

# Solutions

DATE : (18<sup>th</sup> Aug- 24<sup>th</sup> Aug)

## 1) Correct Answer: (b) Linear Induction Motor for Pod Propulsion

### Explanation

- **Core Concept:** Hyperloop uses **vacuum tubes, magnetic levitation, and Linear Induction Motors (LIM)** for ultra-high-speed transport.
- **Key Features:**
  - LIM generates propulsion through a moving electromagnetic field.
  - Low-pressure tubes minimize drag.
  - Magnetic levitation ensures frictionless, smooth travel.
- **Why (b) is Correct:** LIM is the **core propulsion technology** in hyperloop systems.
- **Why Others are Wrong:**
  - (a) Helium not used.
  - (c) Not based on conventional rail tracks.
  - (d) No solar-powered steam engine in hyperloop.

## 2) Correct Answer: (a) Maintain Price Stability with Growth Consideration

### Explanation

- **Core Concept:** India's **Flexible Inflation Targeting (FIT)** framework (2016) ensures **price stability** while supporting growth.
- **Key Features:**
  - Target: **4% CPI inflation with  $\pm 2\%$  band.**
  - Introduced via **RBI Act, 1934 amendment.**
  - Balances inflation control with growth imperatives.
- **Why (a) is Correct:** Main aim is **price stability**, with secondary focus on **growth**.
- **Why Others are Wrong:**
  - (b) Full employment is not its mandate.
  - (c) Maximizing FDI is irrelevant.
  - (d) Export-led growth is not its goal.

## 3) Correct Answer: (c) Kuala Lumpur (AIBD Secretariat)

### Explanation

- **Core Concept:** **Asia-Pacific Institute for Broadcasting Development (AIBD)** fosters cooperation in electronic media.
- **Key Features:**
  - Established **1977 under UNESCO.**
  - HQ: **Kuala Lumpur, Malaysia.**
  - India represented by **Prasar Bharati**; plays a leading role.
- **Why (c) is Correct:** Secretariat is in Kuala Lumpur.
- **Why Others are Wrong:**
  - (a) Jakarta incorrect.
  - (b) New Delhi only member presence, not HQ.
  - (d) Bangkok not correct.

## 4) Correct Answer: (a) Stealth and Twin-Engine Powered Supercruise (AMCA)

### Explanation

- **Core Concept:** **Advanced Medium Combat Aircraft (AMCA)** – India's fifth-generation stealth fighter jet.
- **Key Features:**
  - **Stealth design** to evade radar.
  - **Twin-engine supercruise** capability.
  - Equipped with **AESA radar, AI-based avionics, advanced weapon systems.**
- **Why (a) is Correct:** These are **defining features** of AMCA.
- **Why Others are Wrong:**
  - (b) Not single-engine.
  - (c) Not rotary-wing.
  - (d) Not propeller or reconnaissance aircraft.

## 5) Correct Answer: (c) Three-Stage LMLV with Liquid + Cryogenic Propellants

### Explanation

- **Core Concept: Lunar Mission Launch Vehicle (LMLV)** – designed for India’s human lunar landing (by 2040).
- **Key Features:**
  - **Three stages:**
    - First two – **liquid propellant**.
    - Third – **cryogenic propellant**.
  - Payload: **80 tonnes to LEO, 27 tonnes to Moon**.
- **Why (c) is Correct:** Matches LMLV’s actual configuration.
- **Why Others are Wrong:**
  - (a) Not for nano-satellites.
  - (b) Not single-stage.
  - (d) Does not use reusable boosters.

### 6) Correct Answer: (b) Rampage – Long-Range Air-to-Ground Missile by Israel Aerospace Industries

#### Explanation

- **Core Concept:** Rampage is a **supersonic, long-range, precision strike missile** acquired by the IAF, designed for stand-off air-to-ground operations.
- **Key Features:**
  - Range: long-distance strike capability.
  - Supersonic speed, highly precise.
  - Difficult to detect/intercept.
- **Why (b) is Correct:** Developed by **Israel Aerospace Industries**, designed for precision ground attack.
- **Why Others are Wrong:**
  - (a) Not a DRDO surface-to-air missile.
  - (c) Not Russian submarine-launched cruise missile.
  - (d) Not a French tactical ballistic missile.

