R.C. Reddy IAS Study Circle

CURRENT AFFAIRS TEST-3 NOVEMBER 2023

CURRENT AFFAIRS TEST SERIES- CSE PRELIMS 2024 Key with Explanation

1. | A

About the Republic of Dagestan:

- It is a province of Russia, within the Russian Federation. Statement 1 is correct.
- It is one of 22 republics that are part of Russia.
- Dagestan, which translates as "land of the mountains", is situated in the eastern part of the North Caucasus.

Borders:

- Dagestan has Georgia and Chechnya to the west and Azerbaijan to the south.
- To its east is the Caspian Sea. Statement 2 is incorrect.
- Religion: The majority of Dagestanis are Sunni Muslims.
- It is Russia's most ethnically and linguistically varied region and home to at least 40 different ethnicities. More than 30 languages are spoken here.
- It is sometimes known as the Mountain of Languages or Mountain of Nationalities, with some national groups occupying no more than one or two villages.
- The Avars are the largest ethnicity. They form about a fifth of the population in the province.
- After the Avars, there is a sizeable presence of Dargins, Kumyks, and Lezgins.



2.

Statements 1 and 3 are correct.

- NAAQS are the permissible limits for various air pollutants in ambient air, set by the Central Pollution Control Board (CPCB) of India.
- NAAQS are set at levels that are intended to protect public health and welfare.
 Non-compliance with NAAQS can result in fines or other legal actions against those responsible for the pollution.
- The AQI is designed to be a simple and understandable way to communicate air quality information to the public. It provides a single number that reflects the overall air quality in an area, taking into account multiple pollutants.
- The AQI is not legally binding and does not result in legal consequences for noncompliance.
- NAAQS are used to set emission standards for vehicles and industries. They are also used by government agencies to develop air quality improvement plans and to set air quality standards for different regions of the country. These standards are used to assess air quality and take action to reduce emissions from sources like power plants, factories, and cars.
- AQI is used to communicate air quality information to the public. The index is often displayed on websites, mobile apps, and news broadcasts to help people make informed decisions about their activities, such as whether to exercise outdoors or stay inside.
- The AQI also helps raise awareness about air pollution and encourages individuals and organizations to take action to improve air quality.

Statement 2 is incorrect.

NAAQS is the maximum permissible levels of air pollutants in ambient air, while AQI is a measure of the overall air quality in a given location.

3. C

It was established under Section 410 of the Companies Act, 2013 for hearing appeals against the orders of the National Company Law Tribunal(s) (NCLT), with effect from 1st June 2016. Statement 1 is correct.

The NCLAT was established to provide an efficient and specialized forum for addressing matters related to company law, insolvency, and competition law.

Functions:

- Hear appeals against the orders passed by NCLT(s) under Section 61 of the Insolvency and Bankruptcy Code, 2016 (IBC).
- Hear and dispose of appeals against any direction issued or decision made or order passed by the Competition Commission of India (CCI).
- It also hears and disposes of appeals against the orders of the National Financial Reporting Authority. Statement 2 is correct.

Composition:

- It is composed of a chairperson and judicial and technical members.
- Appointment: These members are appointed by the Central Government based on their expertise and experience in relevant fields such as law, finance, accountancy, management, and administration. Statement 3 is correct.

Headquarter: New Delhi.

4. | D

Statements 1, 2 and 3 are incorrect.

There are three different types of disinvestment policies in India: minority stake sale, strategic disinvestment, and closure of non-viable PSUs.

Minority stake sales involve the government selling a portion of its holdings

in public sector enterprises (PSEs) to private investors.

In recent years, such sales have been executed for major PSUs like Coal India, ONGC, and Indian Oil Corp.

Strategic disinvestment involves selling of more than 50% of government shares in a public enterprise. It also includes the transfer of managerial control from the government to the private shareholder. In recent years, this approach was taken for PSUs like Air India, Bharat Petroleum Corp, and Shipping Corp of India. Statement 1 is incorrect.

Closing non-viable PSUs is the process of shutting down unprofitable public sector enterprises that show no prospects of future profitability. In recent years, the government has ceased operations of non-viable PSUs like Scooters India and Hindustan Photo Films Manufacturing Company.

The Department of Investment and Public Asset Management (DIPAM) oversees the disinvestment process, operating under the Ministry of Finance. Statement 2 is incorrect.

The proceeds from disinvestment of Central Public Sector Enterprises are directed to National Investment Fund (NIF). Statement 3 is incorrect.

5. B

- Varaha is ocean mining vehicle which is a part of Deep Ocean Mission which is also called as Samudrayaan Mission.
- MATSYA-6000 is also a part of the Deep Ocean Mission.
- It is a self-propelled track-based seabed mining system and operates on the flexible riser technique.
- Flexible riser is a class of flexible pipes which is used to connect subsea pipelines to floating offshore installations.
- Varaha is lowered to the ocean bed from a surface ship using a highstrength flexible cord system.

- Once the vehicle reaches the ocean bed, it will be able to move around while the surface ship moves in tandem.
- It uses a high-power pressure pump system to facilitate the extraction of precious polymetallic nodules. These nodules are pumped from the ocean bed to the surface ship.

Last year (2022) National Institute of Ocean Technology (NIOT) successfully conducted deep-sea locomotion trials of 'Varaha' at a depth of 5,270 m in the central Indian Ocean.

Over a span of 2.5 hours, the surface ship covered a distance of 120 m with Varaha.

This achievement marked the world's deepest dive for an underwater mining machine.

6. A

Recently Brazzaville Summit of the Three Basins ended with a declaration that did not result in an Alliance of the three basins.

- The three global ecosystems account for 80% of the world's tropical forests and 2/ 3rd of the earth's biodiversity. Statement 3 is correct.
- The central vision of the Summit for the preservation and restoration of the planet's three ecological lungs.

The objectives of the summit include:

- To promote scientific and technical cooperation, strengthen capacities and increase influence in multilateral forums for environmental advocacy.
- To establish effective global governance to manage environmental and climate challenges on a planetary scale.
- To develop a common strategy to stimulate investment projects aimed at combating climate change and preserving biodiversity.

The three basins include Amazon, Congo and Borneo-Mekong-Southeast Asia. Statement 2 is incorrect.

The Summit of the Three Basins, 2023 concluded with the declaration by the Heads of State and Government of the States.

Three Basins Summit, 2023 was held at Brazzaville, capital of the Republic of Congo. Statement 1 is incorrect.

The 7-point declaration includes:

- 1. Recognise the value of enhanced cooperation between the three basins.
- 2. Recognise that sovereign management of biodiversity, forests and associated resources of the three basins is essential.
- 3. Develop solutions together.
- 4. Pool and capitalise on existing knowledge, experience, resources and achievements.
- 5. Involve all states and national authorities, including indigenous peoples, youth, women, civil society, academia and the private sector.
- 6. Encourage financial mobilisation and the development of traditional and innovative financing mechanisms.
- 7. Establish a sustainable system of remuneration for the ecosystem services provided by the three basins.

The summit provided a good start on important discussions about the future of these forests and the solutions that are needed to address the challenges they face.



AMAZON BASIN - It is located in the countries of Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela, as well as the territory of French Guiana.

CONGO BASIN - The Congo Basin spans across six countries-Cameroon, Central African Republic, Democratic Republic of the Congo, Republic of the Congo, Equatorial Guinea and Gabon.



MEKONG BASIN - The Mekong River is one of the largest rivers in the world, crossing six countries: China, Myanmar, Thailand, Laos, Cambodia, and Vietnam.



7. C

- The UNESCO Creative Cities Network (UCCN) was created in 2004 to promote cooperation with and among cities that have identified creativity as a strategic factor for sustainable urban development. Statement 1 is correct.
- It aims to strengthen cultural activities, goods, services and international cooperation for sustainable development.
- Almost 300 cities around the world which currently make up this network work together towards a common objective.
- By joining the Network, cities commit to sharing their best practices and

developing partnerships involving the public and private sectors as well as civil society.

• The Creative Cities Network is a privileged partner of UNESCO.

The Network covers 7 creative fields that includes:

- 1. Crafts and Folk Art
- 2. Media Arts
- 3. Film
- 4. Design
- 5. Gastronomy
- 6. Literature
- 7. Music

Statement 2 is incorrect.

The Indian cities which are part of UNESCO Creative Cities Network (UCCN) are:

- Jaipur (2015) and Srinagar (2021) for Crafts and Folk Arts.
- Mumbai (2019) under film category.
- Hyderabad (2019) for Gastronomy.
- Chennai (2017), Varanasi (2015) and Gwalior (2023) under music category.

There are no Indian cities under the Design and Media Arts field. Statement 3 is correct.

Kozhikode is the 1st Indian city to be recognized under the Literature category. Statement 4 is correct.

8.

Commodity Markets Outlook Report is a Biannual (April and October) report released by the World Bank. Statement 2 is incorrect.

Commodity markets is a place which involves trading, where buying and selling of various commodities and their derivative products take place.

It provides market analysis for major commodity groups - energy, metals, agriculture, precious metals, and fertilizers. Statement 1 is correct.

The report forecasts prices for 46 key commodities, including oil. Statement 3 is incorrect.

The report emphasizes the importance of avoiding trade restrictions such as food and fertilizer.

It discourages the implementation of price controls and subsidies in response to elevated food and oil prices.

The suggested approach is to enhance social safety nets, diversify food sources, and increase efficiency in food production and trade.

Key highlights of the report - Overall commodity prices are projected to fall by 4.1 % in 2024, primarily attributed to increasing supplies.

The report predicts that commodity prices will stabilize in 2025.

Agricultural commodities prices are also expected to decline and metal prices could decline by 5 %.

Food prices are expected to fall by 8 % in 2023 and 3 % in 2024.

9. A

Colombo Security Conclave (CSC)

The CSC, was formed in 2011 as a trilateral maritime security grouping of India, Sri Lanka and the Maldives. Statement 1 is correct.

- Members: The CSC comprises India, Sri Lanka, Maldives, and Mauritius as permanent members. Bangladesh and Seychelles are observers. Statement 2 is incorrect.
- · Secretariat: Colombo, Sri Lanka.
- Governance: It is held at the National Security Advisor (NSA)-level.
- Objective: It is a security-focused group operating in the Indian Ocean region.

Mandate: In March 2022, the group adopted an agenda of five pillars:

- 1. maritime safety and security;
- 2. countering terrorism and radicalisation;
- 3. combating trafficking and transnational organised crime;
- 4. cybersecurity and protection of critical infrastructure and technology; and
- 5. humanitarian assistance and disaster relief. Statement 3 is correct.

Timeline of CSC

- The CSC evolved out of trilateral meetings between NSAs and Deputy NSAs from India, Maldives, and Sri Lanka, starting in 2011.
- India's strained relationship with then-President Abdulla Yameen of Maldives led to the suspension of meetings between 2014 and 2020.
- Since its revival and re-branding as the CSC in 2020, Mauritius was added as a member of the grouping, with Bangladesh and the Seychelles
- Bangladesh and the Seychelles, which are currently observers, have been invited to join the group and are likely to join as full members.

Significance of CSC

- As China's influence and presence in the Indian Ocean grows, India has sought to enhance security cooperation with the Indian Ocean island and littoral nations, through the Colombo Security Conclave (CSC).
- The small group provides an opportunity for India to address its own strategic concerns in the Indian Ocean while providing an opportunity for the island and littoral nations to address their own challenges.

10. C

Recently, a Black Stork species rarely seen, has been spotted in the Hastinapur Wildlife Sanctuary in Uttar Pradesh.

- The black stork (Ciconia nigra) is a large bird in the stork family Ciconiidae
- Habitat: It breeds in swampy coniferous and mixed forests.
- It can also be found in grasslands, agricultural fields, and on the margins of lakes and rivers during winter.
- It is a long-distance migrant, with European populations wintering in tropical Sub-Saharan Africa, and Asian populations in the Indian subcontinent. Statement 1 is correct.
- Distribution: It is mainly found in Europe, Asia and African countries.

- Conservation status
- IUCN: Least concern Statement 2 is correct.

Key facts about Hastinapur Wildlife Sanctuary

- It is located in the state of Uttar Pradesh.
- It lies alongside the northern tip of the River Ganga, flowing through the districts of Muzaffarnagar and Bijnor.
- Flora: It has a variety of landforms and is a mixture of different habitats such as wetlands, marshes, dry sand beds and gently sloping ravines.
- Fauna: Swamp Deer, Leopard, Wild Cats, Wild Otter, Pythons etc.
- It is a part of the "Asia Flyway" project, and many migratory Birds, both local and foreign, flock in numbers near the numerous water bodies present in the region.

11. C

- Carbon nanoflorets are like tiny marigold flowers made only of carbon, which are called as the material carbon nanoflorets.
- They reported that these nanoflorets could absorb sunlight at many frequencies and convert it to heat with unprecedented efficiency. Statement I is correct.
- The nanoflorets converted the light energy they absorbed into thermal energy-a process called solar-thermal conversion-with a remarkable efficiency of 87%.

The carbon nanoflorets' high efficiency comes from three properties.

- The nanoflorets absorb three frequencies in sunlight - infrared, visible light, and ultraviolet, while other common materials absorb only visible and ultraviolet light. Statement II is incorrect.
- Shape: As light falls on the material, the carbon cones ensure that very little is reflected back.

- Long-range disorder: Parts of the structure at some distance from each other possess different physical properties. As a result, heat waves in the material aren't carried over long distances, reducing the amount of heat dissipated away. Process of synthesis
- Researchers heated a special form of silicon dust called DFNS (for dendritic fibrous nanosilica) in a furnace.
- Once heated, she introduced acetylene gas into the chamber.
- The white powder turned black, a sign that carbon had been deposited on the DENS
- Then they collected the black powder and treated it with a strong chemical that dissolved the DFNS away, leaving carbon particles behind.

The structure of the silicon particles - 50-1,200 nanometers in size-resembled spikes arranged around a sphere.

12. I

Aerogels are a class of synthetic porous ultralight material derived from a gel, in which the liquid component for the gel has been replaced with a gas, without significant collapse of the gel structure. Statement 1 is correct.

Aerogels are good thermal insulators because they almost nullify two of the three methods of heat transfer - conduction (they are mostly composed of insulating gas) and convection (the microstructure prevents net gas movement). They are good conductive insulators because they are composed almost entirely of gases, which are very poor heat conductors. Statement 2 is incorrect.

They, also known as 'solid air' or 'frozen smoke', are excellent adsorbents (a solid substance used to remove contaminants) and are incredibly lightweight solids composed mostly of air. In addition, they offer advantages like adjustable surface chemistry, low density, and a highly porous structure. Statement 3 is correct.

13.

What are the Parliamentary Privileges? About:

- Parliamentary privileges are special rights, immunities and exemptions enjoyed by the two Houses of Parliament, their committees and their members.
- These privileges are defined in Article 105 of the Indian Constitution. Statement 1 is correct.
- Under these privileges, the members of Parliament are exempted from any civil liability (but not criminal liability) for any statement made or act done in the course of their duties. Statement 2 is incorrect.
- The privileges are claimed only when the person is a member of the house.
- As soon as s/he ends to be a member, the privileges are said to be called off.

Parliament has not made any special law to exhaustively codify all the privileges. Statement 3 is incorrect.

