

Solutions

DATE : (18th Aug- 24th 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 ±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

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- **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 ±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 (EEAU)** 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 EEAU.
- **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**

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- **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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