

UPSC PRELIMS 2024

Q1. What is the concept of “book building” in the context of financial markets?

- A) It is the process of aggregating institutional investor orders to set the price range for an initial public offering (IPO).
- B) It is a preliminary document filed by a company to the SEBI when it is planning to issue an IPO.
- C) To pool money from multiple investors and invest in a diversified portfolio of stocks, bonds, or other assets.
- D) It enables parties to hedge against the future price movements of commodities, currencies, or financial instruments.

Q2. Which of the following best describes “nurdles”?

- A) Microscopic algae responsible for harmful algal blooms in marine ecosystems.
- B) Tiny insects commonly found in agricultural fields, causing crop damage.
- C) Small plastic pellets used as raw materials in the manufacturing of plastic products.
- D) Spherical tiny seeds used in horticulture for propagating plants.

Q3. Match the following.

Text	Descriptions
1. Pratishakhya	a. Jain text composed by Acharya Kundakunda.
2. Samayasāra	b. One of the six ancient Vedangas.
3. Nirukta	c. Part of the 12 Jain upangaāgamas as per Śvetāmbara tradition.
4. Aupapatika Sutra	d. Vedic-era manuals devoted to the precise and consistent pronunciation of words.

Choose the correct option:

- A) 1-b, 2-c, 3-a, 4-d
- B) 1-d, 2-a, 3-b, 4-c
- C) 1-d, 2-b, 3-a, 4-c
- D) 1-c, 2-d, 3-a, 4-b

Q4. How many of the following statements are correct with reference to computing?

- 1. When the Onion Router is used, the internet traffic is encrypted and routed through multiple relays, obscuring the IP address.
- 2. Side-channel attack is a security exploit that attacks the algorithm and its mathematical properties.
- 3. Sandboxing isolates web browser processes and tabs from each other and from the underlying operating system.

Choose the correct option:

- A) Only one
- B) Only two
- C) All
- D) None

Q5. Consider the following statements:

- 1. The cities of Khartoum and Omdurman were divided between two warring factions during the recent ongoing war in Sudan.
- 2. The Treaty of Jeddah, which was signed in the recent past by the United States, Saudi Arabia, and Sudan and representatives of both warring sides, was made to make peace in Sudan.
- 3. Ethnic violence against the Masalit people reignited amidst conflict in Sudan, prompting many to seek refuge in Chad.

Which of the statements given above is/are correct?

- A) 1 and 2 only
- B) 2 only
- C) 1 and 3 only
- D) All

Q6. How many of the following statements are correct?

- 1. Old-growth forests have never been subject to human disturbance or logging activities.

2. Tonnes of plutonium deposits have been found in the recent past in Rohil in Sikar district, Rajasthan.
3. The Global Green Growth Institute (GGGI) is a treaty-based international, inter-governmental organization established in 2012 at the Rio+20 United Nations Conference on Sustainable Development.

Choose the correct option:

- A) Only one
- B) Only two
- C) All
- D) None

Q7. With reference to Abdul Rahim Khan-i-Khanan, which of the following statement(s) is/are NOT correct?

1. He was one of the nine important ministers (dewan) in Akbar's court, known as the Navaratnas.
2. Akbar appointed him to lead a campaign against Maharana Pratap in order to capture or kill him.
3. He translated Babar's memoirs, Baburnama, from the Chagatai language to the Persian language.

Choose the correct option:

- A) 2 only
- B) 1 and 3 only
- C) All
- D) None

Q8. Consider the following statements with reference to the State Emblem of India.

1. The State Emblem of India can be used by private citizens in India on letterheads, business cards and other personal uses with certain restrictions.
2. Most of the states and union territories of India have adopted their own state emblem, seal or coat of arms which are used as an official governmental symbol.
3. State Emblem of India (Prohibition of Improper Use) Act, 2005 lays down the

persons who can use the Emblem in official stationery, on cars, etc.

Which of the statements given above is/are correct?

- A) 1 and 2 only
- B) 3 only
- C) 1, 2 and 3
- D) None

Q9. Consider the following pairs:

Movement/Organization — Founder/Associated Personality

1. India League--Dadabhai Nouroji
2. Women Indian Association - Lady Sadashiva Ayyar
3. Scientific Society--Sir Sayyed Ahmad Khan

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

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

Q10. How many of the following statements are correct?

1. LCR (Liquidity Coverage Ratio) is calculated by dividing the bank's high-quality liquid assets by their total net cash flows over the course of a specific, 30-day stress period.
2. The Liquidity Coverage Ratio in banking resulted from the Basel III agreement.
3. LCR can reduce the ability of businesses to expand.

Choose the correct option:

- A) Only one
- B) Only two
- C) All
- D) None

Q11. He worked as a personal doctor for Dara Shikoh.

A tour of inspection by Aurangzeb gave him the opportunity to describe Kashmir. He also wrote a memoir on Indian commerce for the use of Jean-Baptiste Colbert who recently had founded the French Company of the East Indies.

Which of the following travellers has been described above?

- A) François Bernier
- B) Gemelli Careri
- C) Sir Thomas Roe
- D) Edward Terry

Q12. Consider the following statements.

1. Indian Elector's Photo Identity Card (EPIC) was first introduced in 1993 during the tenure of the Chief Election Commissioner T. N. Seshan.
2. The count determined by the VVPAT paper slips takes precedence over the vote count recorded on the EVMs if there is a disparity between the data on VVPATs and EVMs.
3. If a party or candidate violates Model Code of Conduct, the Election Commission of India holds authority under the Election Symbols (Reservation and Allotment) Order of 1968 to suspend or withdraw a party's recognition.

How many of the above statements are correct?

- A) Only one
- B) Only two
- C) All
- D) None

Q13. Which of the following was/were the impact(s) of Mahalwari System?

1. The system provided for the redistribution of land.
2. It provided security of tenure for cultivators.
3. It led to an increase in food production.

Choose the correct code.

- A) 1 only
- B) 2 and 3 only
- C) 1, 2 and 3

D) None

Q14. Consider the following statements with reference to Bioactive Compounds.

1. Bioactive compounds have proved to be essential for life.
2. Carotenoids, polyphenols, or phytosterols are examples of plant bioactive compounds.
3. Nutritionally, they have also been called nutraceuticals because when ingested, they provide health benefits beyond basic nutrition

How many of the above statements are incorrect?

- A) Only one
- B) Only two
- C) All
- D) None

Q15. Which of the following biomimicry-inspired inventions is correctly matched with its natural inspiration?

- A) Climbing pads mimicking the biomechanics of gecko feet.
- B) The aerodynamics of the Japanese Bullet train inspired by the shape of an eagle's wings.
- C) The first flying machine heavier than air inspired by the flapping motion of seagulls.
- D) Architecture inspired by the texture of spider webs for passive cooling structures.

Q16. Consider the following pairs:

Mountain Range	Highest Peak
1. Urals	Mount Rainier
2. Cascade Range	Mount Elbert
3. Appalachian	Mount Mitchell

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

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

Q17. Which landmark Supreme Court case established a principle in protecting online free speech against arbitrary restrictions?

- A) Lily Thomas v. Union of India
- B) Harbans Singh Jalal vs Union of India
- C) Shreya Singhal vs. Union of India
- D) Shyam Narayan Chouksey vs Union of India

Q18. Consider the following statements:

- 1. The Netherlands is India's largest merchandise export destination in Europe.
- 2. Major exported items from India to the Netherlands include petroleum products.
- 3. 2023 marked 75 years of the establishment of diplomatic relations between India and the Netherlands.
- 4. India's trade surplus with the Netherlands has increased in the last seven years.

Which of the statements given above are correct?

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

Q19. How many of the following bodies has/have been constituted under the Wildlife Protection Act, 1972?

- 1. Central Zoo Authority
- 2. Indian Council of Forestry Research and Education
- 3. Centre for Wildlife Studies
- 4. Centre for Ecological Sciences

Choose the correct code.

- A) Only one
- B) Only two
- C) All
- D) None

Q20. Consider the following events:

- 1. India conducts its first nuclear test.

- 2. Commencement of nationwide railway strike led by George Fernandes.
- 3. India launched its first satellite, Aryabhata.
- 4. Formation of India's first non-Congress government at the centre.

Which of the following is the correct chronological sequence of the above events?

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

Q21. How many of the following is/are the salient feature(s) of National Education Policy 2020?

- 1. Increase the Gross Enrolment Ratio in higher education from 26.3% (2018) to 70% by 2035.
- 2. Vocational education will start in schools from the 10th grade, and will include internships.
- 3. Every district will have to establish "Bal Bhavans" mandatorily as a special daytime boarding school, to participate in art-related, career-related, and play-related activities.

Choose the correct code.

- A) Only one
- B) Only two
- C) All
- D) None

Q22. "Vishal Bharat", a nationalist and pro-Gandhi Indian Hindi-language magazine with a particular emphasis on rural matters was published in 1929 by

- A) Bal Gangadhar Tilak
- B) Ramananda Chatterjee
- C) Sunder Singh Lyallpuri
- D) Bipin Chandra Pal

Q23. Which of the following best describes "Pareto Optimality"?

- A) A situation where resources are allocated efficiently, maximizing total utility without considering distribution.

- B) A situation where resources are allocated in such a way one can be made better off without making someone else worse off.
- C) A situation when the circumstances of one individual cannot be made better without making the situation worse for another individual.
- D) A situation where resources are allocated equally among all individuals, ensuring fairness in distribution.

Q24. Which of the following scenarios would likely lead to an increase in bond yields?

- A) Central bank announces an expansionary monetary policy
- B) Investors become more risk-averse and seek safe-haven assets
- C) Government announces a decrease in public spending
- D) Inflation expectations decrease due to a decrease in oil prices

Q25. Consider the following pairs:

River Places

1. Tapti – Burhanpur
2. Palar – Vellore
3. Netravati – Bantwal

Which of the pairs given above are correctly matched?

