

Solutions

DATE : (22nd Sept- 28th Sept)

Explanation:

1. Introduction / Context

Census towns are settlements with urban features but without statutory urban recognition. Their classification impacts urban planning, governance, and resource allocation.

2. Main Points / Analysis

• **Criteria for Census Towns:**

- Minimum population of 5,000
- Population density of ≥ 400 persons/sq km
- At least 75% of male main working population in non-agricultural activities

• **Difference from Statutory Towns:** Census towns lack statutory status and are governed by rural panchayats.

3. Broader Relevance

Correct classification ensures **urban planning, infrastructure funding, and service delivery** in rapidly urbanizing areas.

4. Challenges

- Governance gap: mismatch between urban needs and rural governance.
- Gender bias: exclusion of female workforce in the definition.

2) Answer: (c) Central Government, the Governor of the State, or the Administrator of the Union Territory

Explanation:

1. Introduction / Context

The Armed Forces (Special Powers) Act (AFSPA), 1958 empowers armed forces in “disturbed areas,” balancing internal security and governance.

2. Main Points / Analysis

- **Authority under Section 3:** Central Government, State Governor, UT Administrator.
- **Not empowered:** State Legislature, Chief Minister, or President.
- **Effect of declaration:** Armed forces gain powers of search, arrest, and use of force.

3. Broader Relevance

AFSPA has been crucial in **North-East India and Jammu & Kashmir** for counterinsurgency operations.

4. Challenges

- Human rights concerns.
- Criticism of excessive force.
- Judicial interventions (e.g., **Naga People’s Movement v. Union of India, 1997**).

3) Answer: (a) I only

Explanation:

1. Introduction / Context

India’s urban classification shapes policy design, governance structures, and resource allocation.

2. Main Points / Analysis

- **Statement I – Correct:** Statutory towns with **1,00,000+ population** are classified as **cities** by Census.
- **Statement II – Incorrect:** Census criterion applies to **75% of male main working population**, not total workforce.

3. Broader Relevance

Local Bodies (ULBs).

- **Census Towns:** Recognized by demographic/economic criteria, governed by rural panchayats.

4. Challenges

- Gender bias in census definitions.
- Governance mismatch in census towns.

4) Answer: (c) Both I and II

Explanation:

1. Introduction / Context

The Andaman-Nicobar Basin holds significant hydrocarbon potential, making it strategic for India’s energy security and diversification.

2. Main Points / Analysis

- **Statement I – Correct:** Geological intersections create **stratigraphic traps** favorable for hydrocarbons.
- **Statement II – Correct:** Both basins form part of the **Bengal-Arakan sedimentary system**.

3. Broader Relevance

- Supports India’s **Hydrocarbon Exploration and Licensing Policy (HELP)**.
- Helps achieve India’s **2030 gas-based economy goals**.

4. Challenges

- Deepwater exploration difficulties.
- Fragile ecology of Andaman-Nicobar islands.

5) Answer: (a) I, II and III only

Explanation:

1. Introduction / Context

UNSC reform debates aim to democratize global governance and ensure fairer representation of developing countries.

2. Main Points / Analysis

- **Statement I – Correct:** India is a member of **G4 and L.69**.
- **Statement II – Correct:** G4 includes **Brazil, Germany, India, Japan**.
- **Statement III – Correct:** C10 represents **Africa’s common position** with 10 AU members.
- **Statement IV – Incorrect:** L.69 advocates for **developing countries**, not developed ones.

3. Broader Relevance

- **G4:** Push for permanent seats.
- **L.69:** Advocacy for developing nations.
- **C10:** Africa’s unified demand for representation.

4. Challenges

- Opposition from **Uniting for Consensus (UfC) group**.
- Resistance from **P5** due to veto concerns.

