

UPSC PRELIMS 2023 PAPER I (GS) ANSWER KEY - SERIES - A

1. Consider the following statements:

1. Jhelum River passes through Wular Lake.
2. Krishna River directly feeds Kolleru Lake.
3. Meandering of Gandak River formed Kanwar Lake.

How many of the statements given above are correct?

- (a) Only one
(b) Only two
(c) **All three**
(d) None

2. Consider the following pairs :

Port	Well known as
1. Kamarajar Port	: First major port in India registered as a company
2. Mundra Port	: Largest privately owned port in India
3. Visakhapatnam Port	: Largest container port in India

How many of the above pairs are correctly matched?

- (a) Only one pair
(b) **Only two pairs**
(c) All three pairs
(d) None of the pairs

3. Consider the following trees:

1. Jackfruit (*Artocarpus heterophyllus*)
2. Mahua (*Madhuca indica*)
3. Teak (*Tectona grandis*)

How many of the above are deciduous trees?

- (a) Only one
(b) **Only two**
(c) All three
(d) None

4. Consider the following statements :

1. India has more arable area than China.
2. The proportion of irrigated area is more in India as compared to China.
3. The average productivity per hectare in Indian agriculture is higher than that in China.

How many of the above statements are correct?

- (a) Only one
(b) **Only two**
(c) All three
(d) None

5. Which one of the following is the best example of repeated falls in sea level, giving rise to present-day extensive marshland?

- (a) Bhitarkanika Mangroves
(b) Marakkanam Salt Pans
(c) Naupada Swamp
(d) **Rann of Kutch**

6. Ilmenite and rutile, abundantly available in certain coastal tracts of India, are rich sources of which one of the following?

- (a) Aluminium
(b) Copper
(c) Iron
(d) **Titanium**

7. About three-fourths of world's cobalt, a metal required for the manufacture of batteries for electric motor vehicles, is produced by

- (a) Argentina
(b) Botswana
(c) **the Democratic Republic of the Congo**
(d) Kazakhstan

8. Which one of the following is a part of the Congo Basin?

- (a) **Cameroon**
- (b) Nigeria
- (c) South Sudan
- (d) Uganda

9. Consider the following statements:

1. Amarkantak Hills are at the confluence of Vindhya and Sahyadri Ranges.
2. Biligirirangan Hills constitute the easternmost part of Satpura Range.
3. Seshachalam Hills constitute the southernmost part of Western Ghats.

How many of the statements given above are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) **None**

10. With reference to India's projects on connectivity, consider the following statements:

1. East-West Corridor under Golden Quadrilateral Project connects Dibrugarh and Surat.
2. Trilateral Highway connects Moreh in Manipur and Chiang Mai in Thailand via Myanmar.
3. Bangladesh-China-India-Myanmar Economic Corridor connects Varanasi in Uttar Pradesh with Kunming in China.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) **None**

11. Consider the following statements:

Statement-I :

India, despite having uranium deposits, depends on coal for most of its electricity production.

Statement-II :

Uranium, enriched to the extent of at least 60%, is required for the production of electricity.

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

12. Consider the following statements :

Statement-I:

Marsupials are not naturally found in India.

Statement-II:

Marsupials can thrive only in montane grasslands with no predators.

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

13. Invasive Species Specialist Group' (that develops Global Invasive Species Database) belongs to which one of the following organizations?
- (a) *The International Conservation of Nature Union for*
- (b) The United Nations Environment Programme
- (c) The United Nations World Commission for Environment and Development
- (d) The World Wide Fund for Nature
14. Consider the following fauna:
1. Lion-tailed Macaque
 2. Malabar Civet
 3. Sambar Deer
- How many of the above are generally nocturnal or most active after sunset?
- (a) Only one
- (b) *Only two*
- (c) All three
- (d) None
15. Which of the following organisms perform waggle dance for others of their kin to indicate the direction and the distance to a source of their food?
- (a) Butterflies
- (b) Dragonflies
- (c) *Honeybees*
- (d) Wasps
16. Consider the following statements :
1. Some mushrooms have medicinal properties.
 2. Some mushrooms have psycho- active properties.
 3. Some mushrooms have insecticidal properties.
 4. Some mushrooms have biolumi- nescent properties.
- How many of the above statements are correct?
- (a) Only one
- (b) Only two
- (c) Only three
- (d) *All four*
17. Consider the following statements regarding the Indian squirrels :
1. They build nests by making burrows in the ground.
 2. They store their food materials like nuts and seeds in the ground.
 3. They are omnivorous.
- How many of the above statements are correct?
- (a) Only one
- (b) Only two
- (c) *All three*
- (d) None
18. Consider the following statements:
1. Some microorganisms can grow in environments with temperature above the boiling point of water.
 2. Some microorganisms can grow in environments with temperature below the freezing point of water.
 3. Some microorganisms can grow in highly acidic environment with a pH below 3.
- How many of the above statements are correct?
- (a) Only one
- (b) Only two
- (c) *All three*
- (d) None
19. Which one of the following makes a tool with a stick to scrape insects from a hole in a tree or a log of wood?
- (a) Fishing cat
- (b) *Orangutan*
- (c) Otter
- (d) Sloth bear

20. Consider the following:

1. Aerosols
2. Foam agents
3. Fire retardants
4. Lubricants

In the making of how many of the above are hydrofluorocarbons used?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four**

21. Consider the following statements :

Statement-I:

Interest income from the deposits in Infrastructure Investment Trusts (InvITs) distributed to their investors is exempted from tax, but the dividend is taxable.

Statement-II:

InvITs are recognized as borrowers under the 'Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002'.

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**

22. Consider the following statements :

Statement-I :

In the post-pandemic recent past, many Central Banks worldwide had carried out interest rate hikes.

Statement-II:

Central Banks generally assume that they have the ability to counteract the rising consumer prices via monetary policy means.

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

23. Consider the following statements :

Statement-I :

Carbon markets are likely to be one of the most widespread tools in the fight against climate change.

Statement-II:

Carbon markets transfer resources from the private sector to the State.

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
24. Which one of the following activities of the Reserve Bank of India is considered to be part of 'sterilization'?
- (a) Conducting 'Open Market Operations'**
 - (b) Oversight of settlement and payment systems
 - (c) Debt and cash management for the Central and State Governments
 - (d) Regulating the functions of Non-banking Financial Institutions

25. Consider the following markets:

1. Government Bond Market
2. Call Money Market
3. Treasury Bill Market
4. Stock Market

How many of the above are included in capital markets?

- (a) Only one
(b) **Only two**
(c) Only three
(d) All four

26. Which one of the following best describes the concept of 'Small Farmer Large Field'?

- (a) Resettlement of a large number of people, uprooted from their countries due to war, by giving them a large cultivable land which they cultivate collectively and share the produce
- (b) **Many marginal farmers in an area organize themselves into groups and synchronize and harmonize selected agricultural operations**
- (c) Many marginal farmers in an area together make a contract with a corporate body and surrender their land to the corporate body for a fixed term for which the corporate body makes a payment of agreed amount to the farmers
- (d) A company extends loans, technical knowledge and material inputs to a number of small farmers in an area so that they produce the agricultural commodity required by the company for its manufacturing process and commercial production

27. Consider the following statements :

1. The Government of India provides Minimum Support Price for niger (*Guizotia abyssinica*) seeds.
2. Niger is cultivated as a Kharif crop.
3. Some tribal people in India use niger seed oil for cooking.

How many of the above statements are correct?

- (a) Only one
(b) Only two
(c) **All three**
(d) None

28. Consider the investments in the following assets:

1. Brand recognition
2. Inventory
3. Intellectual property
4. Mailing list of clients

How many of the above are considered intangible investments?

- (a) Only one
(b) Only two
(c) **Only three**
(d) All four

29. Consider the following:

1. Demographic performance
2. Forest and ecology
3. Governance reforms
4. Stable government
5. Tax and fiscal efforts

For the horizontal tax devolution, the Fifteenth Finance Commission used how many of the above as criteria. other than population area and income distance?

- (a) Only two
(b) **Only three**
(c) Only four
(d) All five

30. Consider the following infrastructure sectors:

1. Affordable housing
2. Mass rapid transport
3. Health care
4. Renewable energy

On how many of the above does. UNOPS Sustainable Investments in Infrastructure and Innovation (S3i) initiative focus for its investments?

- (a) Only one
(b) Only two
(c) **Only three**
(d) All four

31. In essence, what does 'Due Process of Law' mean?
- (a) **The principle of natural justice**
 - (b) The procedure established by law
 - (c) Fair application of law
 - (d) Equality before law
32. Consider the following statements:
- Statement-I :
- In India, prisons are managed by State Governments with their own rules and regulations for the day-to-day administration of prisons.
- Statement-II :
- In India, prisons are governed by the Prisons Act, 1894 which expressly kept the subject of prisons in the control of Provincial Governments.
- 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
33. Which one of the following statements best reflects the Chief purpose of the 'Constitution' of a country?
- (a) It determines the objective for the making of necessary laws.
 - (b) It enables the creation of political offices and a government.
 - (c) **It defines and limits the powers of government.**
 - (d) It secures social justice, social equality and social security.
34. In India, which one of the following Constitutional Amendments was widely believed to be enacted to overcome the judicial interpretations of the Fundamental Rights?
- (a) 1st Amendment
 - (b) **42nd Amendment**
 - (c) 44th Amendment
 - (d) 86th Amendment
35. Consider the following organizations/ bodies in India :
1. The National Commission for Backward Classes
 2. The National Human Rights Commission
 3. The National Law Commission
 4. The National Consumer Disputes Redressal Commission
- How many of the above are constitutional bodies?
- (a) **Only one**
 - (b) Only two
 - (c) Only three
 - (d) All four
36. Consider the following statements :
1. If the election of the President of India is declared void by the Supreme Court of India, all acts done by him/her in the performance of duties of his/her office of President before the date of decision become invalid.
 2. Election for the post of the President of India can be postponed on the ground that some Legislative Assemblies have been dissolved and elections are yet to take place.
 3. When a Bill is presented to the President of India, the Constitution prescribes time limits within which he/she has to declare his/her assent.
- How many of the above statements are correct?
- (a) Only one
 - (b) Only two
 - (c) All three
 - (d) **None**

37. With reference to Finance Bill and Money Bill in the Indian Parliament, consider the following statements:

1. When the Lok Sabha transmits Finance Bill to the Rajya Sabha, it can amend or reject the Bill.
2. When the Lok Sabha transmits Money Bill to the Rajya Sabha, it cannot amend or reject the Bill, it can only make recommendations.
3. In the case of disagreement between the Lok Sabha and the Rajya Sabha, there is no joint sitting for Money Bill, but a joint sitting becomes necessary for Finance Bill.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) **All three**
- (d) None

38. Consider the following statements :

Once the Central Government notifies an area as a 'Community Reserve'

1. the Chief Wildlife Warden of the State becomes the governing authority of such forest
2. hunting is not allowed in such area
3. people of such area are allowed to collect non-timber forest produce
4. people of such area are allowed traditional agricultural practices

How many of the above statements are correct?

- (a) Only one
- (b) **Only two**
- (c) Only three
- (d) All four

39. With reference to 'Scheduled Areas' in India, consider the following statements:

1. Within a State, the notification of an area as Scheduled Area takes place through an Order of the President.
2. The largest administrative unit forming the Scheduled Area is the District and the lowest is the cluster of villages in the Block.
3. The Chief Ministers of the concerned States are required to submit annual reports to the Union Home Ministry on the administration of Scheduled Areas in the States.

How many of the above statements are correct?

- (a) Only one
- (b) **Only two**
- (c) All three
- (d) None

40. Consider the following statements:

Statement-I:

The Supreme Court of India has held in some judgements that the reservation policies made under Article 16(4) of the Constitution of India would be limited by Article 335 for maintenance of efficiency of administration.

Statement-II :

Article 335 of the Constitution of India defines the term 'efficiency of administration'.

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

41. In which one of the following regions was Dhanyakataka, which flourished as a prominent Buddhist centre under the Mahasanghikas, located?
- (a) **Andhra**
 (b) Gandhara
 (c) Kalinga
 (d) Magadha
42. With reference to ancient India, consider the following statements:
1. The concept of Stupa is Buddhist in origin
 2. Stupa was generally a repository of relics.
 3. Stupa was a votive commemorative structure in Buddhist tradition.
- How many of the statements given above are correct?
- (a) Only one
 (b) **Only two**
 (c) All three
 (d) None
43. With reference to ancient South India, Korkai, Poompuhar and Muchiri were well known as
- (a) capital cities
 (b) **ports**
 (c) centres of iron-and-steel making
 (d) shrines of Jain Tirthankaras
44. Which one of the following explains the practice of 'Vattakirutal' as mentioned in Sangam poems?
- (a) Kings employing women bodyguards
 (b) Learned persons assembling in royal courts to discuss religious and philosophical matters
 (c) Young girls keeping watch over agricultural and driving away birds and animal
 (d) **A king defeated in a battle committing ritual suicide by starving himself to death**
45. Consider the following dynasties :
1. Hoysala
 2. Gahadavala
 3. Kakatiya
 4. Yadava
- How many of the above dynasties established their kingdoms in early eighth century AD?
- (a) Only one
 (b) Only two
 (c) Only three
 (d) **None**
46. With reference to ancient Indian History, consider the following pairs :
- | Literary work | Author |
|----------------------|--------------------|
| 1. Devichandragupta | : Bilhana |
| 2. Hammira-Mahakavya | : Nayachandra Suri |
| 3. Milinda-panha | : Nagarjuna |
| 4. Nitivakyamrita | : Somadeva Suri |
- How many of the above pairs are correctly matched?
- (a) Only one
 (b) Only two
 (c) **Only three**
 (d) All four
47. "Souls are not only the property of animal and plant life, but also of rocks, running water and many other natural objects not looked on as living by other religious sects."
- The above statement reflects one of the core beliefs of which one of the following religious sects of ancient India?
- (a) Buddhism
 (b) **Jainism**
 (c) Shaivism
 (d) Vaishnavism
48. Who among the following rulers of Vijayanagara Empire constructed a large dam across Tungabhadra River and a canal-cum-aqueduct several kilometres long from the river to the capital city?
- (a) **Devaraya I**
 (b) Mallikarjuna
 (c) Vira Vijaya
 (d) Virupaksha
49. Who among the following rulers of medieval Gujarat surrendered Diu to Portuguese?
- (a) Ahmad Shah
 (b) Mahmud Begarha
 (c) **Bahadur Shah**
 (d) Muhammad Shah
50. By which one of the following Acts was the Governor General of Bengal designated as the Governor General of India?
- (a) The Regulating Act
 (b) The Pitt's India Act
 (c) The Charter Act of 1793
 (d) **The Charter Act of 1833**

51. Consider the relation to following statements in Janani Suraksha Yojana :

1. It is a safe motherhood intervention of the State Health Departments.
 2. Its objective is to reduce maternal and neonatal mortality among poor pregnant women.
 3. It aims to promote institutional delivery among poor pregnant women.
 4. Its objective includes providing public health facilities to sick infants up to one year of age
- How many of the statements given above are correct?

- (a) Only one
(b) Only two
 (c) Only three
 (d) All four

52. Consider the following statements in the context of interventions being undertaken under Anaemia Mukt Bharat Strategy:

1. It provides prophylactic calcium supplementation for pre-school children, adolescents and pregnant women.
2. It runs a campaign for delayed cord clamping at the time of child- birth.
3. It provides for periodic deworming to children and adolescents.
4. It addresses non-nutritional causes of anaemia in endemic pockets with special focus on malaria, hemoglobinopathies and fluorosis.

How many of the statements given above are correct?

- (a) Only one
 (b) Only two
(c) Only three
 (d) All four

53. Consider the following statements:

1. Carbon fibres are used in the manufacture of components used in automobiles and aircrafts.
2. Carbon fibres once used cannot be recycled.