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

Q26. Consider the following statements with reference to Sangam Literature.

- A) The Puram poetry explores the realm of emotions, romantic love and eroticism.
- B) The Akam poetry narrates heroic exploits and deeds, particularly in the context of warfare and public life.
- C) Kundalakesi is a Tamil Buddhist epic authored by Nathakuthanaar during the Sangam Age.

How many of the above statements are incorrect?

- A) Only one
- B) Only two
- C) All
- D) None

Q27. Consider the following countries:

1. Benin
2. Cameroon
3. Chad
4. Niger
5. Togo

How many of the above-mentioned countries share a land border with Nigeria?

- A) Only two
- B) Only three
- C) Only four
- D) Only five

Q28. Consider the following countries:

1. The Global Compact for Safe, Orderly, and Regular Migration (GCM) is the first ever intergovernmental negotiated agreement, prepared under the United Nations and India has signed it.
2. The Compact is a major “binding cooperative framework” on migration.
3. Global Compact for Migration was adopted in Marrakech, Morocco, in 2018.

Which of the statements given above is/are correct?

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

Q29. Consider the following statements:

1. Synthetic Aperture Radar (SAR) uses laser pulses to create 2D or 3D images by bouncing signals off the Earth’s surface.
2. SAR can penetrate clouds and vegetation, is sensitive to surface moisture and roughness.

3. SAR works in all weather conditions and day or night.

How many of the above statements are correct?

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

Q30. What are the implications of an increase in Repo Rate by the Central Bank?

1. A decrease in savings and a reduction in the flow of capital to the economy, which results in slump in stock markets.
2. Rise in equated monthly installments on home, vehicle and other personal and corporate loans.
3. High impact and vulnerability of capital-intensive sectors such as capital goods, infrastructure, etc.

Which of the statements given above is/are correct?

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

Q31. Consider the following statements with reference to All India States Peoples' Conference (AISPC).

1. The first session of the organisation was held in Bombay in December 1927.
2. In 1939, Jawaharlal Nehru became its president, serving in this position till 1946.
3. It was established to encourage political dialogue between the princely class of India, and the British Raj, upon the issues of governance, political stability and future of India.
4. For a long period, the Conference was hostile to the Indian independence movement, and acted often to condemn and counter-act the work of the Indian National Congress.

Which of the statements given above is/are correct?

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

Q32. How many of the following affects the prices of Treasury Bills?

1. Inflation levels
2. Economic growth
3. Unemployment rates
4. Fiscal policies

Choose the correct code.

- A) Only one
- B) Only two
- C) Only three
- D) All

Q33. Which of the following phenomena, is responsible for triggering powerful gamma-ray flare emissions from magnetars?

- A) Neutrino emissions during neutron star formation
- B) Supernova explosions during the collapse of massive stars
- C) Starquakes disturbing the magnetic field on the surface of the magnetar
- D) Gravitational lensing effects near black holes

Q34. Which of the following pairs of wind types and their associated regions is correctly matched?

1. Pampero - Persian Gulf
2. Gregale - Central Mediterranean
3. Bora - Rocky Mountains
4. Foehn - Alps in Europe

Choose the correct code.

- A) 1 and 2 only
- B) 2 only
- C) 2 and 4 only
- D) 1, 2 and 4 only

Q35. Consider the following pairs:

	Country		Important reason for being in the news recently
1.	Sudan	—	Slipped into famine.
2.	Tanzania	—	First edition of IMT TRILAT exercise
3.	Cambodia	—	Indians trapped in cyber-slavery
4.	France	—	First country to ban hair discrimination.

How many pairs given above are correctly matched?

- A) Only one pair
- B) Only two pairs
- C) Only three pairs
- D) All four pairs

Q36. With reference to Indian history, consider the following pairs:

Poet	King
1. Jinsena	Yasovarman
2. Dandin	Narsimhavarman
3. Rajashekhar	Mahindrapala
4. Bilhana	Vikramaditya VI

How many pairs given above is/are incorrectly matched?

- A) None of the pairs
- B) Only one pair
- C) Only two pairs
- D) All four pairs

Q37. Which of the following National Parks is/are located within the Amazon Rainforest?

- 1. Yasuni National Park
- 2. Tumucumaque National Park
- 3. Banff National Park
- 4. Triglav National Park

Choose the correct option:

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

Q38. Which of the following could be the problems associated with Judicial Review?

- 1. It constrains the government's functioning.
- 2. It may exceed the constitutional power limit by overriding existing laws.
- 3. It may adversely affect the public due to judgments influenced by personal or selfish motives.
- 4. It could erode public trust in the government's integrity, quality, and efficiency.

Choose the correct option:

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

Q39. Consider the following pairs:

1	Whiteley Commission	Lord Irwin
2	Sapru Commission	Lord Linlithgow
3	Chalfield Commission	Lord Linlithgow
4	Floud Commission	Lord Curzon

How many pairs given above are correctly matched?

- A) Only one pair
- B) Only two pairs
- C) Only three pairs
- D) All four pairs

Q 40. Which of the following are the findings of the fifth cycle leopard population estimation in India presented by National Tiger Conservation Authority and Wildlife Institute of India?

- 1. The leopard population in India has decreased compared to the 2018 estimate.
- 2. The survey included non-forested habitats and high Himalayan regions.

3. Madhya Pradesh has the smallest leopard population in the country.
4. Shivalik hills and Gangetic plains experienced a decline in the number of leopards.

Select the correct option:

- A) 1 and 2 only
- B) 2 and 4 only
- C) 1 and 3 only
- D) 3 and 4 only

Q41. Consider the following statements:

1. Toll-like receptors (TLRs) link adaptive immunity with innate immunity by mediating inflammatory pathways in the gut.
2. India has been the world's largest producer of direct reduced iron in the last two decades.
3. RAD51 protein serves as a key checkpoint during DNA replication, ensuring that each DNA segment is only duplicated once.

How many of the above statements are incorrect?

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

Q42. Consider the following statements with reference to Polytetrafluoroethylene (PTFE):

1. PTFE is so slippery that insects cannot get a grip and tend to fall off.
2. PTFE's dielectric properties make it ideal for use as an insulator in connector assemblies, cables, and microwave frequency printed circuit boards.
3. PTFE's coefficient of friction is lowest of any known solid material.
4. PTFE is best known for its use in coating non-stick frying pans and other cookware, as it is hydrophobic and possesses fairly high heat resistance.

How many of the above statements are correct?

- A) Only one
- B) Only two

- C) Only three
- D) All

Q43. This soil is characterized by its genesis from the deposition of organic matter from forests, leading to its rich humus content. It tends to be acidic and heterogeneous, with its characteristics varying based on parent rocks and climate. However, it is deficient in essential nutrients like potash, phosphorus, and lime, necessitating the application of fertilizers for agricultural productivity. Despite its deficiencies, this soil type is suitable for growing crops such as wheat, maize, barley, as well as temperate fruits, spices, tea, and coffee.

Which type of soil is being described in the above passage?

- A) Laterite Soil
- B) Mountain Soils
- C) Alluvial Soil
- D) Black soils

Q44. It is also known as a wrinkle-free fiber. It is mostly used for food and drink packaging purposes due to its strong ability to prevent oxygen from getting in and spoiling the product inside. This type of plastic contains antimony trioxide—a matter that is considered as a carcinogen—capable of causing cancer in living tissue.

Which type of plastic is being described in the above passage?

- A) Polyethylene Terephthalate
- B) Polystyrene
- C) Polyvinyl Chloride
- D) Low-Density Polyethylene

Q45. Which of the following committees were constituted to address the issues plaguing India's electoral process and to propose necessary reforms?

1. Ranganath Mishra Commission
2. Indrajit Gupta Committee
3. Jeevan Reddy Committee
4. Vohra Committee

Select the correct option:

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

Q46. Match the following international declarations with their respective purposes/descriptions:

1. Brighton Declaration	a) First international conference on women and sport.
2. Great Barrington Declaration	b) Statement of ethical principles for medical research.
3. London Declaration	c) Alternative approach to handling the COVID-19 pandemic.
4. Declaration of Helsinki	d) India's continued membership of the Commonwealth of Nations.

- A) 1-d, 2-c, 3-a, 4-b
 B) 1-b, 2-c, 3-a, 4-d
 C) 1-c, 2-d, 3-b, 4-a
 D) 1-a, 2-c, 3-d, 4-b

Q47. Arrange the following events in chronological order:

1. Treaty of Salbai
2. First Anglo-Maratha War
3. Abolition of dual government in Bengal
4. First Regulating Act

Options:

- A) 2, 1, 4, 3
 B) 4, 2, 1, 3
 C) 3, 4, 2, 1
 D) 3, 2, 4, 1

Q48. Which one of the following lakes, once a significant water body, has completely dried up

due to environmental factors?

- A) Lake Poopó
 B) Lake Naivasha
 C) Lake Solai
 D) Lake Sevan

Q49. What is the lowest point in Africa, located within the geological depression known as the Afar Triangle?

- A) Lake Tanganyika
 B) Lake Victoria
 C) Lake Assal
 D) Lake Malawi

Q50. Consider the following statements.

1. Betel leaves maintain their green foliage throughout the year.
2. Doses of 5 grams or more Saffron can cause human poisoning.
3. The Basmati Mark in Basmati Rice is a DNA-fingerprinting-based certification done by the laboratory of Basmati Export Development Foundation (BEDF).
4. Golden Bamboo is a highly invasive running bamboo native to Southeast China.

How many of the above statements are incorrect?