### 7) Correct Answer: (a) Statements I, II and IV only (AIBD)

#### Explanation

- **Core Concept: Asia-Pacific Institute for Broadcasting Development (AIBD)** promotes cooperation, training, and policy dialogue in electronic media.
- **Key Features:**
  - Founded: **1977 under UNESCO**.
  - **Secretariat:** Kuala Lumpur, Malaysia.
  - India: Founding member, represented by **Prasar Bharati**.
- **Why (a) is Correct:**
  - (I) True – HQ in Kuala Lumpur.
  - (II) True – India founding member.
  - (III) False – Represented by Prasar Bharati, not Ministry directly.
  - (IV) True – Established in 1977 under UNESCO.

### 8) Correct Answer: (a) Statements II, III and IV only (Drake Passage)

#### Explanation

- **Core Concept: Drake Passage** connects the Atlantic & Pacific Oceans between **Cape Horn and South Shetland Islands**.
- **Key Features:**
  - Strong Antarctic Circumpolar Current.
  - Historic trade route pre-Panama Canal.
  - Roughest seas, strategic location.
- **Why (a) is Correct:**
  - (I) False – Ocean flow west → east, not both directions.
  - (II) True – Historic trade route.
  - (III) True – Dominated by Circumpolar Current.
  - (IV) True – Located between Cape Horn & South Shetland Islands.

### 9) Correct Answer: (b) Statements I and III only (Sundarbans Tiger Reserve)

#### Explanation

- **Core Concept: Sundarbans Tiger Reserve (STR)** – India’s second largest tiger reserve after recent expansion.
- **Key Features:**
  - Location: **West Bengal**, part of Sundarbans Biosphere Reserve.
  - Legal framework: **Wildlife Protection Act, 1972** requires NTCA + NBWL approval for boundary changes.

- **Why (b) is Correct:**
  - (I) True – Both NTCA & NBWL required.
  - (II) False – STR is in India, not Bangladesh.
  - (III) True – Now second-largest tiger reserve.

### 10) Correct Answer: (b) Both Statements I and II are correct, but Statement II does not explain Statement I (Flexible Inflation Targeting)

#### Explanation

- **Core Concept:** India's **Flexible Inflation Targeting (FIT)** framework, adopted in **2016**, aims at price stability with growth considerations.
- **Key Features:**
  - Target: **4% CPI inflation  $\pm 2\%$** .
  - RBI Act amendment formalised inflation targeting.
  - Guided by **Monetary Policy Committee (MPC)**.
- **Why (b) is Correct:**
  - (I) True – FIT balances inflation & growth.
  - (II) True – Debate exists on headline vs. core inflation.
  - But (II) does not logically explain (I).

### 11) Correct Answer: (b) Ministry of Social Justice and Empowerment (SMILE Scheme)

#### Explanation

- **Core Concept:** **Support for Marginalized Individual for Livelihood and Enterprise (SMILE)** scheme addresses socio-economic challenges of **transgender persons** and **persons engaged in begging**.
- **Key Features:**
  - Central Sector Scheme under **Ministry of Social Justice and Empowerment (MoSJE)**.
  - Two sub-schemes:
    - 1. Welfare of Transgender Persons.
    - 2. Rehabilitation of Persons Engaged in Begging.
  - Includes **medical care, counseling, skill training, education, and economic linkages**.
- **Why (b) is Correct:** MoSJE implements SMILE directly.
- **Why Others are Wrong:** Other ministries (like Health or Labour) are not the nodal authority.

### 12) Correct Answer: (c) Sweden – 32nd NATO Member (2024)

#### Explanation

- **Core Concept:** NATO, formed in **1949**, has expanded from 12 founding members to **32 in 2024**.
- **Key Features:**
  - Core principle: **Collective defense (Article 5)**.
  - Membership requires **unanimous approval** by existing members.
- **Why (c) is Correct:** Sweden joined in **2024** as the most recent member.
- **Why Others are Wrong:**
  - (a) Ukraine – not yet a member.
  - (b) Georgia – not a NATO member.
  - (d) Finland – joined earlier (31st member).

