in the health sector for all stakeholders involved.
- These are accountability and liability, autonomy, data privacy, collaboration, risk minimisation and safety, accessibility and equity, optimisation of data quality, non-discrimination and fairness, validity and trustworthiness.
- The ethical review process came under the **domain of the ethics committee which assesses a host of factors** including data source, quality, safety, anonymization, etc.

#### Significance of the guidelines:

- The autonomy principle ensures human oversight of the functioning and performance of the AI system.
- It is also critical to attain informed consent from the patient on the physical, psychological and social risks involved.
- It **aims to prevent unintended or deliberate misuse and cyber attacks** and mandates a benefit-risk assessment by an ethical committee.
- It underlines the **importance of regular internal and external audits** to ensure the optimum functioning of AI systems.
- It acknowledges the widespread availability of appropriate infrastructure and thus aims to bridge the digital divide.

#### Way ahead:

Standard practices to make the **AI-based solutions technically sound, ethically justified and applicable** to a large number of individuals with equity and fairness. All the stakeholders should adhere to these guiding principles to make the technology more useful and acceptable to the users and beneficiaries of the technology.

## Prelims Booster- The Hindu & Indian Express

### 1st March

#### 1. NEWS BROADCASTING & DIGITAL STANDARDS

**AUTHORITY:** The NBDSA is an independent body set up by the **News Broadcasters and Digital Association (NBDA)**; it serves as a representative of private television news, current affairs and digital broadcasters. **It promotes itself as “the collective voice of the news, current affairs and digital broadcasters in India.”** Though it is not a government or legal organization, its rulings matter. **The NBDA has 26 news and current affairs broadcasters (comprising 119 news and current affairs channels) as its members. It is funded entirely by its members.** It aims to protect all its members from persons carrying unfair and/or unethical practices or who discredit television news broadcasters, digital news media and other related entities. It may initiate proceedings on its own and issue notice or take action concerning any matter which falls within its regulations. It can impose a fine up to Rs. 1 lakh.

2. **Justice Abhay Manohar Sapre committee:** The Supreme Court recently formed a **five-member expert committee to investigate the possibility of regulatory failure in the Hindenburg Adani saga.** It will suggest measures to strengthen Indian investor awareness, investigate any regulatory failure in dealing with the alleged breaking of rules and suggest measures to strengthen the statutory and regulatory framework.

3. **Grievance Appellate Committee (GAC):** It was added in the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021 to look into **user complaints regarding unsatisfactory grievance redressal by social media intermediaries.**

- **Three such bodies have been constituted of professionals from various fields.**
- Each GAC will comprise **three government-appointed, full-time members, including a chairperson.** Any user aggrieved by a decision of a platform’s Grievance Officer can appeal to the GAC within 30 days of the receipt of communication from the Grievance Officer.
- The Committee has to dispose of the appeals within 15 days of receiving them.
- GAC’s decisions will be binding on the intermediary. **The GAC will be a virtual Digital platform that will**

**operate only online and digitally** — wherein the entire appeal process, from the filing of the appeal to the decision thereof, shall be conducted digitally through the new portal

4. **First G- 20 Anti-Corruption Working Group Meeting (ACWG):** It is under India’s chairpersonship, and **Italy is the co-chair country.** The G20 Anti-Corruption Working Group (ACWG) was set up in **June 2010 at the Toronto Summit.**

**Aim:** to make “comprehensive recommendations for consideration by leaders on how the G20 could continue to make practical and valuable contributions to international efforts to combat corruption.” **The ACWG actively works with the World Bank Group, OECD, UNODC, IMF, and FATF, as well as with Business 20 (B20) and the Civil Society 20 (C20).**

5. **CE-20 cryogenic engine:** ISRO recently conducted a flight test of cryogenic engine for the Chandrayan-3 mission. **It has been designed and developed by the Liquid Propulsion Systems Centre (LPSC), a subsidiary of ISRO.** It will power the Cryogenic Upper Stage of the LVM3 launch vehicle for the Chandrayaan-3 mission. It is the **first Indian cryogenic engine** to feature a gas-generator cycle. It is one of the **most powerful upper-stage cryogenic engines in the world.**

### 2nd March

1. **HTT-40 trainer aircraft:** The Hindustan Turbo Trainer-40 (HTT-40) is a basic trainer aircraft (BTA).

- **Designed and developed by Hindustan Aeronautics Limited (HAL), it is a turboprop aircraft designed to have good low-speed handling for better training effectiveness.**

- It has a maximum take-off weight of 2.8 tonnes. It can achieve a top speed of 450 Km/hr and a maximum range of 1,000km.
- A turboprop aircraft uses a turbo-prop engine rather than a piston-powered engine or a jet engine. They have one or more gas-turbine engines and lower operating costs than jets because they burn less fuel, but they are also slower than jets.

2. **Expected Credit Loss (ECL) regime:** RBI recently proposed to move the banking system to an **expected credit loss-based provisioning approach from an “incurred loss” approach.**

- Under this practice, a bank is required to estimate expected credit losses based on forward-looking estimations rather than wait for credit losses to be

actually incurred before making corresponding loss provisions.

- As per the proposed framework, banks will need to **classify financial assets (primarily loans) as Stage 1, 2, or 3, depending on their credit risk profile, with Stage 2 and 3 loans having higher provisions based on the historical credit loss patterns observed by banks.**
  - This will be in contrast to the existing approach of incurred loss provisioning, whereby step-up provisions are made based on the time the account has remained in the Non-Performing Asser (NPA) category.
3. **SMART-PDS System:** Scheme for Modernization and Reforms through Technology in Public Distribution System. **Nodal Ministry:** Ministry of Consumer Affairs, Food and Public Distribution. The Department of Food and Public Distribution (DFPD) is envisaging a new and unified scheme to strengthen the PDS technology components by standardization of its operation and implementing data-driven decision-making through data analytics. **It aims to transform the entire PDS IT ecosystem by using Cloud and new-age technology.**  
**Smart Ration Card:** ration is given through fair price shops on the production of the smart ration card by any member of the beneficiary family.  
**Fingerprint Template:** The fingerprint template of the beneficiary is recorded in these smart ration cards, which record all transactions.
4. **Cloud kitchens:** A cloud kitchen is a concept of **delivery-only restaurant with no physical space, no dine-in space, or takeaway counter.** It is a restaurant kitchen that accepts delivery-only orders without a traditional restaurant or dining-in facility. Just an operational kitchen for the preparation of food that functions as a production unit. These kitchens are sometimes also known as **ghost kitchens, dark kitchens, or virtual kitchens.**
5. **DNA vaccine against dengue:** In a significant development in DNA vaccination research, India's first and only DNA vaccine candidate for dengue has shown promising results.  
DNA vaccines use engineered DNA to induce an immunologic response in the host against bacteria, parasites, and viruses. The **basic working principle behind DNA vaccine involves the use of a DNA plasmid that encodes for a protein that originated from the pathogen in which the vaccine will be targeted.** DNA vaccine will avoid extracellular

degradation and successfully enter the nucleus of target cells to induce a long-term immune response.

### 3rd March

1. **CEC and ECs appointment:** The Supreme Court recently ruled that the appointment of Chief Election Commissioner (CEC) and election commissioners (ECs) will be done by the President on the advice of a committee comprising the prime minister, the leader of the opposition in the Lok Sabha, and the Chief Justice of India. **Under Article 324 (2), the President appoints the CEC and other EC on the advice of the Union Council of Ministers headed by the Prime Minister.**
2. **Space Weather:** It describes the conditions in the region of space close to the earth, especially the presence of Solar wind, Coronal Mass ejections, Geomagnetic storms and charged particles emitted by the sun, which can affect human activity and technology. **A new study has revealed that Bad space weather can cause safety issues during air travel and result in flight delays.**
3. **GLOBAL METHANE TRACKER:** According to the International Energy Agency's (IEA) annual Methane Global Tracker report, fossil fuel companies emitted 120 million metric tonnes of methane into the atmosphere in 2022, only slightly below the record highs seen in 2019.
  - Energy sector accounts for around **40% of total average methane emissions.**
  - 80% of available options to curb methane emissions can be implemented at net zero cost.
  - Implementing methane reduction measures would cost less than 3% of net income received by the oil and gas industry in 2022.
  - Reduction of 75% of natural gas wastage could lower global temperature rise by nearly 0.1 degree Celsius by mid-century.
  - **Methane is a greenhouse gas responsible for 30% of warming since preindustrial times, second only to carbon dioxide.** Over a 20-year period, methane is 80 times more potent at warming than carbon dioxide.
4. **Ornamental Fish Aquaculture:** National Bureau of Fish Genetic Resources (NBFGR) under Indian Council of Agricultural Research (ICAR) is providing technical support to provide intensive training to islanders of **Lakshadweep for Ornamental Fish Aquaculture.**  
**Ornamental fish culture is the culture of attractive, colourful fishes of various characteristics, which**

are reared in a confined aquatic system. Farmers and hobbyists mainly grow it and these fish are also known as living jewels. Kerala, Tamil Nadu and West Bengal mainly practice ornamental fish farming in India.

5. **India ranks third globally in forest area gain from 2010-2020:** Economic Survey

- **Forests covered 24% of India's total geographical area**, accounting for 2% of the world's total forest area in 2020. Globally, **the top 10 countries account for 66% of the world's forest area**. Of these, Brazil (59%), Peru (57%), Democratic Republic of Congo (56%) and Russia (50%) have half or more of their total geographical area under forests.
- **Indian states with largest forest cover areas: Madhya Pradesh (11%) Arunachal Pradesh (9%), Chhattisgarh (8%), Odisha (7%) and Maharashtra (7%).**
- Mizoram (85%), Arunachal Pradesh (79%), Meghalaya (76%), Manipur (74%) and Nagaland (74%): highest proportion of forest cover to the geographical area of the State in 2021.
- Much of India's increase in forest cover from 2011-21 is attributed to enhancement in very dense forest cover, which rose by approximately 20% during the period.

#### 4<sup>th</sup> March

1. **FRINJEX-23:** It is the first joint military exercise between the Indian Army and French Army. **This is the first time the two countries have engaged in a military exercise in a team format consisting of a company group to enhance interoperability, coordination, and cooperation.**

**Indian-France Military Exercises:** Exercise Garuda: Air Force; Exercise Varuna: Navy; Exercise Shakti: Army

2. **Photobombing effect:** it means the reduction in a space telescope's ability to observe habitable exoplanets due to obscurity caused by other celestial bodies.

According to NASA, when a telescope is pointed at an exoplanet, the light reflected by the planet could be contaminated by light from other planets in the same system- causing the photobomb effect. **It stems from the "point-spread function" of the target exoplanet.** PSF is the image created due to the diffraction of light coming from the source and becomes larger than the source for very distant objects, like an exoplanet.

3. **Pyramid of Giza:** Hidden corridor discovered in Pyramid of Giza using Cosmic-Ray Muon Radiography. **The Great Pyramid of Giza is the largest Egyptian pyramid and the tomb of Khufu, who is widely regarded as the greatest emperor of ancient Egypt.** The Pyramid was built in the **early 26th century BC.** The pyramid is **the oldest of the Seven Wonders of the Ancient World**, and the only one to remain largely intact.

4. **Cosmic-Ray Muon Radiography:** CMR is a technique used to study the density and composition of materials hidden within large and dense objects, such as geological formations, archaeological sites etc. The non-invasive technique involves **using muons, a type of cosmic-ray particle**, to generate images of the interior of such objects.

- Muon particles are created when cosmic rays, mostly protons and atomic nuclei, collide with atoms in the Earth's upper atmosphere. These muons travel through the atmosphere and penetrate deep into the ground, passing through objects along their path.
- The principle behind CMR is to **measure the flux of muons passing through an object and compare it to the expected flux based on the object's geometry and composition.**
- Differences in the measured and expected flux indicate variations in the object's density or composition, which can be used to create an image of the object's internal structure.

5. **Myanmar Teak Trade:** Teak wood from Myanmar's deciduous and evergreen forests is highly valued for its durability, resistance to water and termites, and is commonly used for high-end furniture, veneers, and ship-decking. However, the forest cover and teak reserves in Myanmar are shrinking, which increases the wood's value. **Teak, is a large deciduous tree native to India, Myanmar, Laos and Thailand.**

- **Myanmar teak is listed in the IUCN Red List as endangered, but not listed in the CITES.** African teak is classified as Endangered on the IUCN Red List 2004, and is listed on Appendix II of CITES.
- **India has become the second largest importer of "conflict wood" from Myanmar, after China.** India hasn't banned the import of teak from Myanmar.
- Following the military coup in Myanmar in February 2021, the military junta took over Myanma Timber Enterprises (MTE), with exclusive control over the country's valuable timber and teak trade. The sales of this "conflict" wood are a crucial source of income for the military regime.

#### 6<sup>th</sup> March

1. **Hindu Rate of Growth:** Former Reserve Bank Governor Raghuram Rajan said that India was “dangerously close” to the ‘Hindu rate of growth’ in view of the subdued private sector investment, high interest rates and slowing global growth. **The ‘Hindu rate of growth’ is a term describing low Indian economic growth rates from the 1950s to the 1980s, which averaged around 4%. It was coined by an Indian economist Raj Krishna.**

2. **Megha-Tropiques-1 satellite:** The MT1 is a joint Indo-French satellite launched in 2011 for tropical weather and climate studies which was providing data services, supporting regional and global climate models till 2021. **ISRO will be undertaking a challenging experiment of a controlled re-entry of the decommissioned MT1** The ISRO said that the United Nations/Inter-Agency Space Debris Coordination Committee space debris mitigation guidelines recommended deorbiting a Low Earth Orbit object at its end-of-life, preferably through controlled re-entry to a safe impact zone, or by bringing it to an orbit where the **orbital lifetime was less than 25 years.**

3. **Whiskey fungus:** The fungus, called *Baudoinia compniacensis*, feeds on alcohol vapor, the substance whiskey makers call the “**angel’s share**” **of distilled spirits that evaporates during maturation.** The fungus tends to spread to nearby surfaces, blanketing almost everything that comes in its way. Researchers haven’t found any instances of health risks from short or long-term exposure to the whiskey fungus but it can destroy trees and damage properties

4. **Qualified Stock Brokers:** According to SEBI, QSBs as entities who, because of their size and scale of operations, can likely impact investors and the securities market, as well as governance and service standards. These stock brokers cater to the needs of a large number of investors. The failure of such stock brokers has the potential to cause disruption in the services they provide to large numbers of investors, causing widespread impact in the securities market. **A stock broker will be designated as QSB on the basis of four parameters — number of active clients, total available assets of clients, trading volumes and end-of-day margin obligations.**

All stock brokers with a total score greater than or equal to five on these four parameters are identified as QSBs. The scores are to be calculated on an annual basis (financial year) and the revised

list of QSBs will be released jointly by stock exchanges, in consultation with Sebi. QSBs will have to red flag any unusual client behaviour to stock exchanges and take necessary measures to prevent fraudulent activity in the market.

5. **Think 20:** A two-day Think-20 summit under the auspices of the G20 will bring together prominent individuals from around the world to debate a range of issues, including “**Global Governance with LiFE, Values, and Wellbeing**” in Bhopal. A “**Bhopal Declaration**” will cap off the occasion.

### 7th March

1. **RBI Home Price Index:** The RBI data is based on transaction-level data received from the registration authorities in ten major cities — **Ahmedabad, Bengaluru, Chennai, Delhi, Jaipur, Kanpur, Kochi, Kolkata, Lucknow and Mumbai.** The RBI’s All India Home Price Index (HPI) recorded a **2.79 per cent growth (year-on-year)**

2. **International Big Cat Alliance (IBCA):** It is a proposed mega-global alliance that will work toward the protection and conservation of the **seven major big cats — tiger, lion, leopard, snow leopard, puma, jaguar, and cheetah.** Membership to the alliance will be open to 97 ‘range’ countries, which contain the natural habitat of these big cats, as well as other interested nations, international organizations, etc. After the first five years, which will be supported by **India’s ‘total grant assistance’ of \$100 million, the IBCA is expected to sustain itself through membership fees, and contributions from bilateral and multilateral institutions and the private sector** A Council of at least seven but not more than 15 member countries elected by the General Assembly for a term of 5 years, and a Secretariat.

3. **SECTION 230 OF THE US’ COMMUNICATIONS DECENTY ACT:** Passed in 1996, it **provides legal immunity to internet companies for content that is shared on their websites.** The act was first introduced to regulate pornography online. Section 230 is an amendment to the act, which holds users responsible for their comments and posts online. **Online companies, including social media platforms, are not liable for the content shared on their website by its users.** So if a user posts something illegal on the website, the company is protected from lawsuits.

4. **SWAMIH Investment Fund 1:** It is a government backed fund, set up as a Category-II AIF (Alternate Investment Fund) debt fund registered with SEBI launched in 2019. **The Fund is sponsored by the Ministry of Finance and is managed by SBICAP Ventures Ltd. (a State Bank Group company).** It is **India's largest social impact fund** specifically formed for completing stressed and stalled residential projects. The real estate projects must be Real Estate (Regulation and Development) Act (RERA)-registered which have been stalled due to a lack of adequate funds. They must also fall under the **'Affordable and Middle-Income Project' category (any housing projects wherein housing units do not exceed 200 sq.m.)**.
5. **Nallamala Forest:** It is **one of the largest stretches of undisturbed forest in South India, apart from the Western Ghats in Andhra Pradesh and Telangana.** It is located in Nallamala Hills, which is a part of the Eastern Ghats. It lies south of the Krishna river. The forest has a good tiger population, and a part of the forest belongs to the Nagarjunsagar-Srisailem **Tiger Reserve, the largest tiger reserve in the country.**

#### 8<sup>th</sup> March

1. **Mimeusemia ceylonica:** Researchers from Tamil Nadu have spotted a rare moth species for **the first time in India in the buffer zone of Kalakkad-Mundanthurai Tiger Reserve (KMTR) after it was last sighted 127 years ago – at Trincomalee in Sri Lanka in 1893.** *Mimeusemia ceylonica* is a moth species belonging to the subfamily Agaristinae and family Noctuidae. Moths are a group of insects that includes all members of the order Lepidoptera that are not butterflies. Most species of moth are nocturnal, but can be crepuscular and diurnal species.
2. **"Theatre Level Operational Readiness Exercise for 2023" or TROPEX-23:** Started in November 2022 and culminated in March 2023. This operational level exercise is **conducted biennially** and witnesses participation by all Indian Navy units along with **Indian Army, Indian Air Force and Coast Guard assets.** As part of the exercise, all surface combatants of the Indian Navy including Destroyers, Frigates, and Corvettes as well as submarines and aircraft are put through complex maritime operational deployments. The overall exercise construct included **the Coastal Defence exercise Sea Vigil and the Amphibious Exercise AMPHEX.**
3. **IBSA Forum:** It is a **trilateral, developmental initiative between India, Brazil and South Africa to promote South-South cooperation and exchange.** The grouping was formalized when the Foreign Ministers of the three countries met in Brasilia (Brazil) in 2003 and issued the Brasilia Declaration. IBSA does not have a headquarters or a permanent executive secretariat. At the highest level, it counts on the Summits of Heads of State and Government. **IBSAMAR (IBSA Maritime Exercise) is an important part of IBSA trilateral defence cooperation. IBSA Fund (India, Brazil and South Africa Facility for Poverty and Hunger Alleviation) is a unique Fund through which development projects are executed with IBSA funding in fellow developing countries.** The fund is managed by the UN Office for South-South Cooperation (UNOSSC). Each member country is required to contribute \$1 million per annum.
4. **Pritzker prize:** The international Pritzker prize was established by Chicago's Pritzker family in 1979. **It is considered to be one of the world's premier architecture prizes, and is often referred to as the Nobel Prize of architecture.** It is awarded annually and bestows laureates with \$100,000 along with bronze medallion.
5. **INS Sahyadri:** It is a Shivalik class multi-role stealth frigate. It is equipped with cutting-edge weapons and sensors, which can identify and eliminate threats from **the air, the surface, and the subsurface.** The vessel is a member of the Eastern Fleet of the Indian Navy, which is located in Visakhapatnam. Stealth Frigates under the Shivalik class series **namely INS Shivalik, INS Sahyadri, and INS Satpura are the first stealth warships built in India (by Mazagon Dock Limited).**

#### 9<sup>th</sup> March

1. **Additional Tier 1 Bonds:** AT1 bonds, also called perpetual bonds, carry no maturity date but have a call option, but no put option i.e. Investors cannot return these bonds to the issuing bank and get the money but the issuer of such bonds may redeem the bonds if it is getting money at a cheaper rate, especially when interest rates are falling. **They are like any other bonds but pay a slightly higher rate of interest.** Banks issue these bonds to shore up their core capital base to meet the Basel-III norms. These bonds are also listed and traded on the exchanges. So, if an AT-1 bondholder needs money, he can sell it in the secondary market. Banks issuing AT-1 bonds can skip interest payouts for a particular year or even reduce the bonds' face value. **AT-1**

**bonds are regulated by the Reserve Bank of India (RBI).** If the RBI feels that a bank needs a rescue, it can simply ask the bank to write off its outstanding AT-1 bonds without consulting its investors.

- 2. Safe Harbour Protection: Section 79 of the Information Technology (IT) Act provides for the Safe Harbour protection to social media giants.** It says that any intermediary shall not be held legally or otherwise liable for any third-party information, data, or communication link made available on its platform. However, the intermediary should not involve any way in initiating the transmission of the message in question, select the receiver of the transmitted message, and do not modify any information of the transmission.
- 3. Guindy National Park:** Guindy is India's eighth-smallest national park and one of the very few national parks located inside a city- in the heart of Chennai's metropolitan area of Tamil Nadu. **It is one of the last remnants of the tropical dry evergreen forests of the Coromandel Coast.**  
The Tropical Dry Evergreen Forest is a unique forest found only in **Tamil Nadu and Andhra Pradesh.**
- 4. Yaoshang Festival:** The festival is celebrated every year on the full moon of Lamta month (February-March) of the Meitei lunar calendar. **The festival is celebrated by the Meitei people who are predominantly Hindu.** It is celebrated at the same time as Holi and is known as 'Manipur's version of Holi'. The highlight of the festival is the **ThabalChongba, a traditional Manipuri folk dance where boys and girls hold hands and sing and dance in a circle.** The festival marks the rejuvenation of the spirit of life and **commemorates the birthday of Chaitanya Mahaprabhu.**
- 5. Securities-Based Lending:** It is the practice of raising a loan by offering your existing investments in stocks/mutual funds/ Exchange-traded funds (ETFs) as collaterals. **These kinds of loans are generally offered to high-net-worth individuals by large financial institutions and private banks.** The loan amount depends on the security offered. The loan can be used for making purchases like real estate or personal items but not for making further security purchases. Due to the inherent volatility in the nature of stocks/mutual funds, the risk of forced liquidation tends to be very high for these loans.

### 10<sup>th</sup> March

- 1. Kinzhal Missile:** The Kh-47M2, nicknamed "Kinzhal" (Dagger), is a **nuclear-capable, Russian air-**

**launched ballistic missile.** The Kinzhal can reach speeds of up to Mach 10 and can carry both conventional and nuclear warheads with a payload of up to 480 kg with a range of 1,500-2,000 km.

- 2. Moon to get its own Time Zone:** The Moon has a day and night cycle of **about 29.5 Earth days.** Currently, the time on the Moon is measured **using Universal Time Coordinated (UTC), which is the same timekeeping system used on the Earth.** However, because the Moon's day is much longer it would be difficult to use UTC for day-to-day activities on the Moon.  
**Issues:** Synchronizing time on the moon is tricky because clocks run faster there, gaining around 56 microseconds, or millionths of a second, per day. It would be difficult to establish a consistent time zone for the entire Moon, as terrain, lighting etc vary across its surface.
- 3. Universal Time Coordinated (UTC):** It is a time standard used to keep time consistent around the world and is based on International Atomic Time (TAI), which is maintained by atomic clocks around the world. **UTC is expressed as a 24-hour clock and is used to indicate the time offset from Coordinated Universal Time (UTC+0). Time zones are defined as an offset from UTC, with some time zones being ahead of UTC (UTC+1, UTC+2, etc.) and others being behind UTC (UTC-1, UTC-2, etc.).** UTC is adjusted periodically to account for changes in the Earth's rotation, which can cause variations in the length of a day. These adjustments are made through the addition of leap seconds to UTC, to keep the time standard synchronized with the Earth's rotation.
- 4. Crypto markets under PMLA:** Exchange between virtual digital assets and fiat currencies, the exchange between one or more forms of virtual digital assets and the transfer of digital assets will be covered under money laundering laws. **Virtual digital assets (VDA)** are as any code or number or token generated through cryptographic means with the promise or representation of having inherent value. **Crypto exchanges and intermediaries dealing with VDA will now be required to perform KYC of their clients and users of the platform.** Indian crypto exchanges will have to report suspicious activity to the Financial Intelligence Unit India (FIU-IND). Entities dealing in VDA will be **considered "reporting entity" under PMLA-banks,** financial institutions, entities engaged in real estate and jewellery sectors as well as

casinos are 'reporting entities' now. Under this law, every reporting entity is required to maintain a record of all transactions.

5. **National Platform for Disaster Risk Reduction (NPDRR):**

It is a multi-stakeholder platform constituted by the Government of India in 2013 to facilitate dialogue, sharing experiences, views, ideas, action-oriented research & explore opportunities in the area of Disaster Risk Reduction (DRR). **NPDRR is chaired by the Union Home Minister and Minister of State in-charge of Disaster Management, Ministry of Home Affairs is the Vice Chairperson of NPDRR.** The output from the National Platform will offer a strategic direction and a road map for the formulation of the future National Action Plans on DRR.

**11<sup>th</sup> March**

1. **MSME COMPETITIVE (LEAN) SCHEME:** Launched by MSME ministry, the objective is to increase manufacturing competitiveness in the MSME Sector and streamline a system of lean manufacturing using lean techniques such as **5S, Kaizen, KANBAN, Visual Workplace, Poka Yoka, etc.** Government will **cover 90% of implementation costs for coaching and consulting fees to support MSME.** For MSMEs located in the Northeast, owned by Women/SC/ST, and a part of SFURTI clusters, an additional 5% contribution will be made. A special feature is available to help Industry Organizations to urge their supply chain vendors to take part in this scheme. A SPV will be formed in each cluster. It is expected that once MSMEs are introduced to the benefits and savings that accrue from LM techniques, they would themselves continue the Scheme from the second year onwards at their own expense.

2. **Cyclone Freddy:** It originated off the northern coast of Australia in 2022. Freddy was the first tropical cyclone in the Southern Hemisphere to undergo six separate rounds of rapid intensification. It also holds the record for all-time accumulated cyclone energy (ACE) (storm strength during its lifetime) for the Southern Hemisphere. WMO recently announced the constitution of an expert committee to evaluate the intensity and lifespan of Cyclone Freddy, which is on track to set a record as the longest-lasting tropical cyclone on record.

3. **Advanced Light Helicopter (ALH) Dhruv:** It is a multi-role and multi-mission light utility helicopter

intended for both military and civil operators which is developed indigenously by Hindustan Aeronautics Limited (HAL). **The ALH choppers are operated by all three Indian defense forces, including the Army, Navy, and Air Force,** along with the Indian Coast Guard. **The major variants of Dhruv are classified as Dhruv Mk-I, Mk-II, Mk-III & Mk-IV.** The Mk-IV version of the HAL ALG Dhruv helicopter is the Armed variant for Attack, Close Air Support, and High altitude operations. It is also called **ALH Rudra** and has a twin-engine configuration allowing continued flight virtually throughout the flight envelope. It has a maximum take-off weight of 5800 kg and a range of 590 km. It has a dedicated Electronic Warfare suite for self-protection.

4. **India-Bangladesh Friendship Pipeline (IBFPL):** IBFPL will carry diesel from Assam-based Numaligarh Refinery Ltd's (NRL) marketing terminal at Siliguri in West Bengal to the Parbatipur depot of Bangladesh Petroleum Corporation. The 13 km pipeline has a capacity of one million metric tonnes per annum (MMTPA) and is built under grant assistance from the government of India.

5. **Bond yield curve inversion:** Yield curve illustrates the interest rates on bonds of increasing maturities. An inverted yield curve occurs when short-term debt instruments carry higher yields than long-term instruments of the same credit risk profile. **Inverted yield curves are unusual since longer-term debt should carry greater risk and higher interest rates, so when they occur there are implications for consumers and investors alike.** An inverted yield curve is one of the most reliable leading indicators of an impending recession.

**13<sup>th</sup> March**

1. **High-Powered Committee on Wild Animals:** It is set up under the chairmanship of former judge Justice Deepak Verma, to consider approval, dispute, or grievance concerning the transfer or import of wild animals into India or their procurement or welfare by any rehabilitation center or zoo. **It was initially constituted to oversee the transfer of captive wild elephants from the north-eastern States, restricted to Tripura and Gujarat.** It will now cater to all wild animals in need of rehabilitation or rescue anywhere in India **All State and Central authorities shall report the seizure of wild animals or abandonment of captive wild animals to the Committee.**

2. **Bobbili Veena:** also known as Saraswathi Veena or the Ekanda Veena, it is a large plucked string instrument used in Carnatic classical music. It is carved from a single piece of Jackwood. Jackwood is a rainforest tree. **It earned a Geographical Indication (GI) tag in 2012 for its unique design and high-quality craftsmanship and is made in Andhra Pradesh.**

3. **Terran 1 Rocket:** It is the world's first 3D-printed rocket built by California aerospace startup Relativity Space. **Eighty-five percent of its mass is 3D printed with metal alloys, including the engines.** It is powered by Aeon engines using liquid oxygen and liquid natural gas as propellants. It has nine 3D-printed Aeon 1 engines in its first stage and one 3D-printed Aeon Vacuum engine in its second stage. The rocket will eventually be capable of putting up to 2,755 pounds (1,250 kilograms) into low Earth orbit.

4. **National Assessment and Accreditation Council (NAAC):** established in **1994 as an autonomous institution of the University Grants Commission (UGC) it is Headquartered in Bengaluru.**

**Function:** Evaluation, assessment, and accreditation of Higher Education Institutions (HEIs) in the country. Assessment is a performance evaluation of an institution and its units and is accomplished through a process based on self-study and peer review using defined criteria. **Accreditation refers to the certification given by NAAC, which is valid for a period of five years.** The ratings of institutions range from **A++ to C.** If an institution is graded D, it means it is not accredited. At present, the Assessment and Accreditation by NAAC is done on a voluntary basis. **The Chairperson of the UGC is the President of the General Council of the NAAC.**

5. **National Startup Advisory Council:** constituted by DPIIT under the Union Ministry of Commerce and Industry to advise the Government on measures needed to build a strong ecosystem for nurturing innovation and startups in the country  
**Chairman:** Minister for Commerce & Industry.

**Ex-officio Members:** Nominees of the concerned Ministries/Departments/Organisations not below the rank of Joint Secretary. **NSAC is playing an important role in identifying areas of intervention for the expansion of the startup ecosystem** and ideating and nurturing national programs under the Startup India initiative.

## 14<sup>th</sup> March

1. **Central Industrial Security Force (CISF):** The CISF is a central armed police force under the aegis of Ministry of Home Affairs, **established in 1969 under CISF Act, 1968 to protect major PSUs.** However, it was converted to armed force with a larger ambit under an amendment to the Act in 1983. CISF is tasked with providing security to various government installations including country's airports, metros etc. Now, CISF provides security to industrial ventures and establishments, VIPs and engages in disaster management amongst others. **With force larger than 1,65,000 it is the largest security force in the world.**

2. **Rosenstrasse Protest:** The Rosenstrasse Protest of **1943, in the heart of Berlin, was one of the most successful non-violent protest in Nazi Germany.** The protestors were "gentile", or not-Jew, women married to Jewish men. On February 27, 1943, the Gestapo rounded up over 2,000 Jewish men who were still free because they were in mixed marriages. The women came to Rosenstrasse (Rose Street) and gave rise to the cry: "Give us our husbands back."

3. **Wagner Group:** Also known as PMC Wagner it is a Russian paramilitary organization founded in 2014 by a Russian veteran of the Chechen war. The skull is the symbol of the Wagner Group. **The organization first came to the world's attention in 2014, fighting alongside Russian-backed separatists in the Donbas region of eastern Ukraine.** The organization has also been active across Africa in recent years — Libya, Sudan, Mozambique, Mali and the Central African Republic. The U.S. government has called Wagner a "proxy force" of Russia's defense ministry.

4. **India's Arms Imports:** SIPRI: India remained the world's largest arms importer for the five-year period between 2018 and 2022, followed by Saudi Arabia, even though its arms imports dropped by 11% between 2013-2017 and 2018-2022 **Russia was the largest supplier of arms to India from 2013 to 2022, but its share of total imports fell from 64% to 45% while France is the second largest supplier.** Among the top 10 arms exporters for the period 2018 to 2022, India was the biggest arms export market to **three countries — Russia, France and Israel — and the second largest export market to South Korea. India was the third-largest arms supplier to Myanmar** While the global level of international arms transfers decreased by 5.1%, imports of major arms by European states increased

by 47% between 2013–17 and 2018–22 in the backdrop of the war in Ukraine.

5. **“Chip 4” alliance:** The “Chip 4” or “Fab 4” alliance includes four of the world’s top producers of semiconductors: the **U.S., Japan, Taiwan, and Korea**. It represents more than **70 percent of the value of the global semiconductor industry**.

It was **first proposed by the US in March 2022 as part of wider plans aimed at enhancing the “security” and “resilience” of semiconductor supply chains, including by reducing the world’s reliance on chips made in China**. It is intended to cooperate on policy implementation that would support sustainable semiconductor manufacturing in the member states’ home countries.

#### 15<sup>th</sup> March

1. **Boma capturing Technique:** A boma is traditionally known throughout Africa as an enclosure, stockade or fort used to secure and protect people’s livestock. It involves luring of animals into an enclosure by chasing them through a funnel-like fencing. The funnel tapers into an animal selection-cum-loading chute, supported with grass mats and green net to make it opaque for animals, which are herded into a large vehicle for their transport to another location. It was earlier utilised to capture wild elephants for training and service. But presently make a significant contribution in the prey base management. **Following its adoption in Madhya Pradesh in recent years, Boma has been put to practice for the first time in Rajasthan to improve the prey base in Mukundara Hills Tiger Reserve**

2. **Synthesis Report:** The Intergovernmental Panel on Climate Change (IPCC) is set to organize meeting in Switzerland to finalize the Synthesis Report, which will summarize the findings of the IPCC’s previous five reports and address policy-relevant scientific questions related to climate change. **The report will emphasize meeting the 1.5-degree Celsius target as the main global goal**. The Synthesis Report is expected to provide a non-technical summary of the previous reports, which were released during the sixth assessment cycle since 2018.

3. **EURASIAN OTTER:** The first photographic record of an elusive semi-aquatic carnivorous mammal in the upper Chenab catchment has confirmed that some stretches of the Neeru remain unpolluted. The Neeru is a tributary of the Chenab river. **It has one of the widest distributions of all Palaearctic**

**mammals. Its range covers parts of three continents: Europe, Asia, and Africa**. Found in northern, northeast, and southern India. It has a long lithe body, sensitive whiskers to help detect prey and two layers of fur: a thick waterproof outer one and a warm inner one. It has an acute sense of sight, smell, and hearing. **IUCN: Near threatened, Wildlife Protection Act, 1972: Schedule II, CITES: Appendix I**

4. **Kattunayakan tribe:** it is one of the 75 PVTGs of India and designated scheduled tribe in the states of **Tamil Nadu, Kerala, Karnataka, and Andhra Pradesh** They are also known by different names like Jenu (honey) Kurumbas and Thenu (honey) Kurumbas in different regions because of their expertise in collection of honey. **The tribe has traditionally been hunter-gatherers and are experts in basketry**. They speak the Kattunayakan language which is also called as nama basha (our language) by them. It is basically of the South Dravidian origin containing elements of Kannada, Malayalam and Tamil. the settlements are known as padi and a single hut in a settlement is called manai. Kattunayakans are patrilineal **The Elephant Whisperers, which won an Oscar for the Best documentary, depicts the story of Kattunayakan tribe of the Western Ghats**.

5. **National Vaccination Day 2023:** It is also known as National Immunisation Day and is observed on **March 16th annually to spread awareness about the importance of vaccines**. The day also marks the victory of India against polio disease. **Theme: Vaccines work for everyone The world’s largest covid 19 vaccination campaign has been conducted by India**.

#### 16<sup>th</sup> March

1. **Security Bond-2023:** Naval forces from China, Iran and Russia — all countries at varying degrees of odds with the United States — are staging joint drills in the Gulf of Oman **The three countries held similar drills last year and in 2019, underscoring China’s growing military and political links with nations that have been largely shunned by the US and its partners**. This is the 3<sup>rd</sup> edition with other countries participating as well.
2. **Senior advocates/lawyers in India:** Under Section 16 of the Advocates Act 1961 two classes of advocates are classified; Senior Advocate and Junior or those who are not designated as seniors. **Section 16(2) of the Advocates Act, 1961 and Rule 2(a) of**

**Order IV of the Supreme Court Rules, 1966 provide certain guidelines to be followed for the designation of a senior counsel.** However, the judges of the SC and HC had the sole discretion of according this status to advocates. A senior advocate is not permitted to appear without an Advocate-on-record or any junior. He/she is refrained from drafting pleadings or affidavits before any court or authority He/she shall not accept directly from a client any brief or instructions to appear in any Court. A senior cannot file any pleading or represent his client nor can draft an application by his own handwriting. The senior advocate must maintain a code of conduct, different from the other advocates.

3. **Desalination Plant in Lakshadweep:** The NIOT is working on an initiative to provide potable water in **six islands of Lakshadweep using Low Temperature Thermal Desalination (LTTD) technology.** The NIOT is now trying to make this process emission-free. It will be the first of its kind in the world. Currently the desalination plants, each of which provides at least 100,000 litres of potable water every day, are powered by diesel generator sets. **Currently there are five desalination plants in operation in the Lakshadweep islands.** The proposed desalination plant will use a combination of renewable energy sources like solar, wind, and wave energy to power the plant. The plant will be equipped with reverse osmosis (RO) technology to desalinate seawater and produce potable water.

4. **Low Temperature Thermal Desalination Technology:** LTTD is a desalination technique that turns seawater into drinkable water. This method is based on the idea that **ocean water 1,000 to 2,000 feet below the surface is 4–8°C colder than surface water.** Therefore, a tank is used to collect and apply high pressure to salty surface water (via an external power source). The vaporized water under pressure is contained in tubes or a chamber. Cold ocean water is drawn up via these tubes, where the vapour condenses to create fresh water and the salt that results is diverted away and the condensed fresh water can be used for drinking.

5. **J P Singh Joirel panel:** Set up by UGC chairman to examine the lapses in functioning of NAAC Irregularities found: Internal systems can be accessed by employees who are “no longer its employees”, temporary “consultants” have been given powers rather than regular staffers; universities **issued A+ grades despite “wrong**

**claims” in Self Study Reports (SSRs) which are allotted to only certain empanelled Data Validation and Verification (DVV) firms.**

**17<sup>th</sup> March**

1. **‘Indira Jaising vs. Union of India’ (2017):** In 2017, the Supreme Court released a list of “Guidelines to Regulate the Conferment of Designation of Senior Advocates” after a case filed by India’s first woman Senior Advocate Indira Jaising for greater transparency in the process of designating. The Court guidelines discouraged the system of ‘voting by secret ballot’, except in cases where it was “unavoidable.” A **“Committee for Designation of Senior Advocates” was created under CJI and consists of two senior-most Supreme Court judges, the Attorney General of India, and a “member of the Bar” nominated by the chair and other member who were to meet at least twice a year.** The CJI or any other judge could recommend the name of an advocate for the designation of senior lawyers. Advocates could also submit their applications to the committee, after which the committee members would evaluate them on several criteria like 10-20 years of legal practice where qualification for eligibility is not less than that prescribed for a district judge. Once a candidate’s name is approved, it will be forwarded to the Full Court to decide based on the majority. The Full Court can also recall the designation of a senior advocate.
2. **Taijiquan:** Taijiquan, also known as **tai chi**, is a traditional physical practice characterized by relaxed, circular movements that works in harmony with breath regulation and the cultivation of a righteous and neutral mind. China’s taijiquan was added to UNESCO’s intangible cultural heritage list
3. **H3N2 Influenza Virus:** The influenza-causing virus subtype H3N2 is a subtype of influenza virus . **Both birds and mammals can contract H3N2 viruses.** It is a type of RNA virus, meaning that it uses ribonucleic acid instead of DNA to replicate itself. The virus has evolved into several strains in pigs, humans, and birds. This virus is extremely contagious and spreads through droplets released by an infected person when coughing, sneezing, or talking. Prevention: flu vaccine annually.
4. **Influenza Virus:** Influenza viruses, which cause the infectious disease known as flu, are of four different types: **A, B, C, and D. Influenza B virus (IBV) and Influenza C virus (ICV) primarily infect humans. Influenza D virus (IDV) is found in cattle and pigs.**

Influenza A is further classified into different subtypes and one of them is **H3N2**.

**H for hemagglutinin**, a protein that causes red blood cells to agglutinate.

**N for neuraminidase**, an enzyme that cleaves the glycosidic bonds of the monosaccharide sialic acid (previously called neuraminic acid).

Various hemagglutinin and neuraminidase proteins are encoded by multiple influenza viruses. Theoretically, 198 distinct combinations of these proteins are feasible given that there are 11 different forms of neuraminidase and 18 different types of hemagglutinin.

5. **Starberry-Sense:** Researchers at the Indian Institute of Astrophysics (IIA) have developed a low-cost star sensor for astronomy and small CubeSat class satellite missions. Star sensor is one of the precise attitude determination sensors. **It is an electro-optical system that takes an image from a set of stars and by comparing it with the star catalogue determines angle deviation of the satellite and modifies its attitude.** Star sensor is composed of baffle, optical system, detector, and electronic and image processing system. This star sensor is less expensive than those on the market by less than 10% as is developed by using Raspberry Pi Zero which is a compact size (smaller than a credit card) computer with low power consumption, and ability to run custom software.

### 18<sup>th</sup> March

1. **Horseshoe crabs:** one of the oldest living creatures on earth (around 450 million years) and medicinally priceless, appear to be disappearing along Odisha's coast which is **the largest habitat of horseshoe crabs in India**. These crabs are basically **deep-sea animals and known as marine 'living fossil'**. The blood of this crab is very important for the preparation of rapid diagnostic reagents. Only a few countries in the world have them. They are marine and brackish water arthropods and the only living members of the order Xiphosura. Despite their name, they are not true crabs or crustaceans: they are chelicerates, most closely related to arachnids such as spiders, ticks, and scorpions. Horseshoe crabs live primarily in and around shallow coastal waters on soft, sandy or muddy bottoms. **Wildlife Protection Act 1972: Schedule IV**
2. **Montevideo Convention:** The Montevideo Convention on the Rights and Duties of States is a

treaty **signed at Montevideo, Uruguay, in 1933, during the Seventh International Conference of American States**. As per Montevideo Convention, a region wanting to become independent should meet 4 criteria: A country-hopeful must have a defined territory, people, government, and the ability to form relationships with other countries. However, there is no straightforward rule to become a country. A region's quest for nationhood mainly depends on how many countries and international organisations it manages to convince to recognise it as a country.