- A) Only two
 B) Only three
 C) All four
 D) None

Q51. How many of the following factors are considered for determining the Fair and Remunerative Price (FRP) of sugarcane according to the Sugarcane (Control) Order, 1966?

1. The availability of sugar to consumers at a fair price.
2. The cost of production of sugarcane.
3. The return to the grower from alternative crops and the general trend of prices of agricultural commodities.

4. The recovery rate of sugar from sugarcane.

Options:

- A) Only two
- B) Only three
- C) All four
- D) None

Q52. Which of the following is NOT considered a current asset on a company's balance sheet?

- A) Cash equivalents
- B) Accounts receivable
- C) Acquired brands
- D) Inventory

Q53. Consider the following statements.

1. China is the largest producer of semiconductors in the world.
2. For use of neon gas in the semiconductor industry, the gas has to reach 99.99% purity levels.
3. Hosur will have the first commercial semiconductor fabrication facility in India.

Choose the correct code.

- A) 1 and 2 only
- B) 2 only
- C) 2 and 4 only
- D) 1, 2 and 4 only

Q54. Consider the following statements.

1. Pattadakal Group of Monuments is located on the west bank of the Tungabhadra River.
2. The Virupaskha temple has repeated patterns that demonstrate the concept of Fractals.
3. The Ravana Phadi Cave Temples, built in the 6th century by the Badami branch of the Chalukyas, are dedicated to Vishnu.

Choose the incorrect statements.

- A) 1 and 2 only
- B) 3 only

C) 1 and 3 only

D) None

Q55. Consider the following statements with reference to Rapid Action Force (RAF).

1. It is a specialized rapid reaction wing of the State Armed Police Forces.
2. They are only deployed by the orders of Ministry of Home Affairs on specific demands from state governments for a short duration.
3. Its motto is "Serving Humanity with Sensitive Policing".

Choose the correct code.

- A) 1 and 2 only
- B) 2 and 3 only
- C) 1, 2 and 3
- D) None

Q56. Consider the following pairs.

Operation	Objective
1. Operation Sukoon	a) Relief operation to evacuate Indian, Sri Lankan, and Nepalese nationals during Lebanon War
2. Operation Searchlight	b) Search operation to find the missing Boeing 777 M.H 17 Malaysian Flight
3. Operation Raahat	c) Evacuation of Indian citizens from Yemen Island of Socotra stranded by Cyclone Mekenu.
4. Operation Nistar	d) Evacuation of Indian citizens and foreign nationals from Yemen during Yemeni Crisis

- A) 1-d, 2-c, 3-a, 4-b
- B) 1-a, 2-b, 3-c, 4-d
- C) 1-c, 2-d, 3-b, 4-a
- D) 1-a, 2-b, 3-d, 4-c

Q57. Which of the following statements regarding factors influencing liquidity preferences is true?

- A) Individuals with higher incomes tend to have

lower liquidity preferences because they have more investment opportunities.

- B) When interest rates are low, individuals prefer to hold more cash as the opportunity cost of not earning interest is reduced.
- C) When interest rates are high, people prefer holding more cash as the opportunity cost of not earning interest becomes significant.
- D) Liquidity preferences are solely determined by personal preferences and are not influenced by external factors.

Q58. Which of the following countries does not border the South China Sea?

- A) China
- B) Philippines
- C) Japan
- D) Vietnam

Q59. Arrange the following events in chronological order:

1. Halba rebellion
2. Chakma rebellion
3. Tana Bhagat movement
4. Muria Gond Rebellion

Options:

- A) 1, 2, 4, 3
- B) 2, 1, 4, 3
- C) 3, 2, 4, 1
- D) 3, 1, 4, 2

Q60. Consider the following statements with reference to Indo-Saracenic Architecture:

1. Chepak Palace in Chennai designed by Paul Benfield is the first Indo-Saracenic building in India.
2. Victoria Memorial Hall of Kolkata is an example of the Indo-Saracenic style.
3. Chhajja, overhanging eaves, Mashrabiya, towers or minarets are the prominent features of Indo-Saracenic Architecture.

How many of the above statements are correct?

- A) Only one
- B) Only two
- C) All
- D) None

Q61. Which of the following organisms is known for its significant contribution to carbon sequestration?

1. Termites
2. Switchgrass
3. Agaves
4. Springtails

Choose the correct code.

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

Q62. Which of the following best defines the concept of tissue tropism in relation to pathogens?

- A) The ability of pathogens to spread rapidly through the bloodstream to infect multiple organs simultaneously.
- B) The range of cells and tissues within a host that support the growth and replication of a particular pathogen.
- C) The process by which pathogens mutate to evade the host immune response within specific tissues.
- D) The transmission of pathogens through physical contact with infected tissues or bodily fluids.

Q63. Consider the following pairs.

Name of Committees/ Commissions	Subject of the Committee
1. Hilton Young Commission	Currency
2. Babington Smith Commission	Currency
3. Scott-Moncrieff Commission	Irrigation
4. Strachy Commission	Famine

How many of the above pairs are correct?

- A) Only one
- B) Only two
- C) Only three
- D) All

Q64. Monocrotophos is primarily used as:

- A) An herbicide
- B) An insecticide
- C) A fungicide
- D) A fertilizer

Q65. Consider the following pairs.

Legislation	Key Provision
1. Transfer of Property Act, 1882	Immovable property does not include standing timber, growing crops, or grass.
2. Registration Act, 1908	A document not registered within the stipulated time frame may incur a fine, capped at two times the registration fee.
3. Right to Information Act, 2005	Any Indian citizen can seek information from a "public authority," obliging them to respond promptly or within thirty days.

How many of the above pairs are correct?

- A) Only one
- B) Only two
- C) Only three
- D) All

Q66. Consider the following statements:

1. Money market consists of negotiable instruments such as treasury bills, commercial papers, and certificates of deposit.
2. The money market is a regulated and formal market and structured, unlike the capital markets.
3. Withdrawing money from the money market is not easy.

How many of the above statements are incorrect?

- A) Only one
- B) Only two
- C) All
- D) None

Q67. Which of the following international conventions is correctly arranged in chronological order according to their adoption years?

- A) Ramsar Convention, CITES, Stockholm Convention, Bonn Convention, Vienna Convention, Convention on Biological Diversity (CBD)
- B) CITES, Ramsar Convention, Bonn Convention, Vienna Convention, Stockholm Convention, Convention on Biological Diversity (CBD)
- C) CITES, Ramsar Convention, Bonn Convention, Vienna Convention, Convention on Biological Diversity (CBD), Stockholm Convention
- D) Vienna Convention, Bonn Convention, Ramsar Convention, CITES, Convention on Biological Diversity (CBD), Stockholm Convention

Q68. Which martial art form, originating from Mizoram, emphasizes strict rules prohibiting certain actions like kicking and stepping out of the circle, and focuses on lifting opponents off their feet while adhering to these regulations?

- A) Inbuan Wrestling
- B) Kuttu Varisai
- C) Cheibi Gadga
- D) Sarit-Sarak

Q69. Consider the following pairs pertaining to Tirukkural.

Book	Theme
1. Aram	Dealing with moral values of an individual and essentials of yoga philosophy.
2. Poru!	Dealing with socio-economic values, polity, society, and administration.
3. Inbam	Dealing with psychological values and love.

How many of the above pairs are correct?

- A) Only one
- B) Only two

- C) Only three
D) All

Q70. Consider the following pairs

Type of Bond	Description
1. Zero-Coupon Bonds	Issued at a discount, with periodic interest payments.
2. Floating Rate Bonds	Interest rate adjusted periodically based on reference rates. Protects investors from interest rate risk.
3. Callable Bonds	Offer flexibility for the issuer to redeem before maturity, usually at a premium price.
4. Convertible Bonds	Can be converted into shares of the issuing company's stock at a predetermined conversion ratio.

Top of Form

How many of the above pairs are correct?

- A) Only one
B) Only two
C) Only three
D) All

Q71. Which government initiative aims to provide financial support to economically disadvantaged but meritorious students from Navodaya Vidyalayas for pursuing higher education, in collaboration with the private sector?

- A) Pradhan Mantri Vidya Lakshmi Scheme
B) EdCILVidyanjali Scholarship Programme
C) National Merit Scholarship Scheme
D) Sarva Shiksha Abhiyan

Q72. Which of the following Reports are published by World Economic Forum?

1. Travel and Tourism Competitiveness Report

2. Global Energy Architecture Performance Index Report
3. Global Competitiveness Report
4. Global Gender Gap Index

Choose the correct code.

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

Q73. Consider the following pairs:

Food Item	Common Adulterants
1. Milk	Urea
2. Vegetables	Malachite green
3. Sweets	Tar dye
4. Honey	Antibiotics

Top of Form

How many of the above pairs are correct?

- A) Only one
B) Only two
C) Only three
D) All

Q74. Which of the following components are commonly found in the ink used for printing newspapers?

- A) Zinc oxide and sulfur dioxide
B) Titanium dioxide and hydrogen peroxide
C) Lead and polycyclic aromatic hydrocarbon
D) Iron oxide and carbon monoxide

Q75. Consider the following pairs

Judgement	Component of Basic Structure
1. Minerva Mills	Limiting the amending power
2. Central Coal Fields case (1980)	Effective access to justice
3. KihotoHollohon v. Zachillhu (1992)	Democracy & fair electoral process

Judgement	Component of Basic Structure
4. S. R. Bommai v. Union of India (1994)	Democracy, federalism, secularism
5. M. Nagaraj v. Union of India (2006)	Doctrine of equality

How many of the above pairs are correct?

- A) Only two
- B) Only three
- C) Only four
- D) All

Q76. Who authored the Hindi texts "Gyan-lila" and "Yog-cintamani," as well as "Vaisnava Mata Bhajabhaskara" and "RamarcanaPaddhati"?