They are rather based on five sources:

- 1. Constitutional provisions
- 2. Various laws made by Parliament
- 3. Rules of both the Houses
- 4. Parliamentary conventions
- 5. Judicial interpretations

Privileges:

1. Freedom of Speech in Parliament:

- The freedom of speech and expression guaranteed to a citizen under Asrticle 19(2) is different from the freedom of speech and expression provided to a member of the parliament.
- It has been guaranteed under Article 105(1) of the Indian constitution. But the freedom is subject to rules and orders which regulate the proceedings of the parliament.

• Limitations:

 Freedom of speech should be in accordance with the constitutional provisions and subject to rules and

- procedures of the parliament, as stated under Article 118 of the Constitution.
- Under Article 121 of the Constitution, the members of the parliament are restricted from discussing the conduct of the judges of the Supreme Court and the High Court.

2. Freedom from Arrest:

- The members enjoy freedom from arrest in any civil case 40 days before and after the adjournment of the house and also when the house is in session.
- No member can be arrested from the limits of the parliament without the permission of the house to which s/he belongs so that there is no hindrance in performing their duties.
- If the detention of any members of the parliament is made, the chairman or the speaker should be informed by the concerned authority, of the reason for the arrest.
- But a member can be arrested outside the limits of the house on criminal charges against him under the Preventive Detention act, the Essential Services Maintenance Act (ESMA), the National Security Act (NSA), or any such act. Statement 4 is correct.

3. Right to Prohibit the Publication of Proceedings:

- Article 105(2) of the Constitution, no person shall be held liable for publishing any reports, discussions etc. of the house under the authority of the member of the house.
- For paramount and national importance, it is essential that the proceedings should be communicated to the public to aware them of what is going on in the parliament.

4. Right to Exclude Strangers:

 The members of the house have the power and right to exclude strangers who are not members of the house from the proceedings. This right is very essential for securing free and fair discussion in the house.

14. 1

About Committee of Privileges:

This committee consists of 15 members in Lok Sabha (10 in case of Rajya Sabha) nominated by the Speaker(Chairman in case of Rajya Sabha). Statement 1 is incorrect.

In the Rajya Sabha, the deputy chairperson heads the committee of privileges. Statement 2 is correct.

Powers and Functions:

- The committee examines every question involving a breach of privilege of the House or of the members or of any Committee thereof referred to it by the House or by the Speaker/Chairman.
- It also determines with reference to the facts of each case whether a breach of privilege is involved and makes suitable recommendations in its report.
- It also states the procedure to be followed by the House in giving effect to its recommendations.
- When a question of privilege is referred to the Committee by the House, the report of the Committee is presented to the House by the Chairman or, in his absence, by any member of the Committee.
- Where a question of privilege is referred to the Committee by the Speaker, the report of the Committee is presented to the Speaker who may pass final orders thereon or direct that it be laid on the Table of the House.
- The Speaker/Chairman may refer to the Committee any petition regarding the disqualification of a member on the ground of defection for making a preliminary inquiry and submitting a report to him. Statement 3 is correct.
- The procedure to be followed by the Committee in these cases is so far as may be the same as in applicable to questions of breach of privilege.

What is breach of privilege?

• A breach of privilege is a violation of any of the privileges of MPs/Parliament.

 Among other things, any action 'casting reflections' on MPs, parliament or its committees; could be considered breach of privilege.

This may include publishing of news items, editorials or statements made in newspaper/ magazine/ TV interviews or in public speeches.

15. B

The list of the east-flowing rivers is given below:

- Damodar
- Subarnarekha
- Ponnaiyar
- Mahanadi
- Godavari
- Krishna
- Kaveri
- Pennar
- Brahamani
- Sarada
- Vaigai



16. C

- It was established by the General assembly of the United Nations in 1991.
- It is responsible for bringing together humanitarian actors to ensure a coherent response to emergencies.
- It also ensures there is a framework within which each actor can contribute to the overall response effort.
- It replaced the Office of the United Nations Disaster Relief Coordinator (UNDRO). Statement 1 is correct.
- On-Site Operations Coordination Centres (OSOCC), an OCHA tool, provides a platform for the coordination of international response activities immediately following a sudden-onset emergency or a rapid change in a complex emergency.
- Funds: There are two types of pooled funds:
- Central Emergency Response Fund (CERF) which can fund an emergency anywhere in the world. Statement 2 is correct.
- Country-Based Pooled Funds (CBPFs) which are country specific.
- It has two headquarter locations -Geneva and New York which acts as centres of global operations.

17. C

- The Index is an annual assessment released by the Food Safety and Standards Authority of India (FSSAI).
- It was started from 2018-19 with the aim of creating a competitive and positive change in the food safety ecosystem in the country.
- The index will help in providing safe and nutritious food to our citizens.
- This index is based on the performance of the State/ UT on six significant parameters, namely,
- 1. Human Resources and Institutional Data
- 2. Compliance
- 3. Food Testing Infrastructure and Surveillance

- 4. Training & Capacity Building
- 5. Consumer Empowerment.
- 6. In the 2023 index, a new parameter called 'Improvement in SFSI Rank' was added.
- The Index is a dynamic quantitative and qualitative benchmarking model that provides an objective framework for evaluating food safety across all States/ UTs.
- The States/UTs are classified into 3 categories namely Large States, Small States and UTs for the evaluation and assessment.

18. B

- The Lewis Model, developed by Sir W. Arthur Lewis, is an economic theory that explains the process of economic development in dualistic economies, where there is a coexistence of two sectors: a traditional agricultural sector and a modern industrial sector.
- This model posits that economic development occurs as surplus labour from the agricultural sector is gradually absorbed into the industrial sector, resulting in increased productivity, higher wages, and overall economic growth.
- It emphasizes the importance of labour mobility and the transition from lowproductivity agricultural activities to higher-productivity industrial activities as key drivers of economic development in such economies.

19. B

Pulsars

- Most neutron stars are observed as pulsars.
- Pulsars are rotating neutron stars observed to have pulses of radiation at very regular intervals that typically range from milliseconds to seconds.
- Pulsars have very strong magnetic fields which funnel jets of particles out along the two magnetic poles. Statement 1 and 2 are correct.
- These accelerated particles produce very powerful beams of light.

- Often, the magnetic field is not aligned with the spin axis, so those beams of particles and light are swept around as the star rotates.
- We see pulsars turn on and off as the beam sweeps over Earth.
- Young pulsars sometimes create jets of matter and antimatter that move away from their poles, along with an intense "wind," creating what is known as a "pulsar wind nebula". Statement 3 is incorrect.
- NASA's Chandra X-ray Observatory first observed this pulsar with a wind nebula shaped like a human hand labelled PSR B1509-58 in 2001.
- The pulsar wind nebula is called MSH 15-52 and is located about 16,000 light-years away from our planet.

20. C

Lucy Mission

The Lucy space craft is set to cross the 'Dinkinesh', an asteroid situated in the main asteroid belt between the orbits of Mars and Jupiter.

National Aeronautics and Space Administration (NASA) has launched the Lucy mission on October 2021 and its main aim was to observe the Jupiter Trojan asteroids. Statement 2 and 3 are correct.

It is possible for Lucy to observe so many because it won't stop or orbit the asteroids.

Jupiter Trojan asteroids refers to a huge group of small bodies that orbit the Sun in two "swarms."

One of the swarms leads Jupiter in its orbit while the other trails behind the gas giant.

Lucy will first fly by Dinkinesh and another asteroid in the main belt called Donald johnson.

The mission has been visually tracking Dinkinesh since September and it will be the first asteroid that Lucy will visit on its 12-year-long journey. Statement 1 is correct.

Dinkinesh is about a kilometre wide and orbits the Sun in the main belt of asteroids between the orbits of Mars and Jupiter.

21.

- Coffee was introduced to India during the late seventeenth century.
- The smuggling of seven coffee beans from Yemen to India by an Indian pilgrim in 1670 marked its initial arrival.
- The Dutch, who occupied parts of India during the 17th century, played a role in spreading coffee cultivation.
- However, it was during the British Raj in the mid-nineteenth century that commercial coffee farming fully flourished, particularly from the Mysore region.

Cultivation and Biodiversity:

1. Coffee Plantation Practices in India:

- Predominantly grown under thick natural shade.
- Ecologically sensitive regions of the Western and Eastern Ghats.

2. Biodiversity Hotspots:

- Coffee plantations located in these regions are recognized as biodiversity hotspots.
- Contribute significantly to India's unique biodiversity.

3. Export and Domestic Consumption:

 Approximately 65% to 70% of the coffee produced in India is exported and remaining coffee is consumed domestically.

4. Role in Sustainability and Socioeconomic Development:

- Coffee cultivation plays a vital role in sustaining biodiversity.
- Fosters socio-economic development in remote hilly areas.

Climatic Conditions and Soil Types:

Climate Conditions:

Hot and humid climate, Temperature 15°C to 28°C, and Rainfall 150 to 250 cm.

Harmful Conditions:

Frost, Snowfall, High temperatures above 30°C, and Strong sunlight. Statement 1 is incorrect.

Ideal Soil Conditions:

 Well-drained loamy soils, Presence of humus and minerals (iron, calcium), Fertile volcanic red earth, and Deep sandy loam soils.

Less Suitable Soil Conditions:

· Heavy clay soils, Sandy soils.

Coffee Plantation Locations in India:

 Karnataka, Kerala, Tamil Nadu, Andhra Pradesh (Araku Valley), Odisha, Manipur, Mizoram, and Other northeastern states.

Major Coffee Producer:

 Karnataka accounts for approximately 70% of India's total coffee production. Statement 2 is incorrect.

Coffee Varieties in India:

· Arabica and Robusta.

Characteristics of Arabica:

 Grown at higher altitudes and it has Higher market value due to its aroma.

Characteristics of Robusta:

 Known for its strength and used in various blends.

The Coffee Board of India

- It is a statutory organization that was constituted under Section (4) of the Coffee Act, 1942. Statement 3 is correct.
- It functions under the administrative control of the Ministry of Commerce and Industry, Government of India.
- The Board comprises 33 Members including the Chairperson, who is the Chief Executive and it functions from Bangalore.
- The Board mainly focuses its activities in the areas of research, extension, development, market intelligence, external & internal promotion for coffee.

22. E

India is the world's largest user of groundwater, accounting for one-fourth of global groundwater extraction. About 70% of India's water usage comes from groundwater.

There is no single law that governs groundwater management at the national level in India. The legal and regulatory frameworks for groundwater in India are based on a number of different laws, including the Indian Easements Act,

1882, the Water (Prevention and Control of Pollution) Act, 1974, the Environment (Protection) Act, 1986, and the Model Groundwater Bill, 2017. Statement I is correct.

However, these laws are not comprehensive and do not provide a unified framework for groundwater management.

This lack of a single national law on groundwater management has made it difficult to develop and implement effective groundwater management policies. It has also made it difficult to enforce groundwater regulations.

Further, the Constitution of India does not explicitly mention groundwater, but it does guarantee the right to water as a fundamental right.

According to the Central Ground Water Authority (CGWA) Act, ground water is considered to be a public resource. This means that the CGWA has the authority to regulate and control the use and development of groundwater in India. Statement II is correct but is not the correct explanation for Statement I.

23.

What is Bletchley Declaration?

Britain, along with 28 other countries and the European Union, published the "Bletchley Declaration" at Bletchley Park, England.

Central objective- The central objective of the Bletchley Declaration is to address risks and responsibilities associated with frontier AI in a comprehensive and collaborative manner.

The document emphasizes the necessity of aligning AI systems with human intent and urges a deeper exploration of AI's full capabilities.

Historical Importance of Bletchley Park:

- During the war, Bletchley Park played a pivotal role in breaking the 'unbreakable' Enigma code, which was used by the Nazis.
- The site is also known for creating the Turing Bombe, a device that expedited code-breaking efforts.
- Bletchley Park contributed to the development of the Colossus, often considered the world's first programmable electronic computer.

24. B

- It is a colourless, easily liquefied, gaseous hydrocarbon (compound of carbon and hydrogen). Statement 1 is correct.
- It is an alkane, which means it consists of only single covalent bonds between carbon and hydrogen atoms.
- It is the third member of the paraffin series following methane and ethane.
- The chemical formula for propane is C3H8.

Source:

- It is a by-product of natural gas processing and petroleum refining.
- It is also produced during the fractional distillation of crude oil. Statement 2 is correct.
- It is commercially available as liquefied propane or as a major constituent of liquefied petroleum gas (LPG). Statement 4 is incorrect.
- It has a high octane rating, making it an excellent choice for sparkignited internal combustion engines. Statement 3 is incorrect.

Application of Propane

- Its main uses include home and water heating, cooking and refrigerating food, clothes drying, and powering farm and industrial equipment.
- The chemical industry also uses propane as a raw material for making plastics and other compounds.

25.

- Purchasing Managers' Index (PMI) is an economic indicator, which is derived after monthly surveys of different companies.
- It measures activity at the purchasing or input stage.
- In this sense, it is very different from industrial production which is indicative of actual production.
- E.g., the Index of Industrial Production (IIP) measures output. Statement 1 is incorrect.
- There are two types of PMI Manufacturing PMI and Services PMI.
- The index shows trends in both the manufacturing and services sector. Statement 2 is correct.
- PMI does not capture informal sector activity. Statement 3 is correct.

Institution responsible for releasing PMI for India

- PMI data for India is released by S&P Global - a global major in financial information and analytics.
- Earlier PMI data is India was released by IHS Markit before its merger with S&P.
- The Manufacturing PMI measures the performance of India's manufacturing sector and is derived after a survey of approx. 500 manufacturing companies.

Methodology

- The PMI is derived from a series of qualitative questions. For manu facturing PMI, the questionnaire is sent to manufacturing companies.
- The questions are related to 5 key variables.

The variables with their weights in the index are:

- 1. new orders (30%),
- 2. output (25%),
- 3. employment (20%),

- 4. suppliers' delivery times (15%) and
- 5. stock of items purchased (10%).
- The surveys are conducted on a monthly basis.

Reading of the PMI

- A PMI number greater than 50 indicates expansion in business activity.
- A number less than 50 shows contraction. Statement 4 is correct.
- The rate of expansion can also be judged by comparing the PMI with that of the previous month data.
- If the figure is higher than the previous month's then the economy is expanding at a faster rate.
- If it is lower than the previous month then it is growing at a lower rate.

Significance of PMI

- The index is released much before most of the official data on industrial output, manufacturing and GDP growth becomes available.
- Hence, it is considered a good leading indicator of economic activity.
- Central banks of many countries also use the index to help make decisions on interest rates.
- It also gives an indication of corporate earnings and is closely watched by investors as well as the bond markets.
- A good reading of index enhances the attractiveness of an economy visa- vis another competing economy.

26. D

- World Health Organization (WHO), the United Nations' specialized agency for Health was founded in 1948.
- Its headquarters are situated in Geneva, Switzerland.
- There are 194 Member States, 150 country offices, six regional offices.
- It is an inter-governmental organization and works in collaboration with its member states usually through the Ministries of Health.

- The WHO provides leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.
- It began functioning on April 7, 1948 a date now being celebrated every year as World Health Day.

What are the Objectives?

- To act as the directing and coordinating authority on international health work.
- To establish and maintain effective collaboration with the United Nations, specialized agencies, governmental health administrations, professional groups and such other organizations as may be deemed appropriate.
- To provide assistance to the Governments, upon request, in strengthening health services.
- To promote cooperation among scientific and professional groups which contribute to the advancement of health.

How is it Governed?

