

# General Studies

## Current Affair Test (January-2025)

### 1. Ans: (c)

The SpaDeX Mission aims to demonstrate critical technologies such as spacecraft rendezvous, docking, and undocking to support future robotic and inter-satellite applications.

#### About SpaDeX Mission:

- Launch Vehicle: Polar Satellite Launch Vehicle (PSLV-C60) in its core-alone configuration.

#### Aim:

##### Primary:

- Demonstrate rendezvous, docking, and undocking of two spacecraft.

##### Secondary:

- Transfer electric power between docked spacecraft for future robotic applications.
- Composite spacecraft control and post-docking payload operations.

#### Features:

- Launch of two satellites: SDX01 (Chaser) and SDX02 (Target), each weighing 220 kg.
- Placement in a 470-km circular orbit at a 55-degree inclination.
- Progressive docking process: From a 20-km separation (Far Rendezvous) to a 3-meter docking distance.
- Demonstration of electrical power transfer between the two spacecraft post-docking.

### 2. Ans: (d)

Statement 1 is correct as the initiative focuses on safeguarding cultural practices endangered by globalization. Statement 3 is correct because inclusion requires alignment with sustainable development. Statement 2 is incorrect as community participation, not just government support, is a crucial criterion.

#### About UNESCO's National Inventory of Intangible Cultural Heritage:

- Established in: Adopted in 2003, came into force in 2006 under the Convention for the Safeguarding of Intangible Cultural Heritage.
- Aim: To safeguard cultural practices, expressions, and knowledge systems endangered by globalization, ensuring respect for community heritage.

#### Criteria:

- Must demonstrate the importance of the practice for cultural identity.
- Should involve active community participation.
- Must align with the principles of human rights and sustainable development.

#### Types of Lists:

- Representative List of Intangible Cultural Heritage

of Humanity.

- List of Intangible Cultural Heritage in Need of Urgent Safeguarding.
- Register of Good Safeguarding Practices.

### 3. Ans: (c)

The project generates power, mitigates floods, and maintains river flow during lean seasons. Statement 2 is incorrect because the project is located on the Siang River, not the Dibang River, and is in Arunachal Pradesh, not Assam.

#### About Upper Siang Multipurpose Project:

- What it is: A multipurpose hydroelectric project aimed at flood mitigation, maintaining the Siang River's natural flow, and electricity generation with a capacity of 11,000 MW.
- Location: Upper Siang District, Arunachal Pradesh, near the Siang River (Brahmaputra).
- River: Siang River, a major tributary of the Brahmaputra River.
- States Involved: Arunachal Pradesh and Assam (infrastructure development and approach roads).

#### Key Features:

- Reservoir capacity: 9 billion cubic metres (BCM).
- Installed capacity: 11,000 MW.
- Jointly developed by NHPC and NEEPCO.
- Designed to mitigate flooding from upstream water releases by China and maintain river flow during lean seasons.

### 4. Ans: (d)

A recent discovery of an ancient Sanskrit inscription in Gilgit, Pakistan-Occupied Kashmir was decoded by the Archaeological Survey of India (ASI).

#### About Sanskrit Inscription:

##### Location Found:

- Gilgit, Pakistan-Occupied Kashmir– Written in Brahmi script, 4th century CE.
- Near Peshawar, Pakistan– Written in Sharada script, 10th century CE.



## About the Inscription:

### Gilgit Inscription:

- Mentions “Pushpasingha,” who installed a Mahesvaralinga for his guru’s merit.
- Written in Brahmi script.
- Indicates strong religious ties, specifically to

### Peshawar Inscription:

- Fragmentary, engraved on a slab.
- Written in Sharada characters.
- Refers to Buddhist Dharini (chants) in line six.

## 5. Ans: (b)

### About India-Australia Economic Cooperation and Trade Agreement:

- Established in: Signed in 2022.
- Nations: India and Australia.

### Features of the Agreement:

- Trade Preferences: Provides preferential market access for key goods, including textiles, chemicals, and agriculture products.
- Diversification: Promotes trade in new areas such as gold-studded diamonds and turbojets.
- Raw Material Imports: Facilitates imports of metalliferous ores, cotton, and wood products for industrial support.
- MSMEs Focus: Special emphasis on empowering MSMEs and fostering employment generation.
- Bilateral Trade Target: Aims to reach USD 100 billion in trade by 2030.

## 6. Ans: (a)

Statement 1 is incorrect because MASLD is caused by multiple factors like obesity, insulin resistance, and dyslipidemia, not exclusively high cholesterol.

Statement 2 is correct as advanced MASLD, particularly when it progresses to MASH, can lead to complications like hepatocellular carcinoma.

Statement 3 is incorrect because MASLD is associated with increased risks of cardiovascular diseases due to metabolic dysfunction.

### About Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD):

- What it is: MASLD is a liver disease caused by excessive fat build-up in the liver, often linked to metabolic dysfunction. It can progress to inflammation (MASH) and severe complications like liver fibrosis or cirrhosis.

### Causes:

- Obesity (BMI  $\geq 30$ ).
- Insulin resistance leading to poor blood sugar management.
- Type 2 diabetes.
- Dyslipidemia (high cholesterol and lipids).

### Symptoms:

- Fatigue and weakness.
- Right upper abdominal ache.

- Swollen belly and yellowing skin (in advanced cases).
- Severe cases may lead to cirrhosis or liver cancer.

### Diseases Associated:

- MASH (inflammation with scarring).
- Hepatocellular carcinoma (liver cancer).
- Increased risks of cardiovascular diseases, breast cancer, and colon cancer.
- Type 2 diabetes in non-diabetic individuals.

### Treatment:

- Lifestyle Changes: Weight loss and regular exercise to reduce liver fat and improve insulin sensitivity.
- Dietary Adjustments: Avoiding high-fat, high-sugar foods.
- Pharmacotherapy: For managing metabolic risk factors like diabetes and cholesterol.
- Exercise Protocols: Tailored regimens can benefit all patients, including those with advanced liver disease like cirrhosis.

## 7. Ans: (d)

The Crimea Peninsula is connected to Russia by the Kerch Strait, which is spanned by the Crimean Bridge.



## 8. Ans: (b)

Statement 1 is incorrect: The BBIN energy grid is designed for regional power trade among Bangladesh, Bhutan, India, and Nepal, not Myanmar and Bangladesh. It fosters regional cooperation by sharing surplus power and ensuring energy security within the BBIN nations.

Statement 2 is correct: India actively supports e-governance projects in neighboring countries to enhance trade facilitation. Such initiatives aim to modernize customs systems, reduce trade barriers, and streamline logistics processes, promoting regional economic integration.

Statement 3 is correct: The Kaladan Multimodal Project includes both waterways and roadways, connecting India’s northeast with Myanmar. It involves a waterway route from the port of Kolkata to Sittwe in Myanmar, followed by a road link to Mizoram, enhancing connectivity and trade.

**9. Ans: (a)**

India's Renewable Energy Certificates (REC) mechanism was introduced to promote renewable energy adoption and provide industries with a market-driven and flexible compliance tool.

Statement-I is correct because RECs allow industries to meet renewable energy obligations (such as Renewable Purchase Obligations or RPOs) without directly sourcing renewable power. Instead, industries can purchase RECs, representing the environmental attributes of renewable power generation.

Statement-II is also correct, as the REC mechanism was designed to promote renewable energy deployment and ensure compliance flexibility for entities unable to source green power directly. By separating the renewable energy generation from its environmental benefits, RECs provide a streamlined and market-based approach to fostering clean energy.

**10. Ans: (a)**

Statement 1 is correct as India is currently a member of the ICH Committee (2022–2026).

Statement 2 is incorrect because the Sangeet Natak Akademi, not the Ministry of External Affairs, prepares the nomination dossiers.

Statement 3 is incorrect because the Sangeet Natak Akademi, not ASI, manages ICH matters.

**India and UNESCO:**

- UNESCO Committees Membership: India is a member of the Intangible Cultural Heritage (ICH) Committee (2022–2026) and the World Heritage Committee (2021–2025).
- Previous Tenures: India served on the ICH Committee from 2006–2010 and 2014–2018.
- Nodal Office: The Sangeet Natak Akademi, under the Ministry of Culture, manages intangible cultural heritage matters and prepares nomination dossiers for UNESCO's Representative List.

**11. Ans: (c)**

The Belagavi Congress Session of 1924 stands out as the only session presided over by Mahatma Gandhi in his political career. Unlike other sessions, this event emphasized the eradication of untouchability, promotion of khadi, sanitation drives, and Hindu-Muslim unity, alongside the pursuit of Swaraj.

Held in Belagavi (then Belgaum), the session also reflected Gandhi's commitment to grassroots empowerment, demonstrated by restructuring Congress to make it more inclusive. He significantly reduced the membership fee, making the organization accessible to marginalized sections of society.

**12. Ans: (a)**

Both statements are correct, and Statement-II explains Statement-I. Matsya Seva Kendras are designed to offer one-stop solutions, including analytical services

like water, soil, and microbial testing, to fish farmers.

About Matsya Seva Kendras:

What it is: One-stop solution centres providing extension services to fish farmers and hatcheries.

Launched in: Under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) in 2020.

Aim: To provide comprehensive support in aquaculture, disease management, and training.

**Features:**

Equipped with labs for water, soil, and microbial analysis.

Offers need-based services like disease testing, capacity building, and technology infusion.

Mobilizes cooperatives, SHGs, and start-ups to share best practices.

**13. Ans: (b)**

Contractionary monetary policy aims to control inflation and reduce overheating by curbing excessive demand through measures like higher interest rates and reduced money supply.

**Impact of Monetary Policy on Growth and Demand:**

Type	Tools	Impact on Growth	Impact on Demand
Expansionary Monetary Policy	– Lower interest rates	– Encourages borrowing and investment	– Increases consumer spending
	– Reduce CRR	– Stimulates economic activity	– Boosts aggregate demand
	– Quantitative Easing (QE)		
Contractionary Monetary Policy	– Higher interest rates	– Reduces overheating in the economy	– Decreases consumer and business spending
	– Increase CRR	– Slows down GDP growth	– Controls inflation by reducing aggregate demand
	– Open Market Sales		

**14. Ans: (c)**

Statement-I is correct as Sagar Mitras act as a vital link between the government and coastal fishers.

Statement-II is incorrect because their focus is not on direct financial assistance or biodiversity conservation

but on data dissemination, sustainable fishing, and market insights.