- A) Tulsidas
- B) Kabir Das
- C) Ramanandacharya
- D) Surdas

Q77. Consider the following statements:

1. 100 per cent Foreign Direct Investment (FDI) in the textile sector under automatic route.
2. Up to 100 percent FDI is permitted under the automatic route for manufacturing components and systems or sub-systems for satellites, ground segments, and user segments.

Choose the correct code:

- A) Only 1
- B) Only 2
- C) Both
- D) None

Q78. Which of the following statements about the Molucca Sea is true?

1. The Molucca Sea borders the Banda Sea to the south and the Celebes Sea to the west.
2. The Talaud Islands to the north are considered to be the northern border the sea.
3. The Portuguese, Dutch, British, and Spanish Empires fought each other for control of the spice islands that can only be accessed through the Molucca Sea.

Choose the correct code:

- A) 1 and 2 only
- B) 1, 2 and 3
- C) 3 only
- D) None

Q79. Which of the following pairs correctly matches the newly designated Ramsar sites with their respective states?

- A) Ankasamudra Bird Conservation Reserve - Tamil Nadu
- B) Aghanashini Estuary - Karnataka
- C) Karaivetti Bird Sanctuary - Karnataka
- D) Longwood Shola Reserve Forest – Kerala

Q80. Which ancient empire, as documented by Fernao Nuniz, is renowned for its empowerment of women, who held significant positions and actively participated in political, social, and literary spheres, as well as receiving education and training in various fields including wrestling, weaponry, music, and fine arts?

- A) Maurya Empire
- B) Gupta Empire
- C) Chola Empire
- D) Vijayanagara Empire

Q81. Match the following:

Ethnic Community	Region
1. Zulu	a) Predominantly located in South Africa
2. Sami	b) Indigenous peoples of northern Europe
3. Maasai	c) Found mainly in Kenya and Tanzania
4. Yoruba	d) Predominantly located in Nigeria

Choose the correct option:

- A) 1-a, 2-b, 3-c, 4-d
- B) 1-a, 2-b, 3-d, 4-c
- C) 1-d, 2-b, 3-c, 4-a
- D) 1-c, 2-d, 3-a, 4-b

Q82. These paintings are characterised by rich and

vivid colors, simple iconic composition, glittering gold foils overlaid on delicate but extensive gesso work and inlay of glass beads and pieces or very rarely precious and semi-precious gems.

Which painting is being referred to in the above passage?

- A) Thanjavur Painting
- B) Hoysala Painting
- C) Mysore Paintings
- D) Lepakshi paintings

Q83. Which country is poised to chair the International Sugar Organization in 2024?

- A) Brazil
- B) India
- C) United States
- D) United Kingdom

Q84. Consider the following statements:

1. India is the largest producer of pulses in the world and hence a less significant importer (14%) of pulses in the world.
2. Tur is the most dominant pulse having a share of around 40 per cent in the total production.
3. Kharif pulses contribute more than 60 per cent of the total production.

How many of the above statements are incorrect?

- A) Only one
- B) Only two
- C) All
- D) None

Q85. Consider the following statements:

1. Brumation is a term used to describe a state of dormancy or slowed metabolic activity observed in certain endothermic animals.
2. Aerogels are produced by extracting the liquid component of a gel through supercritical drying or freeze-drying.

Which of the above statements is/are correct?

- A) 1 only
- B) 2 only

- C) both 1 and 2
- D) neither 1 nor 2

Q86. Which of the following best describes the objective of sponge farming?

- A) To extract sponges from natural habitats for commercial use, disregarding environmental impact.
- B) To cultivate marine sponges in controlled environments to meet market demand while minimizing environmental impact.
- C) To encourage the natural growth of marine sponges in the wild through conservation efforts.
- D) To develop synthetic alternatives to natural sponges to reduce the need for sponge farming.

Q87. Which Lagrange point is shielded from direct solar radiation and is suitable for astronomical observations?

- A) L1 Point
- B) L2 Point
- C) L3 Point
- D) L4 and L5 Points

Q88. In which region of India is the Kopili fault zone located?

- A) Western Ghats
- B) Indo-Gangetic Plain
- C) North East India
- D) Deccan Plateau

Q89. Which of the following statements about Taricayas, is incorrect?

- A) They are one of the largest South American river turtles.
- B) Their carapace can grow up to 45 cm long and weigh up to 8 kg.
- C) They are primarily found in fast-flowing rivers.
- D) They are native to South America's Amazon and Orinoco basins, as well as river systems of the Guianas.

Q90. Which type of weeds is Clethodim primarily used to control?

- A) Broadleaf weeds

- B) Grasses
C) Sedges
D) Aquatic weeds
- Q91. In which sea is the Murmansk Commercial Seaport situated?**
- A) Baltic Sea
B) Black Sea
C) Barents Sea
D) Caspian Sea
- Q92. What is the primary mode of transmission for Legionnaires' disease?**
- A) Person-to-person contact
B) Ingestion of contaminated food
C) Inhalation of mist containing Legionella bacteria
D) Direct contact with contaminated surfaces
- Q93. Consider the following statements:**
1. India is one of the largest producers as well as exporters of cotton yarn.
 2. Gujarat and Maharashtra together produce about 50% of India's cotton.
 3. The Cotton Textile Export Promotion Council (TEXPROCIL) takes part in national and international events to enhance the visibility of Indian products.
- How many of the above statements are correct?**
- A) Only one
B) Only two
C) All
D) None
- Q94. In which districts of Uttarakhand is the Kalagarh Tiger Reserve located?**
- A) Pauri Garhwal and Nainital
B) Dehradun and Almora
C) Haridwar and Chamoli
D) Rudraprayag and Tehri Garhwal
- Q95. Which shipbuilding method involves stitching**
- wooden planks together instead of using nails, offering flexibility and durability to the ships and reducing susceptibility to damage from sandbars and shoals?**
- A) Tongue and groove method
B) Plank-on-frame method
C) Tankai method
D) Lapstrake method
- Q96. What are the various uses of Cicadas?**
1. Aerating the soil
 2. Folk medicines
 3. Religious and monetary symbols
 4. Indicator of soil health and vegetation
 5. Nutrient source for plants
 6. Source of food
- Choose the correct code.
- A) 1, 2, 4 and 6 only
B) 1, 2, 3, 4, 5 and 6
C) 3, 4 and 6 only
D) 2, 4 and 6 only
- Q97. Which traditional craft originating from Kashmir primarily involves the use of pure sheep wool and utilizes a unique felting technique instead of traditional weaving processes?**
- A) Pashmina weaving
B) Namda craft
C) Papier mâché art
D) Walnut wood carving
- Q98. Which international human rights treaty ensures comprehensive rights for African women, covering areas such as harmful traditional practices, reproductive health, political roles, economic empowerment, and violence prevention?**
- A) African Charter on Human and Peoples' Rights
B) Maputo Protocol
C) Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW)
D) Universal Declaration of Human Rights

Q99. Consider the following statements:

1. Both the dark and deep web share can't be found in search engine results.
2. Deep web pages can be accessed by anyone with a standard web browser who knows the URL.
3. The dark web is a small, less accessible part of the deep web.

How many of the above statements are correct?

- A) Only one
- B) Only two
- C) All
- D) None

Q100. Which of the following statements regarding petcoke is NOT true?

- A) Petcoke is derived from oil refining and exists in two forms: green and calcined petcoke.
- B) Calcined petcoke is the raw material without treatment, while green petcoke is the result of heating to remove moisture and volatile components.
- C) Petcoke is primarily used as fuel in industries such as cement, steel, power, and aluminum.
- D) Petcoke has a low ash content compared to coal and natural gas, leading to increased maintenance for boilers and furnaces.

Answer 1. A)**Explanation**

Book building is a **process used by companies to determine the price at which their initial public offering (IPO) of securities will be offered to the public.** It involves the collection of bids from investors, typically institutional investors and high-net-worth individuals, to determine the demand for the securities being offered.

Hence, statement 1 is correct.

During the book building process, the issuer, with the help of underwriters or investment bankers, sets a price range within which investors can bid for the shares or other securities. Investors then submit their bids specifying the quantity of securities they wish to purchase and the price they are willing to pay.

The bidding process typically lasts for a few days, during which investors have the opportunity to revise their bids based on market conditions and information provided by the issuer. Once the bidding period is over, the underwriters analyze the bids received and determine the final offer price for the securities.

Book building allows issuers to gauge investor interest and demand for their securities, thereby helping them to price their IPO effectively. It also allows for price discovery, as the final offer price is determined based on the bids submitted by investors. This process helps ensure that the securities are priced fairly and that the issuer raises the necessary capital while maximizing investor participation.

Trivia

DRHP stands for **Draft Red Herring Prospectus**. It is a **preliminary document filed by a company to the SEBI when it is planning to issue an IPO.**

Mutual funds are investment vehicles that pool money from multiple investors to invest in a diversified portfolio of stocks, bonds, or other assets.

Futures contracts are financial instruments that obligate the parties involved to buy or sell an asset at a predetermined price on a specified future date. The primary purpose of futures contracts is to provide a mechanism for hedging against the risk of adverse price movements in underlying assets, such as commodities (e.g., oil, wheat), currencies (e.g., US dollar, euro), or financial instruments (e.g., stock indices, interest rates).

Hence, statements 2, 3 and 4 are incorrect.

ALL ABOUT IPO

An IPO, or Initial Public Offering, is the process by which a privately held company makes its shares available to the general public for the first time. It transitions from

a privately-owned entity to a publicly traded company, allowing individuals and institutional investors to purchase its shares.