### 13) Correct Answer: (c) State Cooperative Banks (UIDAI Framework)

#### Explanation

- **Core Concept:** UIDAI enables **Aadhaar-based eKYC and authentication** for cooperative banks to enhance **financial inclusion**.
- **Key Features:**
  - **State Cooperative Banks (SCBs):** Registered as Authentication User Agencies & eKYC User Agencies.
  - **District Central Cooperative Banks (DCCBs):** Receive internal identifier (DCB-ID).
- **Why (c) is Correct:** Only **SCBs** are authorized under UIDAI for Aadhaar authentication.
- **Why Others are Wrong:** DCCBs and PACS are not authorized for full eKYC operations.

### 14) Correct Answer: (b) International Big Cat Alliance (IBCA) – India-led Global Initiative

#### Explanation

- **Core Concept:** IBCA is a global alliance launched by India in **2023** for conservation of big cats.
- **Key Features:**
  - Covers **7 big cat species:** Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, Puma.
  - HQ: **India**.
  - Includes **95 countries** (range and non-range).
- **Why (b) is Correct:** IBCA is led by **Ministry of Environment, Forest & Climate Change, India**.



- **Why Others are Wrong:** No other global agency leads this initiative.

### 15) Correct Answer: (c) Central Consumer Protection Authority (CCPA)

#### Explanation

- **Core Concept:** CCPA, established under **Consumer Protection Act, 2019**, regulates misleading advertisements.
- **Key Features:**
  - Defines and penalizes “**misleading advertisements**.”
  - Powers: **investigate, issue directions, impose penalties**.
  - Jurisdiction: All goods & services, including **digital platforms**.
- **Why (c) is Correct:** CCPA is the statutory authority with this mandate.
- **Why Others are Wrong:** Other consumer bodies lack statutory investigative and penal powers.

### 16) Correct Answer: (b) Statements I and II only (NATO)

#### Explanation

- **Core Concept:** NATO is a **military and political alliance** (Europe + North America) established in **1949** for collective security.
- **Key Features:**
  - Core principle: **Article 5 → Collective defense**.
  - HQ: **Brussels, Belgium**.
  - Members: **32 as of 2024** (Sweden most recent).
- **Why (b) is Correct:**
  - (I) True – Article 5 provides for collective defense.
  - (II) True – NATO has 32 members in 2024.
  - (III) False – HQ is in Brussels, not Geneva.

### 17) Correct Answer: (c) Statements I and II (Dal Lake)

#### Explanation

- **Core Concept:** Dal Lake, located in **eastern Srinagar**, is central to Kashmir’s ecology, culture, and tourism.
- **Key Features:**
  - Fed by **Arrah River**.
  - Divided into **four basins**: Gagribal, Lokut Dal, Bod Dal, Nagin.
  - Venue for **Khelo India water games**.
- **Why (c) is Correct:**
  - (I) True – Fed by Arrah river.
  - (II) True – Located in east Srinagar & divided into four basins.

### 18) Correct Answer: (b) Statement II only (Registrar General of India – CRS)

#### Explanation

- **Core Concept:** **Registrar General of India (RGI)** manages Census and Civil Registration.
- **Key Features:**
  - CRS governed by **Registration of Births and Deaths Act, 1969**.
  - Census governed by **Census Act, 1948**.
  - Also conducts **NPR, Sample Registration, Mother Tongue Survey**.
- **Why (b) is Correct:**
  - (I) False – RGI does more than NPR (e.g., Mother Tongue Survey).
  - (II) True – Registration of births & deaths compulsory under 1969 Act.
  - (III) False – CRS not governed by Census Act.

### 19) Correct Answer: (c) Statements II and IV only (International Big Cat Alliance)

#### Explanation

- **Core Concept:** IBCA, launched by India in **2023**, promotes **global big cat conservation**.
- **Key Features:**
  - Covers **7 species**: Tiger, Lion, Leopard, Snow Leopard, Cheetah, Jaguar, Puma.
  - HQ: **India**.
  - Membership: **95 countries** (range + non-range).
- **Why (c) is Correct:**
  - (I) False – Launched during Project Tiger’s 50th anniversary, not Project Lion.
  - (II) True – Includes both range & non-range nations.
  - (III) False – Covers 7 cats, not just 5.
  - (IV) True – HQ in India; NTCA involved.

