

# 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**

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

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

### Explanation

#### Cho La Pass

- **✗Option (a)** – Not in the **Karakoram range (Ladakh)**.
- **✗Option (b)** – Not located in **Uttarakhand**.
- **✗Option (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

- **✗Statement (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**.
- **✗Statement (IV)** – NECA is awarded by **BEE**, not the Central Electricity Authority.

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

### Explanation

#### Dowry-related Legal Framework

- **✗Statement (I)** – IPC/BNS provisions cited deal with **dowry death**, not merely cruelty.
- **Statement (II)** – **NCW investigates dowry harassment complaints** and reviews laws.
- **✗Statement (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.
- **✗Statement (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**.
- **✗No 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

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

- **✗ 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.

- **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

### 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

### Women-Centric Schemes & Protections

- **X**Statement (I) — PM-SYM shows **regional gaps** in women's enrolment.
- **X**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 & 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**.
- **X**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**.
- **X**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)

- **X**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)

- **X**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 ( $\approx$  one-third of conventional reactors).
- **X**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

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

### 39) Answer (b) Rhine

#### Explanation

##### Rivers & the Netherlands

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

### 40) Answer (b) World Trade Organization agreements

#### Explanation

##### Anti-Dumping Duties

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

- (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**
  - Ayurgyan 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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