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APRIL
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Practice Question

Art & Culture

1. Consider the following statements regarding Banarasi Shehnai:

1. It is rooted in the Banaras Gharana of Indian classical music.
2. Ustad Bismillah Khan popularized it with his performance at the Red Fort on India's first Independence Day.
3. The Banarasi Shehnai has been granted the Geographical Indication (GI) tag.

Which of the statements is/are correct?

- A. 1 only
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1, 2, and 3

2. Consider the following statements regarding the Shewaki Stupa:

1. It is a major Buddhist-era monument dating from the 1st to 3rd centuries AD, located in Kabul.
2. It reflects a blend of Kushan and Hellenistic architectural influences and was constructed using fieldstones, mud, and plaster.

Which of the above statements is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

3. Consider the following statements regarding the Taj Mahal:

1. It was included in the UNESCO World Heritage List in 1983, recognized for its exceptional value as a masterpiece of human creative genius.
2. It is managed by the Archaeological Survey of India (ASI) and is protected under the Ancient Monuments and Archaeological Sites and Remains Act, 1958.

Which of the above statements is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

4. Which of the following entries have been included in UNESCO's Memory of the World (MoW) Register?

1. Rig Veda
2. NAM Summit Archives 2023
3. Natyashastra
4. G20 Summit Archives 2023

Select the correct answer using code given below:

- A. 1 and 4 only
- B. 2 and 4 only
- C. 1, 2 and 3 only
- D. None of the Above

History

5. Which commission was formed by the British government to investigate the Jallianwala Bagh massacre?

- A. The Hunter Commission
- B. The Lee Commission
- C. The Simon Commission
- D. The Woodhead Commission

6. Consider the following events regarding the Indian freedom struggle during the 1920s and 1930s:

1. Chauri Chaura Incident
2. Formation of the Swaraj Party
3. Simon Commission's arrival in India
4. Lahore Session of the Indian National Congress

Which of the events given above is/are in the correct chronological order?

- A. 1 – 2 – 3 – 4
- B. 2 – 1 – 4 – 3
- C. 1 – 3 – 2 – 4
- D. 2 – 3 – 1 – 4

7. Consider the following statements regarding the Cripps Mission of 1942:

1. The Cripps Mission was constituted by the British government to secure full Indian cooperation and support for their efforts in World War II.
2. The mission proposed a dominion status for India after the war and the formation of a constituent assembly.

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3. The failure of the Cripps Mission led to the launch of the Quit India Movement, demanding an end to British rule.

Which of the statements given above is/are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

8. Consider the following statements regarding the Jallianwala Bagh massacre:

1. The people had gathered peacefully for a non-violent satyagraha against the Rowlatt Act.
2. The immediate cause of the unrest in Punjab was the arrest of Dr. Satyapal and Saifuddin Kitchlew.
3. It became a key reason for Mahatma Gandhi to launch the Non-Cooperation Movement (NCM) (1920–22), along with other factors such as the Khilafat issue.

How many of the above statements is/are correct?

- A. Only one
B. Only two
C. All three
D. None

9. Consider the following pairs:

Sikh Guru	Contribution
1. Guru Ram Das	Founded the city of Amritsar
2. Guru Arjan Dev	Compiled Guru Granth Sahib in Gurmukhi script
3. Guru Gobind Singh	Established the institution of the Khalsa

Which of the pairs given above is/are correctly matched?

- A. Only one pair
B. Only two pairs
C. All three pairs
D. None

Geography

10. Consider the following statements:

1. The Hadean proto-crust, Earth's earliest crust, formed during the Hadean Aeon—a period of intense heat, volcanism, and a partially molten surface.

2. The Hadean Aeon was followed by the Archean Eon, marked by the formation of Earth's first stable crust and the onset of plate tectonics.

Which of the statements given above is/are correct?

- A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

11. Consider the following statements regarding the Slovak Republic:

1. It borders Poland to the south, Hungary to the north, Czech Republic to the northwest, Ukraine to the west and Austria to the east.
2. It emerged as an independent nation after the peaceful dissolution of Czechoslovakia in 1993, commonly referred to as the "Velvet Divorce".

Which of the statements given above is/are correct?

- A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

12. With reference to Cloudbursts, consider the following statements:

1. It occurs when descending dry air from a mountain range heats up, leading to heavy rainfall on the leeward side.
2. Due to their localised nature, cloudbursts are hard to predict or detect but can unleash sudden, devastating rainfall, leading to flash floods and landslides.

Which of the statements given above is/are not correct?

- A. 1 only
B. 2 only
C. Both 1 and 2
D. Neither 1 nor 2

13. Consider the following pairs

Dam	River
1. Kishanganga	Chenab
2. Ratle	Jhelum
3. Shahpurkandi	Ravi

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How many of the pairs given above is/are correctly matched?

- A. Only one
- B. Only two
- C. All three
- D. None

14. Consider the following statements regarding the Saora Tribe:

1. It is one of the oldest tribes of Tamil Nadu, mentioned in both the Ramayana and the Mahabharata.
2. It has two subgroups, the Sudha Saora, who practice wet cultivation in the plains, and the Lanjia Saora, who rely on shifting cultivation in the hills.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

15. Consider the following statements:

1. It is located between the Black Sea and the Sea of Azov.
2. It is separated from the Sea of Azov by the Tonka of Arabat sandspit.
3. Its Sevastopol port is essential for Russia's access to warm water ports and holds significant strategic military value.

Which of the following locations best matches the above description?

- A. Crimea
- B. Sochi
- C. Odessa
- D. Batumi

16. Consider the following statements regarding Shahid Rajaei Port:

1. It is Iran's largest and most advanced commercial port, located near the Strait of Hormuz.
2. It is part of the International North-South Transport Corridor (INSTC), a trilateral agreement by Iran, Russia, and India.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

17. Consider the following statements regarding ocean currents and their influence on global water resources:

1. Ocean currents play a significant role in the redistribution of heat across the planet, affecting regional climates.
2. Cold ocean currents are generally associated with arid coastal regions.
3. The thermohaline circulation is driven primarily by wind patterns in the equatorial region.

Select the correct answer using the code below:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1, 2 and 3
- D. 1 only

18. Consider the following statements regarding convection in the Earth's mantle:

1. Convection currents in the mantle are driven by the heat from the Earth's core.
2. These convection currents cause the movement of tectonic plates at the surface.
3. The convection in the mantle is slow, taking millions of years to complete one cycle.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1, 2 and 3
- D. 1 only

Polity & Governance

19. With reference to the sub-categorisation of Scheduled Castes (SCs), consider the following statements:

1. Article 14 allows sub-classification if there is a clear, rational basis for distinguishing groups and a logical connection to the goal it seeks to achieve.
2. In E.V. Chinnaiah v. State of Andhra Pradesh, the SC held that states can sub-classify SCs within reservations based on backwardness.

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Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

20. Consider the following statements:

1. The committee was constituted to examine and recommend reforms on Centre-State relations.
2. The committee observed that the Indian Constitution, though federal in form, functioned in a unitary manner.
3. The committee recommended that Article 356 should be abolished.

Which of the committees made the recommendations mentioned above?

- A. Rajamannar Committee (1969)
- B. Administrative Reforms Commission (1969)
- C. Sarkaria Commission (1983)
- D. Punchhi Commission (2007)

21. With reference to the Registrar General of India, consider the following statements:

1. The RGI, established under the Ministry of Home Affairs, is responsible for overseeing the decennial Census and the Linguistic Survey of India.
2. It maintains the National Population Register (NPR) to record demographic details of all usual residents.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

22. Consider the following statements regarding the Chief Justice of India (CJI):

1. The Constitution mandates that the President appoint the senior-most judge of the Supreme Court as the Chief Justice of India, as per Article 124(2).
2. The CJI can be removed from office only by the President, upon the adoption of a special majority resolution in both Houses of Parliament.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

23. Consider the following statements regarding the Jal Jeevan Mission (JJM):

1. The National Rural Drinking Water Programme, 2009 was subsumed into the JJM to provide Functional Household Tap Connections to rural households in India.
2. The JJM has successfully achieved 100% tap water coverage to all 16 crore rural households by 2024.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

24. Consider the following statements regarding the National Company Law Appellate Tribunal (NCLAT):

1. Although constituted under the Companies Act, 2013, NCLAT also functions as the Appellate Tribunal for matters under the Insolvency and Bankruptcy Code (IBC), 2016.
2. It hears appeals against the orders passed by the National Company Law Tribunal (NCLT) and the Competition Commission of India (CCI).

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

25. Consider the following statements regarding Panchayati Raj Institutions (PRIs) in India:

1. The 73rd Constitutional Amendment Act of 1992 granted constitutional status to the PRIs and provided for the reservation of seats for SCs, STs, and women.
2. The District Planning Committee is responsible for preparing the draft development plan for rural and urban areas in a district.

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Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

26. Consider the following statements regarding the Cruise Bharat Mission (CBM):

1. It was launched to transform India into a leading cruise tourism destination by 2029.
2. It is led by the Ministry of Tourism and will be implemented in two phases.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

27. Consider the following statements:

1. Only 37% of the total area of the Western Ghats should be designated as an Ecologically Sensitive Area (ESA).
2. The National Education Policy (NEP), 2020 should emphasize multidisciplinary education, skill development, and flexible curricula.

Which of the following committees made the above-mentioned recommendations?

- A. Gadgil Committee (2011)
- B. Kelkar Committee (2015)
- C. Kasturirangan Committee (2013 and 2019)
- D. TSR Subramanian Committee (2016)

28. With reference to the election process of the Deputy Speaker in Lok Sabha, consider the following statements:

1. The Deputy Speaker performs the Speaker's duties when the Speaker's post is vacant.
2. He is elected by an absolute majority of all members of the House.
3. The Deputy Speaker of the Lok Sabha does hold office at the pleasure of the President.

How many of the above statements is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

29. Consider the following statements:

Statement-I: The government has selected Bengaluru-based start-up Sarvam to develop the country's first homegrown AI Large Language Model (LLM) under the IndiaAI Mission.

Statement-II: IndiaAI Mission, approved in 2024, aims to foster responsible and inclusive growth within India's AI ecosystem.

Which one of the following is correct in respect of the above statements?

- A. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- B. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- C. Statement-I is correct but Statement-II is incorrect
- D. Statement-I is incorrect but Statement-II is correct

30. Consider the following statements:

1. The Arbitration Council of India (ACI) is a statutory body, created under the Arbitration and Conciliation (Amendment) Act, 2019.
2. The Dr. T.K. Viswanathan Committee (2024) recommended institutional arbitration, and reducing court intervention.

Which of the statements given above is/are not correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

31. Consider the following regarding the Registration of Births and Deaths (RBD) Act, 1969:

1. The RBD Act, 1969 (amended in 2023) mandates the digital registration of all births and deaths through the Civil Registration System (CRS).
2. The time period for reporting a birth or death under the RBD Act is within 30 days of the occurrence of the event.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

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32. Consider the following statements regarding the President of India:

1. The President is elected through an electoral college consisting of the elected members of both the Houses of Parliament and the Legislative Assemblies of the States and Union Territories.
2. Under Article 67 of the Constitution, the President has the power to remove the Vice President.
3. As per the President (Discharge of Functions) Act, 1969, the Chief Justice of India will act as the President if both the offices of the President and Vice President are vacant.

Which of the statements given above is/are not correct?

- A. 1 only
- B. 2 and 3 only
- C. 2 only
- D. 1 and 3 only

Social Issues

33. In which of the following landmark cases did the Supreme Court decriminalize homosexuality by reading down Section 377 of the Indian Penal Code?

- A. Suresh Kumar Koushal v. Naz Foundation
- B. National Legal Services Authority v. Union of India
- C. Puttaswamy case
- D. Navtej Singh Johar v. Union of India

34. Consider the following statements regarding the India Justice Report (IJR):

1. It is a periodic national report that ranks states based on their capacity to deliver justice.
2. It evaluates states on five pillars namely Police, Prisons, Judiciary, Legal Aid, and State Human Rights Commissions (SHRCs).
3. The report categorizes states into large/mid-sized and small states based on a population threshold of 1 crore.

How many of the above statements is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

35. Consider the following statements:

1. The Anemia Mukh Bharat (AMB) campaign was launched with a framework to target six vulnerable groups, six interventions, and six institutional mechanisms.
2. The Mother Child Tracking System (MCTS) is used to track and report cases of anemia, particularly among pregnant women.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Agriculture & Allied Sector

36. Consider the following:

1. Pusa Decomposer
2. Pelletization of crop residues
3. Biochar production
4. Happy Seeder

Which of the methods given above directly helps in reducing stubble burning by utilizing crop residues for productive purposes?