### 20) Correct Answer: (b) Statement II only (Registrar General of India – Census)

#### Explanation

- **Core Concept:** RGI is under **Ministry of Home Affairs**, responsible for Census & CRS.
- **Key Features:**
  - Census → under **Census Act, 1948**.
  - CRS → under **Registration of Births & Deaths Act, 1969**.
- **Why (b) is Correct:**
  - (I) False – RGI under Ministry of Home Affairs, not Social Justice.
  - (II) True – Census conducted under **Census Act, 1948**.

### 21) Correct Answer: (b) Offering online money games and related financial transactions (Online Gaming Bill)

#### Explanation

- **Core Concept:** The bill regulates the **online gaming sector** by distinguishing between **e-sports, social games, and online money games**.
- **Key Features:**
  - Introduced under **Article 117 with Presidential recommendation**.
  - Establishes an **Online Gaming Authority**.
  - **Strict prohibition on online money games** to curb risks of fraud, addiction, and money laundering.
- **Why (b) is Correct:** Offering online money games/financial transactions is **explicitly prohibited**.
- **Why Others are Wrong:**
  - (a) Advertising e-sports → allowed.
  - (c) Skill-based non-monetary games → encouraged.
  - (d) Social games without stakes → permitted.

### 22) Correct Answer: (d) A vital link between India and Tibet (China) & Kailash Mansarovar Yatra route (Lipulekh Pass)

#### Explanation

- **Core Concept:** **Lipulekh Pass** in Uttarakhand connects India with Tibet (China).
- **Key Features:**
  - Historic trade route + pilgrimage route for **Kailash Mansarovar Yatra**.
  - Strategically important in India-China border dynamics.
  - Subject of **territorial dispute with Nepal**.
- **Why (d) is Correct:** Known as the **gateway for Kailash Mansarovar pilgrims** & trade link with Tibet.
- **Why Others are Wrong:**
  - (a) Not in Arunachal Pradesh.
  - (b) Not a route to Bhutan.
  - (c) Not primary trade route to Nepal.

### 23) Correct Answer: (d) Uzbekistan (Eurasian Economic Union Membership)

#### Explanation

- **Core Concept:** The **Eurasian Economic Union (EAEU)** was formed in 2014 to promote **regional economic integration**.
- **Key Features:**
  - Members: **Russia, Belarus, Kazakhstan, Kyrgyzstan, Armenia**.
  - Focus: Free movement of goods, services, labor, and capital.
- **Why (d) is Correct:** Uzbekistan is **not a member** of EAEU.
- **Why Others are Wrong:**
  - (a) Belarus → member.
  - (b) Armenia → member.
  - (c) Russia → founding member.

### 24) Correct Answer: (d) Kerala (Thattekad Bird Sanctuary)

#### Explanation

- **Core Concept:** **Thattekad Bird Sanctuary** (Salim Ali Bird Sanctuary) is Kerala's **first bird sanctuary**.
- **Key Features:**
  - Located in **Ernakulam district, Kerala**.
  - Rich in **avian biodiversity**, including endemic and rare species.
  - Habitat: marshlands, river systems, plantations.
- **Why (d) is Correct:** Sanctuary is in **Kerala**.
- **Why Others are Wrong:**

- (a) Not in Andhra Pradesh.
- (b) Not in Karnataka.
- (c) Not in Tamil Nadu.

### 25) Correct Answer: (a) Converting coal into syngas for electricity, fuel cells & downstream products (Coal Gasification)

#### Explanation

- **Core Concept:** Coal gasification → process of converting coal into **synthetic gas (syngas)**.
- **Key Features:**
  - Produces syngas ( $H_2 + CO$ ).
  - Applications: **electricity generation, fuel cells, methanol, fertilizers, synthetic natural gas.**
  - Suitable for **high-ash coal** like India's.
- **Why (a) is Correct:** Main output is **syngas for multiple downstream uses.**
- **Why Others are Wrong:**
  - (b) LNG not produced directly.
  - (c) Calorific value not increased via ash removal.
  - (d) Methane extraction (CBM) is different from gasification.