**The biggest sanction of nationhood is the United Nations recognising a territory as a country.**

3. **New Parliament building:** The new building's six entrances exhibit 'guardian statues showing auspicious animals', who have been chosen based on their importance in Indian culture, vastu shastra and traits such as **wisdom, victory, power and success**.  
**North:** Gaj (elephant); represents knowledge, wealth, intelligence and memory.  
**South:** Ashwa (horse), symbolizing endurance, strength, power and speed  
**Eastern:** Garuda (eagle), which symbolizes the aspirations of the people. East is associated with the rising sun, which represents victory.  
**North-eastern:** hamsa (swan), which represents prudence and wisdom.  
The remaining entrances display Makara (a mythical aquatic creature that is a combination of body parts of various animals), representing unity in diversity, and Shardula (a mythical animal said to be the most powerful of all living beings) which is a symbol of the power
4. **Creation of a New District:** The power to create new districts or alter or abolish existing districts rests with the State governments either through an executive order (mostly used) or by passing a law in the State Assembly. The Centre has no role to play in the alteration of districts or creation of new ones. The Home Ministry comes into the picture when a State wants to change the name of a district or a railway station. The departments such as **the Ministry of Earth Sciences, Intelligence Bureau, Department of Posts, Geographical Survey of India Sciences, and the Railway Ministry, provides their clearance to the proposal of state government**. After examination of their replies, state government receives a no-objection certificate. **As of August 2022, there are a total of 766 districts.**

## 20<sup>th</sup> March

1. **Sangita Kalanidhi Awards:** It is considered the highest accolade in the field of Carnatic music since 1942. Prior to that, a senior musician/expert was invited to preside over the Music Academy's annual conference. In 1942, it was decided that the musician so invited would be conferred the **title of Sangita Kalanidhi, the award comprising a gold medal and a birudu patra (citation)**. Since 2005, the Sangita Kalanidhi has also received the MS Subbulakshmi Award instituted by The Hindu. **Nritya Kalanidhi award is presented in the field of dance every year by the Madras Music Academy**

2. **V-Dem Democracy Report 2023:** Data of V-Dem (Varieties of Democracy) Institute at Sweden's University shows that democratic values in India have eroded significantly in recent years. The report classifies countries into four regime types based on their score in the Liberal Democratic Index (LDI): **Liberal Democracy, Electoral Democracy, Electoral Autocracy, and Closed Autocracy**. In all these indexes, **0 is the lowest value and 1 the highest**. The values of these indexes have been declining since 2014 in India.

**India has been among the top 10 autocratizing countries in the last 10 years and ranked at 108th spot globally for electoral democracy**

3. **SCO International Conference on 'Shared Buddhist Heritage:** International conference on **"Shared Buddhist Heritage" 2023 is first of its kind event that is being organized under India's SCO Leadership**. The Conference aims to re-establish trans-cultural links, seek out commonalities, between Buddhist art of Central Asia, art styles, archaeological sites and antiquity in various museums' collections of the SCO countries. It is being organized by the **Ministry of Culture, the Ministry of External Affairs and the International Buddhist Confederation (IBC-as a grantee body of the Ministry of Culture)**.
4. **GAGANYAAN:** It is an Indian crewed orbital spacecraft that is intended to send 3 astronauts to space for a minimum of seven days by 2023, as part of the Indian Human Spaceflight Programme. The spacecraft, which is being developed by ISRO consists of a service module and a crew module, collectively known as the Orbital Module. It will be for the first time that India will launch its manned

mission to space, making the country fourth in line to have sent a human to space **after US, Russia and China**. GSLV Mk-III (Geosynchronous Satellite Launch Vehicle) the three-stage heavy-lift launch vehicle will be used for carrying the orbital module. **The first trial (uncrewed flight) for Gaganyaan is being planned by the end of 2023 or early 2024**. This will be followed by sending Vyom Mitra, a humanoid and then with the crew onboard.

5. **LVM3:** LVM3 (erstwhile GSLV) is an expendable space launch vehicle designed, developed, and operated by the ISRO to launch satellites and other space objects into Geosynchronous Transfer Orbits. It is a three-stage vehicle: Solid, Liquid and cryogenic **It is the heaviest rocket**. LVM3 can carry weight up to 5,000 kg and reach up to 36,000 km.

## 21<sup>st</sup> March

1. **Siniyah Island:** Archaeologists have found the oldest pearling town in the Persian Gulf on an island off one of the northern sheikhdoms of the UAE. The pearling town sits **on Siniyah Island, whose name means 'flashing lights'**. Siniyah Island shields the Khor al-Beida marshlands and located north of Umm al-Quwain which is the least-populated emirate in the UAE. The pearling town predates the rise of Islam across the Arabian Peninsula and dates back to the late 6th century.
2. **2Africa Pearls:** launched in **2020 it will connect 23 countries through 37000km subsea cable**. It is one of world's longest subsea cable systems that will ultimately interconnect countries in Africa, Asia, and Europe and provide connectivity to total of 3 billion people. **3 landing stations will be located in India: 2 in Mumbai and 1 in Chennai**.
3. **Vienna Convention on Diplomatic Relations 1961:** adopted in 1961 by the United Nations Conference on Diplomatic Intercourse and Immunities held in Vienna, Austria. It provides a complete framework for the establishment, maintenance and termination of diplomatic relations on a basis of consent between independent sovereign States. **It came into force in April 1964 and there are 192 parties to the convention**. It applies to diplomats and military and civilian personnel from the military departments, who are present in the country under the authority of the chief of the diplomatic mission. **The first attempt in modern times to codify diplomatic**

**immunity occurred in 1815 at the Congress of Vienna.**

An important aspect of the treaty is the provision of legal immunity for diplomats so that they don't have to face prosecution according to the laws of the host country. The Vienna Convention holds that persons working as diplomats are "inviolable" and therefore cannot be detained or arrested. Host nations are also obliged to protect diplomats from attacks on their freedom and dignity.

**Article 22 of the Convention: It deals with obligations with regard to the premises of the Mission – the receiving/host State is mandated to take all appropriate steps to protect the premises of the mission against any intrusion or damage.**

4. **Letter of Comfort (LoC):** An LoC is a letter issued to a lending institution by a stakeholder of the company acknowledging the support of the attempt for financing asked by that company. They are usually issued by a **third party or a stakeholder in the transaction**. It is not legally binding and does not imply that the parent company guarantees repayment of the loan being sought by the subsidiary company. It can also be issued **by banks, NBFCs, and auditors**. It lays down the contract conditions and steps to complete the transaction successfully.
5. **Gas geyser:** Gas geysers consume oxygen to generate heat for warming water. In an ill-ventilated bathroom, they can consume the entire oxygen forcing a person to breathe in carbon monoxide — a known cause of epileptic seizures and brain damage. **Gas geysers make use of Liquid Petroleum Gas (LPG) for heating water**. These geysers provide a constant flow of hot water and can provide rapid water heating. They are less powerful and quick to recover as compared to electric geysers.

**22<sup>nd</sup> March**

1. **Global Initiative on Sharing All Influenza Data (GISAID):** It is a public platform started by the WHO in 2008 for countries to share genome sequences. Created as an alternative to the public domain sharing model, GISAID's sharing mechanism took into account the concerns of Member States by providing a publicly accessible database designed by scientist for scientist, to improve the sharing of influenza data. **In 2010 the Federal Republic of Germany became the official host of the GISAID platform**. GISAID's database access agreement

ensures that contributors of genetic sequence data do not forfeit their intellectual property rights to the data.

2. **Jagannath Puri Temple:** The temple is believed to be constructed in the **12th century by King Anantavarman Chodaganga Deva of the Eastern Ganga Dynasty**. **Jagannath Puri temple is called 'Yamanika Tirtha' where, the power of 'Yama', the god of death has been nullified in Puri due to the presence of Lord Jagannath**. This **temple was called the "White Pagoda" and is a part of Char Dham pilgrimages (Badrinath, Dwaraka, Puri, Rameswaram)**. There are four gates to the temple—Eastern 'Singhdwara' which is the main gate with two crouching lions, Southern 'Ashwadwara' (Horse), Western 'Vyaghra Dwara (Tiger) and Northern 'Hastidwara' (Elephant). In front of the entrance stands the Aruna stambha or sun pillar, which was originally at the Sun Temple in Konark. The image of Jagannath is made of wood and is ceremoniously replaced every twelve or nineteen years by an exact replica.
3. **Price tag attack policy:** The price tag attack policy, also sometimes referred to as **"mutual responsibility" is the name given to the attacks and acts of vandalism committed primarily in the occupied West Bank by Israeli Jewish fundamentalist settler youths against Palestinian Arabs**. The attackers officially claim that the acts are committed to "exact a price from local Palestinians or from the Israeli security forces for any action taken to remove them from their settlements". These actions come as retaliation for Palestinian acts of violence against settlers, or decisions by the Israeli government to curb Jewish construction in the West Bank.
4. **Raccoon dogs:** neither dogs nor raccoons, they belong to the canid family and are the only canids that hibernate during the winter. **Raccoon dogs are native to east Asia and commonly found in parts of China, Korea, and Japan, where they are known as tanuki**. They are also found in Europe. EU report declared them **"one of the most successful alien carnivores in Europe."** Least Concern in The IUCN Red List of Threatened Species. Laboratory experiments have shown that raccoon dogs are susceptible to and capable of transmitting the novel coronavirus. But that does not mean that they are the natural reservoir for the virus.
5. **Black Swan Events:** It is a term used to define highly improbable events, impossible to predict, which

have a massive impact on the world, but which seem obvious in hindsight. **THE GREY RHINO: It is a term used to define a danger that's slow moving, obvious and yet is conveniently ignored.** Somewhat of an opposite of a Black Swan. Its argued that the Climate Crisis is one such event.

### 23<sup>rd</sup> March

1. **Aragalaya:** It is a **Sinhalese word for "struggle"**. It is being used widely to describe the daily gathering of people at Colombo that began with the demand that Gotabaya resign as President and make way for a new dispensation, even "a new system". **Aragalaya also captures the struggle of individual Sri Lankans to find food, fuel and medicines on a daily basis**, bringing them all together in a "janatha aragalaya" — a people's struggle. It has been mostly leaderless, though some individuals have spoken for the group.
2. **Waterfall mechanism for distribution of net proceeds:** IBC puts creditors into different categories based on the nature of debt. Banks, bond issuers, and lenders are classified as financial creditors. Trade creditors & vendors are classified as operational creditors. **Financial creditors are further categorised as secured and unsecured creditors, based on the security furnished by the borrower company.** Secured financial creditors rank the highest in the order of priority followed by unsecured financial creditors, government dues and, finally, operational creditors. The creditors receive proceeds (even if in surplus over the liquidation value) under the resolution plan in order of the mentioned priority. As a result, proceeds may be extinguished at the level of financial creditors itself, leaving almost nothing for other creditors in the waterfall mechanism.
3. **6G technology:** 6G networks will be able to use higher frequencies than 5G networks and provide substantially higher capacity and much lower latency. **One of the goals of 6G internet will be to support one microsecond-latency communication. This is 1,000 times faster — or 1/1000th the latency — than one millisecond throughput.** Working in conjunction with artificial intelligence (AI), the computational infrastructure of 6G will autonomously determine the best location for computing to occur; this includes decisions about data storage, processing and sharing. 6G is expected to support data rates of 1 terabyte per second. It seeks to utilize the terahertz band of frequency which is currently unutilized. Terahertz waves fall

between infrared waves and microwaves on the electromagnetic spectrum.

4. **South Atlantic Anomaly (SAA):** It is a region at the Earth's surface where the intensity of the magnetic field is particularly low. It stretches out between South America and southwest Africa. **Earth's magnetic field acts like a protective shield around the planet, repelling and trapping charged particles from the Sun.** SAA exists because the Earth's inner Van Allen radiation belt comes closest to the planet's surface, causing an increased flux of energetic particles. This leads to the penetration of solar energetic particles deep into Earth's atmosphere, posing severe problems for airplanes and ships' positioning systems as well as spacecraft electronic systems.
5. **Van Allen radiation belts: it is a zone of energetic charged particles, most of which originate from the solar wind.** The particles are captured by and held around a planet by that planet's magnetic field. It surrounds Earth, containing a nearly impenetrable barrier that prevents the fastest, most energetic electrons from reaching Earth. The outer belt is made up of billions of high-energy particles that originate from the Sun and become trapped in Earth's magnetic field, an area known as the magnetosphere. The inner belt results from interactions of cosmic rays with Earth's atmosphere.

### 24<sup>th</sup> March

1. **Guillotine:** In legislative parlance, to "guillotine" means to bunch together and fast-track the passage of financial business. **It is a fairly common during the Budget Session in Lok Sabha.** Parliament goes into recess for about three weeks after budget presentation, during which the House Standing Committees examine Demands for Grants for various Ministries, and prepare reports. After reassembly, the Business Advisory Committee (BAC) draws up a schedule for discussions on the Demands for Grants. Given the limitation of time, the BAC identifies some important Ministries for discussions. Once the House is done with these debates, the Speaker applies the "guillotine", and all outstanding demands for grants are put to vote at once. This usually happens on the last day earmarked for the discussion on the Budget.

2. **Long-term capital gains (LTCG):** The Union Government has scrapped the long-term capital gains treatment (with indexation benefits) for income from debt mutual funds and other schemes that invest up to 35% in equity shares of domestic companies. Currently, capital gains arising from transfer of mutual fund units, other than equity-oriented funds held for more than three years, are considered as long-term investments and taxed at 20% with indexation benefits. The returns from such funds will now be treated as short term capital gains. These tax changes will also apply to categories such as gold funds, international funds and domestic fund of funds that have an equity exposure of upto 35%.
  3. **Abel Prize:** Luis Caffarelli has won the 2023 Abel Prize “for his seminal contributions to regularity theory for nonlinear partial differential equations including free-boundary problems and the Monge-Ampère equation”. **First awarded in 2003**, the Abel prize “recognises pioneering scientific achievements in mathematics”. It is named after Norwegian mathematician Niels Henrik Abel. It is often considered to be an equivalent of the Nobel prize – which does not have a category for mathematics. It is awarded and administered by the Norwegian Academy of Science and Letters on behalf of the Norwegian government. **Niels Henrik Abel:** His most famous single result is the first complete proof demonstrating the impossibility of solving the general quintic equation in radicals.
  4. **Foreign law Firms in India:** Bar Council of India (BCI) has notified **Rules for Registration and Regulation of Foreign Lawyers and Foreign Law Firms in India, 2022, allowing foreign lawyers and law firms to practice in India, if they are entitled to practice law in their home countries.** However, they cannot practice Indian law or appear before courts, tribunals or other statutory or regulatory authorities. They shall be allowed to practise on transactional work/corporate work such as joint ventures, mergers and acquisitions, intellectual property matters, drafting of contracts etc and have to register with BCI. They shall not be involved in any work pertaining to the conveyancing of property, title investigation etc. The reciprocity rule, however, will not apply if the foreign lawyer or law firm works on ‘fly in and fly out’ basis to advise Indian clients on foreign law. **Indian lawyers working with foreign law firms will also be subject to the same restriction of engaging only in “Non-Litigious Practice.”**
  5. **GST Appellate Tribunal:** Under GST, if a person is not satisfied with the decision passed by any lower court, an appeal can be raised to a higher court, the hierarchy for the same is as follows: Adjudicating Authority, Appellate Authority, Appellate Tribunal, High Court, Supreme Court The CGST Act empowers the Central Government to constitute, on the recommendation of the GST Council, the GST Appellate Tribunal. **It is the forum of second appeal in GST laws and the first common forum of dispute resolution between Centre and States.** The GST Appellate Tribunal is likely to be headed by a former Supreme Court (SC) judge or a former Chief Justice of a High Court (HC) and its framework may permit the resolution of disputes involving dues or fines of less than Rs. 50 lakh by a single-member bench.
- 25<sup>th</sup> March**
1. **Article 103:** If any question arises as to whether a member of either House of Parliament has become subject to any of the disqualifications mentioned in clause (1) of article 102, the question shall be referred for the decision of the President and his decision shall be final. Before giving any decision on any such question, the President shall obtain the opinion of the Election Commission and shall act according to such opinion. **Under Article 102 (1) and Article 191 (1) of the Constitution, an MP or an MLA (or an MLC) is barred from holding any office of profit under the central or state government.**
  2. **TV Somanatha committee:** With demand growing for the old pension system (OPS) with assured benefits, the Centre announced to set up a committee headed by **finance secretary TV Somanathan to explore ways to salvage pension reforms**, by treading a middle path between the fiscally-imprudent OPS and the reform-oriented National Pension System (NPS).
  3. **Power of Siberia:** It is a massive 3000km gas pipeline linking one of the most remote parts of Russia with a far-flung region of China. Under this pipeline **project, Russia will deliver 1 trillion cubic meters of natural gas to China over the next 30 years.** The pipeline will pass through the deltas of the Yangtze and Amur rivers of China. It is the first cross-border gas pipeline between Russia and China.
  4. **Section 8 of the Representation of The People Act (RPA) 1951:** It deals with disqualification for conviction of offences. Disqualification is triggered

for conviction under certain offences listed in Section 8(1). Section 8(1) includes certain specific offences such as promoting enmity between two groups, bribery and undue influence or personation at an election. Defamation does not fall under this list.

**Section 8(3) of the RPA mandates that an MP can be disqualified if convicted and sentenced to not less than two years of imprisonment.**

As per Section 8(4) of the RPA the disqualification takes effect only after three months have elapsed from the date of conviction. Within that period, the convicted lawmaker could have filed an appeal against the sentence before a higher court.

However, this provision was struck down as “unconstitutional” in the SC’s landmark 2013 ruling in ‘Lily Thomas v Union of India’. Simply filing an appeal will not be enough but the convicted MP must secure a specific order of stay against the conviction of the trial court. In 2018, in ‘Lok Prahari v Union of India’ case, the SC clarified that the disqualification will not operate from the date of the stay of conviction by the appellate court.

5. **MARBURG VIRUS:** A highly virulent disease causing haemorrhagic fever, it has a fatality ratio of up to 88% and is of the same family as the virus that causes Ebola virus disease i.e family Filoviridae. **It is endemic in arid woodlands of equatorial Africa.** Fruit bats of the Pteropodidae Family are the key carriers of the disease. It typically infects humans following prolonged exposure to mines or caves inhabited by Rousettus bat colonies. **Human-to-human transmission takes place through direct contact with the blood, secretions, organs or other bodily fluids of infected people.**

There are no approved vaccines or antiviral treatments for the virus yet. It was first detected in 1967 after simultaneous outbreaks in Marburg and Frankfurt in Germany; and in Belgrade, Serbia. Since then, there have been 12 major outbreaks.

### 27<sup>th</sup> March

1. **Background Radiation high in Kerala:** Background radiation is a measure of the level of ionizing radiation present in the environment at a particular location which is not due to deliberate introduction of radiation sources. **It’s origin can be both natural and artificial.**

The International Atomic Energy Agency (IAEA) specifies maximum radiation exposure levels and this has also been adopted by India’s atomic energy establishment.

Public exposure shouldn’t exceed 1 milli-Sievert every year, those who work in plants or are by virtue of their occupation shouldn’t be exposed to over 30 milli-Sievert every year.

**Generally, it is measured in nanogray per second.** A (nGy/s) is a decimal fraction of the SI-derived unit of ionizing radiation absorbed dose rate.

2. **Biomining:** It is a process of extracting valuable metals and minerals of economic interest from solid waste using microorganisms. The technique may also be used to clean up sites that have been polluted with metals. Bacteria are the primary microorganisms used in biomining due to their ability to oxidise sulfur or iron compounds to generate acid and solubilize metal ions from ores. When the metal of interest is directly dissolved, the biomining process is called “bioleaching,” and when the metal of interest is made more accessible or “enriched” in the material left behind, it is called “biooxidation.” The environmental risks related to biomining are due to leakage of the acidic, metal-rich solution created by the microbes which is similar to the acid mine drainage from some abandoned mines.
3. **Tipu Sultan:** he was the last Muslim ruler of the Kingdom of Mysore, before the taking over by Wodeyar Dynasty. Defeat in Third Anglo-Mysore War convinced Tipu to take measures to build a navy. He issued a Hukmnanah (ordinance) in 1796 for a strong naval force with headquarters at Seringapatam. **He was the Pioneer of rocket technology and expanded iron cased Mysorean rockets and commissioned a military manual Fathul Mujahidin** Introduced a new calendar in 1784. This calendar was known as Mauludi Era
4. **Gravity-Operated Weighted Blocks:** An Australian renewable energy company has developed a unique scheme to generate electricity using defunct mines, such as **the Kolar Gold Fields (KGF) in Karnataka, India, to produce reliable and cost-effective renewable energy.** It uses a weighted block of up to 40 tonnes up to the top of a mine shaft using renewable power during the day when it is available. When backup power is required, the heavy block will fall under gravity, powering a generator via a connected shaft or rotor. The depth to which the block falls can be determined via a braking system, giving control over the amount of power produced. It is similar to the approach of “pumped hydropower” storage.

5. **IPCC AR6 working groups:** This is the final report of the AR6, which integrates findings from six reports (3 working groups + 3 special reports) released by IPCC during the cycle which began in 2015. **Working Group I deals with The Physical Science Basis of Climate Change, Working Group II with Climate Change Impacts, Adaptation and Vulnerability and Working Group III with Mitigation of Climate Change.**

### 28<sup>th</sup> March

1. **Synthesis Report of IPCC:** This is the final report of the AR6, which integrates findings from six reports (3 working groups + 3 special reports) released by IPCC during the cycle which began in 2015. **The 6th Assessment Report (AR6) assesses scientific, technical, and socio-economic information concerning climate change.**

There is a more than 50% chance that global temperature rise will reach or surpass 1.5 degrees Celsius between 2021 and 2040.

Odisha has one of the most dynamic coasts in the country, with sea levels rising at a rate more than the average for the rest of the country. **It is also the most cyclone-prone state in India.**

2. **Biotransformation Technology:** Pioneered by a UK based startup, it is a novel approach to processing plastics efficiently and breaking them down. Plastics made using this technology are given a pre-programmed time during which they look and feel like conventional plastics without compromising on quality.

Once the product expires and is exposed to the external environment, it self-destructs and biotransforms into bioavailable wax within 2-4 months. This wax is then consumed by microorganisms, converting waste into water, CO<sub>2</sub>, and biomass.

Biotransformation technology ensures polyolefins fully biodegrade in an open environment causing no microplastics.

3. **The New Warsaw Pact:** Recently, the air chiefs of Denmark, Finland, Norway and Sweden agreed to integrate their air defenses to counter the Russian threat. The Nordic move is about coping with a heightened sense of insecurity in northern Europe after the Russian invasion of Ukraine. **The emerging security arrangements are being called the "New Warsaw Pact"** The geopolitical arc in Central Europe has come full circle as the "New Warsaw Pact"

points its weapons eastward in opposition to Russian revisionism.

**Old Warsaw Pact:** The Warsaw Treaty Organization (also known as the Warsaw Pact) was a political and military alliance established on May 14, 1955, between the Soviet Union and several Eastern European countries to counterbalance NATO.

4. **INS CHILKA:** It is the premier basic training establishment for sailors of the Indian Navy. The concept of training the mind, body and soul to obtain a 'Sea Warrior' with the right attitude has been adopted. **INS Chilka is the only ab-initio training establishment of the Indian Navy, which trains more than 6600 raw recruits annually to make them able bodied sailors.** It is located in the coastal state of Odisha in the vicinity of Chilka Lake.

5. **Pharmaceutical Pricing in India:** National List of Essential Medicines, 2022 has been notified by the Ministry of Health and Family Welfare. Medicines included in the National List of Essential Medicines are included in the Schedule I of Drugs (Prices Control) Order, 2013. **Prices of drugs in included in Schedule 1 is fixed by the Government based on taking the average of all brands who have market share of more than 1%.** The Government shall revise the ceiling prices of scheduled formulations as per the annual wholesale price index (WPI) for preceding calendar year on or before 1st April of every year.

### 29<sup>th</sup> March

1. **CC Issue Arrest Warrant against Putin:** As of March 2023, Russia is not a party to the Rome Statute, and therefore, the **ICC has no jurisdiction** over crimes committed on its territory. However, the ICC can investigate and prosecute crimes committed by individuals from other countries who committed the alleged crimes on the territory of a state party to the Rome Statute. **Ukraine is also not a State Party to the Rome Statute", but it has twice exercised its options to accept ICC's jurisdiction over alleged crimes under the Rome Statute, occurring on its territory, under Article 12(3) of the Statute.** Article 12(3) states that if the acceptance of a state that is not a party to the statute, the state may accept the jurisdiction of the court for a crime concerned, by making a declaration to the Registrar and cooperating without any delay or exception.

2. **International Criminal Court (ICC):** It is an intergovernmental organisation and international tribunal headquartered in Hague. It looks into and prosecutes those accused of heinous offences such as genocide, crimes against humanity, war crimes, and acts of aggression. **It is the first international criminal court that is permanently established.** The Rome Statute, which served as its foundation document, became effective on July 1, 2002. The fact that it had a cooperation arrangement with the UN while not being a United Nations organisation must also be recognised. **India, like the US and China, is not a party to the Rome Statute.**

3. **Sarus crane:** It is the tallest flying bird in the world found mostly in pairs or small groups of 3 or 4. They mate for life with a single partner and its breeding season coincides with heavy rainfall in monsoon. They are known for their ability to live in association with humans. **Omnivorous;** they are found in shallow wetlands or in cropped agricultural areas.

**Distribution** – Sarus crane has 3 disjunct populations – the Indian sub-continent, south-east Asia and northern Australia.

**Wildlife Protection Act, 1972: Schedule IV; IUCN: Vulnerable; CITES and CMS: Appendix II**

**It is the state bird of Uttar Pradesh**

4. **Possession of Wildlife in India:** No person is allowed to acquire or keep in his possession, custody or control any wildlife which is state property, under **Section 39 of the Wildlife (Protection) Act, 1972.** If anyone does so they must report it to the nearest police station or the authorised officer within 48-hours of obtaining such possession.

**Burden of proof** – Further, under Section 57 of the Act, if a person is found in possession, custody or control of any wildlife, the burden of proof for establishing that it is not illegal is on the person.

5. **ADVAIT (Advanced Analytics in Indirect Taxation):** The Ministry of Corporate Affairs (MCA) and Central Board of Indirect Taxes and Customs (CBIC), Ministry of Finance, signed a MOU for data exchange between the two organisations. **The MoU will facilitate the sharing of data and information between MCA and CBIC on an automatic and regular basis.** In addition to regular exchange of data, MCA and CBIC will also exchange with each other, on request, any information available in their respective databases, for the purpose of carrying out scrutiny, inspection, investigation and prosecution.

**30<sup>th</sup> March**

1. **Application Supported by Blocked Amount system (ASBA):** SEBI approves ASBA-like facility for trading in secondary market

This process is developed by **SEBI to apply for IPOs, Rights and Debts Issues, FPS and more.**

It entails that the amount to be paid for subscribing to the shares does not get debited from the investor's account until the shares have been allotted by the company. Investors can apply for ASBA and have the bank block out the application money until the shares get allotted to the investor.

**This system will provide the authorization of the investor to subscribe only when the application is selected for the issue.** This blocking is carried out by Self-Certified Syndicate Banks (SCSB). Upon the approval of the issue to the investor, the funds are paid accordingly.

2. **Re-wilding:** As per the Standard Operating Procedures/Guidelines laid down by the National Tiger Conservation Authority (NTCA) under the Wildlife Protection Act, 1972, there are three ways to deal with orphaned or abandoned tiger cubs.

The first is to make an effort to reunite the abandoned cubs with their mother.

Second, if a reunion of the cub with its mother is not possible, then shift the cub to a suitable zoo.

Third, reintroduction of the cub into the wild after a certain time when it appears that the cub is capable of surviving in the wild independently. This is what is known as 're-wilding'.

**NTCA stresses that the tiger cub should be reared in an in situ enclosure for a minimum of two years,** and during this time, each cub should have a successful record of at least 50 'kills'.

3. **PIEZOELECTRIC EFFECT:** For the first time, scientists have reported evidence of the piezoelectric effect in liquids. The effect has been known for 143 years and has been observed only in solids.

Piezoelectric Effect is the ability of certain materials to generate an electric charge in response to applied mechanical stress. In this, a body develops an electric current when it is squeezed. **Quartz is the most famous piezoelectric crystal:** it is used in this capacity in analog wristwatches and clocks.

**One of the unique characteristics of the piezoelectric effect is that it is reversible,** meaning that materials exhibiting the direct piezoelectric effect (the generation of electricity when stress is

applied) also exhibit the converse piezoelectric effect (the generation of stress when an electric field is applied).

4. **Cultured Meat:** It is actual meat that is produced from animal cells. **It is also known as cultivated meat, cell-based meat or Lab-grown meat.** Without the need to raise and kill animals, this meat can be produced. Instead of using meat from dead animals, cultured meat is created by growing animal cells in a lab. **It tastes, smells, looks, and feels the same as traditional animal flesh and is nutritionally similar.** The plant-based meat is created using plant sources like soy or pea protein, whereas cultured meat is created by growing cells in a lab.

**For the first time, lab-grown meat has received safety clearance from the US.** Singapore was the only nation up until this point to permit the sale of items made from domesticated meat.

5. **Product-wise insurance commission cap removed by IRDAI:** Life and non-life players will have more freedom in offering commissions – the compensation paid to and received by an insurance agent from an insurer for soliciting and procuring an insurance policy.

However, the commission will have to be within their overall Expenses of Management (EOM) and insurers can have board-approved limits for paying commissions to their agents.

**Expenses of Management (EOM) include all expenses in the nature of operating expenses of general or health insurance business and commission to the insurance agents or insurance intermediaries.** It also includes commission and expenses on reinsurance inward, which are charged to the revenue account.

### 31<sup>st</sup> March

1. **Daylight Saving Time:** also called **summer time**, It is the practice of setting the clocks forward one hour from the standard time during the summer and back again in the autumn. This is done to make better use of natural daylight. **India does not follow it.** Those in favour of DST argue that it means a longer evening daytime. In countries in the Northern Hemisphere, clocks are usually set ahead one hour in late March or in April and are set back one hour in late September or in October

2. **Vibrant Villages Programme (VVP):** The Cabinet has approved Centrally Sponsored Scheme- for the Financial Years 2022-23 to 2025-26 with financial allocation of Rs. 4800 Crore.

The scheme will **provide funds for development of essential infrastructure and creation of livelihood opportunities in 19 Districts in 4 states and 1 UT along the northern land border.**

The scheme aids to identify and develop economic drivers based **on local, natural, human and other resources of the villages on the northern border and development of growth centres on “Hub and Spoke Model”** through promotion of social entrepreneurship, empowerment of youth and women through skill development and entrepreneurship.

Vibrant Village Action Plans will be created by the district administration with the help of Gram Panchayats. 100 % saturation of Central and state schemes will be ensured. There will not be an overlap with Border Area Development Programme.

3. **Sarbat Khalsa:** it literally refers to the entire Khalsa community. Guru Gobind Singh established the Khalsa in 1699 AD. It was a version of the Panth notion Guru Gobind Singh also established a practice where the whole Khalsa would congregate at the **Sri Akal Takht in Darbar Sahib Gurdwara, Amritsar during Baisakhi and Diwali to meditate on the Sikh practice.** After this, Sikhs began to meet at designated times and pass resolutions in the presence of the Guru Granth Sahib. These gatherings came to be known as Sarbat Khalsa and decisions adopted by the group were labelled Gurmata. **Sarbat Khalsa is a democratic institution in composition and operation.** The entire Sikh Panth used to attend the sessions. While gathered at Akal Takht for Sarbat Khalsa, nobody can claim dominance. During Zaman Shah's raids in the 18th century, the Sarbat Khalsa began to see a decline in the number of congregators but the idea remained alive among Sikhs.

4. **EOS-06 satellite:** Earth Observation satellite is the third-generation satellite in the Oceansat series. It is a follow-up to OceanSat-1 or IRS-P4 and OceanSat-2 launched in 1999 and 2009.

**Payloads:** Ocean Color Monitor (OCM-3), Sea Surface Temperature Monitor (SSTM), Ku-Band Scatterometer (SCAT-3), ARGOS The EOS-06 is envisaged to observe ocean colour data, sea surface temperature and wind vector data to use in

Oceanography, climatic and meteorological applications.

Launch: PSLV C54

5. **Kangra Tea:** It was recently granted the European Geographical Indication (GI) tag. It is a type of tea produced in the Kangra district of **Himachal Pradesh known for its unique flavour,**

**aroma, and colour.** It is made from the leaves, buds, and tender stems of the *Camellia sinensis* species cultivated in the Kangra valley.

- Black tea and green tea have both been cultivated in the Kangra Valley.
- In India, Kangra tea received the **Geographical Indication (GI) designation in 2005.**



## Prelims Booster- Press Information Bureau (PIB)

1st March

- 1. Performance, Achieve and Trade Scheme:** Under PAT Scheme, the Energy Savings Certificates (ESCerts) were **introduced in India in 2012 by the Bureau of Energy Efficiency (BEE)**. It is a regulatory instrument **to reduce specific energy consumption in energy-intensive industries**, with an associated market-based mechanism to enhance the cost-effectiveness through certification of excess energy saving which can be traded. **PAT scheme cover about 13 energy-intensive sectors**. The PAT scheme was established by the National Mission for Enhanced Energy Efficiency. NMEEE is one of the eight national missions under the National Action Plan on Climate Change (NAPCC) **launched by the GoI in the year 2008**. The Union Ministry of Power and BEE were entrusted with the task of preparing the implementation plan for the NMEEE.
- 2. Exercise Shinyuu Maitri:** The Indian Air Force (IAF) is participating in Exercise Shinyuu Maitri with the Japan Air Self Defence Force (JASDF). The exercise is being organised on the side-lines of the Indo-Japan Joint Army Exercise, Dharma Guardian. **The IAF contingent is participating in Exercise Shinyuu Maitri 23 with one C-17 Globemaster III aircraft**. The exercise is being conducted at a time when the IAF's heavy lift transport aircraft fleet is also taking part in Exercise Desert Flag VIII in UAE and Exercise Cobra Warrior in the UK.
- 3. SWAYATT Initiative:** Recently, a function was held to commemorate the success of "SWAYATT", an initiative that **was first launched in February 2019**. It is an **initiative to promote Start-ups, Women and Youth Advantage Through eTransactions on Government eMarketplace (GeM)**.  
**Aim:** To promote the inclusion of various categories of sellers and service providers on the portal by taking proactive steps to facilitate their training and registration, **develop women's entrepreneurship, and encourage the participation of the MSME sector** and startups in public procurement.
- 4. Pradhan Mantri Bhartiya Janaushadhi Kendras (PMBKs):** PMBKs are set up under Pradhan Mantri Bhartiya Janaushadhi Pariyojana, which was **launched by the Department of Pharmaceuticals,**

**Ministry of Chemicals and Fertilizers in November 2008.**

**Objective:** To provide quality medicines at affordable prices for all, particularly the poor, so as to reduce out-of-pocket expenses in healthcare. PMBKs provides generic drugs, which are available at lesser prices but are equivalent in quality and efficacy as expensive branded drugs. All therapeutic medicines are made available from Jan Aushadhi Stores.

Jan Aushadhi stores also sell allied medical products commonly sold in chemist shops so as to improve the viability of running the Jan Aushadhi store.

**Pharmaceutical & Medical Devices Bureau of India (PMBI) has been established under the Department of Pharmaceuticals, Govt. of India, for co-coordinating procurement, supply, and marketing of generic drugs through the PMBKs.**

**Who can open a Jan Aushadhi Kendra?**

State Governments or any organization / reputed NGOs / Trusts / Private hospitals / charitable institutions / Doctors / Unemployed pharmacists/ individual entrepreneurs are eligible to apply for the new Jan Aushadhi Kendra. The applicants shall have to employ one B Pharma / D Pharma degree holder as Pharmacist in their proposed store.

3rd March

- 1. Nano Urea:** It is a nanotechnology-based revolutionary Agri-input that provides nitrogen to plants. It is developed and patented by the Indian Farmers Fertiliser Cooperative Limited (IFFCO). **IFFCO Nano Urea is the only nano fertilizer approved by the GoI and included in the Fertilizer Control Order (FCO)**.  
**Features:** Compared to conventional urea prill, Nano Urea has a desirable particle size of about 20-50 nm and more surface area and number of particles. **It contains 4.0 % total nitrogen.**  
**Benefits:** It is produced by an energy-efficient, with less carbon footprints. It is expected to improve crop productivity, soil health.  
**IFFCO:** It is **India's largest multi-state cooperative society that is entirely owned by Indian cooperatives**. IFFCO is primarily engaged in the production and distribution of fertilizers.  
**Headquarters:** New Delhi, India.
- 2. Dhara initiative:** During its yearlong activities, it has been successful in creating public awareness, and stakeholder participation and helped to devise a

framework for the promotion and revival of multiple domains of Indian Knowledge Systems. The programme was conceptualized as a series of lectures and discussions dedicated to specific areas of inquiry highlighting India's civilizational achievements. **The Indian Knowledge Systems (IKS) Division of the Ministry of Education located at AICTE, New Delhi is the key execution partner for Dhara events.** Nodal Ministry: Ministry of Culture.

**3. SAMARTH Scheme:** Samarth (Scheme for Capacity Building in Textiles Sector) is a demand-driven and placement-oriented umbrella skilling programme. **The implementation period of the scheme is up to March 2024.** It aims to incentivize and supplement the efforts of the industry in creating jobs in the organized textile and related sectors, covering the entire value chain of textiles, excluding Spinning and Weaving. It also caters to the upskilling/ re-skilling requirement of the traditional textile sector such as handloom, handicraft, silk and jute.  
**Nodal Ministry: Ministry of Textiles.**

**4. Sovereign Gold Bonds Scheme:** The SGB scheme was launched in November 2015 with an objective to reduce the demand for physical gold and shift a part of the domestic savings into financial savings. The Gold Bonds are issued as Gol Stock under the Government Securities (GS) Act, 2006. These are issued by the RBI on behalf of the GoI.  
**Eligibility:** The bonds are restricted for sale to resident individuals, Hindu Undivided Families (HUFs), trusts, universities and charitable institutions.  
**Features:** Gold bond prices are linked to the price of gold of 999 purity (24 carats). Gold bonds can be purchased in the multiples of one unit, up to certain thresholds for different investors. **Minimum permissible investment is 1 gram of gold. The gold bonds come with a maturity period of eight years, with an option to exit the investment after the first five years.** A fixed rate of 2.5% per annum is applicable on the scheme, payable semi-annually. The interest on Gold Bonds shall be taxable as per the provision of Income Tax Act, 1961. Bonds can be used as collateral for loans. The capital gains tax arising on redemption of SGB to an individual has been exempted.

#### 4th March

**1. SWAMIH Fund:** The Special Window for Affordable and Mid-Income Housing (SWAMIH) Investment Fund I is India's largest social impact fund specifically formed for completing stressed and

stalled residential projects. The Fund is sponsored by the Ministry of Finance, Government of India, and is managed by SBICAP Ventures Ltd., a State Bank Group company. The Fund has no precedent or comparable peer fund in India or the global markets. **It is a Category-II AIF (Alternate Investment Fund) debt fund registered with SEBI.** Since the Fund considers first-time developers, established developers with troubled projects, developers with a poor track record of stalled projects, customer complaints and NPA accounts, and even projects where there are litigation issues, it is considered as the lender of last resort for distressed projects.

**2. Hallmark Unique Identification:** Recently, the Union Ministry of Consumer Affairs said that the sale of gold jewellery mandates a Hallmark Unique Identification (HUID) from April 1, 2023. The HUID is a unique 6-digit alphanumeric code consisting of numbers and letters. **The HUID will be given to every piece of jewellery at the time of hallmarking and it is unique for every piece of jewellery.** This unique number is stamped manually, on jewellery at the Assaying & Hallmarking centres. Present scenario: Earlier, the HUID used to be 4 digits and now both 4 and 6-digit HUIDs are used in the market. **From April 1st 2023, only 6-digit alphanumeric codes will be allowed.**  
**Symbol –** The BIS Hallmark consists of 3 symbols namely the BIS logo, Purity/Fineness Grade, and a six-digit alphanumeric code. The authenticity of hallmarking jewellery can be checked by using the 'verify HUID' feature on the BIS Care App.

**3. Swachh Sujal Shakti Samman 2023:** The "Swachh Sujal Shakti Samman 2023", organized by the Ministry of Jal Shakti to honour the women champions of rural water and sanitation sector, was graced by the President of India, Smt. Droupadi Murmu. This event organized in the run up to the International Women's Day, was to felicitate the exceptional and exemplary work being done at the grassroots level by women in the implementation of Swachh Bharat Mission – Grameen (SBM-G), Jal Jeevan Mission (JJM), Jal Shakti Abhiyan: Catch the Rain (JSA-CTR). 36 women WASH Champions were felicitated. The event also saw the launch of Jal Shakti Abhiyan – Catch the Rain 2023.

**4. India-Mexico MoU:** India and Mexico signed a Memorandum of Understanding on research,

technology and innovation collaborations with focus on several key technology areas like Aerospace, Electronics Instrumentation & Strategic Sectors; Civil, Infrastructure & Engineering; Ecology, Environment Earth & Ocean Sciences and Water; Mining, Minerals, Metals & Materials; Chemicals (including leather) and Petrochemicals; Energy.

**India and Mexico were termed as 'Privileged Partners', the two countries can complement and supplement each other in many areas.**

The three priority areas of **Water, Lithium and Vaccines** flagged by the Mexican side will be taken care of the CSIR and other Sister Organizations and India will provide tangible results in coming few months. Lithium is becoming a real connect between India and Mexico.

### 6th March

- 1. Exercise FRINJEX-23:** The maiden Joint Military Exercise FRINJEX-23 between Indian Army and French Army will be conducted at **Pangode Military Station, Thiruvananthapuram, Kerala**. It is for the first time armies of both the nations are engaging in this format with each contingent comprising of a Company Group each from the Thiruvananthapuram based Indian Army troops and French 6th Light Armoured Brigade. The scope of the exercise involve establishment and operationalisation of a joint command post to secure an envisaged area for undertaking joint humanitarian assistance and disaster relief, establishing an Internally Displaced Population (IDP) camp and move of disaster relief material.
- 2. Integrated Pensioners' Portal:** The Indian Department of Pension & Pensioners' Welfare has announced the creation of an Integrated Pensioners' Portal to integrate various pension-related portals like Pension Disbursing Bank portals, ANUBHAV, CPENGRAMS, CGHS into a single platform to offer ease of living for pensioners. **The 'Bhavishya' platform (for Pension Payment and processing) is an integrated online pension processing system that was made mandatory for all central government departments from 2017.** In November 2014, an Aadhar-based scheme for online submission of digital life certificates, "Jeevan Pramaan" was also launched to ensure transparency and "Ease of Living" for pensioners while submitting their life certificates.
- 3. Indian Olympic Association (IOA):** Indian Olympic Association (IOA) was established in 1927 as a Non-

Profit Organisation under Societies Registration Act, 1860. **It is an autonomous body recognised by the Ministry of Youth Affairs and Sports.** It was officially recognised by the International Olympic Committee as India's national Olympic organisation.