World Health Assembly

- World Health Assembly (WHA) is WHO's decision-making body attended by delegations from all of WHO's member states, Statement 2 is correct. ? It is held yearly at the headquarters of WHO, i.e., Geneva, Switzerland.
- Specific health agenda prepared by the Executive Board remains the focus of this assembly.
- Since the start of the Covid-19 pandemic, 2022's assembly is the first inperson assembly.
- In May 2022, World Health Assembly's 75th session was held at World Health Organization (WHO).

Functions

- The Health Assembly determines the policies of the Organization.
- It supervises the financial policies of the

Organization and reviews and approves the budget.

 It reports to the Economic and Social Council in accordance with any agreement between the Organization and the United Nations.

The Secretariat

- The Secretariat comprises of the Director-General and such technical and administrative staff as the Organization may require.
- The Director-General is appointed by the Health Assembly on the nomination of the Board on such terms as the Health Assembly may determine. Statement 4 is correct.

Executive Board

The Assembly elects 34 members, technically qualified in the field of health, to the executive board for three-year terms. The main functions of the board are to carry out the decisions and policies of the Assembly, to advise it, and to facilitate its work. Statement 3 is correct.

Membership and Associate Membership All UN member states are eligible for WHO membership, and, according to the WHO website, "other countries may be admitted as members when their application has been approved by a simple majority vote of the World Health Assembly". Statement 1 is correct.

Territories or groups of territories which are not responsible for the conduct of their international relations may be admitted as Associate Members by the Health Assembly.

Financing

The WHO is financed by contributions from member states and outside donors. In 2020-21, the largest contributors were the Germany, Bill & Melinda Gates Foundation, United States, United Kingdom and European Commission.

The WHO Executive Board formed a Working Group on Sustainable Financing in 2021, charged to rethink WHO's funding strategy and present recommendations. Its recommendations were adopted by the 2022 World Health Assembly, the key one being to raise compulsory member dues to a level

equal to 50% of WHO's 2022-2023 base budget by the end of the 2020s.

- Assessed contributions are the dues the Member States pay depending on the states' wealth and population
- Voluntary contributions specified are funds for specific programme areas provided by the Member States or other partners
- Core voluntary contributions are funds for flexible uses provided by the Member States or other partners

SIX REGIONAL OFFICES



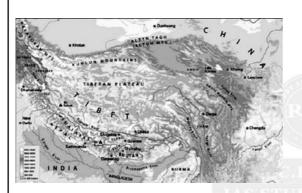
27.

Socotra (Yemen)- Phuket (Thailand)-Sumatra (Indonesia)- Borneo(Indonesia)



28. D







29. D

White hydrogen is also referred to as "natural," "gold" or "geologic" hydrogen. It is naturally produced in the Earth's crust and is considered a potential source of clean energy. It generally exists combined with other molecules. Statement I is incorrect. It causes no CO2 emissions when used as a fuel. It is compatible with existing

infrastructure and technologies for hydrogen production and utilisation. It is also abundant and renewable. Statement II is correct.

30.

- Recently, the National Aeronautics and Space Administration (NASA) launched a sounding rocket as part of its INFUSE mission. Statement 1 is incorrect.
- The Integral Field Ultraviolet Spectro scope Experiment (INFUSE) was launched from the White Sands Missile Range in New Mexico.
- It was launched to study the Cygnus Loop, a supernova remnant. Statement 2 is correct.

What will INFUSE mission do?

- The INFUSE mission is expected to collect information about the remnant for a few minutes from a height of 150 miles (240 km).
- Specifically, the instrument will gather light streaming from the Cygnus Loop in far-ultraviolet wavelengths.
- It will observe how the supernova dumps energy into the Milky Way by catching light given off just as the blast wave crashes into pockets of cold gas floating around the galaxy.
- It will study the Cygnus Loop and try to understand the life cycle of stars. Statement 3 is correct.

What is Cygnus Loop?

- It is the remnant of a star that was once 20 times the size of our Sun.
- Some 20,000 years ago, that star collapsed under its own gravity and erupted into a supernova.
- Even from 2,600 light-years away, astronomers estimate the flash of light would have been bright enough to see from Earth during the day

31. A

India and Bangladesh launched three India-assisted development projects, two of which are expected to boost trade and improve connectivity with the North eastern states.

The three projects are the Akhaura-Agartala Cross-Border Rail Link, KhulnaMongla Port Rail Line; and Unit 2 of the Maitree Super Thermal Power Plant.

Projects Associated

Countries

1. Jayanagar- India-Nepal

Kurtha rail

2. Akhaura- India-Bangladesh

Agartala rail

3. Khulna-Mongla India-Bangladesh Port rail

32. A

Statement 1 is not correct: It provides a legal guarantee for one hundred days of employment in every financial year to adult member of any rural household willing to do public work-related unskilled manual work at the statutory minimum wage.

Statement 2 is correct: The Ministry of Rural Development (MRD) is responsible for implementation of this scheme in association with state governments.

Statement 3 is correct: Within 15 days of submitting the application or from the day work is demanded, wage employment will be provided to the applicant.

Statement 4 is correct: Social Audit of MGNREGA works is mandatory under the scheme.

33. C

Lake Maracaibo, located in the northwest of Venezuela, is the largest lake in Latin America and one of the oldest lakes in the world. It is renowned for its unique atmospheric phenomenon known as "Catatumbo lightning."

Catatumbo lightning, colloquially known as lanterns of San Antonio, the Beacon or Maracaibo, or lanterns of Maracaibo, is a meteorological phenomenon. The bolts flash nearly 300 nights every single year over Lake Maracaibo in Venezuela.

Lake Maracaibo rests in a unique

geographical location with its brackish water combining with this location to create the perfect impetus for the massive lightning production. For one, the lake is surrounded on three sides by large mountains, which helps to create lightning by shielding the water and collecting the negatively-charge ions.

What Causes Lightning to Form?

Two things come together to create a lightning storm: cold air and warm air. When these two things collide, the following happens.

- Ice crystals form; moist, warm air creates water droplets.
- As the warm air rises, the ice crystals collide with the water droplets, creating friction known as static electricity.
- Cloud tops become positively charges with the bottom of the clouds going negative.
- As the negative charge from the bottom builds up enough, the energy becomes lightning.
- The air around the cloud heats up and spreads quickly, causing thunder.
- Warm water surrounded by tall mountains, like Maracaibo, become hot spots for such storms.

34. I

Elephant Corridor Report, 2023

A corridor is a small patch of land that provides connectivity for elephant movement across habitats, largely within a landscape of the elephant reserve.

According to the report there is increase of 62 'elephant corridors' in the country since 2010, bringing the total to 150, an increase of 40 %. Statement 1 is correct.

West Bengal has the most elephant corridors (26) that amounts to 17% of the total elephant corridors. Statement 2 is correct.

Elephants have seen increased presence in Madhya Pradesh found in Sanjay Tiger reserves and Bandhavgarh.

The decrease in corridor use is attributed

to the habitat fragmentation, shrinkage and destruction.

The elephant corridor in forest areas shall be notified under the rules mentioned under the Wild Life (Protection) Act, 1972.

The elephant corridor areas with revenue lands and private lands must be notified under the Environment (Protection) Act, 1986. Statement 3 is incorrect.

It is considered as eco-sensitive, for which the red-category industries are prohibited.

35. I

The British Academy Book Prize is an annual award given to a work of nonfiction that contributes to public understanding of global cultural understanding. Statement 1 is incorrect.

It was established in 2013.

The 2023 winner of the prize is India-born author Nandini Das for her book "Courting India: England, Mughal India and the Origins of Empire." The book explores the complex relationship between England and Mughal India in the 17th century, and its impact on the origins of the British Empire.

The winner gets the £25,000 Prize cash award and each of the shortlisted works will receive £1,000 each.

Statement 2 is correct. The British Academy Book Prize was formerly known as the Nayef Al-Rodhan Prize.

The British Academy is the UK's national academy for humanities and social sciences.

The eligible books come from the subjects that fall within those disciplines, from archaeology, history and psychology to philosophy, languages and cultural studies. Statement 3 is incorrect.

36. /

What is the Most Favoured Nation (MFN)?

 It is a principle in international trade and diplomacy that promotes equal treatment among trading partners.
 Statement I is correct.

- When a country grants MFN status to another, it agrees to extend the same trade privileges and favourable terms to that partner as it does to its most favoured trading partner. Statement II is correct and is the correct explanation.
- For example, if Country A gives Country B MFN status, it must offer the same trade benefits to Country B as it does to its best trading partner, Country C. This ensures fairness and non-discrimination in international trade.

Legal Status of MFN:

- Article 1 of GATT 1994 mandates WTO member countries to grant Most Favoured Nation (MFN) status to each other, ensuring equal trade treatment. There can be exceptions, like bilateral trade agreements and special access for developing nations.
- For instance, India initially granted MFN status to all WTO members, including Pakistan. However, India suspended Pakistan's MFN status in 2019 due to security concerns, and Pakistan never reciprocated MFN status for India.

Background of the MFN Controversy?

- In 2020, India changed its dividend tax policies, creating relative advantages for investors from certain countries. The treaties India separately negotiated with new members of the OECD gave investors from these countries a relative advantage due to lower tax rates.
- Now, investors from France, the Netherlands, and Switzerland (Old

OECD members) also started to look for lower tax rates benefits from India. However, controversy arose over the question of whether the lower tax rates should automatically apply to the three countries without any formal notification.

What did the court say?

 Delhi High Court ruled that no formal notification was needed, and benefits could be given immediately to investors from the 3 countries as well.

SC judgement:

• SC reversed this HC judgment saying that a formal notification is required for changes under the MFN clause, meaning benefits don't apply automatically. As a result, companies in the old OECD countries (such as the Netherlands) receiving dividends from India can't claim lower tax rates based on treaties with new OECD members like Slovenia and must follow the original treaty rate.

Implications of the judgement:

• The decision may lead to additional tax revenue for the Indian government but could potentially strain relations with tax treaty partners.

About Double Taxation Avoidance Agreement or DTAA:

 It is a tax treaty signed between India and another country (or any two/multiple countries) so that taxpayers can avoid paying double taxes on their income earned from the source country as well as the residence country

What is Permanent Normal Trade Relations(PNTR)?

The status of Permanent Normal Trade Relations (PNTR) is a legal designation in the United States for free trade with a foreign nation. It is the same as MFN, only that in the US it is called PNTR.

37. C

- JioSpace Fiber is India's first satellitebased gigabit internet service.
- It is India's first satellite-based broadband service, and it is designed to provide high-speed internet access to remote and underserved areas.

JioSpaceFiber uses the satellites of SES, a Luxembourg-based satellite communication provider.

 JioSpace Fiber uses medium Earth orbit (MEO) satellites while Starlink uses low Earth orbit (LEO) satellites.

This is because:

 MEO satellites can provide coverage to a larger area than LEO satellites.
 Statement 2 is correct.

- MEO satellites are generally cheaper to launch and maintain than LEO satellites. Statement 3 is correct.
- MEO satellites are more reliable than LEO satellites because they are less likely to be affected by atmospheric interference. Statement 4 is correct.
- However, MEO satellites have higher latency than LEO satellites. This means that JioSpace Fiber's internet service may be slightly slower than Starlink, but still faster than traditional satellite internet. Statement 1 is incorrect.

38. | I

Recently Karnataka has stepped up surveillance after a mosquito pool in Chickballapur was found to be positive for Zika virus.

- Zika virus is a mosquito-borne virus first identified in Uganda in 1947 in a Rhesus macaque monkey.
- Zika virus is a vector-borne flavivirus transmitted by the bite of infected Aedes mosquitoes, mainly Aedes aegypti and Aedes albopictus.

Most people with Zika virus infection do not develop symptoms; those who do typically have symptoms including rash, fever, conjunctivitis, muscle and joint pain, malaise and headache that last for 2-7 days.

- The virus during pregnancy can cause infants to be born with microcephaly and other congenital malformations as well as preterm birth and miscarriage.
- The infection is associated with Guillain-Barre syndrome, neuropathy and myelitis in adults and children.
- In February 2016, World Health Organisation (WHO) declared Zikarelated microcephaly a Public Health Emergency of International Concern (PHEIC).
- WHO declared the end of the PHEIC of Zika virus in November of 2016.

 Although cases of Zika virus disease declined from 2017 onwards globally, transmission persists at low levels in several countries in the Americas and other endemic regions.

39. I

About Kawah Ijen:

- Kawah Ijen is a volcanic crater lake located in East Java, Indonesia.
- It is part of the larger Ijen volcano complex, which includes several other craters.

The main attraction of Kawah Ijen is its stunning turquoise-colored crater lake.

- The vibrant color of the water is due to the high concentration of dissolved sulfuric acid and other minerals.
- The lake is the largest, highly acidic crater lake in the world.
- The lake has been included in UNESCO's World Biosphere Reserves.
- The Ijen volcano complex is still active, and Kawah Ijen is one of the areas where volcanic activity is observed.
- The volcano releases sulfur gases, which can be ignited and produce impressive blue flames, especially at night. These flames are often referred to as "blue fire."
- The area around Kawah Ijen is known for traditional sulfur mining.

40. A

About Payment Aggregator-Cross Border (PA-CB):

PAs-CB facilitates cross-border online payments for import and export of permissible goods and services.

- The RBI has set a minimum net worth requirement of Rs 15 crore for these entities, which will be categorized as PA-CB.
- They will be accountable for ensuring that they do not facilitate payment transactions for the import of any restricted or prohibited goods and services.

• If the amount involved exceeds Rs 2.5 lakh, the PA-CB must carry out due diligence on the buyer as well.

What is a Payment Aggregator (PA)?

- A PA (also known as a merchant aggregator) is a third-party service provider that allows merchants to accept payment from customers by integrating it into their websites or apps. Statement 1 is correct.
- It facilitates different types of payment transactions, including cash/cheque, online payments through multiple payment sources, or offline touchpoints.
- It allows merchants to accept bank transfers without setting up a bankbased merchant account. It means a merchant need not have a merchant account directly with the bank.
- A PA in India is incorporated under the Companies Act 2013.
- A PA can be a bank or a non-bank entity. Statement 2 is incorrect.
- Since a PA handles funds, it requires a license from the RBI.
- Only non-bank payment aggregators require unique authorization from RBI as 'handling funds' is considered a part of the normal banking relationships for bank PAs. Statement 3 is incorrect.
- Examples: Amazon (Pay) India, Google India, Razorpay, Pine Labs, etc.

41]

Kara and Laptev Sea are a part of Arctic Ocean.



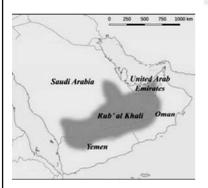


42. 1

Rub al-Khali is a vast desert region in the southern Arabian Peninsula, constituting the largest portion of the Arabian Desert.

It covers an area of about 250,000 square miles (650,000 square km) in a structural basin lying mainly in south eastern Saudi Arabia, with lesser portions in Yemen, Oman, and the United Arab Emirates.

The Rub al-Khali is the largest area of continuous sand in the world. It occupies more than one-fourth of Saudi Arabia's total area.



43. | I

NECP promotes affordable and energy-efficient induction cookers NECP is a subset of the Clean Cooking Scheme. It focuses on Non-Solar/Electricity based Induction cook stoves, aligning with the Goelectric initiative by the Ministry of Power. It introduces induction-based cook-stoves that offer cost advantages of 25-30% over traditional cooking methods. Statement I is incorrect.

