

# Solutions

DATE : (15<sup>th</sup> Dec- 21<sup>st</sup> Dec )

**1) Answer (a)** A group of broad-spectrum antibiotics banned for use in food-producing animals

## Explanation

### Nitrofurans

- Option (a) – Correct
  - Nitrofurans (e.g., furazolidone, nitrofurazone) are **broad-spectrum antibiotics**.
  - Banned in food-producing animals** due to **genotoxic and carcinogenic risks**.
- ✗ Option (b) – Not chemical preservatives.
- ✗ Option (c) – Not plant growth regulators.
- ✗ Option (d) – Not vaccines.

**2) Answer (b)** A secure artificial intelligence platform for decision support without external cloud reliance

## Explanation

### Ekam AI

- Option (b) – Correct
  - Indigenous AI platform** developed for the **Indian Army**.
  - Operates **without external cloud dependency**, ensuring **data security**.
- ✗ Option (a) – Not satellite navigation.
- ✗ Option (c) – Not an ammunition system.
- ✗ Option (d) – Not a drone.

**3) Answer (a)** The first 1.0 GHz, 64-bit dual-core fully indigenous microprocessor

## Explanation

### DHRUV64

- Option (a) – Correct
  - India's first **fully indigenous 1.0 GHz, 64-bit, dual-core microprocessor**.
  - Developed by **C-DAC** under **Microprocessor Development Programme**.
- ✗ Option (b) – Not a satellite.
- ✗ Option (c) – Not a radar.
- ✗ Option (d) – Not an operating system.

**4) Answer (c)** Republic of Türkiye and Spain

## Explanation

### UN Alliance of Civilizations (UNAOC)

- Option (c) – Correct
  - Launched in **2005** by **Türkiye and Spain** under the **United Nations**.
- ✗ Option (a) – Not France–UK.
- ✗ Option (b) – Not India–Germany.
- ✗ Option (d) – Not USA–Canada.

**5) Answer (c)** Maldives

## Explanation

### Exercise Ekatha

- Option (c) – Correct

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- Annual **bilateral maritime exercise** between **India and Maldives**.
  - Enhances **naval interoperability** and **maritime security**.
- **XOption (a)** – Oman not involved.
- **XOption (b)** – Indonesia not involved.
- **XOption (d)** – Sri Lanka not involved.

**6) Answer (d)** Chola range of Eastern Himalayas, connecting Sikkim and Chumbi Valley

### Explanation

#### Cho La Pass

- **XOption (a)** – Not in the **Karakoram range (Ladakh)**.
- **XOption (b)** – Not located in **Uttarakhand**.
- **XOption (c)** – Not in **Arunachal Pradesh**.
- **Option (d)** – Located in the **Chola range of the Eastern Himalayas**, connecting **Sikkim with the Chumbi Valley**; site of **1967 Indo-China clashes** and now part of **battlefield tourism**.

**7) Answer (c)** II and III only

### Explanation

#### State Energy Efficiency Index (SEEI) & NECA

- **XStatement (I)** – SEEI is developed by **BEE with AEEE**, not solely by the Ministry.
- **Statement (II)** – NECA is conferred based on SEEI performance.
- **Statement (III)** – SEEI evaluates **states/UTs across buildings, industry, transport, and municipal sectors**.
- **XStatement (IV)** – NECA is awarded by **BEE**, not the Central Electricity Authority.

**8) Answer (d)** II only

### Explanation

#### Dowry-related Legal Framework

- **XStatement (I)** – IPC/BNS provisions cited deal with **dowry death**, not merely cruelty.
- **Statement (II)** – NCW investigates **dowry harassment complaints** and reviews laws.
- **XStatement (III)** – Dowry Prohibition Act, 1961 prescribes **minimum 5 years**, not 3 years.

**9) Answer (a)** I and II only

### Explanation

#### Viksit Bharat Shiksha Adhishthan (VBSA) Bill

- **Statement (I)** – President of India appoints VBSA President and Members (except ex-officio).
- **Statement (II)** – Bill repeals UGC, AICTE, NCTE Acts, consolidating regulation.
- **XStatement (III)** – Funding of centrally funded institutions is **outside VBSA's purview**.