### 26) Correct Answer: (b) Statement II only (Surface-to-Surface Ballistic Missiles – SSBMs)

#### Explanation

- **Core Concept:** SSBMs are long-range missiles that deliver **nuclear or conventional warheads** from launch site to target following a **ballistic trajectory**.
- **Key Features:**
  - Powered by rockets in initial stage → rest of flight is ballistic.
  - Versatility: capable of carrying **nuclear or conventional warheads.**
  - Managed by **Strategic Forces Command** under **Nuclear Command Authority.**
- **Why (b) is Correct:**
  - (I) False – SSBMs not rocket-propelled throughout, only in initial phase.
  - (II) True – They can carry nuclear/conventional warheads.

### 27) Correct Answer: (d) Statements I and II only (Global Capability Centres – GCCs in India)

#### Explanation

- **Core Concept:** GCCs are **offshore units** of MNCs set up to leverage India's talent pool and cost efficiency for global operations.
- **Key Features:**
  - Drivers: **talent availability, English proficiency, cost efficiency.**
  - Provide **IT, R&D, analytics, design, and global innovation support.**
- **Why (d) is Correct:**
  - (I) True – Talent & English skills attract MNCs.
  - (II) True – Cost efficiency a major factor.
  - (III) False – Rare earth minerals not relevant.
  - (IV) False – Solar radiation unrelated.

### 28) Correct Answer: (b) Statements I, II and III (Minimum Public Shareholding – MPS Norms)

#### Explanation

- **Core Concept:** MPS norms ensure broader ownership of listed companies and reduce promoter dominance.
- **Key Features:**
  - Legal mandate: **Securities Contracts Regulation Act, 1956.**
  - Requirement: **minimum 25% shares must be held by public.**
- **Why (b) is Correct:**
  - (I) True – Applies to all listed companies.
  - (II) True – Ensures dispersion of ownership & transparency.
  - (III) True – 25% public shareholding is mandatory.

### 29) Correct Answer: (c) Statement I only (Saltwater Crocodile – *Crocodylus porosus*)

#### Explanation

- **Core Concept:** Saltwater crocodile – world's largest crocodilian, found in brackish and saline waters.
- **Key Features:**
  - **Legal protection:** Schedule I (Wildlife Protection Act, 1972) & Appendix I (CITES).
  - **Habitat:** Mangrove swamps, estuaries, deltas.
  - **Conservation status:** IUCN → **Least Concern**, not Endangered.



- **Why (c) is Correct:**
  - (I) True – Protected under Schedule I & Appendix I of CITES.
  - (II) False – Found in saline/brackish water, not just freshwater.
  - (III) False – Not Endangered, but Least Concern.

### 30) Correct Answer: (a) Both Statement I and Statement II are correct, and Statement II explains Statement I (Article 117(3) – President's Recommendation on Financial Bills)

#### Explanation

- **Core Concept:** Article 117(3) mandates **President's recommendation** for any bill involving expenditure from the **Consolidated Fund of India**.
- **Key Features:**
  - Ensures **executive oversight** on financial matters.
  - Prevents Parliament from passing such bills arbitrarily.
- **Why (a) is Correct:**
  - (I) True – Executive oversight is a constitutional requirement.
  - (II) True – Article 117(3) explicitly provides this condition.
  - (II) also **explains (I)** → ensures fiscal discipline.

### 31) Correct Answer: (a) The President appoints them under Article 224(1) after approval by the Supreme Court Collegium (Additional Judges of High Courts)

#### Explanation

- **Core Concept:** **Additional Judges** are appointed to address **temporary increase in workload** or vacancies in High Courts.
- **Key Features:**
  - Appointment under **Article 224(1) of the Constitution**.
  - **President of India** makes the appointment, based on the recommendation of the Supreme Court Collegium.
  - Term: Up to **two years**.
  - Retirement age: **62 years** (same as High Court judges).
- **Why (a) is Correct:** Appointment lies with the **President**, guided by Collegium.
- **Why Others are Wrong:**
  - (b) Wrong age (65 years applies to SC judges).
  - (c) Not a fixed 5-year term → max 2 years.
  - (d) Their purpose is **specifically to clear arrears of work**.