By deploying 20 lakhs (2 million) energy-

efficient induction cook stoves across India, NECP seeks to reduce the environmental impact of cooking methods, resulting in cleaner air and improved health. EESL has partnered with Modern Energy Cooking Services (MECS) for the large-scale deployment of induction cooktops. Statement II is correct.

- It is a subset of the Clean Cooking Scheme.
- It focuses on Non-Solar/Electricity-based Induction Cook stoves, aligning with the Go- electric initiative by the Ministry of Power
- This programme introduces inductionbased cook-stoves.
- Target: To deploy 20 Lakh Induction cook-stoves across India.
- EESL seeks to reduce the environmental impact of cooking methods, ensuring cleaner air and improved health for citizens.
- EESL has also partnered with Modern Energy Cooking Services (MECS) for the large-scale deployment of induction cooktops.
- The deployment is expected to accelerate the acceptance and largescale adoption of modern electric cooking devices in Indian kitchens.
- Benefit: It is offering a cost advantage of 25-30% over traditional cooking methods, promising both energy savings and cost-effective cooking solutions.

44. D

The aim of the reports is to inform national and international efforts to advance adaptation. Statement 1 is correct.

The Adaptation Gap Report consists of two main parts:

- Assessment of global progress on adaptation in three areas: planning, financing and implementation.
- A second part that provides a deeper assessment of the status of adaptation within a particular sector or theme, but still framed around the same three elements.

The UN Environment Programme (UNEP) releases Adaptation Gap Report annually. The first edition was released in 2014. Statement 2 is correct.

45. 1

A zero-day (also spelt as 0-day) is a software weakness not known to those who are vendors of the target software. Unless the weakness is resolved, hackers can take control of the system and adverse programs, data, or the computer network itself.

Such attacks are known as zero-day attacks or zero-day exploits.

Definition of Zero-Day

- Zero-Day at first was used to refer to the number of days a new software was released to the public, hence 'zero-day software' was obtained by hacking into the developers' computer before the software was released.
- As time went on, 'zero-day' came to be referred to a series of weaknesses that enabled hacking and to the number of days that the vendor had to fix them. Once the weaknesses became known to the developers, they would apply patches and implement other safeguards to mitigate it.
- The longer it takes for the developers to become aware of the weakness in their software, the less chance they have to fix or mitigate it. However, once safeguards have been developed, the chances of the hacking exploit succeeding decreases as more users apply the fix.

Who carries out Zero-Day attacks? Target of Zero-Day Attacks

Malicious actors who carry out zero-day attacks fall into different categories, depending on their motivation. For example:

- Cybercriminals Hackers with the intention of making financial gains through illicit and criminal means.
- Hacktivists Political activists or social activists with hacking skills in order to bring attention to their cause.
- · Corporate espionage Hacking done to

gather sensitive information about corporations

 Cyber Warfare - Countries or political entities using hacking as a method to attack another nation's computer infrastructure.

Their targets include:

- Operating systems
- Office applications
- Hardware
- Firmware
- Internet of Things (IoT)

Web Browsers

How are Zero-Day attacks identified?

The weaknesses exploited by zero-day attacks can come in the following forms:

- · Missing data encryption
- Missing authorizations
- Incomplete algorithms
- Bugs
- Weakness in password security

46. B

According to Article 361, the President, or the Governor or Rajpramukh of a State, shall not be answerable to any court for the exercise and performance of the powers and duties of his office or for any act done or purporting to be done by him in the exercise and performance of those powers and duties. Statement 1 is correct.

Statements 2 and 3 are incorrect.

The Governor serves at the pleasure of the President, without a fixed term. Removal grounds are unspecified.

In 2016, the Supreme Court ruled the Governor's power to summon the House requires advice from the Council of Ministers.

47. *A*

Commission for Air Quality Management (CAQM)

Commission for Air Quality Management (CAQM) was setup under the Commission for Air Quality Management in National

Capital Region and Adjoining Areas Ordinance, 2021.

The Commission will be the sole authority with jurisdiction over matters defined in the Ordinance (such as air quality management).

- The Commission basically aims at better coordination, research, identification, and resolution of problems related to air quality in NCR and adjoining areas.
- Adjoining areas refer to areas in the neighbouring states of NCR namely, Punjab, Haryana, Uttar Pradesh and Rajasthan.
- The air quality around Delhi-NCR has been monitored and managed by multiple bodies before the CAQM was established. The bodies included the Central Pollution Control Board (CPCB), the state pollution control boards, the Environment Pollution (Prevention and Control) Authority (EPCA) of NCR, and the various state governments concerned.
- These bodies are further monitored by the Union Ministry of Environment, Forests and Climate Change and also the Supreme Court.
- The Act now consolidates all the bodies in that the CAQM is an overarching body that will take decisions and issue orders for protecting and improving the air quality in Delhi and NCR.
- This is to make the management of air quality more efficient and coordinated.
- The Centre also seeks to relieve the Supreme Court from having to constantly monitor pollution levels through various cases.
- The CAQM has replaced the Environment Pollution (Prevention and Control) Authority (EPCA) which was appointed by the SC and had been active for 22 years.
- The Centre said that the EPCA had become redundant and ineffective. It also did not have any penal provisions which the CAQM has been accorded.
- Any non-compliance or contravention

with the Commission's orders or directions can attract a prison term of up to five years and/or a fine of up to Rs. 1 crore.

 Only the National Green Tribunal will have the power to hear cases involving the CAQM, and not the civil courts.

In case of any conflict, the orders or directions of the Commission will prevail over the orders of the following:

- Respective state governments,
- Central Pollution Control Board (CPCB),
- State PCBs and
- · State-level statutory bodies.

Functions of the Commission includes:

- Co-ordinating actions taken under the Ordinance by concerned state governments (Delhi, Haryana, Punjab, Rajasthan, and Uttar Pradesh).
- Planning and executing plans to prevent and control air pollution in the National Capital Region (NCR).
- Preparing various action plans such as increasing plantation and addressing stubble burning.
- Investigate, conducts research and issue directions related to environmental pollution impacting air quality.

The Commission is required to form subcommittees on

- Monitoring and identification,
- Safeguarding and enforcement and ? Research and development.

These sub-committees will be headed by a member, the chairperson and a technical member respectively.

Commission for Air Quality Management (CAQM) has recently announced the implementation of the Stage 3 of Graded Response Action Plan (GRAP).

The GRAP has 4 categorises that includes:

- Stage I 'poor' (AQI 201-300).
- Stage II 'very poor' (AQI 301-400).
- Stage III 'severe' (AQI 401-450).
- Stage IV 'severe plus' (AQI above 450).

48. B

Dam Safety Act 2021

- Dam Safety Act 2021 aims at surveillance, inspection, operation and maintenance of all specified dams across the country. Statement 3 is correct.
- The Act applies to all specified dams in the country i.e., those dams having a height of over 15m and between 10m and 15m with certain design and structural conditions.

Provisions:

It constitutes two National Bodies:

1. National Committee on Dam Safety:

 Its functions include evolving policies and recommending regulations regarding dam safety.

2. National Dam Safety Authority:

- Its functions include implementing policies of the National Committee, and resolving matters between State Dam Safety Organisations (SDSOs), or between a SDSO and any dam owner in that state.
- The National Dam Safety Authority will be headed by a chairman and assisted by five members having working experience in: Policy and research, technical, regulation, disaster and resilience and administration and finance. Statement 2 is correct.

It also constitutes two state bodies:

1. State Dam Safety Organizations (SDSOs):

 Its functions include keeping perpetual surveillance, inspecting, and monitoring dams.

2. State Committee on Dam Safety:

 It will supervise state dam rehabilitation programs, review the work of the SDSO, and review the progress on measures recommended in relation to dam safety, among others.

Obligations of Dam Owners:

 As per the Dam Safety Act 2021, all the specified dams are required to be

- inspected twice a year during the premonsoon and post-monsoon periods. Statement 4 is incorrect.
- Dam owners will be responsible for the safe construction, operation, maintenance and supervision of a dam.
- They must provide a dam safety unit in each dam.

This unit will inspect the dams:

- · Before and after monsoon season
- During and after every earthquake, flood, calamity, or any sign of distress.

Functions of dam owners include:

- · Preparing an emergency action plan
- Carrying out risk assessment studies at specified regular intervals. Statement 1 is incorrect.
- Preparing a comprehensive dam safety evaluation through a panel of experts.

Punishment:

 Anyone obstructing a person in the discharge of his functions under the Act or refusing to comply with directions may be imprisoned for a year. In case of loss of life, the person may be imprisoned for two years.

49.

The Government is planning to extend the tenure of the Rebate of State and Central Levies and Taxes (RoSCTL) Scheme till 2025-26.

About Rebate of State and Central Levies and Taxes (RoSCTL) Scheme:

- It aims to reimburse all embedded State and Central taxes/levies for exports of manufactured goods and garments. Statement 1 is correct.
- The RoSCTL scheme was notified by the Ministry of Textiles in 2019. However, the scheme shall be implemented by the Department of Revenue, Ministry of Finance.
- This scheme has been introduced as a replacement for the previous Rebate of State Levies (RoSL) Scheme, which provided only rebates of state taxes.

- RoSCTL intends to compensate the State and Central Taxes and Levies in addition to the Duty Drawback Scheme on the export of apparel/ garments and madeups manufactured in India by way of a rebate.
- Importer-Exporter Codes (IECs) are necessary in order to apply for the RoSCTL programme. Statement 2 is correct.
- The rebate under the RoSCTL Scheme shall be given to the exporter in the form of duty credit scrips, which will be maintained in the electronic duty credit ledger. The scrips shall be issued electronically on the Customs automated system.
- The duty credit scrips shall be used for payment of customs duties levied under the First Schedule to the Customs Tariff Act, 1975. It cannot be utilized towards the payment of any other taxes, like IGST, Compensation Cess etc., upon the import of goods.
- The duty credit available in an e-scrip shall be transferred at a time for the entire amount in the said e-scrip to another person, and the transfer of the duty credit in part shall not be permitted. Statement 3 is incorrect.
- The value of the goods for calculation of duty credit to be allowed under the Scheme shall be the declared export Free on Board (FOB) value of the said goods or up to 1.5 times the market price of the said goods, whichever is less.
- All exporters of garments/Apparels and made-ups manufactured in India are eligible to take benefit under this scheme except entities/ IECs under the Denied Entity List of the Directorate General of Foreign Trade (DGFT).

50. (

Indian Railways' technical advisor Research Design and Standards Organisation (RDSO), with the Indian Oil Corporation Ltd (IOCL) has developed a special fuel Methanol Diesel-15.

- It is a special fuel developed by the Indian Railways' Research Design and Standards Organisation (RDSO) in collaboration with the Indian Oil Corporation Ltd (IOCL). Statement 1 is correct.
- It is a cost-effective blended fuel containing 15% methanol, 71% mineral diesel, and 14% indigenously developed additives by IOCL.

What are the benefits of MD-15?

- It offers superior performance, combustion, and emission characteristics compared to regular mineral diesel fuel. Statement 2 is correct.
- It has the potential to reduce diesel consumption by 15% and result in substantial annual savings.
- It significantly decreases harmful pollutant emissions, contributing to a cleaner and greener environment.
- The NOx emissions were significantly lower thus reducing the harmful pollutants, which causes smog and pollution.

51. D

The Election Commission of India has designed in-house software ENCORE for complete Candidate and election management.

- This ENCORE software stands for Enabling Communications on Realtime Environment.
- This provides a seamless facility for Returning Officers to process candidate nomination, affidavit, Voter turnout, counting, results and data management.
- The ENCORE counting application is an end-to-end application for returning officers to digitize the votes polled, tabulate the round-wise data and then take out various statutory reports of counting.
- Another application called ENCORE Scrutiny Application allows Returning Officers to do scrutiny of the nominations filed by the candidates on-line.

 After verification of the nomination the status is marked as Accepted, Rejected or Withdrawn helping the Returning Officer to prepare the final list of contesting candidates and assign the symbols.

52. B

The area under rice cultivation in India, in 2013-14 was 44.13 million hectares while in 2015-16, it became 43.39 million hectares and is highest amongst all. Hence statement 1 is correct.

The annual area under Jowar ranges between 17 and 18 million hectares while the oilseed area is 28 million hectares (2013-14), 26.1 million hectares (2015-16) i.e area under the cultivation of Jowar is less than that of oilseeds. Hence statement 2 is not correct.

The area under sugarcane cultivation has not steadily decreased. The area under sugarcane cultivation 4.99 million hectares (2013-14), 5.066 million hectares (2014-15), 4.953 million hectares (2015-16). Hence statement 4 is not correct.

The area under cotton cultivation is 11.96 million hectares (2013-14), 12.81 million hectares (2014-15), and 11.87 million hectares (2015-16). Hence the area under cotton cultivation is more than sugar cultivation. Hence statement 3 is correct.

53. C

About Protection of Women from Domestic Violence Act 2005 (DV Act):

- The DV Act was enacted by Parliament on September 13, 2005, and extends to the whole of India.
- It is basically meant to provide protection to a wife or female live-in partner from violence at the hands of the husband, or a male live-inpartner, or his relatives.
- Domestic violence under the Act includes actual abuse or the threat of abuse, whether physical, sexual, verbal, emotional, or economic. Statement 1 is correct.
- Harassment by way of dowry demands is also covered under the definition of domestic violence. Statement 2 is correct.

Who is covered under the Act?

- The Act covers all women who may be mother, sister, wife, widow, or partners living in a shared household.
- The relationship may be in the nature of marriage or adoption.
- In addition, relationships with family members living together as a joint family are also included.

Who can file a complaint?

- Any woman who alleges to have been subjected to any act of domestic violence by the offender or any person may file a complaint on her behalf. Statement 3 is correct.
- A child is also entitled to relief under the DV Act. The mother of such a child can make an application on behalf of her minor child (whether male or female).
- In cases where the mother makes an application to the court for herself, the children can also be added as coapplicants.
- However, no female relative of the husband or the male partner can file a complaint against the wife or the female partner.

Against whom can a complaint be filed?

- Any adult male member who has been in a domestic relationship with the woman
- Relatives of the husband or the male partner (Includes both male and female relatives of the male partner)

Remedies available: Under the law, women can apply for reliefs such as

- Protection Order
- Residence Order for residing at Matrimonial House
- Monetary Orders, which include maintenance for herself and her children
- · Temporary custody of children
- Compensation order for the damages caused to her
- It is only when the relief granted by the courts is breached that criminal action is taken against the respondent.

Protection Officers:

- Under the DV Act, Protection Officers have been appointed by the Government to help the aggrieved woman in filing the case.
- They are to be attached to the Magistrates of the courts for the area notified for each protection officer.
- The Protection Officer facilitates the women to approach the court by providing legal aid and get appropriate relief from the courts concerned.
- Further, they execute the orders of the Court wherever necessary with the help of the police.
- Options are also available to the aggrieved person to file the petition before the Judicial Magistrate Court, or with the service provider, or at a nearby police station.

Service Providers:

- Under the DV Act, Service Providers are members of notified NonGovernmental Organizations.
- They co-ordinate with all the stakeholders to get justice and relief for the victims of domestic violence.
- They help the aggrieved women in filing the Domestic Incident Report, provide accommodation in the short-stay homes along with their children, counsel them, and help the aggrieved get medical treatment if necessary.
- They also impart them with vocational training to help them secure employment and sustainable income.

