



CA-VA REFLECTIONS

CSE PRELIMS 2025

GENERAL STUDIES

(Paper-I) | Set-B

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1. Consider the following types of vehicles:

- I. Full battery electric vehicles
- II. Hydrogen fuel cell vehicles
- III. Fuel cell electric hybrid vehicles

How many of the above are considered as alternative powertrain vehicles?

- (a) Only one
- (b) Only two
- (c) All the three
- (d) None

CA-VA PMT-3

Q10. Consider the following statements regarding hydrogen fuel cells:

1. Hydrogen fuel cells produce electricity through an electrochemical reaction with water and heat as the only byproducts.
2. They can produce electricity in the form of both Alternating Current and Direct Current.
3. They require constant recharging like conventional batteries.

How many of the above statements is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

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Electric Vehicles (EVs)

Electric Vehicles (EVs) use electric motors powered by batteries or fuel cells instead of internal combustion engines (ICEs). They reduce carbon emissions, fuel dependency, and noise pollution, making them a crucial part of sustainable transportation.

Components of an Electric Vehicle

Component	Function	Common Types/Materials
Electric Motor	Converts electrical energy into mechanical energy to drive the wheels.	AC Induction Motor
Battery Pack	Stores electrical energy and supplies power to the motor and other components.	Lithium-ion, Solid-state, Nickel-metal hydride (NiMH)
Power Electronics	Controls power flow between the battery and motor, optimizing efficiency.	Inverter, Converter
Inverter	Converts DC power from the battery into AC power for the motor.	
Regenerative Braking System	Converts kinetic energy from braking into electrical energy to recharge the battery.	Dynamic braking, Electro-mechanical braking
Thermal Management System	Regulates battery and motor temperature to maintain efficiency and safety.	Liquid cooling, Air cooling, Phase-change materials

Types of Electric Vehicles (EVs)

Type	Description
Battery Electric Vehicle (BEV)	Fully electric, runs on a battery pack with no fuel engine.
Plug-in Hybrid Electric Vehicle (PHEV)	Uses both an electric motor and an ICE, with a plug-in charging option.
Hybrid Electric Vehicle (HEV)	Has an ICE and an electric motor, but cannot be charged externally; recharges via regenerative braking.
Fuel Cell Electric Vehicle (FCEV)	Uses hydrogen fuel cells to generate electricity and power the motor.
Extended Range Electric Vehicle (EREV)	Runs on electricity with a small ICE as a generator to extend the range.

3. In the context of electric vehicle batteries, consider the following elements:

- I. Cobalt
- II. Graphite
- III. Lithium
- IV. Nickel

How many of the above usually make up battery cathodes?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All the four

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Hydrogen Fuel Cell

A hydrogen fuel cell is an electrochemical device that converts hydrogen (H_2) and oxygen (O_2) into electricity, water, and heat, with zero carbon emissions.

Components

Component	Material	Function
Anode (Negative Electrode)	Platinum or platinum-based catalyst	Facilitates hydrogen oxidation, splitting H_2 into protons (H^+) and electrons (e^-).
Cathode (Positive Electrode)	Platinum or nickel-based catalyst	Facilitates oxygen reduction reaction (ORR), combining O_2 , H^+ , and e^- to form water (H_2O).

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Electrolyte	Proton Exchange Membrane (PEM) made of Nafion	Allows protons (H^+) to pass from anode to cathode while blocking electrons.
Separator	Porous polymer membrane	Prevents direct contact between anode and cathode, preventing short circuits.
Bipolar Plates	Graphite, metal, or composite material	Distributes gases (H_2 , O_2) and collects generated electricity.
Gas Diffusion Layer (GDL)	Carbon fiber composite	Ensures uniform gas distribution and efficient reaction.
Current Collectors	Metal grids	Transfers electrons to external circuit for power output.

4. Consider the following:
I. Cigarette butts
II. Eyeglass lenses
III. Car tyres
How many of them contain plastic?
(a) Only one
(b) Only two
(c) All the three
(d) None

FROM HANDOUTS

Plastic pollution

Categories of Plastics

Code	Plastic Type	Properties	Common Uses
1	PET (Polyethylene Terephthalate)	<ul style="list-style-type: none"> - Transparent, lightweight, and shatterproof. - Good barrier to gases and moisture. - Recyclable but degrades after repeated use. 	Water bottles, food packaging, textiles.
2	HDPE (High-Density Polyethylene)	<ul style="list-style-type: none"> - High strength-to-density ratio, chemical-resistant, and opaque. - Resistant to UV radiation and weathering. - Easily recyclable. 	Milk jugs, detergent bottles, pipes.
3	PVC (Polyvinyl Chloride)	<ul style="list-style-type: none"> - Durable, rigid or flexible, and resistant to chemicals and 	Pipes, cable insulation, flooring.

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		weathering. <ul style="list-style-type: none"> - Contains chlorine, making it difficult to recycle and potentially harmful when burned. 	
4	LDPE (Low-Density Polyethylene)	<ul style="list-style-type: none"> - Flexible, lightweight, and resistant to moisture. - Less rigid and weaker than HDPE. - Recyclable but less commonly recycled. 	Plastic bags, squeeze bottles, wraps.
5	PP (Polypropylene)	<ul style="list-style-type: none"> - Tough, heat-resistant, and chemical-resistant. - Lightweight and has a high melting point. - Easily recyclable. 	Food containers, automotive parts, ropes.
6	PS (Polystyrene)	<ul style="list-style-type: none"> - Lightweight, rigid or foamed (as expanded polystyrene or EPS). - Brittle and poor barrier to gases. - Difficult to recycle and often ends up in landfills. 	Disposable cutlery, packaging, insulation.
7	Other (Miscellaneous)	<ul style="list-style-type: none"> - Includes a wide range of plastics like polycarbonate (PC), polylactic acid (PLA), and composites. - Properties vary widely depending on the specific plastic. 	CDs, baby bottles, bioplastics.

5. Consider the following substances:

- I. Ethanol
- II. Nitroglycerine
- III. Urea

Coal gasification technology can be used in the production of how many of them?

- (a) Only one
- (b) Only two
- (c) All the three
- (d) None

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Coal gasification - discussed its production method and main products in class.

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Diesel vs. Petrol Engines:

Aspect	Diesel Engines	Petrol Engines
CO ₂ Emissions	Higher fuel efficiency → Lower CO ₂ per km	Lower fuel efficiency → Higher CO ₂ per unit fuel
NO _x Emissions	High NO _x due to higher combustion pressure & temperature	Lower NO _x due to lower combustion temperature
Particulate Matter (PM)	High PM due to incomplete combustion	Low PM due to better air-fuel mixing
HC & CO Emissions	Lower HC & CO due to lean combustion	Higher HC & CO due to incomplete combustion
SO ₂ Emissions	Varies with sulfur content; low-sulfur diesel reduces SO ₂	Lower SO ₂ as petrol generally has less sulfur

Conversion of Coal to Other Forms and Fuels

Process	Main Product	Process Description	Applications
Coal Gasification	Syngas (CO + H ₂)	Partial oxidation of coal with oxygen, steam, or air at ~1000°C in a gasifier, producing syngas (CO + H ₂).	Syngas is used in power generation, hydrogen production, and synthetic fuels. Coal-to-Gas (CTG) converts syngas into Substitute Natural Gas (SNG).

Types of Hydrogen Based on Production

Type	Production Method	Emission Impact
Grey Hydrogen	From natural gas (methane) using steam reforming.	High CO ₂ emissions.
Blue Hydrogen	Grey hydrogen with Carbon Capture & Storage (CCS).	Reduced CO ₂ emissions.
Green Hydrogen	Electrolysis of water using renewable energy (solar, wind, hydro).	Zero emissions.
Pink Hydrogen	Electrolysis using nuclear energy.	Zero emissions.
Brown/Black Hydrogen	Produced from coal gasification.	Highest CO ₂ emissions.

Hydrogen Production Technologies

Method	Process	Challenges
Electrolysis	Splitting water (H ₂ O → H ₂ + O ₂) using electricity.	High cost, requires green energy.
Steam Methane Reforming (SMR)	CH ₄ + H ₂ O → CO + H ₂	Emits CO ₂ unless CCS is used.
Coal Gasification	Coal + O ₂ + H ₂ O → CO + H ₂	High emissions, needs carbon capture.
Biomass Gasification	Biomass heated with oxygen to produce H ₂ .	Land-use concerns, costly.
Photoelectrochemical Water Splitting (PEC)	Uses solar energy to split water.	Still in research phase.

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		hydrocarbons.	
Underground Coal Gasification (UCG)	Syngas (CO + H ₂) – in-situ	In-situ gasification of deep, unminable coal seams by injecting oxygen or air with steam, converting coal to syngas underground.	Converts underground coal into syngas without mining, reducing surface disturbance, land degradation, water use, and CO ₂ emissions. Used in power generation, hydrogen production, and synthetic fuels.

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7. Consider the following statements:
- I. It is expected that Majorana 1 chip will enable quantum computing.
 - II. Majorana 1 chip has been introduced by Amazon Web Services (AWS).
 - III. Deep learning is a subset of machine learning.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

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- Q23. The term "backpropagation" is often seen in the news in the context of:
- (a) Quantum computing and its applications in cryptography.
 - (b) Machine learning, particularly in the training of artificial neural networks.
 - (c) Blockchain technology and decentralized finance (DeFi) applications.
 - (d) Biotechnology and advancements in genetic engineering.

FROM HANDOUT

15. Majorana Zero Modes (MZMs):

Recent Breakthrough:

- Microsoft researchers recently announced a significant breakthrough in creating Majorana zero modes.
- They engineered a superconductor composed of an aluminum superconductor and an indium arsenide semiconductor.

What are Majorana Zero Modes?

- Majorana Fermions:
 - ☞ Certain particles under certain conditions can be their own antiparticles. These fermions are called Majorana fermions.

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- ☞ Neutrinos are one type of particle that physicists believe could be Majorana fermions, although experimental proof is still lacking.
- Majorana Zero Modes:
 - ☞ Bound states of fermions that are their own antiparticles are called Majorana zero modes.
- Potential Advantages of Majorana Zero Modes in Computing:
 - MZMs, composed of an electron and a hole, can be used as more stable qubits.
 - Even if one of the entities is disturbed, the overall qubit does not decohere, protecting the encoded information.

8. With reference to monoclonal antibodies, often mentioned in news, consider the following statements:
- They are man-made proteins.
 - They stimulate immunological function due to their ability to bind to specific antigens.
 - They are used in treating viral infections like that of Nipah virus.

Which of the statements given above are correct?

- I and II only
- II and III only
- I and III only
- I, II and III

FROM HANDOUT

2. Monoclonal Antibody Therapy

Monoclonal antibodies are artificially engineered immune proteins designed to identify and attach to specific cancer cell surface markers. Once attached, they either:

- Flag the cancer cell for destruction by the immune system.
- Deliver cytotoxic agents (radioactive particles or drugs) directly to the cancer cell.
- Block growth signals that tumors rely on for proliferation.

12. Consider the following statements:

Statement I:

At the 28th United Nations Climate Change Conference (COP28), India refrained from signing the 'Declaration on Climate and Health'.

Statement II:

The COP28 Declaration on Climate and Health is a binding declaration; and if signed, it becomes mandatory to decarbonize health sector.