- A. 1, 2, and 4 only
- B. 1, 3, and 4 only
- C. 1, 2, 3, and 4
- D. 2 and 3 only

37. The term *Keonjhar Kalachampa* was recently seen in the news in the context of:

- A. An indigenous paddy variety.
- B. A newly discovered medicinal plant in the forests of Keonjhar.
- C. A rare breed of cattle native to Odisha.
- D. A traditional folk dance form of the Keonjhar region.

Environment & Ecology

38. Consider the following statements regarding *Leptobrachium aryatum*:

1. It was recently discovered in the Garbhanga Reserve Forest, situated in Guwahati, Assam.

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- The species is noted for distinctive features, including fiery orange-and-black eyes, a unique reticulated throat pattern, and a smooth, rhythmic call at dusk.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

39. Regarding the Flue Gas Desulphurisation (FGD) systems, consider the following statements:

- FGD is a process used in coal-fired power stations to remove sulfur dioxide (SO₂) from exhaust gases (flue gas) produced by burning fossil fuels.
- Approximately 90% of coal in India has a low sulfur content, which makes the implementation of FGD systems less critical.

Which of the statements given above is/are correct?

- 1 Only
- 2 Only
- Both 1 and 2
- Neither 1 nor 2

40. Regarding the International Big Cat Alliance (IBCA), consider the following statements:

- It is a treaty-based intergovernmental organisation, launched by India on the 50th anniversary of Project Tiger.
- India has officially been designated as the headquarters and secretariat of the IBCA in 2025.
- Its membership is open to all United Nations member states where these species naturally exist and non-range countries that wish to support big cat conservation.

How many of the statements given above is/are not correct?

- Only One
- Only Two
- All Three
- None

41. Consider the following features:

- They are ancient marine crustaceans closely related to crabs and lobsters.

- They live in self-dug burrows within seabeds.
- Their classification into Spearers and Smashers is based on specialized hunting mechanisms.

Which of the following species is best described by the above features?

- Mantis Shrimp
- Pistol Shrimp
- Tiger Prawn
- Ghost Shrimp

42. Consider the following statements regarding World Earth Day:

- It is celebrated annually on 22nd April to raise global environmental awareness, with the theme for 2025 focusing on the expansion of renewable energy.
- The first Earth Day, observed in 1970, directly led to the creation of the United Nations Environment Programme (UNEP).

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

43. Consider the following statements regarding Colossal Squid:

- They are the largest known vertebrates on Earth and belong to the class *Cephalopoda*.
- They are commercially fished and are commonly found around Antarctica, inhabiting the Southern Ocean at depths of 200 to 4000 meters.

Which of the statements given above is/are correct?

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

44. Consider the following statements:

- It is the only place in the world that is home to wild melanistic tigers.
- The park is surrounded by high plateaus and hills, the highest peak being the twin peaks of Khairiburu and Meghashini.

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3. The forests consist of sal trees, moist deciduous, and semi-evergreen varieties, forming a rich and diverse habitat for flora and fauna.

Which of the following National Parks exhibit the above-mentioned characteristics?

- A. Similipal National Park
- B. Kaziranga National Park
- C. Jim Corbett National Park
- D. Ranthambore National Park

45. River Cities Alliance, which is often seen in the news, is best described as:

- A. A government program focused on the preservation of wetlands in rural India.
- B. An initiative aimed at promoting river-sensitive urban planning and creating Urban River Management Plans in Indian cities.
- C. A global alliance formed to promote sustainable urban development in all cities with rivers.
- D. A private organization dedicated to the development of clean energy projects near riverbanks in India.

46. With respect to the 'Revive Our Ocean' initiative, consider the following statements:

- 1. The initiative was launched to promote marine conservation through the creation of Marine Protected Areas (MPAs).
- 2. It targets seven countries, including the UK, Portugal, and India, for empowering local communities to manage MPAs.
- 3. The initiative aligns with the 30X30 target of the Kunming-Montreal Global Biodiversity Framework to protect 30% of the oceans by 2030.

How many of the above statements is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

47. With reference to Alfalfa Seed, consider the following statements:

- 1. It is used primarily as human food and is not suitable as animal fodder.

- 2. It is a highly nutritious plant packed with vitamins, minerals and antioxidants.
- 3. It is a leguminous crop known for its nitrogen-fixing ability.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

48. Consider the following:

- 1. Olive Ridley Turtle
- 2. Lion-tailed Macaque
- 3. Platypus
- 4. Hoolock Gibbon

Which of the species given above is/are native to India?

- A. 1, 2 and 4 only
- B. 2, 3 and 4 only
- C. 1 and 3 only
- D. 1, 2, 3 and 4

49. Consider the following gases:

- 1. Carbon dioxide (CO₂)
- 2. Methane (CH₄)
- 3. Nitrous oxide (N₂O)
- 4. Oxygen (O₂)

Which of the gases given above primarily contribute to global warming through the greenhouse effect?

- A. 1, 2 and 3 only
- B. 1, 2 and 4 only
- C. 3 and 4 only
- D. 1, 2, 3 and 4

50. With reference to Green Cryptocurrency, consider the following statements:

- 1. Green cryptocurrencies are digital currencies designed to minimise environmental impact, particularly high energy consumption and carbon emissions.
- 2. Litecoin is a green cryptocurrency that was created to offer an eco-friendly alternative to traditional digital currencies like Bitcoin.

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Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Economy

51. The 'Global Trade Outlook and Statistics' report is published by the

- A. World Economic Forum
- B. United Nations Trade and Development
- C. World Bank
- D. World Trade Organization

52. With reference to the Ethanol Blending in India, consider the following statements:

1. The Ethanol Blending Programme (EBP) was launched with an initial target of 5% ethanol blending in petrol.
2. The National Policy on Biofuels 2018 initially set a target of 20% ethanol blending by 2030, but the amendment in 2022 advanced this to 2025-26.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

53. Consider the following states:

1. Punjab
2. Uttar Pradesh
3. Bihar
4. Uttarakhand

How many of the above are traversed by the Eastern Dedicated Freight Corridor project?

- A. Only one
- B. Only two
- C. Only three
- D. All four

54. With reference to India's Forex reserves, consider the following statements:

1. They are a key part of the Balance of Payment (BoP), with the RBI managing India's foreign exchange reserves under the RBI Act, 1934.

2. Foreign Currency Assets (FCA) are the largest contributor to India's forex reserves, with gold reserves being the second-largest contributor.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

55. With reference to the India's leather industry, consider the following statements:

1. India is the second largest producer and consumer of leather footwear globally, after China.
2. The Council for Leather Exports (CLE) also plays a role in overseeing environmental pollution like chromium pollution within the leather industry.
3. The Goods and Services Tax (GST) regime has helped lower operational costs for MSMEs in the leather industry.

How many of the above statements is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

56. The term "Spaghetti Bowl Phenomenon" in international trade refers to:

- A. The excessive reliance of countries on agricultural imports from multiple sources
- B. A complex network of overlapping and intersecting regional and bilateral trade agreements
- C. The concentration of global trade in a few developed countries
- D. The dumping of subsidized agricultural products in developing economies

57. Consider the following:

1. Cutting subsidies on food and fuel
2. Raising the Statutory Liquidity Ratio (SLR)
3. Imposing stock limits on essential commodities

Which of the government actions given above can help reduce inflation in the economy?

- A. 2 and 3 only
- B. 1 and 2 only
- C. 1 and 3 only
- D. 1, 2 and 3

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58. Consider the following reports:

1. World Trade Report
2. Global Trade Outlook and Statistics
3. Aid for Trade in Action

Which of the following organisations publishes the above reports?

- A. World Bank
- B. World Trade Organisation (WTO)
- C. United Nations Conference on Trade and Development (UNCTAD)
- D. International Monetary Fund (IMF)

59. Consider the following:

1. World Development Report
2. Poverty & Equity Brief Report
3. Logistics Performance Index

Which of the following organizations releases the above reports?

- A. World Bank
- B. United Nations
- C. World Economic Forum
- D. International Monetary Fund (IMF)

60. Consider the following:

Economic Activity	Sector
1. Teaching in a school	Tertiary
2. Bread production in a bakery	Secondary
3. Harvesting wheat	Primary
4. Transporting goods by truck	Secondary

With reference to the sectors of the Indian economy, how many of the pairs given above is/are correctly matched?

- A. Only one
- B. Only two
- C. Only three
- D. All four

61. Consider the following statements:

1. The report titled 'Unlocking \$25+ Billion Export Potential— India's Hand & Power Tools Sector' was released by NITI Aayog.
2. China dominates global exports, holding approximately 50% of the hand tools market, while India's tools industry holds a relatively minor share.

Which of the statements given above is/are not correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

62. Consider the following statements regarding Khadi and Village Industries Commission (KVIC):

1. KVIC is a statutory body under the Ministry of Rural Development, established by an Act of Parliament in 1956.
2. Under the Scheme of Fund for Regeneration of Traditional Industries (SFURTI), KVIC supports the development of traditional clusters like honey, pottery, and khadi.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

Defence & Security

63. Consider the following pairs:

Joint Exercises	Countries
1. Yudh Abhyas	India - United States
2. Malabar	India - UAE
3. Desert Eagle	India - Mongolia
4. Nomadic Elephant	India - Myanmar

How many of the above pairs is/are not correctly matched?

- A. Only one
- B. Only two
- C. Only three
- D. All four

64. The term GPS Spoofing, often seen in the news, is best described as:

- A. A method of accelerating GPS signal processing to improve accuracy.
- B. A cyberattack where fake GPS signals are generated to mislead navigation systems.

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- C. A technique used to boost the signal strength of GPS satellites.
- D. A process used to improve GPS signal reception in remote areas.

Science & Tech

65. Consider the following statements regarding the world's oldest lifeforms:

1. Cyanobacteria were the first organisms to perform oxygenic photosynthesis, triggering the Great Oxidation Event.
2. Stromatolites are layered rock-like structures formed by cyanobacteria colonies.
3. Archaea are genetically closer to bacteria than eukaryotes and thrive only in extreme environments.

How many of the statements given above is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

66. Consider the following cyber threats and their descriptions:

1. Phishing: Attempt to obtain sensitive information by disguising as a trustworthy entity.
2. Ransomware: Malware that locks or encrypts files and demands payment for release.
3. Denial of Service (DoS): A scam email promising lottery winnings.
4. SQL Injection: Exploiting vulnerabilities in a database query to gain unauthorized access.

Which of the descriptions given above is/are correct?

- A. 1, 2 and 4 only
- B. 1, 3 and 4 only
- C. 2, 3 and 4 only
- D. 1, 2, 3 and 4

67. Consider the following statements regarding Vehicle-to-Grid (V2G) technology:

1. V2G technology enables Electric Vehicle (EV) batteries to both charge from and supply power back to the grid through bi-directional charging.

2. India is a global leader in V2G adoption, with EV owners being compensated for supplying power to the grid during peak demand.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

68. Consider the following statements regarding the James Webb Space Telescope (JWST):

1. It was launched through an international collaboration involving NASA, the European Space Agency (ESA), and ISRO.
2. It is positioned at the Sun-Earth L2 Lagrange Point to maintain a constant view of the Sun and Earth.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

69. With reference to Black Holes, consider the following statements:

1. Black holes can bend light due to their intense gravitational field.
2. The Event Horizon Telescope produced the first-ever image of a black hole using a network of radio telescopes.
3. Gravitational waves provide evidence for black hole mergers in space.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

70. Consider the following statements regarding Solar-based Desalination Technology:

1. Solar-based desalination integrates both solar and electric Joule heating to ensure consistent performance even in fluctuating sunlight conditions.

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2. The Dual-Sided Superhydrophobic Laser-Induced Graphene (DSLIG) evaporator, utilizes hydrophobic materials to prevent salt deposition and improve desalination efficiency.
3. Desalination through solar technologies is limited to treating brackish water and is not effective for seawater desalination.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

71. Consider the following statements regarding Mission Mausam:

1. The mission is primarily implemented by the Indian Space Research Organisation (ISRO) and focuses on satellite-based monsoon prediction.
2. It utilizes supercomputing power, leveraging advanced systems such as Pratyush and Mihir for accurate climate modeling.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

72. Consider the following statements regarding QpiAI-Indus:

1. It is the first complete quantum computing system built entirely in India.
2. It combines quantum hardware with AI-driven software tools, facilitating end-to-end development of quantum applications within a single system.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

73. The E-2025 initiative, Artemisinin, and R21/Matrix-M have been frequently featured in the news due to a common context. Which of the following best describes the reason?