**10) Answer (b)** Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I

### Explanation

#### Biological Weapons Convention (BWC)

- **Statement-I** – India **ratified the BWC in 1975**, affirming commitment to biosecurity.
- **Statement-II** – BWC prohibits development, production, and stockpiling of biological weapons.
- **XNo causal link** – Nature of BWC does **not explain India's ratification year**.

**11) Answer (d)** Abnormal build-up of proteins such as amyloid and tau in the brain

### Explanation

#### Alzheimer's Disease

- **XOption (a)** – Dopamine deficiency is linked to **Parkinson's disease**, not Alzheimer's.
- **XOption (b)** – Autoimmune attack on myelin is characteristic of **Multiple Sclerosis**.

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- **Option (c)** – No primary evidence links Alzheimer's to **viral infection**.
- **Option (d)** – Alzheimer's is caused by **abnormal accumulation of amyloid plaques and tau tangles**, leading to neuronal damage and cognitive decline.

**12) Answer (c)** Ministry of Micro, Small and Medium Enterprises**Explanation****ASPIRE Scheme**

- **Correct**
  - ASPIRE was launched in **2015** by the **Ministry of MSME**.
  - Focuses on **rural entrepreneurship, Livelihood Business Incubators (LBIs)**, and **skill development**.
- Other ministries are **not responsible** for this scheme.

**13) Answer (c)** Both I and II**Explanation****Goldar Committee (ACNAS)**

- **Statement (I)** – Recommended **integration of new datasets** (GST, PLFS, digital economy data).
- **Statement (II)** – Recommended **base year revision from 2011-12 to 2022-23**.
- Aimed at improving **accuracy and relevance of GDP estimation**.

**14) Answer (c)** I, II and IV only**Explanation****India's Polar Research Stations**

- **Statement (I)** – Bharati is an operational station in **Antarctica**.
- **Statement (II)** – Dakshin Gangotri was India's **first Antarctic station** (now decommissioned).
- **Statement (III)** – Himadri is located in the **Arctic**, not Antarctica.
- **Statement (IV)** – Maitri is an operational station in **Antarctica**.

**15) Answer (d)** III only**Explanation****Challenges Faced by WTO**

- **Statement (I)** – Appellate Body dysfunction is a **real challenge**, so statement is incorrect as framed.
- **Statement (II)** – WTO indeed **lacks strong rules on digital trade**, so the statement is incorrect.
- **Statement (III)** – **Consensus-based decision-making** has caused **Doha Round deadlock**.

**16) Answer (b)** Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I**Explanation****Insurance Amendment Bill**

- **Statement-I – Correct**
  - Proposes raising **FDI in insurance to 100% of paid-up equity capital**, liberalising the sector.
- **Statement-II – Correct**
  - **Lowers net-owned fund requirements for foreign re-insurers**, easing market entry.
- **Causal link**
  - Reducing net-owned funds **does not explain** the decision to raise the FDI cap.

**17) Answer (d)** Statement-I is incorrect, but Statement-II is correct**Explanation****SHANTI Bill – Nuclear Liability**

- **Statement-I – Incorrect**
  - The Bill **removes the operator's right of recourse**, not preserves it.

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- **Statement-II – Correct**
  - Introduces a **tiered liability framework based on reactor capacity**.

**18) Answer (a)** Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

**Explanation****Transposons (Jumping Genes)**

- **Statement-I – Correct**
  - Transposons make up **~45% of the human genome**.
- **Statement-II – Correct**
  - Their impact depends on **insertion site**, affecting gene activation or silencing.
- **Link**
  - Their **mobility and insertion effects** explain their large genomic presence.

**19) Answer (d)** Statement-I is incorrect, but Statement-II is correct

**Explanation****VB-G RAM G Bill, 2025**

- **Statement-I – Incorrect**
  - **100% central funding applies only to UTs without legislatures**, not all states.
- **Statement-II – Correct**
  - Provides **90:10 Centre-State funding** for NE states, Himalayan states, and J&K.

**20) Answer (c)** Statement-I is correct, but Statement-II is incorrect

**Explanation****UNGA 80th Session Political Declaration**

- **Statement-I – Correct**
  - Sets **2030 targets** for **tobacco reduction** and **mental health care access**.
- **Statement-II – Incorrect**
  - The declaration **explicitly includes digital health risks** (social media harm, misinformation); it does not exclude them.