6) Solution: a)

Topic in Focus and Key Aspects: Green Firecrackers

- **Context:** An innovation to address health and environmental concerns caused by traditional firecrackers.
- **Policy Background/Framework:** Developed by **CSIR-NEERI**, approved under regulatory oversight.
- **Implementation Mechanism:** Certified with CSIR-NEERI logo; excludes **barium**, limits **aluminium and thermite**.
- **Current Relevance:** Crucial for pollution-prone cities (e.g., Delhi-NCR) during festivals.
- **Broader Impact:** Reduces particulate matter, supports **public health** and **environmental sustainability**.
- **Challenge:** Adoption and enforcement remain difficult.

Analysis of Statements:

- (I) Correct – Uses minimum aluminium and low thermite.
- (II) Correct – Certified by CSIR-NEERI logo.
- (III) Correct – Potassium nitrate reduces emissions by at least 30%.
- (IV) Incorrect – Green crackers do **not** contain barium.

👉 **Correct Answer: (a) I, II and III only**

7) Solution: d)

- **Location:** Northwestern South America; borders **Colombia (N), Peru (S & E)**; Galapagos Islands under its jurisdiction.
- **Physical Features:** **Andean peaks, Amazon rainforest, Pacific coastline.**
- **Notable Peaks:** **Mount Chimborazo** (highest), **Cotopaxi** (active volcano but not the highest).
- **Current Relevance:** Global reputation for **biodiversity** and **unique ecosystems**.

Analysis of Statements:

- (I) Correct – Borders Colombia in the north.
- (II) Correct – Galapagos Islands belong to Ecuador.
- (III) Correct – Equator passes through Ecuador.
- (IV) Incorrect – Chimborazo, not Cotopaxi, is the highest.

👉 **Correct Answer: (d) I, II and III only**

8) Solution: d)

- **Context:** Instruments for financing **fiscal deficit, public debt management**, and safe investments.
- **Policy Background:**
 - **Dated Securities:** Long-term bonds (5–40 yrs), fixed/floating coupon, interest usually half-yearly.
 - **Sovereign Green Bonds (SGBs):** Introduced in **Union Budget 2022-23** for **climate-positive projects**.
- **Impact:** Promotes **climate finance**, influences **interest rates**, enhances **market liquidity**.
- **Challenge:** Ensuring **investor participation** and **effective utilization** of proceeds.

Analysis of Statements:

- (I) Incorrect – Tenure: 5–40 years, not 1–50.
- (II) Incorrect – Coupon can be fixed/floating; interest is half-yearly, not always annual.
- (III) Correct – SGBs launched in 2022-23 Budget.

👉 **Correct Answer: (d) III only**

9) Solution: a)

- **Criteria:**
 - **Statutory Towns:** Legally declared municipalities.

- **Census Towns:** Must have ≥ 5000 population, $\geq 75\%$ of **male main working population** in non-agriculture, and density ≥ 400 persons/sq km.
- **Issue:** Criterion ignores **women's participation**, leading to **underestimation of urbanization**.
- **Impact:** Misclassification leads to poor **planning**, lack of **urban infrastructure**, and outdated definitions.

Analysis of Statements:

- (I) Correct – 75% male workforce in non-agriculture is a criterion.
- (II) Correct – Male-centric, ignores women's contribution.
- (II explains I).

👉 **Correct Answer: (a) Both Statement-I and II correct; Statement-II explains I**

10) Solution: b)

- **Geological Setting:** Part of **Bengal-Arakan sedimentary system**, characterized by **stratigraphic traps** and tectonic complexity.
- **Policy Context:** Guided by **Hydrocarbon Exploration and Licensing Policy (HELP)** and **deepwater missions**.
- **Significance:** Supports India's push for a **gas-based economy** and **energy security**.
- **Challenge:** Domestic production still below demand, high import dependence.

Analysis of Statements:

- (I) Correct – Stratigraphic traps make the region favorable for hydrocarbons.
- (II) Correct – Classified as part of Bengal-Arakan system.
- But (II) does not explain (I).