**Functions:** Responsible for **selecting athletes to represent India at the Olympic Games, Asian Games and other international athletic meets** and for managing the Indian teams at these events. It also acts as the Indian Commonwealth Games Association, responsible for selecting athletes to represent India at the Commonwealth Games. **The Asian Games are set to take place from September 23rd to October 8th in Hangzhou, China this year, while the Olympic Games are scheduled to take place from 26th July 2024 to August 11th, 2024 in Paris, France next year.**

- 4. Controller General Of Accounts:** Shri S.S. Dubey took charge as the Controller General of Accounts (CGA). **Shri Dubey is the 28th Controller General of Accounts (CGA), Ministry of Finance, Government of India.** Controller General of Accounts (CGA) is 'the **Principal Advisor**' on **Accounting matters to the Union Government.** CGA is responsible for establishing and managing a technically sound Management Accounting System and preparation & submission of the accounts of the Union Government. CGA is also responsible for exchequer control and conduct of internal audits for the Central Government.

### 7th March

- 1. ASEAN-India Business summit:** It is being held as part of the ASEAN-India Year of Friendship to commemorate the more than three-decade-long engagement between India and the 10-member bloc in Kuala Lumpur. **It is a group of the Association of Southeast Asian Nations, which was established in 1967 with the signing of the Bangkok declaration.**  
**Founding members:** Indonesia, Malaysia, Philippines, Singapore and Thailand. Presently ASEAN comprises 10 member states namely Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Laos, Myanmar, Cambodia and Vietnam. It **promotes intergovernmental cooperation** and facilitates economic, political, security, military, educational, and sociocultural integration between its members and other countries in Asia.

**2. National Platform for Disaster Risk Reduction (NPDRR):** It was established by the Indian government in 2013 to bring together all segments of the disaster risk community in India.

**The theme of this year's session: "Building Local Resilience in a Changing Climate"**

**Functions:** It facilitates the exchange of experiences, views, and ideas, presents the results of research and action, and explores the possibility of cooperating across continents.

As a result of this platform, National Action Plans on Disaster Risk Reduction will have a strategic direction and an action plan.

**Organisational Structure:** The Union Home Minister chairs the NPDRR, which is also headed by the Minister of State in charge of Disaster Management in the Ministry of Home Affairs and Vice-Chairman of, the National Disaster Management Authority.

In the Ministry of Home Affairs, the Special Secretary/Additional Secretary/Joint Secretary responsible for the Disaster Management Division acts as the convener of NPDRR.

**3. National Agricultural Cooperative Marketing Federation of India Ltd:** It is an apex organization of marketing cooperatives for agricultural produce in India. **It was founded on 2nd October 1958 and is registered under the Multi-State Co-operative Societies Act, 2002.** NAFED is now one of the largest procurement as well as marketing agencies for agricultural products in India.

**Objectives:** To organize, promote and develop marketing, processing and storage of agricultural, horticultural and forest produce. To distribute agricultural machinery, implements and other inputs, undertake inter-state, import and export trade, wholesale or retail as the case may be. To act and assist for technical advice in agricultural production.

**4. Advantage of Bamboo:** After planting, bamboo clumps start yielding after 4-7 years, it can become part of agro forestry practice in small land holdings. New bamboo plantations may curb the pressure from deforestation by serving as wood substitutes. It can be planted to reclaim severely degraded sites and wastelands. It is good soil binder owing to its peculiar clump formation and fibrous root system and hence also plays an important role in soil and water conservation. **It is the fastest growing canopy, releasing 35 per cent more oxygen than trees.**

There are studies reporting that bamboo stands sequester 12 tonnes of carbon dioxide from per hectare. **Madhya Pradesh has the largest area under bamboo forests**, bamboo culture thrives in the North Eastern region. **India is second only to China in terms of bamboo diversity.** The North-Eastern States are a storehouse of bamboo diversity, home to 58 bamboo varieties

### 8th March

**1. Special Protein:** A group of scientists, at the Indian Institute of Technology, Guwahati, has come up with a solution **where healthy skin cells from an adult can be converted into heart cells using special proteins.**

According to scientists, converting cells from one form to another – a.k.a. cellular reprogramming – involves specific proteins, called transcription factors, that alter the "expression of genes within a cell and direct it to take on a new cellular identity".

**They developed a toolbox, which consists of six recombinant proteins:** GATA4, MEF2C, TBX5, ETS2, MESP1, and HAND2. Each of these proteins plays a significant role in reprogramming fibroblasts – a type of cells that provides structure to tissue – into cardiomyocytes. The advantage of recombinant proteins-based cell conversion is they work their miracle inside the nucleus and eventually disappear over time without leaving behind their toxic waste, unlike their genetic counterparts. Thus, they are very safe for reprogramming compared to other approaches.

**2. Mundaka Upanishad:** Recently, Vice President released a book on Mundaka Upanishad written by Dr. Karan Singh. **The Mundaka Upanishad is an ancient Sanskrit Vedic text, embedded inside Atharva Veda.** It is a Mukhya (primary) Upanishad, and is listed as number 5 in the Muktika canon of 108 Upanishads of Hinduism. **It is among the most widely translated Upanishads.**

It is presented as a dialogue between great sacrificer Saunaka and sage Angiras. **It is a poetic verse style Upanishad, with 64 verses, written in the form of mantras.** However, these mantras are not used in rituals, rather they are used for teaching and meditation on spiritual knowledge. Upanishads take us to the wholesome path of order, truth and moral values. **It is of particular significance to us – Our national motto सत्यमेव जयते is part of a mantra from मुण्डक-उपनिषद्.**

**3. French Ships Visit:** French Navy Ships FS Dixmude, an amphibious helicopter carrier and La Fayette,

frigate are on a visit to Kochi, as part of circumnavigation mission. The French Army embarked onboard ships will also conduct joint military exercise with the Indian Army. **Indo French Naval cooperation is a key element of strengthening regional maritime security and stability in the Indo Pacific region.** The visit of the French ships significantly contribute towards strong bilateral defence ties and strategic partnerships between the two nations.

**4. International Women's Day:** International Women's Day 2023 was observed on March 8 under the theme **"DigitALL: Innovation and technology for gender equality"**.

The idea for an International Women's day arose around the end of the 20th century out of a long-standing movement for women to participate equally in society. **The first International Women's Day was observed on March 19, 1911, in Austria, Denmark, Germany and Switzerland.** Over time, International Women's Day has grown to become a global day of recognition and celebration. It was expanded by the United Nations in 1975 with the International Women's Year. **In 1977, the United Nations adopted a resolution designating March 8 as International Women's Day.**

### 9th March

**1. Janaushadhi Kendras:** On the occasion of 'the 5th Jan Aushadhi Diwas', the government inaugurated **'NaMo Day Care Centre' and flagged off four NaMo Mobile Healthcare Units**

The Department of Pharmaceuticals is celebrating Jan Aushadhi Diwas from **March 1 to March 7, 2023, to create awareness about the Jan Aushadhi Scheme.**

**Objective:** To generate awareness about the usage of generic medicines and the benefits of Jan Aushadhi Pariyojana and its salient features and achievements.

**How price of medicine is determined in the PMBJKs?**

A medicine is priced on the principle of a maximum of 50% of the average price of the top three brands of branded medicines. Thus, the prices of Jan Aushadhi Medicines are cheaper by at least 50% and in some cases, by 80% to 90% of the market price of the branded medicines.

**2. Incredible India Campaign: The Ministry of Tourism under its "Incredible India" brand line is**

**participating in ITB, Berlin 2023,** showcasing India's rich & diversified tourism potential.

The ITB is a prestigious platform and is among the top international travel shows, where travel professionals come together to connect and showcase destinations and tourism products.

**The Ministry has declared 2023 as "Incredible India! Visit India Year 2023".**

Incredible India is the name of an international tourism campaign maintained by the Government since 2002.

**Incredible India 2.0 Campaign:** It aims to shift from generic promotions to promotional plans specific to the market and content creation. It focuses on promoting niche tourism products, including yoga, wellness, luxury, and cuisine wildlife. It represents the post-pandemic plan for Indians in the sector.

**Nodal Ministry: Ministry of Tourism.**

**3. TROPEX 2023:** Indian Navy's major Operational level exercise TROPEX 2023, conducted across the expanse of IOR over a duration of four months from Nov 22 – Mar 23, culminated in the Arabian Sea. **The overall exercise construct included Coastal Defence exercise Sea Vigil and the Amphibious Exercise AMPHEX.** Together, these exercises also witnessed significant participation from the Indian Army, the Indian Air Force and the Coast Guard. The Theatre Level Operational Readiness Exercise (TROPEX) is conducted biennially. As part of the exercise, all surface combatants of the Indian Navy including Destroyers, Frigates, Corvettes as well as submarines and aircraft are put through complex maritime operational deployments to validate and refine the Navy's Concept of Operations including operational logistics and interoperability with other Services.

**4. WINS Awards:** The Union Minister for Housing and Urban Affairs announced the 'Women Icons Leading Swachhata' (WINS) Awards 2023. **The WINS Awards 2023 aim to recognize celebrate and disseminate inspiring and exemplary initiatives in urban sanitation and waste management by women led organizations and individual women.**

**Applications for the Awards are open to** (i) Self-Help Groups (SHGs) (ii) Micro-enterprises, (iii) Non-Government Organisations (NGOs), (iv) Startups and (v) Individual Women Leaders/Swachhata champions. The country is now poised to make a transformational shift from 'Women in Swachhata' to 'Women led Swachhata'.

## 10th March

### 1. Subhash Chandra Bose Aapda Prabandhan Puraskar:

It is an award to recognize and honour the invaluable contribution and selfless service rendered by individuals and organizations in India in the field of disaster management.

**Eligibility: Only Indian nationals and Indian institutions are eligible to apply for the award.**

Institutions, voluntary organisations, corporate entities, academic/research institutions, response/uniformed forces or any other institution may apply as an institution for the award. The candidate for the award must have worked in the area of Disaster Management like Prevention, Mitigation, Preparedness, Rescue, Response, Relief, Rehabilitation, Research/ Innovations or Early Warning related work in India.

**The award is announced every year on 23rd January, the birth anniversary of Netaji Subhash Chandra Bose.** The award carries a cash prize of Rs. 51 lakh and a certificate in the case of an institution and Rs. 5 lakh and a certificate in the case of an individual.

### 2. MSME (LEAN) Scheme: The Union Minister for MSME launched the MSME Competitive (LEAN) Scheme. **The scheme attempt to improve quality, productivity & performance, and capability to change the mindsets of MSME manufacturers and transform them into world-class manufacturers.**

**Objective:** Through the LEAN journey, MSMEs can reduce wastages substantially, increase productivity, improve quality, work safely, expand their markets, and finally become competitive and profitable. Under the scheme, MSMEs will implement LEAN manufacturing tools like 5S, Kaizen, KANBAN, Visual workplace, Poka Yoka etc under the able guidance of trained and competent LEAN Consultants to attain LEAN levels like Basic, Intermediate and Advanced.

**Government support:** The government will contribute 90% of the implementation cost for handholding and consultancy fees. There will be an additional contribution of 5% for the MSMEs which are part of SFURTI clusters, owned by Women/SC/ST and located in the Northeast region.

### 3. PUSHP Portal: The Central Government has launched a High Price Day Ahead Market and Surplus Power Portal (PUSHP) – **an initiative to ensure greater availability of power during the**

**peak demand season.** The surplus power portal aims to reduce the fixed cost burden on Distribution Companies (DISCOMs).

**Day-Ahead-Market (DAM):** DAM is the electricity trading market for delivery on the following day. The prices and quantum of electricity to be transacted are determined through a double-sided closed auction bidding process.

### 4. MoU between India-US: A Memorandum of Understanding (MoU) on establishing semiconductor supply chain and innovation partnership under the framework of India – **US Commercial Dialogue was signed between the two countries following the Commercial Dialogue 2023 held in New Delhi.** The MoU seeks to establish a collaborative mechanism between the two governments on Semiconductor Supply chain resiliency and diversification in view of US's CHIPS and Science Act and India's Semiconductor Mission.

## 11th March

### 1. National Bamboo Mission: It is a Centrally Sponsored Scheme started in the year 2006-07 and was subsumed under the Mission for Integrated Development of Horticulture (MIDH), for the years 2014-15 and 2015-16. MIDH is a Centrally Sponsored Scheme implemented from 2014-15 for the holistic development of horticulture in the country. **The aim of the National Bamboo Mission will focus on the development of bamboo in limited States where it has social, commercial and economical advantages.**

**Nodal Ministry:** Ministry of Agriculture & Farmers Welfare.

**Bamboo is majorly grown in North Eastern region and States** including Madhya Pradesh, Maharashtra, Chhattisgarh, Odisha, Karnataka, Uttarakhand, Bihar, Jharkhand, Andhra Pradesh, Telangana, Gujarat, Tamil Nadu and Kerala. **The initiative aims to reduce the import of bamboo goods while also increasing farmer income.** It establishes a full value chain for the expansion of the bamboo sector.

### 2. PM VIKAS: Prime Minister Vishwakarma Kaushal Samman (PM-VIKAS) scheme has **been announced for traditional artisans and craftsmen in the budget 2023-24.** This scheme will enable traditional artisans and craftsmen to improve the quality, scale and reach of their products and enable them to integrate with the MSMEs value chain. The scheme includes financial support as well as access to

advanced skills, training, knowledge of modern digital technologies and efficient green technologies, brand promotion and social security. **In this, more focus has been given to the Scheduled Castes, Scheduled Tribes, Other Backward Classes, women and weaker sections.**  
**Nodal Ministry:** Ministry of MSME

**3. Maritime Partnership Exercise (MPX):** Indian Navy's indigenously built guided missile frigate, INS Sahyadri participated in a Maritime Partnership Exercise (MPX) with French Navy (FN) ships FS Dixmude, a Mistral Class Amphibious Assault Ship and FS La Fayette, a La Fayette Class Frigate, in the Arabian Sea. INS Sahyadri is fitted with state-of-the-art weapons and sensors, which makes her capable of detecting and neutralising air, surface and sub-surface threats. **The ship is a part of Indian Navy's Eastern Fleet based at Visakhapatnam, under operational control of FOCinC (East).**

**4. Australia- India critical minerals Partnership Agreement:** India and Australia decided to strengthen their partnership in the field of projects and supply chains for critical minerals in July 2022. Australia committed USD 5.8 million to the three-year partnership. Mostly they include graphite, lithium and cobalt, which are used for making EV batteries; rare earth that is used for making magnets and silicon which is a key mineral for making computer chips and solar panels.  
**India's step:** India's Department of Science and Technology, in collaboration with the Council on Energy, Environment and Water, drafted the Critical Minerals Strategy for India in 2016, with a focus on India's resource requirements till 2030. **The Indian Critical Minerals Strategy has identified 49 minerals that will be vital for India's future economic growth.**

As per the 2019 US Geological Survey (USGS) Mineral Commodity Summaries report, **China is the world's largest producer of 16 critical minerals.** They are critical as the world is fast shifting from a fossil fuel-intensive to a mineral-intensive energy system. **Australia produces almost half of the world's lithium, is the second-largest producer of cobalt and the fourth-largest producer of rare earths.**

### 13th March

**1. Samadhaan Portal:** As per the provisions of Micro, Small and Medium Enterprises Development (MSMED) Act 2006, when a buyer does not make payment to the supplier (Micro & Small Enterprises)

for his supplies within 45 days of the acceptance of the goods/service rendered, then the buyer is liable to pay a compound interest with the monthly rests to the supplier on the amount at the three times of the bank rate notified by RBI.

For ease of filing of grievances & for monitoring of the outstanding dues to the Micro and Small Enterprises (MSEs) from the buyers of goods and services, **the Ministry of MSME launched a portal, viz. Samadhaan portal.**

**2. Ayya Vaikunda Swamikal:** The Prime Minister of India recently paid his respect to Sri Ayya Vaikunda Swamikal on his birth anniversary. **He was the pioneer of the social revolutionaries of south India and Kerala.** Research scholars regard Vaikundar as a teacher, healer and also miracle worker. His teachings also affected many social changes in southern India. It resulted in the emergence of a series of social and self-respect movements such as Upper cloth agitation, Temple entry movement and other movements including those of Narayana Guru, Chattampi Swamikal, Vallalar and Ayyankali.

**3. Status of IFC to IREDA:** The Reserve Bank of India (RBI) has granted an 'Infrastructure Finance Company (IFC)' status to Indian Renewable Energy Development Agency (IREDA). **It was earlier classified as 'Investment and Credit Company (ICC)'. With the IFC status, IREDA will be able to take higher exposure in RE financing. The recognition of IREDA as an IFC will increase the investors' confidence, enhance the brand value, and generate positive outlook in the market. IREDA has been promoting, developing and financing new and renewable sources of energy with the motto: "Energy for Ever" since 1987. It finances all RE technologies and value chain.**

**4. Exercise La Perouse:** The third edition of the multilateral maritime exercise is conducted in the Indian Ocean Region. **This edition will witness the participation of personnel, ships and integral helicopters of the Royal Australian Navy, French Navy, Indian Navy, Japanese Maritime Self-Defence Force, Royal Navy and the United States Navy.** The two day biennial exercise La Perouse is conducted by the French Navy and is aimed at enhancing maritime domain awareness and optimising maritime coordination amongst the participating navies in the Indo-Pacific Region. Indigenously built guided missile frigate INS Sahyadri and fleet tanker INS Jyoti will be participating in this edition of the exercise.

5. **Dragon Fruit:** Dragon Fruit is a herbaceous perennial climbing cactus widely known as **Pitaya**, has its origin in **Southern Mexico, Central America and South America**. Its flowers are **hermaphrodites (male and female organs in the same flower) in nature and open at night**. It grows in all kinds of soil and does not require much water. The plant sustains yield for more than 20 years, is high in nutraceutical properties (medicinal effects) and good for value-added processing industries. It is widely cultivated throughout the tropical and sub-tropical world. **The world's largest producer and exporter of dragon fruit is Vietnam**. In India, the **cultivation of Kamalam Fruit is done in Karnataka, Kerala, Tamil Nadu, Maharashtra, Gujarat, Chhattisgarh, Odisha, West Bengal, Andhra Pradesh, Andaman & Nicobar Islands, Mizoram and Nagaland**.

#### 14th March

1. **Exercise Bold Kurukshetra:** It was the 13th edition of Exercise Bold Kurukshetra, a bilateral military exercise between India and the Singapore army. For the first time in the exercise series, both armies participated in a command post Exercise, which involved Battalion and Brigade level planning elements and computer wargaming. **It was hosted by the Indian Army. First conducted in 2005**, this exercise underscores the strong and long-standing bilateral defence relationship between both countries and enhances cooperation between the two armies.  
**SIMBEX is the naval exercise between the two nations.**
2. **ATL Sarthi:** NITI Aayog recently launched ATL Sarthi, a comprehensive self-monitoring framework to strengthen the ever-growing ecosystem of Atal Tinkering Labs (ATL). ATL Sarthi will enable the Atal Tinkering Labs to be efficient and effective. The initiative has four pillars ensuring the performance enhancement of ATLs through regular process improvements like  
**MyATL Dashboard:** It is a self-reporting dashboard.  
**Compliance SOPs:** For schools to ensure financial and non-financial compliance  
**Cluster-based Approach:** On-ground enablement of ATLs in collaboration with relevant local authorities.  
**Performance-Enablement (PE) Matrix:** It provides ownership to schools to analyze their performance.
3. **National Youth Conclave:** National Youth Conclave' is being organized by the National Institute of Urban Affairs (NIUA) Affairs.

**The event is organized under the aegis of India's G20 presidency in 2023, aligning with the Urban20 and Youth20 engagement groups.**

The National Youth Conclave, which brings together the country's youth and government leadership, is an opportunity for cross-learning.

**Youth20 (Y20):** The Y20 is the **official youth engagement group for the G20**. The list of policy recommendations by Y20 is known as a communiqué, which is announced publicly at the Y20 Summit and presented to world leaders as part of the official G20 summit.

**India hosted the Y20 summit for the first time.**

In a run-up to the final Youth-20 Summit, for the next eight months, there will be Pre summits on the five Y20 themes along with various discussions and seminars at different Universities across the country.

4. **LCA Tejas:** Recently, the Defence Research and Development Organisation (DRDO) has successfully conducted a maiden flight test of the Power Take off (PTO) Shaft on Light Combat Aircraft (LCA Tejas) Limited Series Production (LSP) -3 aircraft in Bengaluru.

**LCA Tejas is the lightest, smallest and tailless multi-role supersonic fighter aircraft in its class.**

This aircraft is designed to carry a range of air-to-air, air-to-surface, precision-guided, weapons.

It has the air-to-air refuelling capability. **The maximum payload capacity of Tejas is 4000 kg.**

**Speed: Mach 1.8.**

#### 16th March

1. **Smart Meter:** The Cellular Operators Association of India (COAI) has flagged concerns over the deployment of advanced metering infrastructure using unlicensed spectrum in the 865-868 MHz frequency band. **A smart meter is an electronic device that records information such as consumption of electric energy, voltage levels, current, and power factor.** Smart meters communicate the information to the consumer for greater clarity of consumption behaviour, and electricity suppliers for system monitoring and customer billing. They are part of the Advanced Metering Infrastructure (AMI) solution that records consumers' electricity usage at different times of the day and sends it to an energy supplier. **Smart grids are energy networks that can automatically monitor energy flows and adjust to changes in energy supply and demand accordingly.**

2. **NIPUN BHARAT:** It has been launched as a National Mission called “National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat)” in 2021.

**Aim:** To ensure that every child in the country necessarily **attains foundational literacy and numeracy by the end of Grade 3, by 2026-27**. A five-tier implementation mechanism will be set up at the National- State- District- Block- School level in all States and UTs, under the aegis of the centrally sponsored scheme of Samagra Shiksha. **It is one of the components of the NEP 2020.**

**Implementing agency:** The Department of School Education & Literacy, Ministry of Education.

3. **Exercise SEA DRAGON 23:** The Sea Dragon is an annual, **multinational anti-submarine warfare (ASW) exercise conducted by the United States Navy**. **Participating Countries:** India, USA, Japan, Canada and South Korea. **The annual exercise launched in 2014.** This is the third edition of the coordinated multi-lateral ASW exercise for Long Range MR ASW aircraft. The Exercise would witness representation by an Indian Navy P8I aircraft along with other countries’ aircrafts. **Other Exercises between India and USA: Malabar: India and USA with Japan, Australia participate in the naval war gaming exercise named Malabar.** Yudh Abhyas: Military Training Exercise VAJRA PRAHAR: Special Forces Exercise

4. **Atal Jyoti Yojana (AJAY):** The Ministry of New and Renewable Energy (MNRE) **launched the Atal Jyoti Yojana (AJAY) in 2016 to illuminate dark regions through establishment of solar street lights.** It is a sub scheme under off –grid and decentralized solar application scheme.

Energy Efficiency Services Limited (EESL) has been entrusted to implement the scheme.

**Funding allocation:** MNRE provided 75% of the cost of street lights and remaining 25% by Member of Parliament Local Area Development funds (MPLADS).

5. **India-Bangladesh Friendship Pipeline (IBFPL):** Prime Ministers of India and Bangladesh will jointly inaugurate the maiden cross-border oil pipeline between the two countries. IBFPL will carry diesel from Assam-based Numaligarh Refinery Ltd’s (NRL) marketing terminal at Siliguri in West Bengal to the

Parbatipur depot of Bangladesh Petroleum Corporation (BPC).

**IBFPL is 131.5 Kilometers long, out of which 126.5 kilometer pipeline is in Bangladesh and 5 kilometers in India.** The pipeline has a capacity of one million metric tonnes per annum (MMTPA).The project is built under grant assistance from the government of India.

### 17th March

1. **PM MITRA Sites:** The Gol announced the sites for setting up of 7 PM Mega Integrated Textile Regions and Apparel (PM MITRA) Parks for the Textile industry. **The Parks will come up in Tamil Nadu, Telangana, Gujarat, Karnataka, Madhya Pradesh, Uttar Pradesh and Maharashtra.**

**Inspired by the 5F vision (i.e. Farm to Fibre to Factory to Fashion to Foreign), the Parks are a major step forward in realising the Government’s vision of making India a global hub for textile manufacturing and exports.** The Ministry of Textiles will oversee the execution of these projects. An SPV owned by Centre and State Government will be set up for each park which will oversee the implementation of the project. Nearly Rs. 70,000 crores investment and 20 lakhs employment generation is envisaged through these parks.

2. **Zojila Pass:** Also known as ‘**The Mountain Pass of Blizzards**’, is a **strategic pass that connects Kashmir Valley to Ladakh.** It is located on the Srinagar-Kargil-Leh highway (NH-1) at a height of 11,650 feet. The pass remains closed for almost half of the year due to heavy snowfall. **It was the site of the Indo-Pakistan War of 1947-48.**

**Zojila Tunnel:** It is an under-construction tunnel situated on the Srinagar-Leh Highway in Jammu and Kashmir. The tunnel would provide all-weather connectivity between Srinagar and Leh on NH-1. Total Length: 14.15 km. **It will be India’s longest road tunnel, and Asia’s longest bi-directional tunnel.** It would be in the shape of a horseshoe.

3. **H3N2 influenza:** Influenza A H3N2 is a seasonal virus and the occurrence of influenza infections normally peaks during season changes. It can spread from person to person. **The method of testing for H3N2 is also similar to COVID-19 testing – RTPCR.** There is a vaccine for seasonal flu.

**Seasonal influenza:** According to WHO, seasonal influenza is an acute respiratory infection caused by influenza viruses. **There are 4 types of seasonal influenza viruses, types – A, B, C and D.** In which Influenza viruses A, B, and C can infect

humans. Influenza A viruses are further classified into subtypes according to the combinations of the hemagglutinin (HA) and the neuraminidase (NA), the proteins on the surface of the virus. **Influenza B is of two subtypes: Victoria and Yamagata.**

**4. herSTART' Initiative:** It is the initiative of Gujarat University Startup and Entrepreneurship Council aims at supporting women-led startups. Through this platform, free resources and training modules free will be provided to aspiring women entrepreneurs. It will build a digital community and also a digital publication to spread their success stories. **At least 36 unicorns and potential unicorns in India has at least one woman founder or a co-founder.**

**5. Kudumbashree and Unnathi Programme:** Recently, the President inaugurated the silver jubilee celebration of 'Kudumbashree' – one of the largest women's self-help networks in the world and launched 'Unnathi' – an umbrella programme to create opportunities for employment and self-employment, among the youth belonging to SC and ST communities.

Kudumbashree was launched in Kerala in 1998 as a joint programme of the Government of Kerala and NABARD to wipe out absolute poverty through community action. **It is the largest women empowering project in the country. It has three components i.e., microcredit, entrepreneurship and empowerment.**

#### 18th March

**1. Matua Dharma Maha Mela:** Organized by the All India Matua Mahasangha, the event is a **highly anticipated holiday for the Matua community**, a subset of lower-class AVARNA Hindus belonging to the Namasudra Scheduled Caste group. It is a celebration of the community's traditions and way of life, which were established by Shree Shree Harichand Thakur and developed by Guruchand Thakur and Boro Ma. They participate in religious ceremonies, including offering prayers to Shri Shri Harichand Thakur Ji and other spiritual leaders. **The Matua community has a significant presence in West Bengal and Bangladesh.** The community's origins can be traced back to the 19th century when Shree Shree Harichand Thakur founded the Matua sect. **The sect's teachings focused on the importance of compassion, equality, and social justice.**

**2. Indian Institute Of Astrophysics:** The IIA with its headquarters in Bengaluru is an autonomous Research Institute wholly financed by the Department of Science and Technology, Government of India. IIA conducts research primarily in the areas of astronomy, astrophysics and related fields. **It was established in 1971.** IIA contributed to Astrosat, India's first dedicated multi-wavelength space observatory. Also led the development of Ultra-Violet Imaging Telescope (UVIT). **The institute has a network of laboratories and observatories in India, including:**

- Kodaikanal – the Kodaikanal Solar Observatory
- Kavalur – the Vainu Bappu Observatory,
- Gauribidanur – the Gauribidanur Radio Observatory,
- Hanle – the Indian Astronomical Observatory.

**3. National Institute Of Ocean Technology:** The NIOT was established in November 1993 as an autonomous society under the Ministry of Earth Sciences, Government of India. NIOT is managed by a Governing Council and the Director is the head of the Institute.

**Major aim of starting NIOT is to develop reliable indigenous technologies to solve the various engineering problems associated with harvesting of non-living and living resources in the Indian Exclusive Economic Zone (EEZ),** which is about two-thirds of the land area of India.

**Headquarter: Chennai**

NIOT is the nodal institution for the Deep Ocean Mission, which encompasses all the areas of ocean technology like development of manned submersible, offshore large scale desalination, ocean thermal energy conversion, etc.

**4. Foot-and-mouth disease:** It is an **infectious and sometimes fatal viral disease.** Affects cloven-hoofed animals, including domestic and wild bovids. The virus causes a high fever for two or three days, followed by blisters inside the mouth and on the feet that may rupture and cause lameness. **The virus responsible for the disease is a picornavirus, the prototypic member of the genus Aphthovirus.** It has severe implications for animal farming, since it is highly infectious and can be spread by infected animals through aerosols, through contact with contaminated farming equipment, vehicles, clothing, or feed, and by domestic and wild predators. **Humans can be infected with foot-and-mouth disease through contact with infected animals, but**

**this is extremely rare.** Some cases were caused by laboratory accidents. Because the virus that causes FMD is sensitive to stomach acid, it cannot spread to humans via consumption of infected meat, except in the mouth before the meat is swallowed.

### 20th March

1. **Civil 20:** Civil 20, an engagement group of G20, recently released its logo and tagline. **While the tagline of Civil 20 is 'You are the Light', the logo depicts a beam of light, implying society moves with its autonomous power and creates its own path.** Further the logo of C20 symbolize the flame of hope, self-motivation and selfless services..**The aim is to strike a balance between the economic interests of a country and the interests of the citizens.** C20 is one of the eight official engagement groups of the G20 forum since 2013.  
**India is holding the presidency of G20 this year and has planned the C20 group inception conference at Nagpur, Maharashtra.**  
Moreover, the C20 Summit is to take place in Jaipur, Rajasthan on 30-31 July 2023.

2. **Poshan Pakhwada:** The Poshan **Pakhwada aims to raise awareness about the importance of nutrition and promote healthy eating habits** through Jan Andolan and Jan Bhagidari.  
**The theme of this year's Poshan Pakhwada 2023 is "Nutrition for All: Together Towards a Healthy India".** The activities during the Poshan Pakhwada will focus, inter alia, on the following key themes: Promotion and popularization of Shree Anna / Millets for nutritional- wellbeing, Celebration of Swasth Balak Spardha and Popularize Saksham Anganwadis.  
**Nodal Ministry: Ministry of Women and Child Development.**

3. **Enzyme Laccase:** Laccase is generated by a group of fungi that have been found capable of degrading a variety of hazardous organic dye molecules that are regularly drained into waterbodies after dyeing clothes in the textile industry. This observed characteristic which the scientists termed substrate promiscuity can have deep implications in designing enzyme-coated cassettes for treating heavily dye-polluted water. Laccase, generated by a group of fungi, contains 4 copper atoms in two different oxidation states, and degrades substrates through redox reactions, producing only water and the simplest non-virulent or less virulent oxides of carbon, nitrogen and sulphur.

**Enzyme promiscuity:** Enzyme promiscuity is defined as the capability of an enzyme to catalyze a reaction other than the reaction for which it has been specialized. Although the enzyme is known for its specificity, many enzymes are reported to be promiscuous.

4. **AFINDEX:** The Indian Army is set to host the second edition of the Africa-India field training exercise (AFINDEX-23) and African Chiefs Conclave in Pune. **The first Africa-India Field Training Exercise was held in Pune in March 2019.** It saw participation from 20 African nations. **The first India-Africa Defence Ministers Conclave was held on the sidelines of the DEFEXPO, 2020 in Lucknow.**  
The exercise is divided into four phases in which trainers would be initially trained. This would be followed by a humanitarian mine action and a peace-keeping operations phase.  
Maximum use of indigenous equipment is being made during the exercise and new-generation equipment manufactured in India would be showcased during the exercise.

### 21st March

1. **Indo-Pacific Economic Framework for Prosperity (IPEF):** Recently, an Inter-Ministerial delegation from India led by the Department of Commerce participated in the second IPEF negotiating round in Bali, Indonesia.  
**It is an economic initiative launched by United States in May 2022.** IPEF has fourteen member states: Australia, Brunei, Fiji, India, Indonesia, Japan, South Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, United States and Vietnam. **During the Bali Round, discussions covered all four pillars of the IPEF: Trade (Pillar I); Supply Chains (Pillar II); Clean Economy (Pillar III); and Fair Economy (Taxation & Anticorruption) – (Pillar IV).**  
India participated in the discussions related to Pillars II to IV.
2. **International Liquid Mirror Telescope:** The Union Minister of Science & Technology inaugurated Asia's largest 4-metre ILMT at Devasthal in Uttarakhand.  
**ILMT is the first liquid mirror telescope designed exclusively for astronomical observations and is the first optical survey telescope in India.** It has a 4-meter-diameter rotating mirror made up of a thin layer of liquid mercury to collect and focus light. The

metal mercury is in liquid form at room temperature, which is highly reflective and designed to survey the strip of the sky passing overhead each night. The Devasthal observatory is equipped with the largest aperture telescope available in India that will use Big Data and AI algorithms to classify objects in the sky. The data collected from the ILMT, over an operational time of 5 years, will be ideally suited to perform a deep photometric and astrometric variability survey. **Maintained by the Aryabhata Research Institute of Observational Sciences (ARIES).**

**3. Down syndrome:** Down syndrome is a genetic disorder, caused by the presence of an extra chromosome 21 also known as trisomy of chromosome 21. **It is one of the leading causes of genetic disorders around the world. There are three types of Down syndrome.**

a. **Trisomy 21:** With this type of Down syndrome, each cell in the body has 3 separate copies of chromosome 21 instead of the usual 2 copies. **(95% people have this type of syndrome)**

b. **Translocation Down syndrome:** This occurs when an extra part or a whole extra chromosome 21 is present, but it is "trans-located" to a different chromosome rather than being a separate Cr 21.

c. **Mosaic Down syndrome:** Mosaic means mixture or combination. For children with mosaic Down syndrome, some of their cells have 3 copies of chromosome 21, but other cells have the typical two copies of chromosome 21. Down syndrome is a lifelong condition and it cannot be cured. Early therapy programs can help improve skills.

**4. International Telecommunication Union (ITU):** It is an **intergovernmental organization that coordinates between governments and private sector bodies with respect to global telecommunication and ICT services.** It was established in 1865 as International Telegraph Union. **In 1947, it became a UN specialised agency. Headquarters: Geneva, Switzerland. It has a membership of 193 countries and nearly 800 private sector entities and academic institutions.**

**Functions:** To allocate global radio spectrum and satellite orbits; coordination and setting of technical standards related to telecommunication/ICT; strive to improve access to ICTs in underserved communities worldwide. India and ITU: **India has been an active member of the ITU since 1869 and has been a regular member of the ITU Council since 1952.**

## 22nd March

**1. INS Androth:** It is an Anti-Submarine Warfare Shallow Water Craft (ASW SWC). **It is built by Garden Reach Shipbuilders and Engineers (GRSE) in Kolkata for the Indian Navy.**

**Primary Role:** To conduct anti-submarine operations in coastal waters, low-intensity maritime operations, and mine-laying operations. It is also capable of full-scale sub-surface surveillance of coastal waters and various surface platforms and coordinated ASW operations with aircraft.

**Features:** It is propelled by three diesel-driven water jets. It can attain a maximum speed of 25 knots. It carries lightweight torpedoes, ASW rockets and mines. It will be fitted with hull-mounted sonar and a low-frequency variable depth sonar.

## 2. Indian New Year:

New Year	State	New Year	State
<b>Chaitra Sukladi</b>	North India	Bestu Varas	Gujarat, Rajasthan (after Deepawali)
<b>Ugadii</b>	Deccan region	Vishu	Kerala
<b>Gudi Padwa</b>	Maharashtra	Loosong	Sikkim(Dec)
<b>Baisakhi</b>	Punjab	Cheti Chand	Sindh
<b>Puthandu</b>	Tamil nadu	Sajibu cheiraoba	Meiteis in Manipur
<b>Bohag Bihu</b>	Assam	Navreh	Kashmir
<b>Pohela Boishakh</b>	Bengali	Navroj	Parsis

**3. Green Tug Transition Programme (GTTP):** India aims at becoming 'Global Hub for Green Ship' building by 2030 with launch of GTTP.

**Aim: To convert all tugboats working in the country into 'Green Hybrid Tugs', running on non-fossil fuel like Methanol, Ammonia, and Hydrogen.**

Tugs are special boats that assist other vessels into and out of port. The primary purpose of these boats is to help move larger ships by towing, pushing, and guiding. **The Ministry has set a target for the initial Green Tugs to start working in all Major Ports by 2025.** At least 50% of all the Tugs are likely to be converted into Green Tugs by 2030. **The minister also inaugurated India's first National Centre of Excellence in Green Port & Shipping (NCoEGPS) in Gurugram, Haryana.** It is the setup by Ministry of Ports, Shipping & Waterways and the TERI. It will act as a technological arm of MoPSW.

4. **Stories of Change series:** Atal Innovation Mission (AIM) has launched a series called "Stories of Change," which features 15 change-makers from the grassroots.

**Aim:** To inspire people to become entrepreneurs and showcase the potential of Indian villages for problem-solving capabilities. **AIM has established 15 Atal Community Innovation Centers in 9 states of India** and plans to establish 50 such centres soon to serve unserved areas.

### 23rd March

1. **Aravalli Green Wall Project:** The project is a major initiative to green the 5 km buffer area around Aravalli Hill. It is part of the Union Environment Ministry's vision to create green corridors across the country to combat land degradation and desertification.

**The project covers the states of Haryana, Rajasthan, Gujarat and Delhi.**

**Some of the objectives of the Project:**

- Improving the ecological health of the Aravalli range,
- To prevent the eastward expansion of the Thar Desert and to reduce land degradation, Contribute to India's commitments under various international conventions such as UNCCD, CBD and UNFCCC.

2. **Parvatmala Programme:** The National Ropeway Development Programme also known as 'Parvatmala' (Parvatmala means garlanding mountains) was announced in the 2022-23 Union Budget.

**Aim:** To decongest mountainous areas where road and train connectivity cannot be upgraded beyond a limit. Under phase-I of the project, 30 priority points or stretches will be constructed. Parvatmala

will construct ropeways in mountainous terrains of India under the Public Private Partnership (PPP). **The Ministry of Road Transport and Highways undertakes the project.** The National Highways Logistics Management Limited (NHLML) has been mandated by the ministry to implement the project. **It is a 100% owned SPV of the National Highways Authority of India (NHAI).**

3. **Seekho Aur Kamao scheme:** Seekho Aur Kamao is a skill development scheme for the youth of the 14 – 35 years age group.

It aims at providing employment and employment opportunities, improving the employability of existing workers, school dropouts etc. The scheme ensures 75% placement, out of which 50% should be in the organized sector. For the candidates interested in self-employment after availing the training, the organization shall arrange easy microfinance/ loans for them through financial institutions, National Minority Development Finance Corporation (NMDFC), banks etc.

Post-placement support of Rs. 2000/- per month is provided to placed trainees for two months as placement assistance. **Ministry Of Minority Affairs is the nodal agency.**

4. **PENCIL Portal:** Platform for Effective Enforcement for No Child Labour is a separate online portal to ensure effective enforcement of the provisions of the Child Labour Act and smooth implementation of the National Child Labour Project (NCLP) Scheme. **It has various components, namely Child Tracking System, Complaint Corner, State Government, National Child Labour Project and Convergence.**

**Features of the portal.** Online complaints regarding child labour can also be filed by anybody on the Portal. The complaint gets assigned to the concerned Nodal Officer automatically by the system for further necessary action.

5. **Exercise Konkan 2023:** Konkan exercise is the annual bilateral maritime exercise between the Indian Navy and the UK's Royal Navy. INS Trishul, a guided missile frigate, and HMS Lancaster, a Type 23 guided missile frigate, participated in this edition. **The exercises covered all domains of maritime operations, air, surface, and sub-surface.**

### 24th March

1. **One World TB Summit:** It is being organised on World Tuberculosis Day at Rudrakash Convention Centre in Varanasi. This summit is being organised by the Ministry of Health and Family Welfare and

the Stop TB Partnership (Founded in 2001, the Stop TB Partnership is a UN hosted organisation). **Various initiatives launched:** TB-Mukt Panchayat initiative; the official pan-India rollout of a shorter TB Preventive Treatment (TPT); **A Family-centric care model for TB and the release of India's Annual TB Report 2023.** This Summit will provide an opportunity to further deliberate upon the targets. **Each year, the World TB Day is celebrated on March 24. This year's theme is 'Yes! We can end TB!'.**

**2. NISAR (NASA-ISRO Synthetic Aperture Radar):** Recently, NASA announced that the satellite will be shipped to India soon. The launch is scheduled for 2024.

It is an **Earth-observation satellite.** It will map the entire globe in 12 days and provide spatially and temporally consistent data for understanding changes in Earth's ecosystems, ice mass, vegetation biomass, sea level rise, groundwater, and natural hazards. It carries L and S dual band Synthetic Aperture Radar (SAR), which operates with the Sweep SAR technique to achieve large swaths with high-resolution data. NASA is responsible for providing the L-Band SAR payload system and ISRO supplied S-Band SAR payload. This would be the first dual-frequency radar imaging mission in L-Band & S-Band. **The NISAR Observatory will be launched from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota on the GSLV expendable launch vehicle contributed by ISRO.**

**3. Global Engagement Scheme:** It is a scheme which provides financial assistance to cultural societies which are actively promoting Indian culture abroad. **Aim:** To provide artists practicing Indian art forms an opportunity to perform abroad under the banner of 'Festival of India. **It is implemented by Ministry of Culture.** Earlier the scheme was known as 'Scheme for promotion of International Cultural relations.

**4. Urban Climate Film Festival: The National Institute of Urban Affairs (NIUA) is organising the first Urban Climate Film Festival through the CITIIS program under U20 engagement events.** It is organised with support from the Ministry of Housing & Urban Affairs, the French Development Agency (AFD), and the EU. **A curated selection of 11 films from 9 countries will be showcased to create wider awareness of the impact of climate change.** **Objective:** To Employ the powerful medium of film to enlighten audiences about the environmental,

social and economic impacts of climate change on urban settlements.

The NIUA is a Central Autonomous Body under the Ministry of Housing & Urban Affairs. **It is a national think-tank undertaking policy planning and advocacy in the domain of urban development.** It is also serving as the technical secretariat for U20.