#### About Sagar Mitra:

- What it is: A field-level interface between government and coastal fishers.
- Launched in: Coastal States and UTs under Pradhan Mantri Matsya Sampada Yojana (PMMSY).
- Aim: To support fishers with data dissemination, market insights, and sustainable fishing practices.

#### Features:

- Collects data on marine catch, market trends, and prices.
- Provides updates on local regulations, weather forecasts, and potential fishing zones.
- Facilitates hygienic fish handling and safety information.

#### 15. Ans: (c)

Subsidies for renewable energy represent an example of expansionary fiscal policy because they aim to boost economic activity by increasing sectoral demand. Expansionary fiscal policies are designed to stimulate economic growth, especially during periods of slow economic activity or recession. By reducing the cost of renewable energy projects through subsidies, the government encourages investment in this sector, leading to job creation, increased production, and a multiplier effect across the economy.

In contrast, other options like increasing income tax rates or reducing government spending on infrastructure are contractionary measures as they lower disposable income and decrease public expenditure, thereby dampening demand. Increasing interest rates is a tool of monetary policy, not fiscal policy, and it is used to control inflation rather than stimulate demand.

#### 16. Ans: (d)

Statement 1 is incorrect because the award is for children aged 5–18 years, not above 18.

Statement 2 is incorrect as it is organized by the Ministry of Women and Child Development, not the Ministry of Youth Affairs and Sports.

Statement 3 is incorrect because achievements must have occurred within two years prior to the nomination deadline, not five years.

#### About Pradhan Mantri Rashtriya Bal Puraskar:

- What it is: India's highest civilian award for children, celebrating exceptional achievements in various fields.
- Awarded by: President of India on behalf of the Government of India.
- Ministry involved: Organized by the Ministry of Women and Child Development.

#### Categories:

- Art & Culture
- Bravery
- Innovation

- Science & Technology
- Social Service
- Sports
- Environment

#### Eligibility:

- Must be an Indian citizen.
- Age: 5–18 years as of July 31 of the respective year.
- Achievements must have occurred within two years prior to the nomination deadline.
- Up to 25 awards are conferred annually, with flexibility at the discretion of the National Selection Committee.

#### 17. Ans: (b)

##### Surya Kiran 2024:

Exercise name: Surya Kiran 2024

Held at: Saljhandi, Nepal

Nations involved: India and Nepal

Focus: Jungle warfare, counter-terrorism, and humanitarian operations under the UN Charter.

#### 18. Ans: (a)

Statement 1 is incorrect because the Brahmaputra originates from the Chemayungdung Glacier near Mount Kailash, not directly from Manasarovar Lake.

Statement 2 is incorrect because the Mariam La Pass separates the Brahmaputra's source from Manasarovar Lake; it does not mark its entry into Arunachal Pradesh.

Statement 3 is correct as the Brahmaputra, called Jamuna in Bangladesh, merges with the Ganga to form the Sunderbans delta.

#### 19. Ans: (b)

Statement 1 is incorrect because the Purna Swaraj resolution was introduced later in 1929.

Statement 2 is correct as Gandhi reduced the Congress membership fee by 90%, making it more accessible.

Statement 3 is correct as the session prioritized self-reliance through khadi promotion and rural revitalization.

#### About Belagavi Congress Session, 1924:

- Year and Presidentship: Held in December 1924; chaired by Mahatma Gandhi, marking the only Congress session he presided over.
- Blend of Political and Social Reform: Unlike other sessions, it focused equally on social issues like untouchability eradication, khadi promotion, sanitation, and Hindu-Muslim unity, alongside political goals like Swaraj.
- Institutional Transformation: Gandhi restructured the Congress into a mass movement by reducing the membership fee by 90%, making it accessible to all social classes.
- Focus on Grassroots Empowerment: The session mandated contributions to hand-spun khadi, promoting self-reliance and village industries, and marked a shift from urban-centric strategies to rural revitalization.

### Cultural and Ethical Impact:

- Advocated equality, with Brahmin volunteers engaging in sanitation work.
- Iconic cultural performances by Vishnu Digambar Paluskar and Gangubai Hangal.
- Gandhi's famous declaration, "If I am to be born again, may I be born a Bhangi," emphasized social justice and upliftment.
- Infrastructure Legacy: The construction of Pampa Sarovara, a well for the session, continues to serve Belagavi, symbolizing sustainable contributions from the event.
- Visionary Resolutions: Unique resolutions on urban planning and cow protection linked economic development with cultural preservation, showcasing Gandhi's holistic approach.

### 20. Ans: (b)

Statement 1 is incorrect because Quantitative Easing (QE) is an expansionary monetary policy tool, not contractionary. QE involves the central bank purchasing financial assets, such as government securities, to inject liquidity into the economy, stimulate demand, and promote growth, particularly during economic slowdowns.

Statement 2 is correct as Open Market Operations (OMO) involve the central bank buying or selling government securities to manage liquidity in the financial system. When the central bank buys securities, it increases liquidity; when it sells, it reduces liquidity.

Statement 3 is also correct because repo rate changes directly influence short-term borrowing costs. A reduction in the repo rate lowers borrowing costs for banks, encouraging lending and investment, while an increase has the opposite effect.

### 21. Ans: (a)

Statement 1 is incorrect: The SMILE Program is funded by the Asian Development Bank (ADB), not the World Bank.

Statement 2 is correct: It promotes smart, efficient, and low-emission logistics systems.

Statement 3 is correct: The program is implemented by the DPIIT, Ministry of Commerce and Industry.

### About SMILE Program:

- What It Is: Strengthening Multimodal and Integrated Logistics Ecosystem (SMILE Program), a policy-based loan program.
- Ministry: Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry.
- Funded By: Asian Development Bank (ADB).
- Aim: Enhance logistics efficiency, expand manufacturing, and improve supply chain resilience.

### 22. Ans: (c)

Undersea fiber-optic cables, like India Asia Xpress (IAX) and India Europe Xpress (IEX), are primarily

used to transmit data at high speeds globally, forming the backbone of the internet.

### About Underwater Cables:

- What it is: Fiber-optic cables laid under the ocean to transmit data at high speeds globally.

### New Cables:

- IAX: Connects Chennai and Mumbai with Singapore, Thailand, and Malaysia.
- IEX: Connects Chennai and Mumbai with France, Greece, Saudi Arabia, Egypt, and Djibouti.

### 23. Ans: (c)

Statement 1 is incorrect: The report focuses on the interconnections among biodiversity, water, food, health, and climate change, rather than solely on economic implications.

Statement 2 is correct: It highlights the interdependencies between food, water, and health systems, emphasizing their connections with biodiversity and climate change.

Statement 3 is incorrect: The report offers actionable options but does not propose a new international agreement.

The Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) launched the Nexus Report, a comprehensive scientific assessment of the interconnections among biodiversity, water, food, health, and climate change.

### About Nexus Report:

- Full Name: Assessment Report on the Interlinkages Among Biodiversity, Water, Food and Health.
- Aim: To analyze the complex interdependencies among biodiversity, water, food, health, and climate change, offering over 60 specific response options to optimize co-benefits and tackle global challenges effectively.

### 24. Ans: (a)

The Spot-billed Pelican (*Pelecanus philippensis*), a migratory bird, is one of the prominent species found in the sanctuary, along with the Lesser Adjutant.

The Bordoibam-Bilmukh Bird Sanctuary (BBBS) in Assam has recorded a significant 72% decline in bird species over 27 years, primarily due to anthropogenic activities.

### About Bordoibam-Bilmukh Bird Sanctuary:

- Location: Located on the border of Dhemaji and Lakhimpur districts in Assam.
- Established in: Declared a wildlife sanctuary in 1996.
- Habitat: Covers 11.25 sq. km of wetlands; experiences a moist tropical climate. Vegetation includes flooded valley grasslands and wetlands.

### Major Flora and Fauna:

- Flora: Aquatic plants and grassland species.
- Fauna: Migratory birds like Spot-billed Pelican

(*Pelecanus philippensis*) and Lesser Adjutant (*Leptoptilos javanicus*); resident birds like the Indian Pond Heron and Fulvous Whistling Duck.

**25. Ans: (a)**

Statement 1 is correct: The Caucasus Mountains are known for their endemic species, making them a biodiversity hotspot.

Statement 2 is incorrect: The region is popular for tourism despite its harsh winters.

Statement 3 is correct: The area is well-known for winter sports activities, attracting global tourists.

Statement 4 is correct: The range serves as a natural geopolitical boundary between Europe and Asia.



**About Caucasus Mountains:**

- Spread over: Extends across Russia, Georgia, Armenia, and Azerbaijan.
- Peak point: Mount Elbrus (5,642 meters), the highest peak in Europe.
- Rivers: Originates major rivers like the Terek, Kura, and Rioni.

**Significance:**

- Geopolitical boundary between Europe and Asia.
- Biodiversity hotspot with unique flora and fauna.
- Popular for tourism and winter sports.

**26. Ans: (b)**

Statement 1 is incorrect: IPBES does not draft legally binding agreements; it provides scientific assessments to guide policy making.

Statement 2 is correct: A key role of IPBES is to bridge the gap between science and policy for biodiversity management.

Statement 3 is incorrect: IPBES does not provide funds but focuses on scientific evaluations and recommendations.

**About Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES):**

- Established in: April 21, 2012, in Panama City by 94 governments.
- Headquarters: Bonn, Germany.

- Aim: To strengthen the science-policy interface for biodiversity and ecosystem services, ensuring sustainable use and long-term human well-being.

**Functions:**

- Assess global biodiversity and ecosystem service trends.
- Promote sustainable practices and conservation efforts.
- Provide decision-makers with actionable scientific insights.
- Bridge the gap between science and policy for biodiversity management.

**27. Ans: (d)**

The Protected Area Permit (PAP) is an official document required by foreign nationals to visit certain sensitive regions in India under the Foreigners (Protected Areas) Order, 1958. It is not applicable to Indian citizens.

PAP regions are declared by the Ministry of Home Affairs (MHA) and include parts of Arunachal Pradesh, Manipur, Mizoram, Nagaland, Sikkim, and certain areas in Himachal Pradesh, Jammu & Kashmir, Rajasthan, and Uttarakhand.

**28. Ans: (c)**

Georgia is bordered by Russia (north), Turkey (southwest), Armenia (south), Azerbaijan (southeast), and the Black Sea (west). Ukraine does not share a border with Georgia.