Which of the statements given above is/are correct?

- (a) Only one**
 (b) Only two
 (c) Both 1 and 2
 (d) Neither 1 nor 2

54. Consider the following actions :

1. Detection of car crash/collision which results in the deployment of airbags almost instantaneously
2. Detection of accidental free fall of a laptop towards the ground which results in the immediate turning off of the hard drive
3. Detection of the tilt of the smartphone which results in the rotation of display between portrait and FI landscape mode

In how many of the above actions is the function of accelerometer required?

- (a) Only one
 (b) Only two
(c) All three
 (d) None

55. With reference to the role of in Recirculating biofilters consider the Aquaculture System, following statements:

1. Biofilters provide waste treatment by removing uneaten fish feed.
2. Biofilters convert ammonia present in fish waste to nitrate.
3. Biofilters increase phosphorus as nutrient for fish in water.

How many of the statements given above are correct?

- (a) Only one
(b) Only two
 (c) All three
 (d) None

56. Consider the following pairs :

Objects in space	Description
------------------	-------------

- | | |
|-------------|---|
| 1. Cepheids | : Giant clouds of dust and gas in space |
| 2. Nebulae | : Stars which brighten and dim periodically |
| 3. Pulsars | : Neutron stars that are formed when massive stars run out of fuel and collapse |

How many of the above pairs are correctly matched?

- (a) Only one**
 (b) Only two
 (c) All three
 (d) None

57. Which one of the following countries has its own Satellite Navigation System?
- Australia
 - Canada
 - Israel
 - Japan**
58. Consider the following statements :
- Ballistic missiles are jet-propelled at subsonic speeds throughout their flights, while cruise missiles are rocket-powered only in the initial phase of flight.
 - Agni-V is a medium-range supersonic cruise missile, while BrahMos is a solid-fuelled intercontinental ballistic missile.
- Which of the statements given above is/are correct?
- 1 Only
 - 2 Only
 - Both 1 and 2
 - Neither 1 nor 2**
59. Consider the following statements regarding mercury pollution:
- Gold mining activity is a source of mercury pollution in the world.
 - Coal-based thermal power plants cause mercury pollution.
 - There is no known safe level of exposure to mercury.
- How many of the above statements are correct?
- Only one
 - Only two
 - All three**
 - None
60. With reference to green hydrogen, consider the following statements:
- It can be used directly as a fuel for internal combustion.
 - It can be blended with natural gas and used as fuel for heat or power generation.
 - It can be used in the hydrogen fuel cell to run vehicles.
- How many of the above statements are correct?
- Only one
 - Only two
 - All three**
 - None
61. Consider the following countries :
- Bulgaria
 - Czech Republic
 - Hungary
 - Latvia
 - Lithuania
 - Romania
- How many of the above-mentioned countries share a land border with Ukraine?
- Only two**
 - Only three
 - Only four
 - Only five
62. With reference to the Earth's atmosphere, which one of the following statements is correct?
- The total amount of insolation received at the equator is roughly about 10 times of that received at the poles.
 - Infrared rays constitute roughly two-thirds of insolation.
 - Infrared waves are largely absorbed by water vapour that is concentrated in the lower atmosphere.**
 - Infrared waves are a part of visible spectrum of electromagnetic waves of solar radiation.
63. Consider the following statements:
- Statement-I:
The soil in tropical rain forests is rich in nutrients.
- Statement-II :
The high temperature and moisture of tropical rain forests cause dead organic matter in the soil to decompose quickly.
- Which one of the following is correct in respect of the above statements?
- Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
 - Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
 - Statement-I is correct Statement-II is incorrect
 - Statement-I is incorrect Statement-II is correct**

64. Consider the following statements:

Statement-I:

The temperature contrast between continents and oceans is greater during summer than in winter.

Statement-II :

The specific heat of water is more than that of land surface.

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

65. Consider the following statements :

1. In a seismograph, P waves are recorded earlier than S waves.
2. In P waves, the individual particles vibrate to and fro in the direction of wave propagation whereas in S waves, the particles vibrate up and down at right angles to the direction of wave propagation.

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

66. With reference to coal-based: thermal power plants in India, consider the following statements :

1. None of them uses seawater.
2. None of them is set up in water-stressed district.
3. None of them is privately owned.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) **None**

67. 'Wolbachia method' is sometimes talked about with reference to which one of the following?

- (a) **Controlling the viral diseases spread by mosquitoes**
- (b) Converting crop residues into packing material
- (c) Producing biodegradable plastics
- (d) Producing biochar from thermo- chemical conversion of biomass

68. Consider the following activities :

1. Spreading finely ground basalt rock on farmlands extensively
2. Increasing the alkalinity of oceans by adding lime
3. Capturing carbon dioxide released by various industries and pumping it into abandoned subterranean mines in the form of carbonated waters

How many of the above activities are often considered and discussed for carbon capture and sequestration?

- (a) Only one
- (b) Only two
- (c) **All three**
- (d) None

69. 'Aerial metagenomics' best refers to which one of the following situations?

- (a) **Collecting DNA samples from air in a habitat at one go**
- (b) Understanding the genetic makeup of avian species of a habitat
- (c) Using air-borne devices to collect blood samples from moving animals
- (d) Sending drones to inaccessible areas to collect plant and animal samples from land surfaces and water bodies

70. 'Microsatellite DNA' is used in the case of which one of the following?

- (a) **Studying the evolutionary relationships among species of fauna**
- (b) Stimulating 'stem cells' to transform into diverse functional tissues
- (c) Promoting clonal propagation of horticultural plants
- (d) Assessing the efficacy of drugs by conducting series of drug trials in a population

71. Consider the following statements with reference to India :

1. According to the 'Micro, Small and Medium Enterprises Development (MSMED) Act, 2006', the 'medium enterprises' are those investments in plant with and machinery between ₹ 15 crore and ₹ 25 crore.
2. All bank loans to the Micro, Small and Medium Enterprises qualify under the priority sector.

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. With reference to Central Bank digital currencies, consider the following statements:

1. It is possible to make payments in a digital currency without using US dollar or SWIFT system.
2. A digital currency distributed with a can be condition programmed into it such as a time- frame for spending it.

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. In the context of finance, the term 'beta' refers to

- (a) the process of simultaneous buying and selling of an asset from different platforms
(b) an investment strategy of a portfolio manager to balance risk versus reward
(c) a type of systemic risk that arises where perfect hedging is not possible
(d) a numeric value that measures the fluctuations of a stock to changes in the overall stock market

74. Consider the following statements:

1. The Self-Help Group (SHG) programme was originally initiated by the State Bank of India by providing microcredit to the financially deprived.
2. In an SHG, all members of a group take responsibility for a loan that an individual member takes.
3. The Regional Rural Banks and Scheduled Commercial support SHGs.

How many of the above statements are correct?

- (a) Only one
(b) Only two
(c) All three
(d) None

75. Consider the following statements:

Statement-I :

India's public sector health care system largely focuses on curative care with limited preventive, promotive and rehabilitative care.

Statement-II:

Under India's decentralized approach to health care delivery, the States are primarily responsible for organizing health services.

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 Statement-II is incorrect
(d) Statement-I is incorrect Statement-II is correct

76. Consider the following statements:

Statement-I:

According to the United Nations' World Water Development Report, 2022', India extracts more than a quarter of the world's groundwater withdrawal each year.

Statement-II:

India needs to extract more than a quarter of the world's groundwater each year to satisfy the drinking water and sanitation needs of almost 18% of world's population living in its territory.

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 Statement-II is incorrect**
- (d) Statement-I is incorrect Statement-II is correct

77. Consider the following statements:

1. According to the Constitution of India, the Central Government has a duty to protect States from internal disturbances.
2. The Constitution of India exempts the States from providing legal counsel to a person being held for preventive detention.
3. According to the Prevention of Terrorism Act, 2002, confession of the accused before the police cannot be used as evidence.

How many of the above statements are correct?

- (a) Only one
- (b) **Only two**
- (c) All three
- (d) None

78. Which one of the following countries has been suffering from decades of civil strife and food shortages and was in news in the recent past for its very severe famine?

- (a) Angola
- (b) Costa Rica
- (c) Ecuador
- (d) **Somalia**

79. Consider the following statements:

1. In India, the Biodiversity Management Committees are key to the realization of the objectives of the Nagoya Protocol.
2. The Biodiversity Management Committees have important functions in determining access and benefit sharing, including the power to levy collection fees on the access of biological resources within its jurisdiction.

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

80. Consider the following statements in respect of election to the President of India:

1. The members nominated to either House of the Parliament or the Legislative Assemblies of States are also eligible to be included in the Electoral College.
2. Higher the number of elective Assembly seats, higher is the value of vote of each MLA of that State.
3. The value of vote of each MLA of Madhya Pradesh is greater than that of Kerala.
4. The value of vote of each MLA of Puducherry is higher than that of Arunachal Pradesh because the ratio of total population to total number of elective seats in Puducherry is greater as compared to Arunachal Pradesh.

How many of the above statements are correct?

- (a) **Only one**
- (b) Only two
- (c) All three
- (d) All four

81. With reference to the Indian History, Alexander Rea, A. H. Longhurst, Robert Sewell, James Burgess and Walter Elliot were associated with

- (a) *archaeological excavations*
- (b) establishment of English Press in Colonial India
- (c) establishment of Churches in Princely States
- (d) construction of railways in Colonial India

82. Consider the following pairs:

Site	Well known for
1. Besnagar	: Shaivite cave shrine
2. Bhaja	: Buddhist cave shrine
3. Sittanavasal	: Jain cave shrine

How many of the above pairs are correctly matched?

- (a) Only one
- (b) *Only two*
- (c) All three
- (d) None

83. Consider the following statements:

Statement-I :

7th August is declared as the National Handloom Day.

Statement-II

It was in 1905 that the Swadeshi Movement was launched on the same day.

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 Statement-II is incorrect
- (d) Statement-I is incorrect Statement-II is correct

84. Consider the following statements in respect of the National Flag of India according to the Flag Code of India, 2002:

Statement-I :

One of the standard sizes of the National Flag of India is 600 mm x 400 mm.

Statement-II :

The ratio of the length to the height (width) of the Flag shall be 3:2.

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 Statement-II is correct*

85. Consider the following statements in respect of the Constitution Day:

Statement-I :

The Constitution Day is celebrated on 26th November every year to promote constitutional values among citizens.

Statement-II :

On 26th November, 1949, the Constituent Assembly of India set up a Drafting Committee under the Chairmanship of Dr. B. R. Ambedkar to prepare a Draft Constitution of India.

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

86. Consider the following statements:

Statement-I :

Switzerland is one of the leading exporters of gold in terms of value.

Statement-II :

Switzerland has the second largest gold reserves in the world.

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 Statement-II is correct

87. Consider the following statements:

Statement-I :

Recently, the United States of America (USA) and the European Union (EU) have launched Technology Council'.

Statement-II:

The USA and the EU claim that through this they are trying to bring technological progress and physical productivity under their control.

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

88. Consider the following statements :

Statement-1:

India accounts for 3.2% of global export of goods.

Statement-II :

Many local companies and some foreign companies operating in India have taken advantage of India's 'Production-linked Incentive' scheme.

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**

89. Consider the following statements:

The 'Stability and Growth Pact' of the European Union is a treaty that

1. limits the levels of the budgetary deficit of the countries of the European Union
2. makes the countries of the European Union to share their infrastructure facilities
3. enables the countries of the European Union to share their technologies

How many of the above statements are correct?

- (a) **Only one**
- (b) Only two
- (c) All three
- (d) None

90. Consider the following statements:

1. Recently, all the countries of the United Nations have adopted the first-ever compact for international migration, the 'Global Compact for Safe, Orderly and Regular Migration (GCM)'.
2. The objectives and commitments stated in the GCM are binding on the UN member countries.
3. The GCM addresses internal migration or internally displaced people also in its objectives and commitments.

How many of the above statements are correct?

- (a) Only one
 (b) Only two
 (c) All three
(d) None

91. With reference to Home Guards, consider the following statements:

1. Home Guards are raised under the Home Guards Act and Rules of the Central Government.
2. The role of the Home Guards is to serve as an auxiliary force to the police in maintenance of internal security.
3. To prevent infiltration on the international border/coastal areas, the Border Wing Home Guards Battalions have been raised in some States.

How many of the above statements are correct?

- (a) Only one
(b) Only two
 (c) All three
 (d) None

92. With reference to India, consider the following pairs:

- | Action | The Official Secrets Act, 1923 |
|---|---|
| 1. Unauthorized wearing of police or military uniforms | : Giant clouds of dust and gas in space |
| 2. Knowingly misleading or otherwise interfering with a police officer or military officer when engaged in their duties | : The Indian Evidence Act, 1872 |
| 3. Celebratory gunfire which can endanger the personal safety of others | : The Arms (Amendment) Act, 2019 |

How many of the above pairs are correctly matched?

- (a) Only one
(b) Only two
 (c) All three
 (d) None

93. Consider the following pairs:

- | Regions often mentioned in news | Reason for being in news |
|---------------------------------|--------------------------------------|
| 1. North Kivu and Ituri | : War between Armenia and Azerbaijan |
| 2. Nagorno-Karabakh | : Insurgency in Mozambique |
| 3. Kherson and Zaporizhzhia | : Dispute between Israel and Lebanon |

How many of the above pairs are correctly matched?

- (a) Only one
 (b) Only two
 (c) All three
(d) None

94. Consider the following statements:

Statement-1:

Israel has established diplomatic relations with some Arab States.

Statement-II:

The 'Arab Peace Initiative' mediated by Saudi Arabia was signed by Israel and Arab League.

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-1 is incorrect but Statement-II is correct

95. Consider the following pairs with regard to sports awards:

- | | | |
|---------------------------------------|---|---|
| 1. Major Dhyan Chand Khel Ratna Award | : | For the most and outstanding performance by a sportsperson over period of last four years |
| 2. Arjuna Award | : | For the lifetime achievement by a sportsperson |
| 3. Dronacharya Award | : | To honour eminent coaches who have successfully trained sportspersons teams |
| 4. Rashtriya Khel Protsahan Puraskar | : | To recognize the contribution made by sportspersons even after their retirement |

How many of the above pairs are correctly matched?

- (a) Only one
- (b) Only two**
- (c) Only three
- (d) All four

96. Consider the following statements in respect of the 44th Chess Olympiad, 2022:

1. It was the first time that Chess Olympiad was held in India.
 2. The official mascot was named Thambi'.
 3. The trophy for the winning team in the open section is the Vera Menchik Cup.
 4. The trophy for the winning team in the women's section is the Hamilton-Russell Cup.
- How many of the statements given above are correct?
- (a) Only one
- (b) Only two**
- (c) Only three
- (d) All four

97. Consider the following pairs:

Regions often mentioned in news	Country where it is located
1. Donbas	: Syria
2. Kachin	: I Ethiopia
3. Tigray	: DNorth Yemen

How many of the above pairs are correctly matched?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None**

98. In the recent years Chad, Guinea, Mali and Sudan caught the international attention for which one of the following reasons common to all of them?

- (a) Discovery of rich deposits of rare earth elements
- (b) Establishment of Chinese military bases
- (c) Southward expansion of Sahara Desert
- (d) Successful coups**

99. Consider the following heavy industries:

1. Fertilizer plants
2. Oil refineries
3. Steel plants

Green hydrogen is expected to play a significant role in decarbonizing how many of the above industries?

- (a) Only one
- (b) Only two
- (c) All three**
- (d) None

100. Consider the following statements about G-20:

1. The G-20 group was originally established as a platform for the Finance Ministers and Central Bank Governors to discuss the international financial issues. economic and
2. Digital public infrastructure is one of India's G-20 priorities.