**5. Naya Savera Scheme:** The scheme aims to **empower the students belonging to minority communities and prepare them for competitive examinations,** so that their participation in government and private jobs improves. The scheme provides financial support for free coaching to notified minority students in selected coaching institutions.

### 25th March

**1. Hamari Dharohar Scheme:** It was launched in **2015 by the Minority Affairs ministry.** The scheme has been **formulated to preserve the rich heritage of minority communities of India.** The scheme provides for curating rich heritage of minorities under the overall concept of Indian Culture which includes curating exhibitions, preservation of literature/ documents etc. Preservation of minority heritage buildings has not been undertaken under the Hamari Dharohar Scheme.

**2. LaQshya Programme:** The Ministry of Health and Family Welfare has launched "LaQshya" (Labour room Quality Improvement Initiative) to improve the **quality of care in the labour room and maternity operation theatres in public health facilities.**

**Aim of the LaQshya program is to reduce preventable maternal and newborn mortality, morbidity and stillbirths.** The LaQshya program will be implemented by all Medical College Hospitals, District Hospitals and First Referral Unit (FRU), and Community Health Centres (CHCs).

**3. Fish Production: India stands third in world in terms of fish production,** contributing 8 percent to the global fish production **and ranks second in aquaculture production.** Under Pradhan Mantri Matsya Sampada Yojana, overall fish production in the country has shown an increasing trend.

**4. DigiClaim: Union Ministry of Agriculture & Farmers Welfare has launched the National Crop Insurance Portal's digitized claim settlement module namely DigiClaim under the ambit of Pradhan Mantri Fasal Bima Yojana (PMFBY).** Developed by the integration

of the National Crop Insurance Portal (NCIP) and the Public Finance Management System (PFMS)  
**It will disburse claims electronically, thus easing the lives of insured farmers and providing them with sustainable financial support.** DigiClaim will reduce claim reversal and enable farmers to track their claim settlement process in real-time through their mobile phones. Farmers' claims will be processed directly to their respective bank accounts in a transparent and accountable manner.

5. **Arudhra Radar and Project Himshakti:** Ministry of Defence signed two separate contracts with Bharat Electronics Limited (BEL), to enhance the operational capabilities of **the Indian Air Force. Medium Power Radars (MPR) 'Arudhra' and 129 DR-118 Radar Warning Receivers (RWR) are the two contracts.** Both projects are under Buy (Indian – IDMM (Indigenously Designed Developed and Manufactured)) category. The projects is to enhance surveillance, detection, tracking & Electronic Warfare capabilities of Indian Air Force. **Arudhra radar has been indigenously designed and developed by DRDO and will be manufactured by BEL.** It is a 4D multi-function phased array radar with electronic steering in both azimuth and elevation for surveillance, detection and tracking of aerial targets. The system will have target identification based on interrogations from co-located Identification Friend or Foe system. For the Army, contracts for Project Himshakti, a DRDO-developed integrated electronic warfare system for mountains, a dedicated communications satellite for the Army, and an indigenous air defence control and reporting system are in the pipeline.

27th March 2023

1. **INS SUMEDHA:** INS Sumedha is the **third ship of an indigenously built Naval Offshore Patrol Vessel project** deployed for multiple roles independently and in support of Fleet Operations. It is part of the Indian Navy's Eastern Fleet based at Visakhapatnam. **The ship has been designed and built by Goa Shipyard Limited.** The primary role of the ship is to undertake EEZ surveillance, anti-piracy patrols, fleet support operations, provide maritime security to offshore assets and carry out escort operations for high-value assets. Port Algiers-Algeria.
2. **Central Bureau of Narcotics (CBN):** Before 1950, the administration of the Narcotics Laws, namely, **the Opium Act of 1857 & 1878 and the Dangerous Drugs Act of 1930 vested with the Provincial Government.** The amalgamation of these Agencies

**laid the foundation of the Opium Department in November 1950 which is presently known as the Central Bureau of Narcotics (CBN).** All three enactments mentioned above were repealed by the Narcotics Drugs & Psychotropic Substances Act, of 1985 (NDPS Act, 1985). **Headquarter: Gwalior. Functions:** License farmers to cultivate opium poppy, Supervises and controls the cultivation, Procures the opium produced by licenced cultivators. **Nodal Ministry: Under the Department of Revenue, Ministry of Finance.**

3. **LVM3-M2/ One Web India-1 Mission:** ISRO's LVM3 or GSLV-Mk3 successfully put into space 36 satellites of Bharti-backed OneWeb. **It was previously known as the Geosynchronous Satellite Launch Vehicle (GSLV) Mark-III.**

The recent launching of 36 satellites was the sixth launch of India's heaviest rocket LVM-3.

**It was the second dedicated commercial satellite mission undertaken by Space PSU NewSpace India Limited (NSIL) for Network Access Associates Ltd (OneWeb).** India marks the first dedicated commercial launch for New Space India Limited (NSIL) using the LVM3 (GSLV Mk-III) rocket. With this successful launch, the LVM3 has become a catalyst for the Indian Space Programme, opening new vistas for heavy payloads to the LEO.

**Salient features of the Mission:** First Commercial Mission of LVM3. First Multi-Satellite mission with 36 One Web Satellites onboard. First Indian rocket with six-ton payload. First One Web Mission with NSIL/DoS.

4. **One Web Constellation Summary:**

One Web Constellation operates in a LEO Polar Orbit. **Satellites are arranged in 12 rings (Orbital planes) with 49 satellites in each plane.**

The orbital planes are inclined to be near polar (87.9 Deg.). The orbital planes are 1200 km above the Earth Each satellite completes a full trip around the earth every 109 minutes. The earth is rotating underneath satellites, so they will always be flying over new locations on the ground. In full service, each plane will have 49 satellites = 588 Satellites.

**NewSpace India Limited:** It is a **Central Public Sector Enterprise established in 2019. It is the second commercial entity of the Department of Space (DoS) after Antrix Corporation Limited, which was set up in 1992 to market the products and services of the ISRO.**

## 28th March

1. **PARIVESH Portal:** Pro Active and Responsive Facilitation by Interactive and Virtuous Environmental Single-window Hub is a **web based, role-based workflow application which has been developed for online submission and monitoring of the proposals submitted by the proponents seeking for Environmental (EC), Forest (FC), Wildlife (WL) and Coastal Regulation Zone (CRZ) clearances.** Main aim and objective of the PARIVESH portal is to provide a “single window” solution by process automation of aforementioned four major clearances through process & data synchronization, leveraging emerging technologies such as GIS, Advance Data Analytics etc for an expeditious, transparent and effective decision making without compromising on the environmental safeguards. It is an initiative of MoEFCC.

2. **Bar Council Of India:** The Bar Council of India is a **statutory body created by Parliament under the Advocates Act, 1961 to regulate and represent the Indian bar.** It performs the regulatory function by prescribing standards of professional conduct and etiquette and by exercising disciplinary jurisdiction over the bar. **It also sets standards for legal education and grants recognition to Universities whose degree in law will serve as qualification for enrolment as an advocate.** In addition, it performs certain representative functions by protecting the rights, privileges and interests of advocates and through the creation of funds for providing financial assistance to organise welfare schemes for them. **Its members are elected from amongst the lawyers in India.** As per the Advocates Act, the Bar Council of India consists of members elected from each state bar council, and the Attorney General of India and the Solicitor General of India who are ex officio members. The council elects its own chairman and vice-chairman for a period of two years from amongst its members. Assisted by the various committees of the council, the chairman acts as the chief executive and director of the council.

3. **Child Protection Services Scheme:** It is a centrally sponsored scheme under the Ministry of Women and Child Development. Under the scheme, support is provided to States and UT Governments for delivering services for children in need and difficult circumstances. **The Child Care Institutions (CCIs) established under the scheme, support inter-alia age-appropriate education, access to vocational training, recreation, health care, counselling etc. and equally covers rural and urban children.** As per

census 2011, there are 472 million children below the age of 18 years and comprise 39% of the total population in India.

4. **Eighth Schedule:** Part XVII of the Indian Constitution deals with the official languages in Articles 343 to 351. **The eighth schedule includes the recognition of the following 22 languages:**

Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Odia, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri are the 22 languages presently in the eighth schedule to the Constitution.

**Of these languages, 14 were initially included in the Constitution.** Subsequently, Sindhi was added in 1967; Konkani, Manipuri and Nepali were added in 1992; and Bodo, Dogri, Maithili and Santali were added by the 92nd Amendment Act of 2003.

**There is no fixed criteria for any language to be considered for inclusion in the Eighth Schedule.**

Both attempts through the Pahwa (1996) and Sitakant Mohapatra (2003) Committees to decide the criteria yielded no result.

## 29th March

1. **About Lynx-U2 System:** It is a naval gun fire control system designed and developed indigenously. The system will be installed on the NOPV (Naval Offshore Patrol Vessel), Talwar and Teg class of ships. **The system has been completely designed and developed by Bharat Electronics Limited (BEL).** It is capable of accurately tracking and engaging targets amidst sea clutter. It is capable of accurately tracking air/surface targets and generating required target data for predicting weapon aiming points and engaging targets. **The target engagement is carried out with medium/short-range gun mounts like Russian AK 176, AK190, AK630 and the Super Rapid Gun Mount (SRGM) available onboard ships.**

2. **Rajasthan Day:** Every year, **March 30, is celebrated as Rajasthan Day, marking the foundation of India's largest state in 1949.** Rajasthan was created in phases, with the final modifications occurring in 1956 after India's independence. At that time, Rajasthan was almost wholly contained in the Rajputana Agency, a political office of the British Indian Empire. **Rajasthan consists of 22 princely states and estates, all of which assimilated in less than 22 months after India's independence.** Most

rulers were Rajput with the exception being Bharatpur and Dholpur which had Jat rulers.

**3. The Institute of Eminence Scheme:** The UB 2016-17 announced 10 public and 10 private HEIs are to be recognised to emerge as world-class institutions. UGC launched the scheme in 2017 to enable HEIs to emerge as top 100 institutions in the world over time (top 500 by 2027).

**Benefits:** administrative and academic autonomy to freely decide fee, flexible course duration and structure, exemption from approvals for collaborations with foreign institutions. **The selected public institutions will get Rs 1,000 crore each from the Ministry of Education.** However, no financial assistance to the private institutions. **Criteria: The institutions should be among the top 50 in the NIRF in their category, and top 500 in internationally recognised rankings.** Public institutes eligible to apply are central universities, govt-owned and controlled deemed to be universities, institutions of national importance (IITs, NITs), and state univs.

**Procedure:** Institutes need to submit a proposal → with milestones to be achieved over the next 5 to 15 years → To the Empowered Expert Committee (EEC constituted by UGC). In case the institute fails to achieve scheme objectives at the end of the 5th and subsequent years, the EEC could penalise them. Final action on revocation is to be taken by the Ministry of Education. So far 12 (8 public + 4 private institutes) have been granted the IoE status.

**4. New India Literacy Programme:** The government has launched a new Centrally Sponsored Scheme namely, the **"New India Literacy Programme" (NILP) for implementation during five years from the FYs 2022-23 to 2026-27.**

**Target:** All Non-literates aged 15 years and above, with a target of 5.00 crore beneficiaries.

**Components:** Foundational Literacy and Numeracy, Critical Life Skills, Vocational Skills Development, Basic Education, Continuing Education. The method for teaching would primarily be Volunteerism, technology-based and predominantly online. Teaching resources are available on the DIKSHA platform of NCERT, dissemination through TV, Radio, Samajik Chetna Kendra. Under the Ministry of Education. Also named as Nav Bharat Shaksharta karyakram. The term Adult Education to be replaced by 'Education for all'. Focus shall be on all aspirational districts.

## 30<sup>th</sup> March

**1. India's Export Data: Prime Minister, Shri Narendra Modi has lauded the people of India for achieving over \$750 Billion in exports in the 75th year of India's independence.** India's goods and services exports touched an all-time high of \$422 billion and \$254 billion respectively in 2021-22. India exports maximum to USA (18% share) > UAE (6%) > China (5%) > Bangladesh India's target: \$ 2 trillion export by 2030.

**2. Search And Rescue (SAR) Exercise:** Indian Coast Guard recently conducted Regional Search and Rescue exercise at Kakinada, Andhra Pradesh **Exercise Vayu Prahar:** It is a joint Multi Domain Air-Land Exercise of the Indian Army and Air force **Project Akashteer:** Indigenously developed Automated Air Defence Control & Reporting System will enable monitoring of low-level airspace over the battle areas of the Indian Army and effectively control the Ground Based Air Defence Weapon Systems.

**Sarang systems:** Indigenously developed, Sarang is an advanced Electronic Support Measure system for helicopters of the Indian Navy.

**3. Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY):** The Ministry of Rural Development has launched a new initiative called "Captive Employment" under the Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY) program.

**Captive employers:** Any Employer or Industry that provides employment to candidates in their own organization or one of its subsidiaries and has suitable in-house training facilities.

**Launched:** 2014 as part of the National Rural Livelihood Mission (NRLM)

**Objective:** Demand-led skill training aimed at rural poor youth between 15 and 35 years of age. Mandatory coverage of socially disadvantaged groups (SC/ST 50%; Minority 15%; Women 33%). **The emphasis is on Career Progression rather than just training.**

**4. Universal Acceptance day: March 28 is celebrated as Universal acceptance day.** It is a day to encourage policies towards inclusive and multi-lateral internet.

Organized by: Collaborative effort of Universal Acceptance Steering Group (UASG), and Internet Corporation for Assigned Names and Numbers (ICANN). **With over 900 million internet users, India was the second largest online market in the world, behind China.**

**Use:** The adoption of Universal Acceptance in India can add another 500 million broadband users to add value to the digital economy, promote startup ecosystems, and generate employment opportunities.

**5. Global Wind Energy Council (GWEC):** It is a member-based trade association that represents the entire wind energy sector. **Established in 2005 the members of GWEC represent over 1,500 companies, organisations and institutions in more than 80 countries,** including manufacturers, developers, component suppliers, research institutes, national wind and renewables associations, electricity providers, and finance and insurance companies. **Headquarters: Brussels, Belgium.**

**Mission:** To promote the development and deployment of wind power as a sustainable and cost-effective source of energy. The GWEC conducts research, provides market intelligence. Reports published: Global Wind Report

### 31<sup>st</sup> March

**1. Chandrayaan 3 by ISRO:** Chandrayaan-3 is a follow-on mission to Chandrayaan-2 to demonstrate end-to-end capability in safe landing and roving on the lunar surface. It will be launched by GSLV Mk-III from Satish Dhawan Space Center, Sriharikota. The propulsion module will carry the lander and rover configuration till 100km lunar orbit.

**The propulsion module has: Spectro-polarimetry of HAbitable Planet Earth (SHAPE) payload.**

**Lander payloads:** Chandra's Surface Thermophysical Experiment (ChaSTE): To measure the thermal conductivity and temperature.

**Instrument for Lunar Seismic Activity (ILSA):** To measure the seismicity around the landing site.

**Langmuir Probe (LP):** To estimate the plasma density and its variations. A passive Laser Retroreflector Array from NASA is accommodated for lunar laser ranging studies.

**Rover payloads:** Alpha Particle X-ray Spectrometer (APXS) and Laser Induced Breakdown Spectroscopy (LIBS): For deriving the elemental composition in the vicinity of landing site.

**2. 2022 Resilient Democracies Statement:** India, along with the G7 nations and four other countries (Argentina, Indonesia, Senegal and South Africa) **signed a statement that called for "guarding the freedom, independence and diversity of civil society actors" and "protecting the freedom of expression and opinion online and offline"**. These countries have expressed commitment to a rules-based international order. **Principles include:**

**a. Global Responsibility:** This includes promoting respect for the territorial integrity and sovereignty of other countries;

**b. Information Environment:** Ensuring an open, open, global, interoperable, reliable and secure Internet, etc.

**c. Civil Society:** This includes protecting the freedom and diversity of civil society workers;

**d. Inclusion and Equality:** promoting inter-religious dialogue; Social integration and inclusion etc. are included.

**3. EOS-06 satellite:** EOS-06 is third generation satellite in the Oceansat series, which provides continued services of Oceansat-2 with enhanced payload capability. **The satellite onboard carries four important payloads viz. Ocean Color Monitor (OCM-3), Sea Surface Temperature Monitor (SSTM), Ku-Band Scatterometer (SCAT-3), ARGOS.** To observe ocean color data, sea surface temperature and wind vector data to use in Oceanography, climatic and meteorological applications. Also supports value added products such as potential fishing zone using chlorophyll, SST and wind speed and land based geophysical parameters.

**4. Recyclable Plastic:** Recently, scientists from Boise State University in the US have just developed a new kind of plastic that, unlike existing plastics, isn't made from crude oil and its derivatives. **The new recyclable plastic is based on Poly (ethyl cyanoacrylate) or PECA, which is prepared from the monomer used to make Super Glue.** It is formed through a process of polymerization. It has comparable properties to existing plastics and is stable in hot, humid environments. The long polymer chains of the PECA plastic can be thermally 'cracked' at temperatures of 210 °C and the resulting monomers distilled into a clean product to use again.

Ethyl cyanoacrylate is a highly reactive monomer that has been used nearly exclusively to make Super Glue and related fast-setting adhesives. **Polymerization is a process in which relatively small molecules called monomers**

**combine chemically to produce a very large chainlike or network molecule, called a polymer.**  
The monomer molecules may be all alike, or they

may represent two, three, or more different compounds.



## PLACES IN NEWS

### 1. Zojila Pass and Razdan Pass:

- Zoji La is a high mountain pass located in the **Kargil district of Ladakh**.
- The pass **links Leh and Srinagar** and provides an **important link between Union Territories of Ladakh and Kashmir**.
- Zoji La pass **remains closed during winters due to heavy snowfall**, cutting off Ladakh region from Kashmir.
- **In 2018, the Zoji La tunnel project was launched**. The tunnel is **Asia's longest** and strategic bi-directional tunnel, which will provide all-weather connectivity between Srinagar, Kargil and Leh.
- Razdan Pass, is a 3,556 m (11,667 ft) high mountain pass in the Himalayas of Jammu and Kashmir. It connects the Gurez Valley in the north to the Kashmir Valley in the south, and is located in the Bandipora district. **The pass is the only route connecting Gurez with the rest of the world.**

### 2. Mudumalai Tiger Reserve:

- Mudumalai Tiger Reserve is located in the **Nilgiris District of Tamil Nadu state** at the tri-junction of three states, viz, **Karnataka, Kerala and Tamil Nadu**.
- It is a **part of Nilgiri Biosphere Reserve** (1st Biosphere Reserve in India)
- The name **Mudumalai means "the ancient hill range"**. Indeed, it is as old as 65 million years when Western Ghats were formed.
- The Reserve has tall grasses, commonly referred to as **"Elephant Grass"**, Bamboo of the giant variety, valuable timber species like Teak, Rosewood, etc.

### 3. Coral Triangle:

- It spreads **across the 6 countries (CT6) of – Indonesia, Malaysia, Papua New Guinea, the Philippines, the Solomon Islands and Timor Leste**.
  - It occupies **only 1.5% of the world's total ocean area, but represents 30% of the world's coral reefs**. 76% of the world's coral species are found here. It is home to 56% of the Indo-Pacific coral reef fishes.
  - It is the **world's epicentre of marine biodiversity**.
  - It is **one of the 3 mega ecological complexes** on our planet together with the Congo basin and the Amazon rainforest.
- Coral triangle day is celebrated on June 9** by the Coral Triangle Initiative, a multilateral partnership of the CT6 countries.



4. **Huwara: Palestinian town located in the northern West Bank** In February 2023, hundreds of Israeli settlers went on a violent late-night rampage in Huwara as a revenge attack for the deadly shooting of two Israeli settlers in the same town by an unidentified armed Palestinian
5. **Somalia: faced its longest ever drought leading to death of 43000 people**
  - It is a country in the **Horn of Africa**.
  - It has the **longest coastline on Africa's mainland**.
  - Somalia is separated from **Seychelles by the Somali Sea**.
  - Somalia is located at the mouth of the Bab-el-Mandeb; the gateway to the Red Sea and the Suez Canal. **Somalia has only two permanent rivers, the Jubba and Shabelle.**
6. **Kenya:**
  - Riots have emerged in Kenya after **Odinga**, who lost the **presidential election for a fifth time in August**, called for nationwide protests to demonstrate against what he claims, without evidence, is an illegitimate government that stole the election.
  - Kenya is a country in **East Africa** with coastline on the Indian Ocean.
  - **Kenya's capital and largest city is Nairobi**, while its oldest, currently second largest city, and first capital is the coastal city of Mombasa
7. **Valencia, Spain:** experienced a major wildfire destroying more than 1000 acres of forest
8. **Sisupalgarh fort:** The nationally protected **2,700-year-old Sisupalgarh**, a fort city on the outskirts of Bhubaneswar, is being bulldozed by the land mafia. It is located near the city of Bhubaneswar in Odisha.
  - It was **once the capital of Kalinga**, which is the ancient name of Odisha.
  - It **dates back prior to the Mauryan period**. It is a 2,000-year-old fortified city.
  - It is **considered one of the largest and best-preserved ancient fortifications in India**.

- The remains of the fortification were discovered in **1948** by the **Indian archaeologist B.B. Lal**
- It is identified with Kalinganagara of Kharavela and Tosali of Ashoka.
- The construction of Sisupalgarh was based on **JalaDurga** (Water Fort) concept, which in Odia is known as the **GadaKhai concept**.

#### 9. Taurus Strait (Torres Strait)

The Torres Strait also known as **Zenadh Kes**, is a strait between **Australia** and the **Melanesian island of New Guinea**. Bass Strait is a strait separating the island state of Tasmania from the Australian mainland



#### 10. Solomon Islands: A Chinese state company has reportedly bagged the multi-million dollar contract to redevelop an international port in Honiara, the capital of the Solomon Islands.

- It is a nation in **Melanesia**, east of Papua New Guinea with capital Honiara.
- The Solomon Islands have been inhabited by **Melanesian people** for at least 30,000 years.
- It consists of a **double chain of volcanic islands and coral atolls in Melanesia**.
- Melanesia is a **subregion of Oceania** in the southwestern Pacific Ocean.
- The country comprises most of the **Solomons chain—with the exception of Buka and Bougainville**.
- The island is a **constitutional monarchy**, with the British monarch, represented by a governor-general, serving as the formal head of state.

#### 11. Sharda Peeth

- Sharda Peeth is an **abandoned Hindu temple** and ancient centre of learning.
- It is located in the village of **Sharda in the valley of Mount Harmukh**, along the Neelam River in the Pakistani-administered territory of Azad Kashmir. It lies 16 miles to the northwest of the Line of Control.

- **As a Centre of Learning:** Between the 6th and 12th centuries CE, it was one of the foremost centres of **higher learning**, hosting scholars such as **Kalhana, Adi Shankara, and Vairotsana**.
- It is also said to be where **Panini and Hemachandra** completed and stored their writings on Sanskrit grammar.
- **Sharda is the most revered religious place for Kashmiri Pandits**. They believe that Sharada in Kashmir is a **tripartite embodiment of the goddess Shakti: Sharada** (goddess of learning), **Saraswati** (goddess of knowledge), and **Vagdevi** (goddess of speech).
- It is **one of the 18 Maha Shakti Peethas** throughout South Asia that commemorate the location of fallen body parts of the Hindu deity Sati

#### 12. Kartarpur Corridor:

- The corridor – often dubbed as the **“Road to Peace”** – will connect **Gurdwara Darbar Sahib in Pakistan’s Kartarpur with Dera Baba Nanak shrine in India’s Gurdaspur district**.
- The Gurdwara in Kartarpur **stands on the bank of the Ravi**, about 120 km northeast of Lahore. It was here that Guru Nanak assembled a Sikh community and lived for 18 years until his death in 1539.
- Indian Sikhs gather in large numbers for darshan from the Indian side, and binoculars are installed at Gurdwara Dera Baba Nanak.

#### 13. Kanha National Park:

- It is nestled in the **Maikal range of Satpuras in Madhya Pradesh**, the heart of India that forms the central Indian highlands.
- This Tiger Reserve lies in two districts **Mandla and Balaghat** in the state of **Madhya Pradesh**.
- The Kanha National Park is situated in the upper courses of Narmada, along the banks of the Banjar River.
- **Kanha is best known for its evergreen Sal forests**.
- **Fauna:** Barasingha, Tiger, Leopard, Dhole, Bear, Gaur and Indian Python

#### 14. Ishigaki island:

- Japan's Ground Self-Defense Force (GSDF) began operating out of a newly established base on the country's southwestern island of **Ishigaki, Okinawa Prefecture** It is close to Taiwan and the disputed Senkaku islands

## EDUFACTS

### 1<sup>ST</sup> MARCH

1. Yellowstone National Park in US is the **world's 1st national park**.
2. NEP targets to raise enrolment in higher education and vocational education to **50% by 2035**.
3. Over **9000 janaushadhi kendras** already established in country out of the 10000 target.
4. **Revised data for GDP growth according to NSO:**  
2020-21: -5.8%  
2021-22: 9.1%

### 2<sup>ND</sup> MARCH

1. India is the chair of the **1st April Corruption working group of G20** in gurugram with Italy as the co chair.
2. Goal to reduce **anaemia among women**, especially among those who are pregnant, is where **India lags the most**— Lancet Report
3. India's **largest** tiger reserve: **Nagarjunasagar Srisailam** Tiger reserve
4. 25 weeks of pandemic destroyed 25 years of progress in health: Bill Gates.
5. **Scheduled Tribes and other Traditional Forests Dwellers (Recognition of Forest Rights) Act, 2006** (ROFR Act) is the sole legal basis for any regularisation of forest land in any part of the country

### 3<sup>RD</sup> MARCH

1. Pratigya yatras are being organised to popularise **Jan Aushadhi**
2. **Top Palm pil producers:** Indonesia, Malaysia and Thailand
3. **Top soyabean and sunflower oil sources:** Argentina, Brazil, Russia and Ukraine
4. **Record high CO2 emissions reached in 2022:** International Energy Agency
5. Election Commissioners having tenure **below 6 years** is breach of law: SC
6. **Nagaland** elects its **1st woman Member of Legislative Assembly**

### 4<sup>TH</sup> MARCH

1. **China has the World's biggest standing army, world's largest navy and largest aviation force** in Indo Pacific.
2. Road sector has maximum number of delayed projects in India.
3. Union Health and Family Welfare Ministry has received the **Porter Prize 2023** for managing Covid-19 through involvement of ASHA workers
4. Government's millet procurement to fall short of **target by 40%**
5. Workforce engaged in farming registered, for the first time in India's history, a fall in absolute terms.

### 8<sup>TH</sup> MARCH

1. India is **world's dog-bite and rabies capital**
2. India accounts for **half of the world's gendered digital divide**
3. **Theme for International Women's Day 2023:** DigitALL: Innovation and technology for gender equality
4. Vice President appoints his staff in 20 House Committees
5. **2022 winter air in NCR 'cleanest' in 5 years but still toxic:** CSE Report

### 9<sup>TH</sup> MARCH

1. **Budget allocation to Pwd is declining since last 3 years:** 00084% of GDP in 2022-23
2. There has been a **growth of 200% in digital payment volume in the past 4 years:** 45 billion UPI transactions in 2021-22
3. Acute malnutrition among pregnant women has increased by 25% in 12 countries in the past 2 years.
4. Sri Lanka closes in on \$2.9 billion IMF deal after support from China

### 10<sup>TH</sup> MARCH

1. Grazing by livestock leads to **lower carbon storage in soil** compared to grazing by wild herbivores: IISc
2. Abusing someone with caste name during argument won't lead to SC/ST Act case: High Court
3. **57% of vehicles** on Indian roads are **uninsured**

### 13<sup>TH</sup> MARCH

1. 21% rural households do not have access to any type of toilet: Multiple indicator Survey
2. **India is among the top 5 landslide prone countries globally** with Rudraprayag and Tehri Garhwal in Uttarakhand being the most vulnerable districts
3. **Report & Publisher**
  - Statement of Climate of India-IMD
  - Landslide Atlas of India- ISRO

### 14<sup>TH</sup> MARCH

1. 21,200 cases are pending before **National Company Law Tribunal** at the end of January 2023
2. Election commission tells Allahabad High Court that it has no power to ban caste based political rallies during non election period.
3. Agriculture ministry couldn't use, surrendered Rs 44k cr in 3 years.
4. 17 airports have been made operational in the NER: DoNER Minister
5. **39% of world's 50 most polluted cities are in India.**
6. Flatter is faster, leaner is better: Meta CEO Mark Zuckerberg as company cuts another 10,000 jobs.

### 16<sup>TH</sup> MARCH

1. **Uranus has 13 rings and gets its blue colour** because of methane in its atmosphere.
2. 436 CAPF personnel end life in 3 years; task force formed.
3. NGOs received over Rs 22000 crore foreign funds in 2021-22: MHA
4. India overtakes China for the 2nd year in unicorns by **creating 23 new unicorns in 2022**
5. Threats, dissent can be ground for Governor to call floor test: Supreme Court
6. Best performing agencies in terms of conviction rate: ED (96%), NIA (94%), CBI (68%)
7. 49.8 % households in rural and 92 % in urban areas used clean fuel as the primary source of energy for cooking. (78th Round of NSSO Multiple Indicator Survey)

### 18<sup>TH</sup> MARCH

1. 974 URL, social media accounts blocked within the 1st 3 months of 2023 under section 69A of Information technology Act
2. International Criminal Court issues warrant against Putin over Ukraine
3. There is not a single monument connected with Dalits and B R Ambedkar's struggle that has been declared as a national monument
4. Except for cases related to national security, it is not a practise to seek R&AW reports on proposals for appointment of judges.
5. India moots action plan to mark 2023 as year of tourism development at SCO meet
6. 7093 women personnel are serving in Indian Army, 1636 in IAF and 748 in the Navy

### 21<sup>ST</sup> MARCH

1. Chhattisgarh announces **Mukhyamantri Vriksha Sampada Yojana**: country's 1st ever large scale commercial plantation drive
2. India is the **largest producer of millets** in the world
3. Proportion of women has increased in all but one (Bank of Baroda) public sector bank, reaching upto 30% in some banks
4. Practise of sealed cover must end, goes against process of fair justice: CJ

### 23<sup>RD</sup> MARCH

1. **Shaheed Diwas or Martyrs Day** on 23rd March marks the death anniversary of freedom fighters: **Bhagat Singh, Sukhdev and Rajguru**

2. **Lake baikal in Russia**: world's deepest and oldest lake as well as the largest freshwater lake by volume
3. **Lake Tanganyika in Africa**: world's longest freshwater lake
4. Number of foreign businesses exiting India (550) surpass new entrants (470) since 2018, with a 5 year low in 2022

### 28<sup>TH</sup> MARCH

1. 61 deaths by suicide at IITs, IIMs, NITs since 2018: Govt
2. Students to get **new textbooks from NCERT** after a gap of nearly 20 years
3. High court seeks ChatGPT's response on bail plea

### 29<sup>TH</sup> MARCH

1. 99% of police stations are registering 100% FIRs directly on the **Crime and Criminal Tracking Network and Systems (CCTNS)**: Home Minister
2. **Bihar and West Bengal** have the lowest police population ratio in country
3. The proportion of deaths due to **non communicable diseases** has increased from 38% in 1990 to 62% in 2016.
4. The capturing of attendance for all the works (except individual beneficiary schemes/projects) under **National Rural Employment Guarantee Scheme through National Mobile Monitoring System** app has been made mandatory from 1st January, 2023. (Ministry of Rural Development)

### 30<sup>TH</sup> MARCH

1. For the 1st time ever, **Russia is deploying nuclear weapons outside its borders**- in Belarus.
2. Only about **20% of the waste from solar photovoltaic sector is recovered**, the rest is treated informally
3. India has the **world's 4th highest solar PV deployment**
4. House panel proposes overarching apex body for glacier management

### 31<sup>ST</sup> MARCH

1. **G20-CSAR** (Chief Science Advisers Roundtable) was held for the first time to discuss transboundary science and technology issues
2. **Profound risks to society**: Musk, others call for pause on Artificial intelligence
3. Pakistan court strikes down colonial era sedition law: **sec 124A of Pakistan penal code**

## Practice MCQs on Current Affairs- March 2023

**Q.1) Consider the following statements regarding earthquake related aftershocks.**

1. Aftershocks are a sequence of earthquakes that happen after a larger mainshock.
2. Aftershocks occur near the fault zone where the mainshock rupture had occurred.
3. They become less frequent with time, but can continue for weeks or months.

**Which of the above statement is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans:- Option D**

**Q.2) Consider the following statements regarding Darjeeling Himalayan Railway (DHR).**

1. The Darjeeling Himalayan Railway (DHR) started its operations in the pre-independence era.
2. The DHR is a UNESCO World Heritage Site.
3. The DHR is part of the Eastern Frontier Railway (EFR).

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 1, 2
- (c) 1, 3
- (d) 2, 3

**Ans:- Option B**

The 141-year-old mountain railway system connecting **New Jalpaiguri** and **Darjeeling** in West Bengal is under the **Guwahati-headquartered Northeast Frontier Railway (NFR)**

**Q.3) Consider the following statements regarding the Mulethi:**

1. It is a sweet-tasting perennial shrub which has been traditionally used as medicine in Ayurveda.
2. India is the world's largest producer and exporter of Mulethi.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2

(d) Neither 1 nor 2

**Ans:- Option A**

Himachal Pradesh has recently begun the commercial cultivation of **licorice (Mulethi)** to become the **first state in India** to have organized cultivation of Mulethi.

- **Mulethi, commonly known as licorice**, is a sweet-tasting perennial shrub.
- The roots have a sweet taste due to **the presence of glycyrrhizin**, which is 50 times sweeter than sucrose. It has been **traditionally known and used as medicine in Ayurveda** (known in Ayurveda as 'Yashtimadhu') **for rejuvenation**.

**Q.4) Consider the following statements regarding the i-ATS (Indigenous-Automatic Train Supervision) system:**

1. It is India's first indigenously developed Train Control and Supervision System.
2. It has been jointly developed by the Indian Railways and Bharat Electronics Limited (BEL).

**Which of the statements given above is/are not correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

The Delhi Metro Rail Corporation (DMRC) recently launched the **first ever indigenously developed Train Control and Supervision System**.

- It is **India's first indigenously developed Train Control and Supervision System**.
- It is a **computer-based system** that will manage train operations including basic functioning such as running and halting.
- The i-ATS has been jointly developed by the **DMRC and Bharat Electronics Limited (BEL)** under the Government of India's **'Make in India'** and **'AatmaNirbhar Bharat'** initiatives for Metro Rail Transit Systems.
- It will reduce the metro's dependence on foreign vendors for metro operations.

**Q.5) With reference to the ULTRASAT, consider the following statements:**

1. It is developed by the Indian Space Research Organisation and European Space Agency.
2. It will be launched in the Low Earth Orbit.

**Which of the statements given above is/are correct?**

- (a) 1 Only

- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

NASA will launch Israel's first space telescope mission, the **Ultraviolet Transient Astronomy Satellite (ULTRASAT)** in early 2026.

- ULTRASAT is an ultraviolet observatory with a large field of view, that will investigate the secrets of short-duration events in the universe, such as **supernova explosions and mergers of neutron stars**.
- It is planned to launch into a **geostationary orbit around Earth**.
- NASA will provide the launch opportunity, Flight Payload Adapter, and other launch-related responsibilities for ULTRASAT.

**Q.6) With reference to the Adi Tribes, consider the following statements:**

1. They reside in the lower Dibang Valley district areas of Meghalaya.
2. They celebrate a harvesting festival called Solung.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

The Adi constitute a major group and inhabit the lower part of the **Lower Dibang Valley district**, especially the **Roing** and **Dambuk** areas of **Arunachal Pradesh**.

- They are experts in making **cane and bamboo items**.
- The Adis are basically dependent on agriculture. Both **wet rice cultivation and shifting cultivation** are practised.
- **Solung** (a harvesting festival where animal sacrifices and rituals are performed) and **Aran** (a hunting festival where all the male members of the family go hunting) are **two major festivals of the Adi tribes**.

**Q.7) With reference to the International Financial Services Centre Authority, consider the following statements:**

1. It is established by the Securities and Exchange Board of India (SEBI).
2. All members of this authority will have a term of five years.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

The International Financial Services Centre Authority is a **statutory authority** established under the **International Financial Services Centres Authority Act, 2019**.

- **Mandate:** To develop and regulate the financial products, financial services, and financial institutions in the International Financial Services Centres ('IFSC').
- The International Financial Services Centres Authority consists of **nine members, appointed by the central government**.
- **Term:** All members of the IFSC Authority will have a **term of three years**, subject to reappointment

**Q.8) The "Chip 4" alliance, recently seen in the news, is related to which one of the following?**

- (a) Renewable energy
- (b) Vaccine development
- (c) Semiconductors
- (d) Genetic engineering

**Ans:- Option C**

- The **"Chip 4" or "Fab 4" alliance** includes **four of the world's top producers of semiconductors**: the U.S., Japan, Taiwan, and Korea.
- It represents more than **70 percent of the value of the global semiconductor industry**.
- It was **first proposed by the US in March 2022** as part of wider plans aimed at enhancing the "security" and "resilience" of semiconductor supply chains, including by reducing the world's reliance on chips made in China.

**Q.9) Consider the following statements.**

1. The Supreme Court of India was established on the day when Constitution of India came into force.
2. The Supreme Court of India replaced both the Federal Court of India and the Judicial Committee of the Privy Council which were then at the apex of the Indian court system.
3. The original Constitution of India left it to Parliament to increase the number of the Judges of the Supreme Court.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3

- (c) 2, 3  
(d) 1, 2, 3

**Ans:- Option C**

On the **January 28, 1950**, two days after India became a **sovereign democratic republic**, the Supreme Court of India came into being.

**Q.10) Consider the following statements.**

1. Normally, when water freezes, it crystallizes and its molecules are arranged into hexagonal solid structure called ice.
2. Ice is more dense than water.
3. Amorphous ice lacks long-range order in its molecular arrangement.

**Which of the above statements is/are correct?**

- (a) 1, 2  
(b) 1, 3  
(c) 2, 3  
(d) 1, 2, 3

**Ans:- Option B**

Normally, when water freezes, it crystallizes and its molecules are arranged into the familiar hexagonal, solid structure that we call ice. Ice is less dense than its liquid form — an unusual property for a crystal. Depending on conditions such as pressure and the speed of freezing, water can also solidify in any of two dozen other regular arrangements. **Amorphous ice is different: it has no such order.**

**Q.11) Consider the following statements regarding Grievance Appellate Committee (GAC):**

1. It will examine user complaints regarding unsatisfactory grievance redressal by social media intermediaries.
2. Social media intermediaries can appeal against GAC's order in the High Court or Supreme Court within 30 days of the order.

**Which of the statements given above is/are correct?**

- (a) 1 only  
(b) 2 only  
(c) Both 1 and 2  
(d) Neither 1 nor 2

**Ans:- Option A**

The GAC was one of the provisions in the recently amended **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.**

- GAC will look into user complaints regarding unsatisfactory grievance redressal by social media intermediaries.

- Three such bodies have been constituted of professionals from various fields.
- Each GAC will **comprise three government-appointed, full-time members, including a chairperson.**
- Any user aggrieved by a decision of a platform's Grievance Officer can appeal to the GAC **within 30 days** of the receipt of communication from the Grievance Officer.
- The Committee has to dispose of the appeals **within 15 days of receiving them.**
- GAC's decisions will be binding on the intermediary.

**Q.12) Consider the following statements regarding the CE-20 cryogenic engine:**

1. It is the first Indian cryogenic engine to feature a gas-generator cycle.
2. It will power the Cryogenic Upper Stage of the LVM3 launch vehicle for the Chandrayaan-3 mission.

**Which of the statements given above is/are correct?**

- (a) 1 only  
(b) 2 only  
(c) Both 1 and 2  
(d) Neither 1 nor 2

**Ans:- Option C**

- It has been designed and developed by the **Liquid Propulsion Systems Centre (LPSC)**, a subsidiary of ISRO.
- It will power the Cryogenic Upper Stage of the LVM3 launch vehicle for the **Chandrayaan-3 mission.**
- It is the **first Indian cryogenic engine** to feature a gas-generator cycle.
- It is **one of the most powerful upper-stage cryogenic engines in the world.**

**Q.13) Consider the following statements regarding Anthrax.**

1. People with cuts or scrapes in the skin can get infected with anthrax.
2. Flies also appear to play a significant role in explosive outbreaks of the disease.
3. One way to prevent the disease is by vaccination of livestock so that the disease cannot spread.

**Which of the above statements is/are correct?**

- (a) 1, 2  
(b) 1, 3  
(c) 2, 3

(d) 1, 2, 3

**Ans:- Option D**

**Q.14) Consider the following statements regarding UN-General Assembly.**

1. UN-General Assembly elects the non-permanent members of the UN Security Council.
2. Each sovereign state gets one binding vote and permanent members enjoy Veto powers.
3. All the decisions at the General Assembly must be approved by two-thirds majority of Member States.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans:- Option A**

Decisions are taken through a vote. Admission of new members and budgetary matters require a **two-thirds majority**, while the decision on other issues are taken by a simple majority.

- Each sovereign state gets **one vote** and the votes are not binding on the membership, except in budgetary matters.
- The Assembly has no binding votes or veto powers like the UN Security Council.
- The UNGA can express world opinion, promote international cooperation in various fields and make recommendations to the UNSC and **elect the Security Council's non-permanent members.**

**Q.15) Consider the following statements regarding the QR-Code based Coin Vending Machine (QCVM) introduced by the Reserve Bank of India (RBI) recently:**

1. It is a cashless coin dispensation machine that can dispense coins using United Payments Interface (UPI).
2. It will have the option for physical tendering of banknotes and their authentication.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- It will eliminate the need for physical tendering of banknotes and their authentication.

- It will be launched with an aim **to promote the distribution of coins and enhance the accessibility to coins.**

**Q.16) Consider the following statements regarding Prohibition of Child Marriage Act 2006.**

1. The Prohibition of Child Marriage Act 2006, says that child marriages are illegal and voidable at the option of contracting party being a child.
2. The Act punishes anyone who performs, conducts, directs, or abets any child marriage.
3. The Act does not stipulate any minimum marriageable age for men.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans:- Option A**

The Act stipulates **18 years** as the minimum marriageable age for **women**, while for **men** it is **21 years**. The Act punishes child marriage with "rigorous imprisonment which may extend to two years or with fine which may extend to one lakh rupees or with both."

**Q.17) Consider the following statements regarding the deficiency of Vitamin D in human body.**

1. Vitamin D deficiency is often associated with rickets.
2. In the absence of vitamin D, the skeletal muscle is starved of energy, decreasing muscle mass.
3. It leads to hardening of bones resulting in skeletal deformities.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans:- Option A**

Vitamin D deficiency is often associated with **rickets**. In rickets, the bone tissue does not correctly mineralise calcium and phosphorus, leading to softening of bones resulting in **skeletal deformities**.