- A. Global initiatives to address antimicrobial resistance (AMR)
- B. Progress in malaria eradication efforts
- C. International efforts in coral reef conservation
- D. Breakthroughs in cancer treatment research

74. Consider the following statements regarding Measles:

1. It is a highly contagious viral disease and is a cause of death among young children globally.
2. It is caused by the Morbillivirus, an RNA virus, with humans being the sole natural hosts of the virus.

Which of the statements given above is/are not correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

75. Consider the following statement related to RNA Silencing:

1. It is a plant's natural defense mechanism where double-stranded RNA triggers the immune system to destroy viral RNA.
2. Host-Induced Gene Silencing involves the use of RNA sprays to enhance plant immunity without any genetic modification.

Which of the following statements is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

76. Consider the following statements:

1. Cyanobacteria were the only prokaryotes capable of oxygenic photosynthesis and are widely considered responsible for the Great Oxidation Event.
2. Archaea are single-celled microorganisms that are genetically distinct from bacteria, with certain features more closely related to eukaryotes.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

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77. Which of the following are the potential areas of application of Quantum Gravity Gradiometers (QGGs)?

1. Mineral and hydrocarbon exploration
2. Infrastructure monitoring and tunnelling detection
3. Planetary studies and climate change monitoring
4. Non-invasive archaeological surveys

Select the correct answer using the code given below:

- A. 1, 2 and 3 only
- B. 2, 3 and 4 only
- C. 1, 2, 3 and 4
- D. 1 and 4 only

78. In solar technology, a perovskite material is a hybrid organic-inorganic material composed of a metal cation (like lead), a halide anion (like iodide), and an organic molecule (like methylammonium).

Which of the following is correct regarding the characteristics of Perovskite materials?

1. Excellent light absorption
2. Poor tunability
3. Efficient charge transport properties

Select the correct answer using the code given below:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

79. Which of the following statements is/are not correct regarding the properties of Metamaterials?

1. Their unique properties primarily come from their chemical composition.
2. Exhibit unusual electromagnetic properties like a negative refractive index.
3. They can be naturally occurring or engineered artificially.

Select the correct answer using the code given below:

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 3 only

International Relations and Current Affairs

80. Consider the following statements regarding the India-Middle East-Europe Economic (IMEC) Corridor:

1. IMEC was launched at the G20 Summit 2023 with signatories including India, the US, Saudi Arabia, UAE, France, Germany, Italy, and the European Union.
2. IMEC is a part of the Partnership for Global Infrastructure and Investment (PGII), launched by the G7.
3. IMEC will consist solely of Ship-to-Rail network-based transport routes.

How many of the above statements is/are correct?

- A. Only one
- B. Only two
- C. All three
- D. None

81. Consider the following statements regarding the Prime Minister's Award for Excellence in Public Administration (PMAEPA):

1. It is presented annually on Civil Services Day, observed on 21st April.
2. All government officers and organisations are eligible for this award.
3. The final selection of awardees is approved by the Cabinet Secretary and Prime Minister.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 2 only
- D. 1, 2 and 3

82. Consider the following statements:

1. The Delhi Declaration (2006) and Riyadh Declaration (2010) elevated India-Saudi Arabia ties to a Strategic Partnership.
2. In FY 2023-24, Saudi Arabia became India's largest source of crude oil, accounting for 14.3% of the country's total crude oil imports.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

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83. Consider the following statements regarding MacGregor Award:

1. The award was instituted to honor Major General Sir Charles Metcalfe MacGregor, the founder of the United Service Institution of India (USI).
2. It is open to all ranks of the Indian Army, Navy, Air Force, Territorial Army, Reserve Forces, Rashtriya Rifles, and Assam Rifles.

Which of the statements given above is/are correct?

- A. 1 only
- B. 2 only
- C. Both 1 and 2
- D. Neither 1 nor 2

84. Consider the following statements regarding South Asian Association for Regional Cooperation (SAARC):

1. SAARC was established in 1985 with seven founding member countries.
2. The SAARC Secretariat is located in Dhaka, Bangladesh.
3. The idea of SAARC was formally proposed by India at the Non-Aligned Movement summit in 1980.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1, 2 and 3
- D. 1 only

Answers

- | | | | | | | | | | |
|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 1. (D) | 2. (C) | 3. (C) | 4. (C) | 5. (A) | 6. (A) | 7. (D) | 8. (C) | 9. (C) | 10. (C) |
| 11. (B) | 12. (A) | 13. (A) | 14. (B) | 15. (A) | 16. (C) | 17. (A) | 18. (C) | 19. (A) | 20. (A) |
| 21. (C) | 22. (B) | 23. (A) | 24. (C) | 25. (C) | 26. (A) | 27. (C) | 28. (A) | 29. (A) | 30. (A) |
| 31. (A) | 32. (C) | 33. (D) | 34. (B) | 35. (C) | 36. (C) | 37. (A) | 38. (C) | 39. (C) | 40. (D) |
| 41. (A) | 42. (A) | 43. (D) | 44. (A) | 45. (B) | 46. (B) | 47. (B) | 48. (A) | 49. (A) | 50. (A) |
| 51. (D) | 52. (C) | 53. (C) | 54. (C) | 55. (A) | 56. (B) | 57. (A) | 58. (B) | 59. (A) | 60. (C) |
| 61. (D) | 62. (B) | 63. (C) | 64. (B) | 65. (B) | 66. (A) | 67. (A) | 68. (B) | 69. (D) | 70. (A) |
| 71. (B) | 72. (C) | 73. (B) | 74. (D) | 75. (A) | 76. (C) | 77. (C) | 78. (C) | 79. (C) | 80. (B) |
| 81. (D) | 82. (A) | 83. (C) | 84. (D) | | | | | | |

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Explanations

Art & Culture

1. (D)

Exp:

- 💡 Banarasi Shehnai is a **traditional wind instrument** deeply rooted in the **Banaras Gharana** of Indian classical music. **Hence, statement 1 is correct.**
- 💡 It gained national prominence through **Ustad Bismillah Khan**, who famously played the shehnai at the **Red Fort** on **India's first Independence Day**. **Hence, statement 2 is correct.**
 - ✦ He elevated the Shehnai to **prominence** in Indian classical music with his performance at the **Calcutta All India Music Conference in 1937.**
- 💡 **Varanasi's rich cultural and craft heritage** gained national recognition as the **Banarasi Shehnai** was granted **Geographical Indication (GI)** tag. **Hence, statement 3 is correct.**

2. (C)

Exp:

Shewaki Stupa:

- 💡 The **Shewaki Stupa of Kabul** is **over 20 meters wide** and is a major **Buddhist-era monument from the 1st to 3rd centuries AD**. **Hence, statement 1 is correct.**
- 💡 It **reflects both Kushan and Hellenistic architectural styles** (influenced by Greek culture) and was built with **fieldstones, mud, and plaster**. **Hence, statement 2 is correct.**
- 💡 The stupa, once a key religious and caravan site, was **first excavated in 1820 by archaeologists.**

3. (C)

Exp:

Taj Mahal:

- 💡 The Taj Mahal was commissioned by **Mughal Emperor Shah Jahan** in memory of his wife **Mumtaz Mahal**, and **Ustad Ahmad Lahori** is credited as the chief architect.
 - ✦ Construction started in **1632 AD** and was completed in **1648 AD**; ancillary structures were completed by **1653 AD**. It was built by artisans from across the **Mughal Empire, Central Asia, and Iran.**
- 💡 It was included in the **UNESCO World Heritage List in 1983**, recognized for its exceptional value as a masterpiece of human creative genius. **Hence, statement 1 is correct.**

- ✦ It is globally renowned as one of the **Seven Wonders of the World.**

- 💡 The Taj Mahal was declared a **centrally protected monument of national importance** in 1920.

- ✦ It is managed by the **Archaeological Survey of India (ASI)**. It is protected under the **Ancient Monuments and Archaeological Sites and Remains Act, 1958 & 1959 Rules**, and is enclosed within the **Taj Trapezium Zone (TTZ)**. **Hence, statement 2 is correct.**

4. (C)

Exp:

- 💡 **UNESCO's MoW Programme:** Launched in 1992, UNESCO's MoW Programme aims to preserve world heritage in manuscripts, oral traditions, audiovisuals, and archives.
 - ✦ Updated biennially, it currently includes 570 entries, with notable Indian entries such as **Rig Veda (2005)**, **Abhinavagupta's Works (2023)**, and **NAM Summit Archives (2023)**.
 - ✦ The **Bhagavad Gita** and **Natyashastra** have been added to UNESCO's **Memory of the World (MoW) Register**, which preserves documentary heritage of global significance.
 - ✦ **G20 Summit Archives 2023** is not included in UNESCO's **Memory of the World (MoW) Register.**
- 💡 Hence, Option C is correct.

History

5. (A)

Exp:

Aftermath of Jallianwala Bagh Massacre:

- 💡 The **Jallianwala Bagh Massacre** marked a turning point in India's freedom struggle, deeply shaking public faith in British rule.
- 💡 The British Government set up the **Hunter Commission (1919)** to investigate the **Jallianwala Bagh massacre** and, in its **1920 report**, it unanimously condemned **General Dyer's actions**. However, it did not recommend any **penal or disciplinary action** against him.
 - ✦ **Congress formed a non-official committee**, comprising **Motilal Nehru, Gandhi**, and others, to investigate the incident, **condemning Dyer's actions as inhuman and criticizing the imposition of martial law** in Punjab as unjustifiable.

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- 🔦 **Udham Singh**, originally **Ram Mohammad Singh Azad**, assassinated **Michael O'Dwyer**, the Lieutenant Governor responsible for the **1919 Jallianwala Bagh massacre**.

✦ He was **hanged in 1940**, and his ashes were returned to India in 1974.

- 🔦 Hence, option A is correct.

6. (A)

Exp:

Indian freedom Struggle during the 1920–1930s

- 🔦 **Chauri Chaura Incident (1922)**: A violent clash in Gorakhpur district (UP) where a mob set fire to a police station, killing 22 policemen. This led Mahatma Gandhi to withdraw **Non-Cooperation Movement**, emphasizing non-violence as a core principle of the freedom struggle.

- 🔦 **Formation of the Swaraj Party (1923)**: Formed by C.R. Das and Motilal Nehru, aimed to **contest elections and obstruct British policies** from within the legislative councils after the Non-Cooperation Movement ended.

- 🔦 **Simon Commission's Arrival (1928)**: A British commission to review constitutional reforms, but with **no Indian members**, sparking nationwide protests with the slogan "**Simon Go Back.**" **Lala Lajpat Rai** was injured during a protest and later died.

- 🔦 **Lahore Session of INC (1929)**: Under the presidency of **Jawaharlal Nehru**, the Indian National Congress adopted the historic **Poorna Swaraj (Complete Independence)** resolution and declared **26th January 1930** as *Independence Day*.

- 🔦 Hence, option A is correct.

7. (D)

Exp:

- 🔦 The **Cripps Mission** of **March 1942** was a British diplomatic effort led by Sir **Stafford Cripps** to secure **Indian support for the British war effort during World War II** and offer a post-war political settlement. Hence, **statement 1 is correct**.

- 🔦 The mission proposed granting India **dominion status** after the war, the formation of a **constituent assembly** to draft a constitution, and the option for provinces, especially Muslim-majority ones, to opt out of the new constitution. Hence, **statement 2 is correct**.

✦ However, the proposed terms were seen as inadequate by Indian leaders leading to its

rejection by the Indian National Congress and the Muslim League.

- 🔦 The failure of the Cripps Mission to secure Indian cooperation led to widespread disappointment and anger, eventually prompting the Indian National Congress to launch the **Quit India Movement in August 1942**, demanding an immediate end to British rule. Hence, **statement 3 is correct**.

8. (C)

Exp:

Jallianwala Bagh massacre:

- 🔦 The **Jallianwala Bagh massacre** occurred on **13th April 1919**, when hundreds of innocent Indians were killed by troops of the **British Indian Army**, mostly Gurkhas, on orders of **Brigadier-General REH Dyer**.

- 🔦 The people had gathered peacefully for a **non-violent satyagraha** against the Rowlatt Act, 1919. Hence, **statement 1 is correct**.

✦ **Jallianwala Bagh** is a historic **garden and memorial** near the **Golden Temple** in Amritsar, Punjab.

- 🔦 **Mahatma Gandhi** had called for a **non-violent satyagraha (first mass strike)**, against the **Rowlatt Act** starting with a hartal on **6th April 1919**.

- 🔦 In Punjab, on **9th April**, nationalist leaders **Dr. Satyapal** and **Saifuddin Kitchlew** were arrested without reason and taken to an unknown place. This **provoked widespread anger**, becoming the **immediate trigger** for the **large-scale protests** by thousands of Indians on **10th April**. Hence, **statement 2 is correct**.