### 32) Correct Answer: (c) Societies Registration Act, 1860 (Quality Council of India – QCI)

#### Explanation

- **Core Concept:** **QCI** is India's **apex quality body**, promoting global competitiveness in goods and services.
- **Key Features:**
  - Established in **1996** under **Societies Registration Act, 1860**.
  - Autonomous, non-profit → governed by a council chaired by a PM-nominated representative.
  - Industry representation: **CII, FICCI, ASSOCHAM**.
- **Why (c) is Correct:** QCI was set up as a registered society.
- **Why Others are Wrong:**
  - (a) Not Cooperative Societies Act.
  - (b) Not under Companies Act.
  - (d) No other Act applies.

### 33) Correct Answer: (a) Must be qualified for election as a member of the Rajya Sabha (Vice-President Eligibility)

#### Explanation

- **Core Concept:** VP is India's **second-highest constitutional post** & **ex-officio Chairman of Rajya Sabha**.
- **Key Features (Article 66):**
  - Citizen of India.
  - **35 years minimum age**.
  - Qualified for **Rajya Sabha membership**.
  - Must not hold any **office of profit**.
- **Why (a) is Correct:** Eligibility is tied to **Rajya Sabha**, not Lok Sabha.
- **Why Others are Wrong:**
  - (b) Age is 35, not less.
  - (c) Citizenship mandatory.
  - (d) Office of profit clause valid.

### 34) Correct Answer: (b) Ministry of Education (ICSSR)

#### Explanation

- **Core Concept: Indian Council of Social Science Research (ICSSR)** is India's **apex body** for funding & guiding social science research.
- **Key Features:**
  - Established in **1969**.
  - Provides **funding, fellowships, research programs**.
  - Supports policy-relevant social science studies.
- **Why (b) is Correct:** Functions under **Ministry of Education**.
- **Why Others are Wrong:** Not under Culture, Social Justice, or other ministries.

### 35) Correct Answer: (d) Government decides the composition (Parliamentary Consultative Committees – PCCs)

#### Explanation

- **Core Concept: Consultative Committees** → platform for informal policy discussions between MPs and ministries.
- **Key Features:**
  - Formed under **Allocation of Business Rules, 1961**.
  - Composition decided by **Government of India (Ministry of Parliamentary Affairs)**.
  - Membership is **voluntary**.
- **Why (d) is Correct:** Government decides composition.
- **Why Others are Wrong:** Neither Parliament, Rajya Sabha Chairman, nor Lok Sabha Speaker decides composition independently.

### 36) Correct Answer: (b) Statement II only (Parliamentary Consultative Committees – PCCs)

#### Explanation

- **Core Concept: PCCs** are **informal platforms** for dialogue between MPs and ministries, ensuring participatory governance.
- **Key Features:**
  - Governed by **Allocation of Business Rules, 1961**.
  - Membership: **10 to 30 MPs**, voluntary in nature.
  - Composition decided by the **Government of India** (Ministry of Parliamentary Affairs).
- **Why (b) is Correct:**
  - (I) False – Membership is not fixed at 20; it ranges between 10–30.
  - (II) True – Government decides their composition.

### 37) Correct Answer: (a) Statement I only (Additional Judges – High Courts)

#### Explanation

- **Core Concept: Additional Judges** are appointed to High Courts to handle **temporary workload or arrears of cases**.
- **Key Features:**
  - Appointment: **President under Article 224(1)**, based on Collegium recommendations.
  - Term: **Not more than 2 years**.
  - Retirement age: **62 years**.
- **Why (a) is Correct:**
  - (I) True – President appoints under Article 224(1).
  - (II) False – Tenure cannot exceed 2 years, regardless of Collegium approval.

### 38) Correct Answer: (c) Statements I and II (Quality Council of India – QCI)

#### Explanation

- **Core Concept: QCI** is India's apex body for quality standards, created via a **public-private partnership** model.
- **Key Features:**
  - Established in **1996**, autonomous non-profit society.
  - Jointly set up by **Government of India and industry bodies (CII, FICCI, ASSOCHAM)**.
  - **DPIIT** is the nodal department.
- **Why (c) is Correct:**
  - (I) True – DPIIT is the nodal department.
  - (II) True – Established jointly by Govt + industry.