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



UPSC Prelims 2023 Explanation (GS 1- Set A)

1. Answer: C

- **Statement 1 is correct:** The main source of water for Wular Lake is the **River Jhelum**. This lake also has a small island called the '**Zaina Lank**'.
- **Statement 2 is Correct:** The Kolleru lake is a natural eutrophic lake, situated between the two major river basins of the Godavari and the **Krishna**, fed by two seasonal rivers and a number of drains and channels.
- **Statement 3 is Correct:** The Kanwar lake draws water from the confluence of the Gandak, the Bia and the Kareh river, is situated near Manjhaul, 22 km northwest of Begusarai, Bihar.

2. Answer: B

Explanation:

- **Statement 1 is Correct:** Kamarajar Port, located on the Coromandel Coast about 24 km north of Chennai Port, is the 12th major port of India, and the **first port in India which is a public company**.
- **Statement 2 is Correct:** The mega port at Mundra is a major economic gateway that caters to the northern hinterland of India with multimodal connectivity. The deep draft, all-weather port is the **largest commercial port in India with state-of-the-art infrastructure**.
- **Statement 3 is Incorrect:** Mundra Port, India's biggest commercial port by volumes, has overtaken state-run Jawaharlal Nehru Port Trust (JNPT) to become the **country's largest container gateway** by handling 5.65 million twenty-foot equivalent units (TEUs) in FY21.

3. Answer: B

Explanation:

- **Statement 1 is Incorrect:** Jackfruit is an evergreen tree characterised by its dense foliage and exudation of latex from above ground plant parts including fruits when injured.
- **Statement 2 is Correct:** Mahua tree is known as Indian Butter Tree. A medium

sized to large deciduous tree with a large rounded crown

- **Statement 3 is Correct:** Teak (*Tectona grandis*) is a tropical hardwood tree species in the family Lamiaceae. It is a large, deciduous tree that occurs in mixed hardwood forests.

4. Answer: B

Explanation:

- **Statement 1 is Correct:** according to a map released by the US Geological Survey, **India has the largest cropland of any country at 179.8 million hectares, compared with 167.8 million in the US and 165.2 million in China**. Russia ranks fourth, while South Asia and Europe are labelled "agricultural capitals of the world," as cropland accounts for more than 80% of some countries in those regions. In comparison, only about a fifth of land in the US and China is dedicated to growing food.
- **Statement 2 is correct:** . Irrigated area accounts for nearly **48.8 per cent** of the 140 million hectare (mha) of agricultural land in India. **China's irrigation cover is 41% of cultivated area, and India's is 48%**.
- **Statement 3 is incorrect:** China's productivity in most crops is 50 to 100% higher than India's.

<https://www.financialexpress.com/opinion/india-can-learn-agri-policy-lessons-from-china/1748398/>

5. Answer: D

Explanation:

- The Rann area was a vast shallow of the Arabian Sea and was **submerged during marine incursions in the geological past but after geological upliftment turned to desert as the sea transgressed and left behind Quaternary clay and evaporate sediments**. Hence, Rann of Kutch is the best example of repeated falls in sea level, giving rise to present day extensive marshland.

6. ANSWER: D

EXPLANATION:

- India is endowed with **large resources of heavy minerals** which occur mainly along

coastal stretches of the country and also in inland places.

- Heavy mineral sands comprise a group of seven minerals, viz, ilmenite, leucosene (brown ilmenite), rutile, zircon, sillimanite, garnet and monazite. **Ilmenite (FeO.TiO₂) and rutile (TiO₂) are the two chief minerals of titanium.**
- **Ilmenite and rutile** along with other heavy minerals are important constituents of beach sand deposits found right from Moti Daman-Umbrat coast (Gujarat) in the west to Odisha coast in the east.
- **Hence, option D is correct.**

7. ANSWER: C

EXPLANATION:

- According to data from the US Geological Survey (USGS), around 140,000 metric tonnes of cobalt were produced worldwide during 2019 – more than 70% of which came from a single country, the **Democratic Republic of Congo (DRC) in Central Africa.**
- **Major countries in worldwide cobalt mine production in 2022:**
 - **Hence, option C is correct.**

8. ANSWER A

EXPLANATION:

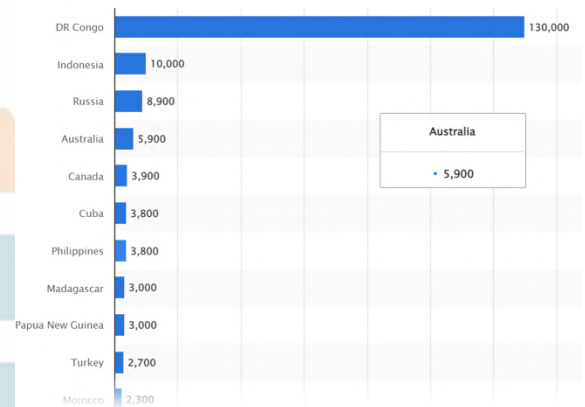
- The **Congo Basin spans across six countries**—Cameroon, Central African Republic, Democratic Republic of the Congo, Republic of the Congo, Equatorial Guinea and Gabon.
- Congo basin has the **world's largest tropical peatlands**, discovered in 2017.
- Scientists estimate that these **peatlands store carbon worth about 20 years of the fossil fuel emissions of the US.** The basin is also rich in biodiversity and in minerals.
- **Hence, option A is correct.**

<https://www.downtoearth.org.in/news/afri-ca/more-research-investment-needed-to-protect-congo-basin-peatlands-finds-report-85002>

9. ANSWER: D

EXPLANATION:

- **Statement 1 is not correct:** Amarkantak is at the confluence of the Vindhya and Satpura mountain ranges.
- **Statement 2 is not correct:** Biligiri Rangan Hills (B.R.Hills) is a hill range situated in south-eastern Karnataka, at its border with Tamil Nadu (Erode District). It falls under the confluence of the Western Ghats and the Eastern Ghats. The unique geographical positioning and diversity of habitats make BR Hills one of the richest areas for biodiversity in India.
- **Statement 3 is not correct:** Seshachalam Hills are hilly ranges part of the Eastern Ghats in southern Andhra Pradesh state, in South-eastern India.



10. ANSWER: D

Explanation :

- **Statement 1 is not correct:** The East-West corridor of the Golden Quadrilateral connects Silchar and Porbandar cities in India.
- **Statement 2 is not correct:** The India–Myanmar–Thailand trilateral Highway connects Moreh in Manipur, India to Mae Sot in Thailand via Mandalay and Naypyidaw in Myanmar.
- **Statement 3 is not correct.** The 2800 km Bangladesh-China-India-Myanmar (BCIM) Economic corridor proposes to link Kunming in China's Yunnan province with Kolkata, passing through nodes such as Mandalay in Myanmar and Dhaka in Bangladesh before heading to Kolkata.

<https://www.thehindu.com/news/international/bangladesh-china-india-myanmar-bcim-economic->

[corridor-no-longer-listed-under-bri-umbrella/article26971613.ece](https://www.bri-umbrella/article26971613.ece)

11. ANSWER: C

Explanation:

- **Statements 1 is correct**
 - In India, power is generated from conventional (Thermal, Nuclear & Hydro) and renewable sources (Wind, Solar, biomass, etc.). However, Major production of Electricity is achieved through coal, a thermal power plant which is around 75% of the total power generation. India's total power generation in Dec 2020 stood at 103.66 billion units, according to data released by the Central Electricity Authority.
- **Statement 2 is correct:**
 - Most reactors are light water reactors (of two types – PWR and BWR) and require uranium to be enriched from 0.7% to 3-5% U-235 in their fuel. This is normal low-enriched uranium (LEU). There is some interest in taking enrichment levels to about 7%, and even close to 20% for certain special power reactor fuels, such as high-assay LEU (HALEU).
 - High-assay LEU (HALEU) is anything between 5% and 20% U-235, and the higher levels in this range are needed for some advanced power reactor fuels

References

<https://www.sipri.org/commentary/essay/2021/why-iran-producing-60-cent-enriched-uranium>

<https://world-nuclear.org/information-library/nuclear-fuel-cycle/conversion-enrichment-and-fabrication/uranium-enrichment.aspx>

[Power Sector at a Glance ALL INDIA | Government of India | Ministry of Power \(powermin.gov.in\)](#)
[Ministry of Coal, Government of India](#)

12. Answer: C

Explanation:

- **Statement 1 is correct:** Most Australian marsupials live in dry scrub or desert habitats. In South America, marsupials live in forests or tropical rainforests.
- **Statement 2 is correct:** Marsupials can live in any part of the forest habitat, from the trees to the forest floor, where, like the wombat, they burrow underground.
- Recently, Archaeologist Jinu Koshy has found thousands of rock drawings in Andhra Pradesh – including some of marsupials.

Sources:

<https://ucmp.berkeley.edu/mammal/marsupial/marsupial.html>

<https://animals.sandiegozoo.org/animals/marsupial>

13. Answer: A

Explanation

- The Invasive Species Specialist Group (ISSG) is a global network of scientific and policy experts on invasive species, organised under the auspices of the Species Survival Commission (SSC) of the International Union for Conservation of Nature (IUCN).
- The Invasive Species Specialist Group (ISSG) aims to reduce threats to natural ecosystems and the native species they contain by increasing awareness of invasive alien species, and of ways to prevent, control or eradicate them.
- The ISSG promotes and facilitates the exchange of invasive species information and knowledge across the globe and ensures the linkage between knowledge, practice and policy so that decision making is informed.
- The two core activity areas of the ISSG are policy and technical advice, and information exchange through our online resources and tools and through networking.

Reference

- https://www.iucn.org/sites/default/files/2023-04/2021-iucn-ssc-invasive-species-sg-report_publication.pdf

14. Answer: B**Explanation**

- **Statement 1 is incorrect:** The lion-tailed macaque is diurnal in nature, as in being active solely during daylight hours. Preferring rainforest environments it is a good climber, spending most of its time in the upper reaches of a tropical rainforest. Its habitats consist of rainforest regions of Karnataka, Kerala and Tamil Nadu.
- **Statement 2 is correct:** The Malabar civet is one of 5-20 species of civet, a small nocturnal mammal with a long body and short legs. These ground-dwelling creatures live solitarily in hollows and eat small animals and plants. The Malabar civet, or *Viverra civettina*, lives in the Western Ghats of India, and is extremely endangered. They are similar to another type of civet that also lives in southern India, called the small Indian civet; both have a banded tail and black and white markings. At first glance it is hard to tell these two apart, but the Malabar civet is bigger, has a crest of black hair down its spine, and has a 'necklace' of black and white bands.
- **Statement 3 is correct:** Sambar are nocturnal or crepuscular animals and rest during the day under the cover of heavy forest. The males live alone for much of the year, and the females live in small herds of up to 16 individuals. Males are nomadic and will establish their territory primarily during the breeding season; they wallow and dig their antlers in urine-soaked soil, and then rub against tree trunks.

Reference:

- https://animalia.bio/sambar?custom_list=571
- <https://programs.wcs.org/india/Newsroom/Blog/ID/12547/Icons-of-Anamalai-Lion-Tailed-Macaque>
- <https://www.tosaveanimals.com/malabar-civet>

15. Answer: C**Explanation**

- Waggle dance is a term used in "Beekeeping" beekeeping and ethology for a particular figure-eight dance of the honey bee.

- By performing this dance, successful foragers can share information about the direction and distance to patches of flowers yielding nectar and pollen, to water sources, or to new nest-site locations with other members of the colony.

Reference:

- <https://www.science.org/doi/10.1126/science.ade1702>

16. Answer: D**Exp:**

- **Statement 1 is correct:** Some mushrooms have medicinal properties. For example, shiitake mushrooms contain lentinan, a polysaccharide that has been shown to boost the immune system.
- **Statement 2 is correct:** Some mushrooms have psychoactive properties. For example, psilocybin mushrooms contain psilocybin, a psychedelic compound that can cause hallucinations.
- **Statement 3 is correct:** Some mushrooms have insecticidal properties. For example, the entomopathogenic fungus *Beauveria bassiana* can infect and kill a variety of insects.
- **Statement 4 is correct:** Some mushrooms have bioluminescent properties. For example, the jack-o'-lantern mushroom (*Omphalotus olearius*) emits a greenish-yellow light from its gills.

17. Answer: C**Explanation:**

- **Statement 1 is correct:** Indian Palm Squirrels **build nests in the treetops** using the grass, ground and branches. Some Squirrel makes Nest in the ground as well.
- **Statement 2 is Correct:** Squirrels don't just gather the food they need at that moment. They gather and stock up for the future. When a squirrel gathers food like nuts, seeds, acorns and berries, he carries them in his mouth back to his nest, where he stores them. Alternatively, **he may bury food in the ground at different places around the neighbourhood, where his sense of smell later leads him to unearth it.**

- **Statement 3 is Correct:** Indian Palm Squirrel is an omnivore. Its diet is mostly based on fruit and nuts, but it also consumes eggs, small birds, larvae and insects.

Reference:

https://dste.py.gov.in/ppcc/pdf/Publication/Newsletters/2017/newsletter_April-June-2017.pdf
<https://www.livescience.com/28182-squirrels.html>

18. Answer: C**Explanation:**

- **Statement 1 is Correct:** Some bacteria are also able to tolerate extreme temperatures. Some of these bacteria are able to live at temperatures **greater than 100 °C (above Boiling point of Water)**, deep in the ocean where high pressures increase the boiling point of water.
- **Statement 2 is Correct:** Psychrophiles are microorganisms that **can grow at 0 °C and below**.
- **Statement 3 is Correct:** Bacteria that grow below Ph level 4 are called **acidophiles**.

Reference:

https://dste.py.gov.in/ppcc/pdf/Publication/Newsletters/2017/newsletter_April-June-2017.pdf
<https://lab-training.com/conditions-favourable-growth-microorganisms/>

19. Answer: B**Explanation:****Option (b) is CORRECT:**

- **Orangutans use sticks to remove insects from tree holes, poke logs for honey,** and when eating Neesia fruits, which are known for their irritant hairs.
- Once they use the sticks to remove these impediments, they can feast on the fruit's seeds unencumbered.

Reference

<https://www.nathab.com/blog/animals-that-use-tools/#:~:text=Orangutans%20also%20use%20stick%20to,on%20the%20fruit's%20seeds%20unencumbered.>

[ks%20to,on%20the%20fruit's%20seeds%20unencumbered.](https://www.nathab.com/blog/animals-that-use-tools/#:~:text=Orangutans%20also%20use%20stick%20to,on%20the%20fruit's%20seeds%20unencumbered.)

20. Answer: D**Explanation:****Option (d) is CORRECT:**

- **Hydrofluorocarbons (HFCs)** are greenhouse gases (GHGs) commonly used **in a wide variety of applications**, including refrigeration, air-conditioning (AC), building insulation, **fire extinguishing systems**, and **aerosols**.
- Hydrofluorocarbons (HFCs) are a climate "super-pollutant": greenhouse gases with hundreds to thousands of times the heat-trapping power of carbon dioxide.
- HFCs are synthetic gases used in air conditioning systems, aerosol propellants, **foam blowing agents**, solvents, and **flame retardants**.
- **They are also used for lubricants.** For example, **Isel's hydrofluorocarbon (HFC) refrigeration compressor lubricants** are designed to maximize the benefits of lubrication and oil return for refrigeration systems, offering the highest level of performance and protection possible.

Reference:

[https://iselinc.com/refrigeration-lubricants/hfchcfc-lubricants/#:~:text=Isel's%20hydrofluorocarbon%20\(HFC\)%20refrigeration%20compressor,protection%20to%20extend%20component%20life](https://iselinc.com/refrigeration-lubricants/hfchcfc-lubricants/#:~:text=Isel's%20hydrofluorocarbon%20(HFC)%20refrigeration%20compressor,protection%20to%20extend%20component%20life)

21. Answer: D**Explanation:**

- **Statement 1 is incorrect :** The dividend and Interest income from InvITs is completely taxable as per the slab rate of the investor.
- **Statement 2 is correct: InvITs and REITs are now recognised as borrowers under the SARFAESI Act,** With this, lenders to these trusts, shall have adequate statutory enforcement options, absence of which was earlier becoming a constraint for bankers to lend directly at trust level.