**Q.18) Consider the following statements regarding the CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora):**

1. It is a legally binding international agreement between governments.
2. The CITES Secretariat is administered by UNEP and is located in Nairobi, Kenya.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- Although CITES is legally binding on the Parties – in other words, they have to implement the Convention – it does not take the place of national laws.
- The CITES Secretariat is administered by **UNEP** and is located in **Geneva, Switzerland**.
- The Conference of the Parties to CITES is the **supreme decision-making body of the Convention** and comprises all its parties.

**Q.19) With reference to the PMLA Appellate Tribunal, consider the following statements:**

1. The state Government has been given the power to set up an Appellate Tribunal under the Prevention of Money Laundering Act, 2002 (PMLA).
2. The Tribunal consists of a Chairperson and twelve other Members.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

The Central Government has been given the power to set up an Appellate Tribunal under the **Prevention of Money Laundering Act, 2002 (PMLA)**.

- **Composition:** The Tribunal consists of a Chairperson and two other Members.
- **Qualifications for appointment:**
- A person shall not be qualified for appointment as Chairperson unless he is or has been a Judge of the Supreme Court or of a High Court judge or is qualified to be a Judge of the High Court.
- A person shall not be qualified for appointment as a Member unless he/she has been a member of the Indian legal service/Indian revenue service/Indian economic service/Indian Customs and central excise service/Indian Audit and accounts Service.
- **Tenure:** They are appointed for a **term of five years or till the age of 65 years**, whichever is earlier.

- **Functions:** Appellate Tribunal has been constituted to hear appeals against the orders of the Adjudicating Authority and the authorities under the PMLA.

**Q.20) With reference to the Kayasthas, consider the following statements:**

1. They were subordinates to the rulers of the Kakatiya dynasty.
2. They ruled the region with Vallur as the capital.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C**

13th century Hindu temple ruins have been unearthed atop a hillock in the **Pushpagiri Kshetram in Andhra Pradesh**.

- The architectural features of the ruins reveal a style that is contemporary to a temple at **Vallur**, built by the **Kayastha rulers**.
- Pushpagiri is referred to as **Hari-Hara Kshetra**, as there are a number of temples dedicated to both Shiva and Vishnu.
- It is located on the banks of the **Pennar river**.
- **Pushpagiri is also called the second Hampi** due to its beautiful architecture.

**Q.21) Dhara, recently seen in the news, is an initiative of which of the following union Ministry?**

- (a) Ministry of Jal Shakti
- (b) Ministry of Power
- (c) Ministry of Culture
- (d) None of these

**Ans:- Option C**

- The Dhara initiative taken up under the aegis of **Azadi Ka Amrit Mahotsav** by the **Ministry of Culture** has been completed one year.
- During its yearlong activities, it has been **successful in creating public awareness, and stakeholder participation** and helped to devise a framework for the promotion and revival of multiple domains of Indian Knowledge Systems.
- The programme was conceptualized as a series of lectures and discussions dedicated to specific areas of inquiry highlighting India's civilizational achievements.

**Q.22) Consider the following statements regarding the Nano Urea:**

1. It is a nanotechnology-based agri-input that provides micronutrients like Iron(Fe) and Zinc(Zn) to plants.
2. IFFCO Nano Urea is the only nano fertilizer approved by the Government of India and included in the Fertilizer Control Order (FCO).

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option B

- It is a **nanotechnology-based revolutionary Agri-input** that provides nitrogen to plants.
- It is developed and patented by the **Indian Farmers Fertiliser Cooperative Limited (IFFCO)**.
- IFFCO Nano Urea is the **only nano fertilizer approved by the Government of India** and included in the Fertilizer Control Order (FCO).

Q.23) Consider the following statements.

1. Judicial review is considered a basic structure of the constitution.
2. Article 11 declares that all laws that are inconsistent with or in derogation of any of the fundamental rights shall be void.
3. The term 'untouchability' has been defined in Untouchability (Offences) Act, 1955

Which of the above statements is/are correct?

- (a) 2, 3
- (b) 1, 2
- (c) 1 only
- (d) 1, 3

Ans:- Option C

The term 'untouchability' has not been defined either in the Constitution or in the Act. **Article 13** declares that all laws that are inconsistent with or in derogation of any of the fundamental rights shall be void. In other words, it expressly provides for the doctrine of judicial review. This power has been conferred on the **Supreme Court (Article 32) and the high courts (Article 226)** that can declare a law unconstitutional and invalid on the ground of contravention of any of the Fundamental Rights.

Q.24) Which of the following countries shares border with Arabian Sea?

1. Oman
2. Jordan
3. Pakistan
4. Yemen

Select the correct answer code:

- (a) 1, 2, 3
- (b) 1, 3
- (c) 1, 3, 4
- (d) 1, 2, 3, 4

Ans:- Option C

Q.25) Which of the following statements best describe the 'hawkish stance in RBI monetary policy'?

- (a) RBI's top priority is to keep the inflation low.
- (b) RBI is prepared to expand the money supply to boost economic growth.
- (c) RBI can either cut rate or increase rate.
- (d) Cut in the interest rate by RBI is off the table.

Ans:- Option A

A hawkish stance indicates that the **central bank's top priority is to keep the inflation low**. During such a phase, the central bank is willing to hike interest rates to curb money supply and thus reduce the demand. **A hawkish policy also indicates tight monetary policy.**

Q.26) With reference to the Scrub typhus, consider the following statements:

1. It is a parasitic disease spread through the bites of infected larval mites.
2. Vaccine is available for this disease.

Which of the statements given above is/are correct?

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Ans:- Option D

- Scrub typhus is a life-threatening infection caused by **Orientia tsutsugamushi bacteria** which is a major public health threat in South and Southeast Asia.
- It is spread to people through **bites of infected chiggers** (larval mites).
- **Symptoms:** The most common symptoms of scrub typhus include fever, headache, body aches, and sometimes rash.
- **Treatment:** Scrub typhus should be treated with the **antibiotic doxycycline**. Doxycycline can be used in persons of any age.
- There is no vaccine available for this disease.

**Q.27) Consider the following statements regarding the European Travel Information and Authorisation System (ETIAS):**

1. It is a digital travel authorization system for visa-exempt visitors to the EU and its Schengen Area.
2. It is a completely electronic system that allows and keeps track of visitors from countries who do not need a visa to enter the Schengen Zone.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C)**

**Q.28) Kermadec Islands, recently seen in the news, lies in which one of the following oceans?**

- (a) Indian Ocean
- (b) Atlantic Ocean
- (c) Pacific Ocean
- (d) Arctic Ocean

**Ans:- Option C)**

- They are **volcanic island group in the South Pacific Ocean**, 600 mi (1,000 km) northeast of Auckland, New Zealand.
- They are a **dependency of New Zealand**.
- The islands are a volcanic island arc, formed at the convergent boundary where the Pacific Plate subducts under the Indo-Australian Plate

**Q.29) Consider the following statements regarding Enemy property in India:**

1. Enemy properties are those left behind by the people who took citizenship of Pakistan and China after leaving India during the partition and after the 1962 war.
2. Maximum number of enemy properties is in Gujarat.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- The enemy properties are those left behind by the people who took **citizenship of Pakistan and China** after leaving India during the partition and **after 1962 war**.

- The enemy properties are vested with the **Custodian of Enemy Property for India (CEPI)**, an authority created under the Enemy Property Act 1968.
- The **2017 amendment to the act** (Enemy Property (Amendment and Validation) Act, 2017) stated that the successors of those who migrated to Pakistan and China ceased to have a claim over the properties left behind in India.
- Maximum number of enemy properties is in **Uttar Pradesh** - 4,991. **Bengal** has 2,735, and **Delhi** has 487.

**Q.30) With reference to the Lewis Super Acid, consider the following statements:**

1. It is used as a catalyst to accelerate chemical reactions.
2. It helps in converting non-biodegradable fluorinated hydrocarbons into sustainable chemicals.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C**

**Q.31) With reference to the Army Court martial, consider the following statements:**

1. The Armed Forces Tribunal is empowered with the adjudication of court martials in India.
2. The President and Governor can pardon a sentence given by a court martial.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- The Armed Forces Tribunal Act 2007 was passed by the Parliament and led to the formation of the Armed Forces Tribunal.
- This tribunal is empowered with the adjudication of disputes and complaints concerning the commission, appointments, enrolments and conditions of service in respect of persons subject to the **Army Act, 1950, The Navy Act, 1957 and the Air Force Act, 1950**

- The Judicial Members are retired High Court Judges and Administrative Members are retired Members of the Armed Forces who have held the rank of Major General/ equivalent or above for a period of three years or more.
- **Judge Advocate General (JAG)** who has held the appointment for **at least one year** is also entitled to be appointed as the Administrative Member.
- **Pardoning power:** The president of India can use his **judicial power under Article 72 of the Constitution** to pardon, reprieve, respite or remission of punishment or sentence given by a court martial and the Governors of the states are not empowered with such power.

**Q.32) Cutlass Express 2023, which was recently seen in the news is:**

- (a) A multinational maritime exercise.
- (b) A bilateral army exercise
- (c) A WHO's Tuberculosis (TB) campaign
- (d) None of these

**Ans:- Option A**

- **INS Trikand** is participating in the **International Maritime Exercise/ Cutlass Express 2023 (IMX/CE-23)** being held in the Gulf region from **26 Feb to 16 Mar 23**.
- Cutlass Express 2023 is one of the **largest multinational maritime exercises** in the world.
- It aims to bolster regional security and stability in the Western Indian Ocean.

**Q.33) MSCI indexes, recently seen in news is related to**

- (a) Multidimensional Poverty
- (b) Food and Nutrition Security
- (c) Stock Market
- (d) WPI and CPI Inflation

**Ans:- Option C**

- MSCI, or **Morgan Stanley Capital International**, is owned by the multinational investment management and financial services company **Morgan Stanley**.
- It is a **leading provider of critical decision support tools**, including stock indexes, and services for the global investment community. It has over 160,000 indexes in its portfolio.
- MSCI Indexes facilitate the construction and monitoring of portfolios in a cohesive and complete manner, avoiding benchmark misfit.

**Q.34) Which of the following factors show signs of an impending recession?**

- (a) Steady rise in job losses
- (b) Inverted yield curve
- (c) Both a and b
- (d) Neither a nor b

**Ans:- Option C**

**Q.35) Consider the following statements regarding Prevention of Money Laundering Act.**

1. The offence under this law is mainly the laundering of money made through crimes such as terrorism, drug-trafficking and corruption.
2. The Enforcement Directorate under the PMLA Act is considered as "police" and hence follow the provisions of Code of Criminal Procedure (CrPC) for search, seizure, arrest, attachment of properties.
3. The cases booked under the Prevention of Money Laundering Act are non-bailable.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans:- Option A**

The Enforcement Directorate under the PMLA Act is not considered "police" and hence does not follow provisions of the CrPC for search, seizure, arrest, attachment of properties. The Supreme Court recently upheld the constitutional validity of the **Prevention of Money Laundering Act, 2002**.

**Q.36) Consider the following statements regarding International Big Cat Alliance (IBCA):**

1. It is a United Nations proposed global alliance for the protection and conservation of the seven major big cats.
2. Membership to the alliance will be open only to countries that contain the natural habitat of big cats.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- It is a proposed **mega-global alliance** that will work toward the **protection and conservation of the seven major big cats** — tiger, lion, leopard, snow leopard, puma, jaguar, and cheetah.

- Membership to the alliance will be **open to 97 'range' countries**, which contain the natural habitat of these big cats, as well as other interested nations, international organizations, etc.

**Q.37) With reference to Point Calimere Wildlife Sanctuary, consider the following statements:**

1. It is located in the state of Karnataka.
2. It is designated as one of the UNESCO world heritage sites of 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:- Option D**

- Point Calimere Wildlife Sanctuary was established in the year of **1967** and is situated in the **state of Tamil Nadu**.
- It houses the famous bird sanctuary of **Vedaranyam and the Talaigayar forests**.
- It is flanked by the Bay of Bengal in the east, and Palk Strait in the south.
- It primarily **focuses on the protection and conservation of the black antelopes**, an endangered and endemic species that are found in this region.
- It is **designated as a Ramsar site**.

**Q.38) With reference to the National Platform for Disaster Risk Reduction, consider the following statements:**

1. It was established by the Indian government in 2013 by UN
2. It helps in discussing issues related to all kinds of disasters 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:- Option B**

- It was established by the Indian government in **2013** to bring together all segments of **the disaster risk community in India**, including government officials, parliamentarians, mayors, the media, international agencies, non-governmental organisations, representatives from local communities, scientific and academic

institutions, and corporate businesses, among others.

- The theme of this year's session: **"Building Local Resilience in a Changing Climate."**
- **Functions:** It facilitates the exchange of experiences, views, and ideas, presents the results of research and action, and explores the possibility of cooperating across continents.
- As a result of this platform, **National Action Plans on Disaster Risk Reduction will have a strategic direction and an action plan.**
- This platform helps in discussing issues related to all kinds of disasters in India.

**Q.39) Consider the following statements regarding the Real Time Train Information System (RTIS) project:**

1. RTIS devices that use satellite imagery are installed on the trains under the project.
2. The project is executed by the Centre for Railway Information Systems (CRIS).

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C**

**Q.40) With reference to the Muggler crocodile, consider the following statements:**

1. It is mainly found in saltwater habitats.
2. It is listed as a Vulnerable species in the IUCN Red list.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- It is **native to freshwater and inhabits marshes, lakes, rivers and artificial ponds**.
- The muggler is found in **15 Indian states, with the largest populations in the middle Ganges (Bihar-Jharkhand) and Chambal (Madhya Pradesh, Gujarat and Rajasthan) basins**.
- They are found all over south Asia — India, Pakistan, Sri Lanka, Nepal and Bangladesh — as well as south-eastern Iran.
- Conservation status

- **IUCN Red List:** Vulnerable
- **CITES Appendix I**

**Q.41) Which among the following best describes 'PALM 400', that was in the news recently?**

- It is a genetically modified variety of palm trees.
- It is a high-precision attack drone.
- It is an earth-sized exoplanet.
- None of the above

**Ans:- Option B**

- The PALM 400 - acronym for '**Precision Attack Loitering Munition**' is a long-range, high-precision loitering munition system.
- It is built to fly over areas where armored vehicles are concentrated or are anticipated.
- Each PALM 400 selects its targets when armored vehicles enter the kill zone and launch an armor-piercing projectile, penetrating it from the top where there is least protection.
- **The Indian army has recently tested the prototype version of the PALM-400 drones successfully.**

**Q.42) With reference to Lupus disease, consider the following statements:**

- It is a parasitic disease caused by brain eating parasites.
- The SLEDAI disease activity index is used for the prognosis of this disease.

**Which of the statements given above is/are correct?**

- 1 Only
- 2 Only
- Both 1 and 2
- Neither 1 nor 2

**Ans:- Option A**

- Lupus is an **autoimmune disease** in which the body's immune system starts attacking your own tissues and organs.
- The condition **primarily affects the kidney**, but it also has an impact on the skin, blood vessels, connective tissue, heart, brain, and nearly every other organ.
- It is treated by immunosuppression via drugs such as **mycophenolate, azathioprine, cyclophosphamide, and rituximab.**

**Q.43) With reference to the Multi-Angle Imager for Aerosols mission, consider the following statements:**

- It is a joint mission between NASA and the ISRO.

2. The main objective of this mission is to investigate the health impacts of air pollution in the world's most populated cities.

**Which of the statements given above is/are correct?**

- 1 Only
- 2 Only
- Both 1 and 2
- Neither 1 nor 2

**Ans:- Option B**

- It is a joint mission between **NASA** and the **Italian Space Agency ASI.**
- This will investigate the health impacts of air pollution in the world's most populated cities.
- It will consist of the **PLATiNO-2 satellite**, which will be provided by ASI, and a science instrument that will be built at NASA's Jet Propulsion Laboratory (JPL).

**Q.44) Consider the following statements regarding the creation of new districts in India.**

- The creation of new districts or change of name of a district in India is the exclusive power of the Central Government and the state government does not have any role in it.
- Central governments can also create new districts by simply issuing an order and through gazette notification.
- At present, Uttar Pradesh has the most districts in India.

**Which of the above statements is/are correct?**

- 1, 2
- 3 only
- 2, 3
- 1, 3

**Ans:- Option B**

- This power lies with the state governments, who can pass a law in the Assembly or simply issue an order and notify it in the gazette.
- The central government does play a role, however, when a change of name of a district or railway station is contemplated. The request of the state government in this regard is sent to several central government departments **before a no-objection certificate is issued.**
- **Uttar Pradesh** has the most districts (75) in the country, followed by **Madhya Pradesh** (52).

**Q.45) Consider the following statements regarding Ocean deoxygenation.**

- Ocean deoxygenation is the minimum increase of oxygen minimum zones in the world's oceans

as a consequence of anthropogenic emissions of carbon dioxide.

2. The areas of Sea water that is depleted of dissolved oxygen is called Anoxic waters.
3. Oxygen is more soluble in warmer water.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1, 3
- (c) 2 only
- (d) 1, 2, 3

**Ans:- Option C**

- Ocean deoxygenation is the **expansion of oxygen minimum zones in the world's oceans as a consequence of anthropogenic emissions of carbon dioxide**. The change has been fairly rapid and poses a threat to fish and other types of marine life, as well as to people who depend on marine life for nutrition or livelihood.
- Most of the excess heat from CO<sub>2</sub> and other greenhouse gas emissions is absorbed by the oceans. Warmer oceans cause deoxygenation both because oxygen is less soluble in warmer water, and through temperature driven stratification of the ocean which inhibits the production of oxygen from photosynthesis.
- **Anoxic waters are areas of sea water, fresh water, or groundwater that are depleted of dissolved oxygen and are a more severe condition of hypoxia.**

**Q.46) Consider the following statements regarding the U.S.-India initiative on Critical and Emerging Technology (iCET):**

1. The goal of the initiative is to elevate and expand strategic technology partnership and defense industrial cooperation between the two countries.
2. The initiative will be spearheaded by Niti Aayog in India and the Office of Science and Technology Policy in the US.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- It was launched by the **US President and Indian Prime Minister** on the sidelines of the **Quad summit on May 2022**.
- **Goal:** To elevate and expand Indo-U.S. strategic technology partnership and defense industrial cooperation between the governments,

businesses, and academic institutions of the two countries.

- The initiative will be spearheaded by the **National Security Council Secretariat in India and the US National Security Council**.

**Q.47) WINS Awards 2023, which was recently seen in the news, is an initiative of which union Ministry?**

- (a) Ministry of Housing and Urban Affairs
- (b) Ministry of Power
- (c) Ministry of Jal Shakti
- (d) None of these

**Ans:- Option A**

- The WINS Awards 2023 aims to recognize and disseminate inspiring and exemplary initiatives in **urban sanitation and waste management** by **women-led organizations** and individual women.
- Applications for the Awards are open to **Self-Help Groups (SHGs), Micro-enterprises, Non-Government Organisations, Startups and Individual Women Leaders/Swachhata champions**.

**Q.48) Consider the following statements regarding Asteroids.**

1. Asteroids are rocky objects that orbit the Sun.
2. Trojans have orbits that pass close to the Earth, and all of which are classified as potentially hazardous asteroids (PHAs)
3. Near Earth asteroids are asteroids that share an orbit with a larger planet.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 1, 2
- (c) 1, 3
- (d) 2, 3

**Ans:- Option A**

- Asteroids are divided into three classes.
- **First** are those found in the main asteroid belt between **Mars and Jupiter**, which is estimated to contain somewhere between 1.1-1.9 million asteroids.
- The **second group** is that of **trojans, which are asteroids that share an orbit with a larger planet**. NASA reports the presence of **Jupiter, Neptune and Mars trojans**. In 2011, they reported an Earth trojan as well.
- The **third** classification is **Near-Earth Asteroids (NEA)**, which have orbits that **pass close to the Earth**. Those that cross the Earth's orbit are called **Earth-crossers**. More than 10,000 such

asteroids are known, out of which over 1,400 are classified as **potentially hazardous asteroids (PHAs)**.

**Q.49) Consider the following statements regarding Urban local bodies.**

1. 74th Constitution Amendment Act of 1992 identifies 29 local level functions to be devolved to municipalities, including planning for economic and social development, regulation of land, construction of buildings, urban planning and public health.
2. As per the amended Municipal Corporation Act of 1888, Mayors are elected by the elected municipal councillors in all states.
3. Since the enactment of 74th Constitution Amendment Act, elections to urban local bodies is held once in every five years in all states in India.

**Which of the above statements is/are correct?**

- (a) 1,2
- (b) 2, 3
- (c) 1, 3
- (d) None

**Ans:- Option D**

- In some States, elections to urban local bodies have not been held for years, defeating the lofty goal of decentralised governance. The idea of giving more authority to the third tier of governance has suffered serious stunting, in spite of the 74th Constitution Amendment Act of 1992 identifying 18 local level functions to be devolved, including planning for economic and social development, regulation of land, construction of buildings, urban planning and public health.
- Only In some states like **Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Uttar Pradesh and Uttarakhand, Mayors are directly elected by the people.**

**Q.50) Consider the following statements regarding the ALH Dhruv helicopters:**

1. It is a multi-role and multi-mission light utility helicopter operated by army and navy only.
2. It is developed indigenously by the Defence Research and Development Organisation (DRDO).

**Which of the statements given above is/are not correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- Advanced Light Helicopter (ALH) Dhruv is a **multi-role and multi-mission light utility helicopter** in the 5.5-ton weight class, intended for both **military and civil operators**.
- It is developed indigenously by **Hindustan Aeronautics Limited (HAL)**.
- The ALH choppers are operated by all three Indian defense forces, including the Army, Navy, and Air Force, along with the Indian Coast Guard.

**Q.51) Mount Merapi, which was recently seen in the news, is located in which country?**

- (a) Indonesia
- (b) Brazil
- (c) Russia
- (d) None of these

**Ans:- Option A**

Mount Merapi (Mountain of Fire) is one of the **world's most active volcanos located in Indonesia**. Indonesia is located on the **Ring of Fire**, a vast area around the Pacific Ocean.

**Q.52) Which among the following best describes 'NASAMS', recently seen in the news?**

- (a) It is an anti-submarine torpedo system.
- (b) It is a Shivalik- class stealth multi-role frigate.
- (c) It is an air defense system.
- (d) It is a security alliance of Nordic nations.

**Ans:- Option C**

- It is a medium-range ground-based air defense system.
- It is designed to engage air targets at low and medium altitudes in all weather conditions.
- It was designed and developed jointly by **Raytheon (United States) and Kongsberg Defence&Aerospace (Norway)**.
- It is the **world's first networked short- and medium-range air defense system** that could integrate with other equipment and air defense systems.

**Q.53) Consider the following statements regarding Virtual Digital Assets (VDA):**

1. They are defined under any Information Technology Act.
2. They can be transferred, stored, or traded electronically.

**Which of the statements given above is/are correct?**

- (a) 1 only

- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- According to the Income tax act, '**virtual digital asset**' refers to any information, code, number, or token (not being Indian currency or foreign currency) generated through cryptographic means or otherwise and can be called by whatever name.
- It can be transferred, stored, or traded electronically.
- The definition of VDA also specifically includes a **non-fungible token, i.e., NFT**, or any other token of similar nature, by whatever name is called.

**Q.54) Consider the following statements.**

1. At present only private sector units can enter into agreements with the Union Ministry of Culture to adopt and maintain State-owned archaeological sites or monuments.
2. Monuments selected for the Adopt a heritage scheme must not necessarily be protected by the Archaeological Survey of India (ASI).

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- Private firms, companies, and public sector units can enter into agreements with **the Union Ministry of Culture** to adopt and maintain **State-owned archaeological sites or monuments**. Businesses that enter such agreements are going to be known as **Monument Mitras**.
- Many monuments selected for the '**Adopt a Heritage**' scheme are on **ASI lists**. However, there are some monuments selected for the scheme that are not protected by the ASI.

**Q.55) Founding Act on Mutual Relations, Cooperation and Security, 1997 was signed between**

1. United States
2. Russia
3. NATO
4. European Union

**Select the correct answer code:**

- (a) 1, 3, 4

- (b) 1, 2, 3
- (c) 2, 3
- (d) 1, 2, 3, 4

**Ans:- Option C**

**Q.56) Consider the following statements regarding the recently constituted High-Powered Committee on Wild Animals:**

1. It will cater to all wild animals in need of rehabilitation or rescue anywhere in Assam.
2. Secretary to the Minister of Environment, Forest, and Climate Change acts as the Chairman of the committee.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- **High-Powered Committee on Wild Animals:** It is set up under the chairmanship of **former judge Justice Deepak Verma**.
- **Mandate:** To consider approval, dispute, or grievance concerning the transfer or import of wild animals into India or their procurement or welfare by any rescue or rehabilitation center or zoo.
- It was initially constituted to oversee the transfer of captive wild elephants from the northeastern States. **The ambit of the committee was earlier restricted to Tripura and Gujarat.**
- It will now have a **wider responsibility and will cater to all wild animals in need of rehabilitation or rescue anywhere in India**

**Q.57) With reference to Macquarie Island, consider the following statements:**

1. It is located in the Atlantic Ocean.
2. It is designated as UNESCO's World Heritage site.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- Macquarie Island is located around 1,500km southeast of Tasmania.

- This is the **only piece of land in the world formed entirely of oceanic crust**.
- **Macquarie Ridge** is one of only 3 such ridges that impede the **Antarctic Circumpolar Circulation**. This results in distinct differences between the west and east sides of the ridge, which are used in different ways by different species

**Q.58) With reference to the Urban 20(U20) initiative, consider the following statements:**

1. It is a city diplomacy initiative launched in 2018 at CBD summit.
2. The 2023 event of U20 was chaired by the City of Ahmedabad.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- Urban20 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 was **chaired by the City of Ahmedabad**.

**Q.59) Consider the following statements.**

1. Less than half of the total amount of oxygen in the earth's atmosphere is created by creatures in the ocean.
2. Territorial waters as defined by UNCLOS make up more than half of the surface of the Earth.
3. Oceans store more carbon dioxide than what's currently found in the earth's atmosphere.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 3 only
- (c) 2, 3
- (d) 1, 2, 3

**Ans:- Option B**

More than half of the total amount of oxygen in our atmosphere is created by creatures in the ocean. At the same time, **oceans store 50 times more carbon dioxide than what's currently found in our atmosphere**. The warmer the ocean gets, the less CO<sub>2</sub> it can store. It's a vicious cycle: the warmer it gets, the less our oceans can protect the planet from even more extreme weather events.

**Q.60) Consider the following statements regarding Sansad Ratna Awards 2023.**

1. Sansad Ratna Awards are given by the Government of India to recognise and felicitate the top-performing MPs on the basis of their work in the apex legislative body.
2. The Sansad Ratna Awards were inspired by the teachings of former President APJ Abdul Kalam.
3. Even parliamentary committees are chosen for the award.

**Which of the above statements is/are correct?**

- (a) 1, 2
- (b) 1 only
- (c) 2, 3
- (d) 1, 2, 3

**Ans:- Option C**

- The Sansad Ratna Awards were **instituted in 2010**, inspired by the **teachings of former President APJ Abdul Kalam**, who launched the first edition of the Award function in Chennai. They seek to **recognise and felicitate the top-performing MPs on the basis of their work in the apex legislative body**.
- The Jury Committee has **chosen a total of 13 MPs and two parliamentary committees for the award**, with a lifetime award being presented for the first time this year.
- The Sansad Ratna Awards are not given by the Government of India, though over the years, its jury members have included individuals in the government. The awards were instead the **brainchild of K Srinivasan, a communication strategist who founded the Prime Point Foundation in 1999**.

**Q.61) Doha Political Declaration, recently seen in the news, is associated with which one of the following?**

- (a) Organisation of Islamic Cooperation (OIC)
- (b) Conference on the Least Developed Countries (LDC5)
- (c) Organisation for Economic Co-operation and Development (OECD)
- (d) World Trade Organization (WTO)

**Ans:- Option B**

It is a key outcome of the **second part of the LDC5 conference** held under the theme **“From Potential to Prosperity”** in Qatar.

- The declaration welcomed the **Doha Programme of Action (DPoA)**
- It requested UN secretary-General to ensure the full mobilization and coordination of all parts of the UN system to facilitate coordinated implementation of the Doha Programme of Action
- The DPoA for the **Least Developed Countries** was **adopted** at the first part of the **LDC5 conference held in New York in 2022.**
- It is a **10-year plan to put the world’s 46 most vulnerable countries** back on track to achieving the **UN-mandated Sustainable Development Goals (SDG)**

**Q.62) Exercise La Perouse – 2023, which was recently seen in the news is:**

- (a) Cultural exchange programme
- (b) A multilateral maritime exercise
- (c) An Antarctica expedition
- (d) Showcase of world's most famous paintings

**Ans:- Option B**

The third edition of the multilateral maritime exercise is conducted in the **Indian Ocean Region.** The biennial exercise **La Perouse** is conducted by the **French Navy** and is **aimed at enhancing maritime domain awareness** and optimising maritime coordination amongst the participating navies in the Indo-Pacific Region.

**Q.63) With reference to the Indian Black Turtle, consider the following statements:**

1. It is only found in the Eastern Ghats region of India.
2. It is designated as vulnerable species under the IUCN Red list.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- The Indian black turtle is medium-sized found across the Indian subcontinent.
- It is an **aquatic species**, mainly associated with **standing water bodies, sometimes rivers.**
- The species is an **omnivore**, consuming both aquatic macrophytes and invertebrates.

- **Conservation status:** IUCN: Least concern

**Q.64) India’s first Behavioural Lab is approved to be set up in which one of the following states?**

- (a) Kerala
- (b) Maharashtra
- (c) Rajasthan
- (d) Gujarat

**Ans:- Option C**

- The faculty of the IIM will impart training on **applied methods, and certificate courses of Ph.D level** will be conducted here.
- International experts will also be involved in conducting experiments and workshops.
- **Human behavior** will be studied with the help of **innovative technology**, including ultra-modern software and hardware.

**Q.65) Which of the following diseases is/are considered as Occupational Diseases?**

1. Silicosis
2. Asbestosis
3. Byssinosis

**Select the correct answer code:**

- (a) 1 only
- (b) 1, 2
- (c) 1, 3
- (d) 1, 2, 3

**Ans:- Option D**

**Q.66) Consider the following statements regarding India’s first indigenous quadruped robot, recently seen in the news;**

1. They are four-legged robots made for navigating in unstructured terrains.
2. The robots can carry around 5 tonne in payload.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- The indigenous robots and wearable exoskeletons were developed by **Hyderabad-based Svaya Robotics** in collaboration with the **DRDO Labs, Research and Development Establishment (R&DE), Pune, and the Defence Bioengineering and Electromedical Laboratory (DEBEL), Bengaluru,** as technology demonstrators with their design inputs.

- They are four-legged robots that can **walk or run on uneven and rough terrains**.
- The robots can **carry 25 kg in payload** and walk along with the soldier.
- It is made for navigating in unstructured terrains to provide remote reconnaissance and inspection, which otherwise are not safe for humans to operate in.

**Q.67) Consider the following statements regarding the mathematical constant 'Pi ( $\pi$ ):'**

1. It represents the ratio of the circumference of a circle to its diameter.
2. It has an exact value of 3.14.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- Pi is a **mathematical constant** that represents the **ratio of the circumference of a circle to its diameter**. It is an infinitely long, irrational number, and its exact value cannot be known.
- **Pi is roughly equal to 3.14 or 22/7.**
- Pi has been known for nearly 4,000 years and was discovered by the ancient **Babylonians**
- It also has a symbol, ' **$\pi$** .' The symbol  $\pi$  was devised by **British mathematician William Jones in 1706.**
- International Day of Mathematics, or Pi Day, is celebrated on **March 14 every year** to recognize the mathematical constant, Pi.

**Q.68) With reference to the Pench Tiger Reserve, consider the following statements:**

1. It is located in the Eastern Ghats
2. This reserve has tropical mixed deciduous 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:- Option B**

- It is located in the **Nagpur district of Maharashtra** which derives its name from its lifeline - the **River Pench**.
- Pench River divides the reserve into almost two halves.

- The Reserve is located in the southern reaches of the **Satpura hills in the Seoni and Chhindwara districts in Madhya Pradesh** and continues in Nagpur district in Maharashtra as a separate Sanctuary.

**Q.69) The Astana Declaration of 2018 is related to**

- (a) Rights of Indigenous Peoples
- (b) LGBT Rights
- (c) Strengthen primary healthcare
- (d) Intellectual property rights

**Ans:- Option C**

In **October 2018**, 120 UN member countries signed the **Astana Declaration**, vowing to **strengthen primary healthcare** and **achieve universal health coverage by 2030**. This is the second time the world took this pledge. **In 1978, 134 nations signed the Alma-Ata Declaration with the same pledge.** Though Alma-Ata was signed to ensure health for all, its progress was uneven, with several countries missing out on several indicators set under the declaration.

**Q.70) Barda Wildlife Sanctuary, which was recently seen in the news, is located in which state?**

- (a) Gujarat
- (b) Rajasthan
- (c) Maharashtra
- (d) None of these

**Ans:- Option A**

- The Gujarat government has proposed a **second home for Asiatic lions in Gujarat at Barda Wildlife Sanctuary**, about 100km away from their present home at Gir National Park.
- Barda Wildlife Sanctuary area falls into **two districts, Porbandar and Jamnagar** in the state of Gujarat.
- It is characteristically abundant in floral diversity, which consists of a good number of medicinal plants.

**Q.71) Consider the following statements regarding the McMahon Line:**

1. It is a geographical border between Kashmir and China
2. It was negotiated between India and China at the end of the Indo-China War of 1962.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- It is a geographical border between Northeast India and Tibet.
- It was negotiated between **Tibet and Great Britain at the end of the Shimla Conference in 1914**. The length of this boundary is 890 kilometers.
- It runs from the eastern border of Bhutan along the crest of the Himalayas until it reaches the great bend in the Brahmaputra River, where that river emerges from its Tibetan course into the Assam Valley.
- **Though India considers the McMahon Line as the legal national border, China rejects it**, contending that Tibet was not a sovereign state and therefore did not have the power to conclude treaties.

**Q.72) Which among the following best describes 'MQ 9 Reaper', recently seen in the news?**

- (a) It is an air-to-air missile.
- (b) It is a new radio telescope launched by USA.
- (c) It is an Unmanned Aerial Vehicle (UAV)
- (d) It is a newly discovered exoplanet.

**Ans:- Option C**

- The MQ-9 Reaper, also known as **Predator B**, is an unmanned aerial vehicle (UAV) capable of remotely controlled or autonomous flight operations for the United States Air Force
- It is **remotely operated by a two-person team** consisting of a pilot and an aircrew member who operates sensors and guides weapons.
- The US **uses the MQ-9 Reaper for both surveillance and strikes**.

**Q.73) Consider the following statements regarding Wild Ass Sanctuary;**

1. It is the last remaining habitat of Indian wild ass.
2. It is a complete desert ecosystems.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- It is located in the **Little Rann of Kutch of the Gujarat State in India**.
- It is the **only place** where the **Indian wild ass**, locally called **Khacchar**, is found.

- The sanctuary is **home to** a sizeable population of **Rabari and Bharwad tribes**.
- It can be considered a **large ecotone**, a transitional area between marine and terrestrial ecosystems.
- It is dotted with about **74 elevated plateaus or islands, locally called 'bets'**.
- During the monsoon, large parts are flooded.

**Q.74) The criteria for declaration of Scheduled areas include:**

1. Compactness and reasonable size of the area
2. Preponderance of tribal population
3. Economic backwardness of the area as compared to neighbouring areas

**Select the correct answer code:**

- (a) 1, 2
- (b) 1, 3
- (c) 2, 3
- (d) 1, 2, 3

**Ans:- Option D**

**Q.75) With reference to the ATAL VAYO ABHYUDAY YOJANA (AVYAY), consider the following statements:**

1. It is a Central sector Scheme.
2. It has 4 components which are 100% financed by centre

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- It is a **Central Sector Scheme**, which is formerly known as **National Action Plan for Senior Citizens**. It has two components – the Integrated Program for Senior Citizens (IPSRc) and the State Action Plan for Senior Citizens (SAPSRc)
- **IPSRc**: It entails setting up homes to improve the quality of life of senior citizens, especially indigent senior citizens for writing basic amenities.
- **SAPSRc**: Each state/union territories expected to frame its own action plan for the welfare of senior citizens.
- **Five schemes have been launched under this umbrella scheme:**

- Poshan Abhiyan for elderly
- Livelihood and skilling initiatives for senior citizens
- scheme on promoting silver economy
- Awareness generation and capacity building for welfare of senior citizens
- Channelising CSR funds for elderly care.
- **Nodal Agency:** Ministry of Social Justice and Empowerment.

**Q.76) Consider the following statements regarding the Pension Fund Regulatory and Development Authority (PFRDA):**

1. It is a statutory regulatory body set up under PFRDA Act enacted in 2014.
2. It is under Ministry of Commerce and Industry.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- It is a statutory regulatory body set up under **PFRDA Act enacted in 2014.**
- **Objective:** To promote old age income security by establishing, developing, and regulating pension funds and to protect the interests of subscribers to schemes of pension funds and related matters.
- It comes under the **jurisdiction of the Ministry of Finance.**
- **Composition:** It consists of a Chairperson and not more than six members, of whom at least three shall be Whole-Time Members, to be appointed by the Central Government.

**Q.77) Theppakadu Elephant Camp, recently seen in the news, lies in which one of the following Tiger Reserves?**

- (a) Bandipur Tiger Reserve
- (b) Sathyamangalam Tiger Reserve
- (c) Mudumalai Tiger Reserve
- (d) Panna Tiger Reserve

**Ans;- Option C**

The Oscar-winning 'Elephant Whisperers' was filmed at the **Theppakadu Elephant Camp**, located inside the **Mudumalai Tiger Reserve**.

**Q.78) With reference to the Trade Infrastructure for Export Scheme, consider the following statements:**

1. The objective of this scheme is to enhance export competitiveness by bridging gaps in export infrastructure.
2. This scheme is only applicable to GIFT city, Gandhinagar.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- This scheme replaced a **centrally sponsored scheme - Assistance to States for creating Infrastructure for the Development and growth of Exports (ASIDE).**
- **Objective:** To enhance export competitiveness by bridging gaps in export infrastructure, creating focused export infrastructure and first-mile and last-mile connectivity.
- **Eligibility:** The Central and State Agencies, including Export Promotion Councils, Commodities Boards, SEZ Authorities and Apex Trade Bodies recognised under the EXIM policy of the Government of India; are eligible for financial support under this scheme.
- Under the scheme, **financial assistance in the form of grants-in-aid is provided to Central/State Government owned agencies** (or their Joint Ventures with major stake-holding by them) for setting up or upgrading export infrastructure in States/UTs.
- **The Department of Commerce (Ministry of Commerce and Industry) is implementing the TIES**

**Q.79) With reference to the Peptide, consider the following statements:**

1. It is a chain of amino acid monomers connected by amide bonds.
2. Aspartame is a synthesized peptide which is used in anti-ageing creams.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans;- Option A**

Peptides are naturally occurring **short chains of amino acid monomers connected by amide bonds.** Peptide is used in many anti-ageing creams. The

most commonly used peptides are those that are obtained from ocean plants like **sea jasmine, sea fennel and sea beet**. It is used in treating the skin that is affected by injury, sun damage or acne lesions.

Aspartame which is a synthesized peptide **used as an artificial sweetener with zero calories** found in many diet foods is produced in labs and is 200 times sweeter than sugar.

**Q.80) Consider the following statements.**

1. Caveat refers to a formal notice requesting the court to refrain from taking some specified action without giving prior notice to the person lodging the caveat.
2. The term Caveat is defined in the Constitution of India.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- In common parlance, a caveat refers to **“warning” or “caution”**. However, legally it connotes a “formal notice requesting the court to refrain from taking some specified action without giving prior notice to the person lodging the caveat.” The person lodging the caveat is called a “caveator”.
- Inserted by the **Amendment Act of 1976**, added after the Law Commission’s recommendation, Section 148A of the Civil Procedure Code (CPC) explains when a person has a right to lodge a caveat.

**Q.81) Consider the following statements regarding the INS Androth, recently seen in the news:**

1. It is a nuclear powered attack submarine.
2. It is built by Garden Reach Shipbuilders and Engineers (GRSE) in Kolkata for the Indian Navy.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- The INS Androth, the second in a series of eight Anti-Submarine Warfare Shallow Water Craft (ASW SWC), was launched recently.

- It is an **Anti-Submarine Warfare Shallow Water Craft (ASW SWC)**.
- It is built by **Garden Reach Shipbuilders and Engineers (GRSE)** in Kolkata for the Indian Navy.
- It will conduct **anti-submarine operations in coastal waters**, low-intensity maritime operations, and mine-laying operations.
- It is also capable of full-scale sub-surface surveillance of coastal waters and various surface platforms and coordinated ASW operations with aircraft.

**Q.82) Consider the following statements regarding the Right to Information (RTI) Act 2005:**

1. The information seeker is not required to give valid reasons for seeking information from a public authority under the act.
2. In the normal course, information to an applicant shall be supplied within 48 hours from the receipt of the application by the public authority.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- The RTI Act **applies to all States and Union Territories of India**.
- Under the provisions of the Act, any citizen may request information from a **“public authority”** (a body of Government or “instrumentality of State”) by making an **application in writing or through electronic means**. The information seeker is not required to give reasons for seeking information.
- In the normal course, information to an applicant shall be supplied **within 30 days** from the receipt of the application by the public authority.
- If the information sought concerns the life or liberty of a person, it should be **supplied within 48 hours**.

**Q.83) With reference to the River Kothari, consider the following statements:**

1. It originates from Aravalli hills in Gujarat.
2. It is one of the tributaries of the River Narmada.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only

- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- The Kothari River raises from the **Aravalli hills near Devgarh in the Rajsamand district of Rajasthan.**
- This river is a **tributary of river Banas** which joins it at Nandrai in Kotri tehsil.
- The Meja dam on the Kothari river provides drinking water to the Bhilwara district.