✦ In response, the British imposed **martial law**, giving full authority to **Brigadier-General Dyer**.

- 🔦 It became a key reason for **Mahatma Gandhi** to launch the **Non-Cooperation Movement (NCM) (1920–22)**, along with other factors such as the **Khilafat issue**, the growing demand for **Swaraj**, and the hardships caused by **World War I**. Hence, **statement 3 is correct**.

9. (C)

Exp:

Sikh Gurus

- 🔦 **Guru Ram Das**, the fourth Sikh Guru, founded the city of Amritsar in 1577. He began the excavation of the sacred tank which later became the site of the **Golden Temple (Harmandir Sahib)**. Hence, **pair 1 is correctly matched**.

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- ⚡ Guru Arjan Dev, the fifth Sikh Guru, compiled the Adi Granth (the original version of Guru Granth Sahib) in 1604 in the Gurmukhi script. He included hymns of previous Gurus and other saints. **Hence, pair 2 is correctly matched.**
- ⚡ Guru Gobind Singh, the tenth Sikh Guru, created the Khalsa in 1699 at Anandpur Sahib to instill a martial spirit among Sikhs and to defend righteousness (Dharma). **Hence, pair 3 is correctly matched.**
- ⚡ **Therefore, option C is correct.**

Geography

10. (C)

Exp:

Hadean Proto Crust & Hadean Aeon:

- ⚡ The **Hadean proto crust** is **Earth's earliest crust**, formed within the **first 200 million years of the Hadean Aeon** (4.6 to 4 billion years ago), a period marked by **extreme heat, volcanic activity**, and a **partially molten surface**. **Hence, statement 1 is correct.**
 - ✦ Over time, parts of the **molten surface cooled and solidified, forming the first crust.**
- ⚡ **Hadean Aeon** was followed by the **Archean Eon** (4 to 2.5 billion years ago), marked by the **formation of Earth's first stable crust**, the **beginning of plate tectonics**, and the **emergence of life**. **Hence, statement 2 is correct.**
 - ✦ As the surface cooled, **thick crust formed the first continents**, which moved over the **semi-fluid asthenosphere beneath.**

11. (B)

Exp:

Slovak Republic:

- ⚡ It is a landlocked country in Central Europe. It borders **Hungary** to the south, **Poland** to the north, **Czech Republic** to the northwest, **Austria** to the west and **Ukraine** to the east. **Hence, statement 1 is not correct.**
- ⚡ The **Velvet Revolution (1989)** ended communist rule in **Czechoslovakia** and led to the peaceful dissolution of the country into the **Czech Republic** and **Slovakia** in 1993 (often referred to as the "**Velvet Divorce**"). **Hence, statement 2 is correct.**
- ⚡ Slovakia is a **high-income developed economy** with its capital at **Bratislava** and follows a parliamentary democratic republic system.

12. (A)

Exp:

- ⚡ A cloudburst is a **sudden, intense rainstorm that results in more than 10 cm of rain** in less than an hour over a small area (approximately 10 km²).
- ⚡ It occurs when moist air is forced to rise over a mountain range. As the air ascends, it cools and condenses, resulting in heavy rainfall. **Hence, statement 1 is not correct.**
- ⚡ It can also be accompanied by **hail and thunder**. Cloudbursts are common in **mountainous areas**, especially in the Himalayas.
- ⚡ Due to their localised nature, cloudbursts are **hard to predict or detect** but can unleash sudden, devastating rainfall, leading to flash floods and landslides. **Hence, statement 2 is correct.**

13. (A)

Exp:

- ⚡ The Kishanganga Dam, part of the Kishanganga Hydroelectric Project, is located on the Kishanganga River, a tributary of the Jhelum River. **Hence, pair 1 is not correctly matched.**
- ⚡ The Ratle Dam is part of the Ratle Hydroelectric Project, located on the Chenab River in the Kishtwar district of the Indian Union Territory of Jammu and Kashmir. **Hence, pair 2 is not correctly matched.**
- ⚡ The Shahpurkandi Dam, located on the **Ravi River** in Punjab, utilizes water released by the Ranjit Sagar Dam for power generation and irrigation in Punjab and J&K. **Hence, pair 3 is correctly matched.**
- ⚡ **Hence, option A is correct.**

14. (B)

Exp:

Saora Tribe:

- ⚡ The Saora are one of the **oldest tribes of Odisha**, mentioned in the Ramayana and Mahabharata, and also found in parts of Andhra Pradesh, Jharkhand, Madhya Pradesh, and Assam. **Hence, statement 1 is not correct.**
- ⚡ The Saora Tribe consists of two main subgroups: the **Sudha Saora, who live in the plains and practice wet cultivation** and wage work, and the **Lanjia Saora, who reside in the hills** and rely on shifting and terraced farming. **Hence, statement 2 is correct.**

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15. (A)

Exp:

Crimea:

- 💡 Crimea is an **autonomous region** that was part of **Ukraine** prior to 2014, located between the **Black Sea** and the **Sea of Azov**.
 - ✦ Crimea is linked to the mainland by the narrow **Perekop Isthmus** and is **separated from the Sea of Azov by the Tonka of Arabat sandspit**.
 - ✦ It links to Russia via the Kerch Strait and the Crimean Bridge.
- 💡 Russia's coastline spans over **37,000 km**, but much of it lies north of the Arctic Circle, where sea ice makes many ports unusable in winter.
 - ✦ The Black Sea, the warmest marine feature bordering Russia, is crucial for its access to the Mediterranean.
 - ✦ Crimea's geography, particularly the **Sevastopol port**, is essential for Russia's access to warm water ports and holds significant strategic military value for projecting power in the Black Sea and Mediterranean.

💡 Hence, option A is correct.

16. (C)

Exp:

Shahid Rajaei Port:

- 💡 **Strategic Location:** It is Iran's **largest and most advanced** commercial port.
 - ✦ It is situated near the crucial **Strait of Hormuz**, through which about **26% of the world's oil passes**. Hence, **statement 1 is correct**.
 - ✦ It handles **85%** of Iran's container cargo, **52%** of its oil trade, and over half of its maritime cargo.
 - ✦ It is positioned on the **International North-South Transport Corridor (INSTC)**, which connects the Indian Ocean and Persian Gulf to the Caspian Sea, Russia, and Northern Europe.
 - 📌 INSTC, launched in 2000, is a **trilateral agreement** by Iran, Russia, and India. Hence, **statement 2 is correct**.
- 💡 **Historical Link:** Shahid Rajaei Port was first opened in **1985** during the **Iran-Iraq War** and has steadily expanded over the years.

17. (A)

Exp:

Ocean currents:

- 💡 Ocean currents are the continuous, predictable, directional movement of seawater driven by gravity, wind (Coriolis Effect), and water density.
- 💡 Ocean currents act as **global conveyor belts**, **transferring heat from equatorial regions to polar regions and vice versa**. This redistribution of heat moderates the climate of coastal regions (e.g., the warm Gulf Stream warms Western Europe). Hence, **statement 1 is correct**.
- 💡 Cold ocean currents (such as the California Current, Humboldt Current, and Canary Current) cool the air above them, reducing its ability to hold moisture. This often leads to **dry, desert-like conditions** along adjacent coasts (e.g., the Atacama and Namib Deserts).
 - ✦ Cold ocean currents have a direct influence on desert formation, particularly along the western coasts of tropical and subtropical continents.
 - ✦ Hence, statement 2 is correct.
- 💡 The **thermohaline circulation** (also known as the global conveyor belt) is driven by **differences in water temperature and salinity** (thermo = heat, haline = salt), **not by wind**. Wind-driven currents dominate the surface layers, especially near the equator, but thermohaline circulation occurs in the **deep ocean** and is density-driven. Hence, **statement 3 is not correct**.

18. (C)

Exp:

- 💡 The **heat generated by the Earth's core** is the **primary driver of convection currents** in the **mantle**. The core heats the **lower mantle**, causing material to **rise towards the surface, cool, and then sink again**, creating a circular movement known as **convection**. Hence, **statement 1 is correct**.
- 💡 The convection currents in the mantle exert a force on the lithosphere, **causing tectonic plates to move**. As hot mantle material rises and cooler material sinks, it **pushes and pulls the overlying plates**, driving the processes of plate tectonics. Hence, **statement 2 is correct**.
- 💡 Mantle convection is a **slow process**, with a cycle **taking millions of years to complete**. The movement of material in the mantle occurs at a slow rate, with convection currents moving at speeds of a **few centimeters per year**. Hence, **statement 3 is correct**.

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Polity & Governance

19. (A)

Exp:

Constitutional and Legal Aspects of SC Sub-Categorisation:

💡 **Constitutional Provisions:**

✦ **Article 14:** Permits reasonable classification to achieve substantive equality. Sub-classification is permissible if based on **intelligible differentia** (a clear and understandable basis for distinguishing one group from another) and a **rational nexus** (a logical connection between the classification and the goal it aims to achieve). Hence, statement 1 is correct.

✦ **Article 15(4) and 15(5):** Empower the State to make special provisions for the advancement of socially and educationally backward classes, including SCs and STs, in education and institutions.

💡 **Key Judicial Interpretations:**

✦ **E.V. Chinnaiah v. State of Andhra Pradesh (2004):** Supreme Court ruled that the SCs form a **homogeneous class** and any sub-classification within SCs would amount to **tinkering with the Presidential List** under Article 341.

💡 As only Parliament can amend the list, the Court declared sub-classification by states as **unconstitutional**.

✦ **State of Punjab v. Davinder Singh (2024):** A seven-judge Constitution bench overruled *Chinnaiah verdict* and has upheld that **states can sub-classify SCs and STs within the reservation quota based on varying levels of backwardness**, using empirical data and historical evidence. Hence, statement 2 is not correct.

💡 Such sub-classification must avoid political motives and is subject to judicial review.

20. (A)

Exp:

Rajamannar Committee:

💡 The **Rajamannar Committee** was constituted to review **Centre-State relations** which criticised the **growing centralisation of power** that undermined state autonomy.

💡 The committee called for strengthening the **Inter-State Council (ISC)** to restore federal balance.

💡 Though the **Constitution appeared federal**, the committee said it functioned **unitarily**, turning states into **administrative arms of the Centre**.

💡 It flagged **Articles 256** (States must comply with laws made by Parliament), **257** (allows Union to direct states in certain cases), **365**, and **356** for enabling undue **Centre control**.

💡 The committee recommended that **Article 356** should be abolished.

💡 Hence, option A is correct.

21. (C)

Exp:

Registrar General of India

💡 The **RGI**, established in 1949 under the **Ministry of Home Affairs**, is responsible for overseeing population data collection, including the decennial **Census of India** and the **Linguistic Survey of India**. Hence, statement 1 is correct.

💡 The RGI ensures the implementation of the **RBD Act, 1969**, and manages the **Civil Registration System** for continuous birth and death registration.

✦ It also maintains the **National Population Register (NPR)** to record demographic details of all usual residents. Hence, statement 2 is correct.

💡 RGI is headed by a senior civil servant, typically of **Joint Secretary rank**, the RGI plays a crucial role in demographic planning and policy formulation.

22. (B)

Exp:

Chief Justice of India

💡 A **Supreme Court** judge, including the CJI, is appointed by the **President** under Article 124 (2).

💡 The senior-most judge is designated as CJI based on length of service (it is customary practice, not a legal requirement). Hence, statement 1 is not correct.

💡 To qualify as CJI, one must be a citizen of India, have served as a **High Court judge for 5 years** or as an **advocate for 10 years**, or be a distinguished jurist in the President's opinion.

💡 The CJI can only be removed by the **President** after an address by **Parliament**, supported by a special majority in both Houses. Hence, statement 2 is correct.

23. (A)

Exp:

Jal Jeevan Mission

💡 The Government of India restructured and subsumed the ongoing National Rural Drinking Water Programme (NRDWP) into the Jal Jeevan Mission (JJM) to provide

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Functional Household Tap Connections (FHTCs) to every rural household. Hence, statement 1 is correct.

- ⚡ JJM aims to provide tap water to all **16 crore rural households** by December 2024, currently, **75% coverage achieved**, with nearly 4 crore households still pending. The mission is now proposed to be extended till **December 2028** to achieve universal coverage. Hence, statement 2 is not correct.

- ⚡ The fund sharing pattern between Centre and State is **90:10** for Himalayan (Uttarakhand, Himachal Pradesh) and North-Eastern States, **100:0** for UTs and **50:50** for the rest of the States.