👉 **Correct Answer: (b) Both Statement-I and II correct, but II does not explain I**

11) Solution: d)

1. Introduction / Context

- Dugong, the "sea cow," is a marine mammal of **ecological and conservation importance**.
- Found mainly in **Palk Bay, Gulf of Mannar, and Gulf of Kutch** in India.

2. Main Points / Analysis

- **IUCN Status:** Vulnerable on Red List.
- **Legal Protection in India:** Listed under **Schedule I** of the Wildlife (Protection) Act, 1972.
- **Habitat & Threats:** Seagrass meadows; threatened by habitat loss and bycatch.
- **Conservation Measures:** Reserves, habitat protection, and awareness programs.

3. Challenges

- Small population (~200 in India).
- Need for urgent action to prevent local extinction.

Dugong conservation is vital for **marine ecosystem health** and aligns with **national and global biodiversity goals**.

12) Solution: b) Ministry of Statistics and Programme Implementation (MoSPI)

1. Introduction / Context

- Integrates **environmental concerns with economic decision-making**.
- India's first dedicated forest accounting publication uses **UN SEEA framework**.

2. Main Points / Analysis

- Responsible Agency:** MoSPI (2018 onwards).
- Framework:** SEEA integrates environmental and economic data.
- Components:** Physical, extent, condition, and service accounts of forests.
- Policy Impact:** Supports **sustainable forest management** and SDGs.

3. Challenges

- Data gaps in remote forests.
- Aligning forest accounts with **national policy frameworks**.

13) Solution: a) It is a two-stage, solid-fueled, canister-launched ballistic missile with a range up to 2000 km

1. Introduction / Context

- Latest missile in India's **Agni series**, reflecting technological advancement and strategic deterrence.

2. Main Points / Analysis

- Type:** Two-stage, solid-fueled, canister-launched ballistic missile.
- Range:** Up to 2000 km.
- Capabilities:** Dual warheads (conventional/nuclear), rail-based mobility, rapid deployment.
- Developer:** DRDO.

3. Challenges / Strategic Significance

- Enhances **credible minimum deterrence** and **operational flexibility**.
- Strengthens **second-strike capability**.

14) Solution: d) Ethanol produced from plant fiber (cellulose) obtained from agricultural waste like straw and corn cobs

1. Introduction / Context

- 2G ethanol uses **non-food, lignocellulosic biomass**, contributing to **sustainable energy transition**.

2. Main Points / Analysis

- Feedstock:** Agricultural residues like straw, corn cobs.
- Policy Context:** Encouraged under India's biofuel policy; export permitted with regulation.
- Advantages:** Does not compete with food crops; supports **rural income** and **waste management**.
- Environmental Impact:** Reduces fossil fuel dependency and emissions.

3. Challenges

- Technology-intensive production.
- Scaling up for commercial use.

15) Solution: b) II only

1. Introduction / Context

- First WTO multilateral agreement with **environmental sustainability at its core**, addressing **overfishing and harmful subsidies**.

2. Main Points / Analysis

- Objective:** Curb subsidies that promote **illegal, unreported, unregulated (IUU) fishing**.
- Scope:** Special provisions for developing and least-developed countries.
- India's Position:** Has not joined; prioritizes protection of **small-scale fishers and food security**.

3. Challenges / Broader Impact

- Balances global trade with **ecological preservation**.
- Aligns with **SDG 14** (Life below water).

Analysis of Statements:

- (I) Incorrect – India has not joined; protects small fishers.
- (II) Correct – First WTO agreement with environmental sustainability as focus.

16) Solution: b) II only

1. Introduction / Context

- Report by **MoSPI** on children's well-being: education, health, nutrition, protection.
- Tracks **Gender Parity Index (GPI)** and **Under-Five Mortality Rate (U5MR)**.

2. Main Points / Analysis

- Statement I – Incorrect:** U5MR declined from 30 (2022) to 29 (2023), not increased.
- Statement II – Correct:** GPI parity achieved across all educational stages in 2024-25.