**About Georgia:**

- **Capital:**
  - ♦ Neighbours: Bordered by Russia (north), Turkey (southwest), Armenia (south), Azerbaijan (southeast), and the Black Sea (west).
- **Geographical features:**
  - ♦ Rivers: Kura and Rioni rivers dominate the landscape.
  - ♦ Mountains: Home to the Caucasus Mountains and the Likhi Range, dividing the eastern and western parts of the country.

**29. Ans: (d)**

The Northern Giant Hornet (Murder Hornet) can decimate entire honeybee hives in under 90 minutes by decapitating the bees to feed its larvae, making it a severe threat to pollinator populations and ecosystems.

**About Murder Hornet (Northern Giant Hornet)**

- Scientific name: *Vespa mandarinia*.
- Habitat: Native to Asia; prefers forested areas and underground cavities for nesting.

**Features:**

- Up to 2 inches long.
- Delivers venom nearly seven times stronger than that of honeybees.
- Can sting multiple times and penetrate beekeeper

**Threats:**

- Can decimate entire honeybee hives within 90 minutes by decapitating bees.

- Competes with native pollinators, disrupting ecosystems and agriculture.
- Deadly to humans; caused fatalities and injuries in China in 2013.

### 30. Ans: (b)

Statement-I is correct: Kuwait is located at the northern tip of the Arabian Peninsula in West Asia.

Statement-II is correct: Kuwait Bay is a key geographical feature and serves as a natural harbour for the country. However, it does not explain Kuwait's location in the Arabian Peninsula.

#### About Kuwait:

- Location: Situated in West Asia at the northern tip of the Arabian Peninsula.
- Neighbours: Borders Iraq to the north, Saudi Arabia to the south, and shares a maritime boundary with Iran in the Persian Gulf.
- Capital: Kuwait City.

#### Geographical Features:

- Lacks major rivers or mountains; primarily desert terrain.
- Coastline: Approximately 500 km along the Persian Gulf.
- Notable geographic feature: Kuwait Bay, a prominent natural harbour.

### 31. Ans: (b)

Statement 1 is incorrect because IPF has no known exact cause (idiopathic), though environmental factors like dust and smoke can trigger or exacerbate the condition.

Statement 2 is correct; IPF reduces oxygen levels, leading to complications like pulmonary hypertension and respiratory failure.

Statement 3 is correct; genetic predisposition has been identified as a contributing risk factor for IPF.

#### About Idiopathic Pulmonary Fibrosis (IPF):

- What it is: A chronic, progressive lung disease causing scarring (fibrosis) of lung tissue, making breathing difficult.

#### Causes:

- Exact cause unknown (idiopathic).
- Triggered by environmental factors (smoke, dust, pollution), genetic predisposition, and chronic inflammation.

#### Symptoms:

- Shortness of breath (dyspnea)
- Dry cough
- Fatigue and unintended weight loss
- Low oxygen levels leading to complications like pulmonary hypertension and respiratory failure.
- Diagnosis: Confirmed via high-resolution CT scans, pulmonary function tests, and occasionally lung biopsy.

#### Treatment:

- Antifibrotic medications: Pirfenidone, Nintedanib (slows progression).
- Oxygen therapy and lung exercises.
- Lung transplantation for advanced cases.

### 32. Ans: (a)

El Niño is the warming phase of the El Niño-Southern Oscillation (ENSO), characterized by above-average sea surface temperatures in the eastern and central Pacific Ocean. It occurs when trade winds weaken, reducing the upwelling of cold water.

#### About El Niño:

What it is: The warming phase of ENSO, with higher-than-average sea surface temperatures in the eastern Pacific Ocean.

How it forms: Weakened trade winds allow warm water to accumulate in the eastern and central Pacific.

#### Global Impacts:

Heavy rainfall in the southern U.S. and western South America.

Severe droughts in Southeast Asia, Australia, and Africa.

Disruption of marine ecosystems due to warmer ocean waters.

#### Impacts on India:

Below-normal monsoons (e.g., 2023).

Intense summer heat waves and prolonged droughts.

Reduced agricultural output and water shortages.

### 33. Ans: (c)

The scheme aims to provide credit guarantees for loans availed using e-NWRs (electronic negotiable warehouse receipts). This ensures financial support to farmers and traders while minimizing credit risk for lending institutions.

#### About Credit Guarantee Scheme for e-NWR (Negotiable warehouse receipt):

Launched in: December 2024.

Ministry: Ministry of Consumer Affairs, Food, and Public Distribution.

Aim: To provide credit guarantee for loans availed against e-NWRs, ensuring financial support for farmers and traders while minimizing risks.

#### Features:

Total Corpus: 1,000 crore.

#### Loan Coverage:

Up to 75 lakh for small and marginal farmers.

Up to 200 lakh for MSMEs and traders.

#### Guarantee Coverage:

85% for loans up to 3 lakh.

80% for loans between 3 to 75 lakh for SMFs/women/SC/ST/PwD.

75% for MSMEs, traders, and FPOs.

Guarantee Fee: 0.4% p.a. for farmers and 1% p.a. for non-farmers.

Implemented by: Warehousing Development and Regulatory Authority (WDRA).

Eligible Institutions: All scheduled banks and cooperative banks.

### 34. Ans: (d)

Hydroxymethanesulfonate (HMS) is a secondary aerosol that forms through the reaction of formaldehyde and sulphite ions in aerosol particles. This reaction requires liquid water within aerosols, often in a supercooled state, making it unique.

#### About Hydroxymethanesulfonate:

- What it is: A secondary aerosol that forms from chemical reactions involving formaldehyde and sulphur dioxide in the presence of liquid water.  
How it is formed:
  - ◆ Occurs when formaldehyde reacts with sulphite ions in aerosol particles.
  - ◆ Requires liquid water within aerosol particles, even in extremely cold conditions (supercooled state).

#### Factors favoring its formation:

- Low temperatures: Inhibit ammonium volatilization, reducing aerosol acidity.
- High ammonium ion concentrations: Neutralize acidity, enabling reactions.
- Supercooled liquid water: Present in aerosols at sub-zero temperatures.

### 35. Ans: (a)

La Niña enhances the Indian monsoon, often resulting in above-normal rainfall. It also brings colder winters to northern India due to stronger westerlies and cooler temperatures in the region.

#### About La Niña:

What it is: A cooling phase of the Pacific Ocean, characterized by lower-than-average sea surface temperatures between Indonesia and South America.

How it forms: Strengthened trade winds push warm water westward, allowing colder water to upwell in the central and eastern Pacific.

#### Global Impacts:

- Increased hurricanes over the Atlantic Ocean.
- Droughts in Africa and western U.S.
- Enhanced rainfall in Southeast Asia and Australia.

#### Impacts on India:

- Above-normal monsoons (e.g., 2020-2022).
- Colder winters in north India and cooler summer relief.
- Higher wind speeds, improving air quality.

### 36. Ans: (d)

Statement 1 is incorrect: Triple Dip La Niña typically leads to above-normal monsoons in India due to stronger trade winds and enhanced moisture transport.

The years 2020-2022 witnessed robust monsoons due to prolonged La Niña phases.

Statement 2 is incorrect: La Niña brings cooler-than-average winters to northern India due to stronger cold winds from central Asia.

Statement 3 is incorrect: La Niña increases cyclone activity in the Australian region and Atlantic Ocean due to favorable atmospheric conditions, such as reduced wind shear.

#### About Triple Dip La Niña:

- What it is: When La Niña conditions persist for three consecutive years (rare occurrence).
- How it forms: Sustained strengthening of trade winds and persistent cooling of the Pacific over multiple cycles.

#### Global Impacts:

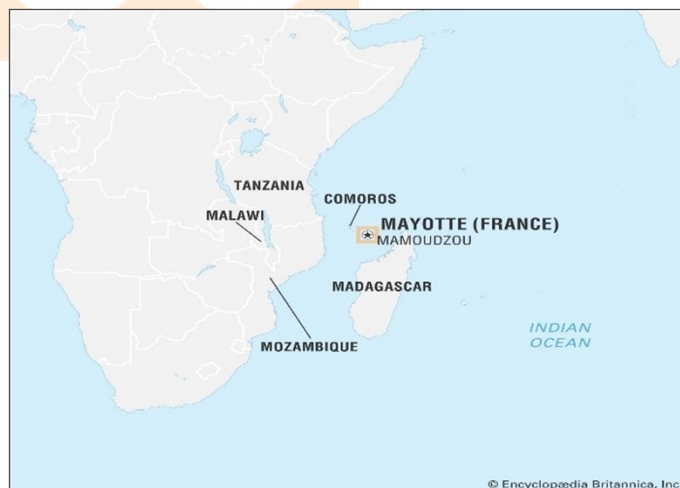
- Extended droughts in Africa and western U.S.
- Increased cyclone activity in Australia and Atlantic hurricanes.
- Prolonged disruptions in global agricultural and marine systems.

#### Impacts on India:

- Consistent above-normal rainfall (e.g., 2020-2022).
- Cooler winters in north India.
- Enhanced agricultural yield due to robust monsoons.

### 37. Ans: (b)

Mayotte is an overseas department of France located in the Mozambique Channel of the Indian Ocean, situated between northwestern Madagascar and northeastern Mozambique. Its strategic position makes it important for maritime navigation and trade routes.



### 38. Ans: (c)

Statement 1 is correct: The CHARAK Initiative is launched as part of NCL's CSR mandate.

Statement 2 is correct: It covers both infectious diseases like TB and non-communicable diseases like cardiovascular diseases.

Statement 3 is correct: Treatment for accidental trauma and burn injuries is included under the scheme.

### About CHARAK Initiative:

What it is: A health-centric CSR initiative by NCL for free treatment of life-threatening diseases.

Launched by: Northern Coalfields Limited (NCL), under the Ministry of Coal.

Aim: To provide free and specialized healthcare to economically weaker sections suffering from life-threatening diseases.

Eligibility: Residents of Singrauli and Sonbhadra districts with annual family income below 8 Lakhs.

Covered Diseases: Includes malignancy, TB, HIV complications, cardiovascular diseases, organ transplants, burns, neurological disorders, accidental trauma, etc.

### 39. Ans: (b)

Statement 1 is incorrect; antifibrotic medications like Pirfenidone and Nintedanib only slow the progression of IPF but do not reverse the lung damage.

Statement 2 is correct; oxygen therapy alleviates symptoms like breathlessness but does not halt disease progression.

Statement 3 is correct; lung transplantation is a viable option for patients with advanced IPF who do not respond to other treatments.