Statement III:

If India's health sector is decarbonized, the resilience of its health-care system may be compromised.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

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COP27	2022	Sharm El Sheikh, Egypt	no financing mechanism created. - Loss and Damage Fund (LDF) established under UNFCCC financial mechanisms. - Launched Mitigation Work Programme (MWP) for scaling up emission reductions. - Global Goal on Adaptation (GGA) strengthened under Paris Agreement Article 7. - Launched Food and Agriculture for Sustainable Transformation (FAST) initiative.
COP28	2023	Dubai, UAE	- First Global Stocktake (GST) completed assessing progress on Paris Agreement goals. - Tripling renewables & doubling energy efficiency by 2030 pledge. - Operationalization of the Loss and Damage Fund , hosted by the World Bank for 4 years. - Africa Green Industrialization Initiative launched to support low-carbon economic development. - Declaration on Climate and Health emphasizing public health impacts of climate change.
COP29	2024	Baku, Azerbaijan	- New Collective Quantified Goal (NCQG) on Climate Finance: Developed countries pledged \$300 billion/year for developing nations by 2035.

14. Consider the following statements:

Statement I:

Article 6 of the Paris Agreement on climate change is frequently discussed in global discussions on sustainable development and climate change.

Statement II:

Article 6 of the Paris Agreement on climate change sets out the principles of carbon markets.

Statement III:

Article 6 of the Paris Agreement on climate change intends to promote inter-country non-market strategies to reach their climate targets.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

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Q21. Which of the statements is incorrect regarding the term 'Phantom credits'?

- (a) Phantom Credits can undermine global climate goals by allowing companies to claim emissions reductions that have not actually occurred.
- (b) They arise due to overestimated carbon sequestration, unverifiable projects, and double counting.
- (c) The voluntary carbon market is immune to Phantom Credits as all carbon offset projects undergo strict regulatory oversight.
- (d) The **Paris Agreement's Article 6** aims to regulate carbon markets and regulate this issue.

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2. Mechanism Under Article 6.2 – Cooperative Approaches

- **Article 6.2 of the Paris Agreement** establishes a **bilateral and multilateral carbon trading framework** known as **Cooperative Approaches**.
- It allows countries to **trade Internationally Transferred Mitigation Outcomes (ITMOs)** to meet their **Nationally Determined Contributions (NDCs)** more cost-effectively.
- Under this mechanism, nations can mutually agree on mitigation projects and transfer **carbon reduction credits** while ensuring corresponding adjustments to prevent **double counting** of emissions reductions.
- This approach enables **direct country-to-country trading**, fostering regional climate cooperation and integrated carbon markets.

Key Features of Article 6.2 Mechanism

- **Flexible Trading:** ITMOs can be transferred and used across different jurisdictions while maintaining compliance with UNFCCC regulations.
- **Corresponding Adjustments:** Ensures that emissions reductions are **only counted once**, either in the **host country's inventory** or the **acquiring country's inventory**.
- **Bilateral and Plurilateral Agreements:** Countries can form alliances to facilitate trading and enhance climate finance flows.
- **Integration with Domestic Carbon Markets:** ITMOs can be linked to **national emission trading systems (ETS)**, such as the EU ETS, China's ETS, and voluntary markets.

3. Mechanism Under Article 6.4 – Global Carbon Market Mechanism

- **Article 6.4** establishes a **centralized UN-supervised carbon market**, also referred to as the **Paris Agreement Crediting Mechanism (PACM)**.
- This mechanism **replaces the Kyoto Protocol's Clean Development Mechanism (CDM)** and facilitates the **generation, verification, and trading of carbon credits** from mitigation projects in **developing countries**.
- Unlike **Article 6.2**, which allows bilateral trades, Article 6.4 operates under a **regulated market structure with oversight from a Supervisory Body** under the UNFCCC.

Key Features of Article 6.4 Mechanism

- **Standardized Rules and Governance:** The UN sets **methodologies, verifies emission reductions, and approves projects** for global carbon trading.
- **Private Sector Participation:** Allows **corporations and financial institutions** to invest in mitigation projects and trade carbon credits.

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COP29 (2024) – Key Outcomes



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16. With reference to 'Direct Air Capture', an emerging technology, which of the following statements is/are correct?

- I. It can be used as a way of carbon sequestration.
- II. It can be a valuable approach for plastic production and in food processing.
- III. In aviation, it can be a source of carbon for combining with hydrogen to create synthetic low-carbon fuel.

Select the correct answer using the code given below:

- (a) I and II only
- (b) III only
- (c) I, II and III
- (d) None of the above statements is correct

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Q11 Consider the following statements:

1. It uses chemical solvents to absorb CO₂ from ambient air.
2. It is more energy-efficient than conventional carbon capture methods.
3. It employs solar geoengineering to reflect sunlight and cool the planet.
4. It captures CO₂ at industrial emission sources like factories.

How many of the statement(s) given above is/are correct about **Direct Air Capture and Storage (DACs)**?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Solution:

Statement 1: Correct:

- DACS facilities use **chemical solvents** (such as hydroxide solutions) or **solid sorbents** to **capture CO₂ directly from ambient air**, which has a very low concentration (~0.04%).
- After capture, **thermal regeneration** (heating) releases the concentrated CO₂, which is then either **stored underground** (geological storage) or **reused** in various industrial applications.
- Though the source of CO₂ differs (ambient air vs flue gas), the **technical process (capture → heating → release)** is **similar** to what is done in **Carbon Capture and Storage (CCS)** at industrial plants.

Statement 2: Incorrect:

- DACS is **less energy-efficient** compared to capturing CO₂ from industrial flue gases.
- **Reason:** Ambient air has only **0.04% CO₂**, while flue gases from industries contain **5–15% CO₂**.
- Capturing CO₂ from a much **more dilute source (air)** requires significantly **more energy per ton of CO₂ removed**.
- Thus, DACS is **more energy-intensive**, not less.

Statement 3: Incorrect:

- **Solar geoengineering** refers to **techniques** like **stratospheric aerosol injection** or **space-based reflectors**, aimed at **reflecting sunlight to cool the Earth**.
- **DACS**, on the other hand, is purely a **carbon removal technology** — it **physically extracts CO₂** from the atmosphere without modifying Earth's radiative balance.
- Therefore, DACS does **not involve solar geoengineering** at all.

Statement 4: Incorrect:

- **Carbon Capture and Storage (CCS)** focuses on capturing CO₂ **directly at emission points** (e.g., power plants, cement factories).
- **DACS** captures **existing CO₂ from the ambient air**, independent of any industrial source.
- It is a **negative emissions technology**, aimed at **removing historical emissions**, not just controlling new emissions.

FROM HANDOUT

Direct Air Capture and Storage (DACs)

DACS uses chemical or physical processes to extract low-concentration CO₂ (~420 ppm) from the atmosphere.

Key Technologies:

1. Liquid Chemical Sorbents (e.g., Potassium Hydroxide)

- Air is passed over liquid solutions that react with CO₂ to form carbonates.
- Carbonates are then heated to release pure CO₂, which is stored or reused.
- Example: Carbon Engineering (Canada)

2. Solid Sorbents (e.g., Amine-based filters)

- Air flows over solid materials that adsorb CO₂ molecules.
- Temperature-Vacuum Swing Adsorption (TVSA) is used to regenerate the sorbent.
- Heat or vacuum releases the captured CO₂ from the solid.
- Example: Climeworks (Switzerland)

Captured CO₂ can then be:

- Stored geologically (long-term)
- Utilized (synthetic fuels, carbonation)

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Comparison with Point-Source CCUS

Feature	DACS	Point-Source CCUS
Target	Ambient air (~420 ppm CO ₂)	Industrial flue gases (5–20% CO ₂)
Flexibility	Location-independent	Tied to emission sources
Use Case	Removing residual or historic emissions	Preventing new emissions
Energy Requirement	Very high	Moderate to high
Scalability	Modular and potentially global	Large-scale, site-specific

18. Consider the following statements:
- Carbon dioxide (CO₂) emissions in India are less than 0.5 t CO₂ / capita.
 - In terms of CO₂ emissions from fuel combustion, India ranks second in Asia-Pacific region.
 - Electricity and heat producers are the largest sources of CO₂ emissions in India.
- Which of the statements given above is/are correct?
- I and III only
 - II only
 - II and III only
 - I, II and III

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Pollution - Environment

Organic Matter and Growth

- Photosynthesis & Respiration:** Autotrophs (Cyanobacteria, Pteridophytes, Angiosperms) fix CO₂ into organic molecules using solar energy.
- Decomposition & Soil Enrichment:** Microbial decomposers (Bacillus, Pseudomonas, Actinomycetes) break down organic matter, releasing humus, CO₂, CH₄, and nutrients. Mycorrhizal fungi aid in phosphorus uptake, while nitrogen-fixing bacteria enhance soil fertility.

Combustion for Energy

Reaction Mechanism

- General Combustion Equation: $C_xH_y + O_2 \rightarrow CO_2 + H_2O + \text{Energy}$
- Incomplete combustion** can lead to **CO, unburned hydrocarbons (UHCs), and soot (PM2.5)**.

CO₂ Emissions (IEA, 2023)

- China: 10.7 Gt CO₂** (largest emitter, driven by coal dependence).
- USA: 4.7 Gt CO₂** (high per capita emissions, reliance on oil and gas).
- India: 2.7 Gt CO₂** (growing industrialization, coal-heavy power sector).
- Global Impact:** Fossil fuel combustion accounts for **87% of anthropogenic CO₂ emissions**.

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Combustion for Energy

Reaction Mechanism

- General Combustion Equation: $C_xH_y + O_2 \rightarrow CO_2 + H_2O + \text{Energy}$
- Incomplete combustion** can lead to **CO, unburned hydrocarbons (UHCs), and soot (PM2.5)**.

CO₂ Emissions (IEA, 2023)

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- USA: 4.7 Gt CO₂** (high per capita emissions, reliance on oil and gas).
- India: 2.7 Gt CO₂** (growing industrialization, coal-heavy power sector).

31. With reference to investments, consider the following:

- I. Bonds
- II. Hedge Funds
- III. Stocks
- IV. Venture Capital

How many of the above are treated as Alternative Investment Funds?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All the four

FROM HANDOUT

→ Help in attracting more investment

ALTERNATE INVESTMENT FUNDS (AIF)

→ investment vehicles that collect funds from Indian or foreign investors for investing in a defined investment policy

→ regulated under SEBI (AIF) Regulations 2012

↳ privately pooled from HNWIs & institutional investors

→ Categories

→ AIF-CI → sectors considered socially & economically desirable

→ AIF-CII → Pvt equity funds

→ AIF-CIII → complex trading strategies (hedge funds)

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36. Consider the following statements:

- I. India has joined the Minerals Security Partnership as a member.
- II. India is a resource-rich country in all the 30 critical minerals that (It) has identified.
- III. The Parliament in 2023 has amended the Mines and Minerals (Development and Regulation) Act, 1957 empowering the Central Government to exclusively auction mining lease and composite license for certain critical minerals.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

CA-VA PMT-1

Q16. Consider the following statements regarding the 50th G7 Summit :

1. The G7 launched the Mineral Security Partnership (MSP) to ensure a secure and diversified supply of critical minerals essential for clean energy technologies.
2. The Energy for Growth in Africa initiative, supported by the G7, focuses on expanding access to sustainable and affordable energy in African nations.

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

Answer: (b)

Context: India participated in the 50th Group of Seven (G7) Summit in Apulia, Italy, where India was invited as an Outreach Country.

Solution:

Statement 1 is Incorrect: The Mineral Security Partnership (MSP) was not launched by the G7 but by the United States and its allies, including some G7 members, to strengthen supply chains for critical minerals used in clean energy and technology. The G7, however, supports broader mineral security initiatives.