### 39) Correct Answer: (d) Statements I, II and IV only (ICSSR)

#### Explanation

- **Core Concept: ICSSR** is the **apex body for social science research**, supporting academic and policy-oriented studies.



- **Key Features:**
  - Established in **1969**.
  - Functions under **Ministry of Education**.
  - Provides **funding, fellowships, and research guidance**.
- **Why (d) is Correct:**
  - (I) True – Apex body for social sciences.
  - (II) True – Operates under Ministry of Education.
  - (III) False – Not autonomous; linked to MoE.
  - (IV) True – Established in 1969.

### 40) Correct Answer: (d) Statement II only (Vice-President of India – Election & Disqualifications)

#### Explanation

- **Core Concept:** VP is India's **second-highest constitutional post** and **ex-officio Chairperson of Rajya Sabha**.
- **Key Features:**
  - **Articles 66–68** govern eligibility & election.
  - Elected by **Electoral College of both Houses (elected + nominated members)**.
  - Disqualification includes **office of profit**.
  - **Anti-Defection Law does not apply** → no whip in VP election.
- **Why (d) is Correct:**
  - (I) False – Anti-Defection Law does not apply.
  - (II) True – Office of profit disqualification applies.
  - (III) False – Both elected & nominated MPs vote, not only elected.

### 41) Correct Answer: (b) Promote development and commercialization of indigenous technology (Technology Development Board – TDB)

#### Explanation

- **Core Concept:** TDB is a **statutory body** (est. 1996 under TDB Act, 1995) to **bridge research and commercialization**.
- **Key Features:**
  - Provides **financial support** (5% concessional loan/equity) for indigenous R&D.
  - Promotes **adaptation of imported tech** for Indian needs.
  - Supports **Atmanirbhar Bharat** and industrial competitiveness.
- **Why (b) is Correct:** TDB's **primary mandate** is indigenous technology promotion and commercialization.
- **Why Others are Wrong:**
  - (a) Does not implement international tech transfer.
  - (c) IPR not its role.
  - (d) Does not regulate imports.

### 42) Correct Answer: (c) Establishment of special courts with in-camera proceedings (POCSO Act)

#### Explanation

- **Core Concept:** **POCSO Act (2012)** is India's main law against **child sexual offences**, gender-neutral, covering all <18 years.
- **Key Features:**
  - Special courts for speedy trial.
  - **In-camera proceedings** to protect victim dignity.
  - Mandatory reporting & victim-friendly procedures.
  - Severe penalties including **death penalty** for aggravated offences.
- **Why (c) is Correct:** Mandates **special courts + in-camera proceedings** as safeguards.
- **Why Others are Wrong:**
  - (a) Gender-neutral → anyone can file complaint.
  - (b) Reporting not restricted to law enforcement.
  - (d) Severe penalties already exist.

### 43) Correct Answer: (d) Species-poor areas dominated by wide-ranging generalist species (Transition Zones – Biodiversity)

#### Explanation

- **Core Concept:** **Biogeographical regions** have structured biodiversity: core areas (rich, endemic) → transition zones (poor, generalists).
- **Key Features:**
  - Core zones = **high richness & endemism**.
  - Transition zones = **species-poor, generalists dominate**.
  - Ecological boundaries → mixing zones.

- **Why (d) is Correct:** Transition zones are **species-poor** & dominated by **generalists**.
- **Why Others are Wrong:**
  - (a) Moderate richness = inner layers, not transition.
  - (b) High richness/endemic = core zones.
  - (c) Non-characteristic species may occur but not defining feature.

### 44) Correct Answer: (b) Radio Frequency Identification (RFID) (FASTag)

#### Explanation

- **Core Concept:** **FASTag** = electronic toll collection system using **RFID** tech for seamless tolling.
- **Key Features:**
  - Linked to **prepaid/savings account**.
  - Deduction automatic on toll plaza passage.
  - Managed by **NPCI & NHAI**.
  - Mandatory for most NH vehicles.
- **Why (b) is Correct:** RFID enables **contactless toll deduction**.
- **Why Others are Wrong:**
  - (a) GPS not used for payment.
  - (c) Not infrared scanning.
  - (d) NFC not used here.