### About Idiopathic Pulmonary Fibrosis (IPF):

What it is: A chronic, progressive lung disease causing scarring (fibrosis) of lung tissue, making breathing difficult.

#### Causes:

- Exact cause unknown (idiopathic).
- Triggered by environmental factors (smoke, dust, pollution), genetic predisposition, and chronic inflammation.

#### Symptoms:

- Shortness of breath (dyspnea)
- Dry cough
- Fatigue and unintended weight loss
- Low oxygen levels leading to complications like pulmonary hypertension and respiratory failure.
- Diagnosis: Confirmed via high-resolution CT scans, pulmonary function tests, and occasionally lung biopsy.

#### Treatment:

- Antifibrotic medications: Pirfenidone, Nintedanib (slows progression).
- Oxygen therapy and lung exercises.
- Lung transplantation for advanced cases.

### 40. Ans: (a)

Statement 1 is incorrect: Moldova's terrain is mostly low-lying with rolling hills, not dominated by mountains.

Statement 2 is incorrect: Transnistria is a breakaway territory and is not recognized internationally as autonomous or independent.

Statement 3 is correct: Moldova is known for its fertile

land and temperate continental climate, which support agriculture.



### 41. Ans: (c)

Statement 1 is incorrect: MuleHunter.AI was developed by the Reserve Bank Innovation Hub (RBIH), not the Ministry of Finance.

Statement 2 is incorrect: It focuses on online financial frauds, not offline frauds like counterfeit cash circulation.

Statement 3 is correct: Its primary function is real-time monitoring and detection of mule accounts.

Digital fraud in India's financial sector is rising, with mule accounts aiding cybercrime. To combat this, the RBI has launched MuleHunter.AI, an AI-powered tool developed by its Innovation Hub in Bengaluru.

#### What is MuleHunter.AI?

- Definition: AI is an AI-driven solution designed to detect and mitigate mule bank accounts effectively.
- Developed by: Reserve Bank Innovation Hub (RBIH), Bengaluru.
- Aim: To curb the misuse of mule accounts in online financial frauds.

#### Functions:

- Real-time identification of mule accounts.
- Collaborative framework with banks for advanced fraud detection.
- Uses AI/ML technologies for enhanced monitoring and fraud prevention.

### 42. Ans: (b)

#### What is Antimatter?

Antimatter consists of antiparticles, each having the same mass but opposite charge as their matter counterparts.

Example: The antielectron (positron) is positively charged, unlike the negatively charged electron.

#### Discovered by:

- Theorized by: Paul A.M. Dirac (1928).
- Observed by: Carl Anderson in cosmic rays (1932).

#### Characteristics:

- Charge: Opposite to that of corresponding matter particles.

- Mass: Identical to matter particles.
- Behavior: Annihilates upon contact with matter, producing energy.
- Existence: Scarce in the observable universe.

#### Origin of Antimatter:

- Antimatter was formed during the Big Bang alongside matter.
- A tiny asymmetry in matter-antimatter populations led to the annihilation of antimatter, leaving matter dominant.

#### 43. Ans: (a)

Statement 1 is incorrect: Wind erosion affects 9 million hectares, much less than the 94 million hectares impacted by water erosion.

Statement 2 is correct: Chemical overuse, such as excessive application of urea, causes soil acidification and nutrient imbalance.

Statement 3 is incorrect: Deforestation increases vulnerability to erosion, not salinity.

#### Factors Impacting Soil:

- Water Erosion: Heavy rainfall and poor land management practices result in topsoil loss in over 94 million hectares.
- Wind Erosion: Affects 9 million hectares in arid regions like Rajasthan and Gujarat.
- Salinity: Improper irrigation practices lead to salinization, impacting coastal and irrigated zones.
- Chemical Overuse: Excessive use of urea and other fertilizers causes nutrient imbalance and soil acidification.
- Deforestation: Removal of vegetation increases vulnerability to erosion and loss of soil cover.

#### 44. Ans: (b)

##### About Hindon River:

- Source: Lower Shivalik ranges, Saharanpur District, Uttar Pradesh.
- Flows through: Uttar Pradesh only.
- Course: Travels for approximately 400 km, merging into the Yamuna River in Noida.
- Major Cities: Saharanpur, Muzaffarnagar, Shamli, Baghpat, Ghaziabad, Gautam Buddha Nagar.

##### Tributaries:

- Kali (West) River: Carries industrial and domestic pollutants.
- Krishni River: Contributes additional pollution from agricultural runoff and industrial waste.

#### 45. Ans: (c)

Statement 1 is incorrect: Melye-Amiley is derived from fermented bamboo shoots, not mangoes.

Statement 2 is correct: Melye-Amiley promotes fatty acid  $\beta$ -oxidation, contributing to its anti-obesity properties.

Statement 3 is incorrect: Its primary health benefit is metabolic health improvement and weight management, not immunity enhancement.

A study by the Institute of Advanced Study in Science

and Technology (IASST) has revealed that Melye-Amiley, a traditional fermented bamboo shoot from Tripura, exhibits anti-obesity properties.

It enhances metabolic health by reducing lipid accumulation and promoting fatty acid  $\beta$ -oxidation, making it a potential solution for weight management.

#### About Melye-Amiley:

- Definition: A traditional fermented bamboo shoot from Tripura, locally called Melye-Amiley.
- Nature: Known for its unique flavour and nutritional properties.
- Region: Indigenous to Tripura, a state in North East India.
- Source: Derived from bamboo shoots traditionally fermented by local communities.

#### Health Benefits:

- Reduces lipid accumulation in adipocytes.
- Enhances fat browning regulator genes and thermogenic protein expression.
- Stimulates mitochondrial biogenesis through the activated protein kinase (AMPK) signalling pathway.
- Cultural Value: Reflects Tripura's rich culinary and traditional knowledge.
- Scientific Relevance: Offers potential for natural weight management solutions.

#### 46. Ans: (d)

##### About Eklingji Temple:

- Built in: Originally constructed in the 8th century.
- Built by: Bappa Rawal, the 8th-century ruler of Mewar.
- Location: Situated in Kailashpuri village, Udaipur District, Rajasthan.

##### Historical Timeline:

- 8th Century: Constructed by Bappa Rawal.
- 14th Century: Hamir Singh renovated and reinstalled the idol after destruction by invaders.
- 15th Century: Rana Kumbha rebuilt the temple and added a Vishnu temple.
- Late 15th Century: Reconstructed by Rana Raimal after attacks by Malwa Sultanate's Ghiyath Shah.

##### Architectural Features:

- Temple Complex: Made of marble and granite, the complex has a central Shiva lingam representing Lord Ekling Nath.
- Intricate Carvings: Features elaborate sculptures and ornamental pillars, showcasing Mewar's architectural style.
- Main Idol: A four-faced Shiva lingam symbolizing creation, preservation, and destruction.
- Sect Associations: Originally linked to the Pashupata sect, then Nath sect, and later to Ramanandis.

#### 47. Ans: (a)

Statement 1 is incorrect: Article 90, not Article 67(b), governs the removal of the Deputy Chairperson.

Statement 2 is incorrect: A joint session is not required for the removal of the Deputy Chairperson.

Statement 3 is incorrect: A 14-day notice, not 7 days, is required to initiate the motion.

Statement 4 is correct: A simple majority in the Rajya Sabha is sufficient for the motion to succeed.

#### **What is a No-Trust Motion?**

- A procedural tool to express a lack of confidence in the presiding officer of a House.
- Aimed at holding leaders accountable and upholding parliamentary integrity.

#### **Constitutional Article:**

- Article 67(b): Governs the removal of the Vice-President and Rajya Sabha Chairperson.
- Article 90: Pertains to the removal of the Deputy Chairperson of the Rajya Sabha.

#### **Rules and Procedure:**

- Notice Requirement: Must be submitted with at least 14 days' notice.
- Majority Vote: Requires a majority of votes in the Rajya Sabha to pass.
- Concurrence of Lok Sabha: The motion must also be approved by the Lok Sabha for removal.

#### **48. Ans: (a)**

Statement 1 is incorrect: Antimatter has the same mass but opposite charge as its matter counterparts.

Statement 2 is correct: Both antimatter and matter were formed during the Big Bang.

Statement 3 is incorrect: Antimatter scarcity is due to a tiny asymmetry in matter-antimatter populations, not its dominance over matter.

#### **49. Ans: (d)**

The Bima Sakhi Yojana aims to empower women by training them as LIC agents, promoting financial literacy, and increasing insurance awareness. It does not provide free insurance policies or education loans.

#### **About Bima Sakhi Yojana:**

- Launched by: Life Insurance Corporation of India (LIC).
- Aim: To empower women economically by training them as LIC agents and promoting financial literacy and insurance awareness.

#### **Eligibility criteria:**

- Age: 18-70 years.
- Qualification: Minimum Class X pass.

#### **Features:**

- Training and Stipend: Women receive specialized training and a stipend for the first three years.
- Employment Opportunity: Trained Bima Sakhis can serve as LIC agents, with opportunities to advance as Development Officers.
- Insurance Coverage: Promotes insurance awareness and access to affordable insurance products.
- Economic Independence: Offers sustainable livelihood and additional income for women.

#### **50. Ans: (d)**

Money mules are often individuals with limited

financial knowledge who are exploited by fraudsters. They are manipulated into allowing their accounts to be used for illicit activities.

#### **What are Mule Bank Accounts?**

- Definition: Accounts used by fraudsters for illegal activities such as laundering illicit funds.
- Operation: Often acquired from individuals with limited financial knowledge.
- Impact: Innocent account holders, or "money mules," are implicated in fraud investigations, while actual criminals evade

#### **51. Ans: (b)**

Statement 1 is correct: The Chief Justice has exclusive authority over allocating cases to benches as the master of the roster.

Statement 2 is incorrect: The Chief Justice is not required to consult the Registry while finalizing the schedule; the Registry performs an administrative role under the CJI's directions.

Statement 3 is correct: The master of the roster principle enables the Chief Justice to decide which bench hears a particular case.

#### **About Scheduling of Cases in the Supreme Court:**

##### **Who is in Charge?**

- Chief Justice of India (CJI): Acts as the master of the roster, deciding the allocation and scheduling of cases.
- Supreme Court Registry: Administers filing, scrutiny, listing, and scheduling of cases.

##### **Law Governing Case Scheduling:**

- Governed by Supreme Court Rules, 2013, outlining procedural aspects like filing, listing, and hearing.

#### **52. Ans: (a)**

Statement 1 is incorrect: De-dollarisation reduces dependence on the U.S. dollar but does not aim to completely abandon its use.