Reference:

<https://www.etmoney.com/learn/personal-finance/all-you-need-to-know-about-infrastructure-investment-trusts-invits/>

<https://www.thehindubusinessline.com/news/national/over-35-lakh-crore-of-assets-to-get-monetised-through-invt-reits-in-next-one-year-icra/article34782753.ece>

22. Answer: A

- **Statement 1 and 2 both are correct:** Post Covid World faced many hiccups like Supply chain disruption, Russia-Ukraine War and this led to inflation in many countries thus, various central banks went for tight monetary policy by hiking the interest rates.
- Example federal bank of the USA hiked the interest rates which led to Black Swan events in India.
- Monetary policy is used for controlling inflation by Central banks world wide.
- In tight monetary policy Central banks go for hikes in interest rates to suck up the liquidity from the Market and reduce the money supply to check the inflation.

Reference: Economic survey 2022-23 Chapter 1

23. Answer: B

Explanation:

- **Both Statements are CORRECT but Statement 2 is NOT the explanation of Statement 1:**
 - **Statement 1 is CORRECT:** - Carbon markets are a very important tool to reach global climate goals, particularly in the short and medium term.
 - They mobilise resources and reduce costs to give countries and companies the space to smooth the low-carbon transition and be able to achieve the goal of net zero emissions in the most effective way possible.
- **Statement 2 is CORRECT:**
 - Like taxes, carbon markets transfer resources from the private sector to the state, which irks those standing for small government.
 - Higher carbon prices can also help to push up consumer prices, angering voters, while hurting the margins of firms that donate to political parties.

Reference:

- <https://www.worldbank.org/en/news/feature/2022/05/17/what-you-need-to-know-about-article-6-of-the-paris-agreement>
- <https://www.economist.com/finance-and-economics/2022/05/26/carbon-markets-are-going-global>

24. Answer: A

Explanation:

- Sterilized interventions involve the sale or purchase of foreign currency assets and an open market operation involves the purchase or sale of government securities. The **classical form of sterilization has been through the use of open market operations**, that is, selling Treasury bills and other instruments to reduce the domestic component of the monetary base.

25. Answer: B

- Capital markets **refer to the venues where funds are exchanged between suppliers and those who seek capital for their own use.**
- The best-known capital markets include the **stock market and the bond markets.**
- The treasury bill (T-bill) market is **typically included as a part of the money market.** Treasury bills are short-term debt instruments issued by the government to raise funds.
- The call money market is **not typically considered a part of the capital market.** The call money market, on the other hand, is a segment of the money market.
- **Hence, option B is correct.**

26. Answer: B

Exp:

- The Small Farmers Large Field model is participatory and flexible and allows small farmers to benefit from achieving economies of scale by organising themselves into groups and synchronising and harmonising selected operations.
- The SFLF model is found to be a very attractive option for small and marginal farmers who can significantly increase their income by harmonising and synchronising selected operations to achieve scale and

gain bargaining power in input purchases and output sales.

<https://link.springer.com/article/10.1007/s12571-021-01236-x>

27. Answer : C

EXPLANATION:

- **Statement 1 is correct:** One of the 14 kharif crops for which the Centre releases a minimum support price (MSP) every year is an unlikely plant called niger or ramtil (*Guizotia abyssinica*).
- This lesser known oilseed commands one of the highest MSPs, fixed on the basis of the cost of production and market demand.
- **Statement 2 is correct:** In 2020-21, the cultivated area shrunk by 80 per cent to a little over 0.1 million ha, the lowest among the 14 kharif crops with MSP.
- **Statement 3 is correct** The tribal population uses niger seed oil for cooking, the press cake post oil-extraction as livestock feed, and also consume the seeds as a condiment. The primary reason such a sparsely grown crop is part of the exclusive MSP list is because niger seed has traditionally “been the lifeline of tribal agriculture and economy in several states across India,” the 2013 AICRP report stated.

• **Hence Option(C) all are correct**

Source:

<https://www.downtoearth.org.in/news/agriculture/illusiv-oilseed-india-s-niger-seed-cultivation-is-declining-here-is-why-84380>

28. Answer - C

- An intangible asset is an asset that is not physical in nature. Goodwill, brand recognition and intellectual property, such as patents, trademarks, and copyrights, are all intangible assets. Intangible assets exist in opposition to tangible assets, which include land, vehicles, equipment, and inventory.
- According to this three pairs are correctly matched. So Answer is C.

29. Answer: B

Explanation:

Option (b) is CORRECT:

- **Only three criteria** from the question are part of Horizontal devolution:
- Based on principles of need, equity and performance, the overall devolution formula is as follows.
- On horizontal devolution, while XVFC agreed that the Census 2011 population data better represents the present need of States, to be fair to, as well as reward, the States which have done better on the demographic front, XVFC has assigned a 12.5 per cent weight to the demographic performance criterion.
- The Fifteenth finance commission has reintroduced tax effort criteria to reward fiscal performance.
- **Governance reforms and stable government are not given as can be seen in the table given below.**

Horizontal devolution:

- Based on principles of need, equity and performance, overall devolution formula is as follows.

Criteria	Weight (%)
Population	15.0
Area	15.0
Forest & ecology	10.0
Income distance	45.0
Tax & fiscal efforts	2.5
Demographic performance	12.5
Total	100

Reference:

<https://pib.gov.in/PressReleasePage.aspx?PRID=1693868>

30. Answer: C

Explanation:

- Leveraging UNOPS’ mandate and its core strengths in infrastructure, procurement and project management, S3i - **Sustainable Investments in Infrastructure and Innovation** is dedicated to helping make the SDGs a reality.
- **Focusing on affordable housing, renewable energy and health infrastructure**, the S3i sustainable infrastructure investments aim to crowd

public and private financing into large-scale infrastructure projects in regions that have struggled to attract capital.

Reference: <https://content.unops.org/documents/WANTED-Partnership-Proposals.pdf>

31. Answer -A

- “Due Process of Law” is a doctrine that not only checks if there is a law to deprive the life and personal liberty of a person but also ensures that the law is made fair and just. According to this statement, option a, The principle of natural justice is the most appropriate answer.

32. Answer -A

- Prison is a State subject under List-II of the Seventh Schedule in the Constitution.
- The management and administration of Prisons falls exclusively in the domain of the State Governments, and is governed by the Prisons Act, 1894 and the Prison Manuals of the respective State Governments.
- Thus, States have the primary role, responsibility and power to change the current prison laws, rules and regulations

33. Answer - C

- The Constitution is the fundamental law of a nation that outlines the powers and limitations of the government, and the rights and duties of citizens. According to the given options the chief purpose of the ‘constitution’ of a country is to define and limit the powers of government.

34. Answer - B

- By the 42nd Amendment Act 1976, it is widely believed to be enacted to overcome the judicial The 42nd amendment attempted to alter the basic structure of the Indian Constitution. This amendment has made significant changes in the constitution and this is why it is also now as a mini-constitution.

35. Answer A

Explanation:

- **Statement 1 is correct:** National Commission for Backward Classes (NCBC) is a constitutional body under the Ministry of Social Justice and Empowerment. Article 338B provides authority to NCBC to examine complaints and welfare measures regarding socially and educationally backward classes.
- **Statement 2 is incorrect:** The National Human Rights Commission is not a constitutional body. It was established on 12 October 1993 under the statute Protection of Human Rights Act (PHRA), 1993.
- **Statement 3 is incorrect:** Law Commission of India is neither a constitutional body nor a statutory body. It is constituted by a notification of the Government of India, Ministry of Law & Justice, Department of Legal Affairs with definite terms of reference to carry out research in the field of law and the Commission makes recommendations to the Government (in the form of Reports) as per its terms of reference.
- **Statement 4 is correct:** The National Consumer Disputes Redressal Commission (NCDRC), India is a quasi-judicial commission in India which was set up in 1988 under the Consumer Protection Act of 1986. Thus it is a statutory body.

Reference:

http://www.ncbc.nic.in/User_Panel/UserView.aspx?TypeID=1025

<https://nhrc.nic.in/about-us/about-the-Organisation>

<https://indianexpress.com/article/explained/everyday-explainers/law-commission-of-india-rituraj-awasthi-constitution-role-powers-explained-8256040/>

<http://ncdrc.nic.in/>

36. Answer: D

Explanation:

- **Statement 1 is incorrect:** According to Article 71(2) in of the Constitution of India

'If the election of a person as President or Vice President is declared void by the Supreme court, acts done by him in the exercise and performance of the powers and duties of the office of President or Vice President, as the case may be, on or before the date of the decision of the Supreme Court shall not be invalidated by reason of that declaration'.

- **Statement 2 is incorrect:** Election for post of president will not be postponed on the ground that some legislative assemblies have been dissolved.
- **Statement 3 is incorrect:** The Constitution does not prescribe any time limit for the President or the Governor declaring assent to a Bill.

Reference:

<https://indiankanoon.org/doc/1349319/>
<https://indiankanoon.org/doc/1155468/>
<https://legallaffairs.gov.in/sites/default/files/The%20Institution%20of%20Governor%20under%20the%20Constitution.pdf>

37. Answer: C

Explanation:

- **Statement 1 is correct:** The Rajya Sabha has the power to amend or reject the finance bill.
- **Statement 2 is correct:** Rajya Sabha cannot amend or reject a money bill. It should return the bill to the Lok Sabha within 14 days, either with recommendations or without recommendations.
- **Statement 3 is correct:** The provision of joint sitting is applicable to ordinary bills or financial bills only and not to money bills or Constitutional amendment bills.

Reference:

<https://www.legalserviceindia.com/legal/article-9532-finance-bill-article-117-of-the-indian-constitution.html>
<https://cms.rajyasabha.nic.in/UploadedFiles/Legislation/Introduction.pdf>

38. Answer: B

Explanation:

- **Statement 1 is correct:** Once the Centre notifies an area as a community reserve, as per Section 33 of the WLPA Act, the Chief Wildlife Warden of the state becomes the governing authority of the forest, whose consent is required for all decisions pertaining to the area.
- **Statement 2 is correct:** After a forest has been made into a community reserve, people are not allowed to hunt there.
- **Statements 3 and 4 are incorrect:** After a forest has been made into a community reserve, people are not allowed to collect non-timber forest produce, or use it for agricultural practices such as jhum cultivation.

39. Answer: B

Explanation:

- **Statement 1 is correct:** The Fifth Schedule under Article 244(1) of Constitution defines "Scheduled Areas" as such areas as the President may by order declare to be Scheduled Areas after consultation with the Governor of that State.
- **Statement 2 is correct:** The largest administrative unit forming the scheduled areas has been the district and the lowest the cluster of villages in the block.
- **Statement 3 is incorrect:** Para 3 of Fifth Schedule of the Constitution lays down, "The Governor of each State having Scheduled Areas therein shall annually, or whenever so required by the President, make a report to the President regarding the administration of the Scheduled Areas in that State and the executive power of the Union shall extend to the giving of directions to the State as to the administration of the said areas."

Reference:

<https://vikaspedia.in/social-welfare/scheduled-tribes-welfare/fifth-schedule-areas>

<https://www.epw.in/journal/2019/44/alternative-standpoint/governors-and-fifth-schedule.html>

<https://economictimes.indiatimes.com/news/politics-and-nation/governors-of-most-states-yet-to-submit-scheduled-areas-report-rti/articleshow/47090903.cms?from=mdr>

40. Answer: (c)

Explanation:

- **Statement 1 is correct**
 - In the past seven decades of constitutional jurisprudence on reservations, the Supreme Court of India has consistently referred to the notions of “efficiency” and “merit,” while adjudicating the validity of various reservation policies.
 - **The Court has held in several judgments — Indra Sawhney v Union of India 1993; M Nagaraj v Union of India 2006 — that the reservation policies made under Article 16(4)¹ of the Constitution would be limited by Article 335, which provides for “maintenance of efficiency of administration,” while considering the claims of the Scheduled Castes (SCs) and the Scheduled Tribes (STs) in the making of appointments to public services and posts.**
- **Statement 2 is incorrect :**
 - Article 335 of the Constitution of India does not define the term ‘efficiency of administration’.

Reference:

<https://theprint.in/opinion/article-164-stands-on-its-own-constitution-made-no-room-for-merit-that-courts-invoke/669215/>
<https://indiankanoon.org/doc/1113850/>

41. Answer: (a)

Explanation

- Since the beginning of the Buddhist epoch, Guntur stood foremost in matters of education. Buddhists established universities in ancient

times at Dhanyakataka (Amaravathi) and Nagarjunakonda.

- The first and foremost Buddhist shrine in Andhra, the mahachaitya at Amaravati, in the district of Guntur, is said to have been founded by Mahadeva, a monk-missionary, deputed by Asoka to preach and propagate the dhamma in the Andhradesa.
- The excavation results at the stupa site in Dhanyakataka have led to startling discoveries. Thus, Dhanyakataka flourished as a prominent Buddhist centre under the Mahasanghikas.



Reference:

<https://guntur.ap.gov.in/district-profile/>
https://rajdhnicollege.ac.in/admin/cditor/ckfinder/userfiles/files/13_chapter%204.pdf

42. Answer: (b)

Explanation:

- **Statement 1 is incorrect:** The word 'Stupa' is said to have been derived from the Sanskrit root 'Stu' meaning 'to worship' or 'to praise'. The Stupa developed as the nucleus of Buddhist faith and worship, but its origin cannot be regarded as Buddhist for evidence of its roots date back to c. 2000 B.C.
- **Statement 2 is correct:** A Stupa (literally “heap” or “pile”) is a reliquary, a shrine containing the remains of a holy or sainted person and/or artefacts (relics) associated with them.

- **Statement 3 is correct:** According to M. Sivarammurti Stupa is regarded as a monument for veneration. But as Stupa seems to be associated with votive and commemorative and offering purposes; moreover Stupa was related to the ritualistic and commemorative with sectarian affiliation with the school of philosophical obligation and was bound by aspects of social-economic life. The Buddhist texts like the Avadana Satakam, Mahavadana and Stupavadanam mentions about the commemorative aspects of the Stupa even the Jaina literature like Raya Pasenaiya Sutta refers to it. Probably in the later period, due to deep desire of the common mass to worship the lord for the sake of salvation, Stupa acquired its votive character as well.

Reference:

[http://tibetanbuddhistencyclopedia.com/en/index.php/The Buddhist Stupa: origin and development](http://tibetanbuddhistencyclopedia.com/en/index.php/The_Buddhist_Stupa:_origin_and_development)
<https://www.worldhistory.org/stupa/>
<https://www.wisdomlib.org/history/essay/stupas-in-odisha-study/d/doc1149361.html>

43. Answer: (b)**Explanation:**

- Poompuhar, also known as **Puhar**, is believed to be the **Port town** of Chola Empire. Poompuhar, also known as Kaveripoompattinam, was submerged by the sea, and there are references to this in the Tamil epic Manimekalai.
- The state archaeology department in coordination with National Institute of Ocean Technology (NIOT) and Indian Maritime University began a reconnaissance mission to trace the **ancient port city** of Korkai in the Tuticorin sea.
- Muziris, the fabulous ancient Indian port, also known as Murchiri is located in Kerala and was an important port of Cheras.