3. Broader Relevance

- Supports **SDG 3 (Health)** and **SDG 4 (Education)**.
- Guides evidence-based **policy interventions for child development and gender equity**.

17) Solution: d) I, II and III

1. Introduction / Context

- First marine reserve in India for **dugong and seagrass ecosystem protection**.
- Dugong is the **only strictly herbivorous marine mammal** in India (~200 individuals).

2. Main Points / Analysis

- Statement I – Correct:** Dugong listed as Vulnerable (IUCN).
- Statement II – Correct:** Dugongs depend entirely on seagrass for survival.
- Statement III – Correct:** Reserve established in 2022 under Wildlife Protection Act, 1972.

3. Broader Relevance

- Enhances **marine biodiversity, carbon sequestration**, and aligns with **international best practices**.

18) Solution: d) I and IV only

1. Introduction / Context

- 2FA ensures **secure digital payments** amid rising cyber threats in India.

2. Main Points / Analysis

- **Statement I – Correct:** RBI mandates 2FA for all digital payments.
- **Statement II – Incorrect:** 2FA does not always require biometrics + phone; any 2 factors suffice.
- **Statement III – Incorrect:** RBI does not specify exact authentication methods.
- **Statement IV – Correct:** One factor must be dynamically generated (e.g., OTP, biometric scan).

3. Broader Relevance

- Builds **trust in digital payments** and aligns with **global best practices**.

19) Solution: a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

1. Introduction / Context

- Uranium enrichment increases **U-235 concentration**, vital for nuclear power and weapons.

2. Main Points / Analysis

- **Statement I – Correct:** Enrichment removes U-238 to raise U-235 fraction.
- **Statement II – Correct:** Weapons-grade uranium requires ~90% U-235.

3. Broader Relevance

- Civilian reactors: 3–5% U-235.
- Enrichment technology is central to **global non-proliferation and security regimes**.

◆ Key Highlights (Exam Focus)

Keywords: Uranium, Enrichment, U-235, Weapons-Grade, Centrifuge

◆ Conclusion

Understanding enrichment levels is crucial for **energy security and non-proliferation policy**.

20) Solution: d) All four

Topic in Focus and Key Aspects: Ethanol Generation Technologies

1. Introduction / Context

- Ethanol is classified by **generation (1G–4G)** based on **feedstock and technology**.

2. Main Points / Analysis

- **1G Ethanol:** Food crops (rice, wheat, corn).
- **2G Ethanol:** Cellulosic agricultural residues (straw, cane trash).
- **3G Ethanol:** Aquatic biomass (algae).
- **4G Ethanol:** Engineered plants/microorganisms.

3. Broader Relevance

- 2G–4G are more **sustainable**, support **circular economy**, and reduce **food-fuel conflict**.

21) Solution: b) A unified digital platform integrating multiple election-related services

Topic in Focus and Key Aspects: ECINET – Election Commission Digital Platform

1. Introduction / Context

- **ECINET** is a recent digital initiative by the **Election Commission of India (ECI)** to unify election services.

2. Main Points / Analysis

- **Option (a) – Incorrect:** Not a hardware solution for remote voting.
- **Option (b) – Correct:** Integrates 40+ apps and services like Voter Helpline, cVIGIL, Suvidha; provides Aadhaar-linked authentication.
- **Option (c) – Incorrect:** Not limited to party funding disclosures.
- **Option (d) – Incorrect:** Not a voter ID card.

3. Broader Relevance

- Enhances **transparency, efficiency, and digital governance** in elections.

22) Solution: c) Both I and II

Topic in Focus and Key Aspects: Pandit Deendayal Upadhyaya & Integral Humanism

1. Introduction / Context

- Upadhyaya promoted **Integral Humanism**, emphasizing holistic human development.
- **Antyodaya Diwas** celebrates welfare of marginalized communities.

2. Main Points / Analysis

- **Statement I – Correct:** Integral Humanism integrates body, mind, intellect, and soul.
- **Statement II – Correct:** Antyodaya Diwas promotes welfare of the “last person in the queue.”