54. B

About Commando Battalions for Resolute Action (CoBRA):

- Established in 2008, CoBRA is a specialized unit of the Central Reserve Police Force (CRPF). Statement 1 is incorrect.
- It is one of the few units of the CRPF in the country that is specifically trained in guerilla tactics and jungle warfare.
- They are also known as 'jungle warriors'.

- Originally established to counter the left wing extremism (Naxalite problem), CoBRA is deployed within India to address any insurgent group engaging in asymmetrical warfare. Statement 2 is correct.
- Personnel for CoBRA are selected from CRPF, as CoBRA is an integral part of CRPF.
- They undergo rigorous commando and jungle warfare training before being posted to CoBRA units for operations.
- It has 10 units, raised between 2008 and 2011
- The majority of CoBRA teams are deployed in various Maoist violenceaffected states while a few are based in the northeastern states to undertake counter-insurgency operations.

55. C

About Tellurium:

Tellurium is a semi-metallic, lustrous, crystalline, brittle, silver-white element. Statement 1 is incorrect.

Atomic Number: 52

- It has the properties of both the metals and the non-metals. Statement 2 is correct
- It forms many compounds corresponding to those of sulphur and selenium.
- When burned in the air, tellurium has a greenish-blue flame and forms tellurium dioxide as a result.
- Tellurium is a semiconductor material and is slightly photosensitive.
- It is one of the only elements that readily combine with gold (Au).

Sources:

- Tellurium is sometimes found free in nature.
- More commonly, it is found combined with metals, such as in the minerals calaverite (gold telluride, AuTe2) and sylvanite (silver-gold telluride). Statement 3 is correct.

 Commercially, tellurium is obtained as a by-product of electrolytic copper refining.

Applications:

- Tellurium is alloyed with copper and stainless steel to make these metals more workable.
- It is added at very low levels to lead to decreases the corrosive action of sulphuric acid in batteries and to improve the lead's strength and hardness.
- It is used as a colouring agent in ceramics.
- It is also used in the electronics industry, for example, with cadmium and mercury to form photosensitive semiconductors.
- It is used in vulcanizing rubber, and in catalysts for petroleum cracking, and in blasting caps for explosives. Statement 4 is correct.

56. D

Recently, researchers discovered a new species of jumping spider from the Shendurney Wildlife Sanctuary.

- The new species belongs to the jumping spider genus Pancorius Simon, 1902, and Salticidae family,
- It has been named Pancorius sebastiani after the late spider taxonomist P.A. Sebastian.
- The Pancorius genus of Asian jumping spiders is primarily distributed in southeast Asia.
- Its distribution was hitherto limited to the east and north-eastern regions in India
- The new species is the first to be reported from the south.

Features

- The males and the females of Pancorius sebastiani exhibit reddish brown carapace, yellowish abdomen with black patches and chevronshaped markings posteromedially.
- An analysis of Salticidae species in the

country shows that only two States, West Bengal and Tamil Nadu, have reported high numbers, while the others including those harbouring biodiversity hotspots like the Western Ghats and north-eastern India have relatively few numbers of species.

57. | B

- Helicobacter pylori is a common type of bacteria that grows in the digestive tract and tends to attack the stomach lining. Statement 1 is incorrect.
- It is adapted to live in the harsh, acidic environment of the stomach.
- This infection usually happens during childhood. Statement 2 is correct.
- Its infections are usually harmless, but they're responsible for most ulcers in the stomach and small intestine.
- This bacterium can change the environment around it and reduce the acidity so it can survive more easily.
- The spiral shape of Helicobacter pylori allows it to penetrate the stomach lining, where it's protected by mucus and the body's immune cells can't reach it.
- Most people with Helicobacter pylori infection will never have any signs or symptoms.

When signs or symptoms do occur with Helicobacter pylori infection, they are typically related to gastritis or a peptic ulcer and may include:

- An ache or burning pain in your stomach.
- Stomach pain that may be worse when your stomach is empty? Nausea, Loss of appetite and unintentional weight loss etc.

Treatment

- It typically involves a combination of antibiotics and a proton-pump inhibitor (a drug that reduces your stomach acid) for up to 14 days. Statement 3 is correct.
- This treatment is sometimes referred to as triple therapy.

58.

- It is named as Lysionotus namchoomii.
- Range: The native range of the genus Lysionotus is the Himalayas to Japan and Indo-China, and about 50% of the species found are endemic.
- Species of the genus are mostly epiphytic, lithophytic, or terrestrial evergreen erect or climbing subshrubs.
- The new species bears thick leaves and attractive purple flowers.
- The conservation status of this new species is provisionally assessed as 'Critically Endangered', in accordance with the International Union for Conservation of Nature (IUCN) Red List.
- It is epiphytic in nature and grows another plant.
- Epiphytic plants are mostly found in tropical and subtropical forests.

Key Facts about Botanical Survey of India

- It is the apex taxonomic research organization of the country which is under the Ministry of Environment, Forest & Climate Change, Government of India.
- It was established on 13th February 1890 under the direction of Sir George King.
- The mandate of the organization has been broadened to biosystematics research, floristic studies, documentation, data basing of National Botanical collection, digitization of herbarium specimens etc.
- · Headquarter: Kolkata

59. A

Statement 1 is Incorrect

Globally Important Agricultural Heritage Systems (GIAHS) is a program initiated by the Food and Agriculture Organization (FAO) of the United Nations.

Statement 2 is Correct

India has several Globally Important Agricultural Heritage Systems (GIAHS) recognized by the Food and Agriculture Organization (FAO) of the United Nations. These GIAHS sites in India showcase the rich agricultural heritage and traditional farming practices that have sustained local communities and preserved biodiversity for generations.

Here are a few examples of GIAHS sites in India:

- Kuttanad, Kerala: Kuttanad is known as the "Rice Bowl of Kerala." It is a low-lying, waterlogged region with a unique below sea level farming system that combines paddy farming with prawn and fish farming. This integrated farming system has been recognized as a GIAHS site due to its sustainability and cultural significance.
- Wayanad, Kerala: Wayanad is another GIAHS site in Kerala. It is characterized by its traditional shifting cultivation system called "Kandhagari," which involves the rotation of crops like rice, millets, and tubers. This system has helped maintain biodiversity and is RC deeply rooted in the culture of the indigenous communities.
- Koraput, Odisha: The Koraput region in Odisha is known for its unique agricultural practices. The traditional mixed farming system, which includes diverse crops, fruit trees, and livestock, helps maintain the ecological balance. This region has been recognized as a GIAHS site.
- North Sikkim, Sikkim: North Sikkim is famous for its traditional agricultural practices, including rice-duck farming and the cultivation of traditional crop varieties like "Sailung" rice. These practices contribute to biodiversity conservation and sustainable agriculture.
- Punjab: The rice-wheat cropping system in Punjab has also been recognized as a GIAHS site. While this region is known for modern agriculture, it also showcases traditional practices like diversifying cropping patterns and using watersaving technologies.

These GIAHS sites in India reflect the diversity of the country's agricultural heritage and the importance of preserving traditional farming practices for food security, biodiversity conservation, and cultural heritage. They serve as models of sustainable agriculture that can inspire and inform agricultural practices in India and around the world.

Statement 3 is Incorrect

Pokkali is a unique saline tolerant rice variety.

60.

Statement I is Correct

The MSP is recommended by the CACP on the basis of a number of factors, including the cost of production, market prices, and the need to ensure a reasonable margin of profit for farmers. The MSPs are announced by the Government of India before the sowing season for each crop, and they serve as a floor price for farmers.

The CACP recommends MSPs for 22 mandated crops, which are as follows:

Cereals: Paddy, wheat, maize, jowar, bajra, and ragi.

Pulses: Gram, tur, moong, urad, and lentil. Oilseeds: Groundnut, rapeseed-mustard, soyabean, sesamum, sunflower, safflower, and Niger seed.

Commercial crops: Copra, sugarcane, and cotton.

In addition to MSPs, the CACP also recommends a Fair and Remunerative Price (FRP) for sugarcane.

Statement II is Incorrect

The FRP is a minimum price that sugar mills are required to pay to farmers for their sugarcane.

The FRP is recommended by the CACP on the basis of the cost of production of sugarcane and the need to ensure a reasonable margin of profit for farmers.

The MSPs and FRP play an important role in protecting farmers from price shocks and in ensuring remunerative prices for their produce. The MSPs and FRP are also an important tool for the Government of India to implement its agricultural policies.

61. C

There are two types of cyclones:

- · Tropical cyclones; and
- Extra Tropical cyclones (also called Temperate cyclones or middle latitude cyclones or Frontal cyclones or Wave Cyclones).
- Tropical cyclones develop in the region between the Tropics of Capricorn and Cancer. They are large-scale weather systems developing over tropical or subtropical waters, where they get organized into surface wind circulation.
- Extra tropical cyclones occur in temperate zones and high latitude regions, though they are known to originate in the Polar Regions.

Tropical cyclones originate and intensify over warm tropical oceans. The conditions favourable for the formation and intensification of tropical storms are:

- Large sea surface with temperature higher than 27° C.
- Presence of the Coriolis force.
- Small variations in the vertical wind speed. Statement 1 is incorrect.
- A pre-existing weak low- pressure area or low-level-cyclonic circulation. Upper divergence above the sea level system.

The Temperate cyclones are under high influence of permanent winds called westerlies in the middle latitude between 30° and 60° latitude, due to these winds temperate cyclones move from west to east with these westerlies.

Tropical cyclones move from east to west under the influence of permanent winds of tropical latitudes that is trade winds. Statement 2 is correct.

Statement 3 is Incorrect.

- Cyclones are of two types, tropical cyclone and temperate cyclone.
- The centre of a tropical cyclone is known as the 'eye', where the wind is calm at the centre with no rainfall.
- However, in a temperate cyclone, there is not a single place where winds and rains are inactive, so the eye is not found.

Statement 4 is Incorrect

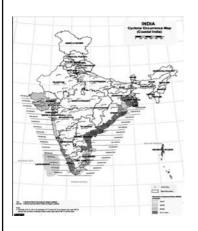
- Twin Cyclone system has a vortex in the northern hemisphere and another in the southern hemisphere, and each of these is a mirror image of the other.
- The interplay of the wind and the monsoon system combined with the Earth system produces these synchronous cyclones.
- The twin tropical cyclones are caused by what are called equatorial Rossby waves.
- Rossby waves are huge waves in the ocean with wavelengths of around 4,000-5,000 kilometres.

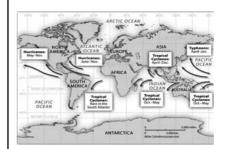
Rossby waves are named for famous meteorologist Carl-Gustaf Rossby who was the first to explain that these waves arose due to the rotation of the Earth.

Anticyclones

- An anticyclone is the opposite of a cyclone i.e. it has an outwardspiralling air circulation around a high pressure centre.
- An anticyclone's winds rotate clockwise in the Northern Hemisphere around a centre of high pressure.
- In anticyclones, air comes in from above and sinks to the ground. High pressure centres generally have fair weather.

Pressure System	Pressure Condition at the Centre	Pattern of Wind Direction	
		Northern Hemisphere	Southern Hemisphere
Cyclone	Low	Anticlockwise	Clockwise
Anticyclone	High	Clockwise	Anticlockwise





62. I

Statement 1 is correct. NGT has the power to take Suo Motu cognizance of Environmental Issues.

Statement 2 is not correct. NGT is not bound by the procedure under the Code of Civil Procedure, 1908 or the Indian Evidence Act, 1872 and is guided by principles of natural justice.

Statement 3 is correct. NGT has not been vested with powers to hear any matter relating to the Wildlife (Protection) Act, 1972, the Indian Forest Act, 1927 and various laws enacted by States relating to forests, tree preservation, etc.

About National Green Tribunal:

- The National Green Tribunal has been established under the National Green Tribunal Act 2010.
- New Delhi is the Principal Place of Sitting of the Tribunal and Bhopal, Pune, Kolkata and Chennai shall be the other four places of sitting of the Tribunal.
- NGT is mandated to make disposal of applications or appeals finally within 6 months of the filing of the same.

What is the composition of NGT?

- The Tribunal comprises the Chairperson, the Judicial Members, and Expert Members.
- They shall hold office for a term of 5 years and are not eligible for reappointment.
- The Chairperson is appointed by the Central Government in consultation with the Chief Justice of India (CJI).
- A Selection Committee shall be formed by the central government to appoint the Judicial Members and Expert Members.

 There are to be at least 10 and a maximum of 20 full-time Judicial members and Expert Members in the tribunal.

Powers & Jurisdiction

- Established for effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources
- It has appellate jurisdiction to hear appeals as a Court.
- The Tribunal is not bound by the procedure laid down under the Code of Civil Procedure, 1908, but shall be guided by principles of natural justice.

63. A

Statement 1 is correct. Under the scheme, a fixed amount of subsidy decided on an annual basis is provided on each grade of subsidized Phosphatic and Potassic (P&K) fertilizers, except for Urea, based on the nutrient content present in them.

Statement 2 is not correct. The scheme is administered by the Department of Fertilizers under the Ministry of Chemicals & Fertilizers.

About Scheme

Commencement and Ministry

• It is being implemented from April 2010 by the Department of Fertilizers, Ministry of Chemicals & Fertilizers

Mandate

- Under the Nutrient Based Subsidy (NBS) scheme fertilizers based on the nutrients N, P, K & S are provided to the farmers at the subsidized rates.
- Under the policy, a fixed amount of subsidy, decided on annual basis, is provided on subsidised P&K fertilisers depending on their nutrient content.
- Also, Fertilizers that are fortified with micronutrients such as molybdenum (Mo) and zinc are given additional subsidies.

Aim of the Scheme

• NBS policy aims to increase the consumption of P&K fertilizers to achieve the proper balance of NPK fertilization i.e., (N:P: K= 4:2:1).

Objective

 The objectives of continuation of NBS Scheme are to promote balanced use of fertilisers, to reduce subsidy burden on the government, to improve availability of fertilisers to farmers and to encourage competition among fertiliser companies.

Announcement

• The Government announces the subsidy on P&K fertilizers annually.

Determination of subsidy

 It is determined on a per kg basis and also take care of international and domestic prices of P&K fertilizers, exchange rate, inventory level in the country etc.

Significance

- The Scheme would improve soil health and results in the higher yield from the crops and enhanced income to the farmers.
- Rational use of fertilizers, would also ease off the burden of fertilizer subsidy.

64. | *A*

Pair 1 is incorrect. Chari dance is a folk dance form associated with the Gujjar and Saini communities of Kishangarh, Ajmer and other places of Rajasthan.

Pair 2 is incorrect. Dhimsa is a tribal dance form performed mainly by the Porja caste women in Andhra Pradesh.

Pair 3 is incorrect. Padayani is a ritual art form performed at Bhadrakali temples located on the banks of river Pampa in the state of Kerala.

Pair 4 is correct. Wangala dance is performed during the Wangala festival, also called the festival of "The Hundred Drums", associated with the Garo tribes in Meghalaya, Nagaland and Assam.

65. | *A*

Statement 2 is incorrect. The Aegean is located between the mainland of Greece and Turkey, respectively

- Dardanelles is a narrow strait in northwestern Turkey linking the Aegean Sea with the Sea of Marmara. Statement 1 is correct.
- The Aegean Sea is an elongated embayment of the Mediterranean Sea and an important natural feature of the Mediterranean region.
- The Aegean is located between the southern Balkan and the Anatolian peninsulas, between the mainland of Greece and Turkey, respectively. In the north, it is connected to the Marmara Sea and the Black Sea by the Dardanelles and the Bosporus.