24. (c)

Exp:

National Company Law Appellate Tribunal (NCLAT):

- ⚡ It was **constituted under Section 410 of the Companies Act, 2013** for hearing appeals against the orders of the National Company Law Tribunal. Hence, statement 1 is correct.
- ⚡ It also functions as the **Appellate Tribunal for matters under the Insolvency and Bankruptcy Code (IBC), 2016**.
- ⚡ NCLAT is also the Appellate Tribunal for hearing appeals against the orders passed by National Company Law Tribunal (NCLT), **Insolvency and Bankruptcy Board of India** under Section 202 and Section 211 of IBC and the **Competition Commission of India (CCI)**. Hence, statement 2 is correct.

25. (c)

Exp:

Panchayati Raj Institutions (PRIs):

- ⚡ The 73rd Constitutional Amendment Act, 1992 gave **constitutional status to the PRIs** and established a system of uniform structure, elections, **reservation of seats** for Scheduled Caste, Scheduled Tribes and women and devolution of fund, functions and functionaries to PRIs. Hence, statement 1 is correct.
- ✖ The **term of office** for elected members of Panchayati Raj Institutions is five years.
- ⚡ The **District Planning Committee** is responsible for preparing the **draft development plan** for rural and urban areas in a district. Hence, statement 2 is correct.

26. (A)

Exp:

Cruise Bharat Mission (CBM):

- ⚡ CBM was launched in **2024** to transform India into a **leading cruise tourism destination by 2029**. Hence, statement 1 is correct.

- ⚡ It is led by the **Ministry of Ports, Shipping, and Waterways** and will be implemented in **3 phases (2024–2029)**. Hence, statement 2 is not correct.

- ✖ The mission includes **terminal development, digitalization, decarbonization, and regional alliances (UAE, Maldives, Singapore)**.

- ⚡ It targets **doubling cruise passenger traffic by 2029** from 4.71 lakh in FY 2023–24.

- ⚡ A **National Cruise Infrastructure Master Plan for 2047** and initiatives like **e-visas** and **e-clearance** aim to enhance connectivity and tourism.

27. (c)

Exp:

Contributions of Dr. K. Kasturirangan:

- ⚡ As a key figure in **ISRO**, Dr. Kasturirangan contributed to the establishment of the **National Natural Resource Management System (NNRMS)**, enabling **satellite-based services** for sectors like **agriculture, forestry, and water management**.

- ⚡ Contributions Beyond Science:

- ✖ The **Kasturirangan Committee (2013)** reviewed the **Western Ghats Ecology Expert Panel report** and recommended that **37% of the Western Ghats** be designated as an **Ecologically Sensitive Area (ESA)** to balance conservation and development.

- ✖ Dr. K. Kasturirangan chaired the committee that drafted the **National Education Policy (NEP) 2020**, advocating for **multidisciplinary education, skill development, and flexible curricula**.

- ⚡ Hence, option C is correct.

28. (A)

Exp:

Deputy Speaker of Lok Sabha:

- ⚡ The **election process** for the **Deputy Speaker** is governed by the **Rules of Procedure and Conduct of Business** in the Lok Sabha.

- ⚡ **Article 95(1)** states that the **Deputy Speaker** performs the Speaker's duties when the post is vacant. Hence, statement 1 is correct.

- ⚡ The **Deputy Speaker** is elected by a **simple majority (majority of members present and voting)**, not by an **absolute majority** of all members of the House. Hence, statement 2 is not correct.

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- As per **Article 95(2)** of the **Constitution of India**, the **Deputy Speaker** continues in office until the dissolution of the **Lok Sabha**. Hence, **statement 3 is not correct**.

29. (A)

Exp:

- The Indian government has selected Bengaluru-based start-up **Sarvam** to develop the country's first homegrown **Artificial Intelligence (AI) Large Language Model (LLM)** under the **IndiaAI Mission**. Hence, **statement I is correct**.
 - The company is developing **three model variants**: Sarvam-Large (advanced reasoning), Sarvam-Small (real-time applications), and Sarvam-Edge (compact on-device tasks).
- Sarvam will receive **4,000 Graphic Processing Units (GPUs)** for six months under the IndiaAI Mission to build a 70 billion parameter AI model.
- Approved in 2024 under the **Ministry of Electronics and Information Technology (MeitY)**, the IndiaAI Mission seeks to drive the responsible and inclusive growth of India's AI ecosystem. Hence, **statement II is correct**.
 - IndiaAI Mission includes democratizing computer access, enhancing data quality, developing indigenous AI models, nurturing AI talent, fostering industry collaboration, supporting startup funding, and promoting ethical, socially impactful AI.
- Hence, **option A is correct because both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I**.

30. (A)

Exp:

- Following **post-1991 liberalisation**, India needed a modern dispute resolution mechanism to attract foreign investors.
 - India enacted the **Arbitration and Conciliation Act, 1996**, based on the **United Nations Commission On International Trade Law (UNCITRAL)** Model Law on International Commercial Arbitration 1985 and the UNCITRAL Conciliation Rules, 1980, ensuring global alignment and legal uniformity.
- The Arbitration Council of India (ACI) is an autonomous body established under the **Arbitration and**

Conciliation (Amendment) Act, 2019, to improve the quality of arbitration and other alternative dispute resolution mechanisms. Hence, **statement 1 is not correct**.

- The **Dr. T.K. Viswanathan Committee (2024)** recommended strengthening institutional arbitration, reducing court intervention, and introducing a cost-effective, time-bound arbitration framework. Hence, **statement 2 is correct**.

31. (A)

Exp:

Registration of Births and Deaths (RBD) Act, 1969:

- The **Registration of Births and Deaths (RBD) Act, 1969**, provides a legal framework for the compulsory registration of births and deaths in India. It aims to create a uniform and reliable Civil Registration System (CRS) across the country.
 - The Act was significantly **amended in 2023** to strengthen digital record-keeping and service delivery.
- As per the 2023 amendment, **digital registration of all births and deaths through the Civil Registration System (CRS)** has been made **mandatory** from **October 1, 2023**. This ensures a centralized and accessible database for individuals and government agencies. Hence, **statement 1 is correct**.
- The **time limit for reporting** a birth, death, or stillbirth is **within 21 days** from the date of occurrence, not 30 days. Delay beyond this period attracts a late fee and may require approval from higher authorities. Hence, **statement 2 is not correct**.

32. (C)

Exp:

President of India:

- As per **Article 54** of the Indian Constitution, the President of India is elected by an electoral college consisting of **elected members of both Houses of Parliament** and the **Legislative Assemblies of the States** and Union Territories of Delhi and Pondicherry. Hence, **statement 1 is correct**.
- As per **Article 67**, the **Vice-President can be removed** by a resolution passed by the Rajya Sabha with an effective majority and agreed to by the Lok Sabha with a simple majority, with at least 14 days' notice. He may also **resign by writing to the President**. Hence, **statement 2 is not correct**.

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✦ Unlike the President, the Constitution does not lay down any grounds for the removal of the Vice-President.

💡 **The President (Discharge of Functions) Act, 1969** provides for the smooth discharge of presidential duties during temporary vacancies or incapacities.

✦ If the **President is unavailable**, the **Vice-President acts as President**. If both offices are vacant, the **Chief Justice of India**, or in his absence, the **senior-most judge of the Supreme Court**, assumes the role. **Hence, statement 3 is correct.**

Social Issues

33. (D)

Exp:

💡 **Suresh Kumar Koushal v. Naz Foundation (2013)**: The SC reversed the Delhi High Court's 2009 decision that decriminalized homosexuality under Section 377 of the Indian Penal Code (IPC).

💡 **National Legal Services Authority v. Union of India (2014)**: The SC affirmed the right of individuals to **self-identify their gender**, acknowledging that gender identity goes beyond **biological sex**, and includes the right to be recognized as male, female, or transgender.

💡 **Puttaswamy Case (2017)**: The Court's affirmation of the **right to privacy** included **sexual orientation** as a fundamental right, emphasizing that discrimination based on sexual orientation violates human dignity and equality.

💡 **Navtej Singh Johar vs. Union of India (2018)**: The SC decriminalized **homosexuality** by reading down Section 377 of the **Indian Penal Code** (now **Bharatiya Nyaya Sanhita**), which had previously criminalized **consensual same-sex relations**.

💡 Hence, option D is correct.

34. (B)

Exp:

India Justice Report 2025:

💡 The **India Justice Report** is described as a **first-of-its-kind** national periodic report that ranks states based on their capacity to deliver justice. **Hence, statement 1 is correct.**

💡 The report assesses four pillars:

✦ **Police, Prisons, Judiciary, Legal Aid** and mentions **State Human Rights Commissions (SHRCs)** as part of the assessment, but it does not explicitly list **SHRCs** as a separate pillar. **Hence, statement 2 is not correct.**

💡 Women continue to hold just **8% of officer posts** and under 1,000 of 4,940 senior IPS roles, **90%** serve in constabulary. However, **78% of police stations** now have **Women Help Desks**.

💡 The report categorizes states into **large/mid-sized** (population >1 crore) and small (population <1 crore) for fair comparison. **Hence, statement 3 is correct.**

✦ **Karnataka, Andhra Pradesh**, and **Telangana** top the **large & mid-sized states**, while **Sikkim** leads among **small states**. **Bihar, Chhattisgarh**, and **Odisha** show the most improvement.

35. (C)

Exp:

Anemia Mukht Bharat (AMB) campaign:

💡 The **World Health Organization (WHO)** defines **anemia** as **hemoglobin** levels below **12 g/dL** for women in the reproductive age group and below **11 g/dL** for children under 5.

💡 The **Anemia Mukht Bharat (AMB) campaign** was launched in **2018** with a **6x6x6 framework** targeting **six vulnerable groups**, **six interventions**, and **six institutional mechanisms**. **Hence, statement 1 is correct.**

💡 The **AMB campaign** mandates fortification of foods with **iron and folic acid** in government programs.

💡 The **Mother Child Tracking System (MCTS)** is used to track and report cases of **anemia**, particularly among **pregnant women**. **Hence, statement 2 is correct.**

Agriculture & Allied Sector

36. (C)

Exp:

Technological Measures to Tackle Stubble Burning

💡 **Pusa Decomposer**: This is a microbial formulation that helps **decompose paddy stubble into compost**. It **reduces the need for burning the crop residues** and **contributes to soil fertility** by turning the stubble into organic matter. Thus, it helps reduce stubble burning.

💡 **Pelletization of crop residues**: In this process, **crop residues are converted into biomass pellets** that can be used for energy generation. This not only **reduces stubble burning** but also **creates an additional income source for farmers**, making it an effective method to manage crop residues.

💡 **Biochar production**: Crop residues are converted into **biochar through pyrolysis**, a process that involves heating the residues in the absence of oxygen. **Biochar improves soil fertility, water retention, and microbial activity**, and its production helps in **reducing stubble**

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burning while also contributing to carbon sequestration.

- Happy Seeder: This tractor-mounted device allows direct sowing of wheat into paddy fields without the need for removing or burning the paddy stubble. It cuts and lifts the straw, sowing wheat directly in the field, which eliminates the need for stubble burning and improves soil health.

Hence, option C is correct.

37. (A)

Exp:

Keonjhar Kalachampa:

- A farmer from Odisha has officially registered his indigenous paddy variety, **Keonjhar Kalachampa**, and has sought compensation from the **Protection of Plant Varieties and Farmers' Rights Authority (PPV&FRA)** for the seed's commercialisation.
- The Indian government notified the variety in 2015. The Odisha State Seeds Corporation (OSSC) and private companies have significantly contributed to the production and distribution of the variety.
 - The variety has shown resilience to major diseases, pests, and the effects of climate change.
 - It is non-lodging (resistant to bending or falling over), responsive to fertilizers, suitable for both timely and late sowing, and a high-yielding variety.

Hence, option A is correct.

Environment & Ecology

38. (C)

Exp:

Leptobrachium aryatium:

- It has been identified in the **Garbhanga Reserve Forest**, situated on the southwestern side of Guwahati, Assam. Hence, statement 1 is correct.
- The species is noted for distinctive features, including fiery orange-and-black eyes, a unique reticulated throat pattern, and a smooth, rhythmic call at dusk. Hence, statement 2 is correct.
- The frog was first identified in 2004 as **Leptobrachium smithi**, but recent molecular and morphological studies confirmed it as a new species.
- The genus **Leptobrachium**, consisting of 38 species of stocky frogs with broad heads, short hind limbs, and distinctively coloured eyes, is found across Southern China, India, the Sunda Shelf, and the Philippines.