**21) Answer (c)** Waste to Energy Programme

**Explanation****National Bioenergy Programme (NBP)**

- **Option (a)** – Wind Energy is **not** a sub-scheme under NBP.
- **Option (b)** – Green Hydrogen Mission is a **separate initiative**.
- **Option (c)** – **Waste to Energy Programme** is a **core sub-scheme** of NBP.
- **Option (d)** – Solar Rooftop Programme does **not** fall under NBP.

**22) Answer (d)** International Container Transshipment Terminal, international airport, power plant, and township

**Explanation****Great Nicobar Holistic Development Project**

- **Options (a), (b), (c)** – Do **not** reflect actual project components.
- **Option (d)** – Project includes:
  - **ICCT**
  - **International airport**
  - **Power plant**
  - **Township**

Designed to enhance **maritime logistics, connectivity, and strategic presence**.

**23) Answer (a)** Lockheed Martin

**Explanation**

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## MH-60R Seahawk Helicopter

- Option (a) – Developed by **Lockheed Martin (USA)**.
- ✗ Option (b) – Sikorsky designed earlier variants; **MH-60R is Lockheed Martin**.
- ✗ Options (c), (d) – Airbus and Boeing are **not associated**.

**24) Answer (a)** A natural carotenoid pigment for food coloring

## Explanation

## Annatto

- Option (a) – A **natural carotenoid pigment** from *Bixa orellana*.
- ✗ Option (b) – Not a synthetic preservative.
- ✗ Option (c) – Primarily used for **color**, not flavour.
- ✗ Option (d) – Not a sweetener.

**25) Answer (a)** A chain reaction of collisions in Earth's orbit leading to space debris proliferation

## Explanation

## Kessler Syndrome

- Option (a) – Describes **cascade collisions** creating exponential space debris.
- ✗ Option (b) – Not related to Earth's magnetic field.
- ✗ Option (c) – Not about communication failure alone.
- ✗ Option (d) – Not about depletion of orbital slots.

**26) Answer (c)** Only three

## Explanation

## Ethiopia's Land Borders

- Pair (1): Somalia — Shares a **long eastern border** with Ethiopia.
- Pair (2): South Sudan — Borders Ethiopia to the **west**.
- ✗ Pair (3): Uganda — **Does not share a border**; separated by **South Sudan and Kenya**.
- Pair (4): Djibouti — Borders Ethiopia to the **northeast**; vital sea access.

□ Three pairs are correctly matched.

**27) Answer (c)** Both I and II

## Explanation

## Anti-Doping Framework

- Statement (I) — National Anti-Doping Act, 2022 gives **statutory backing** to NADA in India.
- Statement (II) — WADA was established in **1999** and is headquartered in **Montreal, Canada**.

□ Both statements are correct.

**28) Answer (a)** I only

## Explanation

## IBC (Amendment) Bill, 2025

- Statement (I) — Introduces **Creditor Initiated Insolvency Resolution Process (CIIRP)** with **out-of-court initiation**.
- ✗ Statement (II) — Cross-border provisions **also apply to foreign companies** with assets/operations in India.

□ Only Statement I is correct.

**29) Answer (d)** III only

## Explanation

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## Women-Centric Schemes &amp; Protections

- **Statement (I)** — PM-SYM shows **regional gaps** in women's enrolment.
- **Statement (II)** — Palna Scheme utilization is **~6.24%**, not **>80%**.
- **Statement (III)** — PoSH Act, 2013 mandates **District-level Local Committees**.

Only Statement III is correct.

## 30) Answer (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

## Explanation

## WIMPs (Dark Matter)

- **Statement-I** — WIMPs are leading **dark matter candidates**.
- **Statement-II** — They interact mainly via **gravity** and possibly the **weak force**, explaining why they're hard to detect.

Both statements are correct with a causal link.

## 31) Answer (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

## Explanation

## Live-in Relationships &amp; Presumption of Marriage

- **Statement-I – Correct**
  - Indian courts recognize a **presumption of marriage** when a couple **cohabits as husband and wife for a significant period**, primarily to **protect women and children** and uphold **Article 21 (life, liberty, dignity)**.
- **Statement-II – Correct**
  - This presumption is **statutorily backed** by **Section 114, Indian Evidence Act** and **Section 119(1), Bharatiya Sakshya Adhiniyam, 2023**, strengthening legal protection.
- **Link**
  - The **statutory provisions explain and reinforce** the judicial presumption.