Statement 2 is Correct: During the **50th G7 Summit (2024) held in Apulia, Italy**, the G7 leaders launched the **Energy for Growth in Africa Initiative** to **accelerate access to clean and affordable energy in Africa**. This is aimed at:

- **Reducing energy poverty in Africa.**
- **Promoting renewable energy projects (like solar, wind, etc.).**
- **Improving energy infrastructure in African countries.**
- **Boosting economic development through energy access.**

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Q46. Consider the following statements regarding Minerals Security Finance Network (MSFN):

1. India recently joined the MSFN, to strengthen critical mineral supply chains.
2. The MSFN includes mining of rare earth minerals and plutonium.
3. By joining the MSFN, India aims to diversify its supply of critical minerals.

How many of the above statement(s) is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None of the above

FROM HANDOUT**6. USA**

- Presidential Election
- Donald Trump of the Republican Party was the 45th president of the USA.
- In the 2024 election, Donald Trump defeated Kamala Harris, securing 312 electoral votes to her 226, and winning the popular vote with 49.8% to Harris's 48.3%.
- California has the highest number of electoral votes among U.S. states.
- Agreements signed between India and the USA include:
 - Security of Supply Arrangement (SOSA)
 - GSMOA
 - LeMOA
 - COMCASA
 - BECA
- India-US 2+2 Ministerial Dialogue

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- The India-US Defense Acceleration Ecosystem (INDUS X) was launched, enabling Indian and American startups to co-develop and co-produce advanced technologies.
- Under the Transforming Relationship Utilizing Strategic Technology (TRUST) initiative announced during Prime Minister Modi's visit to Washington, the two countries aim to reduce barriers to technology transfer, address export controls, and enhance high-tech commerce.
- **India joined the Minerals Security Finance Network (MSFN).**
- India signed the US-led Artemis Accords. Artemis Accords are non-binding bilateral arrangements between the US and other countries that elaborate on the norms expected to be followed in outer space.
- Under the ambitious Mission 500, India and the United States aim to more than double their total bilateral trade to \$500 billion by 2030.
- Also announced during PM Modi's visit, COMPACT (Catalysing Opportunities for Military Partnership, Accelerated Commerce and Technology) is a new initiative to drive 'transformative change across key pillars of cooperation' between the nations.
- The United States Agency for International Development- USAID has been a major contributor to health- and population-linked projects in India over the last two decades. The Trump administration decided to disband USAID.
- CAATSA- Countering America's Adversaries Through Sanctions Act (CAATSA) is a United States federal law that imposes sanctions on Iran, Russia, and North Korea.

38. Consider the following statements:

- I. India accounts for a very large portion of all equity option contracts traded globally thus exhibiting a great boom.
- II. India's stock market has grown rapidly in the recent past even overtaking Hong Kong's at some point of time.
- III. There is no regulatory body either to warn the small investors about the risks of options trading or to act on unregistered financial advisors in this regard.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

CAVA FLT-3

Q48. Consider the following statements:

1. Options
2. Swaps
3. Futures
4. Stocks
5. Bonds

How many statements given above are classified as financial derivatives?

- (a) Only two
- (b) Only three
- (c) Only four
- (d) All five

Answer: (b)

Derivatives are financial contracts whose value is derived from an underlying asset like stocks, commodities, or currencies.

They can be used for hedging, speculation, or managing risk. For example, there can be a stock future option which derives its value from the underlying stock.

The four types of derivatives are:

1. Options
2. Swaps
3. Futures
4. Forwards.

Hence, Statements 1, 2 and 3 are correct.

A non-derivative financial instrument is one whose value is not derived from another asset. Examples of non derivatives include cash, stocks, and bonds. Hence, Statements 4 and 5 are not correct.

CAVA FLT-5

Q93. With reference to the Derivatives Market in India, consider the following statements:

1. The Securities Transaction Tax (STT) is applicable both on the settlement of futures contracts and options contracts in India.
2. The National Stock Exchange (NSE) is the only recognized exchange for trading commodity derivatives in India, post the merger of the Forward Markets Commission (FMC) with SEBI.
3. Foreign Portfolio Investors (FPIs) can issue Offshore Derivative Instruments (ODIs) with derivatives as underlying assets.

How many of the above statement(s) is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

39. Consider the following statements:

Statement I:

Circular economy reduces the emissions of greenhouse gases.

Statement II:

Circular economy reduces the use of raw materials as inputs.

Statement III:

Circular economy reduces wastage in the production process.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement II and Statement III are correct and both of them explain Statement I
- (b) Both Statement II and Statement III are correct but only one of them explains Statement I
- (c) Only one of the Statements II and III is correct and that explains Statement I
- (d) Neither Statement II nor Statement III is correct

FROM HANDOUT

Battery Waste Management Rules, 2022

The Battery Waste Management Rules, 2022, notified under the Environment (Protection) Act, 1986, establish a comprehensive framework for the scientific collection, recycling, and end-of-life disposal of batteries. The rules aim to prevent environmental contamination and promote a closed-loop circular economy.

1. Applicability & Categorization

The rules apply to all types of batteries, classified as:

- **Portable Batteries:** Used in consumer electronics (e.g., mobile phones, laptops, remote controls).
- **Automotive Batteries:** Primarily lead-acid batteries used in vehicles.
- **Industrial Batteries:** Deployed in large-scale applications (e.g., solar power storage, telecommunications, backup systems).
- **Electric Vehicle (EV) Batteries:** Lithium-ion-based energy storage systems used in hybrid and electric vehicles.

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BioTRIG: An Innovative Waste Management Technology

BioTRIG is an advanced **waste-to-energy technology** based on the **pyrolysis process**, designed to address **waste disposal, energy scarcity, indoor air pollution, and soil degradation**, particularly in rural India. It converts **organic waste into bio-oil, syngas, and biochar**, promoting **sustainability and circular economy principles**.

Pyrolysis Process in BioTRIG

- **Definition:** Pyrolysis involves **heating organic waste in an oxygen-free environment**, leading to **chemical decomposition**.
- **Working Mechanism:**
 - **Waste is sealed and heated above 400°C** without oxygen.
 - The process yields **three major products**:
 - **Bio-oil:** A **clean liquid fuel** for cooking and industrial use.
 - **Syngas:** A **hydrogen-carbon monoxide gas mix** used for **electricity and heat generation**.
 - **Biochar:** A **carbon-rich solid** improving **soil fertility** and aiding in **carbon sequestration**.

Global Initiatives to Control Methane

Initiative	Launched By	Objective	Key Features
Global Methane Pledge (GMP) (2021)	USA & EU (COP26, UNFCCC)	Reduce global methane emissions by 30% by 2030 (relative to 2020 levels) to align with IPCC 1.5°C pathway	Over 150+ signatory nations, targeting high-emission sectors (agriculture, energy, waste). Focus on fugitive emissions, enteric fermentation, and landfill methane recovery.
Methane Alert and Response System (MARS) (2022)	United Nations Environment Programme (UNEP) & International Methane Emissions Observatory (IMEO)	Satellite-based real-time methane leak detection to track and mitigate super-emitter events	Uses remote sensing, AI-driven analytics, and geospatial mapping to monitor oil, gas, and coal sector emissions. Facilitates policy action and regulatory compliance.
Global Methane Hub (2021)	Private Philanthropic Organizations (ClimateWorks, Bezos)	Mobilize private sector funding for methane mitigation in livestock, fossil fuels, and municipal solid waste	Over \$300 million in capital deployment to support methane mitigation R&D, scalable technologies, and policy reform.
Lowering Organic Waste Methane (LOW-Methane) Initiative (2023)	USA, Canada, UNEP	Achieve at least 1 million metric tons of methane reduction annually by 2030 through organic waste management	Focus on enhancing landfill gas capture efficiency, large-scale composting, anaerobic digestion, and circular economy-based waste processing.

40. Consider the following statements:

- I. Capital receipts create a liability or cause a reduction in the assets of the Government.
- II. Borrowings and disinvestment are capital receipts.
- III. Interest received on loans creates a liability of the Government.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

CA-VA PMT-23

Q.14 Consider the following:

1. Funds raised by leasing railway stations to private entities under PPP mode.
2. A non-repayable financial aid from Japan for infrastructure development.
3. Sukanya Samriddhi Account (SSA) & Public Provident Fund (PPF) Deposits
4. Corporate tax received from Infosys and Tata Group.

How many of the above are considered Capital Receipts for the Government of India?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Answer: (b)

Context: Government receipts stand at Rs 26.46 lakh crore in first eleven months of FY25.

Solution:

- **Funds raised by leasing railway stations to private entities under PPP mode- (Correct):** This is asset monetization, which involves leasing government assets. Leasing railway stations reduces government assets (railway station ownership) and generates funds, making it a Capital Receipt.
- **A non-repayable financial aid from Japan for infrastructure development- (Incorrect):** Grants are Revenue Receipts since they do not create liabilities or reduce assets.
- **Sukanya Samriddhi Account (SSA) & Public Provident Fund (PPF) Deposits (Correct):** Deposits in SSA & PPF are liabilities for the government, as they must be repaid with interest in the future, making them Capital Receipts.
- **Corporate tax received from Infosys and Tata Group- (Incorrect):** Corporate tax is a Revenue Receipt, as it is part of the government's regular income, recurring and does not affect liabilities or assets directly.

41. Consider the following countries:

- I. Austria
- II. Bulgaria
- III. Croatia
- IV. Serbia
- V. Sweden
- VI. North Macedonia

How many of the above are members of the North Atlantic Treaty Organization?

- (a) Only three
- (b) Only four
- (c) Only five
- (d) All the six

FROM HANDOUT

13. NATO

- It is a Security Alliance of 32 countries established in 1949 via the Washington Declaration (also called the North Atlantic Treaty).
- **Key Principle: Collective Defense** under **Article 5** of the Washington Treaty – an attack on one is considered an attack on all.
- Newest members- Finland and Sweden (2024)
- **NATO plus** - It is a security arrangement of NATO and the five treaty allies of the U.S. — Australia, New Zealand, Japan, Israel, and South Korea.
- Major Non-NATO Ally (MNNA) status is a designation the United States gives to **close allies** that are **not members of NATO** but have **strategic military ties** with the US. - eg Pakistan
- India is a Major Defense Partner of the USA.
- The last NATO summit was in July 2024 in Washington, D.C. and marked NATO's 75th anniversary. The next will be in June 2025 in The Hague, the Netherlands.

CAVA FLT-5

Q54. Consider the following statements regarding NATO (North Atlantic Treaty Organization):

1. Finland became the 31st member of NATO in 2023, followed by Sweden in 2024, completing the inclusion of all Nordic countries.
2. NATO's permanent headquarters is located in The Hague, Netherlands, and serves as the seat of its political decision-making.
3. NATO membership is restricted to countries within the European continent, with the exception of the United States, a founding member.
4. Article 5 of the NATO Treaty commits members to collective defense and has been invoked only once, in response to the 9/11 attacks on the United States.

How many of the statement(s) given above is/are not correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

CA-VA PMT-09

Q12. With reference to the North Atlantic Treaty Organization (NATO), consider the following statements:

1. The Secretary General of NATO has the power to independently authorize military operations.
2. It has member countries from North America and Europe only.
3. India currently holds Major Non-NATO Ally (MNNA) status.
4. Since NATO's inception, its membership has more than doubled.

Select the correct answer using the code given below:

- (a) 1, 2 and 4
(b) 2 and 4
(c) 1, 2 and 3
(d) 3 and 4

Answer: (b)

Context: The North Atlantic Treaty Organization (NATO) marked 75 years of its formation and Sweden has joined NATO as its 32nd member.

Solution:

Statement 1 is incorrect.