Statement 2 is correct: Countries like China and Russia are using local currencies for bilateral trade, reducing reliance on the dollar.

Statement 3 is incorrect: While gold plays a role in diversification, de-dollarisation promotes alternatives, including regional currencies, not just gold.

#### **What is De-dollarisation?**

- Definition: The process of reducing reliance on the U.S. dollar in international trade and reserves to mitigate risks associated with currency volatility.
- Global Context: Countries like China and Russia have initiated measures such as bilateral trade in local currencies and increasing gold reserves.

#### **India's Initiatives:**

- Local Currency Trade Agreements: India has signed agreements with select nations for bilateral trade in local currencies, reducing transaction costs and exchange rate volatility.

- Diversification of Forex Reserves: Increased focus on gold and other currencies in reserves.
- Promoting INR Trade: Steps to internationalize the Indian rupee for global trade settlements.

#### **Impact of De-dollarisation:**

##### **On the Global Economy:**

- Reduced Dollar Dominance: Weakens the U.S. dollar's role as a global reserve currency.
- Geopolitical Tensions: May lead to trade blocs and financial realignments.
- Alternative Currencies: Promotes regional currencies or gold as trade and reserve assets.

##### **On India's Economy:**

- Trade Diversification: Enhances resilience against dollar volatility.
- Risk Mitigation: Shields the economy from sudden dollar-driven shocks.

#### **53. Ans: (d)**

Statement 1 is incorrect: The prize is awarded to individuals or organizations worldwide, not exclusively from India.

Statement 2 is incorrect: The international jury may include prominent figures, but it is not necessarily chaired by a former Prime Minister. For 2024, it was chaired by Shivshankar Menon.

Statement 3 is incorrect: The prize was instituted to honor contributions to peace, disarmament, and development, not specifically India's nuclear program.

##### **About Indira Gandhi Peace Prize:**

- Origin: Instituted in 1986 by the Indira Gandhi Memorial Trust in memory of India's former Prime Minister, Indira Gandhi.
- Aim: Honors contributions to peace, disarmament, and development, fostering global harmony, scientific progress, and human betterment.

##### **Award Components:**

- Monetary Prize: 25 lakh
- Citation: Recognizing exemplary achievements.

##### **Award Given By:**

- Selected by an international jury, chaired this year by Shivshankar Menon, former National Security Adviser.
- Recipient for 2024: Michelle Bachelet: Former Chilean President and UN High Commissioner for Human Rights, for championing gender equality, democracy, and human rights globally.

##### **Notable Past Recipients:**

- Mikhail Gorbachev (1987)
- UNICEF (1989)
- Jimmy Carter (1997)
- Angela Merkel (2013)
- ISRO (2014)
- Sir David Attenborough (2019)

- Pratham NGO (2021)
- Indian Medical Association and the Trained Nurses Association of India (2022)

#### **54. Ans: (b)**

The Democratic Republic of Congo is home to the Congo River Basin, which includes the Congo River (Africa's second-longest river) and the world's second-largest tropical rainforest, making it a significant ecological region.

#### **55. Ans: (d)**

Statement 1 is incorrect: The Laysan Albatross has a notable lifespan, often exceeding 60 years, with individuals like Wisdom living beyond 74 years.

Statement 2 is incorrect: They lay a single egg per year as part of their reproductive strategy.

Statement 3 is incorrect: They exhibit strong pair bonding and typically mate for life, sharing incubation and parental duties.

##### **About Laysan Albatross:**

- Name: Laysan Albatross (*Phoebastria immutabilis*)
- It is a pelagic bird found predominantly in the North Pacific Ocean.
- Region found in: Primarily the North Pacific Ocean, with 99.7% of its population nesting in the Northwestern Hawaiian Islands, particularly at Midway Atoll National Wildlife Refuge.

##### **Key Characteristics:**

- Medium-sized seabird resembling a gull, with long, slender wings for sustained flight.
- Feeds on squid, fish eggs, and crustaceans far from land.
- Mates for life, laying a single egg per year with shared incubation duties.
- Notable lifespan, often exceeding 60 years, with some individuals like Wisdom reaching 74 years.
- IUCN Status: Near Threatened

#### **56. Ans: (b)**

Statement 1 is correct: The SWAYAM platform provides Massive Open Online Courses (MOOCs) for higher education and school-level courses with credit transfer options.

Statement 2 is incorrect: Virtual Labs also include skilling e-labs, in addition to science and mathematics labs.

Statement 3 is incorrect: The DIKSHA platform offers content beyond school education, including teacher training and other educational resources.

Statement 4 is correct: PM e-Vidya was launched in May 2020 under the Atmanirbhar Bharat Abhiyaan.

##### **About PM e-Vidya:**

- Launched in: May 2020, under the Ministry of Education as part of the Atmanirbhar Bharat Abhiyaan.
- Aim: Ensure equitable, accessible, and quality

education through digital, online, and on-air platforms, addressing learning gaps exacerbated by the COVID-19 pandemic.

#### Key Features:

- DIKSHA Platform: National digital platform offering QR-coded Energized Textbooks, interactive content, and over 5.58 crore learning sessions.
- DTH TV Channels: Expanded from 12 to 200 channels, delivering content in multiple languages for Classes 1–12.
- SWAYAM Platform: MOOC-based platform offering over 10,000 higher education and school-level courses with credit transfer provisions.
- Virtual Labs: 750 science and mathematics labs (Classes 6–12) and 75 skilling e-labs for simulated learning environments.
- Community Outreach: Education content broadcast through radio and podcasts like Shiksha Vani for areas with limited internet access.
- ISL Promotion: Channel 31 delivers ISL-based content 24×7, facilitating education for hearing-impaired students and supporting ISL as a subject.

#### Recognitions:

- PM e-Vidya, an ICT-based education initiative, was recognized by UNESCO in 2022 for its impact during COVID-19.
- The Central Institute of Educational Technology (CIET), part of the National Council of Educational Research and Training (NCERT), received the UNESCO King Hamad Bin Isa Al-Khalifa Prize for the Use of ICT in Education for 2021

#### 57. Ans: (b)

Kokernag, located in the Anantnag district, is renowned for its lush gardens and freshwater springs, earning it the title of the “Botanical Garden of Kashmir.”

#### About Places in News:

##### Kokernag

- Location: Anantnag district
- Speciality: Famous for its freshwater springs and lush gardens, it is known as the “Botanical Garden of Kashmir.”

##### Baradari

- Location: Reasi district
- Speciality: An architectural marvel near the Chenab River, known for its historical significance and picturesque surroundings.

#### 58. Ans: (b)

Statement 1 is incorrect: Non-miscellaneous days are primarily used for after-notice matters and regular hearings but are not exclusively for final hearings.

Statement 2 is correct: Miscellaneous days, typically Mondays and Fridays, are allocated for admission hearings and issuing notices for fresh cases.

Statement 3 is correct: The procedural framework for both types of days is outlined in the Supreme Court Rules, 2013.

#### Procedure for Case Scheduling:

- Filing Process: Cases are filed through the court’s e-portal or physical counter by Advocates-on-Record (AoR).
- Scrutiny: Cases are verified for defects by the Registry and allotted a diary number.
- Listing: After verification, cases are listed for hearing based on their type:
- Miscellaneous Days (Mondays and Fridays): Fresh matters for issuing notices.
- Non-Miscellaneous Days (Tuesdays to Thursdays): After-notice or regular hearing matters.
- Admission: Cases requiring full hearings are admitted after preliminary consideration.
- Hearing and Judgment: Admitted cases are scheduled for detailed hearings, leading to verdicts.

#### 59. Ans: (d)

##### About the Democratic Republic of Congo:

- Location: Central sub-Saharan Africa, within the Congo Basin.
- Capital: Kinshasa
- Neighbouring Countries: Borders Republic of Congo, Central African Republic, South Sudan, Uganda, Rwanda, Burundi, Tanzania, Zambia, Angola.
- Rivers: Home to the Congo River, Africa’s second-longest river, and the Congo Basin, the second-largest tropical rainforest globally.
- Mountains: Features mountain terraces and plateaus, along with diverse ecosystems like the Miombo woodlands and cloud forests.
- Climate: Predominantly equatorial, with hot and humid conditions in the north and west, and cooler, drier climates in the south and east.

#### 60. Ans: (c)

Bhadarwah, located in the Doda district of Jammu and Kashmir, is often called “Mini Kashmir” for its lush forests, breathtaking landscapes, and adventure tourism opportunities.

##### Bhadarwah

- Location: Doda district
- Speciality: Often called “Mini Kashmir,” it is renowned for its scenic beauty, forests, and adventure tourism.

##### Doodhpathri

- Location: Budgam district
- Speciality: A pristine meadow surrounded by coniferous forests, it is popular for its serene ambiance and the Shaliganga River.

#### 61. Ans: (a)

Only Statement 2 is correct.

##### About Desert Knight Exercise:

- What It Is: A trilateral air combat exercise designed

to enhance military interoperability and combat readiness among the participating nations.

- Nations Involved: India, France, and the UAE.
- Location: Conducted over the Arabian Sea, approximately 350-400 km southwest of Karachi.

**Aim of the Exercise:**

- Strengthen trilateral defence cooperation.
- Enhance combat skills and interoperability among air forces.

**62. Ans: (c)**

Cameroon shares borders with Nigeria, Chad, Central African Republic, Republic of the Congo, Gabon, and Equatorial Guinea, as well as the Atlantic Ocean. Angola is not a neighboring country.



**63. Ans: (a)**

Statement-I is incorrect as the High Courts of respective jurisdictions are responsible for implementing the project.

Statement-II is correct as Phase I (2007-2015) involved establishing Case Information Systems, basic computerization, and internet connectivity.

Statement-III is incorrect because video conferencing for hospitals and jails is part of Phase III, not Phase II.

**About eCourts Project:**

- Origin: Conceptualized in 2005 by the eCommittee, Supreme Court of India.
- Launched: 2007, under the Department of Justice, Ministry of Law and Justice.

**Aim:**

- To digitize the judiciary for enhanced judicial productivity.
- To ensure cost-effective, predictable, and reliable access to justice.
- To automate processes and enable transparency for all stakeholders.
- Implementing Agency: High Courts of respective jurisdictions.

**Phases:**

- Phase I (2007-2015): Basic computerization, internet connectivity, and establishment of Case Information Systems.
- Phase II (2015-2023): ICT enablement, video conferencing facilities, citizen-centric services

like e-payment gateways and certified online documents.