Types of IPO

There are two common types of IPO:

1. Fixed price offering:

In a Fixed Price IPO, the company sets a specific price for its shares during the initial sale. Investors are aware of the stock price when the company goes public. Once the IPO is closed, the demand for the shares becomes evident. Investors participating in this type of IPO must pay the full price for the shares at the time of application.

2. Book building offering:

Book Building involves the company offering a price band (typically 20%) for its shares to potential investors. Interested investors bid on the shares, specifying the number of shares they want and the price they are willing to pay per share. The range of prices includes the floor price (the lowest) and the cap price (the highest). The final share price is determined based on the bids submitted by investors.

How an initial public offering (IPO) works

In an IPO, a company decides to raise capital by issuing shares of its stock to the public. Here's how the process typically works:

1. Preparation phase:

- A company decides to go public and appoints investment banks as underwriters.
- Extensive due diligence, including financial audits and legal compliance checks, is conducted.

2. DRHP filing:

The company files a Draft Red Herring Prospectus (DRHP) with the Securities and Exchange Board of India.

3. Select the stock exchange:

The next step would be to decide the exchange where the company would list its shares should be made, followed by an application to the selected exchange.

4. Roadshow:

The company, along with underwriters, conducts a roadshow to promote the IPO to potential investors.



5. Pricing:

- Based on investor demand and market conditions, the offering price is determined.
- The final prospectus, known as the Red Herring Prospectus (RHP), is issued with the offer price range.

6. Allocation:

- Shares are allocated to various investor categories, including Qualified Institutional Buyers (QIBs), Non-Institutional Investors, and Retail Individual Investors.
- Bidders can apply for shares within the specified price range.

7. Listing:

The company's shares are listed on stock exchanges like [NSE](#) and [BSE](#).

8. Trading commences:

- On the IPO day, the shares become available for trading in the secondary market.
- Investors can buy and sell shares at market prices.

9. Lock-up period:

Promoters and certain shareholders are often subject to lock-up periods during which they cannot sell their shares.

10. Post-IPO reporting:

The company is required to provide regular financial and operational updates to the stock exchanges and investors.

11. Stabilisation period:

In some cases, [underwriters](#) may engage in stabilisation activities to support the stock's price during the early trading period.

The IPO process in India involves rigorous regulatory compliance and thorough investor scrutiny to ensure transparency and fairness in the capital markets.

What is the IPO timeline?**1. Open/ close date:**

These are the dates when the IPO bidding process is open. Potential investors can apply or bid for shares during this period. It marks the window for submitting IPO applications.

2. Allotment date:

On the allotment date, the registrar of the IPO announces the allotment status to the public. It reveals who has been allocated shares and in what quantity.

3. Refund date:

The refund date is when the application amount, which is temporarily frozen, becomes eligible for refund to those who did not receive IPO allotments. It marks the date when the refund process begins.

4. Credit to Demat account date:

This date varies depending on the company but is when investors receive the credited IPO shares in their Demat accounts. This happens before the official listing date of the shares.

5. Listing date (IPO listing):

The listing date is when the company's shares are officially listed on the stock exchanges, making them available for trading in the secondary market. It is the point at which the IPO shares become publicly tradable.

Pros and cons of investing in IPO

Investing in an IPO offers early access to promising companies and the potential for high returns. However, it comes with risks such as volatility, limited historical information, and susceptibility to market conditions.

Before investing in an IPO, it is important to understand the potential advantages and disadvantages that come with it.

Pros of investing in an IPO:

- 1. Early investment opportunity:** IPOs provide an opportunity to invest in a company during its early stages of going public, potentially benefiting from long-term growth.
- 2. Potential for high returns:** Successful IPOs can offer significant capital appreciation as the company's value may increase after listing.
- 3. Access to promising companies:** IPOs often involve innovative or promising companies that were previously private, allowing investors to be part of their growth story.
- 4. Liquidity for founders and early investors:** Existing shareholders, including founders and early investors, can monetise their investments by selling shares in the IPO.
- 5. Market visibility:** Going public can increase a



company's visibility and credibility, which can positively impact its business relationships and growth prospects.

Cons of investing in an IPO:

- 1. High risk:** IPOs are inherently risky, as newly public companies may lack a track record of profitability and face uncertainties in the market.
- 2. Volatility:** Share prices of IPOs can be highly volatile during the initial trading period, making it challenging to predict short-term price movements.
- 3. Limited historical information:** Investors have limited access to historical financial data and performance metrics, making it challenging to conduct comprehensive due diligence.
- 4. Potential for overvaluation:** Some IPOs may be overvalued, leading to price corrections after the initial hype subsides.
- 5. Lock-up periods:** Promoters and early investors are often subject to lock-up periods, during which they cannot sell their shares, potentially affecting the stock's supply and demand dynamics.
- 6. Market conditions:** IPO success can be influenced by broader market conditions, and adverse market conditions may lead to postponed or cancelled IPOs.

Investing in an IPO requires careful consideration of these factors, as well as thorough research and risk assessment. While the potential for high returns can be enticing, it's important to balance the rewards with the associated risks.

Why does a company offer an IPO?

Companies offer IPOs for several reasons:

- 1. Capital infusion:** IPOs raise capital, which can be used for business expansion, debt reduction, or other corporate purposes.
- 2. Liquidity for investors:** Existing shareholders, including founders and early investors, can monetise their investments by selling shares in the IPO.
- 3. Enhanced visibility:** Going public can increase a company's visibility and credibility in the market.

Terms associated with IPO

Underwriter	Third parties such as a banker, financial institution, or a broker hired by the company to assist with underwriting the stocks.
Fixed price IPO	Fixed Price IPO refers to a predetermined issue price set by companies for the initial sale of their shares.
DRHP	DRHP stands for Draft Red Herring Prospectus. It is a preliminary document filed by a company to the SEBI when it is planning to issue an IPO.
Book building	Book building refers to the process where underwriters or merchant bankers determine the price at which IPOs will be offered.

Answer 2. C)

Explanation

Composed of **polyethylene, polypropylene, polystyrene, and polyvinyl chloride** (which are all fossil fuels), nurdles are colloquially known as pre-production plastic pellets. They are melted down and cast into moulds to make various plastic products. Nurdles serve as the building blocks for various plastic items, including bottles, bags, containers, and packaging materials.

The **first reported appearance of nurdles on beaches dates back to 1970**. Today, nurdles **are rapidly degrading our oceans**.

Produced in bright colours, nurdles are often easily confused for food by marine life. Fish, sea turtles, seabirds, etc., eat these pellets, filling their stomachs with plastic and eventually dying of starvation with a body filled with plastic. **Consequently, this leads to bio-magnification**, i.e., building up of plastic in the food chain such that it can also enter our bodies through the fish and seafood we eat, causing us a variety of problems,

Nurdles absorb toxins and harmful chemicals like persistent organic pollutants (POP). POPs are toxic chemicals found in the air, water, among others, and they have a profound effect on human health. They come from pesticides, toxins and other harmful chemicals. Since they also attract hydrophobic chemical toxins and other pollutants onto their surface, **they are called "toxic sponges"**.

READ MORE: <https://www.iasgyan.in/blogs/nurdles-and-their-impact-on-the-environment#:~:text=Nurdles>

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Answer 3. B)

Explanation

Pratishakhya also known as Parsada, are Vedic-era manuals devoted to the precise and consistent pronunciation of words. These works were critical to the preservation of the Vedic texts, as well as the accurate ritual recitations and analyses of the Vedas, particularly when isolated words interact after they have been joined in sandhi procedures. Each Vedic school and geographic branch developed their own manuals, explaining why they have come to be called parsada or pratisakhya.

The manuals are **parts of the Shiksha Vedanga**: works dealing with the phonetic aspects of the Sanskrit language used in the Vedas. Each Veda has a pratishakhya for each school.

Samayasāra (The Nature of the Self) is a famous Jain text composed by Acharya Kundakunda in 439 verses. Its ten chapters discuss the nature of Jīva (pure self/soul), its attachment to Karma and Moksha (liberation). Samayasāra expounds the Jain concepts like Karma, Asrava (influx of karmas), Bandha (Bondage), Samvara (stoppage), Nirjara (shedding) and Moksha (complete annihilation of karmas).

Nirukta is one of the six ancient Vedangas, or ancillary science connected with the Vedas – the scriptures of Hinduism. Nirukta covers etymology, and is the study concerned with correct interpretation of Sanskrit words in the Vedas.

Aupapātika (c. 1st-2nd century CE) forms part of the 12 Jain upangaāgamas as per Śvetāmbara tradition. Aupapātika is translated as “Spontaneously Arising” so named as it contains descriptions of Heavenly beings and Hellish beings who are born spontaneously.

It contains descriptions of Devas (heavenly beings) who are born in heavens and hellish beings born in hells. It also contains an elaborate account of Mahavira’s preaching and descriptions of the mechanism which brings about attainment of liberation.

TRIVIA

The Vedanga are six auxiliary disciplines of Hinduism that developed in ancient times and have been connected with the study of the Vedas. Vedangas developed as ancillary studies for the Vedas, but its insights into meters, structure of sound and language, grammar, linguistic analysis and other subjects influenced post-

Vedic studies, arts, culture and various schools of Hindu philosophy. The Kalpa Vedanga studies, for example, gave rise to the Dharma-sutras, which later expanded into Dharma-shastras.

Vedangas: Auxiliary Disciplines of Hinduism

1. Shiksha (Instruction)

Focuses on phonetics, phonology, and pronunciation. Studies the Sanskrit alphabet, accent, stress, melody, and euphonic combination of words during Vedic recitation. Essential for correct recitation of Vedic texts.

2. Chandas (Metre)

Deals with prosody, particularly poetic meters. Studies meters based on syllables and morae per verse. Ensures poetic rhythm and structure in Vedic compositions.