66. B

- Nokrek Biosphere Reserve lies in the State of Meghalaya, while River Teesta originates in Sikkim, flows through West Bengal and Bangladesh to join Meghna, without passing through Meghalaya. Pair 1 is incorrectly matched.
- River Ken flows through Panna Biosphere Reserve, which lies in the State of Madhya Pradesh. Pair 2 is incorrectly matched.

Achanakmar-Amarkantak Biosphere Reserve - source of three major river systems: Narmada, the Johilla and the Son River. Similipal Biosphere Reserve - Source of Kharkai River.



67. | E

Statement 1 and 4 are incorrect. These countries are not landlocked.

Landlocked countries in Europe

Andorra, Armenia, Austria, Belarus, Kosovo, Czech Republic, Hungary, Liechtenstein, Luxembourg, North Macedonia, Moldova, San Marino, Serbia, Slovakia, Switzerland and Vatican City.



68. D

Context:

- The Kaleshwaram Lift Irrigation Project (KLIP) is claimed to be the world's largest multi-stage and multi-purpose lift irrigation scheme.
- KLIP was previously known as Pranahita-Chevella Lift Irrigation Project.
- It is located at the confluence point of Pranhita River and Godavari River i.e, at Kaleshwaram village in Telangana. Pranahita river in itself is a confluence of various other smaller tributaries like Wardha, Penganga and Wainganga Rivers.

The Sriram Sagar Project is also known as the Pochampadu Project is an Indian floodflow project on the Godavari.

Dul Hasti is a 390 MW hydroelectric power plant in Kishtwar district of Jammu and Kashmir, India built by NHPC. The power plant is a run-of-the-river type on the Chenab River, in the Kishtwar region.

The Ranjit Sagar Dam, also known as the Thein Dam, is part of a hydroelectric project constructed by the Punjab Irrigation Department on the Ravi River on the border of Union Territory, Jammu and Kashmir and state Punjab.

The Pandoh Dam is an embankment dam on the Beas River in Mandi district of Himachal Pradesh, India. Under the Beas Project, the dam was completed in 1977 and its primary purpose is hydroelectric power generation. Part of a runof-the-river power scheme, it diverts the waters of the Beas. All pairs are incorrectly matched.

69. C

- GST Amnesty Scheme will be open till January 31, 2024.
- It will be available for entities that were unable to submit their appeals against orders issued by the tax officer on or before March 31, 2023.
- The scheme aims to help those who missed the deadline for filing appeals due to various reasons, including administrative errors or unforeseen circumstances. Statement 1 is correct.
- The entities willing to avail of the scheme will have to pre-deposit 12.5 per cent of the tax demand, against 10 per cent currently. Statement 2 is correct.

Significance

- This initiative can also promote enhanced compliance among taxpayers.
- A fair and lenient approach to appeal filing encourages better cooperation with tax authorities and a willingness to resolve disputes or clarify tax matters.
- Additionally, by allowing disputes to be resolved more efficiently, the scheme

- may reduce the burden on the legal system.
- This benefits both taxpayers and the tax administration by streamlining the appeal process and potentially reducing the need.

70. I

According to the finance ministry, India abstained from Pakistan's stand-by arrangement (SBA) loan request to the International Monetary Fund (IMF) in its executive board meeting earlier this year.

The IMF does not publicly disclose how each country voted on the SBA approvals.

The SBA arrangement provides short-term financial assistance to countries facing balance of payments problems.

Countries' economic policies must address the problems that led the country to seek funding.

SBA is provided with conditionality. Disbursements conditional on the observance of quantitative performance criteria.

71. A

The World Customs Organisation (WCO) and the International Association of Ports and Harbors (IAPH) have released their first ever guidelines on cooperation between customs and port authorities.

It will strengthen trade and transport facilitation, compliance and supply chain security.

Statement 1 is not correct: The World Trade Organisation(WTO) is the only international body dealing with the rules of trade between nations.

The World Customs Organization is the only intergovernmental organization exclusively focused on customs matters.

The WCO is an intergovernmental organization of 185 member countries, whose customs administrations process over 98 per cent of international trade.

Statement 3 is correct: Its main activities include developing standards for customs procedures, capacity building of its

members and promoting cooperation between the customs administrations of its members.

Statement 2 is not correct: The International Association of Ports and Harbours (IAPH) is the global trade association for seaports worldwide. It is headquartered in Tokyo, Japan.

Formed in 1955, it has now been recognised as the NGO representing ports worldwide.

72. D

- Statement 1 is not correct: Nepal is on the boundary of two tectonic plates viz. the Indo-Australian and the Eurasian plates, being pushed up against and underneath one another.
- Statement 2 is not correct: Focus (Hypocentre) is the point within the Earth where an earthquake rupture starts.
- Epicentre is the point at the surface of the Earth above the focus.
- Richter Scale was invented in 1935 by Charles F. Richter to rate the magnitude of an earthquake, that is the amount of energy released during an earthquake.

Statement 3 is not correct: While the Mercalli scale measures the intensity, or the effects, of an earthquake on a particular place, the Richter scale describes the earthquake's magnitude by measuring the seismic waves that cause the earthquake.

 The Mercalli scale is linear and the Richter scale is logarithmic. i.e. a magnitude 5 earthquake is ten times as intense as a magnitude 4 earthquake.

73. C

Statement 1 is not correct: A depositary receipt (DR) is a negotiable certificate representing shares in a foreign company traded on a local stock exchange.

Statement 2 is correct: Depositary receipts allow investors to hold equity shares of foreign companies without the need to trade directly on a foreign market.

American Depository Receipts (ADR): They are shares issued in the U.S. from a foreign

company through a depositary bank intermediary.

Statement 3 is not correct: Global Depository Receipts (GDR) are shares issued in foreign markets of more than one country. For example, an Indian company that issues its shares through a depositary bank intermediary into the London market and the United States market.

74.

 The Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY), a free foodgrain distribution scheme, will be extended for the next five years which was scheduled to end on December 31, 2023.

PM-GKAY is a scheme as part of Atmanirbhar Bharat to supply free food grains to migrants and poor.

- Statement 1 is correct: PMGKAY provides 5 kg of foodgrains to each family holding a ration card free of cost and the 5 kg of subsidized foodgrain already offered through the Public Distribution System (PDS).
- Statement 2 is correct: Families belonging to Antyodaya Anna Yojana (AAY) and Priority Households (PHH) categories will be eligible for the scheme.
- PHH are to be identified by State Governments/Union Territory Administrations as per criteria evolved by them.
- Statement 3 is not correct: AAY families are to be identified by States/UTs as per the criteria prescribed by the Central Government.
- Statement 4 is correct: All primitive tribal households are eligible for the scheme.

75. D

National Mineral Development Corporation (NMDC) Ltd is diversifying its operations by venturing into gold mining in Western Australia.

Key Highlights

 National Mineral Development Corporation (NMDC) Ltd., a governmentcontrolled Indian iron ore

- company, is diversifying its minerals portfolio by entering the gold sector.
- NMDC will undertake gold mining at the Mount Celia project in Western Australia.
- This marks the company's first venture into gold extraction. Statement 2 is correct.
- It is the initiative of Legacy Iron Ore Limited, a subsidiary of NMDC Ltd (Stateowned Steel CPSE). Statement 1 is correct.

National Mineral Development Corporation (NMDC)

- NMDC Ltd. is a Navratna Public Sector Enterprise under the Ministry of Steel, making it a significant player in the country's mining sector.
- It is the single largest producer of iron ore in India. It operates mechanized iron ore mines in Chhattisgarh and Karnataka, ensuring a reliable supply of high-quality iron ore to the domestic steel industry. Statement 3 is correct.
- While iron ore remains its core focus, NMDC has diversified its operations into other raw materials essential for the steel industry, including low silica limestone, dead burnt magnesite, and silica sand.
- It owns and operates the only mechanized diamond mine in the country, located at Panna, Madhya Pradesh, showcasing its expertise in mining precious minerals. Statement 4 is correct.

It exports iron ore to various countries worldwide, contributing to India's international trade and economy.

- NMDC's mines are rated 5 Star by the Indian Bureau of Mines, Ministry of Mines, attesting to its adoption of scientific and sustainable mining practices.
- It has its own R&D Centre in Hyderabad.
 This signifies the company's commitment to innovation and continuous improvement in the mining industry.

 It is involved in diverse activities such as developing and operating steel plants, power generation, railway transportation, and infrastructure development, showcasing its multi-sectoral presence in the Indian economy.

NMDC Limited (founded 1958; HQ: Hyderabad), formerly National Mineral Development Corporation, is a public sector undertaking involved in the exploration of iron ore, copper, rock phosphate, limestone, dolomite, gypsum, bentonite, magnesite, diamond, tin, tungsten, graphite, coal etc.

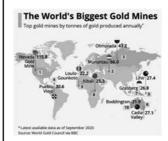
76.

Pueblo Viejo Gold Mine is located 100km away from the capital city of Santo Domingo in the Dominican Republic. Pair 1 is incorrectly matched.

The Loulo-Gounkoto complex comprises two distinct mining permits, Loulo and Gounkoto, and is situated in western Mali. Pair 2 is correctly matched.

The Boddington gold mine is a gold and copper mine located 13 km northwest of Boddington, Western Australia. Pair 3 is incorrectly matched.

The Muruntau gold deposit is situated in the Qizilqum Desert of Uzbekistan. It is being mined in the world's largest open-pit gold mine. Pair 4 is incorrectly matched.



Countries with significant deposits: South Africa, Australia, Indonesia, Canada, Ghana, Chile, China, USA, Russia, etc.

- South Africa: Johannesburg, Boksburg and Orange free state, Kimberley
- USA: Salt lake region and Alaska.
- Australia: Mount Morgan, Kalgoorlie and Coolgardie. (Newcrest's Cadia Valley

- mine in New South Wales, Boddington Gold Mine, Fosterville Gold Mine)
- Russia: Polyus Gold's Olimpiada gold mine in the Krasnoyarsk region of Eastern Siberia, Blagodatnoye gold mine, Kupol gold mine in the Chukotka region of Far East Russia, Natalka gold mine(northern Pacific coast in the Magadan Region), Verninskoye gold mine, Sukhoi Log gold mine.

Gold

- Gold is a valuable metal. Gold usually occurs in auriferous [(of rocks or minerals) containing gold] rocks.
- It is also found in the sands of several rivers which are called as alluvial gold.
- Gold is used for making ornaments; it is also known as an international currency due to its universal use.

Imports -

Gold production in India is insufficient and is imported from Australia, Canada, and Myanmar.

Countries with significant deposits: South Africa, Australia, Indonesia, Canada, Ghana, Chile, China, USA, Russia etc.

Gold Reserves in India

Resources in terms of the metal ore (primary) are located in

- 1. Bihar (45 percent)
- 2. Rajasthan (23 percent)
- 3. Karnataka (22 percent)
- 4. West Bengal (3 percent)
- 5. Andhra Pradesh and Madhya Pradesh (2 percent each)

Resources in terms of metal content

- 1. Karnataka,
- 2. Rajasthan,
- 3. Bihar, Andhra Pradesh, Jharkhand, etc. Kolar Gold Field, Hutti Gold Field and Ramgiri Gold Field are the most important gold fields.

Karnataka -

- Karnataka is the largest producers of Gold, accounts for about 80% of Gold production.
- · Although every district of Karnataka has

- some reserves of Gold, the most important reserves are those of "Kolar Gold Field". This field continues to be the largest supplier of Gold in India.
- Next to Kolar Goldfield, but far below in production, is the "Hutti Mine" in the Raichur district. The ore of Hutti Mine is of low grade.

Andhra Pradesh -

- Andhra Pradesh is the second-largest producer of Gold, though it lags far behind Karnataka.
- The main deposits of Gold are found in Ramagiri in Anantapur District. However, this field is nearly exhausted.
- Apart from Gold Mines, Gold is also obtained as placer deposits i.e. in the sands of the river.

Jharkhand -

- Jharkhand is the 3rd largest producer of Gold and accounts for about 10% of total Gold production.
- Here both 'Placer Deposits' in the sands of Subarnarekha, Sonanadi, etc, and 'native Gold' in Singhbhum District and in some parts of Chhota Nagpur plateau are found.

Kerala -

 The river terraces along the Punna Puzha and the Chabiyar Puzha have some alluvial gold.

Gold Mines	State
Hatti Gold Mines	Karnataka
Kolar Gold Fields	Karnataka
Lava Gold Mines	Jharkhand
Sonbhadra Mine	Uttar Pradesh
Parasi	Jharkhand
Pahadia	Jharkhand
Kunderkocha	Jharkhand
Bhitar Dari	Jharkhand

77.

The Indian Electricity Grid Code (IEGC) is a regulation made by the Central Commission in exercise of powers under clause (h) of subsection (1) of Section 79 read with clause (g) of sub-section (2) of Section 178 of the Electricity Act, 2003. Statement 1 is correct.

The IEGC also lays down the rules, guidelines and standards to be followed by various persons and participants in the system to plan, develop, maintain and operate the power system, in the most secure, reliable, economic and efficient manner, while facilitating healthy competition in the generation and supply of electricity.

IEGC came into effect from 1st April 2010

The Ministry of Power has introduced new regulations called the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023. Statement 2 is correct.

These regulations aim to provide clarity and guidance to entities operating in the power industry and ensure adherence to specified standards and procedures. Statement 3 is correct.

- According to the new rules, the following entities fall within the scope of these regulations: all users, State Load Despatch Centres, Renewable Energy Management Centres, Regional Load Despatch Centres, National Load Despatch Centre, Central Transmission Utility, State Transmission Utilities, licensees, Regional Power Committees, Settlement Nodal Agencies, Qualified Coordinating Agencies, and Power Exchanges, to the extent applicable.
- The regulations clarify that any country connected to the National Grid or Regional Grid will be treated as a separate control area. This recognition enables effective planning of generation and transmission resources to meet projected demand while complying with specified reliability standards.
- The new regulations also introduce guidelines for Integrated Resource Planning (IRP). IRP consists of three key components: demand forecasting, generation resource adequacy planning, and transmission resource planning.

- Demand forecasting requires each distribution licensee within a state to estimate the demand in their control area, considering factors like open access consumers, captive generating plants, energy efficiency measures, distributed generation, and demand response.
- Generation resource adequacy planning involves assessing existing generation resources and identifying additional resources required to meet estimated demand. Each distribution licensee must prepare a generation resource procurement plan, considering their capacity contribution, peak demand, and state requirements. The plan should ensure an adequate generation mix and planning reserve margin, in accordance with guidelines from the Central Electricity Authority (CEA).

78.

NTPC Renewable Energy Limited (NTPC REL), a wholly-owned subsidiary of NTPC, has declared the commercial operation of its first-of-its-kind 50 MW wind farm project located in Dayapar, Kutch, Gujarat. Statement 1 is incorrect.

Dayapar Wind stands out as the first capacity in India to be declared commercial under the new Indian Electricity Grid Code and General Network Access Regime. Statement 2 is correct.

Expanding the Renewable Energy Portfolio

 The commissioning of Dayapar Wind is just the first step in NTPC REL's ambitious growth plan. Currently, the company has 15 other renewable energy projects under various stages of execution, with a combined capacity of 6,210 MW. These projects promise to significantly enhance the renewable energy capacity of NTPC Group.