- Phase III (2023-2027): Focus on digital and paperless courts, digitization of legacy records, expansion of video conferencing to hospitals and jails.

**64. Ans: (c)**

Statement-I is correct as Salar de Uyuni is part of the lithium triangle, a region rich in lithium resources. However, Statement-II is incorrect since Bolivia lags in lithium extraction technologies compared to Chile and Argentina. Despite its vast reserves, limited development infrastructure restricts Bolivia's contribution to global lithium supply.

The Salar de Uyuni, the world's largest salt flat in Bolivia, plays a pivotal role in the global energy transition due to its immense lithium reserves.

This natural wonder, located in the heart of the 'lithium triangle' (Chile, Argentina, and Bolivia), highlights the strategic importance of salt flats in modern energy resources.

**About Salar de Uyuni:**

- What It Is: Salar de Uyuni is the world's largest salt flat, spanning 10,582 square kilometers (4,086 sq mi). It is a unique natural landscape formed by salt crusts over a rich brine pool containing significant lithium deposits.
- Location: Situated in the Daniel Campos Province of Potosí, southwest Bolivia, near the crest of the Andes, at an elevation of 3,656 m (11,995 ft) above sea level.

**Other Major Salt Flat Regions:**

- Chile: Salar de Atacama.
- Argentina: Salinas Grandes.
- USA: Bonneville Salt Flats, Utah.

**65. Ans: (b)**

The World Chess Championship is organized by FIDE (Fédération Internationale des Échecs), which assumed responsibility in 1948. FIDE is the governing body for international chess competitions.

**About World Chess Championship 2024:**

- Held At: Singapore, from November 25 to December 12, 2024.
- Played Between: Reigning champion Ding Liren (China) and challenger D. Gukesh (India).
- Gukesh is also only the 18th world champion in history, which dates back to 1886.
- History: Established in 1886, the World Chess Championship began as a contest between Wilhelm Steinitz and Johannes Zukertort.
- Steinitz emerged as the first official World Chess Champion.
- Governing Body: The event is now organized by FIDE (Fédération Internationale des Échecs), which assumed responsibility in 1948.

### Procedure in Tournament:

- The championship consisted of 14 classical games with tiebreaks scheduled if necessary.
- Gukesh won the match 7½–6½ after 14 games.

### Indian Winners So Far:

- Viswanathan Anand (5-time World Chess Champion).
- Gukesh (2024 World Chess Champion).

### 66. Ans: (d)

Statement-I is incorrect as salt flats are formed by the evaporation of prehistoric lakes, not volcanic ash.

Statement-II is incorrect because salt flats do not expand after rainfall; instead, they reflect the sky due to their flat surfaces.

Statement-III is incorrect as salt flats typically form in arid or semi-arid regions with limited rainfall and groundwater.

### Formation of Salt Flats:

- Originates from prehistoric lakes that existed around 40,000 years ago but evaporated over time.
- Formed by the deposition of minerals, especially salts, left behind as water evaporates.
- Ridges and flat patterns result from varying depths of salty groundwater in the soil.

### 67. Ans: (b)

Statement 1 is incorrect because manganese is essential in trace amounts but becomes toxic at higher concentrations.

Statements 2 and 3 are correct as natural erosion and industrial effluents are key contributors to manganese contamination.

Statement 4 is correct as chronic exposure is associated with neurological and carcinogenic effects.

### What is Manganese?

- Manganese is a naturally occurring metal found in oxides, carbonates, and silicates. It is essential in trace amounts but toxic in higher concentrations.

### WHO Limits for Manganese in Water

- The permissible limit for manganese in drinking water is 100 µg/L, as recommended by WHO.

### Reasons for Manganese in water:

- Geogenic Sources: Naturally occurring manganese deposits in sedimentary and igneous rocks leach into groundwater.
- Industrial Pollution: Discharge from mining, steel, and battery industries contaminates water sources.
- Agricultural Runoff: Excessive use of fertilizers and pesticides introduces manganese into the water table.
- Erosion and Sedimentation: Natural soil erosion and sedimentation contribute to elevated manganese levels in water.

### Health Impacts of Excess Manganese in Water:

- Neurological Disorders: Overexposure can cause

weakness, clumsiness, emotional instability, and difficulty in movement.

- Carcinogenesis: Chronic exposure is linked to cancer, with the study indicating higher contamination levels in advanced cancer stages.

### 68. Ans: (d)

Statement 1 is correct as the policy necessitates amendments to Articles 82A, 83(2), and 327, among others. Statement 2 is correct because the Ramnath Kovind Committee, formed in 2023, submitted an extensive report on ONOE. Statement 3 is incorrect as the policy focuses on synchronizing Lok Sabha and state assembly elections, not local body elections.

### About One Nation, One Election:

#### What It Is:

A policy to synchronize elections for the Lok Sabha and state legislative assemblies to reduce the frequency of elections, streamline governance, and minimize electoral expenditure.

#### Articles Involved:

Proposed amendments to Articles 82A, 83(2), and 327, including the addition of Article 324A, to facilitate synchronized elections.

#### Ramnath Kovind Committee:

Formed in September 2023, the committee evaluated the feasibility of ONOE and submitted a detailed 18,626-page report after extensive stakeholder consultations.

### 69. Ans: (a)

Statements 1, 2, and 3 are correct as agricultural runoff, mining, and geogenic leaching are well-documented sources of manganese contamination.

Statement 4 is incorrect because domestic sewage is not a significant source of manganese pollution.

### 70. Ans: (b)

The National Judicial Data Grid (NJDG) offers real-time case statistics, helping stakeholders monitor pending and disposed cases. This tool enhances transparency and accountability in the judicial process. While NJDG is part of the eCourts project, its primary purpose is statistical analysis, not direct public services like certified copies or e-filing.

### 71. Ans: (a)

Statement 1 is incorrect because seating is allocated based on party strength, not individual seniority. Statement 3 is incorrect as opposition members are placed on the left side, not necessarily in the last rows.

### About Seating Arrangement in Lok Sabha:

#### What It Is:

- The systematic allocation of seats for Members of Parliament (MPs) in the Lok Sabha chamber. It reflects the party's strength and promotes organized conduct of proceedings.

### Law Governing:

- Rule 4 of the Rules of Procedure and Conduct of Business in Lok Sabha.
- Direction 122(1)(a) under Directions by the Speaker provides the framework for seat allocation.

### Who Does It:

- The Speaker of the Lok Sabha determines the seating arrangement.

### Procedure:

- Seats are allocated based on the proportionate strength of parties.
- Ruling party members sit on the right side of the Speaker; opposition parties sit on the left.
- Smaller parties (fewer than 5 members) and independents are placed at the Speaker's discretion.
- The following formula is applied to decide allotment of seats for parties that have a strength of 5 or more members in the house.
- Parties submit recommendations, and the Speaker finalizes the individual placements.

$$\text{Number of Seats in each Row for a Party/Group} = \frac{\text{Strength of the Party or Group} \times \text{Seats available in that row}}{\text{Total Seats in the Chamber}}$$

### 72. Ans: (d)

Due to their neutral buoyancy, nanobubbles remain suspended in water for months, allowing extended interaction and efficient gas transfer, which enhances water purification.

### What is Nano Bubble Technology?

- Definition: It uses nanobubbles, which are ultra-tiny bubbles less than 200 nanometers in diameter, to purify water.
- Innovative Nature: Nanobubbles are neutrally buoyant and remain suspended in water for months, enabling efficient gas transfer and surface reactions.

### Properties of Nanobubbles:

- Size: 70-120 nanometers, 2500 times smaller than a grain of salt.
- Surface Charge: Strong negative charge prevents coalescing and supports microbiological stimulation.
- Neutral Buoyancy: Ensures prolonged interaction with water for effective cleaning.
- Hydrophobic Nature: Repels water, helping to lift organic and inorganic impurities.

### 73. Ans: (b)

- Statement 1: Incorrect. The FSSAI classification removes the mandatory requirement for BIS certification, focusing on inspections and audits instead.
- Statement 2: Correct. The classification simplifies processes by replacing the dual certification requirement.
- Statement 3: Correct. Dairy products and fortified foods are included in the high-risk category.

The Food Safety and Standards Authority of India (FSSAI) has recently categorized packaged drinking water and mineral water as "high-risk foods," intensifying regulatory measures to ensure safety and quality.

- This decision follows the removal of mandatory BIS certification, focusing instead on regular inspections and audits under the FSSAI's purview.

### About High-Risk Food Classification:

- What it is: High-risk foods are those requiring stringent safety protocols due to their potential to impact public health if mishandled.
- Authority: Governed by the Food Safety and Standards Authority of India (FSSAI).
- Law Governing: Regulated under the Food Safety and Standards Act, 2006.

### Why Classification:

- To ensure enhanced consumer safety through rigorous testing and monitoring.
- To replace the dual certification process, streamlining regulatory requirements.

### Other Products Under High-Risk Category:

- Dairy products and analogues.
- Meat, poultry, fish, and seafood.
- Eggs and egg products.
- Prepared and fortified foods (e.g., fortified rice kernels).
- Specialised food products for nutritional uses.

### 74. Ans: (c)

Statement 1: Incorrect. A pardon relieves penalties but does not erase the criminal record.

Statement 2: Incorrect. The President exercises clemency independently, without needing Congressional approval.

Statement 3: Correct. The U.S. Supreme Court ruling in *Burdick vs. U.S.* (1915) clarified that accepting a pardon implies an admission of guilt.

### 75. Ans: (c)

Permanent migration is one of the criteria for job card deletion under MGNREGA. Other criteria include duplicate job cards, fake applicants, reclassification of the area, or explicit disinterest in continuing under MGNREGA. Thus, Statement-II is incorrect as it inaccurately restricts deletions to a single criterion.

### About MNREGA Job Card Deletion:

#### Law Governing:

- Governed under Schedule II, Paragraph 23 of the MGNREGA Act, 2005.
- Supported by Master Circulars issued by the Ministry of Rural Development (MoRD).

#### Authority Responsible:

- Deletions are primarily handled by State Governments.
- The Program Officer verifies and oversees the deletion process.

### Criteria for Deletion:

- Permanent Migration: When households relocate permanently outside the Gram Panchayat.
- Duplicate Job Cards: If a card is found to have been issued based on duplicate or forged records.
- Fake Applicants: If job cards were issued fraudulently.
- Reclassification of Area: Job cards are deleted if a Gram Panchayat is upgraded to a Municipal Corporation.
- Not Willing to Work: Workers explicitly expressing disinterest in continuing under MGNREGA.