39. (C)

Exp:

Flue Gas Desulphurisation (FGD):

- FGD is a process that removes sulphur dioxide (SO₂) from exhaust gases (flue gas) produced by burning fossil fuels (coal, oil). Hence, statement 1 is correct.
 - It is commonly used in coal-fired power stations.
 - Common reagents used include limestone (CaCO₃), lime (CaO), and ammonia (NH₃).
- FGD systems are mainly of three main types:
 - Dry Sorbent Injection:** It uses limestone to remove SO₂ from flue gas before dust control systems, often referred to as dry injection or spray drying systems.
 - Wet Limestone-Based System:** It is suitable for large-scale flue gas treatment, using low-cost limestone to remove SO₂ efficiently and produce gypsum.
 - Seawater-Based System:** It uses alkaline seawater to reduce SO₂ by 70–95%. It is typically used when emission norms are less stringent and offers a lower initial cost.
- Approximately 90% of coal in India has a low sulfur content (ranging from 0.3% to 0.5%), which makes the implementation of Flue Gas Desulfurisation (FGD) systems less critical. Hence, statement 2 is correct.

40. (D)

Exp:

International Big Cat Alliance (IBCA):

- It is a treaty-based intergovernmental organization, launched by India on the 50th anniversary of Project Tiger (April 2023). Hence, statement 1 is correct.
- IBCA became a full-fledged global legal entity after ratification by five countries, i.e., India, Liberia, Eswatini, Somalia, and Nicaragua.
- Recently, India has been formally designated as the headquarters and secretariat of the IBCA. Hence, statement 2 is correct.
- Its membership is open to all United Nations member states, including range countries where these species naturally exist and non-range countries interested in supporting big cat conservation. Hence, statement 3 is correct.

41. (A)

Exp:

- Mantis shrimp are ancient marine crustaceans belonging to the order Stomatopoda, closely related to crabs and lobsters.

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- ✦ With over 450 known species, they range in size from 10 cm to nearly 46 cm.
- ✦ **Despite their name, they are not true shrimp** but are distinguished by their vibrant colors, complex behavior, and powerful hunting appendages.

💡 They live in self-dug burrows within seabeds—smashers in harder substrates and spearers in soft ones—near coral reefs.

💡 Mantis shrimp are categorized into two main types based on their hunting adaptations:

- ✦ **Spearers:** Possess spiny, barbed forelimbs used to impale soft-bodied prey like fish, squid, and worms.
- ✦ **Smashers:** Have heavily calcified, club-like appendages capable of delivering one of the fastest strikes in the animal kingdom, used to break open hard-shelled prey like snails, crabs, and clams.

💡 Hence, option A is correct.

42. (A)

Exp:

💡 **World Earth Day** is celebrated every year on 22nd April with the mission of broadening, educating, and activating environmental movements worldwide.

- ✦ **Theme for 2025: "Our Power, Our Planet"**— It calls on everyone to unite for renewable energy and to work toward tripling **clean energy capacity by 2030**. Hence, statement 1 is correct.

💡 The first Earth Day **was observed in 1970** which led to the passing of significant environmental legislation in the US, including the **creation of the Environmental Protection Agency (EPA)**. Hence, statement 2 is not correct.

💡 In 1990, Earth Day became a global event with 200 million people and **141 countries participating**.

43. (D)

Exp:

Colossal Squid:

💡 **Colossal Squid** are the largest known **invertebrates** on Earth, belonging to the **class Cephalopoda** and family **Cranchiidae**. Hence, statement 1 is not correct.

💡 Colossal squids are found circumpolar around Antarctica and inhabit the Southern Ocean's mesopelagic (200–1000 m) to bathypelagic (1000–

4000 m) zones. They are **not commercially fished**. Hence, statement 2 is not correct.

💡 As a deep-sea predator, it feeds on large fish like the **Patagonian toothfish and other squids**, while being preyed upon by sperm whales, seals, and other marine predators.

💡 The Colossal Squid is listed as **Least Concern by the International Union for Conservation of Nature (IUCN)**.

44. (A)

Exp:

Similipal National Park:

💡 The Similipal Tiger Reserve was notified as **Odisha's second national park** (after Bhitarkanika), with **845.70 sq km as the national park** and the rest of the **2,750 sq km as a wildlife sanctuary under the Wild Life Protection Act, 1972**.

💡 It is the only place in the world that is home to **wild melanistic tigers**, housing 40 Royal Bengal tigers and 25% of Odisha's elephant population.

💡 The park is surrounded by **high plateaus and hills**, the **highest peak** being the **twin peaks of Khairiburu and Meghashini**.

💡 The forests of **Similipal** consist of **sal trees, moist deciduous, and semi-evergreen varieties**, forming a rich and diverse habitat for **flora, fauna**, and forest-dependent communities.

- ✦ It comes under the **Deccan Peninsular Biogeographic Zone**.

💡 Hence, option A is correct.

45. (B)

Exp:

River Cities Alliance:

💡 The **National Mission for Clean Ganga (NMCG)** has approved a master plan for the **River Cities Alliance (RCA)** to promote **river-sensitive urban planning** through capacity building, knowledge sharing, and expert guidance in India's cities.

💡 **River Cities Alliance (RCA)** has been conceptualized to help river cities in India maintain this **symbiotic relationship** with their rivers.

- ✦ Launched in 2021, with 30 river cities, the RCA has now expanded to 145+ cities.

- ✦ It is currently being managed by the **National Mission for Clean Ganga (NMCG)** under the Ministry of Jal Shakti and the National Institute

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of Urban Affairs (NIUA) under the Ministry of Housing and Urban Affairs.

✍ It supports the creation of **Urban River Management Plans (URMPs)**.

💡 **Urban River Management Plans (URMPs)** framework, launched in 2020 by the **NIUA** and the **NMCG**, represents a **first-of-its-kind approach** to ensure that environmental, economic, and social dimensions are considered in the urban management of rivers.

💡 Hence, option B is correct.

46. (B)

Exp:

Revive Our Ocean Initiative:

💡 The '**Revive Our Ocean**' initiative was launched by **NGO Dynamic Planet** to promote marine conservation through **Marine Protected Areas (MPAs)**. Hence, **statement 1 is correct**.

💡 The initiative targets seven countries (UK, Portugal, Greece, Turkey, Philippines, Indonesia, Mexico), but India is not a part of this initiative. Hence, **statement 2 is not correct**.

💡 The initiative aligns with the **30X30 target** of the **Kunming-Montreal Global Biodiversity Framework** to protect **30%** of the oceans by **2030**. Hence, **statement 3 is correct**.

47. (B)

Exp:

💡 **Alfalfa Seed** is a **genetically modified (GM) alfalfa (lucerne) fodder seed**. It is widely used as **animal feed** and is also consumed by humans for its health benefits. Hence, **statement 1 is not correct**.

💡 It is a **highly nutritious plant** packed with vitamins (A, C, K, B vitamins), minerals (calcium, magnesium, potassium), **plant-based proteins**, fiber, and antioxidants. Hence, **statement 2 is correct**.

💡 Being a **legume**, it has the **ability to fix nitrogen** from the atmosphere into the soil. Hence, **statement 3 is correct**.

48. (A)

Exp:

💡 **Olive Ridley Turtles** are the **smallest and most abundant sea turtles** in the world and native to India. They are famous for their mass nesting called *arribada* along the **Odisha coast** (notably Gahirmatha, Rushikulya, and Devi river mouths).

✦ They are listed as **Vulnerable under the IUCN Red List** and are protected under **Schedule I of the Wildlife Protection Act, 1972**.

💡 **Lion-tailed Macaque** is an **endemic and endangered primate** found only in the **Western Ghats** of Karnataka, Kerala, and Tamil Nadu.

✦ It lives in tropical rainforests and is known for its distinctive silver-white mane and tufted tail. It is listed as **Endangered on the IUCN Red List** and also under **Schedule I of the Wildlife Protection Act**.

💡 **Platypus** is a unique mammal **endemic to Australia (not native to India)** and is one of the few egg-laying mammals (monotremes). It has a duck-like bill, webbed feet, and lays eggs. It plays no role in India's natural fauna.

💡 **Hoolock Gibbon** is India's **only ape species**, found in the **northeastern states**, especially **Assam, Arunachal Pradesh, and Meghalaya**. They are known for their loud calls and monogamous pairs.

✦ Classified as **Endangered by IUCN** and protected under **Schedule I of the Wildlife Protection Act**.

💡 Hence, option A is correct.

49. (A)

Exp:

💡 The **greenhouse effect** is the process by which certain gases in Earth's atmosphere trap heat, allowing sunlight to enter but preventing some heat from escaping, thereby warming the planet.

💡 **Greenhouse Gases:** The main gases responsible for the greenhouse effect are:

✦ **Carbon Dioxide (CO₂)**: The most significant human-emitted greenhouse gas, primarily from fossil fuel combustion, deforestation, and industrial activities. It is the main driver of long-term global warming.

✦ **Methane (CH₄)**: A potent greenhouse gas, with a higher heat-trapping capability than CO₂ but breaks down faster. Emitted from livestock, rice paddies, landfills, and fossil fuel extraction.

✦ **Nitrous Oxide (N₂O)**: Released from agriculture, industry, and fossil fuel combustion. Although in smaller amounts, it is more effective at trapping heat than CO₂.

✦ **Other Greenhouse Gases:** Water vapor (H₂O), Ozone (O₃), Chlorofluorocarbons (CFCs), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulfur hexafluoride (SF₆)

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- ⚡ **Oxygen (O₂) is not a greenhouse gas** and does not contribute to global warming.

⚡ Hence, option A is correct.

50. (A)

Exp:

Green Cryptocurrency:

- ⚡ **Green cryptocurrencies** are digital currencies designed to minimize environmental impact, particularly the high energy consumption and carbon emissions associated with traditional cryptocurrencies. Hence, statement 1 is correct.
- ⚡ **Litecoin**, similar to **Bitcoin**, requires significant computational power and energy, so it is not considered a green cryptocurrency. Hence, statement 2 is not correct.
- ⚡ **Chia** is a green cryptocurrency that was created to offer an eco-friendly alternative to traditional digital currencies like **Bitcoin**.

Economy

51. (D)

Exp:

- ⚡ The **Global Trade Outlook and Statistics report by the World Trade Organization (WTO)** analyzes the state and future projections of global trade, covering merchandise and services trade, trends, and key risks impacting trade.
 - ✦ **Global Trade Outlook and Statistics 2025 reveals a 0.2% decline in global merchandise trade**, primarily due to escalating trade tensions, particularly between the US and China. However, the services trade is projected to grow modestly by 4.0%.
- ⚡ The WTO, headquartered in Geneva, Switzerland, was established in 1995 under the Marrakesh Agreement, succeeding the **General Agreement on Tariffs and Trade (GATT)**.
 - ✦ The WTO's key reports include the World Trade Report, Global Trade Outlook and Statistics, and Aid for Trade in Action.

⚡ Hence, Option D is correct.

52. (C)

Exp:

Ethanol Blending:

- ⚡ The **Ethanol Blending Programme (EBP)** was launched in **2003** with a **5% ethanol blending target**. Hence, statement 1 is correct.
- ⚡ The programme is implemented nationwide, except in the **Union Territories of Andaman and Nicobar and Lakshadweep**.

- ⚡ The **National Policy on Biofuels 2018** initially set a target of **20% ethanol blending by 2030**, but the amendment in **2022** advanced this to **2025-26**. Hence, statement 2 is correct.

- ⚡ Ethanol blending reached **12.06%** in 2022-23, **14.60%** in 2023-24, and **17.98%** in 2024-25 (up to February 2025).

53. (C)

Exp:

- ⚡ **Dedicated Freight Corridor (DFC)** is a high speed and high capacity railway corridor that is exclusively meant for the transportation of freight, or in other words, goods and commodities.
 - ✦ DFC consists of two arms: Eastern and Western
- ⚡ **Eastern Dedicated Freight Corridor (EDFC)** starts at Sahnewal (Ludhiana) in Punjab and ends at Dankuni in West Bengal.
 - ✦ The route has coal mines, thermal power plants and industrial cities. Feeder routes are also being made for these.
- ⚡ The EDFC route covers **Punjab (1), Haryana, Uttar Pradesh (2), Bihar (3), Jharkhand** and West Bengal. It does not connect **Uttarakhand (4)**.
- ⚡ Hence, option C is correct.

54. (C)

Exp:

Foreign Exchange Reserves (Forex Reserves):

- ⚡ **About:** Forex are reserve assets held by a central bank in foreign currencies. It may include foreign currencies, bonds, treasury bills and other government securities, typically denominated in US dollars.
 - ✦ The **RBI** is the custodian of India's foreign exchange reserves, deriving its authority from the provisions of the RBI Act, 1934. Hence, statement 1 is correct.
- ⚡ **Purpose:** It helps meet external payment needs and stabilize the national currency.
- ⚡ Components of India's Forex Reserves:
 - ✦ Foreign Currency Assets (FCA) (largest contributor)
 - ✦ Gold reserves (second largest contributor)
 - ✍ Hence, statement 2 is correct.
 - ✦ **Special Drawing Rights:** Its value is determined by a basket of 5 major currencies: the US dollar, euro, Chinese renminbi, Japanese yen, and British pound sterling.