3. Broader Relevance

- Guides policies on **inclusive development, poverty alleviation, and social justice**.

23) Solution: d) III only

Topic in Focus and Key Aspects: Cancer Control and Risk Factors in India

1. Introduction / Context

- Cancer surveillance and prevention in India focus on **modifiable risk factors** and robust data collection.

2. Main Points / Analysis

- **Statement I – Incorrect:** NCRP is under **ICMR**, not Ministry of Health.
- **Statement II – Incorrect:** Modifiable risk factors contribute **>42%**, not <10%.
- **Statement III – Correct:** Occupational risks and air pollution significantly impact cancer prevalence.

3. Broader Relevance

- Evidence-based interventions guide **resource allocation and prevention strategies**.

24) Solution: a) I and II only

Topic in Focus and Key Aspects: GST Appellate Tribunal (GSTAT)

1. Introduction / Context

- GSTAT resolves disputes arising under **GST**, offering an independent appellate forum.

2. Main Points / Analysis

- **Statement I – Correct:** GSTAT has a **Principal Bench in New Delhi** and **State Benches**.
- **Statement II – Correct:** e-Courts Portal developed by **GSTN + NIC** for online filing.
- **Statement III – Incorrect:** GSTAT is the **second appellate authority**; first appeal is within tax administration.
- **Statement IV – Incorrect:** Bench composition is **2 Judicial + 2 Technical Members**, not all technical.

3. Broader Relevance

- Ensures **efficient, transparent, and accessible tax dispute resolution**.

25) Solution: a) II and III only

Topic in Focus and Key Aspects: Appointments Committee of the Cabinet (ACC)

1. Introduction / Context

- ACC approves appointments to **senior bureaucratic and PSU positions**, ensuring **meritocracy and transparency**.

2. Main Points / Analysis

- **Statement I – Incorrect:** ACC comprises **PM and Home Minister only**.
- **Statement II – Correct:** Approves **heads of PSUs, banks, insurance companies**.
- **Statement III – Correct:** Responsible for senior posts like **Secretary, Joint Secretary**.

3. Broader Relevance

- Influences **administrative efficiency, policy implementation, and governance stability**.

26) Solution: c) II and III only

Topic in Focus and Key Aspects: National Medical Commission (NMC)

1. Introduction / Context

- NMC replaced the **Medical Council of India (MCI)** to ensure **quality, transparency, and affordability** in medical education.

2. Main Points / Analysis

- **Statement I – Incorrect:** NMC is constituted under **National Medical Commission Act, 2019**, not IMC Act, 1956.
- **Statement II – Correct:** NMC aims to **improve access to quality and affordable medical education**.
- **Statement III – Correct:** It lays down **policies to regulate medical institutions and professionals**.

3. Broader Relevance

- Ensures **well-trained medical professionals** and **strengthened healthcare outcomes**.

27) Solution: b) I, II, III, IV, V, VI

Topic in Focus and Key Aspects: UPI – International Acceptance

1. Introduction / Context

- **Unified Payments Interface (UPI)** enables **instant, secure digital transactions**; now accepted internationally.

2. Main Points / Analysis

- Countries supporting UPI payments: **Singapore, Nepal, Bhutan, Sri Lanka, Mauritius, France**.

3. Broader Relevance

- Positions India as a **global fintech leader**; facilitates cross-border commerce and tourism.

28) Solution: c) I and III only

Topic in Focus and Key Aspects: Sixth Schedule of the Indian Constitution

1. Introduction / Context

- Provides **autonomy and self-governance** for tribal areas in select North-Eastern states.

2. Main Points / Analysis

- **Statement I – Correct:** Governor can create **ADCs and ARCs**.
- **Statement II – Incorrect:** Applies only to **Assam, Meghalaya, Tripura, Mizoram**, not Manipur.
- **Statement III – Correct:** ADCs/ARCs have **legislative, executive, judicial, and financial powers**.