Reference:

<https://www.thehindu.com/news/national/tamil-nadu/ancient-port-city-of-poompuhar-traced-undersea-claim-researchers/article66413969.ece>

<https://timesofindia.indiatimes.com/city/madurai/tamil-nadu-mission-launched-to-trace-lost-port-of-korkai/articleshow/93978009.cms>
<https://indianexpress.com/article/parenting/learning/make-history-fun-again-muziris-fabulous-ancient-indian-port-5825131/>

44. Answer: (d)**Explanation:**

- Sangam poems are pervaded with a warrior ethic. The goal of the hero of the puram poems was pukal (glory, fame) and a heroic death was greatly valued. It was believed that the spirit of a warrior who died in battle dwelt in paradise. A poem in the Purananuru suggests that the bodies of warriors who did not die in battle were cut with swords before the funerary rites, to simulate death in battle. **The practice of vattakirutal was one in which a defeated king committed ritual suicide by starving himself to death, accompanied by those who had been close to him during his lifetime.** The worship of memorial stones (natukal) was a corollary of the importance of the heroic ideal. Memorial stones were erected in honour of heroes who died fighting valiantly in battle; the spirit of the fallen hero was believed to reside in these stones.

Reference: A HISTORY OF ANCIENT AND EARLY MEDIEVAL INDIA by Upinder Singh: Page No- 951

<https://drive.google.com/file/d/1snCktxBJ1pRzob3NvckbpkuzmKYi34Ki/view>

45. Answer: (d)**Explanation:**

- **Point 1 is incorrect:** The Hoysalas ruled a large part of modern day Karnataka and parts of Andhra Pradesh and Tamil Nadu from the 10th to the 14th century. The Hoysala Empire was founded by King Nripa Kama II who is remembered for having built an alliance with the Western Ganga dynasty. He was succeeded

by his son Vinayaditya who was followed by his son and their sons until Veera Ballala I who died childless and was succeeded by his younger brother Vishnuvardhana Raya.

- **Point 2 is incorrect:** Gahadvala dynasty owed its success in administration and conquests to a number of valiant kings. Chandradeva, the founder of this dynasty, followed an expansion policy conquering Delhi, Ayodhya, and Varanasi. His dominion included the whole of modern Uttar Pradesh. He is also known to protect the upper places of India. Chandradeva's known date is 1085 -1100 A.D. His empire extended to Kasi, north Kosala and Indraprastha. Chandradeva attacked eastern India and fought against Rampala of Pala dynasty but was defeated.
- **Point 3 is incorrect:** The Kakatiya Dynasty emerged after the fall of the Western Chalukyas in the 11th century and shaped the history and civilisation of the region. The rulers of Kakatiya, who were initially feudatories of the Western Chalukyas of Kalyana, ruling over a small territory near Warangal, spread their dynasty to most of the eastern Deccan region, comprising present-day Telangana and Andhra Pradesh, as well as parts of eastern Karnataka and Southern Odisha during the two centuries of their rule.
- **Point 4 is incorrect:** The Yadavas, and their family branch, the Hoysalas of Mysore, initially ruled as vassals of the Western Chalukyas (apparently even while they themselves were eclipsed by the Rashtrakutas), but in 1185 they declared their independence and established a kingdom that reached its peak under Singhana II. The foundation of Marathi culture was laid by the Yadavas and the peculiarities of Maharashtra's social life developed during their rule. The Yadavas also patronised Marathi, which was their court language, and claimed descent from the Yadu clan which gave birth to the epic hero of the Mahabharata, Vasudeva Krishna.

Reference:

- <https://www.karnataka.com/history/hoysalas/>
- https://www.indianetzone.com/25/gahadvalas_indian_ruling_dynasty.htm

<https://www.news9live.com/knowledge/kakatiya-dynasty-history-origin-rulers-and-all-you-need-to-know-about-one-of-the-important-empires-in-indian-history-201144>

<https://www.historyfiles.co.uk/KingListsFarEast/IndiaYadavas.htm>

46. Answer: C

Exp:

- **Pair 1 is incorrect:** Devi-Chandraguptam is an Indian Sanskrit-language political drama attributed to Vishakhadeva, who is generally identified with Vishakhadatta. In the play, king Ramagupta decides to surrender his queen Dhruvadevi ("Devi") to a Shaka enemy when besieged. Ramagupta's younger brother Chandragupta enters the enemy camp disguised as the queen, and kills the enemy ruler.
- **Pair 2 is correct:** Hammira Mahakavya is a 15th-century Indian Sanskrit epic poem written by the Jain scholar Nayachandra Suri. It is a legendary biography of the 13th century Chahamana king Hammira. Much of the text describes Hammira's ancestry and his conquests of the neighbouring Hindu kingdoms. The last third part describes his conflict with Ala-ud-Din Khalji, the Sultan of Delhi. The text attributes Hammira's defeat against Ala-ud-Din to betrayal by his officers.
- **Pair 3 is correct:** Milinda Panha is a Buddhist scripture that was written between 100 BC and 200 AD by Nagarjuna. It is one of the most popular and authoritative Pali texts in Theravada Buddhist literature. Though it has not been included in the Tripitaka in the other Theravada Buddhist countries such as Sri Lanka and Thailand, it has been included in the Burmese Tripitaka as the 18th book of the Kuddhaka Nikaya.
- **Pair 4 is correct:** Somadevasuri, a Jain poet who lived in the latter part of the 10th century wrote Nitivakyamrita, a hand book on polity in 32 chapters. Based on the model of Kautilya's Arthashastra, it furnishes vivid account of the seven elements of the state and sets forth guidelines for the proper functioning of the state.

References

<https://dbpedia.org/page/Devichandraguptam>

https://dbpedia.org/page/Hammira_Mahakavya

<https://drarisworld.wordpress.com/2021/05/26/an-introduction-to-milinda-panha-questions-of-king-milinda/>

<https://www.kamat.com/database/?CitationID=10840>

47. Answer: B**Explanation**

- Jaina metaphysics is both realistic and pluralistic. It draws a sharp distinction between animate substances (jivas : souls) and inanimate substances (ajivas : non-souls).
- Jainism is basically dualistic. It is also pluralistic (anekantavada) in that it recognizes the existence of an infinite number of animate and inanimate substances, each possessing an infinite number of characteristics of its own.
- Since it teaches that the infinite number of substances exists independently of our perceptions or awareness of them, Jainism may also be described as epistemological and metaphysical realism.
- The universe functions through the interaction of living souls and the five categories of non-living entities: ether (akasa), the means or condition of movement (dharma), the means or condition of rest (adharma), time (kala), and matter (pudgala).
- Souls are not only the property of animal and plant life, but also of entities such as stones, rocks, running water, and many other natural objects not looked upon as living by other sects.

Reference:

<https://egyankosh.ac.in/bitstream/123456789/35228/1/Unit-2.pdf>

48. Answer: A**Explanation**

- Deva Raya I ascended the throne of Vijayanagara in 1406 A.D. He did not have a very auspicious start to his reign, having had to face defeat at the hands of the Bahmani Sultan Firzoz Shah Bahmani.

- One of Deva Raya I's greatest achievements was in the field of irrigation and water supply. He realised that the lack of water for irrigation as well as drinking water supply was hampering the growth of Vijayanagara.
- First he built a huge dam across the Tungabhadra River, with huge boulders. Elephants were used to transport these boulders, and build the barrage across the Tungabhadra, which helped a lot in irrigating the fields around.
- Realising that the major problem being faced by Vijayanagara was drinking water, he built a huge aqueduct cum from the Tungabhadra to the capital which was 24 km away. This aqueduct acted like a canal to the capital, bringing in water to the thirsty city.

Reference: <https://historyunderyourfeet.wordpress.com/2014/07/28/vijayanagara-empire-rise-of-the-sangama-dynasty/>

49. Answer: C**Explanation**

- Bahadur Shah was a sultan of the Muzaffarid dynasty who reigned over the Gujarat Sultanate, a late mediaeval kingdom in India from 1526 to 1535 and again from 1536 to 1537.
- The city of Bassein was already given to the Portuguese by Bahadur Shah in 1534, and after that, he signed another treaty with them and gave them Daman & Diu, Mumbai and Vasai, thus purchasing their support.
- Early in 1535, the Portuguese Governor De Cunha had led his expedition for the capture of the town in Diu, but was defeated by the Sultan. However, around that period, the Gujarat Sultan Bahadur Shah's kingdom was overwhelmed by the Mughal invasion.
- Pressed by Mughal king Humayun on one side and the Portuguese at the gates of Diu, Bahadur Shah entered into a treaty with Nuno De Cunha on October 25, 1535 who agreed to assist Bahadur Shah against his enemy by land and sea. In turn he received permission to construct a fortress at Diu and a site was granted for this purpose in the harbour.
- After the Mughal danger receded, the Shah of Gujarat realised his mistake in allowing the

Portuguese to construct the fort. Finally Diu was conquered by the Portuguese in 1546 who ruled there till 1961.

- In 1537 while Bahadur shah was visiting them on a Portuguese ship anchored off the coast of Gujarat, he was killed by the Portuguese and his body was thrown in the Arabian Sea.

Reference:

<https://diu.gov.in/history/>

50. Answer -D

Explanation:

Charter Act of 1833

- The Governor-General of Bengal was elevated to the position of Governor-General of India, with exclusive legislative powers.
- Bombay and Madras presidencies were drained of their legislative powers.
- Civil and military powers were granted to India's Governor-General.
- For the first time, the Government of India was established, with authority over the entire territory possessed by the British in India.
- **Lord William Bentick** became the first governor-general of India

51. Answer: B

Explanation:

- **Statement 1 is incorrect: Janani Suraksha Yojana (JSY)** is a safe motherhood intervention under the **National Rural Health Mission (NHM)** and not of the State Health Departments.
- **Statement 2 is correct: It is being implemented with the objective of reducing maternal and neonatal mortality** by promoting institutional delivery among pregnant women.
- **Statement 3 is correct: It aims to promote institutional delivery among poor pregnant women.**
- **Statement 4 is incorrect: Providing public health facilities to sick infants upto 1 year of age is a provision under Janani Shishu Suraksha Karyakram (JSSK) and not Janani Suraksha Yojana.**

Reference:

<https://vikaspedia.in/health/nrhm/national->

[health-programmes-1/janani-suraksha-yojana](#)

52. Answer: C

Explanation:

- **Statement 1 is incorrect:** The Government of India implements Anaemia Mukh Bharat (AMB) strategy under POSHAN Abhiyaan. **The Anemia Mukh Bharat strategy** focuses on **Prophylactic Iron and Folic Acid supplementation and not Calcium.**
- **Statement 2 is correct: It promotes practice of delayed cord clamping after delivery (by 3 minutes) in health facilities.**
- **Statement 3 is correct: It provides for dose and regime for periodic deworming of childrens and adolescents.**
- **Statement 4 is correct: It addresses non-nutritional causes of anemia in endemic pockets with special focus on malaria, hemoglobinopathies, and fluorosis.**

Reference: <https://anemiamukhbharat.info/interventions/>

<https://pib.gov.in/PressReleasePage.aspx?PRID=1847435>

53. Answer: A

Explanation:

- **Statement 1 is Correct:** Carbon fiber-reinforced composite materials are used to make aircraft and spacecraft parts, racing car bodies, golf club shafts, The strength of carbon fiber allows to be used for making car body parts, such as the roof or trunk lid, some mechanical parts or interior components, including pillars or floor panels. So, statement 1 is correct
- **Statement 2 is Incorrect:** Currently, carbon fiber waste or other fiber composites can be recycled using four types of technologies. There are two main types of carbon fibre waste. The first type of waste is virgin carbon fibre offcuts of the product generated from dry fibre and the non-used expired material, which are also called scrap. So, statement 2 is incorrect.

54. Answer: C

Explanation:

- **Statement 1 is Correct:** Accelerometers are used in cars as the industry method of **detecting car crashes and deploying airbags almost instantaneously.**
- **Statement 2 is Correct:** Accelerometers in laptops protect hard drives from damage. If the laptop were to suddenly drop while in use, the accelerometer would detect the sudden free fall and immediately turn off the hard drive to avoid hitting the reading heads into the hard drive platter
- **Statement 3 is Correct:** An accelerometer is an electromechanical device used to **measure acceleration forces.** Such forces may be static, like the continuous force of gravity or, as is the case with many **mobile devices, dynamic to sense movement such as tilt movement or vibrations.**

Reference:

<https://www.livescience.com/40102-accelerometers.html#:~:text=The%20purpose%20of%20the%20accelerometer&text=For%20example%2C%20accelerometers%20in%20laptops,into%20the%20hard%20drive%20platter.>

55 . Answer: B

Explanation:

- **Statement 1 is Correct:** In recent decades, the use of **biofilters to removal of contaminants from wastewater and waste gases** has been **developed.** Biofilters use microorganisms, which are capable of degrading many compounds, fixed to an inorganic/organic medium (carrier) to break down pollutants present in a fluid stream.
- **Statement 2 is Correct:** Ammonia is removed from an aquarium system through the use of a biofilter. The biofilter provides a substrate on which nitrifying bacteria grow. These **nitrifying bacteria consume ammonia and produce nitrite,** which is also toxic to fish.
- **Statement 3 is Incorrect:** Submerged flow biofilters, utilising a filtermedia with specific surface area of approximately 141 rrl/m³, were used to **remove nitrogen and phosphorus from a synthetic fish farm water.**

Reference:

<https://www.sciencedirect.com/science/article/abs/pii/S0273122396008451>

<https://www.sciencedirect.com/topics/nursing-and-health-professions/biofilter#:~:text=Ammonia%20is%20first%20converted%20to,spp.%2C%20and%20Nitrosococcus%20spp.>

56. Answer: A

Explanation:

- **Pair 1 is incorrectly matched:** Cepheids, also called Cepheid Variables, are stars which brighten and dim periodically. This behavior allows them to be used as cosmic yardsticks out to distances of a few tens of millions of light-years. They are reasonably abundant and very bright. Astronomers can identify them not only in our Galaxy, but in other nearby galaxies as well.
- **Pair 2 is incorrectly matched:** A nebula is a giant cloud of dust and gas in space. Some nebulae (more than one nebula) come from the gas and dust thrown out by the explosion of a dying star, such as a supernova. Other nebulae are regions where new stars are beginning to form. Nebulae are made of dust and gasses mostly hydrogen and helium. The dust and gases in a nebula are very spread out, but gravity can slowly begin to pull together clumps of dust and gas. As these clumps get bigger and bigger, their gravity gets stronger and stronger.
- **Pair 3 is correctly matched:** Most neutron stars are observed as pulsars. Neutron stars are formed when a massive star runs out of fuel and collapses. The very central region of the star – the core – collapses, crushing together every proton and electron into a neutron. Pulsars are rotating neutron stars observed to have pulses of radiation at very regular intervals that typically range from milliseconds to seconds. Pulsars have very strong magnetic fields which funnel jets of particles out along the two magnetic poles. These accelerated particles produce very powerful beams of light.

57. Answer: D

Explanation:

Option (D) is correct : Japan

- GLONASS – Russia
- Bei-Dou China

- QZSS – Japan
- Galileo – European Union
- NAVIC – India

References: [How Many Countries Have Their Own GPS System \[Let's Find Out\] \(trackschoolbus.com\)](#)

58. Answer: D

Explanation:

- **Statement 1 is incorrect:** Cruise missiles are jet-propelled at subsonic speeds throughout their flights, while ballistic missiles are rocket-powered only in the initial (boost) phase of flight, after which they follow an arcing trajectory to the target. As gravity pulls the ballistic warhead back to Earth, speeds of several times the speed of sound are reached.
- **Statement 2 is incorrect:** India's first long-range **surface-to-surface nuclear capable ballistic missile** is Agni-V. It uses a three-stage solid-fuelled engine, which has been developed by India's Defence Research and Development organization (DRDO).

BRAHMOS is a universal long range **supersonic cruise missile system** that can be launched from land, sea and air. BRAHMOS has been jointly developed by DRDO, India, and NPOM, Russia.