- The Secretary-General does not have independent power to authorize military operations.
- All NATO decisions, including military operations, require unanimous consensus from all member states.
- The Secretary General's role is primarily administrative and diplomatic.

Statement 2 is correct.

- NATO comprises member countries exclusively from North America and Europe. As of 2025, it has 32 member countries, including the United States and Canada from North America, and various European nations.

Statement 3 is incorrect.

- India does not have Major Non-NATO Ally (MNNA) status with the United States. The MNNA designation is a U.S. legal status granted to close allies that are not members of NATO, providing certain military and financial advantages. Countries with this status include Australia, Japan, and South Korea, among others. India has not been granted this designation.

Statement 4 is correct.

- There were **12 founding members**— Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States. Expanded Member States- It has expanded since its founding, with new member countries joining in multiple rounds. **The alliance currently consists of 32 member countries.** The expanded members include Greece and Turkey (1952), West Germany (1955; later as Germany), Spain (1982); the Czech Republic, Hungary, and Poland (1999); Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, and Slovenia (2004); Albania and Croatia (2009); Montenegro (2017); North Macedonia (2020); Finland (2023); and Sweden (2024).

About NATO:

- Formed in 1949 with the signing of the Washington Treaty, NATO is a security alliance of countries from North America and Europe. NATO's fundamental goal is to safeguard the Allies' freedom and security by political and military means
- Five of the treaty states that if an armed attack occurs against one of the member states, it should be considered an attack against all members, and other members shall assist the attacked member, with armed forces if necessary.
- At present, NATO has 32 member countries. These countries, called NATO Allies, are sovereign states that come together through NATO to discuss political and security issues and make collective decisions by consensus.
- **European nations not in NATO:** Andorra, Armenia, Austria, Azerbaijan, Belarus, Bosnia and Herzegovina, Cyprus, Georgia, Ireland, Kosovo, Liechtenstein, Malta, Moldova, Monaco, Russia, San Marino, Serbia, Switzerland, Ukraine, Vatican City

- 44. Consider the following statements about turmeric during the year 2022–23:**
- I. India is the largest producer and exporter of turmeric in the world.**
 - II. More than 30 varieties of turmeric are grown in India.**
 - III. Maharashtra, Telangana, Karnataka and Tamil Nadu are major turmeric producing States in India.**
- Which of the statements given above are correct?**
- (a) I and II only**
 - (b) II and III only**
 - (c) I and III only**
 - (d) I, II and III**

CA-VA FLT-4

- Q34.** Consider the following statements.
1. India is the largest producer, consumer and importer of Pulses in the world.
 2. India is the largest producer, consumer and exporter of turmeric in the world.
 3. India is the largest producer and consumer of cotton.
 4. India is the largest producer of Silk.
- Which of the above statement(s) is/are correct?
- (a) 1 and 2
 - (b) 1 and 4
 - (c) 2, 3, and 4
 - (d) 1, 2, 3, and 4

CA-VA PMT-19

- Q2.** Consider the following statements regarding the National Turmeric Board:
1. It was established under the Ministry of Agriculture and Farmers Welfare.
 2. It regulates the domestic prices of turmeric across India.
 3. The ex-officio members of the board include the Chief Ministers of the top three turmeric-producing states.
- Which of the statements given above are not correct?
- (a) 1 and 2 only
 - (b) 1 and 3 only
 - (c) 2 and 3 only
 - (d) 1, 2 and 3

Answer: (d)

Context: Union Minister for Commerce and Industry launches National Turmeric Board, with headquarters at Nizamabad.

Solution:

- **Statement 1 is Incorrect:**
The National Turmeric Board was established under the Ministry of Commerce and Industry, not the Ministry of Agriculture and Farmers Welfare. Its primary objective is to promote turmeric exports and branding.
- **Statement 2 is Incorrect:**
The Board does not regulate domestic prices of turmeric. Price regulation falls under the market dynamics and policies of state governments and other regulatory bodies.
- **Statement 3 is Incorrect:**
The Chief Ministers of the top three turmeric-producing states are not ex-officio members. Instead, the Board consists of representatives from the Ministry of Commerce and Industry, Spices Board, turmeric growers, exporters, and researchers.

50. Consider the following statements about the Rashtriya Gokul Mission:
- I. It is important for the upliftment of the rural poor as the majority of low-producing indigenous animals are with small and marginal farmers and landless labourers.
 - II. It was initiated to promote indigenous cattle and buffalo rearing and conservation in a scientific and holistic manner.

Which of the statements given above is/are correct?

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

FROM HANDOUT

ALLIED SECTORS

Live stock - 30.6% of Agricultural GVA

→ Govt initiatives

→ Rashtriya Gokul mission - conservation of indigenous breeds

→ MATRI - for artificial insemination

→ PMMSY - boost fisheries

→ RAS - Recirculating Aqua culture systems

→ Bioflac systems, Pens, Race ways

52. Consider the following statements in respect of BIMSTEC:
- It is a (regional) organization consisting of seven member States till January 2025.
 - It came into existence with the signing of the Dhaka Declaration, 1999.
 - Bangladesh, India, Sri Lanka, Thailand and Nepal are founding member States of BIMSTEC.
 - In BIMSTEC, the sub sector of 'tourism' is being led by India.

Which of the statements given above is/are correct?

- I and II
- II and III
- I and IV
- I only

CA-VA FLT-2

Q97. How many of the following countries are member of both SAARC and BIMSTEC?

- Sri Lanka
- Nepal
- Thailand
- Bhutan
- Maldives

Select the correct answer from the codes given below:

- Only one
- Only two
- Only three
- Only four

FROM HANDOUT

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Page 5 of 6

21. BIMSTEC

- The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) is a multilateral regional organization established to accelerate shared growth and cooperation between littoral and adjacent countries in the Bay of Bengal region
- It has a total of **seven-member countries**- five from South Asia, including Bangladesh, Bhutan, India, Nepal, and Sri Lanka, and two from Southeast Asia, including Myanmar and Thailand.
- It was founded as BIST-EC, in June 1997, with the adoption of the Bangkok Declaration, with Bangladesh, India, Sri Lanka and Thailand as members. It became BIMST-EC (Bangladesh, India, Myanmar, Sri Lanka and Thailand Economic Cooperation) with the entry of Myanmar in late 1997, and eventually, it was named in its current form when Nepal and Bhutan became members in 2004.
- The **5th BIMSTEC Summit, was hosted in virtual mode by Sri Lanka in March 2022.**
 - The main outcome of the Summit was the adoption and signing of the **BIMSTEC Charter**, which formalizes the grouping into an organization made up of member states that are littoral to, and dependent upon, the Bay of Bengal.
- The **6th BIMSTEC Summit was held from April 3-4, 2025.** Here, the Chairmanship Transition took place from Thailand (host) to Bangladesh.
 - India announced setting up of **BIMSTEC Centres of Excellence in India on Disaster Management, Sustainable Maritime Transport, Traditional Medicine, and Research and Training in Agriculture.** He also announced a new programme for skilling the youth – **BODHI [BIMSTEC for Organized Development of Human Resource Infrastructure]** under which training and scholarships would be provided to professionals, students, researchers, diplomats and others.
 - India would be hosting a **BIMSTEC Athletics Meet this year** and the first **BIMSTEC Games in 2027** when the group celebrates its 30th anniversary. It would also host a BIMSTEC Traditional Music Festival.

55. Consider the following statements regarding AI Action Summit held in Grand Palais, Paris in February 2025:
- Co-chaired with India, the event builds on the advances made at the Bletchley Park Summit held in 2023 and the Seoul Summit held in 2024.
 - Along with other countries, US and UK also signed the declaration on inclusive and sustainable AI.
- Which of the statements given above is/are correct?
- I only
 - II only
 - Both I and II
 - Neither I nor II

CA-VA PMT-11

Q18. Consider the following statements:

Statement I: India has signed the 'Joint Declaration on Inclusive and Sustainable Artificial Intelligence(AI)' at the Paris AI Summit 2025.

Statement II: The Paris AI Summit 2025 has proposed an AI Carbon Footprint Index to track the environmental impact of AI technologies.

Which one of the following is correct in respect of the above statements?

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

Answer: (b)

Context: PM Modi co-chaired the third edition of the AI Action Summit in Paris.

Solution:

Statement-I is Correct –

- India, along with several other nations, has signed the Joint Declaration on Inclusive and Sustainable AI at the Paris AI Summit 2025.**
- This declaration focuses on ethical AI development, responsible AI governance, transparency, fairness, and inclusivity in AI applications.
- India supports AI policies that align with its AI for All vision and its goal to balance innovation, ethics, and economic growth.

Statement-II is Correct –

- The AI Carbon Footprint Index is a proposed global initiative aimed at measuring and mitigating the energy consumption and environmental impact of AI technologies, particularly large-scale AI models.**
- The rapid advancement of AI, including deep learning models and large language models, requires extensive computing power, leading to higher carbon emissions and increased energy consumption.
- The AI Carbon Footprint Index aims to create sustainable AI practices by promoting energy-efficient AI models and responsible resource usage.
- Both statements are correct, however, Statement-II is NOT the explanation for Statement-I.**
- India's signing of the Joint Declaration on Inclusive and Sustainable AI is motivated by its commitment to AI governance, inclusivity, and ethics, not because of the AI Carbon Footprint Index.
- The AI Carbon Footprint Index is an independent initiative aimed at addressing AI's environmental impact, not directly influencing India's decision to sign the declaration.

About Paris AI Summit:

- The **Artificial Intelligence (AI) Action Summit** was held at the Grand Palais in Paris, France, on February 10–11, 2025. Co-chaired by France and India, the summit convened over 1,000 participants from more than 100 countries, including heads of state, industry leaders, academics, and civil society representatives. The primary focus was to discuss the future of AI governance, innovation, and international collaboration.

57. Consider the following statements with regard to BRICS:

- I. 16th BRICS Summit was held under the Chairship of Russia in Kazan.
- II. Indonesia has become a full member of BRICS.
- III. The theme of the 16th BRICS Summit was Strengthening Multiculturalism for Just Global Development and Security.

Which of the statements given above is/are correct?

- (a) I and II
- (b) II and III
- (c) I and III
- (d) I only

FROM HANDOUT

International Relations – Additional Handout

8. BRICS

- BRICS countries met in Kazan (Russia) from 22-24 October 2024 for the 16th BRICS Summit under the chairship of Russia. The theme of the XVI BRICS Summit was 'Strengthening Multilateralism for Just Global Development and Security'.
- The term "BRIC" was coined by Jim O'Neill (Goldman Sachs), predicting the economic rise of Brazil, Russia, India, and China.
- **Composition:** Initially Brazil, Russia, India, China, and later South Africa in 2010.
- First formal BRIC Summit in Yekaterinburg, Russia, in 2009.
- At the 15th BRICS Summit (Johannesburg) in 2023, it expanded to include Egypt, Ethiopia, Iran, Saudi Arabia, UAE and Indonesia.
 - Argentina was invited but declined membership

CA-VA PMT-11

Q24. Consider the following statements about the 16th BRICS Summit:

1. It was the first summit with expanded BRICS membership.
2. The expanded membership includes Egypt, Ethiopia, Iran and the United Arab Emirates.
3. The Charter of the BRICS provides the constitutional basis for the involvement of non-Western economies.

How many of the above statement(s) is/are incorrect?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer: (a)

Context: The 16th BRICS Summit, and the First Summit with expanded BRICS membership was held in Kazan (Russia).