3. Broader Relevance

- Protects **tribal land, customs, and autonomy**; strengthens **federalism**.

29) Solution: b) I and II only

Topic in Focus and Key Aspects: Spot Market

1. Introduction / Context

- The **spot market** allows **immediate or near-immediate exchange** of commodities, currencies, and securities.

2. Main Points / Analysis

- **Statement I – Correct:** Spot market is essential for **importers, exporters, and monetary stability**.
- **Statement II – Correct:** Delivery involves **cash-for-instrument exchange**.
- **Statement III – Incorrect:** Settlement is immediate/few days, **not one month**.

3. Broader Relevance

- Supports **price discovery, liquidity, and economic stability** in national and global markets.

30) Solution: a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I

Topic in Focus and Key Aspects: Theory of Integral Humanism

1. Introduction / Context

- Propounded by **Pandit Deendayal Upadhyaya**, Integral Humanism emphasizes **holistic development** of individuals and society.

2. Main Points / Analysis

- **Statement I – Correct:** Focuses on **physical, mental, intellectual, and spiritual growth.**
- **Statement II – Correct:** Integrates these four dimensions for **holistic development**; explains Statement I.

3. Broader Relevance

- Influences **inclusive development policies**, social welfare programs, and ideological debates in India.

31) Solution: c) Rajasthan

Topic in Focus: India's Solar PV Potential (National Institute of Solar Energy Report)

1. Introduction / Context

- Assesses **ground-mounted solar PV potential** for national renewable energy planning and climate commitments.

2. Key Points / Analysis

- **Rajasthan:** Highest potential at **828.78 GWp.**
- Gujarat and Maharashtra: High but lower than Rajasthan.
- Jharkhand: Much lower potential.

3. Relevance

- Supports **Panchamrit climate targets**, energy transition, and strategic investment in renewable infrastructure.

32) Solution: d) Ministry of Ayush

Topic in Focus: DRAVYA Portal

1. Introduction / Context

- Digital initiative to **catalogue Ayurvedic ingredients and products.**

2. Key Points / Analysis

- Launched by **Ministry of Ayush.**
- Integrates traditional and modern data; largest database.
- Enhances transparency, research, product development, and regulation.

3. Relevance

- Modernizes **Ayurveda research and global promotion.**

33) Solution: b) Bacteria resistant to all antibiotics, capable of sharing resistance genes

Topic in Focus: Nightmare Bacteria

1. Introduction / Context

- Bacteria with **complete antibiotic resistance**, spreading resistance to other strains.

2. Key Points / Analysis

- Example: **Carbapenem-resistant Enterobacteriaceae (CRE).**
- Threat to **modern medicine, hospital safety, and global public health.**

3. Relevance

- Requires **surveillance, infection control, and stewardship programs.**

34) Solution: b) Organisation for Economic Co-operation and Development (OECD)

Topic in Focus: Economic Outlook Report

1. Introduction / Context

- Biannual publication analyzing **macroeconomic trends** globally and nationally.

2. Key Points / Analysis

- Published by **OECD.**
- Covers GDP, inflation, employment, trade, investment, and financial risks.

3. Relevance

- Guides **policy responses, economic planning, and risk mitigation.**

35) Solution: a) I and IV only

Topic in Focus: Geography of Peru

1. Introduction / Context

- Focus on **rivers, lakes, mountains, and international borders.**

2. Key Points / Analysis

- **Marañón River:** Main source of Amazon — Correct.
- **Andes Mountains:** Second highest globally — Incorrect.
- **Southern border:** Peru-Chile, not Brazil — Incorrect.
- **Lake Titicaca:** Shared with Bolivia — Correct.

3. Relevance

- Influences **regional ecology, water resources, and cross-border cooperation.**

36) Solution: a) I, II, III and IV

Topic in Focus: Subansiri River

1. Introduction / Context

- Largest tributary of Brahmaputra; originates in **Tibet**; locally called the "Gold River."