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55. (A)

Exp:

- India is the **second largest** producer and consumer of **leather footwear** globally, after China. Hence, **statement 1 is correct**.
- India accounts for **13%** of **global leather production**, contributing significantly to exports.
- The **Council for Leather Exports (CLE)** facilitates market access and export promotion, not environmental compliance, which is overseen by bodies like the **National Green Tribunal (NGT)** and **Central Pollution Control Board (CPCB)**. Hence, **statement 2 is not correct**.
- Bans on **slaughterhouses** and **cattle trade restrictions** have limited **raw material availability** for the **leather industry**.
- The Goods and Services Tax (GST) regime has increased operational costs for Micro, Small, and Medium Enterprises (MSMEs) in the leather industry by 6-7%. Hence, **statement 3 is not correct**.

56. (B)

Exp:

Spaghetti Bowl Phenomenon

- Spaghetti Bowl Phenomenon** refers to the **confusing and overlapping network of multiple FTAs**, each with different **Rules of Origin (RoO)**. This creates a **complex and tangled system**, increasing the compliance burden and often **hindering trade instead of facilitating it**.
 - The term was coined by **Jagdish Bhagwati** in **1995**, where he criticized FTAs for being counterproductive, complicating global trade rather than promoting openness.
 - The metaphor compares these trade rules to a **bowl of spaghetti**, messy and hard to navigate.
- Impact:** Despite many FTAs, **intra-regional trade** (e.g., South Asia–East Asia) often remains low due to these complexities.

57. (A)

Exp:

Inflation:

- Inflation** is the rise in the general level of prices of goods and services in an economy over a period of time.
- Cutting subsidies on food and fuel will **increase the price of essential goods** like LPG, kerosene, fertilizers, etc, leading to **cost-push inflation** (not reduction).

- When the **Statutory Liquidity Ratio (SLR)** is raised, banks have to **keep more money in government securities**, reducing the **amount available for lending**.

✦ This **reduces money supply** in the economy, which can help **control inflation**. It is a **monetary policy tightening tool**.

- Imposing stock limits on essential commodities** will discourage **hoarding** and **speculative storage** of essential goods, leading to **increased market supply**, helping **stabilize or reduce prices**. It is a **direct control measure** against food inflation.

✦ Hence, option A is correct.

58. (B)

Exp:

World Trade Organization (WTO):

- The WTO, established in 1995 under the **Marrakesh Agreement (1994)**, following the **Uruguay Round of negotiations (1986-94)**, is headquartered in **Geneva, Switzerland**.

✦ WTO is an international organization for liberalizing trade and serves as a forum for governments to negotiate trade agreements. It succeeded the GATT, which had regulated global trade since 1948.

✎ **GATT focused on trade in goods, while WTO covers trade in goods, services, and intellectual property**, including creations, designs, and inventions.

- The WTO has **166 members, representing 98% of world trade**. India has been a member since 1995 and a part of GATT since 1948.

✦ **Membership** is based on negotiations, ensuring a balance of rights and obligations for all members.

- The **Key Reports published by WTO** are the World Trade Report, Global Trade Outlook and Statistics, and Aid for Trade in Action.

✦ Hence, option B is correct.

59. (A)

Exp:

- The World Development Report, Poverty & Equity Brief Report, and Logistics Performance Index are all released by the **World Bank**.

- The **World Development Report** is an **annual publication** by the World Bank, first published in 1978, which provides in-depth analysis and policy

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recommendations on key aspects of global development.

- 💡 **Poverty & Equity Brief Report** is also published by the World Bank and provides **concise updates on poverty**, inequality, and shared prosperity trends across more than 100 developing countries.

- 💡 The World Bank releases the Logistics Performance Index to assess and **compare the efficiency of logistics** and supply chain performance in different countries.

- 💡 Hence, option A is correct.

60. (C)

Exp:

Sectors of Indian Economy:

- 💡 The Indian economy is traditionally classified into **three main sectors**, based on the nature of economic activities:

- ✦ **Primary Sector** involves the use of natural resources and includes agriculture, fishing, mining, forestry, and dairy. It forms the base of the economy, especially in developing countries.

- ✎ **Harvesting wheat** is directly related to **agriculture and natural resource utilization**, thus it belongs to the **primary sector**. Hence, **pair 3 is correctly matched**.

- ✦ **The Secondary Sector** includes **manufacturing and processing** industries like textiles, construction, and food processing. It adds value to raw materials from the primary sector.

- ✎ **Bread production in a bakery** involves **processing raw materials** into a consumable product (bread), hence it's part of the **secondary sector**. Hence, **pair 2 is correctly matched**.

- ✦ **Tertiary Sector** provides services such as **transport, banking, education, healthcare, and communication**. It supports both primary and secondary sectors and contributes significantly to national income.

- ✎ **Teaching is a service-based activity** that falls under the **tertiary sector**. Hence, **pair 1 is correctly matched**.

- ✎ **Transporting goods by truck** is a **logistics and transport service**, and it comes under the **tertiary sector**, not secondary. Hence, **pair 4 is not correctly matched**.

- 💡 Hence, option C is correct.

61. (D)

Exp:

- 💡 NITI Aayog (National Institution for Transforming India) published a report titled **'Unlocking \$25+ Billion Export Potential – India's Hand & Power Tools Sector'**. Hence, **statement 1 is correct**.

- 💡 The report outlines a **strategic roadmap** to scale up tools exports to **USD 25 billion** by **2035**, aligning with the vision of **Viksit Bharat @2047**.

- 💡 The market is divided into **hand tools** (USD 34 billion, expected to grow to USD 60 billion) and **power tools** (USD 63 billion, expected to grow to USD 134 billion), with balanced growth in both sectors.

- 💡 **China** dominates global exports, holding about **50%** of the **hand tools market** with **USD 13 billion** and **40%** of the **power tools market** with **USD 22 billion** while India's tools industry is a small player globally, with **USD 600 million** in **hand tools exports**. Hence, **statement 2 is correct**.

- 💡 (**1.8% global market share**) and **USD 425 million** in power tools exports (**0.7% global market share**).

62. (B)

Exp:

Khadi and Village Industries Commission (KVIC):

- 💡 The **Khadi and Village Industries Commission (KVIC)** is a **statutory body** established under the **KVIC Act of 1956**, but it functions under the **Ministry of Micro, Small and Medium Enterprises (MSME)**, not the Ministry of Rural Development. Hence, **statement 1 is not correct**.

- 💡 KVIC is one of the implementing agencies of the **Scheme of Fund for Regeneration of Traditional Industries (SFURTI)**. The scheme aims to organize traditional industries and artisans into **clusters**, and supports their development in sectors such as **honey production, pottery, khadi, handicrafts**, and more, through infrastructure support, training, and market linkages. Hence, **statement 2 is correct**.

Defence & Security

63. (C)

Exp:

- 💡 **Yudh Abhyas** is a **bilateral exercise** between **India** and the **United States**, focusing on counter-terrorism and joint tactical operations, often conducted in varied terrains. Hence, **pair 1 is correctly matched**.

- 💡 **Malabar exercise** is a multilateral naval exercise involving **India, the US, Japan, and Australia**, aimed at enhancing maritime security and interoperability. Hence, **pair 2 is not correctly matched**.

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India and the UAE conduct several joint exercises, including Desert Cyclone, **Desert Eagle**, Zayed Talwar, and Desert Knight. Hence, pair 3 is not correctly matched.

Nomadic Elephant is a bilateral exercise between India and Mongolia. Hence, pair 4 is not correctly matched

Hence, option C is correct.

64. (B)

Exp:

GPS Spoofing:

It is a form of **cyberattack** in which **false GPS signals are generated to mislead an aircraft's navigation systems**, posing serious risks to flight safety and mission success.

GPS spoofing takes advantage of the weak signals sent by satellites, which are easy to overpower.

Attackers transmit stronger, **fake signals that mimic real satellite data**.

The **GPS receiver locks onto these counterfeit signals**, mistaking them for genuine.

This causes the device to **display incorrect location data**, misleading navigation systems.

During **Operation Brahma**, the Indian Air Force claimed that its transport aircraft delivering relief to **quake-hit Myanmar** faced **Global Positioning System (GPS) spoofing**.

Under '**Operation Brahma**', India deployed six military transport aircraft to deliver humanitarian aid, field hospitals, and rescue teams to earthquake-hit Myanmar.

Hence, option B is correct.

Science & Tech

65. (B)

Exp:

World's Oldest Lifeforms

Cyanobacteria (blue-green algae), emerging around **3.5 billion years ago**, were the **first organisms to perform oxygenic photosynthesis**, triggering the **Great Oxidation Event (~2.4 billion years ago)**, which enriched Earth's atmosphere with **oxygen**, enabling complex life. Hence, statement 1 is correct.

Stromatolites are **layered rock-like structures** formed by cyanobacteria colonies that **trap and bind minerals**, gradually **hardening into rock**. Hence, statement 2 is correct.

The oldest stromatolites, found in Western Australia, are about **3.5 billion years old**, offering insights into ancient microbial ecosystems.

Archaea are **single-celled microorganisms** distinct from bacteria, with genetic features closer to **eukaryotes**. Hence, statement 3 is not correct.

Many are **extremophiles**, surviving in harsh environments and contributing to **biogeochemical cycling**. The **endosymbiotic theory** suggests eukaryotes evolved from archaea through the incorporation of a bacterium, leading to mitochondria.

66. (A)

Exp:

Phishing is a form of cyberattack where the **attacker pretends to be a legitimate or trusted entity** such as a bank, email service, or company in order to trick individuals into revealing personal information like passwords, credit card numbers, or login credentials. Hence, statement 1 is correct.

Ransomware is a type of malicious software (malware) that **encrypts the victim's files or locks their system**. The attacker then **demand a ransom** to restore access. Hence, statement 2 is correct.

A **Denial of Service (DoS) attack** is not a scam email. It is a cyberattack intended to make a computer or network resource unavailable to its intended users by **overwhelming it with traffic**. **DoS** flooding a system with excessive requests to crash or slow it down. Hence, statement 3 is not correct.

SQL Injection is a code injection technique used to **attack data-driven applications**. In this, malicious SQL statements are inserted into an entry field to **gain unauthorized access or manipulate a database**. It can **bypass login credentials or even extract entire databases**. Hence, statement 4 is correct.

67. (A)

Exp:

Vehicle-to-Grid (V2G) technology allows electric vehicle (EV) batteries to **both draw power from and supply power back to the grid** through **bi-directional charging**. This feature helps in optimizing energy distribution and can assist in stabilizing the grid during peak demand periods. Hence, statement 1 is correct.

India is not yet a global leader in its adoption. It is still in the early stages, with pilot projects and limited implementation.

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- ✦ EV owners in India are not yet widely compensated for supplying power back to the grid, as the infrastructure and regulatory framework for such compensation are not fully developed. Hence, statement 2 is not correct.

68. (B)

Exp:

James Webb Space Telescope (JWST):

- 💡 It is the most advanced **infrared space observatory ever built**, launched in 2021 through the collaboration between **NASA**, the **European Space Agency (ESA)**, and the **Canadian Space Agency (CSA)**. Hence, **statement 1 is not correct**.
- 💡 It is positioned at the **Sun-Earth L2 Lagrange Point**. As the successor to the **Hubble Space Telescope**, JWST is designed to look back to the universe's earliest moments, just after the **Big Bang**. Hence, **statement 2 is correct**.

69. (D)

Exp:

- 💡 Black holes create **strong gravitational fields** that warp spacetime, a phenomenon predicted by Einstein's General Theory of Relativity. This allows them to **bend light**, a phenomenon known as **gravitational lensing**. Hence, **statement 1 is correct**.
- 💡 In **2019**, the **Event Horizon Telescope (EHT)**, a collaboration of radio telescopes across continents, captured the first image of the **shadow of a supermassive black hole**, using **radio waves**, not optical light. Hence, **statement 2 is correct**.
- 💡 **Gravitational waves**, first detected in **2015** by **LIGO**, confirmed the **merger of two black holes**. This marked a major breakthrough in astrophysics and confirmed Einstein's predictions. Hence, **statement 3 is correct**.