Augmenting the Wind Portfolio

 In addition to the 50 MW Dayapar project, NTPC REL's wind portfolio is set to receive a substantial boost with the Dayapar Wind Complex. Once fully commissioned, this complex will add an additional 450 MW to NTPC's existing wind capacity of 100 MW, strengthening the company's presence in the wind energy sector.

Investing in Green Hydrogen Technologies

 NTPC REL is not limiting its efforts to wind and solar energy. The company is also venturing into green hydrogen technologies, recognizing the growing importance of hydrogen as a clean energy source. Using the microgrid principle, NTPC REL is setting up a large green hydrogen capacity in Ladakh, further contributing to India's sustainable energy future.

NTPC Green Energy Ltd. (NGEL)

 As another wholly-owned subsidiary of NTPC, NGEL has been actively contributing to NTPC Group's renewable energy capacity. NGEL has already commissioned 2,711 MW of renewable energy capacity and is currently working on two noteworthy projects: a 40 MW solar project in Ayodhya, Uttar Pradesh, and a Hydrogen Hub at Pudimadaka in Andhra Pradesh.

79. C

The Ministry of Science and Technology initiated the Purple Revolution or Lavender Revolution in 2016 through the Aroma Mission of the Council of Scientific and Industrial Research (CSIR). Statement 2 is correct.

Nodal Agencies: CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow.

About Aroma Mission

- It was launched in 2016 to boost the cultivation of plants like lavender, Aloe Vera, Mehndi, Menthol, Mint which have aromatic medicinal properties through new technology developed by the Council of Scientific & Industrial Research (CSIR). Statement 1 is correct.
- It is envisaged to bring transformative

- change in the aroma sector through desired interventions in the areas of agriculture, processing and product development.
- It also seeks to provide technical and infrastructure support for distillation and value-addition to farmers/growers all over the country, apart from enabling effective buy-back mechanisms to assure remunerative prices to the farmers/growers.
- It aims to bring additional area of 30,000 hectares under cultivation of these crops by interventions of CSIR to further catalyse the cultivation of aromatic crops in about 60,000 hectares. Statement 3 is correct.
- This will help in production of an additional 700 tonnes of essential oil for perfumery, cosmetics and pharma ceutical industries, and use of these oils in value addition and herbal products would generate a business of at least 200 crores.

The objectives include

- Development of superior varieties and their agro-technologies and assessment of their suitability for specific agroclimatic regions.
- 2. Value-addition of aromatic crops (Highend aroma chemicals and products)
- 3. Skill development activities
- 4. Intellectual property generation, valuation and management
- 5. Entrepreneurship development/Spinoffs
- 6. Business development
- 7. Making the public aware of Mission activities and achievements using an appropriate interface.

Benefits

- It will promote the cultivation of aromatic crops for essential oils that are in great demand by the aroma industry.
- It is expected to enable Indian farmers and the aroma industry to become global

leaders in the production and export of some other essential oils on the pattern of menthol mint.

- It is expected to provide substantial benefits to the farmers in achieving higher profits, utilization of wastelands and protection of their crops from a wild and grazing animal
- More than 25,000 farming families would be directly benefitted and an employment of more than 10-15 lakhs man-days will be generated in rural areas.

Aroma Mission Phase-I and II:

- During Phase-I, CSIR helped cultivate 6000 hectares of land and covered 46 Aspirational districts across the country. Further, more than 44,000 people were trained.
- On 9th February 2021 CSIR launched Phase-II of Aroma Mission in which it is proposed to engage over 45,000 skilled human resources and will benefit more than 75,000 farming families across the country.

80. C

The lavender crop is also successfully grown in the Kashmir valley region. Statement 1 is correct.

The lavender crop is also cultivated in low rainfall regions and on the slopes of hills of Himachal Pradesh(HP) and Uttar Pradesh(UP).

The lavender plant doesn't need a lot of water, and it's unlikely that it will be attacked by pests or other animals that eat crops. Statement 2 is incorrect.

The Lavender plant is a perennial flowering aromatic herb or shrub that can reach a height of 40 cm to 80 cm.

The leaves of the Lavender plant are opposite, oblong-linear with small flowers.

The Lavender plant is originated in the Mediterranean region. To grow this plant, one must have the right climate similar to the Mediterranean area. Statement 3 is correct.

Lavender can be grown in backyards, pots/containers as well.

Bhaderwah has emerged as the Lavender capital of India and Agri StartUp destination. Bhaderwah being the best place for lavender cultivation in terms of land and climate. Statement 4 is correct.

81. I

If an Indian company is listed on foreign stock exchanges, it can potentially benefit from:

- Increased visibility and exposure to a wider pool of investors,
- · Access to foreign capital markets,
- Enhanced liquidity and trading volumes,
- Higher valuations and potential for higher returns,
- diversifying the company's investor base.
- access to foreign currency,
- · raising the company's profile and
- enhance its brand recognition among international investors and consumers.

However, the challenges include:

Increased regulatory and compliance costs, Currency exchange risks, Differences in accounting and financial reporting standards, Communication and cultural barriers, Potential political and economic instability in foreign markets. Companies may need to spend more money on market makers to maintain liquidity. Statement 3 is incorrect.

They may also need to deal with higher trading costs. Companies may need to spend more money on marketing and investor relations to reach new investors. Companies may need to comply with more stringent accounting and reporting standards.

Further, currently, any company already listed in India is eligible for foreign secondary listing. Now, the government has allowed certain unlisted companies to directly list on foreign stock exchanges.

However, unlisted companies are unlikely to be allowed to list anywhere they want.

The government is expected to provide a list of jurisdictions where Indian firms will be allowed to list. IFSC in Gift City, Gandhinagar is expected to be part of permitted jurisdictions for overseas listing.

82. C

The Supreme Court recently expressed concern over Governors of various states refraining from acting on bills passed by their respective State Assemblies and waiting for Supreme Court intervention before granting assent to such bills.

About Power of the Governor over State Bills: Article 200 of the Indian Constitution includes the process for a state bill to be presented to the Governor for assent.

It provides for four alternative courses of action for a Governor when a bill after being passed by the legislature, is presented to him/her for assent.

- Give assent to the bill
- Withhold assent
- Return the bill to the state legislature, requesting to reconsider some provisions of the bill, or the bill itself. Statement 1 is correct.

However, if the legislature again passes the bill with/without accepting any of the amendments suggested by the Governor, it is constitutionally bound to give assent to the Bill.

 Reserve the bill for the consideration of the President. This reservation is mandatory when the bill passed by the State Legislature endangers the position of the State High Court. Statement 2 is correct.

Article 201:

It states that when a bill is reserved for the consideration of the President, the President can give assent to the bill or withhold assent.

The President may also direct the Governor to return the bill (if it is not a Money Bill) to the House or Houses of the Legislature of the State for reconsideration.

However, the Governor can reserve a bill and not grant assent in certain circumstances. This includes if the bill is

- against the provisions of the Constitution
- opposed to the Directive Principles of State Policy (DPSP)
- against the larger interest of the country of grave national importance
- deals with compulsory acquisition of property under Article 31A of the Constitution.

Previous rulings of SC:

- A Constitution Bench clarified that the Constitution does not impose any time limit within which the Governor should provide assent to bills. Statement 3 is correct.
- However, it maintained that the Governor must honour the will of the Legislature and can act only in harmony with their Council of Ministers.
- It also noted that causing delay to assent bills will be an arbitrary exercise, which in itself is against the spirit of the constitution.

83. (

About Euclid Space Telescope:

- The Euclid mission is part of ESA's Cosmic Vision programme which aims to explore the origin and components of the universe and the fundamental laws that govern it.
- Its main goal is to investigate the "dark side" of the universe, focusing on dark matter and dark energy.
- It was launched on 1 July 2023.
- It is named after the Greek mathematician Euclid of Alexandria, who lived around 300 BC and founded the subject of geometry.
- The Euclid mission will make a 3D map of the universe (with time as the third dimension) by observing billions of galaxies out to 10 billion lightyears across more than a third of the sky.

- It will reveal how dark energy has influenced the stretching and separation of matter over cosmic time.
- Orbit: Its operational orbit will be halo around a point known as the SunEarth Lagrange Point 2 (L2), at an average distance of 1.5 million km beyond Earth's orbit.
- Lifetime: Nominal mission lifetime is six years, with the possibility of extension (limited by the amount of cold gas used for propulsion).

84. A

Indo-Pacific Maritime Domain Awareness (IPMDA)

- Indo-Pacific Maritime Domain Awareness (IPMDA) aims to enhance the security and stability of the Indo-Pacific region.
- Maritime Domain Awareness is the effective understanding of any activity associated with the maritime environment that could impact upon the security, safety, economy or environment.
- IPMDA is a technology and training initiative to enhance maritime domain awareness in the Indo-Pacific region and to bring increased transparency to its critical waterways. Statement 1 is correct.
- IPMDA was announced by the Quad grouping, comprising India, Australia, Japan and U.S., at the Tokyo summit in early 2022. Statement 2 is incorrect.
- IPMDA harnesses innovative technology, such as commercial satellite radio frequency data collection, to provide partners across Southeast Asia, the Indian Ocean region and the Pacific.
- It seeks to track "dark shipping" and build a "faster, wider, and more accurate maritime picture of near-real-time activities in partners' waters".
- It integrates 3 critical regions in the Indo-Pacific region that is the Pacific Islands, Southeast Asia and the Indian

Ocean Region (IOR). Statement 3 is correct.

85. B

Statements 1 and 2 are correct.

Women candidates can join the National Defence Academy (NDA) twice a year, i.e., every six months. The NDA conducts two examinations annually for this.

In 2019, the Indian Navy announced that it would allow women officers to serve on board warships. This was a significant step forward for women in the Indian Armed Forces.

Statement 3 is incorrect.

Women are not eligible in core combat arms such as Infantry, Mechanized Infantry, and Armoured Corps. The Indian Army is not open to women fighting wars at the borders as foot soldiers.

What are the initiatives taken to encourage women in Defence Forces?

- 1.Indian Army: Indian Army is encouraging women officers to join the force by initiatives such as:
- Granting Permanent Commission: Women Officers (WOs) in 12 Arms & Services are eligible for Permanent Commission. This ensures parity with male counterparts and fosters a genderneutral environment.
- Entry in National Defence Academy (NDA): Women candidates now join the NDA every six months.
- Opportunities in Aviation: WOs can serve as pilots in the Corps of Army Aviation, expanding roles.
- Enrollment of Women as Other Ranks: Provision introduced in 2019 for enrolling women in the Corps of Military Police.

2. Indian Navy Measures for women personnel:

 Women in all Branches: Entry of women in all branches/ Cadres/ Specialisations (except Submarine specialization) has commenced from June 2023.

- On board Ships: Women officers are also being appointed on board warships.
- Indian Naval Academy Inclusions: Eligibility through the '10+2 B.Tech.' entry scheme.
- Women Agniveers: As a part of the Agnipath Scheme, women have been enrolled as Agniveers commencing from the first batch itself.

3. Indian Air Force Measures for women personnel:

- All Combat roles: The experimental scheme to induct women officers in all combat roles, was initiated by the IAF in 2015 and was regularized in the year 2022 into a permanent Scheme.
- 'DISHA' cell at Indian Air Force Headquarters: It conducts various Induction Publicity programmes across the country related to the induction/ career of officer cadre in IAF.

86. D

- It is an initiative of the World Health Organisation. Statement 1 is incorrect.
- The first WLPF was organized virtually in 2021.
- Aim: Increasing access to medicines and other health technologies.
- This forum provides Member States and the global community with a regular platform to shape strategies, galvanize collective action, and foster partnerships on sustainable local production to improve timely and equitable access to quality assured health products. Statement 2 is incorrect.
- Secretariat: The Local Production and Assistance (LPA) Unit at the WLPF.
- The second WLPF aims
- To provide a global platform to discuss key challenges in promoting local production and technology transfer.
- To explore opportunities and mechanisms to tackle the bottlenecks.
- To promote sustainable local production capacity to improve access to quality, safe and effective health products and technologies.

87.

Women for Water, Water for Women Campaign

Women for Water, Water for Women Campaign aims to provide a platform for inclusion of women in water governance. Statement 1 is correct.

Women will be given first-hand knowledge about water treatment processes through visits to Water Treatment Plants (WTPs) in their respective cities.

These visits will elucidate the vital procedures involved in delivering clean and safe drinking water to households.

The overarching goal of the campaign is to instil a sense of ownership and belonging among women towards water infrastructure.

During this campaign, women Self Help Groups (SHGs) will visit more than 550 water treatment plants, with a combined operational capacity of more than 20,000.

The phase I of the campaign will focus on:

Familiarizing the women with functioning of Water Treatment Plants & water testing facilities Promote inclusivity & involvement through souvenirs & articles created by

Women SHGs

Familiarizing & educating the women about AMRUT scheme & its impact on water infrastructure

The campaign is an initiative of the Ministry of Housing and Urban Affairs (MoHUA). Statement 2 is incorrect.

The campaign is under the flagship scheme Atal Mission for Rejuvenation and Urban Transformation (AMRUT), in partnership with the Ministry's National Urban Livelihood Mission (NULM). Statement 3 is correct.

Odisha Urban Academy is the knowledge partner.

88.

• Aurora Borealis recently appeared in Bulgaria for the first time.

- Statement 1 is not correct: These lights are most commonly observed near Earth's magnetic north and south poles.
- The auroras can be explained as an interaction of the solar wind and the Earth's magnetic field.
- The solar wind consists of charged particles emanating from the Sun. These are captured by the Earth's magnetic field and drawn towards the poles at a very high speed.
- The phenomenon occurs when the particles collide with atoms and molecules in the upper atmosphere (the ionosphere), transforming kinetic energy into visible light.
- This results in beautiful displays of light in the sky. Oxygen gives off green and red light. Nitrogen glows blue and purple.
- Statement 2 is not correct: These lights are called aurora borealis or northern lights near the North Pole and aurora australis or the southern lights near the South Pole.
- Statement 3 is not correct: The phenomenon occurs in the ionosphere layer of the atmosphere.

89. B

Statement 1 is not correct: The Ministry of Electronics & Information Technology (MeitY) has launched the LEAP AHEAD (Launchpad for Tech Entrepreneurs towards Accelerated Growth and Pioneering AHEAD) initiative in collaboration with Software Technology Parks of India (STPI) and The Indus Entrepreneurs (TiE) Delhi-NCR.

Statement 2 is correct: The LEAP AHEAD initiative is a pan-India programme designed to support start-ups that show early traction and are in the growth stage. It aims to bolster tech start-ups by offering

them access to funding, mentorship, and global connections.

Statement 3 is correct: It offers start-ups an array of benefits including:

 an intensive three-month hybrid mentorship program

- the opportunity for one-on-one mentorship with investors and industry experts
- funding of up to Rs.1 crore in a coinvestment model

90. | A

What is World Food India 2023?

Specification Details

Organized by Ministry of Food

Processing Industries

Aim To present India as the

'food basket of the world' and commemorate 2023 as the International

Year of Millets.

Partner country Netherlands

Events focus Japan

country

What are the key focus pillars of World Food India 2023?