## 32) Answer (a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

## Explanation

## Small Modular Reactors (SMRs)

- **Statement-I – Correct**
  - SMRs support **nuclear expansion** with **flexibility, scalability**, and suitability for **diverse locations**.
- **Statement-II – Correct**
  - Factory manufacturing and modular transport enable **faster, flexible deployment**, a core advantage over large reactors.
- **Link**
  - **Modularity explains** why SMRs are strategically important.

## 33) Answer (c) Statement-I is correct, but Statement-II is incorrect

## Explanation

## Freshwater Sponges

- **Statement-I – Correct**
  - Freshwater sponges can **accumulate heavy metals**, making them useful **bio-indicators/bioremediation agents**.
- **Statement-II – Incorrect**
  - Sponges are **simple invertebrates**, not complex vertebrates (though they do filter water).

## 34) Answer (a) I only

## Explanation

## Competition Commission of India (CCI)

- **Statement (I) – Correct**
  - Statutory body under the **Competition Act, 2002**; **Chairperson + 2-6 Members** appointed by the **Central Government**.
- **Statement (II) – Incorrect**
  - CCI functions under the **Ministry of Corporate Affairs**, not Commerce & Industry (it does regulate combinations).

**35) Answer (b) II only****Explanation****Coal Controller's Organisation (CCO)**

- Statement (I) – Incorrect
  - CCO has no role in oil/petroleum; its mandate is coal-specific.
- Statement (II) – Correct
  - Subordinate office of Ministry of Coal; regulates coal quality, grading, sampling under Colliery Control Rules.

**36) Answer (c) II and IV only****Explanation****Small Modular Reactors (SMRs)**

- Statement (I) – Incorrect
  - SMRs currently have a higher per kWh cost than conventional large reactors.
- Statement (II) – Correct
  - SMRs are defined as reactors with up to 300 MW(e) capacity (≈ one-third of conventional reactors).
- Statement (III) – Incorrect
  - SMRs are factory-assembled and transported; they are not exclusively site-built.
- Statement (IV) – Correct
  - Modularity enables portability and scalability, key SMR advantages.

**37) Answer (c) Only three****Explanation****Indian Diaspora Categories**

- Pair (1): NRI – Indian citizen residing abroad; retains Indian citizenship.
- Pair (2): OCI – Foreign national of Indian origin with lifelong visa and limited privileges.
- Pair (3): PIO – Foreign citizen with Indian ancestry (category merged into OCI since 2015).

- All three descriptions are correct.

**38) Answer (d) Cellular autophagy****Explanation****Nobel Prize (2016) – Yoshinori Ohsumi**

- (a) DNA replication – Not his work.
- (b) Protein synthesis – Not his work.
- (c) Photosynthesis – Unrelated.
- (d) Autophagy – Awarded for discoveries on cellular self-digestion and recycling.

**39) Answer (b) Rhine****Explanation****Rivers & the Netherlands**

- (a) Oder → Baltic Sea.
- (b) Rhine → Forms a delta in the Netherlands → North Sea.
- (c) Thames → England → North Sea (not via Netherlands).
- (d) Seine → English Channel.

**40) Answer (b) World Trade Organization agreements****Explanation****Anti-Dumping Duties**

- (a) ILO – Labour standards, not trade remedies.

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- (b) WTO Anti-Dumping Agreement (GATT Article VI) permits duties against dumped imports causing injury.
- (c) IMF – Macroeconomic stability.
- (d) UNSC – Security, not trade remedies.

**41) Answer (b)** Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I

### Explanation

#### Securities Markets Code

- Statement-I — Correct
  - The proposed **Securities Markets Code** seeks to **consolidate the SEBI Act, Depositories Act, and Securities Contracts (Regulation) Act** into a **single, unified legal framework** to streamline regulation.
- Statement-II — Correct
  - The Bill proposes to **expand the SEBI Board from 9 to 15 members** to improve governance and oversight.
- No causal link
  - **Board expansion** is a governance reform and **does not explain the statutory consolidation**.