### Procedure:

- Verification: All deletions require independent verification of reasons by the Program Officer.
- Opportunity to Be Heard: Workers facing deletion must be allowed to present their case before two independent witnesses.
- Documentation: Reasons for deletion must be documented and updated in the MGNREGA Management Information System (MIS).
- Transparency: Deletion reports must be shared with the Gram Sabha or Ward Sabha.

### 76. Ans: (c)

The DMZ is a heavily fortified buffer zone between North and South Korea, established after the Korean War. It is approximately 250 kilometers long and separates the two nations militarily and politically.

### 77. Ans: (a)

The Proba-3 mission aims to demonstrate precise formation flying, enabling advanced solar corona studies through artificial solar eclipses.

### 78. Ans: (d)

Extrachromosomal DNA (ecDNA) refers to circular fragments of genetic material that detach from chromosomes and remain within the nucleus. These are distinct from linear chromosomal DNA or viral DNA integrated into the host genome.

### About Extrachromosomal DNA (ecDNA):

#### What is ecDNA?

- Definition: ecDNA is a circular fragment of genetic material that breaks away from chromosomes and floats freely in the cell nucleus.
- Formation: Created by DNA damage, chromosomal rearrangements, or errors during cell replication.

#### Where is ecDNA Found?

- Commonly present in cancer cells.
- Detected in 17% of tumor samples, with higher prevalence in liposarcomas, brain tumors, and breast cancers.

#### Key Features of ecDNA

- Carries Oncogenes: Contains multiple copies of cancer-causing genes.
- Dynamic Interactions: Moves freely in the

nucleus, forming concentrated hubs that amplify oncogene expression.

- Violates Mendel's Third Law: ecDNA clusters are inherited together, preserving advantageous genetic combinations.

### 79. Ans: (b)

Statement 1 is incorrect.

### About Proba-3 Mission:

#### Agency Involved:

- Led by the European Space Agency (ESA).
- Launch facilitated by ISRO under its commercial arm, NewSpace India Ltd (NSIL).

#### Full Form:

- Proba-3: "Project for Onboard Autonomy."

#### Aim:

- To demonstrate high-precision formation flying in space.
- To study the Sun's corona and its influence on space weather.

#### Features:

- Two Spacecraft: Coronagraph and Occulter designed for tandem operation.
- Formation Flying: Precision down to the millimeter to create artificial solar eclipses.
- Scientific Goals: Advanced study of the solar corona and its impact on Earth.
- Solar Eclipses on Demand: Allowing extended observation periods for solar phenomena.

#### India's Role:

- Providing the PSLV-XL launch vehicle, renowned for reliability and payload capacity.
- Managing satellite deployment and mission execution.
- Enhancing expertise in solar science following ISRO's Aditya-L1 mission.

### 80. Ans: (b)

- Statement 1: Correct. Presidential pardons apply exclusively to federal crimes, not state crimes.
- Statement 2: Incorrect. A pardon does not protect the recipient from civil lawsuits related to the crime.
- Statement 3: Correct. The Constitution explicitly excludes impeachment from the President's pardon power.

### About US President's Pardon Procedure:

- Constitutional Basis: Article II, Section 2, Clause 1 of the U.S. Constitution grants the President power to pardon federal offenses, except impeachment.

#### Scope:

- Applies to federal crimes only.
- Does not erase the criminal record but relieves penalties and restores specific rights.
- Discretionary Nature: The President exercises clemency independently, without needing Congressional approval.

### Conditions:

- Acceptance of a pardon implies an admission of guilt (Burdick vs. U.S., 1915).
- Does not shield against civil lawsuits or related investigations.

### 81. Ans: (c)

Indian Railways has launched the AI-powered Linen Inspection and Sorting Assistant (LISA) system to enhance the quality and hygiene of linens provided to passengers in air-conditioned coaches.

#### About LISA System:

- What it is: LISA is an AI-based automation system designed for inspecting and sorting linens like bed sheets and towels used in Indian Railways' air-conditioned coaches.
- Origin: Developed by the Pune Division of Indian Railways, deployed at the Ghorpadi Integrated Coaching Complex (GICC).
- Ministry: Ministry of Railways.
- Aim: To ensure 100% quality inspection, streamline operations, reduce manual labor, and elevate passenger comfort and hygiene.

#### Features:

- 100% Quality Inspection: Detects defects, stains, or damages and segregates substandard linens.
- AI-Based Technology: Uses advanced algorithms for precise and reliable inspection results.
- Efficiency: Processes large volumes of linens quickly, enhancing operational efficiency.
- Enhanced Passenger Experience: Contributes to cleaner, more hygienic, and comfortable travel.
- Automation: Reduces dependency on manual labor, transforming linen management processes.

### 82. Ans: (a)

- Statement 1 is correct: The programme aims to increase horticulture yield and promote disease-free and climate-resilient plant varieties.
- Statement 2 is incorrect: The programme does not focus on genetically modified seeds but on advanced diagnostic and tissue culture technologies for disease control.
- Statement 3 is incorrect: It is implemented under the Mission for Integrated Development of Horticulture (MIDH), not Rashtriya Krishi Vikas Yojana.

#### About Atmanirbhar Clean Plant Programme:

- Origin: Announced in Budget 2023-24 with an allocation of 2,200 crore for seven years until 2030.
- Ministry: Ministry of Agriculture and Farmers Welfare.
- Atmanirbhar Clean Plant Programme is implemented under the Mission for Integrated Development of Horticulture (MIDH).

#### Aim:

- Increase horticulture yield.
- Promote climate-resilient and disease-free plant varieties.
- Enhance productivity and profitability for farmers.

#### Features:

- Establishment of 10 world-class Clean Plant Centres (CPCs) for fruits like apple, walnut, almond, mango, and pomegranate.
- The centres will be fully funded by the Centre
- Advanced diagnostic labs and tissue culture technologies for disease control.
- Affordable access to high-quality planting material, including a robust certification and traceability system.
- Active engagement with women farmers and region-specific technologies.

#### Implementing Agency:

- Anchored by the National Horticulture Board (NHB) in partnership with the Indian Council of Agricultural Research (ICAR).
- Operates in Public-Private Partnership (PPP) mode with research organizations, agriculture universities, and private sector partners.

### 83. Ans: (a)

The Euphrates River is a major water resource in Syria, flowing through key regions like Raqqa and Dayr az Zawr. It is part of the Tigris-Euphrates river system and plays a critical role in agriculture and hydroelectric power in the region.



### 84. Ans: (d)

- Statement 1 is correct: Stable institutions ensuring democracy, rule of law, and respect for human rights are prerequisites for EU membership.
- Statement 2 is incorrect: While adopting the euro is an EU goal, not all members have adopted it (e.g., Denmark and Sweden).

- Statement 3 is correct: Prospective members must demonstrate the capacity to adopt EU laws and regulations.

#### About European Union (EU):

- Origin: Established to ensure peace and economic cooperation post-World War II.
- Key Treaty: Treaty of Maastricht (1993) formalized the EU.
- Members: 27 countries, namely Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

#### Criteria to Join the EU:

- European geography
- Respect for democratic values
- Stable institutions ensuring rule of law
- Functioning market economy
- Capacity to adopt EU laws
- Commitment to EU integration goals

#### Recent Developments:

- 2013: Croatia became the latest member.
- 2020: The UK left the EU (Brexit).

d) Statement-I is incorrect but Statement-II is correct

#### 85. Ans: (b)

- Statement 1 is correct: Super volcanoes form calderas, large depressions in the Earth's crust.
- Statement 2 is incorrect: Super volcanoes are characterized by 'infrequent but catastrophic eruptions', not frequent, low-intensity ones.
- Statement 3 is correct: The vast amounts of material ejected during a super volcano eruption can lead to global climatic changes, such as volcanic winters caused by ash blocking sunlight.

#### 86. Ans: (b)

Both statements are correct, but Statement-II is not the explanation for Statement-I.

The project uses Nature-Based Solutions for ecological restoration and relies on GIS tools for precise monitoring and planning. These are independent but complementary strategies for achieving sustainable restoration.

#### About Aravalli Green Wall Project:

##### Origin:

- Inspired by Africa's Great Green Wall initiative, which spans from Senegal to Djibouti.
- Conceptualized to combat desertification spreading from the Thar Desert to northern India.
- States Covered: Haryana, Rajasthan, Gujarat, and Delhi.

##### Aim:

- Restoration of 1.15 million hectares of degraded land by 2027.
- Mitigation of soil degradation, erosion, and

drought impacts.

- Rejuvenation of 75 water bodies in the initial phase.

#### Features:

- Creation of a 1,400 km long and 5 km wide green belt along the Aravalli Range.
- Integration of indigenous afforestation, biodiversity conservation, and advanced water management.
- Use of GIS tools and Nature-Based Solutions to stabilize ecosystems.
- Community engagement for sustainable restoration and green employment opportunities.

#### 87. Ans: (c)

##### About Ajmer Sharif Dargah:

- Who Built It: The mausoleum's earliest structure was built in the 15th century by the Khalji rulers of Malwa. Further expansions were carried out by Mughal emperors like Akbar and Humayun.
- Location: Situated in Ajmer, Rajasthan, at the heart of the city's historical and spiritual landscape.

#### Features:

- Buland Darwaza: Constructed by Sultan Mahmud Khan Khalji, showcasing a mix of Hindu and Islamic architectural styles.
- White Marble Dome: Added during Humayun's reign in 1532.
- Akbari Masjid: Built by Akbar in the 1570s, enhancing the shrine's prominence.

#### Historical Significance:

- The dargah became a spiritual refuge for people of all faiths under Khwaja Moinuddin Chishti's philosophy of inclusivity.
- The site reflects Mughal patronage and syncretic cultural heritage.

#### 88. Ans: (d)

- Statement 1 is incorrect: Green steel is not exclusively produced using green hydrogen. It can also be made using Electric Arc Furnaces (EAF) powered by renewable energy or direct electrolysis.
- Statement 2 is correct: Using ferrous scrap, including dismantled ships' scrap, reduces carbon emissions in the production of green steel.
- Statement 3 is correct: Direct electrolysis in green steel production is a process similar to that used in aluminium production, utilizing renewable electricity.

#### About Green Steel:

##### What It Is:

- Green steel refers to steel produced using renewable energy and sustainable processes, minimizing carbon emissions.