2. Key Points / Analysis

- Supports **hydropower, agriculture, fisheries, and strategic security.**
- **Geology:** Trans-Himalayan antecedent river.
- **Flow:** Arunachal Pradesh → Assam → Brahmaputra.
- **Hydropower:** Projects like 2,200-MW Oju planned.

3. Relevance

- Biodiversity hotspot; critical for **regional ecology, culture, and infrastructure planning.**

37) Solution: a) I and III only

Topic in Focus: Paracetamol use and Autism

1. Introduction / Context

- Addresses safety of **prenatal paracetamol** and its debated association with **autism.**

2. Key Points / Analysis

- Autism: Neurodevelopmental disorder affecting **social interaction, communication, brain development**.
- Paracetamol: Widely used OTC analgesic; no conclusive link with autism.
- WHO: No definitive evidence connecting prenatal paracetamol use to autism.

3. Relevance

- Ensures **safe medication use during pregnancy** and accurate public health communication.

38) Solution: c) II and III only

Topic in Focus: Barren Island Volcano

1. Introduction / Context

- India's **only active volcano**; located in Andaman Sea, northeast of Port Blair.

2. Key Points / Analysis

- Geological type: **Stratovolcano**.
- Strategic and scientific importance: Maritime security, geological research.
- Monitoring: Continuous surveillance for disaster management.

3. Relevance

- Supports **scientific advancement, hazard preparedness, and regional security**.

39) Solution: c) Statement-I correct, Statement-II incorrect

Topic in Focus: SARFAESI Act, 2002

1. Introduction / Context

- Empowers **banks and financial institutions** to recover **NPAs** efficiently.

2. Key Points / Analysis

- Excludes **agricultural land** from seizure.
- Covers **residential and commercial properties**.
- Enhances credit culture and **reduces judicial burden**.

3. Relevance

- Balances **creditor rights with protection of rural livelihoods**.

40) Solution: b) Both Statement-I and Statement-II correct, but II does not explain I

Topic in Focus: Visakhapatnam Declaration on e-Governance

1. Introduction / Context

- Promotes **inclusive, technology-driven, and citizen-centric governance**.

2. Key Points / Analysis

- Emphasizes adoption of **AI, ML, Blockchain, IoT** for real-time, multilingual, sector-specific citizen services.
- Focus on **scaling digital models, improving digital literacy, and bridging digital divide**.

3. Relevance

- Enhances **governance efficiency, transparency, and citizen participation**.

41) Solution: c) Agritech and sustainable agriculture

Topic in Focus: Maitri 2.0

1. Introduction / Context

- Bilateral India-Brazil initiative to promote **agritech innovation and sustainable agriculture**.

2. Key Points / Analysis

- **Launched by ICAR**; builds on Maitri 1.0.
- Supports **co-incubation of startups, knowledge exchange, and digital value-chain development**.
- Aims for **resilient food systems, climate adaptation, and entrepreneurship**.

3. Relevance

- Strengthens **food security, international agricultural collaboration, and sustainable development**.

42) Solution: c) Only Morocco has both Atlantic and Mediterranean coastlines

Topic in Focus: Geography of Morocco

1. Introduction / Context

- Morocco: North-west Africa; strategic location with unique dual coastlines.

2. Key Points / Analysis

- **Coasts**: Atlantic + Mediterranean (only African country with both).
- **Borders**: Algeria and Western Sahara.
- **Highest Point**: Mount Toubkal.
- **Longest River**: Draa River.

3. Relevance

- Coastal geography impacts **trade, geopolitics, and regional connectivity**.

43) Solution: b) Quasi-moons orbit Sun synchronized with planet, not gravitationally bound

Topic in Focus: Quasi-moons

1. Introduction / Context

- Quasi-moons share a planet's orbital period around the Sun but are **not true moons**.

2. Key Points / Analysis

- **Orbital dynamics**: Orbits Sun, appears to accompany planet.
- **Scientific relevance**: Insights into **planetary system evolution**.
- **Examples**: 2025 PN7 near Earth.