Solution:

- **Statement 1 is correct.** The 16th BRICS Summit, held in Kazan, Russia, in October 2024, was the first to include new members Egypt, Ethiopia, Iran, and the United Arab Emirates, who officially joined on January 1, 2024.
- **Statement 2 is correct.** Egypt, Ethiopia, Iran, and the United Arab Emirates joined BRICS on January 1, 2024, Saudi Arabia had been invited but had not confirmed its membership by the time of the 16th Summit.
- **Statement 3 is incorrect.** BRICS is an informal grouping without a formal charter. Its operations are based on principles agreed upon during annual summits, focusing on openness, pragmatism, solidarity, and neutrality.

About BRICS:

BRICS is an intergovernmental organization established in 2009, it aims to enhance economic cooperation and political coordination among emerging economies, providing a platform to challenge Western-dominated global institutions.

Historical Background:

- **Formation:** The term "BRIC" was coined in 2001 by economist Jim O'Neill to describe the emerging economies of Brazil, Russia, India, and China. These countries held their first formal summit in 2009. South Africa joined in 2010, expanding the acronym to "BRICS."
- **Expansion:** In January 2024, BRICS welcomed Egypt, Ethiopia, Iran, and the United Arab Emirates as new members. **Indonesia officially joined in January 2025**, bringing the total membership to ten countries.

Recent Developments:

- **16th BRICS Summit: Held in Kazan, Russia, in October 2024**, this summit was the first to include the newly expanded membership. Discussions focused on enhancing economic cooperation, reducing reliance on the U.S. dollar in international trade, and promoting a multipolar world order.
- **Upcoming Summit:** Brazil is set to host the next BRICS summit in Rio de Janeiro on July 6-7, 2025. The Brazilian government aims to focus on promoting global governance reform and strengthening cooperation among Global South countries.

58. Consider the following statements about Lokpal:

- I. The power of Lokpal applies to public servants of India, but not to the Indian public servants posted outside India.
- II. The Chairperson or a Member shall not be a Member of the Parliament or a Member of the Legislature of any State or Union Territory, and only the Chief Justice of India, whether incumbent or retired, has to be its Chairperson.
- III. The Chairperson or a Member shall not be a person of less than forty-five years of age on the date of assuming office as the Chairperson or Member, as the case may be.
- IV. Lokpal cannot inquire into the allegations of corruption against a sitting Prime Minister of India.

Which of the statements given above is/are correct?

- (a) III only
- (b) II and III
- (c) I and IV
- (d) None of the above statements is correct

FROM HANDOUT

3. LOKPAL

- The SC stays Lokpal's order on HC judges which held that India's anti-corruption ombudsman could probe complaints against High court judges
- The President appoints the chairperson and members of the Lokpal after obtaining the recommendations of a Selection Committee having the Prime Minister as its chairperson.
- Apart from a chairperson, the Lokpal can have eight members, four judicial and four non-judicial.
- Of its other members, not exceeding eight, 50% are to be judicial members, provided that not less than 50% belong to the SCs, STs, OBCs, minorities, and women.
- The tenure of Lokpal Chairman and Members is 5 years or till the age of 70 years.
- It can inquire into allegations of corruption against anyone who is or has been Prime Minister, or a Minister in the Union government, or a Member of Parliament, and officials of the Union government under Groups A, B, C, and D.

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CA-VA FLT-5

Q64. Consider the following statements:

1. The salary, allowances, and conditions of service of the Lokpal Chairperson are the same as that of the Chief Justice of India.
2. The Lokpal cannot inquire into complaints against the Prime Minister unless the full bench approves the inquiry and at least two-thirds of its members agree.
3. The Lokpal Act covers any society, trust, or body receiving foreign contribution above Rs 10 lakh under the Foreign Contribution (Regulation) Act, 2010.
4. The Inquiry Wing of the Lokpal has powers equivalent to a civil and criminal court, including the power to impose imprisonment up to two years.

Which of the above statements is/are not correct with reference to the Lokpal and Lokayuktas Act?

- (a) 1 and 2 only
- (b) 4 only
- (c) 2 and 3 only
- (d) 1, 3 and 4 only

62. Consider the following statements:

- I. Indian Railways have prepared a National Rail Plan (NRP) to create a “future ready” railway system by 2028.
- II. “Kavach” is an Automatic Train Protection system developed in collaboration with Germany.
- III. The “Kavach” system consists of RFID tags fitted on the track in station sections.

Which of the statements given above are not correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

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Page 1 of 2

ECONOMIC SURVEY - INVESTMENT & INFRASTRUCTURE

CAPEX

- Capex by Union Govt on major infrastructure sectors increased by 38.8% (FY 20 to FY 24)
- However it was affected during Q1 FY 25 due to MCC during elections

RAILWAYS

- Net zero carbon emission - Target 30 GW of RE by 2029-30,
- Kavach - indigenously developed Automated Train Protection System

ROAD

- Total road network of 63.4 lakh km, including NH network of 1.4 lakh km
- NH network comprises ≈ 2% of total road network but carries 40% of freight traffic

*Discussed detailedly in class.

63. Consider the following space missions:

- I. Axiom-4
- II. SpaDeX
- III. Gaganyaan

How many of the space missions given above encourage and support micro-gravity research?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

CA-VA FLT-5

Q24. Consider the following statements regarding SPADEX mission:

1. It involved the use of two identical satellites, one acting as the chaser and the other as the target.
2. It used laser-based navigation for docking, like the International Space Station (ISS).
3. India became the third country after the U.S. and Russia to achieve autonomous spacecraft docking with its success.
4. It demonstrates electrical power transfer between the docked satellites and operating payloads.

Which of the above statement(s) is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 4 only
- (d) 3 and 4 only

CA-VA PMT-3

Q16. Consider the following statements about the Gaganyaan Mission:

1. It aims to demonstrate India's capability for human space flights using indigenous technology.
2. It includes a debris removal system to collect existing space debris in Low Earth Orbit (LEO).
3. The Gaganyaan spacecraft will be placed in a Geostationary Orbit at an altitude of 36,000 km.
4. It has included crucial Pad Abort Tests and Crew Escape System trials to ensure astronaut safety during the launch and mission phases.

How many of the above statements is/ are correct?

- (a) Only One
- (b) Only Two
- (c) Only Three
- (d) All Four

66. Consider the following statements with regard to pardoning power of the President of India:
- The exercise of this power by the President can be subjected to limited judicial review.
 - The President can exercise this power without the advice of the Central Government.

Which of the statements given above is/are correct?

- I only
- II only
- Both I and II
- Neither I nor II

CA-VA PMT-1

Q10. Match List I with List II and select the correct answer using the codes given below:

List-I (Pardoning Power of President)	List-II (Implications)
1. Commutation	A. Stay of the execution of a sentence for a temporary period.
2. Reprieve	B. Awarding a lesser sentence in place of one originally awarded due to some special fact.
3. Remission	C. Substitution of one form of punishment for a lighter form.
4. Respite	D. Reducing the period of sentence without changing its character.

Select the answer using the code given below:

- 1-D,2-C,3-B,4-A
- 1-D,2-B,3-A,4-C
- 1-C,2-A,3-D,4-B
- 1-C,2-A,3-B,4-D

Correct Code: (c) 1-C,2-A,3-D,4-B

Solution:

- The President of India exercises pardoning powers under Article 72 of the Constitution of India. These powers apply to cases involving offenses against Union laws, court-martial cases, and matters where the death sentence has been awarded.
- The purpose of these powers is to ensure justice by mitigating excessive, unjust, or disproportionate punishments based on humanitarian and legal considerations.
- The five forms of clemency available to the President include Commutation, Reprieve, Remission, Respite, and Pardon, each serving a distinct purpose:

1. Commutation - C

- Commutation refers to the substitution of one form of punishment for a lesser form.** The nature of the punishment changes but the conviction remains. For example, the **President may commute a death sentence to life imprisonment** or convert rigorous imprisonment to simple imprisonment. This power is exercised **when the original punishment is deemed excessive or unfair** due to factors such as the convict's age, health, or exceptional circumstances.

2. Reprieve - A

- A reprieve is a temporary delay or stay of execution of a sentence, particularly in cases involving capital punishment.** It provides additional time for the convict to **seek clemency, file a review petition, or explore other legal remedies** before the sentence is carried out. The primary purpose is to **ensure that irreversible punishments, such as the death penalty, are not executed prematurely** before all judicial and constitutional avenues are exhausted.

3. Remission - D

- Remission refers to the reduction of the duration of a sentence without changing its nature.** Unlike commutation, where the punishment itself is changed, remission **only reduces the time the convict has to serve**. This may be granted for **good conduct, old age, health reasons, or other mitigating factors**. The **convict's criminal record remains unchanged**, and they must still serve the sentence but for a **reduced period**.

4. Respite - B

- Respite involves awarding a lesser sentence than what was originally prescribed by law, based on specific humanitarian considerations.** This may be granted due to **exceptional circumstances** such as: **Physical disability, Pregnancy, Old age and Other extenuating conditions**.

The President's pardoning power also includes **Pardon**. **A pardon is the most absolute form of Presidential clemency, completely removing the sentence, conviction, and all associated disqualifications.** It restores the offender's legal status **as if the crime was never committed**. A person who receives a **Presidential Pardon is legally deemed innocent** and can no longer be held accountable for the offense.

CA-VA FLT-4

Q83. Consider the following statements:

1. The President of India can pardon an offense even before conviction.
2. The President of India can pardon court martial.
3. The President of India can pardon cases involving contempt of Court.
4. The pardoning of an offense by the President of India removes any disqualification under the Representation of the People Act, 1951.

Which of the statement(s) given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 2 and 4 only
- (d) 1, 2 and 3 only

67. Consider the following statements:

- I. On the dissolution of the House of the People, the Speaker shall not vacate his/her office until immediately before the first meeting of the House of the People after the dissolution.
- II. According to the provisions of the Constitution of India, a Member of the House of the People on being elected as Speaker shall resign from his/her political party immediately.
- III. The Speaker of the House of the People may be removed from his/her office by a resolution of the House of the People passed by a majority of all the then Members of the House, provided that no resolution shall be moved unless at least fourteen days' notice has been given of the intention to move the resolution.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

FROM HANDOUT

- The 18th Lok Sabha held its first session from June 24, 2024 to July 3, 2024, during which the new Speaker of the House was elected.
- Article 94 of the Indian Constitution states: "Whenever the House of the People is dissolved, the Speaker shall not vacate his office until immediately before the first meeting of the House of the People after the dissolution."
- In the new Lok Sabha, the Speaker of the House is decided by a simple majority. Until her selection, the pro-tem Speaker is chosen to administer some important duties. 'Pro-tem' essentially means 'for the time being' or 'temporarily'.
- The Constitution does not mention the post. However, the official 'Handbook on the Working of Ministry of Parliamentary Affairs' speaks about the 'Appointment and Swearing in of Speaker pro tem'.

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CA-VA PMT-7

Q7. Consider the following statements with respect to Speaker of Lok Sabha:

- A member belonging to the ruling party is elected as speaker.
- The House elects its presiding officer by a simple majority of members present and voting.
- The Speakers in India have been elected unopposed except on two occasions 1952 and 1967.

Which of the above statement(s) is/are correct?

- (a) 1 and 2
- (b) 2 only
- (c) 2 and 3
- (d) 3 only

Answer: (b)

Context: The 18th Lok Sabha Speaker was elected by a voice vote.

Solution:

Statement 1 is incorrect.