**Q.84) With reference to the Long-tailed ducks, consider the following statements:**

1. It is a migratory species mainly prevalent in tropical region.
2. It is listed as near threatened species under the IUCN Red List.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- Recently, Long-tailed duck species have been spotted at the **iconic Wular Lake, Kashmir** after 116 years.
- The attractive Long-tailed Duck is found in the high Arctic and spends winters mostly along ocean coasts.
- Unlike other ducks, Long-tailed Ducks do not use their feet to propel their dives, but they flap with partially opened wings.
- **It is one of the species to which the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA) applies.**
- **IUCN: Vulnerable**

**Q.85) What kind of control does the Election Commission have over civil servants during an election?**

1. Election Commission monitors the manner in which civil servants perform their election-related duties, but cannot direct to control partisan activities.
2. Election Commission can transfer but not suspend officials during election time as they come under the disciplinary purview of the government of India or the State 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:- Option D**

- Bureaucrats engaged in the **administrative aspects of elections, including police officers with law and order duties are amenable to the EC's jurisdiction.**
- This power enables the EC to monitor both the manner in which civil servants perform their election-related duties, and prevent activities which may be seen as partisan.
- The EC often cites its vast powers **under Article 324** to transfer or suspend officials during election time, even though they normally come under the disciplinary purview of the government of India or the State governments. **There have been instances of the EC transferring not only Returning Officers, but also Commissioners of Police and Superintendents of Police.**

**Q.86) With reference to the International Liquid Mirror Telescope (ILMT), consider the following statements:**

1. It is the first radio telescope in India which is designed exclusively for astronomical observations
2. It is located in Uttarakhand.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- ILMT is the **first liquid mirror telescope** designed exclusively for astronomical observations and is the first optical survey telescope in India.
- It has a 4-meter-diameter rotating mirror made up of a thin layer of liquid mercury to collect and focus light.
- The **Devasthal observatory (Uttarakhand)** is equipped with the largest aperture telescope available in India that will use Big Data and Artificial Intelligence/Machine Learning (AI/ML) algorithms to classify objects in the sky.
- The telescope has **three components**: A bowl containing a reflecting liquid mercury metal, an air bearing (or motor) on which the liquid mirror sits, and a drive system.
- Maintained by the **Aryabhata Research Institute of Observational Sciences (ARIES).**

**Q.87) With reference to Sharda Peeth, consider the following statements:**

1. It is located in the valley Kashmir along the Chenab river.
2. It is considered one of the Shakti Peetha throughout South Asia.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- Sharda Peeth is located in the village of **Sharda in the valley of Mount Harmukh**, along the Neelam River in the Pakistani-administered territory of Azad Kashmir.
- **As a Centre of Learning:** Between the 6th and 12th centuries CE it hosted scholars such as **Kalhana, Adi Shankara, and Vairotsana**. It is also said to be **where Paṇini and Hemachandra** completed and stored their writings on Sanskrit grammar.
- **Religious significance:** **Sharda** is the most revered religious place for Kashmiri Pandits. They believe that **Sharada** in Kashmir is a **tripartite embodiment of the goddess Shakti: Sharada** (goddess of learning), **Saraswati** (goddess of knowledge), and **Vagdevi** (goddess of speech).
- It is one of the 18 Maha Shakti Peethas throughout South Asia that commemorate the location of fallen body parts of the Hindu deity Sati.

**Q.88) Which among the following best describes 'Oumuamua', recently seen in the news?**

- (a) It is an interstellar object.
- (b) It is a dance form practised in Sudan.
- (c) It is a dialect of Jorwe tribe of India.
- (d) None of the above.

**Ans:- Option A**

- It is **the first confirmed object from another star** (interstellar object) to visit the solar system and was discovered in 2017, by the NASA-funded Pan-STARRS1 telescope.
- Astronomers named **the object 11/2017 U1 ('Oumuamua)**, **Hawaiian** for "a messenger from afar arriving first."
- It had **no bright coma or dust tail**, like most comets, and a peculiar shape.

- It was accelerating away from the sun in a way that astronomers could not explain.
- **Recent Finding:** Researchers say the answer might be the release of hydrogen from trapped reserves inside water-rich ice as the comet warmed up in the sunlight.

**Q.89) Which among the following best describes 'Arudhra', recently seen in the news?**

- (a) It is an air to air missile.
- (b) It is a Medium Power Radar.
- (c) It is a newly discovered Buddhist stupa.
- (d) None of the above.

**Ans:- Option B**

- **Arudhra** is a Medium Power Radar (MPR) designed and developed by **DRDO** and **manufactured by BEL**.
- It is a **4D multi-function phased array radar** with electronic steering in both azimuth (angular position from a reference direction) and elevation for surveillance, detection, and tracking of aerial targets.

**Q.90) Consider the following statements regarding the Exercise Vayu Prahar, recently seen in the news:**

1. It is jointly conducted by the Indian Army and UK army.
2. The exercise aimed to validate joint plans to prosecute synergized multiple-domain operations.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

- It is a multi-domain air-land exercise jointly conducted by the **Indian Army and the Indian Air Force**.
- The special forces also participated along with the Army and the Navy in the 96-hour exercise which was held in the eastern theatre.

**Q.91) Karnala Bird Sanctuary, which was recently seen in the news, is located in which state?**

- (a) Tamil Nadu
- (b) Maharashtra
- (c) West Bengal
- (d) None of these

**Ans:- Option B**

- Karnala Bird Sanctuary is located in the **Raigad District of Maharashtra**.
- It is a **habitat of woodland birds in the Western Ghats**. It also forms a catchment area of the Patalganga River.

**Q.92) With reference to the Indian Arms Act of 1959, consider the following statements:**

1. Under this act one person can have only one firearm.
2. Prohibited Bore guns can be issued by Ministry of Home affairs 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:- Option C**

- The Indian Arms Act of 1959 was **amended in 2019**.
- No one can acquire, possess or carry any firearms in India without a license.
- The Act bars one person from carrying more than one firearm.
- It prevents **persons of unsound mind** or those out on bond from getting such a license.
- **Validity:** The validity of a firearm license was **increased from 3 years to 5 years** (2019 amendment).
- **Non- prohibited bore (NPB):** Indian citizens aged 21 years and above are eligible to get Non-Prohibited Bore (NPB) guns and these are issued by the state governments.
- **Prohibited bore (PB):** Prohibited Bore guns can only be issued to defence personnel or persons facing imminent threats to life and these are issued by the Central Government or Ministry of Home Affairs

**Q.93) Consider the following statements regarding Tactical Nuclear Weapons:**

1. They are designed for use in battle as part of an attack with conventional weapon forces.
2. They are capable of destroying cities or larger targets

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- Nuclear weapons, are categorised into two types — **strategic and tactical**.
- **Strategic Nuclear Weapons:** They refer to nuclear weapons that have **bigger objectives**, such as **destroying cities or larger targets**, with larger war-waging objectives in mind.
- **Tactical Nuclear Weapons (TNWs):** They are **intended to devastate enemy targets in a specific area** without causing widespread destruction and radioactive fallout.
- The explosive yield of **tactical nuclear weapons** can range from **under one kiloton to about 100 kilotons**, whereas **strategic nuclear weapons** can have a **yield of up to one thousand kilotons**. Delivery systems for tactical nuclear weapons also tend to have shorter ranges compared with strategic nuclear weapons, which are typically designed to cross continents. They are the least-regulated category of nuclear weapons covered in arms control agreements.

**Q.94) Which among the following statements is correct with regard to the principle of 'Audi Alteram Partem'?**

- (a) The court applies this principle when there is a conflict between the various federal units
- (b) It is the power of court to issue guidelines in cases of public interests
- (c) It is the power of courts to examine new amendments and examine its position with regard to the constitution
- (d) It denotes that every party shall get an opportunity of hearing, and no one shall go unheard in a case.

**Ans:- Option D**

- The literal meaning of Audi Alteram Partem is to **"hear the other side"**.
- It denotes that every party shall get an opportunity of hearing and no one shall go unheard in a case.
- The doctrine is the **basic concept of the principle of natural justice**.

**Q.95) Consider the following statements regarding the Public Provident Fund (PPF) Scheme:**

1. It is a popular short-term savings scheme in India because of its combination of tax savings, returns, and safety.
2. Investments are not subject to ceiling or floor

**Which of the statements given above is/are correct?**

- (a) 1 only

- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- The PPF Scheme is a very **popular long-term savings scheme in India** because of its combination of tax savings, returns, and safety.
- The PPF was **first offered to the public in the year 1968** by the Finance Ministry's National Savings Institute. It is **one of the safest investment products**. i.e., the government of India guarantees your investments in the fund
- **Tenure:** 15 years (Can be renewed in blocks of 5 years).
- **Investment Amount:** Minimum Rs.500, Maximum Rs.1.5 lakh p.a.
- Any Indian citizen can open a PPF account but cannot be held jointly
- Investment in PPF is tax-exempt under **section 80C of the Income Tax Act (ITA)**, and the returns from PPF are also not taxable.

**Q.96) With reference to the Remission of Duties and Taxes on Exported Products (RoDTEP) scheme, consider the following statements:**

1. It is a scheme under which taxes or duties are rebated to the importers.
2. The rebates will be given by Ministry of MSME.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- The RoDTEP scheme would refund to exporters the embedded central, state and local duties or taxes that were so far not been rebated or refunded.
- It was **launched in January 2021** as a replacement for the Merchandise Export from India Scheme (MEIS).
- Under this scheme, **a rebate will have to be claimed as a percentage of the Freight On Board value of exports**.
- Rebates will be issued in the form of a transferable duty credit/ electronic scrip (e-scrip) which will be maintained in an electronic ledger by the Central Board of Indirect Taxes and Customs (CBIC).

**Q.97) International Committee On Monuments and Sites International Science Committee is:**

- (a) A specialised UN agency
- (b) An intergovernmental organisation
- (c) Global non-governmental organization
- (d) Public private partnership group

**Ans:- Option C**

- International Committee On Monuments and Sites International Science Committee is a **global non-governmental organization associated with UNESCO**.
- Its mission is to promote the conservation, protection, use and enhancement of monuments, building complexes and sites.
- It is an **Advisory Body of the World Heritage Committee** for the implementation of the World Heritage Convention of UNESCO.
- A site Sipàapu located in Arizona, United States and sacred to the Hopi Native American Nation has been awarded a 'Water and Heritage Shield' by the International Committee On Monuments and Sites International Science

**Q.98) Consider the following statements regarding Adjuvants:**

1. They are commonly used to improve the effectiveness of a vaccine.
2. Adjuvants allow for more quantities of the vaccine and increase in doses.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

- An adjuvant is a substance that is added to a vaccine to **stimulate and enhance the magnitude and durability of the immune response**.
- Adjuvants allow for lesser quantities of the vaccine and fewer doses.
- Adjuvanted vaccines can cause more **local reactions** (such as redness, swelling, and pain at the injection site) and more **systemic reactions** (such as fever, chills and body aches) than non-adjuvanted vaccines.
- **Example:** Aluminum adjuvants are used in vaccines such as hepatitis A, hepatitis B, diphtheria-tetanus-containing vaccines etc.

**Q.99) With reference to the INS SUMEDHA, consider the following statements:**

1. It is an indigenously built Naval Offshore Patrol Vessel.
2. It is designed and developed 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:- Option A**

- INS Sumedha is an **indigenously built Naval Offshore Patrol Vessel** deployed for multiple roles independently and in support of Fleet Operations.
- It is **part of the Indian Navy's Eastern Fleet based at Visakhapatnam** and functions under the operational command of the Flag Officer Commanding-in-Chief, Eastern Naval Command.
- It is the **third ship of the indigenous Naval Offshore Patrol Vessel (NOPV) Project to be inducted into the Indian Navy.**
- The ship has been designed and built by Goa Shipyard Limited.

**Q.100) With reference to the Central Bureau of Narcotics (CBN), consider the following statements:**

1. It is a constitutional body.
2. It works under the Union Ministry of Chemicals and Fertilizers.

**Which of the statements given above is/are correct?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- CBN is affiliated with **India's Department of Revenue.**
- It is regulated by the **Central Board of Indirect Taxes and Customs.**
- The key responsibilities are to **prohibit opium trading and production** and to grant permits for the manufacture of authorised synthetic medicines.

## Practice MCQs on Conventional Subjects- March 2023

**Q.1) Consider the following statements about the Prime Minister-Formalisation of Micro Food Processing Enterprises (PM-FME):**

1. The scheme has 'One District One Product' approach.
2. It is a scheme under the Ministry of Food Processing Industries.
3. Self Help Groups are eligible for capital linked grant along the entire value chain.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans:- Option D**

The PM FME scheme is a **central sector scheme** with an outlay of INR 10,000 cr to **support the unorganized micro food processing units in the country**. Seed Capital for the purchase of tools and working capital to Self Help Groups will be provided. **The PM FME scheme has adopted the One District One Product approach from the ODOP Programme launched by the Uttar Pradesh (UP) government in 2018.** Ministry of Food Processing Industries is nodal ministry.

**Q.2) Consider the following statements regarding stabilisation measures and structural reform measures.**

1. Stabilisation measures are long-term measures, aimed at improving the efficiency of the economy and increasing its international competitiveness by removing the rigidities in various segments of the Indian economy.
2. Structural reform measures are short-term measures, intended to correct some of the weaknesses that have developed in the balance of payments and to bring inflation under control.

**Which of the above statements is/are incorrect?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C.**

Stabilisation measures are **short-term measures, intended to correct some of the weaknesses that have developed in the balance of payments and to**

**bring inflation under control.** In simple words, this means that there was a need to maintain sufficient foreign exchange reserves and keep the rising prices under control. On the other hand, **structural reform policies are long-term measures, aimed at improving the efficiency of the economy and increasing its international competitiveness by removing the rigidities in various segments of the Indian economy.**

**Q.3) With reference to Indian economy, which of the following best describes Exit policy**

- (a) Right or ability of an industrial unit or a firm to withdraw from or to close down.
- (b) Policy of repatriation of income by multi-national companies
- (c) Disinvestment policy of Public sector enterprises
- (d) Export policy that guides direction of exports from India

**Ans:- Option A.**

Exit policy means the policy regarding the **retrenchment of the surplus labour force** resulting from restructuring of industrial units and **workers displaced by the closure of sick units**. Exit may become necessary due to strategic reasons, financial constraints and environmental changes.

**Q.4) In Economic theory and policy making, 'Consumer Welfare' is deemed to be maximized when**

- (a) Every individual is able to purchase goods at the exact market price they were willing to pay
- (b) A large number of individuals are able to purchase goods at a much lower market price that they were willing to pay
- (c) All individuals attain an ideal state of having no demand for any more goods and services
- (d) They are able to purchase goods beyond their means of earning

**Ans;- Option B.**

Consumer welfare refers to the **individual benefits derived from the consumption of goods and services**. In theory, individual welfare is defined by an individual's own assessment of his/her satisfaction, given prices and income. Exact measurement of consumer welfare therefore requires information about individual preferences. **The central idea in consumer welfare is to enhance consumer surplus** which is the difference between what people prefer to pay and what they actually pay. **The greater the difference, higher is the surplus.** It means that the market is allocating goods most efficiently (at competitive prices) to people.

**Q.5) 'Economic efficiency' as used by economists and policymakers is related to which of the following?**

1. Equal allocation of goods and services to all consumers and corporations.
2. Resource efficient production.

**Select the correct answer code:**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

Economic efficiency is when **goods and services are distributed according to consumer preferences and needs of corporations**. It is when the maximum number of goods and services are produced with a given amount of inputs.

**Q.6) Which of the following pairs are correctly matched?**

Cyclical Slowdown	It is a period of lean economic activity that occurs at regular intervals.
Structural Slowdown	It is a more deep-rooted phenomenon that last over a long-term

**Select the correct answer code:**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C.**

**What is a cyclical slowdown?**

A cyclical slowdown is a **period of lean economic activity that occurs at regular intervals**. Such slowdowns last over the short-to-medium term, and are based on the changes in the business cycle. Generally, **interim fiscal and monetary measures, temporary recapitalisation of credit markets, and need-based regulatory changes** are required to revive the economy.

**What is a structural slowdown?**

A structural slowdown, on the other hand, is a **more deep-rooted phenomenon that occurs due to a one-off shift from an existing paradigm**. The changes, which last over a long-term, are driven by disruptive technologies, changing demographics, and/or change in consumer behaviour.

**Q.7) Which of the following factors are considered for determining Minimum Support Prices?**

1. Cost of production
2. Inter-crop price parity
3. Effect on cost of living
4. International price situation

**Select the correct answer code:**

- (a) 1,2,3
- (b) 2,3,4
- (c) 1,3,4
- (d) 1,2,3,4

**Ans:- Option D.**

In formulating the recommendations in respect of the level of minimum support prices and other non-price measures, **the Commission for Agricultural Costs and Prices takes into account, apart from a comprehensive view of the entire structure of the economy of a particular commodity or group of commodities, the following factors:-**

- Cost of production
- Changes in input prices
- Input-output price parity
- Trends in market prices
- Demand and supply
- Inter-crop price parity
- Effect on industrial cost structure
- Effect on cost of living
- Effect on general price level
- International price situation
- Parity between prices paid and prices received by the farmers.
- Effect on issue prices and implications for subsidy

**Q.8) Which of the following best describes the term Middle Income Trap**

- (a) Countries that are in the Middle-Income level since the formation of WTO and not moving up to the higher income category
- (b) Rapidly growing economies stagnating at middle-income levels and failing to graduate into the ranks of high-income countries.
- (c) Countries deliberately in middle-income levels so as to receive the benefits from WTO.
- (d) None of the above

**Ans:- Option B.**

An irony about middle income countries is that many of them are not moving up to the higher income category. This situation of falling at the middle-income level is called the **middle-income trap by economists**. The "middle-income trap" is the **phenomenon of hitherto rapidly growing economies stagnating at middle-income levels (of per capita income) and failing to graduate into the**

**ranks of high-income countries.** At the same time, many other countries have made significant progress through industrialization. They were able to expand the national income and thus the per capita income.

**Q.9) Non-performing Assets (NPAs) are loans made by a bank or finance company on which repayments or interest payments are not being made on time. How do high NPAs affect the Banks in India?**

1. Banks tend to lower the interest rates on deposits
2. Results in lesser interest income
3. Adds to risk weighted assets

**Select the correct code?**

- (a) 1,2
- (b) 1,3
- (c) 2,3
- (d) 1,2,3

**Ans:- Option D.**

**Statement 1** - In the light of high NPAs, Banks tend to lower the interest rates on deposits on one hand and likely to levy higher interest rates on advances.

**Statement 2** - The increased NPAs put pressure on recycling of funds and reduces the ability of banks for lending more and thus results in lesser interest income.

**Statement 3** - As per Basel norms, banks are required to maintain adequate capital on risk-weighted assets on an ongoing basis. Every increase in NPA level adds to risk weighted assets which warrant the banks to shore up their capital base further.

**Q.10) Under the Provisions of the Banking Regulation Act, 1949 RBI can**

1. Examine on oath any director or other officer of the bank
2. Issue directions to banks for resolution of stressed assets
3. Prohibit banks against entering into any particular transaction

**Which of the above statements is/are correct?**

- (a) 1,2
- (b) 2,3
- (c) 1,3
- (d) 1,2,3

**Ans:- Option D**

The Reserve Bank of India (RBI) **regulates and supervises Public Sector and Private Sector Banks.** The powers of RBI are wide-ranging and comprehensive to deal with various situations that

may emerge in all banks, irrespective of ownership i.e. the Public Sector and the Private Sector owned Banks.

**Q.11) The Department of Financial Services (DFS) oversees several key programs/initiatives. It provides policy support to:**

1. Public Sector Insurance Companies (PSICs)
2. National Bank for Agriculture and Rural Development (NABARD)
3. Export-Import Bank of India (EXIM Bank)
4. Industrial Finance Corporation of India (IFCI)

**Select the correct answer code:**

- (a) 1,2,3
- (b) 1,3,4
- (c) 2,3,4
- (d) 1,2,3,4

**Ans:- Option D**

- The Department of Financial Services (DFS) **provides policy support to the Public Sector banks (PSBs), Public Sector Insurance Companies (PSICs) and Financial Institutions (FIs)** like National Bank for Agriculture and Rural Development (NABARD), Small Industries Development Bank of India (SIDBI), National Housing Bank (NHB), Export-Import Bank of India (EXIM Bank), National Bank for Financing Infrastructure and Development, India Infrastructure Finance Company Ltd. (IIFCL), Industrial Finance Corporation of India (IFCI), National Credit Guarantee Trustee Company Ltd. (NCGTC) etc.
- It also **monitors the performance of these PSBs, PSICs and DFIs and undertakes policy formulation** in respect of the Banking and Insurance Sector in India.
- This Department **deals with legislative and policy issues pertaining to the concerned regulatory bodies** i.e. the Reserve Bank of India (RBI), the Insurance Regulatory and Development Authority of India (IRDAI) and the Pension Fund Regulatory and Development Authority (PFRDA). DFS also deals with the legislative framework relating to debt recovery.

**Q.12) India's growth's story from the eve of Independence to the liberalization phase is largely termed as 'Hindu rate of growth'. It refers to**

- (a) Non inclusive growth story of India before 1990's liberalization.
- (b) Religious belief of the successive government right from the independence.
- (c) The phenomenon of sluggishness in growth rate of Indian economy before 1990's.

(d) Irrational developmental agenda driven by majoritarian society.

**Ans:- Option C.**

Hindu' rate of growth was coined to refer to the phenomenon of sluggishness in growth rate of Indian economy (3.5 per cent observed persistently during 1950s through 1980s).

The term, which owes to Professor Raj Krishna, Member, Planning Commission, captured popular imagination and was used synonymously to describe inadequacy of India's growth performance.

**Q.13) Consider the following statements regarding cess and surcharges.**

1. The Constitution does permit the Centre to levy cess and surcharges beyond the basic taxes and duties in extraordinary situations.
2. Cess and surcharges go to the divisible pool of taxes.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

The Constitution does permit the Centre to levy cess and surcharges beyond the basic taxes and duties in extraordinary situations. These additional taxes do not go to a divisible pool.

Divisible pool refers to the taxes of the central government that it should share with the sub national or state governments in accordance with the recommendations of the Finance Commission.

**Q.14) Consider the following statements regarding Formalisation of economy.**

1. Formalisation of the economy means bringing companies under the regulatory regime of government and subject to laws related to manufacturing and income tax.
2. It leads to more tax revenues with an increase in tax-to-GDP ratio.
3. It establishes rule of law and provide benefits of labour laws to entrepreneurs and workers.

**Which of the above statements is/are correct?**

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

**Ans:- Option D**

Formalisation of the economy means bringing companies under the regulatory regime of government and subject to laws related to manufacturing and income tax. Formalisation leads to more tax revenues with an increase in tax-to-GDP ratio. Formalisation provides a level-playing field for tax-compliant entities, expanding the tax base so that the burden falls more equitably on all the players rather than a select few. Transitioning economy towards formality brings benefits by establishing the rule of law and provide benefits of labour laws to entrepreneurs and workers.

It enforces minimum wages and proper documentation of benefits by the employer. Formal jobs also end up ensuring the dignity of labour; enable productivity improvements, as well as access to formal training.

**Q.15) Consider the following statements regarding consumer durables.**

1. Goods like food and clothing, and services like recreation that are consumed when purchased by their ultimate consumers are called consumer durables.
2. They undergo wear and tear with gradual use and often need to be preserved, maintained and renewed.

**Which of the above statements is/are incorrect?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A**

Of the final goods, we can distinguish between consumption goods and capital goods. Goods like food and clothing, and services like recreation that are consumed when purchased by their ultimate consumers are called consumption goods or consumer goods.

We may note here that some commodities like television sets, automobiles or home computers, although they are for ultimate consumption, have one characteristic in common with capital goods – they are also durable. That is, they are not extinguished by immediate or even short period consumption; they have a relatively long life as compared to articles such as food or even clothing. They also undergo wear and tear with gradual use and often need repairs and replacements of parts, i.e., like machines they also need to be preserved, maintained and renewed. That is why we call these goods consumer durables.

**Q.16) Consider the following statements regarding the types of economic systems:**

1. In a market economy, market provides those consumer goods that are in demand.
2. Distribution under socialism is based on what people need and not on what they can afford.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C**

In a market economy, also called capitalism, only those **consumer goods will be produced that are in demand**, i.e., goods that can be sold profitably either in the domestic or in the foreign markets. In a capitalist society the goods produced are distributed among people not on the basis of what people need but **on the basis of Purchasing Power**—the ability to buy goods and services.

In a **socialist society** the Government decides **what goods are to be produced in accordance with the needs of society**. The government decides how goods are to be produced and how they should be distributed. In principle, distribution under socialism is supposed to be based on what people need and not on what they can afford to purchase. In a **mixed economy**, the market will provide whatever goods and services it can produce well, and the government will provide essential goods and services which the market fails to do

**Q.17) Consider the following statements regarding food processing sector in India.**

1. Pradhan Mantri Kisan SAMPADA Yojana aims to create efficient supply chain management in food processing sector from farm gate to retail outlet.
2. The share of food processing sector in India's total Gross Value added (GVA) is more than 5%.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A.**

**Statement 2 is incorrect:** The Gross Value added (GVA) in the food processing sector was Rs.2.24 lakh crore in 2019-20 contributing 1.69% of the total GVA in the country.

**Q.18) The committee on doubling farmers' income (DFI) was headed by**

- (a) Abhijit Banerjee
- (b) Amitabh Kant
- (c) Ashok Dalwai
- (d) NK Singh

**Ans:- Option C.**

Committee on doubling farmers' income (DFI)

- The committee was headed by **Ashok Dalwai** who is also the **CEO of Rainfed Area Authority**.
- The DFI Committee addresses **agriculture as a value-led enterprise and suggests empowering farmers with "improved market linkages"** and enabling "self-sustainable models" as the basis for continued productivity-production and income growth for farmers.

**Q.19) Consider the following statements regarding the privatization of the public sector enterprises:**

1. Privatization is the liquidation of government's equity
2. The purpose of the privatization is generally to improve fiscal health of the government along with modernization of the firm.

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C.**

**Both statements are correct.** Privatization implies the shedding of the ownership or management of a government-owned enterprise i.e. liquidation of the assets.

**Government companies are converted into private companies in two ways:**

- i. By the withdrawal of the government from ownership and management of public sector companies and/or
- ii. By the outright sale of public sector companies.

Privatization of the public sector enterprises (PSEs) by selling off part of the equity of PSEs to the public is **known as disinvestment**.

**Q.20) Which of the following elements are contained in the Budget?**

1. Estimates of revenue and capital receipt
2. Ways and Means to raise revenue
3. Details of the actual receipt and expenditure of the closing financial year

**Select the correct answer using the code given below:**

- (a) 1 and 2 only

- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans:- Option D.**

**The Budget contains the following elements:**

- Estimates of revenue and capital receipt
- Ways and Means to raise revenue
- Estimates of expenditure
- Details of the actual receipt and expenditure of the closing financial year

**Q.21) Currently, which of the following are outside the ambit of GST?**

1. Petroleum crude
2. High-speed diesel
3. Kerosene
4. CNG
5. LPG-domestic
6. LPG-Non-domestic

**Select the correct answer using the code given below:**

- (a) 1, 2, 5 and 6 only
- (b) 2,4 and 6 only
- (c) 1, 2 and 4 only
- (d) 1, 2, 3 and 6 only

**Ans:- Option C.**

Goods and Services Tax (GST) is an **indirect tax used in India on the supply of goods and services**. It is a comprehensive, multistage, destination-based tax: comprehensive because it has subsumed almost all the indirect taxes except a few state taxes

**The items which are outside the ambit of GST are,**

- Alcoholic Liquor,
- Electricity and
- Petroleum products (Petroleum Products such as petroleum crude, motor spirit (petrol),
- High speed diesel, natural gas, and aviation turbine fuel. However, the taxes for these products will be charged as per the structure before the introduction of GST.

**The Products which are under the ambit of GST,**

- kerosene (5%), naphtha and
- LPG (both domestic (5%) and non-domestic (commercial liquefied LPG grades (18%))

**So, option (c) is correct**

**Q.22) Consider the following statements with reference to Reserve Funds of State Governments:**

1. Consolidated Sinking Fund (CSF) is an amortisation fund created to meet repayment obligations of the State Government.

2. Guarantee Redemption Fund (GRF) is being provided to State Governments by RBI against the collateral of their investments in marketable securities.

3. CSF and GRF are reserve funds maintained by State Governments with the Reserve Bank of India.

**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:- Option C**

The Reserve Bank of India (RBI) manages **two reserve funds on behalf of State Governments to meet their contingent liabilities;**

- Consolidated Sinking Fund (CSF)
- Guarantee Redemption Fund (GRF)

CSF is a **reserve fund created to meet the repayment obligations of the Government**. The interest accrued and accumulated in the Fund is utilized towards the redemption of outstanding liabilities of the Government. The State Governments constitute GRF to meet their obligations arising from guarantees issued on behalf of State level bodies. Collected Funds can be utilized only for payment of guarantees issued by the Government in respect of bonds issued/ other borrowings by their State level undertakings/ other bodies.

Whereas a **Special Drawing Facility (SDF) is being provided to State Government by RBI against the collateral of their investment in marketable securities issued by the Government of India**. In 2005, Bezbaruah Committee recommended the usage of CSF and GRF as collateral for SDF. So, Statements 1 and 3 are correct

**Q.23) Jaya Jaitly committee was constituted for the purpose of:**

- (a) Battery Waste Management
- (b) Data Protection and Data Privacy
- (c) Public Distribution System
- (d) To raise the legal age of marriage for women in India

**Ans:- Option D.**

- Justice B.N. Srikrishna Committee and Justice A.P. Shah Committee were constituted to study various issues associated with data protection. **So, Option (b) is not correct.**
- The Public Distribution System (PDS) evolved as a system of managing scarcity by distributing food grains at affordable prices. Justice

Wadhwa Committee is related to Public Distribution System. So, **Option (c) is not correct.**

- In June 2020, the **Ministry for Women and Child Development** set up a task force to look into the **correlation between the age of marriage with issues of women's nutrition, prevalence of anemia, IMR, MMR and other social indices.**
- The committee has recommended the age of marriage be increased to 21 years.
- This change will empower girls and young women, increase their access to education, and improve the Infant Mortality Rate (IMR) and the Maternal Mortality Ratio (MMR). **So, Option (d) is correct.**

**Q.24) With reference to cryptocurrencies, consider the following statements:**

1. Cryptocurrencies are decentralized systems, anonymous, borderless and authenticated by consensus.
2. Crypto whales are individuals or entities that help in illegal transactions through cryptocurrencies.
3. Cryptocurrencies do not have any intrinsic value.

**Which of the statements given above are correct?**

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2, and 3

**Ans:- Option B.**

The cryptocurrency whale, more commonly called a "crypto whale" or just a "whale," is a **cryptocurrency community term that refers to individuals or entities that hold large amounts of cryptocurrency.** Whales hold enough cryptocurrency that they have the potential to manipulate currency valuations. Achieving whale status in the cryptocurrency space is subjective. In most cases, the community seems to agree that a large percentage of the available coins make an account a whale. In general, whales seem to account for more than 10% of the total number of a specific cryptocurrency. **So, Statement 2 is not correct.**

It does not have intrinsic value because it is not accepted as a medium of exchange. So, cryptocurrency is a financial asset, not a currency, and they are not an instrument of debt or commodities nor an issuer. **So, Statement 3 is correct.**

**Q.25) Which one of the following releases World Inequality Report?**

- (a) World Bank
- (b) UNDP
- (c) World Inequality Lab
- (d) International Institute for Environment and Development

**Ans:- Option C.**

The World Inequality Report is published by **World Inequality Lab at the Paris School of Economics.** It measures income and wealth inequality systematically and transparently. This report is on a global scale which showcases the trend in inequality across the world, providing a comparative perspective across countries. **So, Option (c) is correct.**

**Q.26) With reference to off-budget borrowings by the Indian government, which of the following statements is/are correct?**

1. These loans are not taken by the centre directly, but by another public institution that borrows on the directions of the central government.
2. These loans are included in the national fiscal deficit.
3. These borrowings can be used to fund both capital and revenue expenditure.

**Select the correct answer using the code given below.**

- (a) 1 and 3 only
- (b) 2 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans:- Option A.**

**Off-budget borrowings** are loans that are **taken not by the Centre directly, but by another public institution that borrows on the directions of the central government.** Such borrowings are used to fulfil the government's expenditure needs. But since the liability of the loan is not formally on the Centre, the loan is not included in the national fiscal deficit. This helps keep the country's fiscal deficit within acceptable limits. Both the centre and states are making such borrowings. **Hence statement 1 is correct.**

Off-budget borrowing figures did not include the loans that public sector undertakings were supposed to take on their behalf or the deferred payments of bills and loans by the Centre. These items constitute "off-budget borrowings" because these loans and deferred payments are not part of the fiscal deficit calculation. **Hence statement 2 is not correct.**

**Q.27) Consider the following statements:**

1. India's GDP in terms of Purchasing Power Parity (PPP) is more than its nominal GDP.
2. Recently, India became the fifth-largest economy in the world in terms of PPP.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option A.**

India has overtaken the U.K. to become the **world's fifth-largest economy (nominal terms) and is now behind only the US, China, Japan and Germany, according to IMF projections.** The size of the Indian economy in 'nominal' cash terms is USD 3.5 trillion against UK's USD 3.5 trillion. **Hence statement 2 is not correct.**

In PPP terms, **India continued to be the third-largest economy in the world.** The economy stood at USD 10.22 trillion, which was almost twice the size of Japan, which was the fourth largest economy in the world in PPP terms, with a USD 5.4 trillion economy. **Hence statement 1 is correct.**

**Q.28) Which of the following funds invest exclusively in government securities?**

- (a) Index Funds
- (b) Open-ended Fund
- (c) Equity Oriented Scheme
- (d) Gilt Funds

**Ans- Option D**

Gilt funds are **debt funds that invest in government securities.** These funds invest exclusively in government securities. Government securities have no default risk. NAVs of these schemes also fluctuate due to change in interest rates and other economic factors as is the case with income or debt-oriented schemes. **These funds have no risk of non-payment of interest** or principal amount but get affected by interest rate movements as the Government borrowing typically happens to be for a longer duration. **Hence, option (d) is the correct answer.**

• Gilt funds **only invest in fixed-interest-generating securities issued by the Central and state governments.**

**Advantages of Gilt Funds**

- Suitable when interest rates in the economy are expected to come down
- Ideal for an investment horizon of at least 3-5 years

- Might see volatility during times of important economic events

**Q.29) Consider the following statements:**

1. Money multiplier increases with increase in Cash Reserve Ratio.
2. Since demonetisation in 2016, currency held with public has steadily decreased.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

With the increase in CRR, the money left to lend will get reduced. This shows an inverse relationship between CRR and money multiplier. **Hence statement 1 is not correct.**

Currency with public refers to notes and coins used by people to transact, settle trades, and for buying goods and services. The figure is arrived at after deducting cash with banks from the currency in circulation. As per the fortnightly data on money supply released by the RBI, the currency with the public increased to Rs 30.88 lakh crore as on October 21, 2022 from 17.7 lakh crore on November 4, 2016 (The date of Demonetisation). **Hence statement 2 is not correct.**

**Q.30) In the context of government financing, the term helicopter drop (or money) is best defined as:**

- (a) The recovery of unpaid taxes from tax havens and using the same for government expenses.
- (b) The abrupt increase in government subsidies to give a boost to ailing sectors in an economy.
- (c) A monetary stimulus strategy to spur inflation and economic output.
- (d) A situation in which the revenue income of a government in a given financial year is more than the estimated amount

**Ans:- Option C**

Helicopter Drop (a metaphorical descriptor), first coined by **Nobel laureate Milton Friedman**, is an unconventional policy tool, where the country's central bank prints large sums of currency notes.

• These are printed specifically to allow the government to distribute it among citizens to raise their income levels, enable more spending and stimulate a falling economy.

• **It refers to a last resort type of monetary stimulus strategy to spur inflation and economic output.** Though it would appear to be theoretically feasible,

from a practical standpoint, it is considered to be a hypothetical, unconventional monetary policy tool whose implementation is highly improbable. **Hence option (c) is the correct answer**

**Q.31) In the context of National Income Accounting, consider the following statements regarding private income:**

1. Private income refers to total factor income earned exclusively within the domestic territory.
2. Like National Income, private income excludes transfer payments.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

- Private income is the total income of the factors from all the sources and current transfers from the government and the rest of the world accruing to the private sector. **Private Sector consists of private enterprises and households [factor owners].**
- It also includes **net factor income from abroad.** Thus, private income consists of not only factor incomes earned within the domestic territory and abroad but also all current transfers from the government and the rest of the world. **Hence statement 1 is not correct.**
- **Private Income =** Income from domestic product accruing to private sector + Net factor income from abroad + All types of transfer incomes. **Hence statement 2 is not correct.**
- **Private Income =** National Income – Income from domestic product accruing to Government Sector + Transfer incomes
- **Private Income =** Personal income + corporate tax + Undistributed profit
- **Personal income is the sum of earned income and transfer income received by persons (households) from all sources within and outside the country.** Thus, the concept of private income is broader than that of personal income because private income consists of personal income + profit tax + undistributed profit.

**Q.32) With reference to Quantitative Easing, which among the following statements is/are correct?**

1. Under this policy, the central bank sells government securities.
2. It is adopted to increase the interest rates and to decrease the money supply.
3. It can lead to higher rates of inflation.

**Select the correct answer using the code given below.**

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1,2 and 3

**Ans:- Option B**

Quantitative easing (QE) is an unconventional monetary policy in which a **central bank purchases government securities or other securities from the market** in order to increase the money supply and encourage lending and investment. **Hence statement 1 and statement 2 are not correct.**

If the money supply increases too quickly, quantitative easing can lead to higher rates of inflation. This is due to the fact that there is still a fixed amount of goods for sale when more money is now available in the economy. Additionally, banks may decide to keep funds generated by quantitative easing in reserve rather than lending those funds to individuals and businesses. **Hence statement 3 is correct.**

**Q.33) Consider the following statements regarding banking system liquidity:**

1. If the banking system is a net lender to the RBI, the system liquidity can be said to be in surplus.
2. A festival season can create a liquidity deficit in the banking system.
3. A widening liquidity deficit can lead to higher interest rates for depositors.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 only
- (c) 1 and 3 only
- (d) 1,2 and 3

**Ans:- Option D**

Liquidity Adjustment Facility (LAF), the system liquidity can be said to be in deficit and if the banking system is a net lender to the RBI, the system liquidity can be said to be in surplus. **The LAF refers to the RBI's operations through which it injects or absorbs liquidity into or from the banking system. Hence, statement 1 is correct.**

Recently, the country's banking liquidity slipped into deficit recently for the first time in over three years, according to data from the Reserve Bank of India. Increased demand for cash during the festival season, a slow pace of government spending, tax outflows, and the central bank's interventions in the currency market have led to the overall liquidity

surplus in the banking system almost entirely drying up. **Hence, statement 2 is correct.**

**The deficit in the liquidity situation has been caused by an uptick in the bank credit, advance tax payments by corporates, intervention of the RBI into the forex market, and also incremental deposit growth not keeping pace with credit demand.**

- A widening liquidity deficit could lead to a rise in short-term borrowing rates and prompt the Reserve Bank of India to pump money into the banking system through repo auctions and slow down its interventions in the currency market.

- With the deficit in liquidity, there will be pressure on banks to raise more deposits. This could result in higher interest rates. Going ahead, this could impact banks' net interest margins, or the difference between interest earned on loans and that paid on deposits. **Hence, statement 3 is correct.**

**Q.34) Which of the following is not correct with reference to zero coupon bonds?**

- (a) They are issued at a discount and redeemed at par.
- (b) Unlike other bonds, they do not give a regular interest pay-out to investors.
- (c) These bonds have high reinvestment risk.
- (d) Zero-coupon bonds can be traded in the secondary market

**Ans:- Option C.**

The most significant advantage of a zero-coupon bond is that the returns that you receive on them are known in advance. **Reinvestment risk refers to the financial risk of reinvesting pay-out, like the periodic interest amount, you get on an investment.** There is a possibility that the rate of return may be lower at the time of pay-out and you invest that amount at a lower interest rate. Since zero-coupon bonds do not offer regular returns, reinvestment risk is eliminated. **Hence, option (c) is the correct answer.**

- **Zero-coupon bonds are traded in the secondary market.** If one doesn't want to hold the bond to maturity, one can sell it before maturity on the stock exchange

**Q.35) Gross Domestic Product (GDP) at market price is obtained from Gross value added (GVA) at basic prices by**

- (a) Addition of product taxes and deduction of product subsidies.
- (b) Deduction of production taxes and addition of production subsidies.
- (c) Addition of production taxes deduction of production and subsidies.

(d) Addition of total taxes and deduction of total subsidies

**Ans:- Option A**

The relationship between GVA at Factor Cost and GVA at Basic Prices and GDP at market prices and GVA at basic prices is shown below:

- $GVA \text{ at factor cost} + (\text{Production taxes less Production subsidies}) = GVA \text{ at basic prices}$
- $GDP \text{ at market prices} = GVA \text{ at basic prices} + \text{Product taxes} - \text{Product subsidies};$

**Hence option (a) is the correct answer.**

**Q.36) With reference to Zero Defect Zero Effect, consider the following statements:**

1. It aims to manufacture goods in the country with 'zero defects' and to ensure that the goods have 'zero effect' on the environment.
2. The Bureau of Indian Standards has been appointed as the National Monitoring & Implementing Unit (NMIU) for implementation of ZED.
3. Ministry of Environment, Forest and Climate Change in collaboration with NITI Aayog launched the ZED scheme.

**Which of the statements given above is/are not correct?**

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1,2 and 3

**Ans:- Option C**

The Ministry of Micro, Small, and Medium Enterprises (MSME) launched a Zero Defect Zero Effect (ZED) Certification Scheme, with an **aim to make Indian companies globally competitive and help them get easier access to capital.** The scheme is an extensive drive to create proper awareness in MSMEs about ZED manufacturing and motivate them for assessment of their enterprise for ZED and support them. **Hence statement 3 is not correct.**

**Zero defect focuses entirely on the customers and tries to bring in zero waste in all aspects with zero non-compliance in manufacturing** or designing processes and zero non-conformity in products while, Zero effect means zero wastage of natural resources and focuses on the environment and how to make it better. It means there shall be zero effect on the environment from MSMEs regarding liquid discharge, air pollution and solid waste materials. **Hence statement 1 is correct.**

Under this, the Quality Council of India (QCI) followed the scheme guidelines on a consistent basis. QCI has completed and submitted all relevant

documents and evidences related to the erstwhile ZED Scheme and it acts as the National Monitoring and Implementation Unit (NMIU). QCI was monitoring & implementing the following components of the guidelines: Industry Awareness Programmes, Training Programmes etc. through accredited agencies, other components as mentioned in the scheme guidelines. **Hence statement 2 is not correct.**

**Q.37) Under the provisions of the Companies Act, 2013, which of the following companies is/are required to spend a minimum of 2% of their net profit over the preceding three years as Corporate Social Responsibility (CSR)?**

1. A company having a net worth of five hundred crore rupees or more
2. A company having a net profit of two crore rupees
3. A company having a turnover of one hundred crore rupees

**Select the correct answer using the code given below.**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 only
- (d) 1, 2 and 3

**Ans:- Option C.**

The Companies Act 2013, is an **act of the Indian parliament that regulates the incorporation, financing, and management of companies in India.** The Act includes provisions related to Corporate Social Responsibility (CSR), which require certain companies to undertake CSR activities as part of their corporate social responsibility.

• **Corporate Social Responsibility (CSR) is a concept in which companies take responsibility for the impact of their activities on society and the environment.** It involves a company taking a proactive approach to addressing the social and environmental issues that are related to its operations, products, and services.

• **Section 135 of the Companies Act, 2013, provides for companies**

- Having net worth of rupees five hundred crore or more. **Hence option 1 is correct.**
- Turnover of rupees one thousand crore or more. **Hence option 3 is not correct.**
- A net profit of rupees five crore or more in a financial year to spend for Corporate Social Responsibility (CSR) policy. **Hence option 2 is not correct.**

• As per the Companies Act 2013, **companies must spend the 2% of the average net profits allocated for CSR within three years**

**Q.38) With reference to Foreign Portfolio Investment (FPI), consider the following statements:**

1. It is regulated by the Reserve Bank of India.
2. It was harmonized by the merger of the Foreign Institutional Investor ('FII') and Qualified Foreign Investor ('QFI') mode of investment.
3. FPIs can invest in Government Securities in India.