Reference:

<https://www.brahmos.com/content.php?id=10&sid=9>

59. Answer: C

Explanation:

- **Statement 1 is correct:** Mercury (Hg) is one of the most harmful metals and has been a public health concern according to the World Health Organization (WHO). Artisanal and small-scale gold mining (ASGM) is the world's fastest-growing source of Hg and can release Hg into the atmosphere, hydrosphere, and geosphere.
- **Statement 2 is correct:** Mercury is an invisible hazardous pollutant, whose effects are visible after a long time. Its symptoms are similar to common diseases as such it becomes very difficult to identify its ill effects. Coal fired thermal power plants are increasing faster than ever to meet overall developmental & ever increasing energy needs of the country. During the process of coal combustion, in coal

fired thermal power plants, the mercury contained as trace elements in coal is released.

- **Statement 3 is correct:** Acute or chronic mercury exposure can cause adverse effects during any period of development. Mercury is a highly toxic element; there is no known safe level of exposure. Ideally, neither children nor adults should have any mercury in their bodies because it provides no physiological benefit.

Reference:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9142007/>
<https://www.ijert.org/research/mercury-emissions-control-from-coal-fired-thermal-power-plants-in-india-critical-review-suggested-policy-measures-IJERTV2IS110612.pdf>
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3096006/#:~:text=Mercury%20is%20a%20highly%20toxic,known%20safe%20level%20of%20exposure.>

60. Answer: C

Explanation:

- **Statement 1 is correct:** Hydrogen is considered an alternative fuel under the Energy Policy Act of 1992. The interest in hydrogen as an alternative transportation fuel stems from its ability to power fuel cells in zero-emission vehicles, its potential for domestic production, and the fuel cell electric vehicle's fast filling time and high efficiency. In fact, a fuel cell coupled with an electric motor is two to three times more efficient than an internal combustion engine running on gasoline. **Hydrogen can also serve as fuel for internal combustion engines.**
- **Statement 2 is correct:** By **blending green hydrogen with natural gas**, utilities can reduce the carbon intensity of their delivered fuel. **Hydrogen** produced through clean pathways can be **injected into natural gas pipelines**, and the **resulting blends can be used to generate heat and power** with lower emissions than using natural gas alone.
- **Statement 3 is correct:** Like **all-electric vehicles, fuel cell electric vehicles (FCEVs) use electricity to power an electric motor.** In contrast to other electric vehicles, FCEVs produce electricity using a fuel cell powered by

hydrogen, rather than drawing electricity from only a battery. During the vehicle design process, the vehicle manufacturer defines the power of the vehicle by the size of the electric motor(s) that receives electric power from the appropriately sized fuel cell and battery combination. Although automakers could design an FCEV with plug-in capabilities to charge the battery, most FCEVs today use the battery for recapturing braking energy, providing extra power during short acceleration events, and to smooth out the power delivered from the fuel cell with the option to idle or turn off the fuel cell during low power needs. The amount of energy stored onboard is determined by the size of the hydrogen fuel tank. This is different from an all-electric vehicle, where the amount of power and energy available are both closely related to the battery's size.

References:

<https://www.mdpi.com/2673-4141/3/4/25>

<https://www.mdpi.com/2673-4141/3/4/25>

61. Answer A**Explanation:**

Only Option A is correct: Ukraine shares its border with seven countries

- Belarus
- Poland
- Slovakia
- Hungary
- Romania
- Moldova

62. Answer (c)**Explanation:**

- **Statement 1 is not correct:** Insolation rises sharply from approximately 50 joules at the poles to 275 joules at the equator. Terrestrial radiation varies less, from 120 joules at the poles to 200 joules at the equator.
- **Statement 2 is not correct:** Water vapor, carbon dioxide, methane, and other trace gasses in Earth's atmosphere absorb the longer wavelengths of outgoing infrared radiation from Earth's surface. Nearly all atmospheric water vapor or moisture is found in the

troposphere, so it is the layer where most of Earth's weather takes place.

- **Statement 4 is not correct ;** Infrared waves, or infrared light, are part of the electromagnetic spectrum. People encounter Infrared waves every day; the human eye cannot see it, but humans can detect it as heat.

References:

[Infrared Waves | Science Mission Directorate \(nasa.gov\)](https://www.nasa.gov/science/mis/Infrared_Waves.html)

63. Answer: (d)**Explanation:**

- **Statement 1 is NOT CORRECT:** The type of clay particles present in tropical rainforest soil has a poor ability to trap nutrients and stop them from washing away. Even if humans artificially add nutrients to the soil, the nutrients mostly wash away and are not absorbed by the plants.
- **Statement 2 is CORRECT:** The high temperature and moisture of tropical rainforests cause dead organic matter in the soil to decompose more quickly than in other climates, thus releasing and losing its nutrients rapidly. The high volume of rain in tropical rainforests washes nutrients out of the soil more quickly than in other climates.

64. Answer- (a)**Explanation:**

- **Statement 1 is correct :** The reason for the larger temperature variation in inland areas is because rock and soil have a lower heat capacity than water. As a result, land areas both lose and gain heat much faster than maritime areas.
- **Statement 2 is correct:** Specific heat is defined by the amount of heat needed to raise the temperature of 1 gram of a substance 1 degree Celsius (°C). Water has a high specific heat, meaning it takes more energy to increase the temperature of water compared to other substances

65. Answer: (c)**Explanation:**

- **Statement 1 is correct :** The primary or P waves travel most quickly and are the first to be registered by the seismograph. Secondary, or S, waves travel more slowly.

- **statement 2 is correct** :_P-waves are also known as longitudinal waves because the displacement of the medium occurs in the same or opposite direction to (parallel to) the wave's propagation direction. P-waves cause density differences in the material, causing it to expand (rarefaction) and compress (compression). S waves are transverse waves, meaning that the direction of particle movement of a S wave is perpendicular to the direction of wave propagation.

66. Answer: (d)**Explanation:**

- **Statements 1 and 3 are incorrect:** India's first Ultra Mega Power Project (UMPP) at Mundra in Coastal Gujarat, a 4,000 MW coal fired plant, is owned by Coastal Gujarat Power Limited (CGPL), a Tata Power group company. The CGPL UMPP will be India's first private sector power project using supercritical boiler technology; and is expected to be the most energy efficient plant in India. CGPL will draw seawater from the Mundra coast for various utilities and for their main boiler. Aquatech has been awarded the contract for executing the 4,622 GPM (25,200 m³/day) (permeate) capacity Seawater Reverse Osmosis Plant (SWRO) on EPC Basis.
- **Statement 2 is incorrect:** New research finds that 40 percent of the country's thermal power plants are located in areas facing high water stress, a problem since these plants use water for cooling.

67. Answer: (a)**Exp:**

- In the Wolbachia method, Aedes aegypti mosquitoes are introduced with the bacterium in the lab and then researchers release them into the wild.
- Now, the Wolbachia-infected mosquitoes breed with their wild counterparts which result in a growing percentage of the bacterium in those mosquitoes.

References:

<https://www.thehindu.com/news/cities/Vijayawada/govt-relies-on-wolbachia-to-control-dengue/article24742129.ece>

68. Answer: (c)**Exp:**

- **Statement 1 is correct:** Basalt enhances the ability of soils to pull CO₂ from the air and sequester it in the ground. Basalt is formed from lava that cools quickly and is compatible with existing organic fertilizer standards. It dissolves into the soil, initiating a chemical reaction that boosts the capacity for CO₂ capture and storage. At the same time, it is safe for crops and delivers at least six nutrients, potassium, phosphorus and calcium among them.
- **Statement 2 is correct:** Adding alkalinity to the ocean removes carbon dioxide (CO₂) from the atmosphere through a series of reactions that convert dissolved CO₂ into stable bicarbonate and carbonate molecules, which in turn causes the ocean to absorb more CO₂ from the air to restore equilibrium.
- **Statement 3 is correct:** Mineral carbonation (MC) is emerging as a potential CCS technology solution to sequester CO₂ from smaller/medium emitters, where geological sequestration is not a viable option. In situ mineral carbonation involves the injection of CO₂ into underground reservoirs to promote the reaction between CO₂ and alkaline-minerals present in the geological formation to form carbonates.

Reference:

<https://www.sustainability-times.com/sustainable-business/rock-dust-applied-to-soils-may-help-capture-2b-tons-of-co2/>
<https://www.american.edu/sis/centers/carbon-removal/fact-sheet-ocean-alkalinization.cfm>
<https://pubs.rsc.org/en/content/articlelanding/2014/cs/c4cs00035h>

69. Answer – (a)**Explanation -**

- Aerial metagenomics involves the collection and analysis of genetic material, particularly DNA, from the air in a specific habitat or environment. It aims to capture and study the genetic material present in airborne particles

such as microorganisms, pollen, fungal spores, and other biological components

Reference:

<https://www.economist.com/science-and-technology/2022/01/08/wildlife-can-now-be-detected-by-sniffing-dna-in-the-air>

70. Answer: A**Explanation:**

- **Microsatellite DNA:** These DNA sequences are typically non-coding. The number of repeated segments within a microsatellite sequence often varies among people, which makes them useful as polymorphic markers **for studying inheritance patterns in families** or for creating a DNA fingerprint from crime scene samples and **Evolutionary analysis**.

Reference:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5004837/>

71. Answer: B**Explanation:**

- **Statement 1 is incorrect:** As per MSMED Act, 2006, the 'medium enterprises' are those with investments in plant and machinery with Rs. 20 Crore and Rs. 100 Crore of turnover.
- **Statement 2 is correct:** The Government has taken measures for easing access to credit for MSMEs. As reported by Reserve Bank of India (RBI) some of the measures taken by RBI for improving flow of credit to MSME sector are as under: Priority Sector Lending Guidelines: In terms of Master Direction on 'Priority Sector Lending (PSL) – Targets and Classification' dated September 4, 2020, all bank loans to MSMEs conforming to the conditions prescribed therein qualify for classification under priority sector lending.

Reference: <https://msme.gov.in/fags/q1-what-definition-msme>
<https://pib.gov.in/PressReleaseframePage.aspx?PRID=1909926>

72. Answer: C**Explanation:**

- **Statement 1 is correct:** A central bank digital currency (CBDC) is the digital form of a country's fiat currency. Alternatives to SWIFT and the U.S. dollar are coming from two directions: cryptocurrencies and central bank digital currencies. **Thus it is possible to make payments in digital currencies without using us dollar or swift system.**
- **Statement 2 is correct:** The digital currencies like digital yuan is programmable to the point that the currency can be made to expire, thus forcing consumers to use it up by a certain date. Programmable payments enable automatic transfers of money when pre-determined conditions are met.

Reference:

<https://bfsi.economictimes.indiatimes.com/news/policy/digital-currency-yuan-comes-with-an-expiry-date-spend-or-it-will-vanish/82059471>
<https://www.brookings.edu/techstream/the-innovators-dilemma-and-u-s-adoption-of-a-digital-dollar/>
https://edps.europa.eu/data-protection/our-work/publications/techdispatch/2023-03-29-techdispatch-12023-central-bank-digital-currency_en

73. Answer: D**Explanation:**

- **Option (d) is CORRECT:** Beta (β) is a measure of the volatility—or systematic risk—of a security or portfolio compared to the market as a whole (usually the S&P 500).
- Stocks with betas higher than 1.0 can be interpreted as more volatile than the S&P 500.

Reference:

<https://www.investopedia.com/terms/b/beta.asp>

74. Answer: B**Explanation**

- **Statement 1 is incorrect:** The SHG Bank Linkage Project launched by NABARD in 1992 has blossomed into the world's largest microfinance project.

- **Statement 2 is correct:** Self Help Groups work as a collective guarantee system for members who propose to borrow from organized sources. The poor collect their savings and save it in banks. In return they receive easy access to loans with a small rate of interest to start their micro unit enterprise.
- **Statement 3 is correct:** Commercial banks, co-operative banks and the regional rural banks have been actively participating in the Self-Help Group-Bank Linkage Programme (SBLP). NABARD later co opted many others as SHPIs including the rural financial institutions (RRBs, DCCBs, PACS), Farmers' Clubs (FCs), SHG Federations, Individual Rural Volunteers (IRVs) etc. These stakeholders were encouraged to take up promotion of SHGs by way of promotional grant assistance from NABARD.

Reference:

[https://www.nabard.org/contentsearch.aspx?AID=225&Key=shg+bank+linkage+programme#:~:text=Self%20Help%20Group%20%E2%80%93%20Bank%20Linkage%20Programme%20\(SHG%20DBLP\)&text=What%20started%20as%20a%20pilot,which%20follow%20'Panchsutrass'%20viz.](https://www.nabard.org/contentsearch.aspx?AID=225&Key=shg+bank+linkage+programme#:~:text=Self%20Help%20Group%20%E2%80%93%20Bank%20Linkage%20Programme%20(SHG%20DBLP)&text=What%20started%20as%20a%20pilot,which%20follow%20'Panchsutrass'%20viz.)
<https://vikaspedia.in/social-welfare/rural-poverty-alleviation-1/self-help-groups/overview-of-shgs>

75. Answer: D

Explanation:

- **Statement 1 is incorrect :**
 - **One of the objectives of the National Health Policy 2017 is 'To improve the overall health status through concerted policy actions in every sector and expand preventive, promotive, curative, palliative and rehabilitative services offered throughout the Public Health Sector with an ultimate focus on quality'.**
 - Also, the Primary Health Centres (PHCs) which are the first point of contact between a village community and a medical officer provide curative and preventive services to 20,000–30,000 people and serve as a referral unit for six subcenters with four to six beds each.
 - **Thus India's public sector health care system focuses on all the aspects of**

health care including curative, preventive, promotive and rehabilitative care.

- **Statement 2 is correct:**

- All Indian citizens can get free outpatient and inpatient care at government facilities. **Under India's decentralized approach to health care delivery, the states are primarily responsible for organizing health services.** But because of severe shortages of staff and supplies at government facilities, many households seek care from private providers and pay out-of-pocket.

Reference:

<https://www.indiafilings.com/learn/national-health-policy/>
<https://www.commonwealthfund.org/international-health-policy-center/countries/india>

76. ANSWER -C

Explanation

- **Statement 1 is correct** - India is the largest groundwater user globally with 26% of global groundwater extraction. Groundwater in India is a critical resource. However, an increasing number of aquifers are reaching unsustainable levels of exploitation. If current trends continue, in 20 years about 60% of all India's aquifers will be in a critical condition, says a World Bank report, Deep Wells and Prudence. This will have serious implications for the sustainability of agriculture, long-term food security, livelihoods, and economic growth. It is estimated that over a quarter of the country's harvest will be at risk. There is an urgent need to change the status quo.
- **Statement 2 is incorrect** - The country has 18 percent of the world's population, but only 4 percent of its water resources, making it among the most water-stressed in the world. A large number of Indians face high to extreme water stress, according to a recent report by the government's policy think tank, the NITI Aayog. India's dependence on an

increasingly erratic monsoon for its water requirements increases this challenge. Climate change is likely to exacerbate this pressure on water resources, even as the frequency and intensity of floods and droughts in the country increases.

- But to sustain this high population and meet their need of Water , the government is focusing on various sustainable methods rather than promoting the extraction of Groundwater.