- While it is a well-established **parliamentary convention** that a **member of the ruling party or coalition to be elected as the Speaker of the Lok Sabha**, this is not a binding parliamentary convention.
- The Constitution of India **does not mandate that the Speaker must belong to the ruling party**. The Speaker is elected by the members of the Lok Sabha from among themselves, as per **Article 93** of the Constitution.
- There have been instances where **individuals from allied parties or those with consensus support or** even from opposition ranks **have been elected to this position**, (e.g., G.M.C. Balayogi in 1998 and Neelam Sanjiva Reddy in 1967) underscoring the principle that the Speaker should function impartially, above party politics.

Statement 2 is correct.

- The Speaker of the Lok Sabha is elected by its members through a simple majority vote.
- The election procedure is outlined in the Rules of Procedure and Conduct of Business in Lok Sabha.
- After a general election, the President appoints a member of the Lok Sabha as the **Speaker Pro Tem** to preside over the first meeting, during which the Speaker is elected. Members submit nominations, and if there is more than one candidate, an election is held where the candidate securing the majority of votes from those present and voting is declared elected. This process ensures that the Speaker has the confidence of the majority of the House at the time of their election.

Statement 3 is incorrect.

There have been more than two occasions when the Speaker's election was contested. Notable contested elections include:

- **1952:** The first election was contested between G.V. Mavalankar and Shankar Shantaram More.
- **1967:** Another contest occurred when Neelam Sanjiva Reddy faced Tenneti Viswanadham.
- **1976:** Bali Ram Bhagat contested against Jagannathrao Joshi.

68. Consider the following statements:

- I. If any question arises as to whether a Member of the House of the People has become subject to disqualification under the 10th Schedule, the President's decision in accordance with the opinion of the Council of Union Ministers shall be final.
- II. There is no mention of the word 'political party' in the Constitution of India.

Which of the statements given above is/are correct?

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

CA-VA PMT-4

Q1. Consider the following cases:

1. If any independent member joins any political party before the expiry of six months.
2. If any nominated member joins any political party before the expiry of six months.
3. If a member voluntarily gives up the membership of the political party.

In how many of the cases given above does membership to Parliament incur disqualification under the Tenth Schedule?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

CA-VA PMT-7

Q3. Consider the following statements:

1. A Member of Parliament who defies the whip issued by their party is automatically disqualified under the Tenth Schedule of the Constitution.
2. A legislator disqualified under the Tenth Schedule can contest a by-election immediately unless disqualified under any other law.
3. The Speaker cannot deny pension benefits to MLAs while disqualifying them under the 10th Schedule.

Which of the above statement(s) is/are incorrect?

- (a) 1 and 3 only
- (b) 1 only
- (c) 1 and 2 only
- (d) All of the above

69. Consider the following statements:

Statement I:

In India, State Governments have no power for making rules for grant of concessions in respect of extraction of minor minerals even though such minerals are located in their territories.

Statement II:

In India, the Central Government has the power to notify minor minerals under the relevant law.

Which one of the following is correct in respect of the above statements?

- (a) Both Statement I and Statement II are correct and Statement II explains Statement I
- (b) Both Statement I and Statement II are correct but Statement II does not explain Statement I
- (c) Statement I is correct but Statement II is not correct
- (d) Statement I is not correct but Statement II is correct

CA-VA FLT-1

Q80. With reference to the management of minor minerals in India, consider the following statements:

1. Sand is a 'minor mineral' according to the prevailing law in the country.
2. State Governments have the power to grant mining leases of minor minerals, but the powers regarding the formation of rules related to the grant of minor minerals lie with the Central Government.
3. State Governments have the power to frame rules to prevent illegal mining of minor minerals.

Which of the statement(s) given above is/are correct?

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

Answer (a)

Statement 1 is correct : The Mines and Minerals (Development and Regulation) Act, 1957, which regulates the mining sector in India, defines minor minerals as minerals other than major minerals.

Statement 2 is not correct : Under the Constitution of India, regulation of mines and mineral development is a state subject. **Thus, state governments have the power to grant mining leases of minor minerals as well as to frame rules related to their grant.** However, the **Central Government has the power to make rules for the whole country in respect of any matter relating to minor minerals.**

Statement 3 is correct : State governments have the power to frame rules to prevent illegal mining of minor minerals. For example, several states have enacted rules to regulate the transportation of sand and other minor minerals to curb illegal mining and transportation

71. Suppose the revenue expenditure is ₹80,000 crores and the revenue receipts of the Government are ₹60,000 crores.
The Government budget also shows borrowings of ₹10,000 crores and interest payments of ₹6,000 crores.
Which of the following statements are correct?
I. Revenue deficit is ₹20,000 crores.
II. Fiscal deficit is ₹10,000 crores.
III. Primary deficit is ₹4,000 crores.
Select the correct answer using the code given below:
(a) I and II only
(b) II and III only
(c) I and III only
(d) I, II and III

CA-VA FLT-4

Q10. Consider the following statements:

1. Fiscal Deficit
2. Revenue Deficit
3. Effective Revenue Deficit
4. Primary Deficit

Which of the deficits given above are consistently reducing (as a percentage of GDP) for the last 5 years?

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1, 3 and 4 only
- (d) 1, 2, 3 and 4

74. The World Bank warned that India could become one of the first places where wet-bulb temperatures routinely exceed 35°C. Which of the following statements best reflect(s) the implication of the above-said report?

- I. Peninsular India will most likely suffer from flooding, tropical cyclones and droughts.
- II. The survival of animals including humans will be affected as shedding of their body heat through perspiration becomes difficult.

Select the correct answer using the code given below.

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

CA-VA PMT-15

Q24. Which of the following best describes the wet-bulb temperature?

- (a) It is the temperature measured by a thermometer wrapped in a water-soaked cloth, which always equals the ambient (dry-bulb) temperature regardless of humidity.
- (b) It is the average of the dry-bulb temperature and the dew point, reflecting a moderate level of evaporative cooling.
- (c) It is the maximum temperature attainable in air saturated with moisture, indicating conditions of high humidity.
- (d) It is the lowest temperature that can be reached solely by the evaporation of water at constant pressure, reflecting the combined effects of ambient temperature and humidity.

Answer: (d)

Solution:

- **Option a:** While it correctly mentions the use of a water-soaked cloth, it falsely states that the wet-bulb temperature always equals the ambient (dry-bulb) temperature. In reality, the wet-bulb temperature is lower than or equal to the dry-bulb temperature, depending on the level of humidity. At lower humidity, more evaporation occurs, resulting in a lower wet-bulb reading.
- **Option b:** This option inaccurately defines the wet-bulb temperature as the average of the dry-bulb temperature and the dew point. The wet-bulb temperature is not an arithmetic mean but rather the lowest temperature achievable solely through evaporative cooling under constant pressure.
- **Option c:** This option incorrectly describes the wet-bulb temperature as the maximum temperature attainable in air saturated with moisture. In fact, when the air is saturated (100% relative humidity), the wet-bulb temperature equals the dry-bulb temperature, but the wet-bulb temperature itself is defined as the minimum temperature achievable by evaporation, not a maximum.
- **Option d is correct because:** The wet-bulb temperature is defined as the lowest temperature that can be reached solely by the evaporation of water, under constant pressure conditions. This means that if you continuously evaporate water from a surface (or a thermometer with a wet wick), the temperature will drop to a point where no further cooling is possible without changing other conditions.

The process of evaporation cools the thermometer, and the extent of this cooling is governed by both the ambient temperature and the relative humidity. In drier conditions, more evaporation occurs, leading to a lower wet-bulb temperature relative to the ambient (dry-bulb) temperature.

Since the wet-bulb temperature reflects how much cooling can occur through evaporation, it inherently combines the effects of both temperature and humidity. The lower the humidity, the greater the potential for evaporative cooling, resulting in a lower wet-bulb temperature.

75. A country's fiscal deficit stands at ₹50,000 crores.
It is receiving ₹10,000 crores through non-debt creating capital receipts.
The country's interest liabilities are ₹1,500 crores.
What is the gross primary deficit?
(a) ₹48,500 crores
(b) ₹51,500 crores
(c) ₹58,500 crores
(d) None of the above

CA-VA FLT-4

Q10. Consider the following statements:

1. Fiscal Deficit
2. Revenue Deficit
3. Effective Revenue Deficit
4. Primary Deficit

Which of the deficits given above are consistently reducing (as a percentage of GDP) for the last 5 years?

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1, 3 and 4 only
- (d) 1, 2, 3 and 4

CA-VA PMT-23

Q14. Consider the following:

1. Funds raised by leasing railway stations to private entities under PPP mode.
2. A non-repayable financial aid from Japan for infrastructure development.
3. Sukanya Samriddhi Account (SSA) Public Provident Fund (PPF) Deposits
4. Corporate tax received from Infosys and Tata Group.

How many of the above are considered as Capital Receipts for the Government of India?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Answer: (b)

Context: Government receipts stand at Rs 26.46 lakh crore in first eleven months of FY25.

Solution:

Funds raised by leasing railway stations to private entities under PPP mode- (Correct):

This is asset monetization, which involves leasing government assets. Leasing railway stations reduces government assets (railway station ownership) and generates funds, making it a Capital Receipt.

A non-repayable financial aid from Japan for infrastructure development- (Incorrect):

Grants are Revenue Receipts since they do not create liabilities or reduce assets.

Sukanya Samriddhi Account (SSA) & Public Provident Fund (PPF) Deposits (Correct):

Deposits in SSA & PPF are liabilities for the government, as they must be repaid with interest in the future, making them Capital Receipts.

Corporate tax received from Infosys and Tata Group- (Incorrect)

Corporate tax is a Revenue Receipt, as it is part of the government's regular income, recurring and does not affect liabilities or assets directly.

76. Which of the following statements with regard to recommendations of the 15th Finance Commission of India are correct?
- It has recommended grants of ₹ 4,800 crores from the year 2022-23 to the year 2025-26 for incentivizing States to enhance educational outcomes.
 - 45% of the net proceeds of Union taxes are to be shared with States.
 - ₹ 45,000 crores are to be kept as performance-based incentive for all States for carrying out agricultural reforms.
 - It reintroduced tax effort criteria to reward fiscal performance.
- Select the correct answer using the code given below.
- I, II and III
 - I, II and IV
 - I, III and IV
 - II, III and IV

FROM HANDOUT

POLITY CLASS-6

CONSTITUTIONAL, STATUTORY & EXECUTIVE BODIES

1. FINANCE COMMISSION (FC)

- The Union Cabinet has approved the Terms of Reference for the 16th FC.
- It will be chaired by Dr. Arvind Panagariya and is tasked with defining the distribution of the Centre's tax revenue to the states for a period of five years, beginning from FY 2026-27
- The President appoints the Finance Commission under Article 280.
- The Commission, comprising a chairman and four members, is appointed every five years.
- The Chairman is chosen for their public affairs experience.
- It is the duty of the Commission to make recommendations to the President as to—
 - The allocation of net tax proceeds between the Union and States, and among States
 - Principles for grants-in-aid to States
 - Strategies to boost a State's Fund to aid Panchayats
 - Other matters the President deems relevant for fiscal health
- The 15th FC criteria for horizontal devolution - Income Distance, Population(2011 Census), Area, Forest and Ecology, Demographic Performance, Tax and Fiscal Efforts.

N

78. Consider the following statements in respect of RTGS and NEFT:

- I. In RTGS, the settlement time is instantaneous while in case of NEFT, it takes some time to settle payments.
- II. In RTGS, the customer is charged for inward transactions while that is not the case for NEFT.
- III. Operating hours for RTGS are restricted on certain days while this is not true for NEFT.

Which of the statements given above is/are correct?