3. Relevance

- Enhances understanding of **celestial mechanics, near-Earth objects, and space research**.

44) Solution: b) II only

Topic in Focus: International Criminal Court (ICC)

1. Introduction / Context

- Permanent tribunal for **individual accountability in genocide, war crimes, and crimes against humanity**.

2. Key Points / Analysis

- Established under **Rome Statute (1998)**; HQ in The Hague.
- **Jurisdiction:** Individuals only; states/groups excluded.
- **Membership:** US, Russia, India not parties.

3. Relevance

- Promotes **global justice**, but effectiveness limited by **non-membership of major powers**.

45) Solution: c) Both Statements I and II

Topic in Focus: Defamation Law in India

1. Introduction / Context

- Recognizes both **civil and criminal liability**; balances **reputation and free speech**.

2. Key Points / Analysis

- Civil: Damages for reputational harm.
- Criminal: **Section 356 of Bharatiya Nyaya Sanhita** replaces Section 499 IPC.
- Debates: Ongoing discussion about **decriminalization** to protect freedom of expression.

3. Relevance

- Ensures **constitutional balance** between individual rights and free speech.

46) Solution: a) Neutrinos – Subatomic particles with zero electrical charge, zero size, and tiny mass

Topic in Focus: Neutrinos

1. Introduction / Context

- Neutrinos are “ghost particles,” extremely abundant yet weakly interacting, fundamental to particle physics and astrophysics.

2. Key Features / Analysis

- **Charge:** Zero; **Size:** Virtually zero; **Mass:** Tiny.
- **Types:** Electron, muon, tau; capable of **oscillation**.
- **Interaction:** Only via **weak nuclear force and gravity**.
- **Detection:** Underground observatories (JUNO, INO, IceCube) due to weak interaction.

47) Solution: c) Kallakkadal waves

Topic in Focus: Long-wavelength Ocean Waves in India

1. Introduction / Context

- Kallakkadal waves are **long-distance swell waves** affecting India’s east coast.

2. Key Features / Analysis

- **Generation:** Distant windstorms; **low frequency, long wavelength**.
- **Recognition:** UNESCO standardizes term for scientific and disaster preparedness.

48) Solution: c) Baltic Sea

Topic in Focus: Geography and Hydrology of the Baltic Sea

1. Introduction / Context

- Largest brackish water body in the world, surrounded by Northern European countries.

2. Key Features / Analysis

- Semi-enclosed, shallow, connects to North Atlantic.
- Important for **regional trade, shipping routes, and international treaties**.
- Borders: Sweden, Finland, Poland; key gulfs: Bothnia, Finland, Gdańsk.

49) Solution: c) Smog Eating Photocatalytic Coatings

Topic in Focus: Urban Air Pollution Mitigation

1. Introduction / Context

- Innovative coatings to reduce urban air pollution, enhance air quality, and support sustainability.

2. Key Features / Analysis

- **Material:** Titanium dioxide triggers **photocatalytic decomposition** of pollutants under UV light.
- **Applications:** Roads, pavements in cities like Delhi.
- **Impact:** Improves **air and water quality**, passive pollution control.

3. Statements Analysis

- Statement (I): Correct – Uses titanium dioxide for photocatalysis.
- Statement (II): Correct – Enhances air and water quality.

50) Solution: a) Swell waves (Kallakkadal waves) – Largely unaffected by local winds

Topic in Focus: Swell Waves in Coastal Management

1. Introduction / Context

- Swell waves travel long distances, impacting coasts with flooding and erosion.

2. Key Features / Analysis

- **Origin:** Distant windstorms, not seismic activity.
- **Characteristics:** Largely unaffected by local winds, hard to detect by satellites.
- **Relevance:** Coastal disaster preparedness and oceanographic research.

3. Statements Analysis

- Statement (I): Correct – Not affected by local winds.
- Statement (II): Incorrect – Originate from windstorms, not earthquakes.