### 45) Correct Answer: (a) I only (Agriculture Infrastructure and Development Cess – AIDC)

#### Explanation

- **Core Concept:** **AIDC**, introduced in **Union Budget 2021-22**, funds **agriculture infrastructure**.
- **Key Features:**
  - Imposed on **petrol, diesel (excise) + customs duty on imports**.
  - Dedicated to **rural infra, cold chains, storage facilities**.
  - Supports farmer market access & logistics.
- **Why (a) is Correct:**
  - (I) True – Introduced in Budget 2021-22 for agri infra.
  - (II) False – It applies to **excise + customs duties**, not only agri goods.

### 46) Correct Answer: (d) Enables direct brain-to-device communication (Brain-Computer Interfaces – BCIs)

#### Explanation

- **Core Concept:** BCIs allow **direct communication between brain & external devices** by translating neural signals into digital commands.
- **Key Features:**
  - Can be **invasive (implants)** or **non-invasive (sensors, EEG caps)**.
  - Bypass muscles/nerve pathways → enable control purely via brain activity.
  - Applications: **paralysis rehabilitation, prosthetic control, immersive gaming, cognitive enhancement**.
- **Why (d) is Correct:** BCIs specifically translate **neural signals into actionable commands**.
- **Why Others are Wrong:**
  - (a) Imaging monitors brain activity, but not device control.
  - (b) External sensors unrelated to brain signals don't form BCIs.
  - (c) Functional electrical stimulation is not BCI.

### 47) Correct Answer: (b) Ministry of Petroleum and Natural Gas (Ethanol Blended Petrol Programme – EBP)

#### Explanation

- **Core Concept:** The **EBP Programme** reduces reliance on crude oil, supports farmers, and lowers emissions by blending ethanol with petrol.
- **Key Features:**
  - Started in **2003**, current target: **20% blending by 2025-26**.
  - Promotes **biofuel security, rural income, and import savings**.
- **Why (b) is Correct:** **Ministry of Petroleum & Natural Gas** is the nodal ministry.
- **Why Others are Wrong:** Agriculture, Environment, or Renewable Energy Ministries are not responsible for fuel blending policy.

### 48) Correct Answer: (c) Driven by differences in water temperature and salinity (Atlantic Meridional Overturning Circulation – AMOC)

#### Explanation

- **Core Concept:** AMOC = a system of Atlantic currents moving heat, nutrients & carbon → regulates **global climate**.

- **Key Features:**
  - **Thermohaline circulation** (driven by temperature & salinity).
  - Warm salty water flows north, cools, sinks → returns south as deep cold current.
- **Why (c) is Correct:** Thermal + haline differences are **primary drivers**.
- **Why Others are Wrong:**
  - (a) Volcanic activity irrelevant.
  - (b) Tides minimal influence.
  - (d) Wind affects surface currents, not deep overturning.

### 49) Correct Answer: (c) Ensure computerization and networking of all Consumer Commissions (E-Jagriti Platform)

#### Explanation

- **Core Concept:** E-Jagriti (2025) modernizes **consumer dispute redressal** through digitization.
- **Key Features:**
  - Launched by **Ministry of Consumer Affairs, Food & Public Distribution**.
  - Connects **district, state, and national Consumer Commissions**.
  - Online filing, case tracking, digital judgments.
- **Why (c) is Correct:** Ensures **computerization & networking of Consumer Commissions**.
- **Why Others are Wrong:**
  - (a) Not for pharmacy.
  - (b) Not for agriculture/crop insurance.
  - (d) Not food business registration.

### 50) Correct Answer: (a) Facilitating securitisation and asset reconstruction of NPAs (Asset Reconstruction Companies – ARCs)

#### Explanation

- **Core Concept:** ARCs = institutions to **resolve NPAs** by acquiring bad loans & restructuring/recovering them.
- **Key Features:**
  - Established under **SARFAESI Act, 2002**.
  - Regulated by **RBI**.
  - Examples: **NARCL, IDRCL**.
- **Why (a) is Correct:** Their core mandate is **securitisation & asset reconstruction**.
- **Why Others are Wrong:**
  - (b) Not about interest rate regulation.
  - (c) Not about FDI in banking.
  - (d) Not about bank mergers.

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