- (a) I only
- (b) I and II
- (c) I and III
- (d) III only

CA-VA PMT-19

Q10. Consider the following information:

Payment System	Controlling Authority	Key Feature
1. Immediate Payment Service	National Payments Corporation of India	Suitable for transactions of all values
2. Real-Time Gross Settlement	Reserve Bank of India	Designed for high-value transactions with real-time settlement
3. National Electronic Funds Transfer	Reserve Bank of India	Enables instant, 24x7 interbank fund transfers for retail customers
4. RuPay Card Payment Network	National Payments Corporation of India	Supports offline transaction capabilities using National Common Mobility Card (NCMC) standards,

In how many of the above row(s) is/are the given information correctly matched?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Answer: (b)

Context: The RBI has announced a name lookup facility for NEFT and RTGS transactions, allowing remitters to verify beneficiary names before initiating payments. Similar to UPI and IMPS, this feature aims to reduce fraud and errors.

Solution:

Immediate Payment Service (IMPS) - Row 1

- **Controlling Authority:** National Payments Corporation of India (NPCI) → **Correct**
- **Key Feature:** "Suitable for transactions of all values" → **Incorrect**
- IMPS is primarily used for low to medium-value transactions. It allows real-time, instant money transfers and is widely used for retail payments.
- It is **not ideal for high-value transactions**. For large sums, **RTGS** (Real-Time Gross Settlement) is used instead.

Real-Time Gross Settlement (RTGS)- Row 2

- **Controlling Authority:** Reserve Bank of India (RBI) → **Correct**
- **Key Feature:** "Designed for high-value transactions with real-time settlement" → **Correct**
- RTGS is specifically designed for **high-value transactions** (typically above ₹2 lakhs).
- It provides **real-time settlement** on a gross basis, meaning each transaction is settled individually without netting.

National Electronic Funds Transfer (NEFT) - Row 3

- **Controlling Authority:** Reserve Bank of India (RBI) → **Correct**
- **Key Feature:** "Enables instant, 24x7 interbank fund transfers for retail customers" → **Incorrect**
- While NEFT is **available 24x7** since December 2019, it does **not provide instant transfers**.
- NEFT works on a **Deferred Net Settlement (DNS)** basis, where transactions are processed in **batches** at **half-hourly intervals**.
- Therefore, it is not an instant payment method like IMPS or RTGS.

RuPay Card Payment Network- Row 4

- **Controlling Authority:** National Payments Corporation of India (NPCI) → **Correct**
- **Key Feature:** "Supports offline transaction capabilities using National Common Mobility Card (NCMC) standards" → **Correct**
- RuPay supports **offline transactions** using the **National Common Mobility Card (NCMC)**.
- NCMC allows contactless payments, particularly in sectors like public transport, where offline payments may be necessary.

79. Consider the following countries:

- I. United Arab Emirates
- II. France
- III. Germany
- IV. Singapore
- V. Bangladesh

How many countries amongst the above are there other than India where international merchant payments are accepted under UPI?

- (a) Only two
- (b) Only three
- (c) Only four
- (d) All the five

CA-VA PMT-9

23. Consider the following:

1. India and UAE have signed a Comprehensive Economic Partnership Agreement (CEPA) to boost trade and investment between the two countries.
2. UAE is India's largest source of remittances, contributing the highest share among all foreign countries.
3. The Unified Payment Interface (UPI) is valid in the UAE only for Indian travellers.
4. They conducted a joint military exercise called Exercise Khanjar.

How many of the following statements is/ are correct with respect to India- United Arab Emirates (UAE) relations?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Answer: (b)

Context: India and UAE held bilateral talks to deepen ties and enhance their Comprehensive Strategic Partnership.

Solution:

- **Statement 1 is correct:** India and the UAE signed a Comprehensive Economic Partnership Agreement (CEPA) in 2022 to enhance bilateral trade relations.
- **Statement 2 is incorrect: The United States (U.S.) is the largest source of remittances** to India, according to RBI data. The UAE is a significant contributor but **not the largest**.
- **Statement 3 is incorrect:** UPI is enabled in the UAE **for both Indian travellers and NRIs**, through **Mashreq Bank's NEOPAY**. It is **not restricted only to travellers**.
- **Statement 4 is incorrect:** Exercise Khanjar is a joint military exercise between India and Kyrgyzstan, not the UAE.

80. Consider the following statements about PM Surya Ghar Muft Bijli Yojana:
- It targets installation of one crore solar rooftop panels in the residential sector.
 - The Ministry of New and Renewable Energy aims to impart training on installation, operation, maintenance, and repairs of solar rooftop systems at grassroots levels.
 - It aims to create more than three lakhs skilled manpower through fresh skilling, and up-skilling, under scheme component of capacity building.
- Which of the statements given above are correct?
- I and II only
 - I and III only
 - II and III only
 - I, II and III

FROM HANDOUT

Ministry of New & Renewable Energy

Name	Details	Aim/ Objectives
PM Surya Ghar: Muft Bijli Yojana	Financial Outlay: of ₹75,021 crore Subsidy Structure: <ul style="list-style-type: none"> 60% subsidy for systems up to 2 kW. 40% subsidy for the additional capacity between 2 to 3 kW. Maximum subsidy capped at ₹78,000 for systems of 3 kW or higher 	Aim: To equip one crore households with solar panels by March 2027. Features: <ul style="list-style-type: none"> Free Electricity: Beneficiaries are entitled to receive up to 300 units of free electricity per month. Government issued Guidelines for 'Incentives to DISCOMs', covering net meter availability and installation facilitation. Government plans to develop 'Model Solar Village' scheme, granting ₹1 crore grant for the winning village in each district. It aims to demonstrate the benefits of solar energy and encourage community participation in renewable energy adoption.

83. With reference to India, consider the following:

- I. The Inter-State Council
- II. The National Security Council
- III. Zonal Councils

How many of the above were established as per the provisions of the Constitution of India?

- (a) Only one
- (b) Only two
- (c) All the three
- (d) None

FROM HANDOUT

10. ZONAL COUNCIL

- The idea of creation of Zonal Councils was mooted by the first PM, Pandit Jawahar Lal Nehru in 1956.
- Five Zonal Councils were set up under Part III of the States Re-organisation Act, 1956. These are, The Northern Zonal Council, Central ZC, Eastern ZC, Western ZC, Southern ZC
- Northeastern Council are set up under the North Eastern Council Act, 1972.
- Organisational structure
 - Chairman (The Union Home Minister is the Chairman of each of these Councils) ; Vice Chairman (The Chief Ministers of the States included in each zone act as Vice- Chairman of the Zonal Council for that zone by rotation, each holding office for a period of one year at a time)
 - Members (Chief Minister and two other Ministers as nominated by the Governor from each of the States and two members from Union Territories included in the zone)
 - Advisers
- Each Zonal Council is an advisory body and may discuss any matter in which some or all of the States represented in that Council, or the Union and one or more of the States represented in that Council, have a common interest and advise the Central Government and the Government of each State concerned as to the action to be taken on any such matter.

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84. Consider the following statements:

- I. The Constitution of India explicitly mentions that in certain spheres the Governor of a State acts in his/her own discretion.
- II. The President of India can, of his/her own, reserve a bill passed by a State Legislature for his/her consideration without it being forwarded by the Governor of the State concerned.

Which of the statements given above is/are correct?

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

FROM HANDOUT

NEXT IAS

CAVA-250224

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EXECUTIVE

12. GOVERNOR'S ASSENT TO THE BILLS

- Article 200 outlines the Governor's power over granting assent to Bill.
- She has the following options: grant assent to the Bill; withhold assent to the Bills; return the Bills for reconsideration; or reserve the Bill for the consideration of the President.
- The SC in the "The State Of Punjab v. Principal Secretary To The Governor Of Punjab And Anr, 2023" ruled that Governors cannot indefinitely delay a bill without action.
- Reserving a bill for the President is mandatory for the Governor if it endangers the position of the state High Court.

POLITY CLASS-5

1. GOVERNOR AS CHANCELLOR

- The Governor as Chancellor of State universities has not been assigned to him by the Constitution of India but by State university laws.
- Inherited from British colonial rule
- As Chancellor, the Governor becomes the head of the university and grants powers such as appointing Vice-Chancellors, nominating members to university bodies like the Syndicate, approving delegated legislation under the university law, and presiding over convocations.
- Constitutionally, a Governor's powers are divided into two categories: those exercised as Governor, where he is bound to act on the advice of the Council of Ministers as per Article 163(1), and those conferred by statutes, such as the role of Chancellor of State universities, where he can act at his discretion, independent of ministerial advice, unless the statute mandates otherwise. The Supreme Court has upheld this distinction.

CA-VA PMT-7

Q4. Consider the following statements regarding the powers of the Governor with respect to bills:

1. The Constitution does not specify a specific timeframe for the Governor to act on a bill.
2. The Governor can return any bill for reconsideration to the State Legislature.
3. The Governor must reserve for the President's consideration any bill that would derogate from the powers of the High Court.

How many of the above statement(s) is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

CA-VA PMT-2

Q14. Consider the following powers:

1. Dismissal of Council of Ministers
2. Reserving a bill for President's consideration
3. Administration of tribal areas under Fifth Schedule
4. Determining time-limit for the Chief Minister to prove majority

How many of the powers given above are the discretionary powers of the governor under the Constitution?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

CA-VA FLT-5

Q10. Consider the following statements:

- 1. If the Governor withholds assent to a Bill it does not become law.
- 2. The Governor may return any Bill, including a Money Bill, to the State Legislature for reconsideration.
- 3. The Governor is constitutionally bound to reserve a Bill for President's consideration if it derogates from the powers of the High Court.
- 4. If a Money Bill is reserved for the President, the President may return it for reconsideration of the State Legislature.

Which of the statements given above are correct?

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 4 only
- (d) 1 and 3 only

85. Consider the following pairs:

Provision in the Constitution of India. Stated under

- I. Separation of Judiciary from the Executive in the public services of the State The Directive Principles of the State Policy
- II. Valuing and preserving the rich heritage of our composite culture. The Fundamental Duties
- III. Prohibition of employment of children below the age of 14 years in factories. The Fundamental Rights

How many of the above pairs are correctly matched?

- (a) Only one
- (b) Only two
- (c) All the three
- (d) None

CA-VA FLT-5

Various FRs, DPSPs and duties are asked repeatedly in PMTs

Q68. Consider the following pairs:

Article

1. Article 39(b)
2. Article 44
3. Article 43A
4. Article 43

Directive Principle

- Uniform Civil Code for citizens
- Participation of workers in management
- Promotion of cottage industries
- Distribution of material resources of the community

How many of the above pairs is/are correctly matched?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

Answer (a)

1. Article 39(b) → Distribution of material resources of the community
Article 39(b) mandates the State to direct its policy towards securing that the ownership and control of material resources are distributed to subserve the common good.
2. Article 44 → Uniform Civil Code for citizens
Article 44 explicitly directs the State to strive for a Uniform Civil Code throughout the territory of India.
3. Article 43A → Participation of workers in management
Added by the 42nd Amendment, Article 43A seeks to secure the participation of workers in the management of industries.
4. Article 43 → Promotion of cottage industries
Article 43 urges the State to promote cottage industries in rural areas based on individual or cooperative basis.

86. Consider the following statements:

With reference to the Constitution of India, if an area in a State is declared as Scheduled Area under the Fifth Schedule:

- I. The State Government loses its executive power in such areas and a local body assumes total administration.
- II. The Union Government can take over the total administration of such areas under certain circumstances on the recommendations of the Governor.

Which of the statements given above is/are correct?