70. (A)

Exp:

Solar-based Desalination Technology:

- 💡 **Solar-based Desalination Technology** refers to the **use of solar energy to remove salts** and other impurities from **seawater or brackish water**, making it suitable for human consumption, agriculture, or industrial use.
- 💡 **Solar-based desalination** technology **combines solar and electric Joule heating**, ensuring that **desalination can continue efficiently** even when sunlight is inconsistent, such as on cloudy days or at night. This

integration allows for **more reliable and stable performance** compared to traditional solar-only desalination methods. Hence, **statement 1 is correct**.

- 💡 **The Dual-Sided Superhydrophobic Laser-Induced Graphene (DSLIG)** evaporator features a **superhydrophobic surface**, similar to the lotus leaf, which **repels water and prevents salt from accumulating on the surface**. This ensures that the evaporator remains free from salt deposits, enhancing the long-term efficiency and effectiveness of the desalination process. Hence, **statement 2 is correct**.

- 💡 Solar-based desalination technologies, including those using the DSLIG evaporator, are **capable of treating both brackish and seawater**. The technology is designed to **efficiently remove salts from seawater**, making it a viable option for large-scale seawater desalination as well as brackish water desalination. Hence, **statement 3 is not correct**.

71. (B)

Exp:

Mission Mausam:

- ✦ It was launched in 2024 under the **Ministry of Earth Sciences (MoES)**, to modernize India's weather and climate forecasting systems.
- 📎 It aims to make the country **"Weather Ready" and "Climate Smart"** by enhancing scientific research, disaster preparedness, and sector-specific advisories.
- ✦ **Need:** India's dependence on **agriculture**, increasing climate variability, and frequent extreme weather events make accurate forecasting vital.
- 📎 Mission Mausam addresses these challenges by enhancing monsoon prediction for better **crop planning** and supporting rural development through improved resource management and infrastructure planning.
- ✦ **Implementation Strategy:** It will be implemented mainly by the **India Meteorological Department (IMD)**, the **Indian Institute of Tropical Meteorology (IITM)**, and the **National Centre for Medium-Range Weather Forecasting (NCMRWF)**. Hence, **statement 1 is not correct**.
- 📎 It focuses on enhancing weather forecasting through infrastructure development (**Doppler radars, weather stations**).

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- ✎ The mission also leverages **supercomputing power**, utilizing advanced systems like **Pratyush and Mihir** for precise climate modeling. **Hence, statement 2 is correct.**

72. (C)

Exp:

QpiAI-Indus

- ✎ **About:** It is the **first complete** quantum computing system built entirely in India. **Hence, statement 1 is correct.**
- ✎ It includes **both hardware and software**, covering everything from the **quantum processor** to **AI-driven application tools** to efficiently run quantum applications. **Hence, statement 2 is correct.**
- ✎ **Performance:** The system boasts **25 qubits**, crucial for high-performance quantum computing;
 - ✎ It enables faster complex calculations with enhanced stability and minimal error rates compared to traditional computers.
- ✎ **Applications:** It has potential uses in **life sciences** (drug discovery, genomics), **materials science** (designing new materials), **mobility and logistics** (route and supply chain optimization).

73. (B)

Exp:

- ✎ The **E-2025 initiative, Artemisinin, and R21/Matrix-M** have recently been in the news due to global efforts to combat malaria.
- ✎ The World Health Organization (WHO) has identified 25 countries under the E-2025 initiative that have the potential to eradicate malaria by 2025.
- ✎ Significant progress in malaria control has been made with the development of effective vaccines and drugs.
 - ✎ In 2023, the **R21/Matrix-M vaccine** was approved as a safe and effective option.
- ✎ Additionally, the **discovery of artemisinin, which is derived from the sweet wormwood plant, Artemisia annua**, has been crucial in malaria treatment.
 - ✎ This discovery earned Youyou Tu the Nobel Prize in Physiology or Medicine in 2015.
- ✎ **Hence, option B is correct.**

74. (D)

Exp:

- ✎ Measles is a **single-stranded, enveloped RNA virus** with a single serotype.

- ✎ It is highly contagious and is a cause of death among young children globally. **Hence, statement 1 is correct.**
- ✎ It belongs to the **genus Morbillivirus within the Paramyxoviridae family**. Humans serve as the **only natural hosts** for the measles virus. **Hence, statement 2 is correct.**
- ✎ Measles **can be entirely prevented through a two-dose vaccine** and has been officially eliminated in many countries with advanced healthcare systems.

75. (A)

Exp:

- ✎ **RNA silencing** is indeed a **natural defense mechanism in plants** where double-stranded RNA (dsRNA) triggers the plant's immune system to respond to viral infections. **Hence, statement 1 is correct.**
- ✎ When a plant is infected by a virus, dsRNA is introduced, which activates enzymes to produce small interfering RNAs (siRNAs).
- ✎ **Host-Induced Gene Silencing (HIGS)**, which is a human induced genetically modified technology, does not involve the use of RNA sprays. Instead, **HIGS genetically modified plants** to produce virus-fighting dsRNA, providing continuous protection against the virus.
- ✎ On the other hand, **Spray-Induced Gene Silencing (SIGS)** is the method that involves **spraying RNA** onto plants to trigger the plant's immune response without any genetic modification. **Hence, statement 2 is not correct.**

76. (C)

Exp:

- ✎ **Cyanobacteria (Blue-green algae)** are a group of **photosynthetic, single-celled organisms** that are among the **oldest living organisms on Earth**.
- ✎ Cyanobacteria were the only prokaryotes capable of oxygenic photosynthesis and played a key role in the **Great Oxidation Event (GOE)** around 2.4 billion years ago. **Hence, statement 1 is correct.**
- ✎ They were responsible for the **rise of oxygen in Earth's atmosphere and oceans**, driving the **oxygenation of terrestrial and marine environments** and enabling the diversification of complex life.

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⚡ **Archaea** are **single-celled microorganisms** that are genetically distinct from bacteria, with certain features **more closely related to eukaryotes**. Hence, **statement 2 is correct**.

- ✦ Many archaea are **extremophiles**, meaning they can survive in extreme environments like hot springs, deep-sea vents, and salt lakes. They play a crucial role in **biogeochemical cycling**, particularly in the nitrogen and sulfur cycles, contributing to the balance of ecosystems.

77. (C)

Exp:

Quantum Gravity Gradiometers (QGG):

⚡ Quantum Gravity Gradiometers (QGGs) are advanced instruments that use quantum technology to detect extremely small variations in gravitational acceleration, as precise as 10^{-15} m/s^2 .

⚡ **Applications of QGG:**

- ✦ **Mineral and Hydrocarbon Exploration:** QGGs can detect underground density anomalies caused by mineral or oil deposits, making them useful in geophysical surveys and resource extraction.
- ✦ **Infrastructure Monitoring and Tunnelling Detection:** They are employed in civil engineering to detect **underground voids, tunnels, and structural weaknesses**, aiding in urban planning and disaster prevention.
- ✦ **Planetary Studies and Climate Monitoring:** QGGs contribute to planetary science by measuring **gravitational fields of celestial bodies** and are also used to monitor **polar ice mass and groundwater changes**, important in climate change research.
- ✦ **Non-invasive Archaeological Surveys:** QGGs enable archaeologists to detect buried structures without excavation by **identifying subtle underground density differences**.

⚡ Hence, option C is correct.

78. (C)

Exp:

- ⚡ **Perovskite Material** refers to any compound that shares the same crystal structure as the mineral perovskite (CaTiO_3).
- ⚡ In solar technology, it typically denotes metal-halide perovskites, which are hybrid organic-inorganic

materials composed of a metal cation (like lead), a halide anion (like iodide), and an organic molecule (like methylammonium).

- ⚡ These materials are known for their **excellent light absorption, charge transport properties, and tunability**, making them ideal for photovoltaic and optoelectronic applications. **Only 1 and 3 are correct about the characteristics of Perovskite materials**. Hence, option C is correct.

79. (C)

Exp:

Metamaterials:

⚡ **About:** Metamaterials are **artificially engineered materials designed to exhibit properties not found in nature**. Hence, **statement 3 is not correct**.

- ✦ Their unique behaviour **arises from their internal structure** and arrangement, not from the base materials (chemical composition) they're made of. Hence, **statement 1 is not correct**.

⚡ **Key Properties:**

- ✦ They often display unusual **electromagnetic properties**, such as a **negative refractive index**. Hence, **statement 2 is correct**.
- ✦ This makes them valuable in fields like optics, telecommunications, and electromagnetism.
- ✦ Their behaviour is comparable to materials like graphite, diamond, and graphene—which all consist of carbon but differ drastically due to structural arrangement.

International Relations and Current Affairs

80. (B)

Exp:

India-Middle East-Europe Economic Corridor

- ⚡ The IMEC is a strategic multi-modal connectivity initiative launched through a Memorandum of Understanding (MoU) during the **G20 Summit 2023 in New Delhi**. Signatories include **India, US, Saudi Arabia, the United Arab Emirates, France, Germany, Italy and the European Union**. Hence, **statement 1 is correct**.
- ⚡ IMEC is a part of the **Partnership for Global Infrastructure and Investment (PGII)**, launched by the G7 in 2021. Hence, **statement 2 is correct**.
- ⚡ IMEC aims to develop an integrated network of ports, railways, roads, sea lines, energy pipelines, and digital infrastructure aimed at enhancing trade between India, the Middle East, and Europe. Hence, **statement 3 is not correct**.

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81. (D)

Exp:

- 💡 The Prime Minister addressed civil servants on the occasion of the **17th National Civil Services Day** (21st April 2025) and honored the **Prime Minister's Awards for Excellence in Public Administration (PMAEPA)**. Hence, **statement 1 is correct**.
- 💡 **PMAEPA**: Instituted to recognize outstanding and innovative work by officers of the Central and State Governments. **All government officers and organizations** are eligible. Hence, **statement 2 is correct**.
 - ✦ The selection process includes evaluation by a Screening Committee, Expert Committee, and final approval by the **Cabinet Secretary and Prime Minister**. Hence, **statement 3 is correct**.
 - ✦ The award includes a trophy, a scroll, and Rs 20 lakh to support public welfare initiatives.

82. (A)

Exp:

- 💡 The **Delhi Declaration (2006)** and the **Riyadh Declaration (2010)** marked key milestones, **elevating bilateral ties** to a **Strategic Partnership**. Hence, **statement 1 is correct**.
- 💡 **Economic Cooperation**: India is Saudi Arabia's **2nd largest trade partner**, while Saudi Arabia ranks as **India's 5th largest**.
 - ✦ In FY 2023-24, bilateral trade stood at **USD 42.98 billion**, with Indian exports at USD 11.56 billion and imports at USD 31.42 billion.
- 💡 **Energy Partnership**: In FY 2023-24, Saudi Arabia was India's **3rd largest source of crude oil**, which accounted for 14.3% of India's total **crude imports**. Hence, **statement 2 is not correct**.
 - ✦ It was also the **3rd largest Liquefied Petroleum Gas (LPG)** supplier, contributing 18.2% to India's total LPG imports.

83. (C)

Exp:

- 💡 The MacGregor Medal was instituted on **3rd July 1888**, to honor **Major General Sir Charles Metcalfe**

MacGregor, who was the founder of the **United Service Institution of India (USI)** in 1870. Hence, **statement 1 is correct**.

- ✦ It is a national security and defense services think tank based in New Delhi.
- ✦ He contributed to the **Anglo-Bhutan War (1864–1865)** by surveying and mapping frontier regions, gathering intelligence, and strengthening British knowledge about the difficult Himalayan terrain.
- 💡 Initially awarded for military reconnaissance and exploration, the medal's scope expanded post-1947 to include adventure activities like mountaineering, sailing, and ultra-running.
- ✦ It is **open to all ranks of the Indian Army, Navy, Air Force, Territorial Army, Reserve Forces, Rashtriya Rifles, and Assam Rifles**. Hence, **statement 2 is correct**.

84. (D)

Exp:

South Asian Association for Regional Cooperation (SAARC):

- 💡 The **South Asian Association for Regional Cooperation (SAARC)** was established with the signing of the **SAARC Charter in Dhaka on 8 December 1985** with 7 founding member countries: **Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka**, who met for the first time in Colombo in **April 1981**.
 - ✦ Afghanistan became the **8th member of SAARC** at the 13th annual summit in 2005. Hence, **statement 1 is correct**.
- 💡 The **Headquarters and Secretariat** of SAARC are at **Kathmandu, Nepal**. Hence, **statement 2 is not correct**.

The **idea of SAARC** was formally proposed in **1980** by **Bangladesh's President Ziaur Rahman**, not by India or at a NAM summit. He initiated consultations with South Asian nations to foster regional cooperation. His vision focused on collaboration in economic, social, cultural, and technical areas to promote peace and development in the region. Hence, **statement 3 is not correct**.



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