**Which of the statements given above are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans:- Option B**

Regulated by SEBI, the FPI regime is a route for foreign investment in India. **Hence statement 1 is not correct.** T

he FPI regime came as a harmonized route of foreign investment in India, merging the two existing modes of investment, that is, Foreign Institutional Investor ('FII') and Qualified Foreign Investor ('QFI'). **Hence statement 2 is correct.**

• Foreign Portfolio Investors (FPIs), Non-Resident Indians (NRIs), Overseas Citizens of India (OCIs), Foreign Central Banks, Multilateral Development Bank, Long term investors like Sovereign Wealth Funds (SWFs), Multilateral Agencies, Endowment Funds, Insurance Funds and Pension Funds which are registered with SEBI Long Term Investors may invest in Government Securities/ Treasury bills. **Hence statement 3 is correct.**

**Q.39) Consider the following statements regarding the textile industry in India:**

1. The textiles and apparel industry in India is the largest employer among all the sectors.
2. The Government targets to achieve US \$100 billion in export for textile products by 2030.
3. USA was the top export destination of textiles during FY2022

**Which of the statements given above is/are correct?**

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 2 only
- (d) 1,2 and 3

**Ans:- Option B**

The textiles and apparel industry in India is the **2nd largest employer after agriculture in the country providing direct employment** to 45 mn people and 100 mn people in allied industries. **Hence statement 1 is not correct.**

• India's textile and apparel exports (including handicrafts) stood at US\$ 44.4 billion in FY22, a 41% increase YoY. The Government aims to achieve US\$ 100 billion in export for textile products by 2030. **Hence statement 2 is correct.**

• India's textile and apparel exports to the US, its single largest market, stood at 27% of the total export value in FY22. USA was the top export destination accounting for 27% share, followed by EU (18%), Bangladesh (12%) and UAE (6%). **Hence statement 3 is correct.**

**Q.40) Which of the following statements regarding 'Pradhan Mantri Jeevan Jyoti Bima Yojana' is/are correct?**

1. It is a one-year life insurance scheme renewable from year to year offering coverage for death due to any reason.
2. Individuals in the age group of 18-70 years having a savings bank or a post office account are entitled to enroll under the scheme.
3. It is mandatory for the participatory account holders to link their Aadhar Card to their account to avail benefits of the scheme.

**Select the correct answer using the code given below.**

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1,2 and 3

**Ans:- Option C**

Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) is available to people in the **age group of 18 to 50 years having a bank account and who give their consent to join/enable auto-debit.** Hence, **statement 2 is not correct.**

**Q.41) With reference to 'Prime Minister Formalization of Micro food processing Enterprises (PM-FME) Scheme', consider the following statements:**

1. It is a centrally sponsored scheme launched by the Ministry of Food Processing Industries.
2. The expenditure under the scheme would be in form of flexible loans offered by World Bank.
3. 'One District One Product' (ODOP) is one of the components adopted under the scheme.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) 2 and 3 only
- (d) 1 and 3 only

**Ans:- Option D.**

**Statement 1 is correct:** PM-FME Scheme is a centrally sponsored scheme launched by the **Ministry of Food Processing Industries (MOFPI)**. The PM-FME scheme will be implemented over a period of five years from 2020-21 to 2024-25 with an outlay of Rs 10,000 crore.

**Statement 2 is incorrect:** The expenditure under the PM-FME scheme would be **shared in 60:40 ratio between Central and State Governments, in 90:10 ratio with North Eastern and Himalayan States, 60:40 ratio with UTs with legislature and 100% by Centre for other UTs.** The support would be provided through credit linked grants at 35% for development of common infrastructure including common processing facility, lab, warehouse through FPOs/SHGs/cooperatives or state-owned agencies or private enterprise. The World Bank is not involved in providing loans under the scheme.

**Statement 3 is correct:** The PM-FME Scheme adopts **One District One Product (ODOP) approach**

**Q.42) The report 'Global status of black soils' is the first such report, released on the occasion of World Soil Day. In this context, select the organization which releases the report?**

- (a) International Food Policy Research Institute (IFPRI)
- (b) United Nations Environment Programme (UNEP)
- (c) World Economic Forum (WEF)
- (d) Food and Agriculture Organization (FAO)

**Ans:- Option D.**

Black soils are **carbon-rich** and highly fertile soils known as the **world's food basket due to the variability of crops they sustain.**

**Option d is correct:** The report '**Global status of black soils**' is the first such report, released on the occasion of **World Soil Day (5th December)**. It was released by Food and Agriculture Organization (FAO).

**Q.43) Arrange the following options in the increasing order of their percentage share of Gross Value Added (GVA) in total agricultural GVA as per Economic Survey 2021-22:**

1. Livestock

2. Forestry and Logging
3. Crops
4. Fishing and Aquaculture

Which of the option given below is correct?

- (a) 1-2-4-3
- (b) 4-2-1-3
- (c) 1-4-3-2
- (d) 2-4-1-3

**Ans:- Option B.**

A trend in the percentage share of agriculture and allied sectors to total Gross Value Added of the economy is an important indicator of the growth and development of agricultural sector in India. **The share of the sector in total GVA of the economy has a long-term trend of around 18 per cent.** The share of the agriculture & allied sector in total GVA, however, improved to 20.2 per cent in the year 2020-21 and 18.8 per cent in 2021-22.

**As per Economic survey 2021-22, the increasing order of the percentage share of Gross Value Added (GVA) of different sectors of Agriculture & Allied Sector is Fishing and Aquaculture < Forestry and Logging < Livestock < Crops (4-2-1-3)**

**Q.44) Consider the following statements regarding the impacts of green revolution in India:**

1. It widened the economic inequalities in the rural sector.
2. It aggravated the improper and under utilization of land.
3. It helped India in becoming self-sufficient in food crops.

Which of the statements given above are correct?

- (a) 2 and 3 only
- (b) 1 and 3 only
- (c) 1 and 2 only
- (d) 1,2 and 3

**Ans:- Option B.**

**Statements 1 is correct:** The green revolution promoted inequalities, widening the already existing gap between the rich and the poor in the rural sector. The labourers and landowners both were benefited from agricultural development, but the latter cornered most of the benefits giving rise to disparity between the landowners and the labourers.

**Statement 2 is incorrect:** The use of modern agricultural techniques, such as improved seeds, irrigation, and fertilizers, allowed farmers to make better use of their land and increased the productivity. So, the statement is incorrect.

**Statement 3 is correct:** The Green Revolution resulted in significant increases in crop yields, particularly for staple crops/food crops such as rice and wheat. This helped India in becoming self-sufficient in production of food crops and to increase food security and reduce hunger in India.

**Q.45) Which among the following are the components of the PM Krishi Sinchayee Yojna:**

1. Accelerated Irrigation Benefits Programme
2. Pradhan Mantri Kisan Urja Suraksha Evam Utthaan Mahabhiyan (PM-KUSUM)
3. Watershed Development
4. Soil Health Card Scheme
5. Command Area Development (CAD)
6. Ground Water Development

Select the correct answer using the code given below:

- (a) 2, 3, 4 and 6 only
- (b) 1,3,5 and 6 only
- (c) 1,2,4 and 5 only
- (d) 1, 2, 3, 4, 5 and 6.

**Ans:- Option B.**

PMKSY consists of three major components implemented by various ministries. They are as follows.

Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti

1) **Component:** Accelerated Irrigation Benefits Programme (AIBP)

2) **Component:** Har Khet Ko Pani (HKKP)

a. **Sub component:** Command Area Development (CAD)

b. **Sub component:** Surface Minor Irrigation (SMI)

c. **Sub component:** Repair, Renovation and Restoration (RRR) of Water Bodies

d. **Sub component:** Ground Water Development Department of Land Resources, Ministry of Rural Development

1) **Component:** Watershed Development Department of Agriculture and Farmers Welfare, Ministry of Agriculture & Farmers Welfare

1) **Component:** Per Drop More Crop

**Q.46) SEBI has recently extended the ban on trading of agricultural commodity derivatives. Which of the following best describes the purpose behind such ban?**

- (a) To protect the traders from volatility in the market.
- (b) To protect the interest of importers by hedging risk.
- (c) To control the rising inflation in economy.

- (d) To gradually remove the agricultural derivatives from market to protect the interest of farmers,

**Ans:- Option C.**

Recently, the Securities and Exchange Board of India (SEBI) has banned the **derivative trade of seven agricultural commodities on the future's platform of National Commodities and Derivatives Exchange (NCDEX) for a year.** The centre, in particular SEBI have extended the ban on agricultural commodities on concerns over rising inflation,

**Q.47) In India, the use of carbofuran, methyl parathion, phorate and triazophos is viewed with apprehension. These chemicals are used as:**

- (a) Pesticides in agriculture
- (b) Preservatives in processed foods
- (c) Fruit-ripening agents
- (d) Moisturizing agents in cosmetics

**Ans:- Option A**

**Carbofuran, phorate, methyl parathion, monocrotophos, methyl demethon, prophenophos and triazophos** used as pesticides in India to control insects in a wide variety of field crops.

**Q.48) In India, the steel production industry requires the import of**

- (a) Saltpetre
- (b) Rock phosphate
- (c) Coking coal
- (d) All of the above

**Ans:- Option C.**

The coal found in India is mainly of **non-coking quality and hence coking coal has to be imported.** 70% of the steel produced today uses coal. Coking coal is a vital ingredient in the steel making process. **Saltpetre is one of the major constituents of gun powder,** it is not used in the production of steel. It is **used in fertilizers, fireworks.**

**Q.49) Consider the following statements regarding World Happiness Report:**

- 1. It is released by the World Health Organization (WHO).
- 2. Social support and Generosity are among the parameters used in the report.
- 3. Each country in the report is compared against a hypothetical nation which has the happiest people in world.
- 4. India has steadily improved her rankings in last 5 World Happiness reports from 2018 to 2022

**Which of the statements given above is/are correct?**

- (a) 2 and 4 only
- (b) 1, 2, and 3 only
- (c) 2 only
- (d) 1,2,3 and 4

**Ans:- Option C**

**Statement 1 is incorrect:** The World Happiness Report is a publication of the **Sustainable Development Solutions Network (not the WHO), powered by the Gallup World Poll data.** It is published since 2012.

**Statement 2 is correct:** The report ranks **150 countries based on several parameters:**

- 1) Real GDP per capita
- 2) Social support
- 3) Healthy life expectancy
- 4) Freedom to make life choices.
- 5) Generosity
- 6) Perception of corruption

**Q.50) Which one of the following statements most appropriately describes the term 'Shadow Entrepreneurs'?**

- (a) They are optimistic individuals with the ability to pick out financial opportunities and exiting when a business hits its peak.
- (b) They are rare individuals that come up with a great idea or product that no one has thought of before.
- (c) They are individuals who manage a business that sells legitimate goods and services but they do not register their businesses.
- (d) They are individuals with a strong skillset in a specific area obtained through education or apprenticeship

**Ans:- Option C**

**Shadow entrepreneurs are individuals who manage a business that sells legitimate goods and services but they do not register their businesses.** This means that they do not pay tax, operating in a shadow economy where business activities are performed outside the reach of government authorities.

Types of businesses include unlicensed taxicab services, roadside food stalls and small landscaping operations. Researcher at Imperial College Business School found that, **India has second highest number of shadow entrepreneurs in the world after Indonesia.**

**Q.51) Which one of the following best describes the term, bancassurance?**

(a) It refers to the exclusive banking and insurance products sold by the same parent company.

(b) It is an insurance taken by the Central Bank against the drop of value of the currency.

(c) It is an arrangement between a bank and an insurance company allowing the insurance company to sell its products to the bank's client base.

(d) It is the insurance taken by banks for protecting the currency deposited within the bank.

**Ans:- Option C.**

Recently, Government has notified new norms on Bancassurance.

• Bancassurance is an **arrangement between a bank and an insurance company allowing the insurance company to sell its products to the bank's client base**. This partnership arrangement can be profitable for both companies. Banks earn additional revenue by selling insurance products, and insurance companies expand their customer bases without increasing their sales force. Hence option (c) is the correct answer.

• Bancassurance as we know it today appears to have **begun in France in the 1970s** (which would account for its seemingly French name). **Spain was also an early adopter, in the 1980s**. Both of those countries continue to be bancassurance market share leaders

**Q.52) Recently the Prime Minister of India announced that India has achieved its target of blending 10% sugarcane-extracted ethanol in petrol, ahead of schedule. In this context, which of the following is/are the advantages of ethanol blending?**

1. Reduction in import of petroleum
2. Increase farmers' incomes
3. Reduce emission of carbon monoxide

**Select the correct answer using the code given below.**

- (a) 1 and 2 only
- (b) 2 only
- (c) 1,2 and 3
- (d) 1 and 3 only

**Ans:- Option C**

Ethanol blending will help bring down our share of oil imports (almost 85%) on which we spend a considerable amount of precious foreign exchange. Secondly, **more ethanol output would help increase farmers' incomes**. According to the Ministry of Petroleum and Natural Gas, ethanol

blending led to the payment of over Rs 40,600 crore to farmers in the course of the last eight years.

**An increase in the ethanol content in fuels reduced the emissions of some regulated pollutants such as carbon monoxide (CO), hydrocarbons (HC) and CO<sub>2</sub>. Hence option (c) is the correct answer**

**Q.53) Consider the following statements with reference to the Special Window for Completion of Affordable and Mid-Income Housing (SWAMIH) Investment Fund:**

1. It has been created for funding stalled projects that are net-worth positive including projects declared as Non- Performing Assets (NPAs).
2. It is a category II Alternative Investment Fund (AIF).
3. It is sponsored and managed by the Reserve Bank of India

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans:- Option A**

Union government has infused about ₹5,000 crore in Special Window for Completion of Affordable and Mid-Income Housing (SWAMIH) Investment Fund.

• In order to give relief to homebuyers of stalled projects, a **Special Window for Completion of Affordable and Mid-Income Housing (SWAMIH investment fund)** has been created for funding stalled projects that are net-worth positive, including those projects that have been declared as **Non-Performing Assets (NPAs) or are pending proceedings before the National Company Law Tribunal under the Insolvency and Bankruptcy Code**. SWAMIH investment fund will provide last mile funding to the stressed affordable and middle-income housing projects in the country, **Hence statement 1 is correct.**

• SWAMIH Fund aims to provide priority debt financing to complete stressed, brownfield and RERA-registered residential projects.

• It is a **category II Alternative Investment Fund (AIF) announced in 2019**. **Hence statement 2 is correct.**

• It is sponsored by the Ministry of Finance and managed by SBICAP Ventures, a unit of State Bank of India. **Hence statement 3 is not correct.**

**Q.54) Consider the following statements with reference to the Unified Payment Interface (UPI):**

1. It is a system that powers multiple bank accounts into a single mobile application merging several banking features.
2. It was launched by the National Payments Corporation of India (NPCI).
3. Credit card payments are completely prohibited on UPI.

**Which of the statements given above are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1,2 and 3

**Ans:- Option A**

Recently, Razorpay, a payments and banking platform, announced its readiness to support credit card transactions on Unified Payments Interface (UPI), claiming it was an industry-first move.

- Now, with RuPay credit cards being enabled on UPI, Razorpay merchants would be able to accept credit card payments on UPI, with minimal changes to their existing set-up. This disruption was made possible in partnership with Axis bank. **Hence statement 3 is not correct.**

**Q.55) Which of the following organizations designed the 'Green Economy Initiative'?**

- (a) The Food and Agriculture Organisation
- (b) The United Nations Environment Programme
- (c) The World Bank
- (d) World Resources Institute

**Ans:- Option B.**

The UN Environment Programme (UNEP) has launched a **Green Economy Initiative**, which seeks to respond to the global economic downturn by focusing on economic growth and job creation in environmental industries.

**Q.56) Which of the following are the components of Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)?**

1. Integrated Cold Chain and Value Addition Infrastructure
2. Development of Food Fortification Resource Centre
3. Creation of Backward and Forward Linkages
4. Infrastructure for Agro-Processing Clusters
5. Mega Food Parks
6. Targeted Public Distribution System

**Select the correct answer using the codes given below:**

- (a) 1,2 and 4 only
- (b) 1,3,4 and 5 only

- (c) 2,3,4 and 6 only
- (d) 1,2,3,4 and 5 only

**Ans:- Option B.**

**Option 2 is incorrect:** The Food Fortification Resource Centre is a **Resource and Support Centre to promote large-scale fortification of food across India**. It is a resource hub which provides information and inputs on standards and food safety, technology and processes, premix and equipment procurement and manufacture, quality assurance and quality control for fortification of foods. **It is launched by FSSAI**. It is not the component of Pradhan Mantri Kisan Sampada Yojana. **Option 6 is also not correct as TPDS not part of it.**

**Q.57) Which of the following is the correct reason for low disbursement of the agricultural credit in North Eastern Region as compare to other parts of India?**

1. The total cultivable area in North Eastern States is less than three percent of the total gross cultivable area of the country.
2. The credit lending institution have very poor penetration in the rural areas of North Eastern States.
3. The system of community ownership of land is prevalent in most of the North Eastern States which negatively affects disbursement of agricultural credit

**Select the correct answer using the codes given below:**

- (a) 1 and 3 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1,2 and 3

**Ans:- Option A.**

**Statement 2 is incorrect:** Poor penetration of credit in the rural areas of North Eastern States is not among the reason for low coverage of the agricultural credit in North Eastern Region as compare to other parts of India. In fact, **the penetration of formal credit to the agriculture sector in North Eastern region is increased in the last decade due to various initiatives like financial inclusion, PSL limits etc.**

**Q.58) With reference to 'Agriculture Infrastructure fund', consider the following statements:**

1. It aims to provide short term- three months credit for post-harvest management Infrastructure.

2. Under the scheme, banks and financial institutions will provide loans featuring interest subvention to eligible beneficiaries.

3. Credit Guarantee Fund Trust for Micro and Small Enterprises scheme will provide guarantee coverage for loans provided to the eligible borrowers

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1 and 3 only

**Ans:- Option C.**

**Statement 1 is incorrect:** The scheme provides a **medium - long term debt financing facility for investment in viable projects for post-harvest management**, Infrastructure and community farming assets through interest subvention and financial support. Moratorium for repayment under this financing facility may vary subject to minimum of 6 months and maximum of 2 years.

**Statement 2 is correct:** Under the scheme, banks and financial institutions will provide Rs. 1 Lakh Crore as loans to eligible beneficiaries. **The Eligible Beneficiaries includes Farmers, FPOs, PACS, Marketing Cooperative Societies, SHGs, Joint Liability Groups (JLG).** The beneficiaries also include Agri-entrepreneurs, startups and Central/State agency or Local Body sponsored Public-Private Partnership Projects. Loans will have an interest subvention of 3% per annum up to a limit of Rs. 2 crores. This subvention will be available for a **maximum period of seven years.**

**Q.59) With reference to crop insurance under Pradhan Mantri Fasal Bima Yojana (PMFBY), Consider the following statements:**

- 1. Enrolment under PMFBY is mandatory for loanee farmers of banks.
- 2. Damage to crops due to wildlife attack is also covered under PMFBY.
- 3. Post-Harvest loss coverage is provided only upto a maximum period of two weeks from harvesting

**Which of the statements given above are correct?**

- (a) 2 and 3 only
- (b) 1 and 3 only
- (c) 1 and 2 only
- (d) 1, 2 and 3

**Ans:- Option A**

**Statement 1 is incorrect:** The scheme was revamped in **2020, which made participation for all**

**farmers voluntary under PMFBY.** Earlier, crop insurance was mandatory for loanee [borrower] farmers and voluntary for non-loanee farmers. All farmers availing Seasonal Agricultural Operations (SAO) loans from Financial Institutions in the notified area who possess a Crop Loan account/KCC account are called as Loanee Farmers.

**Statement 2 is correct:** loss to crops arising out of wildlife attack is also covered under PMFBY crop insurance scheme.

**Statement 3 is correct:** Insurance coverage is available only up to a maximum period of two weeks from harvesting. It is for those crops which are required to be dried in cut and spread / small bundled condition in the field after harvesting against specific perils of Hailstorm, Cyclone, Cyclonic rains and Unseasonal rains.

**Q.60) Consider the following statements regarding the Indian Green Building Council (IGBC):**

- 1. It is an autonomous body under the Ministry of Power for promoting sustainable construction.
- 2. It is voluntary for the projects related to construction to obtain ratings from IGBC.
- 3. Projects certified by IGBC are eligible for various government incentives.
- 4. Membership of the Council is open to all the stakeholders engaged in construction activities.

**Which of the options given above is/are correct?**

- (a) 1,2 and 3 only
- (b) 2,3 and 4 only
- (c) 2 only
- (d) 1,3 and 4 only

**Ans:- Option B**

**Statement 1 is incorrect:** The Indian Green Building Council (IGBC) is a part of **Confederation of Indian Industry (CII). It was formed in the year 2001** to “enable a sustainable built environment for all and facilitate India to be one of the global leaders in sustainable built environment by 2025”.

**Statement 2 is correct:** IGBC has launched its Green Building Rating Systems for green new buildings, residential societies, schools, resorts, healthcare, township, data center and so on. All the IGBC rating systems are **voluntary, consensus based, market-driven building programmes.**

**Q.61) With reference to 'Bharat Gaurav Trains' scheme, consider the following statements:**

- 1. It allows only private players to operate trains on theme-based circuits.

2. The operator has the freedom to decide the route, the halts, and the services provided but not the tariff.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

No fund is envisaged to be allocated for **Bharat Gaurav Trains** scheme as this is based on revenue generating model.

Anyone, from societies, trusts, consortia, and even state governments can apply to take these trains and run them on special tourism circuits based on a theme. **Hence, statement 1 is not correct**

The operator has the freedom to decide the route, the halts, the services provided, and most importantly the tariff. These trains will be end-to-end and cannot be used as ordinary transport trains between an origin and destination. **Hence, statement 2 is not correct.**

**Q.62) With reference to the insurance sector in India, which of the following statements is/are correct?**

- 1. The number of general insurance companies are higher as compared to life insurance companies operating in India.
- 2. Life insurance penetration is less as compared to general insurance penetration in India.

**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:- Option A**

- As per Insurance Regulatory and Development Authority (IRDAI), **there are 34 general insurance companies including the ECGC and Agriculture Insurance Corporation of India and 24 life insurance companies operating in India. Hence, statement 1 is correct.**
- Insurance penetration **indicates the level of development of the insurance sector in a country**, it is measured as the ratio of premiums underwritten in a particular year to the GDP of a country.
- In **2021-22, India's life insurance penetration stood at around 3 percent**, while the general

**insurance penetration stood at around 1 percent.** The overall penetration for the industry is over 4 percent in India (Economic Survey 2021-2022). **Hence, statement 2 is not correct.**

**Q.63) Which of the following goods come under the category of white goods?**

- 1. Refrigerators
- 2. Dishwashers
- 3. Air conditioners
- 4. LED Lights

**Select the correct answer using the code given below.**

- (a) 1 and 2 only
- (b) 3 and 4 only
- (c) 1,2 and 4 only
- (d) 1, 2, 3 and 4

**Ans:- Option D**

White goods refer to **heavy consumer durables or large home appliances, which were traditionally available only in white.** They include appliances such as washing machines, air conditioners, stoves, refrigerators, LED Lights, dish washers etc. **Hence option (d) is the correct answer.**

**Q.64) Consider the following statements regarding the International Monetary Fund (IMF):**

- 1. The International Monetary and Financial Committee (IMFC) is the highest decision-making body of the IMF.
- 2. Every member country has equal voting power in decision-making at the IMF.
- 3. The Board of Governors has the right to approve quota increases, allocate or cancel special drawing rights (SDR),

**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) 3 only

**Ans:- Option D**

The Board of Governors is the **IMF's highest decision-making body.** It consists of one governor and one alternate governor for each member country. The governor is appointed by the member country and is usually the minister of finance or the head of the central bank. **Hence statement 1 is not correct.**

**Unlike the United Nations General Assembly, where each country has one vote, voting power**

and decision-making at the IMF reflect its member countries' relative economic position. The IMF works to ensure that its governance structure keeps pace with changes in the world economy, including the larger role that emerging market and developing economies now have. **Hence statement 2 is not correct.**

**Q.65) With reference to the common BIS standards, consider the following pairs**

BIS Standard	Used for
1. BIS Hallmark	Standards compliance mark for industrial products
2. ISI Mark	Mandatory standard for gold and silver jewellery
3. Ecomark:	Labeling of environment-friendly products

**Select the correct answer using the code given below.**

- (a) 1 and 2 only
- (b) 3 only
- (c) 1 only
- (d) 2 only

**Ans:- Option B**

- **BIS Hallmark:** Mandatory standard for gold and silver jewellery. Hallmarking is the accurate determination and official recording of the proportionate content of precious metal in precious metal articles. Hallmarks are thus official marks used in many countries as a guarantee of purity or fineness of precious metal articles.
- **ISI Mark:** Standards compliance mark for industrial products since 1955. The mark certifies that a product conforms to an Indian standard (IS) developed by the Bureau of Indian Standards (BIS)
- **Ecomark:** ECO Mark Scheme was instituted by the Government of India for labeling of environment-friendly products. The Scheme covers various product categories like Soaps and Detergents, Paints, Food Items, Lubricating Oils, Packing/Packaging Materials, Architectural Paints and Powder Coatings,

**Q.66) "Special Data Dissemination" related to financial data transparency is established by which one of the following?**

- (a) United Nations Statistical Commission

- (b) Organization for Economic Cooperation and Development
- (c) World Economic Forum
- (d) International Monetary Fund

**Ans:- Option D**

The Special Data Dissemination Standard (SDDS) was established in 1996 by the International Monetary Fund to guide members that have, or might seek, access to international capital markets in providing their economic and financial data to the public. **It is aimed at guiding members to enhance data transparency and help financial market participants to assess the economic statistics of individual countries.**

**Q.67) Mr. X has purchased 1000 equity shares for Rs. 50 each in the morning. He then sold his 1000 shares at Rs. 60 each in the evening. He will be taxed under the**

- (a) Wealth Tax
- (b) Goods and Services Tax
- (c) Security Transaction Tax
- (d) Long-Term Capital Gains Tax

**Ans:- Option C**

Securities Transaction Tax (STT) is a direct tax. **It is sanctioned by the central government on both purchase and selling of securities.** These securities may include options, equities and futures. STT is exclusively applicable to transactions settled in the domestic stock exchange. Also, STT covers only transactions completed through accepted stock exchanges in the country. Moreover, this tax excludes off-market transactions.

**Q.68) Consider the following statements:**

1. Purchasing power parity (PPP) exchange rates are calculated by comparing the prices of the same basket of goods and services in different countries.
2. PPP allows for economists to compare economic productivity and standards of living between countries.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C**

- Purchasing power parity (PPP) is a popular metric used by macroeconomic analysts that compares different countries' currencies through a "basket of goods" approach.

• According to this concept, **two currencies are in equilibrium**—known as the currencies being at par—when a basket of goods is priced the same in both countries, taking into account the exchange rates. **So, statement 1 is correct.**

• PPP allows for economists to compare economic productivity and standards of living between countries. **In terms of PPP dollars, India is the third largest economy in the world. So, statement 2 is correct.**

**Q.69) Consider the following statements with reference to the Indian economy:**

1. The aggregate debt to GSDP (Gross State Domestic Product) ratio of states was greater than that of the Centre in 2021.
2. The Central government's debt to GDP ratio has never crossed the 50% mark.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D.**

The aggregate debt of states reached a 15-year high of 31.3% of GDP in FY21 and is seen to be at roughly the same level in FY22. According to the respective budget estimates, **states with the highest debt-GSDP ratio in FY22 are Punjab (53.3%), Rajasthan (39.8%), West Bengal (38.8%), Kerala (38.3%) and Andhra Pradesh (37.6%).** All these states receive revenue deficit grants from the Centre. The Centre's debt was at 58.8 percent of gross domestic product (GDP) in FY21. It fell slightly to 57.6 percent in the first quarter of FY22. **So, statement 1 and statement 2 are not correct**

**Q.70) It is an economy that uses a systems-focused approach and involves industrial processes and economic activities that are restorative or regenerative by design. It enables resources used in the processes and activities to maintain their highest value for as long as possible, and aims for the elimination of waste through the superior design of materials, products, and systems.**

**Which one of the following correctly represents the above description?**

- (a) Gig economy
- (b) Regenerative economy
- (c) Carbon-neutral economy
- (d) Circular economy

**Ans:- Option D**

In a circular economy, **materials for new products come from old products.** As much as possible, everything is **reused, re-manufactured or, as a last resort, recycled back** into a raw material or used as a source of energy. **Therefore, option (d) is the correct answer.**

**Q.71) The surface of a lake is frozen in severe winter, but the water at its bottom is still liquid. What is the reason?**

- (a) Ice is a bad conductor of heat.
- (b) Since the surface of the lake is at the same temperature as the air, no heat is lost.
- (c) The density of water is maximum at 4°C.
- (d) None of the statements (a), (b) and (c) given is correct

**Ans:- Option C**

**Water generally gets denser as it gets colder, and therefore sinks.** However, when the water is colder than 4° Celsius (39° Fahrenheit), water begins expanding and becomes less dense. As a result, close to freezing, colder water floats to the top and the warmer water sinks to the bottom. Eventually, the coldest water, which has floated to the top of the lake in wintry conditions, freezes to form a layer of ice. Right when the water freezes to ice, the ice becomes significantly less dense than the water and continues to float on the lake's surface.

**Q.72) Which one of the following statements best describes the reason behind storage of Sodium in the kerosene oil?**

- (a) It reduces the melting point of the Sodium
- (b) It leads to electroplating on Sodium.
- (c) Sodium is a highly reactive metal
- (d) It increases the weight of the Sodium

**Ans:- Option C**

Sodium is a **highly reactive metal** that can react with water and oxygen in the air **to form sodium hydroxide and hydrogen gas, which can be highly flammable and dangerous.** To prevent these reactions, sodium is typically stored in a liquid hydrocarbon such as kerosene.

**1) Kerosene is an oil product that is immiscible with water, which means it will not mix with water.** This property makes it an effective barrier between the sodium and the water vapor in the air. Additionally, **kerosene is a poor oxidizing agent,** which means it does not readily support combustion. This makes it an effective barrier between the sodium and the oxygen in the air, preventing the formation of hydrogen gas

**Q.73) Generally, curd is not kept in brass and copper vessels. Which of the following is the most probable reason for not keeping curd in brass and copper vessels.?**

- (a) Curd contains Lactic acid which can react with copper & brass to produce harmful products.
- (b) Tartaric acid in curd reacts with copper & brass to produce harmful gases.
- (c) Curd primarily contains Acetic acid, which becomes harmful when it reacts with brass and copper.
- (d) Ascorbic acid in the curd reacts with copper & brass to produce toxic compounds

**Ans:- Option A**

**Option a is correct:** Curd is obtained from milk by **coagulating milk through a process called curdling**. Curd **contains Lactic acid**. When lactic acid in the curd reacts with the metals like Brass and Copper, it **causes corrosion** and the creation of products that cannot be digested by the human body.

**Q.74) Consider the following statements regarding the applications of Nitrogen and its compounds:**

- 1. Nitrogen gas can be used for soldering purposes.
- 2. Nitrogen in form of nitrous oxide is used while giving Anaesthetics to the patients.
- 3. Matchstick contains nitrogen in powdery form.
- 4. Nitrogen can be used in steel making process.

**Which of the statements given above are correct?**

- (a) 1 and 3 only
- (b) 1,2, and 4 only
- (c) 2 and 4 only
- (d) 1, 2, 3, and 4

**Ans:- Option B.**

**Statement 3 is incorrect:** Nitrogen gas is not used in **Matchstick**. **The head of safety matches is made of an oxidizing agent such as potassium chlorate, mixed with sulfur, fillers, and glass powder**. The side of the box contains red phosphorus, binder, and powdered glass.

**Statement 4 is correct:** There are various instances **when nitrogen can be added to steel during Steel making such as melting**. Also, by electroplating the stainless steel with nitrogen gas, the finished product is stronger and more resistant to corrosion.

**Q.75) Consider the following Assertion and Reason:**

**Assertion:** Unlike rainwater, distilled water does not conduct electricity.

**Reason:** Unlike rainwater, distilled water does not contain dissolved ions.

**Which one of the following is correct in respect of the above statements?**

- (a) Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.
- (b) Both Assertion and Reason are correct and Reason is not the correct explanation of Assertion
- (c) None of options correct
- (d) Only the First Statement Correct

**Ans:- Option A**

**Both the Assertion and reason are correct and Reason is the correct explanation of Assertion.**

Distilled water and rainwater have different properties when it comes to their ability to conduct electricity. **Distilled water is purified water that has had impurities removed through a process of distillation**. During this process, any dissolved ions or other conductive materials are removed, leaving behind pure water that is not able to conduct electricity. This is because electricity is conducted through the movement of ions in a solution, and distilled water contains very few ions.

**Rainwater, on the other hand, is naturally occurring water that has not undergone distillation**. Rainwater can contain dissolved ions and other conductive materials, such as dissolved salts and minerals, that are present in the air or picked up from the ground as the rain falls. **These dissolved ions and materials make rainwater a good conductor of electricity**

**Q.76) In context of the Ways and Means Advances (WMA), often seen in news, consider the following statements:**

- 1. It is a temporary loan facility provided by the Reserve Bank of India to State governments.
- 2. The interest rate charged on such loans is always equal to the Repo Rate.
- 3. WMA funding is much costlier than borrowings from the market.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) 1 and 2 only
- (d) 1,2 and 3

**Ans:- Option A**

Ways and Means Advances (WMA) Scheme was **introduced in 1997**. Its objective is to meet mismatches in the receipts and payments of the government.

**Statement 1 is correct:** Ways and Means Advances (WMA) Scheme was introduced in 1997. These are **temporary loan facilities provided by the Reserve Bank of India (RBI) to the central and state governments to meet mismatches in the receipts and payments.** The limits for WMA are decided by the government and RBI mutually and revised periodically.

**Statement 2 is incorrect:** There are **two types of WMAs** —1. Normal Ways and Means Advances; and 2. Special Drawing Facilities against government securities/Special WMA

**The rate of interest applicable for Normal WMA funding from RBI is the repo rate.** The interest levied for special WMAs could be lower than the repo rate due to the backing of government securities. Special WMA or Special Drawing Facility is provided against the collateral of the government securities held by the state. After the state has exhausted the limit of SDF, it gets normal WMA. **The interest rate for SDF is generally one percentage point less than the repo rate.**

**Statement 3 is incorrect:** WMA funding is much cheaper than borrowings from markets as it is charged at the repo rate. **WMA can be an alternative to other tools of borrowing like raising longer-tenure funds from the markets,** issue of State government securities or borrowing from financial institutions for short-term funding.

Rescue Missions	Associated with
1. Operation Sukoon	Evacuation of Indians after Iraqi forces invaded Kuwait
2. Operation Rahat	Evacuation of Indians as well as foreign nationals from war torn Yemen
3. Operation Ganga	Evacuation of Indian students from the War-torn Afghanistan

**Q.77) With reference to the Reserve Bank of India (RBI), consider the following statements:**

- All Indian banks require a licence from the RBI for opening a new branch anywhere in India.
- RBI manages the market borrowing programme of the state governments in India.
- The interest rates on all categories of deposits and loans of banks are solely determined by the RBI.
- The Central and the state Governments are required to maintain a minimum cash balance with the RBI.

**Which of the statements given above is/are correct?**

- 2 and 4 only
- 2 only
- 1,2 and 4 only
- 1 and 3 only

**Ans:- Option A**

RBI was established under **RBI act in 1935 as a private bank.** It was converted into central bank after nationalisation in 1949.

**Statement 1 is incorrect:** For commencing banking operations in India, whether by an Indian or a foreign bank, a licence from the Reserve Bank is required. **The opening of new branches by banks and change in the location of existing branches are also regulated as per the Branch Authorisation Policy.** This policy has recently been liberalised significantly and Indian banks no longer require a licence from the Reserve Bank for opening a branch at a place with population of below 50,000.

**Statement 2 is correct:** RBI acts as the banker for government. As the debt manager of the state governments, the mandate of the Reserve Bank is to manage the market borrowing programme of the state governments. **The function of management of public debt is done by the Internal Debt Management Department (IDMD) of the Reserve Bank.** IDMD of RBI manages the Market Borrowing Programme (MBP). This involves issue and servicing aspects i.e., retirement of rupee loans, interest payment on the loan and handling operational issues.

**Statement 3 is incorrect:** The interest rates on most of the categories of deposits and lending transactions have been deregulated and are largely determined by banks. However, the Reserve Bank regulates the interest rates on savings bank accounts and deposits of non-resident Indians (NRI), small loans up to rupees two lakh, export credits and a few other categories of advance

**Q.78) Consider the following pairs:**

**Which of the pairs given above is/are correct?**

- 1 and 2 only
- 2 only
- 3 only
- 1 and 3 only

**Ans:- Option B**

**Pair 1 is incorrectly matched: Operation Sukoon (2006):** India evacuated not just Indians but also nationals of neighbouring countries with the help of

the Indian navy when conflict **between Israel and Hezbollah broke out in 2006.**

**1990 Kuwait airlift:** Around 1,70,000 Indians were brought back home after Iraqi forces invaded Kuwait, kicking off the first Gulf War.

**Pair 2 is correctly matched: Operation Rahat (2015):** India evacuated nearly 4,000 citizens along with foreign nationals of 26 countries from war-torn Yemen.

**Pair 3 is incorrectly matched: Operation Ganga (2022):** The 700 Indian students were finally successfully evacuated from the north-eastern Ukrainian city of Sumy through Operation Ganga.

**Q.79) Which of the following factors leads to ineffective/ weak transmission of monetary policy in India?**

1. Asset-liability mismatch in Indian banking system
2. Lack of flexibility in interest rates of Term deposits
3. Higher interest rates offered by small saving schemes
4. Weak balance sheets of the banking sector

**Select the correct answer using the code given below:**

- (a) 1,2 and 4 only
- (b) 3 and 4 only
- (c) 1, 2 and 3 only
- (d) 1,2,3 and 4

**Ans:- Option D**

Monetary policy transmission is the process through which policy action of the central bank is transmitted to meet the objectives of economic growth and maintaining optimum inflation. **Traditionally, four key channels of monetary policy transmission are identified, viz., interest rate, credit aggregates, asset prices and exchange rate channels.**

**Statement 1 is correct:** There are several factors which impede monetary transmission to deposit and lending rates of banks. The factors include mismatch of banks' assets and liabilities, competitive pressure for small savings schemes, and assets quality of scheduled commercial banks. Consequences of asset-liability mismatch are interest rate risk and liquidity risk as deposits are of shorter maturity, they are repriced faster than loans. This results in banks paying higher interest whenever a deposit matures and is rebooked. Hence having influence on transmission of monetary policy.

**Statement 2 is correct: Around 58% of the total deposits are term deposits and 77% of the term deposits are for 1 year and above.** Most of the term

deposits have fixed interest rate which means the transmission is effective only for fresh deposits. Besides, banks have no incentive to decrease the deposit rate with the decrease in repo rate due to high operating expenses of savings accounts and already stressed balance sheets.

**Q.80) Under which of the following circumstances may 'capital gains 'arise?**

1. When there is an increase in the sales of a product.
2. When there is a natural increase in the value of the property owned.
3. When you purchase a painting and there is a growth in its value due to increase in its popularity.

**Select the correct answer using the codes given below:**

- (a) 1 only
- (b) 2 and 3 only
- (c) 2 only
- (d) 1, 2 and 3

**Ans:- Option B**

**Statements 2 and 3 are correct.** Capital gain is an increase in a capital asset's value and is considered to be realized when the asset is sold. Realized capital gains and losses occur when an asset is sold, which triggers a taxable event. Unrealized gains and losses, sometimes referred to as paper gains and losses, reflect an increase or decrease in an investment's value but are not considered a **capital gain that should be treated as a taxable event.**

**Statement 1 is incorrect.** Increase sale of a product doesn't imply the increase of value of that product. So, no capital gain.

**Q.81) In the context of evolution, which of the following best reflects the meaning of Adaptive Radiation?**

- (a) A situation where species that are not closely related have many similar traits.
- (b) A situation where similar traits are shared by many species and also by their respective ancestors.
- (c) A process where a single species diversifies into a number of different species
- (d) A process where species evolves back to supposedly more primitive forms over time

**Ans:- Option C**

**Option a and b are incorrect:** Both convergent evolution and parallel evolution are marked by the development of similar traits between the unrelated species. **However, the difference between parallel and convergent lies in the degree**

of similarity between new species and their ancestors. Two species sharing the same traits are considered as parallel evolution if their ancestors shared that similarity; if they did not, then the evolution is defined as convergent evolution.

**Option c is correct:** Adaptive radiation or Divergent evolution involves species with a common ancestor (which means closely related species). These species change to become increasingly different over time. **An adaptive radiation occurs when a single or small group of ancestral species rapidly diversifies into a large number of descendant species.** It usually happens when a change in the environment makes new resources available, alters biotic interactions or opens new environmental niches.

**Option d is incorrect.** Backward evolution is the notion that species can revert to supposedly more primitive forms over time.

**Q.82) Consider the following sites and their locations:**

Sites	Location
Etalin Hydro Power Project	Arunachal Pradesh
West Seti Power Project	Tamil Nadu
Menar Bird Village	Rajasthan

**Which of the pairs given above is/are correctly matched?**

- (a) 3 only
- (b) 1 and 3 only
- (c) 1 and 2 only
- (d) 1,2 and 3

**Ans:- Option B**

**Pair 1 is correctly matched:** Etalin Hydro Power Project is located in **Arunachal Pradesh**. Wildlife scientists and conservationists in Arunachal Pradesh flagged threats to local biodiversity from the proposed **Etalin hydroelectric (3,097 MW) project in Dibang Valley**.

**Pair 2 is incorrectly matched:** West Seti Power Project is a **proposed 750-megawatt Hydropower Project, which is to be built on the Seti river** in far-western Nepal, which has remained on the drawing board for the last six decades.

**Pair 3 is correctly matched:** Recognised as the “**bird village**” following **community-driven conservation efforts, Menar in Udaipur district is set to be notified as Rajasthan's new wetland**. This will pave the way for getting the Ramsar site status for this rural heartland of the Mewar region

**Q.83) Consider the following statements with reference to the food production and nutrition in plants:**

1. In most of the plants, food production is primarily carried out in roots.
2. During photosynthesis, the plant produces oxygen and glucose.
3. Non-green leaves in some plants may also carry out photosynthesis.

**Which of the above given statements is/are correct?**

- (a) 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1 and 2 only

**Ans:- Option B**

**Statement 1 is incorrect:** Food production primarily is carried out in leaves (not roots). Water and minerals from the soil are absorbed by the root and transported to the leaves through vessels. **Carbon dioxide reaches leaves through stomata** – which are small pores on leaves surrounded by guard cells.