- (a) I only
- (b) II only
- (c) Both I and II
- (d) Neither I nor II

CA-VA PMT-2

Q14. Consider the following powers:

1. Dismissal of Council of Ministers
2. Reserving a bill for President's consideration
3. Administration of tribal areas under Fifth Schedule
4. Determining time-limit for the Chief Minister to prove majority

How many of the powers given above are the discretionary powers of the governor under the Constitution?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

CA-VA PMT-5

Q25. With reference to Scheduled Areas in India, consider the following statements: (UPSC 2023)

1. Within a State, the notification of an area as a Scheduled Area takes place through an Order of the President.
2. The largest administrative unit forming the Scheduled Area is the District and the lowest is the cluster of villages in the Block.
3. The Chief Ministers of the concerned States are required to submit annual reports to the Union Home Ministry on the administration of Scheduled Areas in the States.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

88. Consider the following subjects under the Constitution of India:

- I. List I – Union List, in the Seventh Schedule
- II. Extent of the executive power of a State
- III. Conditions of the Governor's office

For a constitutional amendment with respect to which of the above, ratification by the Legislatures of not less than one-half of the States is required before presenting the bill to the President of India for assent?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

CA-VA PMT-4

Current affairs-Value addition (CA-VA)

NEXT IAS

of fraud, false representation or the concealment of any material fact; or

- (b) that citizen has shown himself by act or speech to be disloyal or disaffected towards the Constitution of India as by law established; or

- (c) that citizen has, during any war in which India may be engaged, unlawfully traded or communicated with an enemy or been engaged in, or associated with, any business that was to his knowledge carried on in such manner as to assist an enemy in that war; or

- (d) that citizen has, within five years after registration or naturalisation, been sentenced in any country to imprisonment for a term of not less than two years; or

- (e) that citizen has been ordinarily resident out of India for a continuous period of seven years, and during that period, has neither been at any time a student of any educational institution in a country outside India or in the service of a Government in India or of an international organisation of which India is a member, not registered annually in the prescribed manner at an Indian consulate his intention to retain his citizenship of India.

- The Supreme Court, in *Sarbananda Sonowal v. Union of India* (2005), upheld the government's power to strip citizenship in cases of national security concerns.

Statement 3 is correct.

- Provisions related to Citizenship – acquisition and termination are amended by the simple majority of the constitution.
- The Constitution of India provides for three distinct methods of amendment:

1. Amendment by Simple Majority of Parliament:

- o Certain provisions can be amended by a simple majority, which is

more than 50% of the members present and voting in either House of Parliament. These amendments are not considered as formal amendments under Article 368.

2. Amendment by Special Majority of Parliament:

- o This method requires:

- A majority of the total membership of each House of Parliament.
- A two-thirds majority of the members present and voting in each House.

3. Amendment by Special Majority of Parliament and Ratification by States:

- o For certain provisions that affect the federal structure, the amendment process requires:

- A special majority in both Houses of Parliament.
- Ratification by at least half of the state legislatures through a simple majority.

23. (a)

Context: The government appointed acting Enforcement Directorate chief Rahul Navin as full-time director of the anti-money laundering agency for two years.

Statement 1 is correct.

- The appointment, tenure, and removal of the Director of Enforcement (ED Chief) are governed by the Central Vigilance Commission (CVC) Act, 2003, which was enacted following Supreme Court guidelines in *Vineet Narain v. Union of India* (1998).
- As per Section 25 of the CVC Act, 2003, the Director of Enforcement is appointed by the central government for a fixed tenure of not less than two years.

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(16 – A)

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89. With reference to the Indian polity, consider the following statements:

- I. The Governor of a State is not answerable to any court for the exercise and performance of the powers and duties of his/her office.
- II. No criminal proceedings shall be instituted or continued against the Governor during his/her term of office.
- III. Members of a State Legislature are not liable to any proceedings in any court in respect of anything said within the House.

Which of the statements given above are correct?

- (a) I and II only
- (b) II and III only
- (c) I and III only
- (d) I, II and III

CA-VA FLT-1

Q16. Consider the following statements regarding the Privileges of the State Legislature:

1. The Constitution extends Privileges of State Legislature to all those individuals who are entitled to speak and take part in the proceedings of a House.
2. The Governor of a State is also entitled to the same privileges as the members of the State Legislature.
3. The members cannot be arrested during the session of the State Legislature and 60 days before and after the end of such session.

How many of the statement(s) given above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Answer: (a)

Solution:

Statement 1 is correct : Privileges of the State Legislature are special rights, immunities, and exemptions enjoyed by the members of the two houses of the State Legislature. The Constitution (under Article 177) extends such rights and immunities to those individuals who speak and participate in any committee of the State Legislature, including the Advocate General and State Ministers.

Statement 2 is not correct: The Governor, who is an integral part of the State Legislature, does not enjoy these privileges as the Governor and President enjoy exclusive privileges and protection under article 361.

Statement 3 is not correct: The member of the State Legislature cannot be arrested 40 days before, 40 days after the session of the House, or during the session of the House. If in any case a member of Parliament is arrested within this period, the concerned person should be released to attend the session freely. This privilege protects the MLA from arbitrary arrests by the governing party and promotes his Right to Dissent.

ADDITIONAL INFORMATION

PRIVILEGES OF STATE LEGISLATURE: These privileges can be classified into two categories

(a) Collective Privileges: The privileges belonging to both Houses of the State Legislature collectively are:

1. The right to publish reports, debates, and proceedings, and prohibit others from publishing such the same.
2. The right to publish proceedings without the authorization of the Legislature under the freedom of the press. However, such rights are subject to reasonable restrictions.
3. The right to exclude strangers from its debates and hold secret meetings to address important issues.
4. The right to make rules and regulations to administer its procedure and business.
5. The right to punish members and non-members for their contempt or breach of privileges by reprimand, admonition, or imprisonment.
6. Initiate inquiries and compel a person's attendance.
7. Courts are prohibited from investigating the proceedings of the House or its committees.
8. Without the permission of the Presiding officer, no individual (whether a member or a non member or outsider) can be arrested, and no legal process (civil or criminal) can be served within the premises of the House.

- (b) **Individual Privileges:** Privileges belonging to the members individually are:
1. The members cannot be arrested during the session of the State Legislature and 40 days before and after the end of such a session. This privilege is only presented in civil matters; it is not granted in criminal or preventive detention cases. Hence, statement 3 is not correct.
 2. Members have Freedom of speech and expression. No member of Parliament or its committees is held liable in any court for anything said or any vote given by them in the Legislature or its committees.
 3. Members are exempted from jury duty when Parliament is in session. They have the right to decline to give evidence and testify in court."

FROM HANDOUT

6. PARLIAMENTARY PRIVILEGES

- Parliamentary privileges refer to certain rights, immunities and exemptions enjoyed by parliamentarians individually and collectively.
- To allow them to perform their parliamentary duties without obstruction or fear of legal consequences.
- Articles 105 and 194 outline the privileges for parliament and state legislatures respectively.
- Privileges are based on five sources - Constitutional provisions, laws made by Parliament, Rules of both the Houses, Parliamentary conventions, and Judicial interpretations.
- Key privileges relate to freedom of speech, immunity from legal proceedings for parliamentary speeches/votes, freedom from arrest in civil cases, etc.
- Article 122 of the Indian Constitution says parliamentary proceedings can't be questioned by the judiciary.

99. Consider the following pairs:

Country	Resource-rich in
I. Botswana	Diamond
II. Chile	Lithium
III. Indonesia	Nickel

In how many of the above rows is the given information correctly matched?

- (a) Only one
- (b) Only two
- (c) All the three
- (d) None

CA-VA PMT-24

In test, Indirect reference about Chile as lithium resource rich country, in govt scheme handout direct reference about Botswana as a diamond rich country

Q20. Consider the following characteristics of a desert region:

1. It is the driest non polar desert in the world, with some areas never having recorded rainfall.
2. It is known for its vast salt flats and rich deposits of lithium, a critical mineral for battery production.
3. It is located between two mountain ranges: the **Andes to the east and the Chilean Coast Range to the west.**
4. It is known for its extreme aridity due to the rain shadow effect, high air pressure, and the cold Humboldt Current.

Which of the following deserts best fits the above description?

- (a) Patagonia Desert
- (b) Atacama Desert
- (c) Kalahari Desert
- (d) Namib Desert

Solution:

Characteristic 1: The driest non-polar desert in the world, with some areas never having recorded rainfall

- The **Atacama Desert**, located in northern Chile, is the driest non-polar desert on Earth.

- Some weather stations in this desert have **never recorded rainfall**, and the region receives **less than 1 mm of precipitation per year**.
- NASA has even compared its soil to **Martian soil** due to its extreme dryness, making it a testing ground for Mars rovers.

Characteristic 3: Known for vast salt flats and rich deposits of lithium, a critical mineral for battery production

- The **Salar de Atacama** is one of the largest salt flats in the world and is a major source of **lithium**, a key mineral used in rechargeable batteries.
- Chile, particularly in the Atacama region, is one of the **top three lithium producers globally**, along with Australia and China.
- The lithium extraction industry in this region plays a crucial role in the **global transition to electric vehicles and renewable energy storage**.

Characteristic 4: Located between two mountain ranges – the Andes to the east and the Chilean Coast Range to the west

- The **Atacama Desert** is uniquely positioned between the **Andes Mountains** (to the **east**) and the **Chilean Coast Range** (to the **west**).
- This geographical location is significant because it contributes to its **exceptional dryness** through natural barriers that prevent moisture from reaching the desert.

Characteristic 5: Extreme aridity due to the rain shadow effect, high air pressure, and the cold Humboldt Current

- The **Andes Mountains create a rain shadow effect**, blocking moist air from the **Amazon Basin**, preventing precipitation from reaching the desert.
- The **Humboldt Current**, a **cold ocean current** off the coast of South America, further inhibits rainfall by **cooling the air and reducing its ability to hold moisture**.
- Additionally, the **subtropical high-pressure system** over the region suppresses cloud formation, contributing to its **persistent arid conditions**.

FROM HANDOUT

Ministry of Commerce and Industry		
Name	Details	Aim/ Objectives
Diamond Imprest Authorization (DIA) Scheme	<p>Eligibility Criteria:</p> <ul style="list-style-type: none"> Exporters must hold a Two Star Export House status or higher. Must have an annual export performance of at least USD 15 million in cut and polished diamonds over the preceding three financial years. Import under DIA is limited to 5% of the average annual export performance over the preceding three years, capped at USD 15 million. Validity: <ul style="list-style-type: none"> Authorization is valid for 12 months from the date of issuance. Export obligation must be fulfilled within 18 months from the date of authorization issuance. It is a strategic response to beneficiation policies in diamond-producing countries like Botswana, Namibia, and Angola, which require local processing of a portion of mined diamonds. 	<p>Aim: To support exporters, particularly Micro, Small, and Medium Enterprises (MSMEs), by facilitating duty-free imports and promoting value addition in diamond exports.</p> <p>Key Features:</p> <ul style="list-style-type: none"> Duty-Free Import: of natural cut and polished diamonds, including semi-processed, half-cut, and broken diamonds, each weighing up to 0.25 carats (25 cents). Lab-grown diamonds are excluded from this scheme. Export Obligation: Mandates a minimum of 10% value addition on imported diamonds, with the obligation to export the processed diamonds within six months from the date of import clearance. <p>Objectives:</p> <ul style="list-style-type: none"> Strengthen India's position in the global diamond trade by simplifying import processes and reducing costs. Promote domestic processing and value addition: to imported diamonds, increasing export value. Support MSMEs by providing a level playing field to compete internationally. Prevent Capital Flight: Deter the relocation of Indian diamantaires to diamond-producing countries by offering competitive domestic facilities.

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