#### Various Methods in Production:

- Electric Arc Furnaces (EAF): Use renewable electricity to melt scrap metal, significantly reducing CO2 emissions.

- **Green Hydrogen-Based Reduction:** Replaces coal with hydrogen derived from renewable sources to process iron ore.
- **Direct Electrolysis:** A method similar to aluminium production, using renewable electricity to extract iron from ore (e.g., Boston Metal's innovation).
- **Dismantled ships scrap:** Green steel is also made using ferrous scrap mix in the raw material chain to ensure a proportionate reduction in carbon dioxide emissions.

#### 89. Ans: (b)

- Statement 1 is correct: India has the highest number of snakebite incidents globally, with over 58,000 deaths annually.
- Statement 2 is incorrect: Snakebite cases are more prevalent in rural regions, not urban areas.
- Statement 3 is correct: NAPSE targets a 50% reduction in snakebite deaths and disabilities by 2030.
- Statement 4 is incorrect: Anti-venom treatment availability remains uneven across rural India.

The Government of India has urged States and Union Territories to classify snakebite cases and deaths as “notifiable diseases” to enhance surveillance and improve public health interventions.

- This move aligns with the National Action Plan for Prevention and Control of Snakebite Envenoming (NAPSE), which aims to reduce snakebite-related deaths and disabilities by 50% by 2030.

#### About Snake Bites:

- **Epidemiology:** India records the highest number of snakebite incidents globally, with over 58,000 deaths annually (WHO estimate).
- **High-Risk Areas:** Rural regions with agricultural activity and forested areas report the majority of cases.

#### 90. Ans: (a)

- Statement 1 is incorrect: The convention addresses both ship recycling safety and worker health protections.
- Statement 2 is correct: Compliance involves both shipbreaking yards and shipowners, ensuring sustainable recycling practices.
- Statement 3 is correct: Its standards complement the Basel Convention, which regulates the transboundary movement of hazardous waste.

#### Hong Kong Convention:

- **What It Is:** The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships was adopted in June 2009 to regulate ship dismantling practices globally.
- **Aim:** Ensure safe, environmentally sound ship recycling and protect worker health.
- **Timeline:** Takes effect globally in June 2025 after ratification.

- **India's Status:** Ratified by India; 50% of Alang yards are compliant.
- **Limitations:** Allows the “beaching” method and focuses on safety standards, not eliminating harmful practices.

#### 91. Ans: (b)

Statement 1 is incorrect as the block overlaps with the Arittapatti Biodiversity Heritage Site.

Statement 2 is correct because tungsten is categorized as a critical and strategic mineral.

Statement 3 is also correct, as mining in such areas requires environmental and forest clearances.

Tamil Nadu's Nayakkarpatti Tungsten Block, auctioned to Hindustan Zinc Ltd., faces controversy over its overlap with the Arittapatti Biodiversity Heritage Site, raising ecological and cultural concerns.

#### Nayakkarpatti Tungsten Block:

- **Location:** Spread across 20.16 sq. km in Tamil Nadu, covering villages like Kavattayampatty, Ettimangalam, and Arittapatti.
- **Critical Mineral:** Tungsten is categorized as a critical and strategic mineral, essential for national development.
- **Clearances Required:** Mining can only proceed after obtaining forest and environmental clearances, excluding sensitive areas like biodiversity sites.

#### 92. Ans: (c)

Lake Victoria, Africa's largest freshwater lake, is shared between Uganda, Kenya, and Tanzania. Its location makes it a key feature in the East African Great Lakes region.

- Option a is incorrect as Rwanda and DR Congo do not share Lake Victoria.
- Option c and d are incorrect as South Sudan does not border the lake.
- The lake plays a vital role in biodiversity, fishing, and regional economies.



**93. Ans: (d)**

The Anda of the Sanchi Stupa symbolizes the universe and cosmic harmony, representing the oneness of all existence.

- Option a is incorrect because Buddha's teachings are represented by symbols like wheels.
- Option c is incorrect as relics are stored in the Medhi.
- Option d refers to the Harmika.
- The Anda is central to the stupa's architectural and spiritual design, reflecting Buddhist cosmology.

**94. Ans: (c)**

The Accelerated Degree Programme (ADP) allows high-achieving students to graduate early by earning extra credits. For instance, a three-year degree can be completed in five semesters, and a four-year degree in six or seven semesters.

- Option a is incorrect as transferring credits is not the core feature of ADP.
- Option b refers to the Extended Degree Programme (EDP).
- Option d is incorrect because ADP provides flexibility in graduation timelines.

**95. Ans: (b)**

Statement 1 is incorrect: Asiatic Lions are listed as "Endangered" on the IUCN Red List, not "Vulnerable."

Statement 2 is correct: They are protected under Appendix I of CITES and Schedule I of the Wildlife Protection Act, ensuring the highest conservation status.

Statement 3 is correct: Historically, Asiatic Lions ranged from southwest Asia to northern India.

**About Asiatic Lion (*Panthera leo persica*):**

- **Distribution:**
  - ♦ Historically ranged from southwest Asia to northern India.
  - ♦ Currently found only in Gir National Park and surrounding areas in Gujarat, India.
- **Protection Status:**
  - ♦ IUCN Red List: Endangered
  - ♦ CITES: Appendix I
  - ♦ Wildlife Protection Act (India): Schedule I
- **Physical Characteristics:**
  - ♦ Slightly smaller than African lions; males weigh 160–190 kg, females 110–120 kg.
  - ♦ Distinct fold of skin along the belly, less developed mane, and visible ears in males.
  - ♦ Fur varies from tawny to sandy-grey with a silvery sheen in some lights.
  - ♦ Larger tail tuft and less inflated auditory bullae compared to African lions.
- **Habitat and Behavior:**
  - ♦ Adapted to dry deciduous forests and savannas.
  - ♦ Preys on deer, antelope, and livestock; scavenges on carrion.

- ♦ Coexists with humans in Gujarat through cultural tolerance and conservation measures.

**96. Ans: (b)**

**About Notre-Dame Cathedral:**

- **Location:** Situated on an island in the Seine River, Paris, France.
- **Architecture:** An iconic example of French Gothic style, featuring rib vaults, flying buttresses, stained-glass windows, and carved gargoyles.
- **Historical Significance:**
  - ♦ Construction began in 1160 and completed by 1260.
  - ♦ Hosted Napoleon I's coronation as Emperor in 1804.
  - ♦ Holds the Holy Crown of Thorns and relics from the crucifixion of Jesus.
- **Cultural Importance:** Setting of Victor Hugo's *The Hunchback of Notre-Dame* and celebrated worldwide in literature and film.

**97. Ans: (a)**

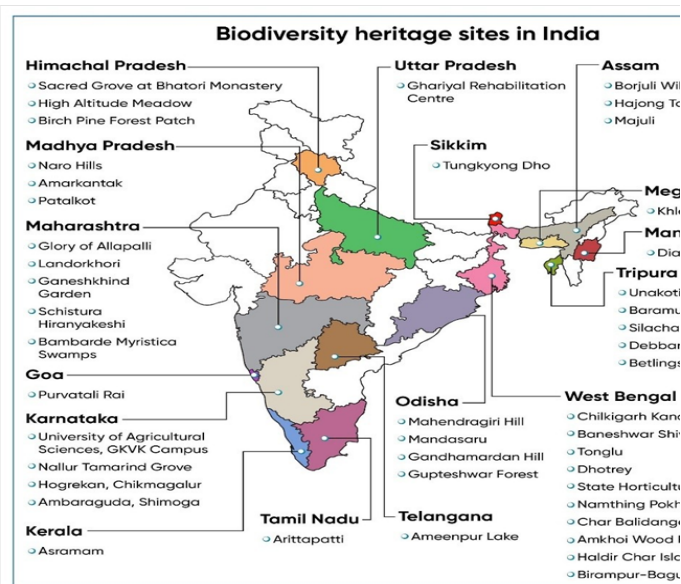
Statement 1 is correct: The Sambhal Mosque was built during Babur's reign (1526–1530) by his general Mir Hindu Beg. It stands as an early example of Mughal architectural patronage in India.

Statement 2 is incorrect: The mosque's design includes elements such as a square mihrab hall with a dome and surrounding arches, which are consistent with other Mughal and Tughlaq-era structures. Its construction using stone masonry and plaster is similar to the Budaun mosque.

The mosque also holds historical and cultural significance, with debates surrounding its origins and its incorporation of elements possibly linked to earlier structures. It reflects the transition and integration of architectural styles during the early Mughal period.

**98. Ans: (c)**

Tungkong Dho is located in Sikkim. Majuli is in Assam, Nallur Tamarind Grove is in Karnataka, and Mandasaru is in Odisha.



**99. Ans: (d)**

- Yellow alert does not call for immediate evacuation but warns of potential disruptions and advises being aware.
- Green alert signals that all is well and no action is required.
- Orange alert highlights the likelihood of extremely bad weather with significant disruptions, requiring preparedness, not just caution.

The IMD's color-coded system is designed to help authorities and the public take appropriate measures, with increasing levels of urgency from Green to Red.

**100. Ans: (a)**

Statement 1 is incorrect: The Sanchi Stupa was commissioned by Emperor Ashoka during the 3rd century BCE and expanded later by the Shungas and Satavahanas.

Statement 2 is incorrect: Inscriptions are found in Brahmi and Kharosthi, not Gupta scripts.

Statement 3 is correct: The paradakshinapatha is a pathway for devotees to perform circumambulation as a form of devotion.

**About Sanchi Stupa:**

- Historical Significance: Commissioned by Emperor Ashoka in the 3rd century BCE and later

expanded by Shunga and Satavahana rulers.

• **Architectural Features:**

- ♦ Large hemispherical dome (Anda) symbolizing the universe.
- ♦ Chatras (umbrella structures) on top, signifying royalty and divine protection.
- ♦ Harmika (balcony) atop the dome representing the abode of the gods.
- ♦ Medhi stores relics and serves as the base of the stupa.
- ♦ Toranas: Four elaborately carved gates depicting Buddha's life events and Jataka tales, pointing to four cardinal directions.
- ♦ Vedita: Railings enclosing the stupa for sacred protection.
- ♦ Paradakshinapatha: Pathways for circumambulation by devotees.
- Symbolism: Early Buddhist aniconism; Buddha represented through symbols like footprints, wheels, or empty thrones rather than direct depictions.
- Inscriptions: Includes Ashokan Lion Capital and inscriptions in Brahmi and Kharosthi scripts.
- UNESCO Status: Declared a World Heritage Site in 1989.