3. Vyakarana (Grammar)

Concerned with grammar and linguistic analysis. Establishes rules for proper form of words and sentences to convey ideas accurately. Forms the basis for precise understanding and interpretation of Vedic texts.

4. Nirukta (Etymology)

Focuses on explanation of words, particularly archaic ones. Analyzes linguistic context to determine meaning of words. Helps in understanding nuanced meanings of Vedic terms.

5. Kalpa (Ritual Instructions)

Standardizes procedures for Vedic rituals and rites of passage. Discusses personal conduct and duties in different stages of life. Forms the basis for Dharma-sutras and Dharma-shastras.

6. Jyotisha (Astrology)

Determines auspicious times for rituals based on celestial positions. Utilizes astronomy to calculate the right time for performing rituals. Facilitates proper timing of Vedic ceremonies.

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Answer 4. B) Two only**Explanation**

The Tor network, often referred to as just "Tor," is a decentralized network that aims to provide privacy and anonymity for users browsing the internet. Tor works by routing internet traffic through a series of volunteer-operated servers called nodes or relays, distributed worldwide and maintained by individuals and organizations contributing their bandwidth and computing resources. When using Tor, **internet traffic gets encrypted and routed through multiple relays, obscuring the user's IP address and making it challenging for anyone to track their online activities. Hence, statement 1 is correct.** Tor employs onion routing, where each relay only knows the IP addresses of the relay before and after it in the chain, creating layered encryption akin to the layers of an onion. This design hides the user's IP address and encrypts their internet traffic, making it difficult for websites, ISPs, and government agencies to monitor their online activities or determine their location. Moreover, Tor assists users in accessing websites and services that might be blocked or censored in their country by routing traffic through nodes in different jurisdictions.

A side-channel attack is a security exploit that aims to gather information from or influence the program execution of a system by measuring or exploiting indirect effects of the system or its hardware -- rather than targeting the program or its code directly. Side-channel attacks involve observing information leaked by a cryptographic device or system through side channels such as power consumption, electromagnetic emissions, timing variations, or even sound. **Hence, statement 2 is incorrect.**

In computer security, a sandbox is a security mechanism for separating running programs, usually in an effort to mitigate system failures and/or software vulnerabilities from spreading. **Hence, statement 3 is correct.**

MUST READ ARTICLES:

COMPUTING CONCEPTS: <https://www.iasgyan.in/blogs/computing-concepts-in-news-part-i>

MALWARE AND ITS TYPES: <https://www.iasgyan.in/blogs/malwares-and-its-types>

FUTURISTIC TECHNOLOGIES: <https://www.iasgyan.in/rstv/perspective-disruptive-futuristic-technologies#:~:text=Disruptive%20technologies%2C%20as%20the%20name,%2C%20markets%2C%20and%20societal%20norms.>

5 G: <https://www.iasgyan.in/blogs/5g-technology-a-primer#:~:text=In%20a%205G%20wireless%20network,service%2Dcentric%20as%20in%204G.>

Answer 5. D)**Explanation**

A civil war erupted in Sudan between two rival factions of the military government, the Sudanese Armed Forces (SAF) led by Abdel Fattah al-Burhan, and the paramilitary Rapid Support Forces (RSF) under Hemedti, beginning on April 15, 2023. The conflict, concentrated around Khartoum and the Darfur region, has resulted in thousands of casualties, millions displaced internally and externally, and reports of civilian massacres.



The RSF initiated attacks on government sites, **leading to a division of Khartoum and Omdurman between the warring factions. Hence, statement 1 is correct.**

Despite attempts at negotiation and a ceasefire through the Treaty of Jeddah, fighting continued, with rebel groups aligning themselves with either the SAF or RSF.

While momentum initially favored the RSF, with gains in Darfur and other regions, the SAF began making gains in Omdurman by February 2024. Negotiations have yet to yield significant results, with various countries providing support to either al-Burhan or Hemedti.

The Treaty of Jeddah, initially known as the Jeddah Agreement or Jeddah Declaration, was an international agreement aimed at bringing peace to Sudan. Signed by the United States, Saudi Arabia, Sudan, and representatives of both warring factions on May 20, 2023, the treaty entered into force 48 hours later. It aimed to implement a week-long ceasefire and facilitate the distribution of humanitarian aid within Sudan. **Hence, statement 2 is correct.**

However, the agreement abruptly expired on May 23, 2023, following renewed clashes, just one day after coming into effect. Although an extension was agreed upon for five days, the treaty proved ineffective and was terminated before its scheduled expiry on May 27, 2023.

In 2023, during the Sudanese war, the Rapid Support Forces (RSF) perpetrated several massacres targeting Masalit civilians in Darfur, including the Ardamata, Misterei, and Geneina massacres. These atrocities are part of the ongoing Darfur genocide, which has been characterized by the systematic killing of ethnic Darfuri

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people, including the Fur, Masalit, and Zaghawa groups. The International Criminal Court (ICC) has indicted several individuals for crimes against humanity, including rape, forced transfer, and torture. Ethnic violence against the Masalit people reignited in 2023, leading to further escalation of the genocide and prompting many affected individuals to flee to Chad. **Hence, statement 3 is correct.**

Ongoing wars around the world in 2024

Ukraine vs Russia: This conflict involves significant military operations and has resulted in a high number of casualties and widespread impact. It's one of the largest conflicts in terms of international involvement and geopolitical implications.

Israeli-Palestinian Conflict (Israel vs Hamas): This conflict has escalated with severe impacts on civilians and involvement from regional players. The United States backs Israel, while Iran supports Hamas. This conflict has broader implications for the Middle East region.

War in Yemen (US & UK's Involvement Against Houthi Rebels): This conflict, though primarily a civil war within Yemen, has significant international involvement, especially from the Saudi-led coalition supported by the US and UK, and has caused a substantial humanitarian crisis.

Sudan Internal Conflict: This war has resulted in thousands of deaths and millions displaced, significantly impacting the region's stability.

Myanmar's Internal Conflict: Following the military coup, this conflict has intensified with various ethnic and political groups involved, causing significant regional instability and humanitarian concerns.

Ethiopia's Internal Conflicts: With rebellions in different regions and rising tensions with Eritrea, this conflict has serious implications for the Horn of Africa region.

Armenia-Azerbaijan Conflict over Nagorno-Karabakh: This conflict has seen military escalations and significant displacement of people, affecting the stability of the South Caucasus region.

U.S.-China Tensions: While not an active war, the rising tensions, especially over Taiwan and in the South China Sea, are significant due to the military and economic might of both nations.

Sahel Region Conflict (Mali, Niger, Burkina Faso): Involves coups and insurgencies with jihadist groups, significantly impacting the West African region.

Haiti's Gang Violence: Although not a conventional war, the severity of gang violence and the potential for international intervention make this situation critical.

Ecuador's Struggle Against Drug Trafficking: This is more an internal security challenge than a conventional war,

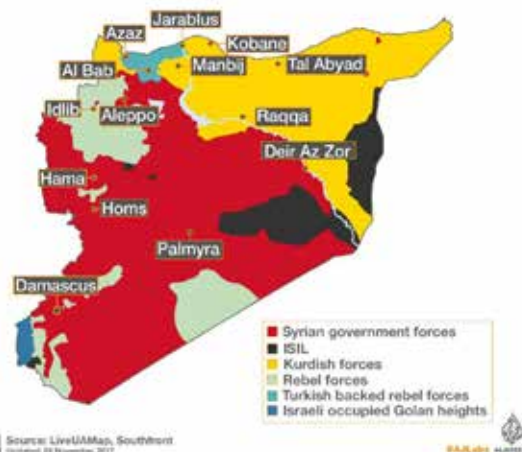
but it has significant implications for the region.

Mexico's Challenges with Drug Cartels: Similar to Ecuador, this is an internal security issue with significant impacts on public safety and governance.

Political Polarization in the United States: While this is not a conventional military conflict, the risk of political violence and domestic terrorism, especially surrounding the presidential election, is a significant concern.

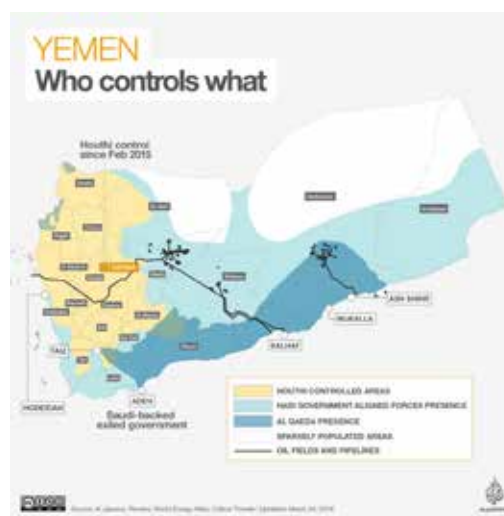
Conflict Zones around the world

Syria: Who controls what?