77. Answer: B**Explanation:**

- **Statement 1 is correct: Article 355:** It shall be the duty of the Union to protect States against external aggression and internal disturbance It shall be the duty of the Union to protect every State against external aggression and internal disturbance and to ensure that the government of every State is carried on in accordance with the provisions of this Constitution.
- **Statement 2 is correct: Article 22:** Protection against arrest and detention in certain cases:
(1) No person who is arrested shall be detained in custody without being informed, as soon as may be, of the grounds for such arrest nor shall he be denied the right to consult, and to be defended by, a legal practitioner of his choice.
(2) Every person who is arrested and detained in custody shall be produced before the nearest magistrate within a period of twenty four hours of such arrest excluding the time necessary for the journey from the place of arrest to the court of the magistrate and no such person shall be detained in custody beyond the said period without the authority of a magistrate.
(3) Nothing in clauses (1) and (2) shall apply (a) to any person who for the time being is an enemy alien; or (b) to any person who is arrested or detained under any law providing for preventive detention.
- **Statement 3 is incorrect: Prevention of Terrorism Act, 2002:** Certain Confession made to police officers to be taken into consideration: A confession made by a person before a police officer not lower in rank than a

Superintendent of police and recorded by such police officer either in writing or on any mechanical or electronic device like cassettes, tapes or sound tracks from out of which sound or images can be reproduced, shall be admissible in the trial of such person for an offence under this Act or the rules made thereunder.

78. Answer: D**Explanation:**

- **Option D is correct:** For the first time ever, Somalia is pushed to the top of the International Rescue Committee’s Emergency Watchlist, as a devastating drought, coupled with the effects of three decades of conflict, have created a catastrophic food crisis. Aside from a protracted civil conflict, Somalia is experiencing its worst drought in 40 years. This is no “natural disaster.” Human-caused climate change has increased the frequency and severity of droughts, decades of conflict have significantly eroded the country’s institutions, and the combined damage to Somalia’s domestic food production have made the country dangerously reliant on imported grains—specifically from Ukraine and Russia.

Reference: <https://www.rescue.org/article/crisis-somalia-catastrophic-hunger-amid-drought-and-conflict>

79. Answer: C**Explanation:**

- **Statement 1 and 2 are correct:** The biodiversity management committees (BMCs) have been constituted in local bodies across the length and breadth of the country under the provisions of the national Biological Diversity Act, 2002 and relevant state rules enacted under it. While primarily responsible for the preparation of peoples’ biodiversity registers (PBRs) containing comprehensive knowledge on the availability and knowledge of local biological resources, their medicinal, or any other use or associated traditional knowledge, the BMCs also have important functions in determining access and benefit-sharing (ABS), including the power to levy collection fees on the access of biological

resources within its jurisdiction. BMCs are, thus, key to the realisation of the objectives of the Nagoya Protocol (2010), negotiated within the CBD, enjoining parties to take measures to ensure that benefits from the utilisation of genetic resources and associated traditional knowledge accrue to indigenous and local communities on mutually agreed terms.

Reference:

<https://www.epw.in/journal/2022/9/commentary/paper-practice.html>

80. Answer: A

Explanation:

- **Statement 1 is incorrect:** Article 54: The President of India is elected by the Members of an Electoral College consisting of (a) the elected members of both Houses of Parliament, and (b) the elected members of the Legislative Assemblies of all States [including National Capital Territory of Delhi and the Union Territory of Puducherry]. The **Members nominated** to either House of Parliament or the Legislative Assemblies of States, including NCT of Delhi and Union Territory of Puducherry, **are not eligible to be included in the Electoral College.**
- **Statement 2 is incorrect:** Higher the population, higher is the value of vote of each MLA of that State and not the number of elective Assembly seats. For example:

Total population of Andhra Pradesh (1971 census)	: 2,78,00,586
Total No of elective seats in the State Assembly	: 175
No. of votes for each member	: <u>2,78,00,586</u>
	1000×175
	= 158.8605
	= 159

Total Value of votes of all members of each State Assembly is worked out by multiplying the number of elective seats in the Assembly by the number of votes for each member, e.g., $175 \times 159 = 27,825$ for Andhra Pradesh. The total value of votes of all the States added together is divided by the total number of elected members of Parliament (Lok Sabha 543 + Rajya Sabha 233) to get the value of votes per each Member of Parliament.

APPENDIX-I

**PRESIDENTIAL ELECTION, 2017
STATEMENT OF VALUE OF VOTES OF ELECTED MEMBERS
OF THE STATE LEGISLATIVE ASSEMBLIES AND
BOTH HOUSES OF PARLIAMENT AS PER
PROVISIONS OF ARTICLE 55(2) OF THE CONSTITUTION OF INDIA**

SL. No.	NAME OF STATE	NUMBER OF ASSEMBLY SEATS (ELECTIVE)	POPULATION (1971 CENSUS)	VALUE OF VOTE OF EACH M.L.A.	TOTAL VALUE OF VOTES FOR THE STATE
(1)	(2)	(3)	(4)	(5)	(6)
1.	ANDHRA PRADESH	175	27800586	159	$159 \times 175 = 27825$
2.	ARUNACHAL PRADESH	60	467511	8	$008 \times 060 = 480$
3.	ASSAM	126	14625152	116	$116 \times 126 = 14616$
4.	BIHAR	243	42126236	173	$173 \times 243 = 42039$
5.	CHHATTISGARH	90	11637494	129	$129 \times 090 = 11610$
6.	GOA	40	795120	20	$020 \times 040 = 800$
7.	GUJARAT	182	26697475	147	$147 \times 182 = 26754$
8.	HARYANA	90	10036808	112	$112 \times 090 = 10080$
9.	HIMACHAL PRADESH	68	3460434	51	$051 \times 068 = 3468$
10.	JAMMU & KASHMIR*	87	6300000	72	$072 \times 087 = 6264$
11.	JHARKHAND	81	14227133	176	$176 \times 081 = 14256$
12.	KARNATAKA	224	29299014	131	$131 \times 224 = 29344$
13.	KERALA	140	21347375	152	$152 \times 140 = 21280$
14.	MADHYA PRADESH	230	30016625	131	$131 \times 230 = 30130$
15.	MAHARASHTRA	288	50412235	175	$175 \times 288 = 50400$
16.	MANIPUR	60	1072753	18	$018 \times 060 = 1080$
17.	MEGHALAYA	60	1011699	17	$017 \times 060 = 1020$
18.	MIZORAM	40	332390	8	$008 \times 040 = 320$
19.	NAGALAND	60	516449	9	$009 \times 060 = 540$
20.	ODISHA	147	21944615	149	$149 \times 147 = 21903$
21.	PUNJAB	117	13551060	116	$116 \times 117 = 13572$
22.	RAJASTHAN	200	25765806	129	$129 \times 200 = 25800$
23.	SIKKIM	32	209843	7	$007 \times 032 = 224$
24.	TAMIL NADU	234	41199168	176	$176 \times 234 = 41184$
25.	TELANGANA	119	15702122	132	$132 \times 119 = 15708$
26.	TRIPURA	60	1556342	26	$026 \times 060 = 1560$
27.	UTTARAKHAND	70	4491239	64	$064 \times 070 = 4480$
28.	UTTAR PRADESH	403	83849905	208	$208 \times 403 = 83824$
29.	WEST BENGAL	294	44312011	151	$151 \times 294 = 44394$
30.	NCT OF DELHI	70	4065698	58	$058 \times 070 = 4060$
31.	PUDUCHERRY	30	471707	16	$016 \times 030 = 480$
	TOTAL	4120	549302005		= 549495

- **Statement 3 is incorrect:** The value of vote of each MLA of Kerala is greater than that of Madhya Pradesh.

13. KERALA	140	21347375	152	$152 \times 140 = 21280$
14. MADHYA PRADESH	230	30016625	131	$131 \times 230 = 30130$

- **Statement 4 is correct:** The value of votes for the Members of each Legislative Assembly varies.

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9.	HIMACHAL PRADESH	68	3460434	51	051 × 068 = 3468
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11.	JHARKHAND	81	14227133	176	176 × 081 = 14256
12.	KARNATAKA	224	29299014	131	131 × 224 = 29344
13.	KERALA	140	21347375	152	152 × 140 = 21280
14.	MADHYA PRADESH	230	30016625	131	131 × 230 = 30130
15.	MAHARASHTRA	288	50412235	175	175 × 288 = 50400
16.	MANIPUR	60	1072753	18	018 × 060 = 1080
17.	MEGHALAYA	60	1011699	17	017 × 060 = 1020
18.	MIZORAM	40	332390	8	008 × 040 = 320
19.	NAGALAND	60	516449	9	009 × 060 = 540
20.	ODISHA	147	21944615	149	149 × 147 = 21903
21.	PUNJAB	117	13551060	116	116 × 117 = 13572
22.	RAJASTHAN	200	25765806	129	129 × 200 = 25800
23.	SIKKIM	32	209843	7	007 × 032 = 224
24.	TAMIL NADU	234	41199168	176	176 × 234 = 41184
25.	TELANGANA	119	15702122	132	132 × 119 = 15708
26.	TRIPURA	60	1556342	26	026 × 060 = 1560
27.	UTTARAKHAND	70	4491239	64	064 × 070 = 4480
28.	UTTAR PRADESH	403	83849905	208	208 × 403 = 83824
29.	WEST BENGAL	294	44312011	151	151 × 294 = 44394
30.	NCT OF DELHI	70	4065698	58	058 × 070 = 4060
31.	PUDUCHERRY	30	471707	16	016 × 030 = 480
	TOTAL	4120	549302005		= 549495

81. Answer A

Explanation:

- **Option (A) is the correct answer :** Archaeological Survey of India, Chennai Circle, formerly called Southern Circle covering the whole area of the then Madras Presidency was established in the year 1881.
- Sir Alexander Rea became the first Superintendent in 1902. Subsequently, great scholars like A.H. Longhurst, Pundit Hirananda Shastri, H.Hayatkhan, T.N.Ramachandran, V.D.Krishnaswamy, Krishna Deva, K.R. Srinivasan, K.V.Soundararajan and others headed the Southern Circle. _

References:

[About Us :Archaeological Survey of India, Chennai Circle \(asichennai.gov.in\)](http://asichennai.gov.in)

82. Answer: (b)

Explanation:

- **Statement 1 is not correct :** Besnagar was known as Bhelsa during the medieval period. It became famous for the temple of Sun god Bhillasvanin.

- **Statement 2 is correct :** Bhaja Caves are a group of 22 rock-cut caves dating back to the 2nd century BC located in the city of Pune, India
- **Statement 3 is correct :** Sittanavasal: a Jain heritage site in Tamil Nadu,

References:

<https://www.thehindu.com/news/national/tamil-nadu/sittanavasals-jain-monuments-weathering-the-elements-and-public-apathy/article65931192.ece>

83. Answer: A

Explanation:

- **Statement 1 is correct :** In 2015, the Government of India decided to designate the 7th August every year, as the National Handloom Day.
- **Statement 2 is correct:** Swadeshi Movement which was launched on 7th August, 1905 had encouraged indigenous industries and in particular handloom weavers.

References:

<https://www.mygov.in/campaigns/national-handloom-day/>

84. Answer: D

Explanation:

- **Statement 1 is not correct:** There are standard sizes mentioned on the official website of Home affairs, sizes like 450x300, 900x600, but not 600x400.
- **Statement 2 is correct** The National Flag shall be rectangular in shape. The Flag can be of any size but the ratio of the length to the height (width) of the Flag shall be 3:2.

Reference

https://www.mha.gov.in/sites/default/files/flag_codeofindia_070214.pdf

85. Answer: (c)

Explanation:

- **Statement-I is correct:** Constitution Day (IAST: Samvidhāna Divasa), also known as "National Law Day" , is celebrated in India on 26 November every year to commemorate the

adoption of the Constitution of India. On 26 November 1949, the Constituent Assembly of India adopted the Constitution of India, and it came into effect on 26 January 1950

- **Statement-II is incorrect:** On 29 August, 1947, the Constituent Assembly set up a Drafting Committee under the Chairmanship of Dr. B.R. Ambedkar to prepare a Draft Constitution for India.

References:

<https://loksabha.nic.in/constituent/facts.html>

<https://www.mygov.in/campaigns/constitution-day/>

86. Answer: C

Explanation:

- **Statement 1 is correct:** Switzerland's gold exports amounted to a value of nearly 87 billion U.S. dollars. Switzerland is consistently the world's leading gold exporting country based on value. The United Kingdom was the second-largest gold exporter that year, with exports worth less than half as much as Switzerland's.
- **Statement 2 is not correct:** The United States holds the largest stockpile of gold reserves in the world by a considerable margin. In fact, the U.S. government has almost as many reserves as the next three largest gold-holding countries combined (Germany, Italy, and France). Russia rounds out the top five.

References:

[Gold export value by leading countries 2021 | Statista](https://www.investopedia.com/ask/answers/040715/what-countries-have-largest-gold-reserves) [https://www.investopedia.com/ask/answers/040715/what-countries-have-largest-gold-reserves.](https://www.investopedia.com/ask/answers/040715/what-countries-have-largest-gold-reserves)

<https://www.gold.org/goldhub/data/gold-reserves-by-country>

87. Answer: C

Explanation:

- **Statement 1 is correct:** The TTC is an essential platform for the U.S.-EU relationship to advance Transatlantic cooperation and democratic approaches to trade, technology, and security, with the goal of delivering benefits for people on both sides of the Atlantic.

- **Statement 2 is correct:** The Meeting involved discussions on roadmaps for future cooperation under the three working groups:
 - Strategic Technologies, Digital governance, and Digital Connectivity
 - Green and clean energy Technologies
 - Trade, Investment, and Resilient Value Chain.

<https://www.state.gov/u-s-eu-trade-and-technology-council-ttc/>

<https://www.trade.gov/useuttc> https://ec.europa.eu/commission/presscorner/detail/en/ip_22_7433

88. Answer: (d)

Explanation:

- **Statement 1 is incorrect:** India aims to raise the share of its exports in global trade to 3% by 2027 and 10% by 2047 from the current 2.1%.
- **Statement 2 is correct:** Companies that are registered in India and are involved in the manufacturing of goods covered under the target segments of the scheme can apply under the production linked incentive scheme. Many local companies and some foreign companies operating in India have taken advantage of production linked incentive scheme.

89. Answer: A

Exp:

- The Stability and Growth Pact (SGP) is a set of rules designed to ensure that countries in the European Union pursue sound public finances and coordinate their fiscal policies.
- Economic policies and activities are coordinated cohesively to safeguard the stability of the economic and monetary union.
- A state's budget deficit cannot exceed 3% of GDP and national debt cannot surpass 60% of GDP.
- Failure to abide by the rules can lead to a maximum fine of 0.5% of GDP.

References:

<https://www.investopedia.com/terms/s/stability-growth-pact.asp>

https://economy-finance.ec.europa.eu/economic-and-fiscal-governance/stability-and-growth-pact_en

90. Answer: D

Explanation :

- **Statement 1 is incorrect:** The Global Compact for Safe, Orderly and Regular Migration is the first intergovernmental agreement, prepared under the auspices of the United Nations, to cover all dimensions of international migration in a holistic and comprehensive manner. It was adopted at an intergovernmental conference on migration in Marrakesh, Morocco on 10 December 2018. All the countries have not signed the Compact for example, Australia is out of Deal.
- **Statement 2 is incorrect:** The global compact is non-legally binding. It is grounded in values of state sovereignty, responsibility-sharing, non-discrimination, and human rights, and recognizes that a cooperative approach is needed to optimize the overall benefits of migration, while addressing its risks and challenges for individuals and communities in countries of origin, transit and destination.
- **Statement 3 is incorrect:** As per its objectives and preamble the Compact covers only the International migration and related issues.

References:

<https://www.ohchr.org/en/migration/global-compact-safe-orderly-and-regular-migration-gcm>
<https://refugeesmigrants.un.org/migration-compact>

91. Answer: B

Explanation:

- **Statement 1 is NOT CORRECT:**
 - **Home Guards** are raised under the Home Guards Act and **Rules of the States/Union Territories**.
- **Statement 2 is CORRECT:**
 - The **role of Home Guards is to serve as an auxiliary Force to the Police in maintenance of internal security situations**, help the community in any kind of emergency such as an air-raid, fire, cyclone, earthquake, epidemic etc., help in

maintenance of essential services, promote communal harmony and assist the administration in protecting weaker sections, participate in socio-economic and welfare activities and perform Civil Defence duties.