**Statement 2 is correct:** During photosynthesis, plants take in carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O) from the air and soil. **The green parts of plants use sunlight, water, and the carbon dioxide from the air to produce glucose and oxygen.**

**Statement 3 is correct:** Some plants, which have **non-green leaves, also engage in photosynthesis**. These non-green leaves contain some amount of chlorophyll. **Chlorophyll is present in small amounts, and other pigments cover the green of chlorophyll**

**Q.84) Which among the following can be considered as the most appropriate description of 'Slow fashion Movement'?**

- (a) Using of only traditional looming techniques in the production of clothings.
- (b) Rejection of big label brands in favour of Small Fashion Enterprises.
- (c) Production of fabric from weavers of tribal and underprivileged groups.
- (d) Producing clothing Sustainably which takes into consideration all aspects of the supply chain.

**Ans:- Option D**

Slow Fashion Movement is an approach to producing clothing which takes into **consideration all aspects of the supply chain and in doing so, aims to respect people, the environment, and animals**. It also means spending more time on the design process, ensuring that each piece of apparel is quality made. **Fast Fashion retailers have taught us**

that more is better, and thereby have created a huge consumption issue. The fast fashion industry is driving down quality, exploiting the environment and their workers to create cheap garments that do not last. **Slow fashion is the exact opposite of this. It's about creating mindful, curated collections based on quality finishes, versus pumping out large quantities of seasonal and trendy clothing.**

**Q.85) Which of the following statements correctly describes the differences between Deoxyribonucleic acid (DNA) and ribonucleic acid (RNA)?**

1. The structure of a DNA is double stranded whereas the structure of RNA is single stranded.
2. As compared to RNA, DNA is more reactive and structurally less stable.
3. Unlike DNA, RNA can produce its own protein.
4. Unlike DNA, RNA can be used for manufacturing vaccines.

Select the correct answer using the code given below:

- (a) 1 and 3 only
- (b) 1,2 and 4 only
- (c) 2 and 3 only
- (d) 1,3 and 4 only

**Ans:- Option A**

Deoxyribonucleic acid (DNA) and ribonucleic acid (RNA) are the two types of nucleic acids found in living systems.

**Statement 1 is correct:** DNA is a **double-stranded molecule that has a long chain of nucleotides. RNA is a single-stranded molecule which has a shorter chain of nucleotides.** DNA replicates on its own whereas RNA does not replicate on its own.

**Statement 2 is incorrect:** RNA is a **more reactive group and easily degradable.** On the other hand, **DNA is less reactive and structurally more stable.** This property makes DNA a better genetic material than RNA. The presence of thymine at the place of uracil confers additional stability to DNA.

**Statement 3 is correct:** RNA can directly code for the synthesis of proteins, hence can easily express the characters. DNA, however, is dependent on RNA for synthesis of proteins. **Hence for the transmission of genetic information, RNA is better.**

**Statement 4 is incorrect:** **Both DNA and RNA can be used for manufacturing vaccines.** DNA vaccination is a technique involving injecting genetically engineered DNA into living organisms so cells directly produce an antigen against disease and RNA vaccination involves injecting RNA into living organisms to direct the body to produce a certain type of protein which acts as an antigen. **ZyCoV-D is**

**a DNA based COVID Vaccine and Pfizer-BioNTech and the Moderna COVID-19 vaccines use mRNA.**

**Q.86) Sometimes seen in news, the "TReDS" is:**

- (a) An electronic platform for third-party guarantee-free loans to the Micro and Small enterprises, especially in the absence of collateral.
- (b) An electronic platform for facilitating the financing of trade receivables of Micro, small and Medium Enterprises (MSMEs) through multiple financiers
- (c) A platform to support traditional artisans to provide Sustainable employment.
- (d) A post COVID Resilience and Recovery Programme to revitalize the MSME sector.

**Ans:- Option B**

TReDS(Trade Receivables Discounting System) is an **institutional mechanism set up in order to facilitate the discounting of invoices for MSMEs from corporate buyers through multiple financiers.** It involves **three participants MSME Supplier, Corporate Buyer and Financier.** It is a platform for uploading, accepting, discounting, trading and settling invoices / bills of MSMEs and facilitating both receivables as well as payables factoring (reverse factoring). It is an electronic platform.

**Option a is incorrect.** Credit Guarantee Scheme for Micro & Small Enterprises (CGTMSE) – It is a **platform for third-party guarantee-free loans to the Micro and Small enterprises (MSEs), especially in the absence of collateral.** It provides Credit guarantee for loans up to Rs. 2 crores, without collateral and third-party guarantee

**Q.87) Which of the following is not a challenge faced by the Food Processing Sector in India?**

- (a) Poor availability of primary processing, storage and distribution facilities
- (b) Many Food Processing Industries are in the unorganized sector.
- (c) Only 49% FDI is permitted in the food-processing sector, leading to fund shortages
- (d) Inadequate focus on quality and safety standards

**Ans:- Option C**

**Statement c is incorrect:** The Food Processing sector was opened to a 100% FDI under Automatic Route in 2016. Further, in 2017, 100 per cent FDI under the Government route for retail trading, including through **e-commerce, is permitted in respect of food products manufactured and/or produced in India.**

**Q.88) Consider the following statements:**

1. Demutualisation is a process through which the debt of a company is transformed into equity shares.
2. Corporatization is transferring control of a government-owned entity to a private entity.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option D**

**Statement 1 is incorrect:** Demutualization is a process by which a private, member-owned company, such as a co-operative, or a mutual life insurance company, legally changes its structure, in order to become a public-traded company owned by shareholders.

**Statement 2 is incorrect:** Corporatization occurs when the government reorganizes the structure of a government-owned entity into one that resembles a private entity (not transferring control to private entity). **Corporatized companies tend to have a board of directors, management, and shareholders.** But the government is the only shareholder, and the shares in the company are not publicly traded. The goal of the government is to retain ownership while allowing the entity to operate efficiently and competitively.

**Q.89) With reference to the Start-ups in India, consider the following statements**

1. Among the Indian states, Karnataka has the highest number of recognised start-ups.
2. Unicorn is a term given to Start-up company whose annual profit is more than \$1 billion.
3. Under the Start-up India initiative, there is no direct fund allocation from Union government to states governments.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans:- Option C**

Start-ups in India have grown remarkably over the last six years, most of these belong to the services sector. As of 2022 there were more than 61,400 start-ups that have been recognised in India

**Statement 1 is incorrect:** With a total of 11,308 start-ups **Maharashtra has the highest number of recognised start-ups in India while Karnataka has total of 8,881.** Recently, **Delhi has replaced Bangalore as the start-up capital of India.** Over 5,000 recognised start-ups were added in Delhi while 4,514 start-ups were added in Bangalore between 2019 to 2021.

**Statement 2 is incorrect;** Unicorn is a term used in the **venture capital industry to describe a privately held start-up company with a market valuation of over \$1 billion.**

**Statement 3 is correct:** There is no direct fund allocation from DPIIT to States/UTs under Start-up India initiative. However, **Government of India has established a Fund of Funds for Start-ups (FFS) with corpus of Rs. 10,000 crores, to meet the funding needs of start-ups.** DPIIT is the monitoring agency and Small Industries Development Bank of India (SIDBI) is the operating agency for FFS. The flow of funds is Government > SIDBI > Venture Capitals > Start-ups

**Q.90) With reference to the Air-Independent Propulsion' technology, consider the following statements:**

1. It allows a conventional submarine to remain submerged for much longer than ordinary diesel-electric submarines.
2. It allows a non-nuclear submarine to operate without access to atmospheric oxygen.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option C**

**Statement 1 is correct:** AIP (Air-Independent Propulsion) technology allows a conventional submarine to remain submerged for much longer than ordinary diesel-electric submarines. **All conventional submarines have to surface to run their generators that recharge the batteries that allow the boat to function underwater.** However, the more frequently a submarine surfaces, the higher the chances of it being detected. AIP allows a submarine to remain submerged for more than a fortnight compared to two to three days for diesel-electric boats.

**Statement 2 is correct:** Air-independent propulsion (AIP), or air-independent power, is **marine propulsion technology that allows a non-nuclear**

**submarine** to operate without access to atmospheric oxygen

**Q.91) In the context of India's Nuclear Policy, consider the following statements:**

1. India is the world's only country to have adopted 'no-first use' policy.
2. Only the Political Council of the Nuclear Command Authority can authorize the use of nuclear weapons.

**Which of the above given statements is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

A nuclear doctrine is meant to provide a framework regarding the use of nuclear weapons by a nuclear-weapon state both during peace and war. **India had officially adopted the nuclear doctrine in 2003.**

**Statement 1 is incorrect:** In 1964, China had already declared its no-first use policy. **India had adopted this policy in 1998 after the successful completion of nuclear tests in Pokhran.** Presently, only **India and China have declared policy of 'no first use'**. The policy asserts that the arsenal would be used only as a nuclear deterrent. However, **the government reserves the right to use nuclear weapons for retaliation against nuclear attack on Indian territory or on Indian Forces anywhere.** In case of biological or chemical weapons attack also, the government reserves right for retaliatory nuclear strike.

**Statement 2 is correct:** The Nuclear Command Authority comprises a Political Council and an Executive Council. The Political Council is chaired by the Prime Minister. **It is the sole body which can authorize the use of nuclear weapons.** The Executive Council is chaired by the National Security Advisor. It provides inputs for decision making by the Nuclear Command Authority and executes the directives given to it by the Political Council.

**Q.92) The 'Panchsheel (Five Principles of Peaceful Coexistence) presented an alternative path to the path of contentions and conflicts. In this context, consider the following statements regarding the 'Panchsheel' doctrine:**

1. These principles were enunciated for the first time during the Bandung Conference in 1955.
2. Both India as well as China has accepted the Panchsheel principles in the matters of foreign policy.

3. 'Peaceful co-existence' is one of the stated principles under Panchsheel.

**Which of the statements given above is/are correct?**

- (a) 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1,2 and 3

**Ans:- Option B**

**Panchsheel gave voice to the newly independent countries who were trying to secure their hard won independence.** It provided an alternative ideology dedicated to peace and development of all as the basis of international interaction.

**Statement 1 is incorrect:** The Panchsheel principles had been formally enunciated for the first time in the Agreement on Trade and Intercourse between the Tibet region of China and India, signed in 1954.

**The Agreement specifically stated the 5 principles of Panchsheel. The vision caught the attention of the peoples of Asia and Africa.** These were also incorporated into the 10 principles of International Peace and Cooperation **issued in 1955 by the Bandung Conference of 29 Afro-Asian countries.**

**Statement 2 is correct:** Since India and China have signed the Agreement on Trade and Intercourse between the Tibet region of China and India, both have formally accepted these principles. **Also, Prime Minister Jawaharlal Nehru and Premier Zhou Enlai issued a joint statement that elaborated the vision for Panchsheel.** They stated that the framework was applicable not only between India-China relations, but also for their relations with other countries.

**Statement 3 is correct**

**Q.93) The PEN-Plus Strategy, is related to which of the following?**

- (a) Encouraging adult education in rural areas
- (b) Containing non-communicable diseases
- (c) Reducing infant mortality rate
- (d) Addressing the problem of Left-Wing Extremism in central India

**Ans:- Option B**

1) "PEN-Plus" refers to the approach to address severe NCDs through an integrated outpatient service at first level hospitals.

2) **Africa has adopted the PEN Plus strategy to tackle severe non-communicable diseases (NCD) such as type 1 diabetes (T1D), rheumatic heart disease (RHD) and sickle cell disease.**

Package of Essential NCD Interventions (PEN) was **adopted by the WHO in 2010** to support the

decentralization of services to the primary care level.

**Q.94) With reference to 'Aridity Anomaly Outlook (AAO) Index', consider the following statements:**

1. The index is released bi-annually by the global organisation AccuWeather Inc.
2. It monitors the situation of agricultural drought that causes crop stress across a specific region.
3. As per the recent outlook, Bihar has the highest number of districts experiencing arid conditions in India.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 only
- (c) 2 and 3 only
- (d) 1 and 3 only

**Ans:- Option B**

**Statement 1 is incorrect:** Indian Meteorological Department (not AccuWeather Inc) releases the Aridity Anomaly Outlook (AAO) Index. The index is computed for **weekly or two-week periods**. For each period, the actual aridity for the period is compared to the normal aridity for that period.

**Statement 2 is correct:** Aridity Anomaly Outlook (AAO) Index monitors agricultural drought, a situation when rainfall and soil moisture are inadequate to support healthy crop growth till maturity, causing crop stress. An anomaly from the normal value signifies a water shortage in these districts that could directly impact agricultural activity.

**Statement 3 is incorrect: The key findings of the index are:** At least 85% of districts face arid conditions across India. Some 196 districts are in the grip of a 'severe' degree of dryness and 65 of these are in **Uttar Pradesh (highest)**. Bihar had the **second-highest number of districts (33) experiencing arid conditions**. The state also has a **high rainfall deficit of 45%**

**Q.95) With reference to the Small Satellite Launch Vehicle, consider the following statements:**

1. It is a two-stage launch vehicle powered by liquid fuels only.
2. It cannot launch a satellite weighing more than 50 Kg into Low Earth Orbit.
3. It would help in increasing the frequency of satellite launch by reducing the Turn-around time.

**Which of the statements given above is/are correct?**

- (a) 1 only

- (b) 3 only
- (c) 1 and 2 only
- (d) 2 and 3 only

**Ans:- Option B**

Small Satellite Launch Vehicle is a small-lift launch vehicle being **developed by the Indian Space Research Organisation (ISRO)**. SSLV is ideal for the on-demand, quick turn-around launch of small satellites.

**Statement 1 is incorrect:** A Small Satellite Launch Vehicle (SSLV) is an all-solid three-stage vehicle.

**Q.96) With reference to Stem Cells, consider the following statements:**

1. Embryonic stem cells are pluripotent whereas adult stem cells are multipotent.
2. Adult stem cells are found only in bone marrow.
3. A Stem Cell Line is a group of identical stem cells that can be grown in a lab.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans:- Option C**

Stem cells are undifferentiated biological cells that can differentiate into specialized cells and can divide to produce more stem cells. **There are three main types of stem cell:**

- 1) **Embryonic stem cells** supply new cells for an embryo as it grows and develops into a baby.
- 2) **Adult stem cells** supply new cells as an organism grows and to replace cells that get damaged.
- 3) **Induced pluripotent stem cells**, or 'iPS cells', are stem cells that scientists make in the laboratory.

**Statement 1 is correct: Embryonic stem cells are said to be pluripotent**, which means they can change into any cell in the body. **Adult stem cells are said to be multipotent**, which means they can only change into some cells in the body, not any cell, for example: Blood stem cells can only replace the various types of cells in the blood.

**Statement 2 is incorrect:** The adult stem cells can be found in various tissues throughout the body, e.g., bone marrow, blood vessels, brain, skeletal muscles and liver.

**Q.97) With reference to the Human Genome Project, consider the following statements:**

1. It aims to study both the coded and non-coded sequences of the DNA.

2. Its scope extends to cover non-humans such as plants, bacteria and yeasts.
3. It can help in developing effective treatments for some of the genetic disorders.

**Which of the statements given above is/are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans:- Option D**

Genome is the **complete set of DNA (genetic material) in an organism, hence it comprises all the genetic information.** Human genome comprises 23 chromosome pairs with a total of 3 billion DNA base pairs. Human genome project aims to study the sequence of all these base pairs in organisms.

**Statement 1 is correct:** Genome comprises both the genes and the non-coding sequences of the DNA. **The Human Genome project aims to sequence the whole set of genomes that contains all the coding and non-coding sequences of the DNA.**

**Statement 2 is correct:** Apart from humans, the Human Genome project includes sequencing the genes of many non-human model organisms, such as **bacteria, yeast, plants (rice and Arabidopsis), Caenorhabditis elegans (a free-living non-pathogenic nematode), Drosophila (the fruit fly) etc.**

**Statement 3 is correct:** A genetic disease is caused by a **change in the DNA sequence.** Some diseases are caused by mutations that are inherited from the parents and are present in an individual at birth. As the human genome project unravels the secrets of all the human genes and its arrangement it can help in developing effective treatment for some of the genetic diseases.

**Q.98) The applications of DNA fingerprinting can be found in which of the following?**

1. Identification of a dead body.
2. Matching tissues of organ donors with organ recipient.
3. Diagnosis of diseases.
4. Precisely edit genes at a particular location.

**Select the correct answer using the code given below:**

- (a) 1, 2 and 3 only
- (b) 1, 2 and 4 only
- (c) 1 and 3 only
- (d) 2, 3 and 4 only

**Ans:- Option A**

DNA fingerprinting involves **identifying differences in some specific regions in a DNA sequence called repetitive DNA.** In these sequences, a small stretch of DNA is repeated many times. It is these differences in sequence of DNA which make every individual unique in their phenotypic appearance.

**Option 1 is correct: DNA fingerprinting is used to Identify a dead body** that's too old or damaged to be recognizable by studying their DNA structure.

**Option 2 and 3 is correct: Its medical uses include matching tissues of organ donors with those of people who need transplants.** It can also be used to identify diseases that are passed down from previous generations i.e., hereditary diseases, genetic disorders etc., and to help find cures for those diseases.

**Option 4 is incorrect:** CRISPR/Cas9 technology enables geneticists and medical researchers to edit parts of the genome by removing, adding or altering genes in a particular location. DNA fingerprinting is about finding the genetic difference between organisms.

**Q.99) Consider the following pairs of micro-nutrients and their unique function for the human body:**

Micro-nutrient	Function
1. Vitamin C	Protect cells against the effects of free radicals
2. Vitamin D	Necessary for the healthy mineralization of bone
3. Vitamin A	Necessary for healthy vision
4. Vitamin E	Helps in improving the immune system

**Which of the pairs given above are correctly matched?**

- (a) 1 and 2 only
- (b) 1,3 and 4 only
- (c) 2, 3 and 4 only
- (d) 1, 2, 3 and 4

**Ans:- Option D**

Micronutrients are nutrients that are **required by the body in lesser amounts for its growth and development.** They play a major role in the metabolic activities of the body. These include vitamins and minerals.

**Q.100) Language Models for Dialog Applications (LaMDA), recently mentioned in the news, refers to which of the following?**

- (a) It is an AI-driven app which provides information about government schemes in different regional languages.
- (b) It is a conversation agent created by Google which is capable of deep learning.
- (c) It is a platform which provides for the digitization of various Buddhist manuscripts.
- (d) It is a language-based app to provide primary education in various regional languages.

**Ans:- Option B**

**Option b is correct:** LaMDA or Language Models for Dialog Applications is a **machine-learning language model created by Google as a chatbot that is supposed to mimic humans in conversation.** It is Google's modern conversational agent enabled with a neural network capable of deep learning.

**Q.101) Which of the following can be found as pollutants in the drinking water in some parts of India?**

- 1. Arsenic
- 2. Sorbitol
- 3. Fluoride
- 4. Formaldehyde
- 5. Uranium

**Select the correct answer using the codes given below.**

- (a) 1 and 3 only
- (b) 2, 4 and 5 only
- (c) 1, 3 and 5 only
- (d) 1,2,3,4 and 5

**Ans:- Option C**

Studies by the Central Water Commission show that **rivers (surface drinking water sources) in India are loaded with toxic heavy metals such as lead, arsenic, Fluoride, copper, cadmium, mercury and nickel.** In India, drinking water especially in wells is highly contaminated with Uranium. Thus, **Options 1, 3 and 5 are correct.**

**Sorbitol and Formaldehyde are not drinking water pollutants.** Thus, **Options 2 and 4 are incorrect.**

Sorbitol is a type of carbohydrate called a sugar alcohol. It contains about one-third fewer calories than sugar and is 60 percent as sweet and occurs naturally in a variety of berries and fruits.

Formaldehyde is a simple chemical compound made of hydrogen, oxygen and carbon. All life forms – bacteria, plants, fish, animals and humans – naturally produce formaldehyde as part of cell metabolism.

**Q.102) With reference to the Comprehensive Environmental Pollution Index (CEPI), consider the following statements:**

- 1. It is prepared and released by the Commission for Air Quality Management.
- 2. It is a nationwide survey of Industrial clusters based on their pollution level.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans:- Option B**

To assess the environmental quality in the Polluted Industrial Areas (PIAs), the Central Pollution Control Board (CPCB) has developed the Comprehensive Environmental Pollution Index (CEPI).

**Statement 1 is incorrect:** Comprehensive Environmental Pollution Index (CEPI) was released by the Central Pollution Control Board (CPCB). **CPCB is a statutory organisation constituted under the Water (Prevention and Control of Pollution) Act, 1974.** CPCB derives its powers and functions under the Air (Prevention and Control of Pollution) Act, 1981.

**Statement 2 is correct:** CEPI is a nationwide survey of Industrial Clusters based on its pollution level. **CEPI was first developed by Central Pollution Control Board in collaboration with IIT Delhi in December 2009.** CEPI identified **43 industrial clusters as critically polluted.** Critically polluted areas have a CEPI value greater than 70, on a scale of 0 to 100. Further **32 industrial clusters with CEPI scores between 60 & below 70 are categorised as Severely Polluted Areas (SPAs).**

**Q.103) Iodine-131 is being used in medicines to diagnose and treat cancers of the thyroid gland. In which of the following ways can it be produced/extracted?**

- (a) It can be extracted directly from the monazite sand.
- (b) It can be produced majorly by the process of nuclear fusion.
- (c) It can be produced majorly by the process of nuclear fission.
- (d) It can be extracted from the ocean floor using the method of hydraulic fracturing

**Ans:- Option C**

Iodine-131 (I-131) is an **important radioisotope of iodine and it is a radioactive material.** I-131 dissolves easily in water or alcohol. I-131 readily

combines with other elements and does not stay in its pure form once released into the environment.

**Option a is incorrect:** Iodine 131 cannot be extracted directly from Monazite sands. Monazite is a primarily reddish-brown phosphate mineral that contains rare-earth elements. Monazite is an important ore for thorium, lanthanum, and cerium.

**Option b is incorrect: Iodine 131 cannot be produced by nuclear fusion.** In nuclear Fusion two light nuclei merge to form a single heavier nucleus. The process releases energy because the total mass of the resulting single nucleus is less than the mass of the two original nuclei thus the leftover mass becomes energy. Fusion reactions are the source of energy for the Sun and other Stars.

**Option c is correct: Iodine- 131 can be produced majorly by the process of nuclear fission.** Iodine 131 is a major fission product of uranium and plutonium. Also, I-131 occurs as a by-product of nuclear fission processes in nuclear reactors and weapons testing.

**Option d is incorrect:** I-131 cannot be extracted from natural sources. Hydraulic fracturing, or fracking is a drilling method used to extract petroleum (oil) or natural gas from deep in the Earth. In this process, cracks in and below the Earth's surface are opened and widened by injecting water, chemicals, and sand at high pressure.

**Q.104) Which of the following are the reasons behind high E-waste generation in India?**

1. Shorter electronic product life cycle
2. No rules and regulations regarding E-waste management
3. No producer responsibility of recycling E-waste
4. Not enough awareness regarding disposal of E-waste

**Select the correct answer using the codes given below:**

- (a) 1 and 4 only
- (b) 1,2 and 4 only
- (c) 1,3 and 4 only
- (d) 2 and 3 only

**Ans:- Option A**

Electronic-Waste is the term used to describe old, end-of-life or discarded electronic appliances. **The Global E-Waste Monitor reports that nearly 3 million tons of electronic waste was generated in India, which is thrice the Centre's estimates.** The reasons behind high E-waste generation and less recycling in India are:

**Option 1 is correct: Shorter product life cycle:** It was found that the previous electronic gadgets

were obsolete as the new upgrades and new models were launched in the market. The fast pace of technological advancements and the growing use of electronics in India contribute to a growing volume of e-waste.

**Option 2 is incorrect:** In India, the management of e-waste is regulated by the Ministry of Environment, Forest, and Climate Change through the E-Waste (Management) Rules, 2016. The rules outline the responsibilities of various stakeholders, including manufacturers, importers, consumers, and e-waste recyclers.

**Option 3 is incorrect:** The E-Waste (Management) Rules, 2016 outline the following responsibilities:

- 1) Extended Producer Responsibility (EPR): Manufacturers and importers are responsible for collecting and managing their products at the end of their life.

**Q.105) Consider the following statements regarding the term 'Bioassay', often seen in the news:**

1. It is the use of a living organism to test for the presence of a substance.
2. Both Plants and animals can be used as Bioassay.
3. It can be used to determine the chemical toxicity in a soil.

**Which of the statements given above is/are correct?**

- (a) 1 and 3 only
- (b) 2 only
- (c) 1, 2 and 3
- (d) 1 and 2 only

**Ans:- Option C**

**Statements 1 is correct:** A bioassay is the use of a living organism to test for the presence of a compound or to determine the amount of the compound that is present in a sample. The organism used is sensitive to the compound for which the test is conducted. Thus, the effect observed is typically the death or deteriorated health of the test organism. **Depending on the test organism, soil, air, or liquid samples can be assayed.**

**Statements 2 is correct:** Both plants and animals can be used as bioassay indicators to show the presence of toxic compounds.

**Statement 3 is correct:** A bioassay involves use of a biological organism to test for chemical toxicity. For environmental testing, bioassays provide an integrated picture of overall toxicity of an effluent or a sample of water, sediment, or soil from a contaminated site

**Q.106) The foreign branches/ foreign subsidiaries of Indian banks and All-India Financial Institutions (AIFIs) have been recently permitted to deal in financial products which are not available or are not permitted by the Reserve Bank in the domestic market without prior approval of the Reserve Bank. However, this is subject to which of the following constraints?**

1. These products should not be linked to Indian Rupee unless specifically permitted by the Reserve Bank.
2. The exposure on such products are appropriately reported in the returns furnished by these banks/AIFIs to the Reserve Bank,
3. Structured deposits from all Indian residents must be accepted.

**Select the correct answer using the codes below.**

- (a) 1, 2 and 3
- (b) 1 and 2
- (c) 2 and 3
- (d) 3 only

**Ans:- Option B.**

While allowing branches/ subsidiaries in foreign jurisdictions as well as in IFSCs to deal in such products, the parent Indian bank/AIFI shall ensure that:

1. Dealing in such products is done with the prior approval from their Board and, if required, the appropriate authority in the concerned jurisdictions.
2. They have adequate knowledge, understanding, and risk management capability for handling such products.
3. They act as **market makers for products** only if they have the ability to price/value such products and the pricing of such products is demonstrable at all times.
4. Their exposure and mark-to-market (MTM) on these products are appropriately captured and reported in the returns furnished to the Reserve Bank.

**Q.107) Which of the following advantages is/are offered by Hydrogen Fuel Cell Electric Vehicles (FCEV) over conventional fuel or electric vehicles?**

1. Hydrogen fuel cells work in a similar manner to conventional batteries found in electric vehicles, but they do not run out of charge and don't need to be recharged with electricity.
2. FCEVS produce no tailpipe emissions except water vapour and warm air.

3. FCEVS do not suffer with the erosion of cathodes or anodes since they do not require such junctions to transport electrical current.

**Select the correct answer using the codes below.**

- (a) 2 only
- (b) 1 and 3
- (c) 2 and 3
- (d) 1 and 2

**Ans:- Option D**

A hydrogen fuel cell bus developed by **KPIT-CSIR in Pune** was unveiled by the Union minister of state for Science and Technology.

- Hydrogen fuel cells **work in a similar manner to conventional batteries found in electric vehicles** but they do not run out of charge and don't need to be recharged with electricity.
- They **continue to produce electricity as long as there is a supply of hydrogen.**
- Just like conventional cells, a fuel cell consists of an anode (negative electrode) and cathode (positive electrode) sandwiched around an electrolyte.
- Hydrogen is fed to the anode and air is fed to the cathode. At the anode, a catalyst separates the hydrogen molecules into protons and electrons and both subatomic particles take different paths to the cathode.

**Q.108) Consider the following matches.**

Indices	Publisher
1. Environmental Performance Index	UN Environment Programme
2. Global Hunger Index	Food and Agriculture Organisation
3. Global Climate Risk Index	World Bank

**Select the correct answer using the codes below.**

- (a) 2 only
- (b) 1 and 3
- (c) 1, 2 and 3
- (d) None of the above

**Ans:- Option D**

**Statement 1:** The EPI is **published every two years** by researchers from **Yale and Columbia Universities** in the U.S. **India's rank: 180 out of 180 countries with a score of 18.90**

- Top rank- Denmark
- India's response- The Indian government rejected the report, alleging the use of "biased metrics and biased weights" in awarding the scores.

**Statement 2:** Global Hunger Index 2021

**GHI is an annual publication prepared by NGOs Concern Worldwide and Welthungerhilfe.**

• **Indicators:** Undernourishment, Child wasting, Child stunting and Child mortality.

• **India's rank- 101 out of 116 countries**

• **India's response-** The report was rejected by the Indian government, saying that the methodology used in the report was "devoid of ground realities and facts".

**Statement 3:** Global Climate Risk Index 2019

It is published annually by **Germany-based NGO Germanwatch.**

It analyses the extent to which countries have been affected by weather-related loss events like storms, floods, etc.

• **India's rank- 7**

**Q.109) Consider the following statements.**

1. A housing finance company (HFC) is considered a non-banking financial company (NBFC) under RBI's regulations.
2. RBI does not mandate stringent norms for housing finance companies concerning compulsory lending to individual borrowers.
3. To ease regulatory requirements, RBI has waived all qualifying assets for registration of a financial company as an HFC.

**Select the correct answer using the codes below.**

- (a) 2 only
- (b) 1 and 3
- (c) 1 only
- (d) 1, 2 and 3

**Ans:- Option C.**

A housing finance company is considered an NBFC under RBI's regulations. **RBI has proposed stringent norms for housing finance companies by mandating 75% of their home loans to individual borrowers by 2024**, and recently, RBI has proposed the definition of qualifying assets for housing finance companies (HFCs). **It defines 'qualifying assets' as loans to individuals or a group of individuals, including co-operative societies, for the construction/purchase of new dwelling units, loans to individuals for the renovation of existing dwelling units, lending to builders for the construction of residential dwelling units.** All other loans, including those given for furnishing dwelling units, loans given against the mortgage of property for any purpose other than buying/construction of a new dwelling units or renovation of the existing dwelling units.

Under the new definition, at least 50% of net assets should be in the nature of 'qualifying

assets' for HFCs, of which at least 75% should be towards individual housing loans.

Such HFCs which do not fulfill the criteria will be treated as NBFC – Investment and Credit Companies (NBFC-ICCs)

**Q.110) Megalodon, in news, was-**

- (a) One of the sub-ages of mass extinction in earth's history
- (b) One of the biggest predatory fishes in earth's history
- (c) A town in ancient Macedonia unearthed in recent excavations
- (d) None of the above

**Ans:- Option B**

A recent study by researchers used fossil evidence to create a **3D model of the Megalodon — one of the biggest predatory fish of all time.**

- It was estimated to be lived at around 23 million to 2.6 million years ago.
- It was around 50 feet from nose to tail, which is **about two to three times the size of today's great white shark.**
- It would have weighed around 70 tons, or as much as 10 elephants.
- Its average cruising speed was perhaps faster than sharks today and it could have migrated across multiple oceans with ease.

**Q.111) Consider the following statements regarding revenue and capital expenditures:**

1. Unlike capital expenditure, which creates assets for the future, revenue expenditure neither creates assets nor reduces any liability of the government.
2. Repayment of loan is also classified as capital expenditure.
3. Capital expenditure allows the economy to generate revenue for many years by adding or improving production facilities and boosting operational efficiency.

**Which of the above statements is/are correct?**

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans:- Option D**

**Statement 1 is correct:** Unlike capital expenditure, which creates assets for the future, revenue expenditure is one that neither creates assets nor reduces any liability of the government. **Salaries of employees, interest payment on past debt,**

subsidies, pension, etc., fall under the category of revenue expenditure. It is recurring in nature.

**Statement 2 is correct:** Along with the creation of assets, repayment of loan is also capital expenditure, as it reduces liability.

**Statement 3 is correct:** Capital expenditure, which leads to the creation of assets are long-term in nature and allow the economy to generate revenue for many years

**Q.112) With reference to the online gaming sector in India, consider the following statements:**

1. In India, online gaming comes under the purview of the Prevention of Money Laundering Act, 2002.
2. At present, GST laws for 'games of chance' (betting or gambling) are different from those for 'games of skill'.
3. The Constitution of India has given exclusive power to the Union government to make laws relating to betting and gambling,

**Which of the above statements is/are correct?**

- (a) 1 only
- (b) 1 and 3 only
- (c) 2 only
- (d) 2 and 3 only

**Ans:- Option C.**

**Statement 2 is correct:** At present, GST laws for 'games of chance' (betting or gambling) and 'game of skill' are vastly different. **Games of skill are taxed at 18 percent GST** on the platform fee, while **games of chance are taxed at 28 percent GST** on the contest entry amount.

**Statement 3 is incorrect:** The state legislators are, vide Entry No. 34 of List II (State List) of the Seventh Schedule of the Constitution of India, given exclusive power to make laws relating to betting and gambling. While it is still not under PMLA, 2002, it was proposed by MeitY Task Force.

**Q.113) Which of the following statements regarding Invasive Alien Species (IAS) is not true?**

- (a) IAS occurs in all taxonomic groups, including animals, plants, fungi and microorganisms, and can affect all types of ecosystems.
- (b) Islands are least vulnerable to IAS as they are naturally isolated from strong competitors and predators.
- (c) It outcompetes or prey on native species and can also alter food chains,
- (d) It has high dispersal ability and ability to adapt physiologically to new conditions,

**Ans:- Option B.**

**Statement (b) is incorrect:** Islands are especially vulnerable to IAS because they are **naturally isolated from strong competitors and predators**. Islands often have ecological niches that have not been filled because of the distance from colonizing populations, increasing the probability of successful invasions

**Q.114) Consider the following statements regarding windfall taxes:**

1. A tax levied on an unforeseen or unexpectedly large profit is called a windfall tax.
2. Windfall taxes cannot be imposed retrospectively.
3. In India, the windfall tax levied as special additional excise duty and is revised every fortnight.

**Which of the above statements are correct?**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans:- Option C**

**Statement 1 is correct:** A tax levied on an unforeseen or unexpectedly large profit is called a windfall tax. The United States Congressional Research Service (CRS) defines a windfall as an "unearned, unanticipated gain in income through no additional effort or expense".

**Statement 2 is incorrect:** Governments typically levy a one-off tax retrospectively over and above the normal rates of tax on such profits, called windfall tax. Companies are confident in investing in a sector if there is certainty and stability in a tax regime. Since windfall taxes are imposed retrospectively and are often influenced by unexpected events, they can brew uncertainty in the market about future taxes.

**Statement 3 is correct:** Since July, 2022, the windfall tax in India is levied as special additional excise duty and is aimed at absorbing the super profits earned by domestic crude oil producers

**Q.115) The Market infrastructure institution, also known as the pillars of the stock market ecosystem, includes-**

1. Stock Exchanges
2. Clearing Corporations
3. Depositories
4. Mutual funds

**Select the correct answer from the code given below:**

- (a) 1 and 3 only
- (b) 2 and 4 only
- (c) 1, 2 and 3 only

(d) 1,2 and 4 only 2

**Ans:- Option C**

**Option (c) is correct:** MIs are institutions providing infrastructure of trading, settlement and record keeping and include stock exchanges, clearing corporations and depositories.

**Supplementary Notes:** That MIs are systemically important in India is clear from the phenomenal growth of these institutions in terms of market capitalisation of listed companies, capital raised and the number of investor accounts with brokers and depositories and the value of assets held in the depositories' account, as highlighted by the Jalan committee.

**Q.116) 'Dupilumab', is a biological drug that can be effectively used to treat which among the following ailments?**

- (a) Atopic dermatitis
- (b) Alzheimer's disease
- (c) Brain cancer
- (d) Celiac disease

**Ans:- Option A**

**Option (a) is correct** Eczema, also known as atopic dermatitis, is a chronic inflammatory skin disorder characterised by red, dry, often oozing skin and itch that can profoundly affect the lives of affected patients and their families.

Certain foods, such as **nuts and dairy, can trigger symptoms of eczema.** Environmental triggers can include smoke, pollen, soaps, and fragrances.

**Eczema is not contagious.** Some people outgrow the condition, while others will continue to have it throughout adulthood.

**Q.117) Consider the following statements related to Cryogenic engine**

1. A Cryogenic engine makes use of Liquid Oxygen (LOX) and Liquid Hydrogen (LH2) as propellants.
2. Cryogenic fuels are fuels that require storage at extremely low temperatures in order to maintain them in a liquid state.
3. India has become the sixth country to master cryogenic technology.

**Which of the above statements are correct?**

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

**Ans:- Option D**

**All statements are correct**

**Supplementary notes:**

**Cryogenic Engines** A Cryogenic rocket stage is more efficient and provides more thrust for every kilogram of propellant it burns compared to solid and earth-storable liquid propellant rocket stages. Specific impulse (a measure of the efficiency) achievable with cryogenic propellants (liquid Hydrogen and liquid Oxygen) is much higher compared to earth storable liquid and solid propellants, giving it a substantial payload advantage

**Q.118) Wet scrubbing', 'Spray-dry scrubbing', 'Dry sorbent injection' are techniques associated with:**

- (a) Flue gas desulphurization
- (b) Waste to energy conversion
- (c) Natural gas extraction
- (d) Extraction of rare earth elements

**Ans:- Option A**

The process of **eliminating sulphur compounds from the exhaust emissions of fossil-fueled (coal-fired) power plants is known as flue gas desulphurization (FGD).** This is accomplished by including absorbent materials, which can eliminate up to 95% of the sulphur from the flue gas by scrubbing.

**Supplementary notes:**

Flue Gas Desulphurization (FGD) -A thermal power plant converts heat energy into electric power by burning fossil fuels (coal) and pumps out a lot of gases which are by-products of the burning.

**Q.119) Which among the following is the first-ever mission to touch the Sun?**

- (a) Aditya-L1
- (b) Helios
- (c) SOHO
- (d) Parker

**Ans:- Option D**

**Explanation: NASA's Parker Solar Probe is the first-ever mission to "touch" the Sun.**

**Supplementary notes**

Parker Solar Probe Parker Solar Probe was launched aboard a Delta IV-Heavy rocket from Cape Canaveral in 2018.

**Q.120) Which among the following compound is used to make anti-radiation pills against radiation exposure?**

- (a) Hydrogen Peroxide
- (b) Sodium Hypochlorite
- (c) Potassium Iodide
- (d) Calcium Bromide

**Ans:- Option C**

**Option (c) is correct:** Potassium iodide (KI) tablets, or anti-radiation pills, are known to provide some protection in cases of radiation exposure. They **contain non-radioactive iodine and can help block absorption, and subsequent concentration, of radioactive iodine in the thyroid gland.**

**Q.121) Which of the following statement regarding AgriStack is incorrect?**

- (a) It is a collection of digital databases based on land records including a unique farmer identity number for each farmer.
- (b) It will act as a payment gateway for expanding scope of DBT subsidies.
- (c) It will act as the underlying platform over which apps like Kisan Suvidha and others will run.
- (d) It aims to shift India's agriculture towards precision farming.

**Ans:- Option B**

AgriStack The government is working on a digital 'stack' of agricultural datasets, with its core as land records. Applications built over the stack will provide farmers with recommendations on which seeds to buy, and **best practices to maximize their yield, along with updates on weather, agricultural credit, insurance and more.**

**Q.122) Which of the following is the nodal implementing agency for Fisheries and Aquaculture Infrastructure Development Fund?**

- (a) National Fisheries Development Board
- (b) National Bank for Agriculture and Rural Development
- (c) National Cooperatives Development Corporation
- (d) NITI Aayog

**Ans:- Option A**

Fisheries and Aquaculture Infrastructure Development Fund (FIDF) **Government of India encourages private entrepreneurs and fish farmers in creation of fisheries infrastructure facilities. In order to achieve 20 million tonnes of fish production by 2022-23,** Fisheries and Aquaculture Infrastructure Development Fund (FIDF) was created with an estimated fund outlay of Rs7522.48 Crore. FIDF provides concessional finance to the Eligible Entities (EEs), including State Governments/Union Territories and State entities for development of identified fisheries infrastructure facilities through

**Nodal Loaning Entities (NLEs) namely:**

- National Bank for Agriculture and Rural Development (NABARD),

- National Cooperatives Development Corporation (NCDC) and
- All scheduled Banks—All the Private Beneficiaries/ Private Entrepreneur

**Q.123) While calculating the MSP of a crop, which of the following determinants are analysed by the Commission for Agricultural Costs & Prices?**

1. Demand and supply
2. Cost of Production
3. Inter-crop price parity
4. A minimum of 100 percent as the margin over cost of production
5. Likely implications of MSP on consumers of that product
6. Price trends in the market, both domestic and international

**Select the correct answer using the code given below:**

- (a) 1, 2, 3, 4 and 5 only
- (b) 1, 2, 3, 5, and 6 only
- (c) 1,3,4 and 6 only
- (d) 2, 5 and 6 only

**Ans:- Option B**

**Option (b) is correct** Calculation of MSP While recommending price policy of various commodities under its mandate, the Commission for Agricultural Costs & Prices keeps in mind the various Terms of Reference (ToR). Accordingly, it analyses: demand and supply; cost of production; price trends in the market, both domestic and international; inter-crop price parity; terms of trade between agriculture and non-agriculture; a minimum of 50 percent as the margin over cost of production; and likely implications of MSP on consumers of that product.

**Q.124) Which of the following is/are the reason (s) that it has been recommended for the revision of Central Issue Prices (CIP) of food grains?**

1. Central Issue Price (CIP) has not been revised since 2013 when the National Food Security Act was enacted.
2. CIPS of food grains are Rs.3/2/1 per kg for rice, wheat and coarse grains for all the welfare schemes implemented in India.

**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:- Option A**

**Statement 2 is incorrect:** Food grains only under NFSA were to be made available at subsidized prices of Rs.3/2/1 per kg for rice, wheat and coarse grains respectively. Central Issue Price The CIP is the price at which the government makes available foodgrains for beneficiaries of the National Food Security Act, 2013 and other welfare schemes to the states from the central pool. It has been unchanged since 2013, when the NFSA came into effect

**Q.125) Which of the following statements regarding the 'Pre-Pack mechanism' are correct?**

1. In this, the debt of a distressed company is resolved through a public bidding process.
2. Recently, the central government promulgated an ordinance for pre-packs to be used as an insolvency resolution mechanism for Micro, Small and Medium Enterprises (MSMEs).
3. It will be implemented in parallel to the Corporate Insolvency Resolution Process (CIRP),

**Select the correct answer using the code given below:**

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1,2 and 3

**Ans;- Option B**

**Statement 1 is incorrect:** In this, the debt of a distressed company is resolved through a direct agreement between secured creditors and the existing owners or outside investors, instead of a public bidding process. **Pre Pack Mechanism** A pre-pack envisages the resolution of the debt of a distressed company through a direct agreement between secured creditors and the existing owners or outside investors, instead of a public bidding process.