Syria:

- Location: Aleppo, Damascus, Idlib, Raqqa
- Affected Communities: Syrian civilians, Kurds, Sunni Muslims, Shia Muslims
- Refugee Zones: Refugee camps in neighboring countries like Turkey, Lebanon, and Jordan
- Active Groups: Syrian government forces, Syrian Democratic Forces, Hayat Tahrir al-Sham, Islamic State of Iraq and Syria (ISIS)



Yemen:

Location: Sana'a, Aden, Hodeidah
 Affected Communities: Yemeni civilians, Houthi rebels, Sunni Muslims
 Refugee Zones: Internally displaced persons within Yemen, refugee camps in neighboring countries
 Active Groups: Houthi rebels, Yemeni government forces, Saudi-led coalition forces



Afghanistan:

Location: Kabul, Kandahar, Helmand, Kunduz
 Affected Communities: Afghan civilians, Pashtuns, Tajiks, Hazaras
 Refugee Zones: Refugee camps in Pakistan and Iran
 Active Groups: Taliban, Afghan government forces, NATO coalition forces, Islamic State in Khorasan Province (ISKP)

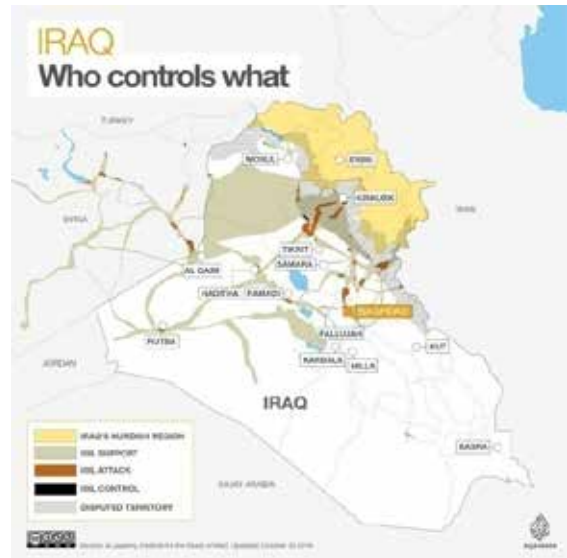
South Sudan:

Location: Juba, Malakal, Bentiu
 Affected Communities: South Sudanese civilians, Dinka, Nuer, Shilluk
 Refugee Zones: Refugee camps within South Sudan, as well as in neighboring countries like Uganda, Ethiopia, and Sudan
 Active Groups: Sudan People's Liberation Movement/Army (SPLM/A), Sudan People's Liberation Army-In Opposition (SPLA-IO), various ethnic militias



Democratic Republic of the Congo (DRC):

Location: North Kivu, South Kivu, Ituri, Kasai
 Affected Communities: Congolese civilians, Hutu, Tutsi, Lendu, Hema
 Refugee Zones: Refugee camps in neighboring countries like Uganda, Rwanda, and Burundi
 Active Groups: Allied Democratic Forces (ADF), Democratic Forces for the Liberation of Rwanda (FDLR), various ethnic militias



Iraq:

Location: Baghdad, Mosul, Kirkuk, Basra
 Affected Communities: Iraqi civilians, Sunni Arabs, Shia Arabs, Kurds
 Refugee Zones: Refugee camps within Iraq, as well as in neighboring countries like Jordan and Turkey
 Active Groups: Iraqi government forces, Popular Mobilization Forces (PMF), Kurdistan Regional Government (KRG), ISIS



Myanmar (Burma):

Location: Rakhine State, Shan State, Kachin State
 Affected Communities: Rohingya Muslims, Rakhine Buddhists, Shan, Kachin
 Refugee Zones: Refugee camps in Bangladesh, internally displaced persons within Myanmar

Active Groups: Myanmar military (Tatmadaw), Arakan Army, Kachin Independence Army (KIA), Rohingya insurgent groups

Israel-Palestine Conflict:

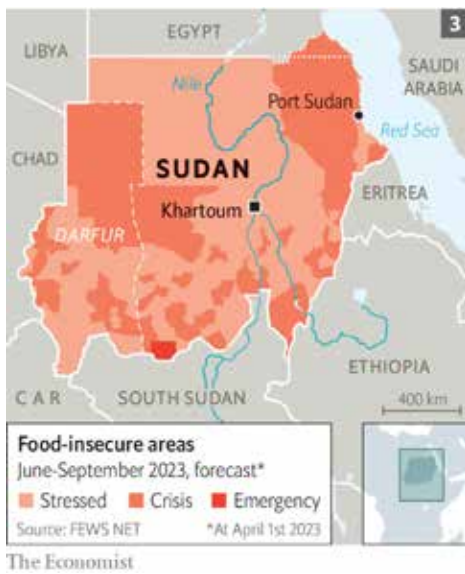


Location: Gaza Strip, West Bank, Jerusalem

Affected Communities: Israelis, Palestinians (both Muslims and Christians)

Refugee Zones: Palestinian refugee camps in Gaza, West Bank, Jordan, Lebanon, and Syria

Active Groups: Israel Defense Forces (IDF), Hamas, Palestinian Authority, various militant groups in Gaza.



Sudan:

Location: Darfur, Blue Nile, South Kordofan

Affected Communities: Sudanese civilians, Darfuri, Nuba, Beja, Masalit, Ardamata, Misterei, and Geneina

Refugee Zones: Refugee camps in neighboring countries

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like Chad and South Sudan

Active Groups: Sudanese government forces, Sudan People's Liberation Movement-North (SPLM-N), various rebel groups



Armenia vs Azerbaijan:

Location: Nagorno-Karabakh region, Tavush, Nakhchivan

Affected Communities: Armenians, Azerbaijanis

Refugee Zones: Internally displaced persons within Armenia and Azerbaijan

Active Groups: Armenian Armed Forces, Azerbaijani Armed Forces



Sahel Region Conflict (Mali, Niger, Burkina Faso):

Location: Gao, Timbuktu, Diffa, Ouagadougou

Affected Communities: Malian civilians, Tuareg, Fulani, Dogon, Peulh

Refugee Zones: Internally displaced persons within Mali, Niger, and Burkina Faso

Active Groups: Jama'at Nasr al-Islam wal Muslimin (JNIM), Islamic State in the Greater Sahara (ISGS), various ethnic militias



Ukraine vs Russia:

Location: Donetsk, Luhansk, Kyiv

Affected Communities: Ukrainians, Russians, Crimean Tatars

Refugee Zones: Internally displaced persons within Ukraine, as well as in neighboring countries

Active Groups: Ukrainian Armed Forces, Russian Armed Forces, separatist groups in Donetsk and Luhansk, such as Donetsk People’s Republic (DPR) and Luhansk People’s Republic (LPR).

Answer 6. A) Only one

Explanation

An old-growth forest is a remarkable ecosystem that evolves over extended periods without significant disruption, boasting distinctive ecological traits. While old-growth forests have limited human disturbance compared to younger forests, **they may have experienced natural disturbances such as wildfires, storms, or insect outbreaks.** Hence, **statement 1 is incorrect.** Primary forests, as defined by the Food and Agriculture Organization of the United Nations, exemplify this state of pristine natural regeneration, hosting native tree species without visible signs of human intervention. They **comprise one-third of global forest cover**, harboring diverse tree structures that foster abundant wildlife habitats, thus enriching forest biodiversity.

Primary forests span **1.11 billion hectares worldwide, with Brazil, Canada, and Russia** collectively housing the majority. Despite a reduction in primary forest area since 1990, the pace of decline slowed considerably in the past decade. These forests are invaluable both economically and ecologically. However, conflicting interests arise between those seeking immediate profits through **logging and environmentalists** advocating for forest preservation to safeguard essential ecosystem services.

Characterized by **towering trees, standing deadwood, and complex canopies**, old-growth forests nurture distinctive flora and fauna, including rare species like the **northern spotted owl**. They possess a **mix of tree ages**, a key factor in ensuring ecosystem stability, and maintain canopy openings vital for diverse habitat creation. Their topography, featuring pits and mounds, supports rich soil biodiversity, while standing snags serve as critical habitat elements.

Fallen timber, a hallmark of old-growth forests, enriches soil fertility and sustains various microorganisms, fungi, and seedlings. Intact soils, with well-defined horizons, provide essential habitats for numerous organisms, crucial for nutrient cycling within the ecosystem.

Old-growth forests are not only reservoirs of biological diversity but also vital players in mitigating climate change and providing essential ecosystem services. Preserving these ecosystems is imperative for the well-being of both nature and humanity.

Recently, the Atomic Minerals Directorate for Exploration and Research (AMD) found 8,813 tonnes of **uranium oxide** deposits in Rohil in Sikar district, 1,086 tonnes in Rohil west, 3,570 tonnes in Jahaz and 1,002 tonnes in Geratiyon ki Dhani. **Hence, statement 2 is incorrect.**

At Umra in Udaipur district, the AMD had found uranium oxide deposits to the tune of 1,160 tonnes. Across the country, the AMD, a constituent unit of the Department of Atomic Energy (DAE), has established a total of 3,82,675 tonnes in situ U3O8 in 47 uranium deposits in Andhra Pradesh, Telangana, Jharkhand, Meghalaya, Rajasthan, Karnataka, Chhattisgarh, Uttar Pradesh, Uttarakhand, Himachal Pradesh and Maharashtra.

Presently, the deposits at Jaduguda, Narwapahar, Bagjata, Bhatin, Banduhurang, Turamdih and Mohuldih in Jharkhand and Tummalalpalle in Andhra Pradesh.



The Global Green Growth Institute (GGGI) is a **treaty-based international, inter-governmental organization** dedicated to supporting and promoting strong, inclusive and sustainable economic growth in developing countries and emerging economies. GGGI was established as an international **intergovernmental organization in 2012 at the Rio+20 United Nations Conference on Sustainable Development. Hence, statement 3 is correct.**

Its vision is a low-carbon, resilient world of strong, inclusive, and sustainable growth and its mission to support Members in the

transformation of their economies into a green growth economic model. It is based in Seoul, South Korea. It is dedicated to promoting green growth, which integrates economic progress with environmental sustainability. GGGI provides technical support, research opportunities, and stakeholder collaboration to develop green growth plans, focusing particularly on the needs of developing countries.

GGGI's activities are centered on four key areas: energy, water, land-use planning, and the development of sustainable urban environments, often referred to as green cities. GGGI operates under an agreement from its member countries established in 2012. The governance structure includes the Assembly, encompassing all member countries, and the Council, which is in charge of strategy, budget, and membership. An Advisory Committee of experts also contributes strategic guidance. Membership in GGGI is open to any United Nations member state aligned with its green growth objectives.