**42) Answer (c)** Both I and II

### Explanation

#### Supreme Court Guidelines: Child Trafficking & Sexual Exploitation

- Statement (I) — Correct
  - Courts must assess evidence **sensitively**, accounting for **trauma, socio-economic and cultural vulnerabilities**, and avoid discrediting testimony for minor inconsistencies.
- Statement (II) — Correct
  - Trafficked children are to be treated as "**injured witnesses**", and **credible sole testimony** can suffice for conviction.

**43) Answer (b)** II only

### Explanation

#### IN-SPACe

- Statement (I) — Incorrect
  - IN-SPACe facilitates and authorizes **non-governmental entities (private players)**, not only governmental agencies.
- Statement (II) — Correct
  - Established in 2020 as an **autonomous nodal agency** under the **Department of Space** to promote private participation.

**44) Answer (d)** I and III only

### Explanation

#### Support to Poor Prisoners' Scheme, 2023

- Statement (I) — Correct
  - Jail Superintendents must inform the DLSA **within one week** if release is stalled due to non-payment of fines.
- Statement (II) — Incorrect
  - **Both district-level and state-level committees** assess eligibility; it is not limited to one level.
- Statement (III) — Correct
  - **Explicit exclusions** apply to offences under specified Acts and **heinous crimes**.

**45) Answer (d)** I and III only

### Explanation

#### Tundra Biome

- Statement (I) — Correct
  - **Flora:** mosses, lichens, shrubs; **Fauna:** caribou, polar bears, etc.
- Statement (II) — Incorrect
  - Tundra receives **less than ~25 cm** of precipitation annually.
- Statement (III) — Correct
  - Found in **Arctic, Antarctic (limited areas)**, and **alpine** regions.

**46) Answer (b) II and IV only****Explanation****AYUSH Drug Quality Initiatives**

- **Statement (I) – Incorrect**
  - National AYUSH Mission (NAM) focuses on **infrastructure, services, and capacity-building**, not specifically on drug quality/standardization.
- **Statement (II) – Correct**
  - AOGUSY targets **drug quality, standardization, and pharmacovigilance**.
- **Statement (III) – Incorrect**
  - Ayush Mark is a **certification scheme**, not a standardization/pharmacovigilance initiative.
- **Statement (IV) – Correct**
  - Ayuryan addresses **drug quality and standardization**.

**47) Answer (d) I and II only****Explanation****Doppler Weather Radars (DWRs)**

- **Statement (I) – Correct**
  - DWRs **emit radio waves** to detect precipitation.
- **Statement (II) – Correct**
  - Return time and intensity of signals help determine **distance and precipitation intensity**.
- **Statement (III) – Incorrect**
  - Larger particles **reflect more energy**, not less.
- **Statement (IV) – Incorrect**
  - DWRs are **designed to detect severe weather** (including thunderstorms); the statement as framed is incorrect.

**48) Answer (a) Only one****Explanation****CSR, Constitutional Duty & Polluter Pays**

- **Pair (1) – Incorrect**
  - Section 135, Companies Act mandates **CSR**, not environmental education in schools.
- **Pair (2) – Correct**
  - Polluter Pays Principle applied by the Supreme Court for **corporate liability** in environmental harm, including species conservation.
- **Pair (3) – Incorrect**
  - Article 51A(g) imposes a **citizen's duty** to protect the environment; it does **not mandate CSR** for companies.

**49) Answer (a) Only one****Explanation****Deposit Insurance in India**

- **Pair (1) – Correct**
  - Coverage is **₹5 lakh per depositor per bank**.
- **Pair (2) – Incorrect**
  - DICGC is a **wholly-owned subsidiary of RBI**, not managed by DFS.
- **Pair (3) – Incorrect**
  - Premium is paid by **banks**, not depositors.

**50) Answer (c) Only three****Explanation****Securities Markets Code – Key Reforms**

- **Pair (1) – Correct**
  - SEBI Board expansion from **9 to 15 members**.
- **Pair (2) – Correct**
  - Expanded definition of **securities** to include hybrid instruments, EGRs, onshore rupee bonds, etc.
- **Pair (3) – Correct**

- Decriminalization of minor/procedural defaults, shifting to civil penalties.



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