- 1. Shree Anna (Millets): Leveraging India's Super Food for the World: Millets are ancient grains that have been part of India's rich heritage for millennia. They are super foods that provide high nutrition, gluten-free options, climate resilience, and eco-friendliness. The United Nations has declared 2023 as the International Year of Millets (IYM 2023) with the aim of increasing the production and consumption of millets worldwide.
- 2. Exponential Food Processing: Positioning India as the Global Hub: India has a vision to become a global hub for food processing and create a competitive advantage for itself in the world food market. Financing Agri Food Value Chains, especially supporting MSMEs, is a key focus area.

Strategic Segments: Unlocking Potentials for Growth: India is one of the world's largest producers and consumers of food products. India leads the world in the production of milk, bananas, mangoes, papayas, guavas, ginger, okra and buffalo meat. It ranks second in the production of

rice, wheat, potatoes, garlic, cashew nuts.

- 4. Creating an Inclusive and Efficient Ecosystem: Removing barriers and establishing a coordinated framework for inclusive opportunities. In line with this, government has allowed 100% FDI under the automatic route in food processing industries in India.
- 5. Sustainable Development for Prosperity: Embracing sustainable practices, renewable energy and eco-friendly agricultural and food processing methods for a more sustainable future.

91. C

About:

- It is a tropical crop generally known as the betel nut.
- Areca nut is considered a horticulture crop in the state, a commercial crop at the national level and dry fruit at the international level.
- Areca nut is not a native crop of India.
 Statement 4 is incorrect.
- Usually referred to as Areca palm, but has also been called yellow palm, butterfly palm, yellow butterfly palm, cane palm and golden feather palm.
- The areca nut palm is the source of a common chewing nut, popularly known as betel nut or Supari.
- India is the largest producer of areca nut and at the same time largest consumer also.
- Globally, India is the leading producer of areca nut, followed by Bangladesh, Myanmar and Indonesia.
- Indonesia is the top exporter of areca nut and Thailand is the top importer.
- Major states cultivating this crop are Karnataka (40%), Kerala (25%), Assam (20%), Tamil Nadu, Meghalaya and West Bengal.
- Originated in Madagascar and is widely grown outdoors in the tropics.

Growing Condition:

· The cultivation of areca nut is mostly

- confined to 28° north and south of the equator. Statement 1 is correct.
- It grows well within the temperature range of 14°C and 36°C and is adversely affected by temperatures below 10°C and above 40°C. Statement 2 is correct.
- Ideal rainfall 750 mm to 4500 mm/ Irrigation
- The largest area under the crop is found in gravelly laterite soils of red clay type. It can also be grown on fertile clay loam soils. Sticky clay, sandy, alluvial, brackish and calcareous soils are not suitable for areca nut cultivation. Statement 3 is correct.

Issues faced by farmers:

- Import of cheaper varieties from Bhutan
- Import of areca nut has taken place mostly from Sri Lanka, Bhutan and Indonesia.
- Massive crop damage due to excessive rainfall
- Financial loss due to plant disease like yellow leaf disease, fruit rot disease and blast disease.
- 35 40 % of crop has been affected in 2022

USES of ARECA NUT:

- It was found that tannins, a by-product from the processing of immature nuts find use in dyeing clothes, tanning leather, as a food colour, as mordant in producing variety of shades with metallic salts etc.
- The nuts contain 8-12% of fat, which can be extracted and used for confectionery purposes. The refined fat is harder than cocoa butter and can be used for blending.
- The medicinal properties were described by Vagbhatta (in 4th Century AD) as effective against leukoderma, leprosy, cough, fits, worms anaemia, obesity.
- Recent studies have shown that areca nut has pharmacological uses viz. Hypoglycaemic effect, mitotic activity, anthelminthic activity, cholinomimetic

- activity etc. However, several studies have also implicated areca nut to cause carcinogenesis.
- Further, areca nut also shows medicinal value in the following lines however these values are yet to be exploited for commercial use.
- 1. In the metabolic system as a digestive and carminative Anti-diabetic
- 2. Used against certain skin diseases
- 3. Used as aphrodisiac
- 4. Improves eyesight
- 5. Helps in relieving asthma
- 6. For Low Blood Pressure (Old Arecanut)
- Areca nut husk finds use in preparations of hard boards, paperboards, cushions and non-woven fabrics besides being a good source of furfural.
- The areca nut leaf sheath could be used for preparation of throwaway cups, plates, ply boards, tea chest, packing cases and suitcases.
- Areca nut stem forms a useful building material in the villages and is widely used in areca nut growing area for a variety of construction purposes. The leaves are good source of organic manure.

92. C

What are the Key Highlights of the Discussion?

Regional Connectivity:

- India and Bhutan have agreed to discuss new routes of regional connectivity, which includes the development of a cross-border rail link between Gelephu in Bhutan and Kokrajhar in Assam, spanning 58 km. Statement 1 is correct.
- Additionally, there is a plan to explore a second rail link of approximately 18 km between Samtse in Bhutan and Banarhat in the tea gardens area of West Bengal.
- Both sides discussed upgrading border and immigration posts to support this project, and it could be a significant development in the border area.

Trade and Connectivity:

 The two countries agreed to facilitate trade by allowing Bhutanese trade items to be carried further from Haldibari in West Bengal to Chilahati in Bangladesh, aiming to enhance trade opportunities and ease the movement of goods between Bhutan and Bangladesh through Indian territory.

Immigration Check Post:

- The Darranga-Samdrup Jongkhar border crossing between Assam and Bhutan's SouthEastern district will be designated as an immigration check post. Statement 2 is correct.
- This will allow not only Indian and Bhutanese nationals but also third country nationals to enter and exit the area, promoting tourism and enhancing connectivity.

Support for Bhutanese SEZ Project:

• The two sides agreed to strengthen trade infrastructure with the upgradation of an existing land customs station at Dadgiri (Assam) to a modernised "Integrated Check Post" (ICP) along with "development of facilities on the Bhutanese side at Gelephu", indicating India's support to the Bhutanese SEZ project. Statement 3 is correct.

Development Assistance:

- India has committed to continue its support for Bhutan's socioeconomic development, with a particular focus on the 13th Five-Year Plan. This underscores the enduring commitment to their strong bilateral ties.
- For the 12th Five Year Plan, India's contribution of Rs 4,500 crore constituted 73% of Bhutan's total external grant component.

Lauds India's Support for Global South:

- Bhutan lauded India's successful organization of the recent G20 Summit, praising India for fostering consensus and constructive decisions outlined in the Delhi Declaration.
- Bhutan commended India's dedication to integrating the interests and priorities of Global South countries in G20 deliberations.

India-Bhutan Energy Partnership:

- Progress on the construction of the 1020 MW Punatsangchhu-II hydropower project was noted with satisfaction, with its early commissioning expected in 2024.
- An agreement was reached to expand the existing India-Bhutan energy Partnership from hydro to non-hydro renewables, including solar energy, as well as green initiatives related to hydrogen and e-mobility.
- India assured essential technical and financial support for projects in these areas.

Recalling Operation All Clear:

 Bhutan King recalled Operation All Clear which was a military operation conducted by the Royal Bhutan Army in 2003 against Assam separatist insurgent groups in the southern regions of Bhutan.



	S. Na.	Location	State	Barder	Operationalized on
	1.	Attes	Pagis	Polistee	13.04.2012
	2.	Agentia	Tripses	Bergistesh	17:11:2013
	k:	Petropole	West Bengal	Bauglalesh	12.02.2016
	4.	Reset	Blor	Nepal	03.06.2016
	50	Jophani	Blor	Nepal	15:11:2006
	4	Morek	Manipur	Mysunse	15.08.2018
	*	Sotarkandi	Auen	Basgladesh	07.09.2019
	6.	PTB Dere Babe Nazak*	Projeb	Polisto	09.11.2019
	*	Scientisper	Tripues	Bangladesh	65.09.2020
		Terminal Building (PTB) at Deva Baba No			

94.

Mouvement du 23 Mars (M23) is an insurgent group active in the Democratic Republic of Congo. It is active in eastern DRC leading to clashes with the Congolese army.

The M23 was formed on 4 April 2012 when nearly 300 soldiers - the majority of them former members of the National Congress for the Defence of the People (CNDP) - turned against the DRC government, citing poor conditions in the army and the government's unwillingness to implement the 23 March 2009 peace deal.

The M23 is made up primarily of Tutsis and opposes the Hutu Power militia Democratic Forces for the Liberation of Rwanda (a group that counts among its number the original members of the Interahamwe that carried out the 1994 Rwandan Genocide) as well as area Mai-Mai (community militias mostly created and supported by the Democratic Republic of Congo).

To be able to upstaff the troops, occupied villages were asked to deliver youngsters for the formation of village defence committees.

95. | **6**

Under Section 90 of the Income-tax Act, 1961, India can enter into an agreement with a foreign country or specified territory for avoidance of double taxation of income, for exchange of information for the prevention of evasion. Statement 1 is correct.

Double Tax Avoidance Agreements (DTAAs)

- A DTAA is a tax treaty signed between two or more countries. Its key objective is that tax-payers in these countries can avoid being taxed twice for the same income.
- A DTAA applies in cases where a taxpayer resides in one country and earns income in another. Statement 2 is correct.
- DTAAs can either be comprehensive to cover all sources of income or be limited

to certain areas such as taxing of income from shipping, air transport, inheritance, etc.

- A DTAA between India and other countries is drafted on a reciprocal basis and covers only residents of India and the residents of the negotiating country.
- Any person or company that is not resident, either in India or in the other country that has entered into an agreement with India, cannot claim benefits under the signed DTAA. Statement 3 is correct.

Significance of DTAA

- DTAAs are intended to make a country an attractive investment destination by providing relief on dual taxation. Such relief is provided by exempting income earned abroad from tax in the resident country or providing credit to the extent taxes have already been paid abroad.
- DTAAs also provide for concessional rates of tax in some cases.
- However, DTAAs can become an incentive for even legitimate investors to route investments through low-tax regimes to sidestep taxation. This leads to loss of tax revenue for the country.

96. I

Statement 1 is incorrect.

The World Food Programme is a UN agency not an independent for-profit organization. It doesn't offer policy recommendations, but rather works directly with governments and other organizations to provide humanitarian assistance and improve food security in developing countries.

Statements 2 and 3 are correct.

The WFP is the world's largest humanitarian organization - it assists over 100 million people in more than 80 countries every year.

It also focuses on long-term development programs to build resilience and improve access to food.

These include initiatives like school

feeding programs, cash transfers, and agricultural support to smallholder farmers

97. (

The NCoE-CCU's CO2 conversion technology is based on electrocatalysis, which is a process that uses electricity to drive chemical reactions.

- In this case, the electricity is used to convert CO2 into CO. The CO produced can then be used as a fuel for various applications, such as the production of synthetic fuels or chemicals. One of the key advantages of the NCoE-CCU's technology is that it can be operated at ambient temperatures and pressures.
- This makes it much more energyefficient than other CO2 conversion technologies that require high temperatures or pressures.
- Currently, the process for CO2 to CO conversion occurs at elevated temperatures (400-750 °C) making it an energy-intensive process. But this newly developed CO2 conversion process requires only minimal energy as it can proceed under ambient temperatures (25-40 °C) in the presence of water.
- Moreover, the energy required for this electrocatalysis reaction can be harnessed directly from a renewable energy source (in the form of a solar panel or windmill) for a carbon-neutral conversion process.

98. (

About Section 27 of the Indian Evidence Act:

- Section 27 of the Evidence Act highlights an interesting and complex feature related to the admission of confessions within its legal framework.
- Sections 25 and 26 establish protection against self-incrimination and abuse of power by the police authority, deeming confessions made in police custody without the presence of a magistrate as inadmissible before a court of law.
- Section 27 adds an exception by enabling the admission of confessions that result

in the discovery of facts.

- Section 27 states: "Provided that, when any fact is deposed to as discovered in consequence of information received from a person accused of any offence, in the custody of a police officer, so much of such information, whether it amounts to a confession or not, as relates distinctly to the fact thereby discovered, may be proved."
- In simpler terms, any confession made by a person while in police custody that leads to the revelation of a fact is considered admissible in court.
- The basic idea embedded in Section 27 of the Evidence Act is the doctrine of confirmation by subsequent events. This doctrine is founded on the principle that every part of the statement made at the instance of the accused, in a police custody should necessarily be confirmed by the subsequent events of discovery, to make it admissible in court.
- In the case of Asar Mohd. v. State of U.P, the Supreme Court held that the concept of "fact" mentioned in Section 27 is not limited to physical objects alone but also includes essential psychological or mental facts that may be directly relevant to the case.

99. In

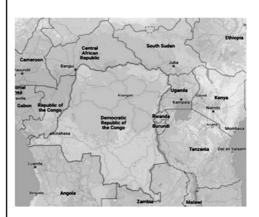
The UN International Organization of Migration (IOM) reported that the number of people who have been internally displaced in the Democratic Republic of Congo (DRC) has risen to 6.9 million.

The Democratic Republic of the Congo (DRC) is located in Central Africa.

It has territories in both the Northern and Southern Hemispheres.

It is located to the east of the Prime Meridian in the Eastern Hemisphere.

Bordering countries of Democratic Republic of Congo: Republic of the Congo, Central African Republic, South Sudan, Burundi, Rwanda, Uganda, Tanzania, Zambia, Angola.



100

The Klyuchevskoy volcano, one of the highest active volcanoes in the world, erupted in Russia's northern Kamchatka Peninsula.

Mount Agung is in Indonesia.

One of the most active and dangerous volcanoes in the world, Mount Nyiragongo is a stratovolcano that rises about 3,470 meters above sea level and has a volume of around 50 cubic kilometres. It is located in the Democratic Republic of the Congo and is known for its highly fluid lava that can move at speeds of up to 100 km/h.

Located in the Andes Mountains of Ecuador, Sangay is a stratovolcano.

S.No	Name	Location
1	Mauna Loa	Hawaii, United States
2	Tamu Massif	Pacific Ocean, off the coast of Japan
3	Ojos del Salado	Argentina/Chile border
4	Tamu Koba	Pacific Ocean, off the coast of Japan
5	Manua Loa	American Samoa
6	Pacific	Pacific Ocean
	Seamounts	
7	Sangay	Ecuador
8	Kilimanjaro	Tanzania
9	Toba	Sumatra, Indonesia

10	Mount Etna	Sicily, Italy	15	Mount Nyiragongo	Democratic Republic of Congo
11	Mount Snasta	California, United States	16	Ambrym	Vanuatu
12	Teide	Canary Islands, Spain	17	Mount St. Helens	Washington, United States
13	Mount	Washington, United	18	Mount Fuji	Honshu, Japan
	Rainier	States	19	Mount	Luzon, Philippines
14	Yellowstone	Wyoming, United		Pinatubo	
	Caldera	States	20	Popocatépetl	Mexico



R.C.REDDY IAS STUDY CIRCLE

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SELF- POST TEST ANALYSIS

Dear Student,

'Self Post Test Analysis' is a tool (in the form of a questionnaire) that has been designed for you to inculcate the habit of reflecting upon your test performance and learning from your mistakes.

Students who make it a habit to reflect upon their performance after giving a test show improvement in their performance curve.

Please use the following questionnaire to reflect on your performance and preparation.

Number of Questions Attempted	(RCR)				
Correct					
Incorrect	R.C.REDDY AS STUDY CIRCLE				
Silly Mistakes					
Unkown Questions					
Which concepts need clarity?					
Which questions and concepts need revision?					
Strong and Weak areas :					