- **Statement 3 is CORRECT:**

- In **border States, Border Wing Home Guards (BWHG) Bns. have been raised**, which serve as an auxiliary to the Border Security Force.
- **Fifteen Border Wing Home Guards (BWHG) Battalions** have been raised in the border States.

Reference: <https://dgfscdhg.gov.in/about-homeguard>

92. Answer: B

Explanation:

- Pair 1 is correctly matched : Section 6 of the Official Secrets Act, 1923 deals with Unauthorised use of uniforms; falsification of reports, forgery, personation, and false documents
- Pair 2 is not correctly matched : Section 7 of the Official Secrets Act, 1923 deals with Interfering with officers of the police or members of the Armed Forces of the Union.
- Pair 3 is correct : The amendment in 2019 in the Arms Act punishes the negligent use of firearms, such as celebratory gunfire during weddings or religious ceremonies which endanger human life or personal safety of others.
- The proposed punishment in this case is imprisonment of up to two years, or a fine of up to one lakh rupees, or both.

Reference:

http://timesofindia.indiatimes.com/articleshow/71914088.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cpps_t
<https://indiankanoon.org/doc/61492784/>

93. Answer: D

Explanation:

- **Pair 1 is NOT CORRECTLY MATCHED: Ituri conflict is between rebels and government in**

the eastern Democratic Republic of the Congo.

- **Pair 2 is NOT CORRECTLY MATCHED: Nagorno-Karabakh**, known as Artsakh by Armenians, is a landlocked mountainous area in the South Caucasus. **It was claimed by both Azerbaijan and Armenia** after the fall of the Russian Empire in 1917 and has remained a point of tension ever since.
- Following a summer of cross-border attacks, heavy fighting broke out along the Azerbaijan-Nagorno-Karabakh border in late September 2020.
- More than seven thousand soldiers and civilians were killed, with hundreds more Armenian and Azerbaijani soldiers wounded.
- **Pair 3 is NOT CORRECTLY MATCHED: In 2022, Russian President Putin has signed decrees recognising the occupied Ukrainian regions of Kherson and Zaporizhzhia as independent territories.**
- Putin's decrees signed are an intermediate step before the two regions are formally incorporated into Russia.

Reference:

<https://www.aljazeera.com/news/2023/4/27/rebel-attacks-deepen-displacement-crisis-in-drcs-ituri-province>
<https://www.cfr.org/global-conflict-tracker/conflict/nagorno-karabakh-conflict>
<https://www.trtworld.com/europe/russia-recognises-ukraine-s-kherson-zaporizhzhia-as-independent-states-61228>
<https://indianexpress.com/article/explained/explained-global/nagorno-karabakh-explained-tensions-rising-8575078/>

94. Answer: C

Explanation:

- **Statement 1 is correct : Israel maintains full diplomatic relations with two of its Arab neighbours, Egypt and Jordan.**
- Israel and Egypt signed a peace treaty in 1979, marking the end of 30 years of relentless hostility and five costly wars.
- **Statement 2 is not correct : The Arab Peace Initiative was drawn up by Saudi Arabia in 2002**, in which Arab nations offered Israel normalized ties in return for a statehood deal with the Palestinians and full Israeli withdrawal

from territory captured in 1967. **But it was not signed by Israel.** The Israeli government under Ariel Sharon rejected the initiative as a "non-starter".

Reference:

- <https://embassies.gov.il/london/AboutIsrael/Amongthenations/Pages/ISRAEL%20AMONG%20THE%20NATIONS-%20Middle%20East%20-%20North%20Afri.aspx> <https://www.adl.org/resources/glossary-term/arab-peace-initiative>

95. Answer: (b)

Explanation:

- **Pair 1 is CORRECTLY MATCHED:** The spectacular and most outstanding performance in the field of sports by a sportsperson over a period of four years immediately preceding the year during which award is to be given shall be honored with the **Major Dhyani Chand Khel Ratna Award** for excellence in Sports & Games at international level i.e. Olympic/Asian/Commonwealth/World Games/Championships/World Cup and equivalent recognized international tournaments.
- **Pair 2 is NOT CORRECTLY MATCHED: Arjuna Award for outstanding performance in Sports and Games'** is given for good performance over a period of the previous four years and for showing qualities of leadership, sportsmanship and a sense of discipline.
- **Pair 3 is CORRECTLY MATCHED: Dronacharya Award** is given for outstanding coaches in Sports and Games' is given to coaches for doing outstanding and meritorious work on a consistent basis and for enabling sportspersons to excel in International events.
- **Pair 4 is NOT CORRECTLY MATCHED: 'Rashtriya Khel Protsahan Puruskar'** is given to corporate entities (both in private and public sector), Sports Control Boards, NGOs, including sports bodies at the State and National level, who have played a visible role in the area of sports promotion and development.

Reference:

<https://www.myscheme.gov.in/schemes/mdckra>

<https://www.pib.gov.in/PressReleasePage.aspx?PRID=1875896>

96. Answer: B

Explanation:

- **Statement 1 is CORRECT:** 44th Chess Olympiad, 2022 was the first time the Chess Olympiad is being held in the place of origin of chess, India.
- It is coming to Asia for the first time in 3 decades.
- **Statement 2 is CORRECT:** Thambi was the official mascot of the 44th Chess Olympiad, which was held in Chennai.
- **Statement 3 is NOT CORRECT:** The trophy for the winning team at the Women's Chess Olympiad is named the Vera Menchik Cup.
- **Statement 4 is NOT CORRECT:** Teams in the open section participated for the Hamilton-Russell Cup.

Reference:

<https://pib.gov.in/PressReleaselframePage.aspx?PRID=1845977>

https://www.espn.in/chess/story/_/id/34236229/meet-thambi-mascot-chess-olympiad-2022#:~:text=Thambi%20is%20the%20official%20mascot,animated%20television%20series%20BoJack%20Horseman.

<https://www.chess.com/news/view/2022-fide-chess-olympiad-inauguration>

97. Answer: D

Explanation:

- **Pair 1 is NOT CORRECTLY MATCHED:** Donbas is predominantly Russian-speaking and **after Russia seized Crimea in 2014**, its proxy forces captured more than a third of Ukraine's east in a war that never came to an end.
- **Pair 2 is NOT CORRECTLY MATCHED:** Kachin State lies in the mountainous north of Myanmar.
- Since 2011, renewed conflict between the Kachin Independence Army and the Myanmar Armed Forces has hindered progress in service-delivery, and significant new conflict and displacement has been triggered since 1 February 2021.
- **Pair 3 is NOT CORRECTLY MATCHED:** Ethiopia's northernmost region of Tigray is at

the center of an ongoing civil conflict involving ethno-regional militias, the federal government, and the Eritrean military that has attracted the concern of humanitarian groups and external actors since November 2020.

Reference:

<https://www.bbc.com/news/world-europe-60938544>

<https://www.unicef.org/myanmar/kachin-state>

<https://www.cfr.org/global-conflict-tracker/conflict/conflict-ethiopia>

98. Answer: D

Explanation:

- **Option (d) is CORRECT:** The recent spate of coups in Chad, Guinea, Mali and Sudan has sparked a flurry of media attention and concern.
- The US Council for Foreign Relations says "coups are back in West Africa", while the Wall Street Journal warns that "coups in Africa are at their "highest level since the end of colonialism".

Reference: <https://www.theafricareport.com/153400/chad-guinea-mali-sudan-can-a-coup-be-a-springboard-for-democracy/>

99 Answer - C

Explanation

- Refineries are under increasing pressure to meet environmental legislation and reduce the emissions of their processes and so it is desirable to produce hydrogen in a cleaner way. The production of green hydrogen by locating large scale electrolyzers at refineries serves to decarbonise the use of hydrogen.
- Replacing coal by hydrogen generated with renewable energy would make it possible to largely decarbonise the industry
- It also helps largely in decarbonising the fertilizer industry.

References

<https://itm-power.com/markets/refinery-hydrogen>

[https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/641552/EPRS_BRI\(2020\)641552_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/641552/EPRS_BRI(2020)641552_EN.pdf)

<https://tractebel-engie.com/en/news/2022/decarbonizing-the-australian-fertilizer-industry-with-green-hydrogen>

100. Answer: C

Explanation:

- **Statement 1 is CORRECT:**
 - The G20 was founded in 1999 in response to several world economic crises. Since 2008, it has convened at least once a year, with summits involving each member's head of government or state, finance minister, or foreign minister, and other high-ranking officials; the EU is represented by the European Commission and the European central bank.
- **Statement 2 is correct :**
 - **Key Priorities:** Inclusive, Equitable and Sustainable Growth, LiFE (Lifestyle For Environment), Women's Empowerment, Digital public infrastructure and tech-enabled development in areas ranging from health, agriculture and education to commerce, Skill-mapping.

EDGE IAS

UPSC-CSE 2023 PRELIMS

GS PAPER 1 - ANSWER KEY

(SET-A)

QUESTION NO.	ANSWER	QUESTION NO.	ANSWER	QUESTION NO.	ANSWER	QUESTION NO.	ANSWER
1	(c)	26	(b)	51	(b)	76	(c)
2	(b)	27	(c)	52	(c)	77	(b)
3	(b)	28	(c)	53	(a)	78	(d)
4	(b)	29	(b)	54	(c)	79	(c)
5	(d)	30	(c)	55	(b)	80	(a)
6	(d)	31	(a)	56	(a)	81	(a)
7	(c)	32	(a)	57	(d)	82	(b)
8	(a)	33	(c)	58	(d)	83	(a)
9	(d)	34	(b)	59	(c)	84	(d)
10	(d)	35	(a)	60	(c)	85	(c)
11	(c)	36	(d)	61	(a)	86	(c)
12	(c)	37	(c)	62	(c)	87	(c)
13	(a)	38	(b)	63	(d)	88	(d)
14	(b)	39	(b)	64	(a)	89	(a)
15	(c)	40	(c)	65	(c)	90	(d)
16	(d)	41	(a)	66	(d)	91	(b)
17	(c)	42	(b)	67	(a)	92	(b)
18	(c)	43	(b)	68	(c)	93	(d)
19	(b)	44	(d)	69	(a)	94	(c)
20	(d)	45	(d)	70	(a)	95	(b)
21	(d)	46	(c)	71	(b)	96	(b)
22	(a)	47	(b)	72	(c)	97	(d)
23	(b)	48	(a)	73	(d)	98	(d)
24	(a)	49	(c)	74	(b)	99	(c)
25	(b)	50	(d)	75	(d)	100	(c)

UPSC-CSE 2023 PRELIMS

GS PAPER 1 - ANSWER KEY

(SET-B)

QUESTION NO.	ANSWER	QUESTION NO.	ANSWER	QUESTION NO.	ANSWER	QUESTION NO.	ANSWER
1	(a)	26	(d)	51	(b)	76	(d)
2	(b)	27	(c)	52	(b)	77	(a)
3	(b)	28	(c)	53	(d)	78	(c)
4	(d)	29	(b)	54	(c)	79	(a)
5	(d)	30	(d)	55	(b)	80	(a)
6	(c)	31	(c)	56	(b)	81	(b)
7	(b)	32	(b)	57	(d)	82	(c)
8	(a)	33	(b)	58	(d)	83	(a)
9	(c)	34	(b)	59	(c)	84	(c)
10	(d)	35	(d)	60	(c)	85	(b)
11	(a)	36	(d)	61	(a)	86	(a)
12	(a)	37	(c)	62	(b)	87	(d)
13	(c)	38	(a)	63	(a)	88	(d)
14	(b)	39	(d)	64	(d)	89	(c)
15	(a)	40	(d)	65	(c)	90	(c)
16	(d)	41	(d)	66	(c)	91	(b)
17	(c)	42	(a)	67	(c)	92	(c)
18	(b)	43	(b)	68	(d)	93	(d)
19	(b)	44	(a)	69	(a)	94	(b)
20	(c)	45	(b)	70	(d)	95	(d)
21	(c)	46	(b)	71	(a)	96	(c)
22	(c)	47	(c)	72	(c)	97	(a)
23	(a)	48	(c)	73	(d)	98	(d)
24	(b)	49	(b)	74	(a)	99	(c)
25	(c)	50	(c)	75	(c)	100	(a)

UPSC-CSE 2023 PRELIMS

GS PAPER 1 - ANSWER KEY

(SET-C)

QUESTION NO.	ANSWER	QUESTION NO.	ANSWER	QUESTION NO.	ANSWER	QUESTION NO.	ANSWER
1	(b)	26	(c)	51	(a)	76	(b)
2	(b)	27	(a)	52	(b)	77	(c)
3	(d)	28	(d)	53	(b)	78	(c)
4	(c)	29	(c)	54	(d)	79	(b)
5	(b)	30	(a)	55	(d)	80	(c)
6	(b)	31	(a)	56	(c)	81	(c)
7	(d)	32	(c)	57	(b)	82	(c)
8	(d)	33	(d)	58	(a)	83	(a)
9	(c)	34	(a)	59	(c)	84	(b)
10	(c)	35	(c)	60	(d)	85	(c)
11	(a)	36	(d)	61	(a)	86	(d)
12	(b)	37	(a)	62	(a)	87	(c)
13	(a)	38	(c)	63	(c)	88	(c)
14	(d)	39	(a)	64	(b)	89	(b)
15	(c)	40	(a)	65	(a)	90	(d)
16	(c)	41	(b)	66	(d)	91	(c)
17	(c)	42	(c)	67	(c)	92	(b)
18	(d)	43	(a)	68	(b)	93	(b)
19	(a)	44	(c)	69	(b)	94	(b)
20	(d)	45	(b)	70	(c)	95	(d)
21	(b)	46	(a)	71	(d)	96	(d)
22	(c)	47	(d)	72	(a)	97	(c)
23	(d)	48	(d)	73	(b)	98	(a)
24	(b)	49	(c)	74	(a)	99	(d)
25	(d)	50	(c)	75	(b)	100	(d)

UPSC-CSE 2023 PRELIMS

GS PAPER 1 - ANSWER KEY

(SET-D)

QUESTION NO.	ANSWER	QUESTION NO.	ANSWER	QUESTION NO.	ANSWER	QUESTION NO.	ANSWER
1	(b)	26	(c)	51	(c)	76	(d)
2	(c)	27	(c)	52	(b)	77	(c)
3	(d)	28	(d)	53	(b)	78	(c)
4	(b)	29	(a)	54	(b)	79	(b)
5	(d)	30	(d)	55	(d)	80	(d)
6	(c)	31	(b)	56	(d)	81	(a)
7	(a)	32	(c)	57	(c)	82	(b)
8	(d)	33	(a)	58	(a)	83	(b)
9	(c)	34	(c)	59	(d)	84	(d)
10	(a)	35	(b)	60	(d)	85	(d)
11	(a)	36	(a)	61	(d)	86	(c)
12	(c)	37	(d)	62	(a)	87	(b)
13	(d)	38	(d)	63	(b)	88	(a)
14	(a)	39	(c)	64	(a)	89	(c)
15	(c)	40	(c)	65	(b)	90	(d)
16	(d)	41	(b)	66	(b)	91	(a)
17	(a)	42	(b)	67	(c)	92	(a)
18	(c)	43	(d)	68	(c)	93	(c)
19	(a)	44	(c)	69	(b)	94	(b)
20	(a)	45	(b)	70	(c)	95	(a)
21	(a)	46	(b)	71	(c)	96	(d)
22	(b)	47	(d)	72	(c)	97	(c)
23	(a)	48	(d)	73	(a)	98	(b)
24	(d)	49	(c)	74	(b)	99	(b)
25	(c)	50	(c)	75	(c)	100	(c)