Answer 7. D) None

Explanation

Khanzada Mirza Khan Abdul Rahim (17 December 1556 – 1 October 1627), commonly known as **Rahim and titled Khan-i-Khanan**, was a prominent poet and statesman during the Mughal era in India. **Under the patronage of Emperor Akbar**, who served as his mentor, Rahim rose to prominence as **one of the Navaratnas, the nine distinguished ministers in Akbar's court. Hence, statement 1 is correct.**

Rahim's literary contributions were significant, particularly in the realm of Hindustani poetry. He was renowned for his dohas, which are couplets known for their profound wisdom and simplicity. Additionally, Rahim authored books on astrology, showcasing his diverse intellectual interests. Notably, **he translated Babur's memoirs, the Baburnama, from Chagatai to Persian, demonstrating his linguistic prowess. Hence, statement 3 is correct.**

In 1580, Rahim was appointed as the chief of Ajmer by Emperor Akbar. During this period, he was also tasked

with leading a campaign against Maharana Pratap, a Rajput ruler. However, during the campaign, Pratap's son captured the women of Rahim's family. Despite the conflict, Pratap displayed chivalry by ordering the safe return of the captives to Rahim, emphasizing honor over hostility. **Hence, statement 2 is correct.**

Rahim's scholarly pursuits extended beyond poetry and astrology; **he had a proficient command of the Sanskrit language. His works in Sanskrit include notable astrological texts such as Khetakautukam and Dwatrimshadyogavali.**

Abdul Rahim Khan-i-Khanan's tomb, **located in Nizamuddin East on Mathura Road, adjacent to Humayun's Tomb in New Delhi**, stands as a testament to the legacy of this esteemed poet and statesman. Originally constructed by Rahim in 1598 as a mausoleum for his wife, it became his final resting place upon his death in 1627.

Over time, the tomb faced the ravages of nature and human intervention. In the mid-18th century, **portions of its marble and sandstone were repurposed in the construction of Safdarjung's Tomb, further diminishing its original grandeur.**

In 2014, the **InterGlobe Foundation and the Aga Khan Trust for Culture embarked on a collaborative project to preserve this architectural gem.** This endeavor aimed to safeguard Rahim's tomb for future generations and revitalize its splendor.

In 2020, Abdul Rahim Khan-i-Khanan's tomb was unveiled to the public after its extensive restoration. The project stands as one of the largest conservation efforts ever undertaken for a monument of national importance in India.

Since, all the statements are correct, the correct answer is D) None.

Answer 8. A) 1 and 2 only

Explanation

The State Emblem of India is the national emblem of the Republic of India and is used by the union government, many state governments, and other government agencies. The emblem is an adaptation of the Lion Capital of Ashoka, an ancient **sculpture dating back to 280 BCE during the Maurya Empire.** The statue is a **three dimensional emblem showing four lions.** It became the emblem of the Dominion of India in December 1947, and later the emblem of the Republic of India. The State Emblem of India is an official seal of the Government of India. It is used as the national emblem of India and appears on official documents, currency and passports.

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The **emblem was adopted by the Government of India on 26 January 1950**, the day that India became a republic. It is **based on the Lion Capital of Ashoka**, a sculpture that was originally erected at the Sarnath, a place where Gautama Buddha first taught the Dharma, now in Uttar Pradesh, India. The emblem features four Asiatic lions standing back to back, symbolizing power, courage, confidence and faith. The lions are mounted on a circular abacus and the abacus is mounted on a lotus. The wheel of the law, Dharmachakra, is in the center of the abacus. The wheel has 24 spokes, which symbolize the progress and evolution of human civilization.

The motto **"Satyameva Jayate" ("truth alone triumphs")** is inscribed below the abacus in **Devanagari script**, which is written from left to right. The use of the emblem is **governed by the State Emblem of India (Prohibition of Improper Use) Act, 2005 and the State Emblem of India (Regulation of Use) Rules, 2007**.

The State Emblem of India is used by the Government of India and its agencies, as well as by all state governments and union territory administrations in India. It is **also used by private citizens in India on letterheads, business cards and other personal uses, but with certain restrictions. Hence, statement 1 is correct**. The emblem is protected under the Indian Emblem Act and its use without proper authority is punishable under the law.

On 26 January 1950, a representation of the Lion Capital of Ashoka placed above the motto, Satyameva Jayate, was adopted as the State Emblem of India.

The emblem forms a part of the official letterhead of the Government of India and appears on all Indian currency as well. It also functions as the national emblem of India in many places and appears prominently on Indian passports. Usage of the emblem is regulated and restricted under State Emblem of India (Prohibition of Improper Use) Act, 2005, under which **no individual or private organisation is permitted to use the emblem for official correspondence**. The Ashoka Chakra (Ashoka wheel) on its base features in the centre of the National Flag of India.

The actual Sarnath capital features four Asiatic lions standing back to back, symbolising power, courage, confidence and pride, mounted on a circular base. At the bottom is a horse and a bull, and at its centre is a Dharma chakra. The abacus is girded with a frieze of sculptures in high relief of The Lion of the North, The Horse of the West, The Bull of the South and The Elephant of the East, separated by intervening

wheels, over a lotus in full bloom, exemplifying the fountainhead of life and creative inspiration. Carved from a single block of sandstone, the polished capital is crowned by the Wheel of Dharma.

In the emblem finally adopted, only three lions are visible, the fourth being hidden from view. The wheel appears in relief in the centre of the abacus, with a bull on the right and a galloping horse on the left, and outlines of Dharma Chakras on the extreme right and left. A horse and a bull are represented right below the abacus. The bull represents hard work and steadfastness, while the horse represents loyalty, speed, and energy. The bell-shaped lotus beneath the abacus has been omitted.

Forming an integral part of the emblem is the motto inscribed below the abacus in Devanagari script: Satyameva Jayate (Sanskrit: सत्यमेवजयते; lit. "Truth alone triumphs"). This is a **quote from the Mundaka Upanishad**, the concluding part of the sacred Hindu Vedas.

Most of the states and union territories of India have adopted their own state emblem, seal or coat of arms which are used as an official governmental symbol, while six states and five union territories use the National Emblem of India with a text legend as their official governmental seal. Hence, statement 2 is correct.

Some of the autonomous district councils established by the Sixth Schedule of the Constitution of India have also adopted an official emblem.

State Emblem of India (Prohibition of Improper Use) Act, 2005

State Emblem of India (Prohibition of Improper Use) Act, 2005 is an Act of Parliament of India which regulates the improper or commercial usage of the Emblem of India.

Prohibitions

- No person can use the emblem or any imitation in a manner so as to create an impression that it is associated with or an official document of the Central Government or State Government, as the case may be, without permission of the appropriate government.
- No person can use the emblem for commercial purpose or as a part of patent title, trademark or design except in cases as specified by the Central Government.
- Registration of intellectual property



containing the Emblem is prohibited.

- Central Government has the power to regulate and make rules for proper usage of the Emblem.

Consequences

- Creation of a false impression of association with Government is punishable with **imprisonment for a term which may extend to two years, or with fine which may extend to five thousand rupees**, or with both or in case of a subsequent offence, with imprisonment for a term which shall not be less than six months, which may extend to two years and with fine which may extend to five thousand rupees.
- Commercial usage of the Emblem is punishable with imprisonment for a term which shall not be less than six months, which may extend to two years and with fine which may extend to five thousand rupees.

Usage

The official seal shall have the Emblem enclosed in an oval or a round frame, with the name of the ministry or department written within the frame.

State Government can use the Emblem or a part of it after taking permission from the Central Government.

The Emblem can be displayed on important government buildings like Rashtrapati Bhawan, Parliament House, Supreme Court and Central Secretariat, Raj Bhavan or Raj Niwas and State Legislature, High Courts and Secretariat buildings of the States or the Union territories, premises of India's Diplomatic Mission abroad, Indian consulates abroad.

Emblem cannot be used by former functionaries of the Government, Commission or Committee, Public Sector Undertaking, Bank, Municipal Council, Panchayat Raj Institution, Parishad, non-government organisation, University.

The **State Emblem of India (Regulation of Use) Rules, 2007** lays down the persons who can use the Emblem in official stationery, on cars, etc. Hence, statement 3 is incorrect.

LEARN ABOUT THE EMBLEMS OF STATES OF BHARAT:
<https://www.nlcbharat.org/emblems/>

READ: The State Emblem Of India (Regulation Of Use) Rules, 2007: <https://indiankanoon.org/doc/134082378/>

Answer 9. C) 2 and 3 only

\Explanation

India League-Krishna Menon
Swatantra Party - C. Rajgopalachari
BahiskritHitkarni Sabha - Dr BR Ambedkar
Mumbai Presidency Association - Feroze Shah Mehta
Missionaries of Charity - Madar Teresa
Gadar Party - Lala Hardayal
Gyan PrasarakMandali - DadabaiNouroji
Paramhansa Sabha - DadobaPadurang
Vedanta College – Raja Ram Mohan Ray
Rashtriya Swayam Sevak Sangh - Dr Baliram Hedgewar
Forward Bloc - Subhash Chandra Bose
Hindustan Socialist Republic Association - Ram Prasad Bismil
Azad Hind Fauj - Captain Mohan Singh
Servants of India Society - GK Gokhale
Khilafat Movement – Ali Brothers
Servants of God or KhudaiKhidmatgar - Khan Abdul Gaffar Khan
Sharada Sadan – Rama Bai
Ved Samaj - Acharya Keshava Chandra Sen
Tattvabodhini Sabha - Debendra Nath Tagore
Swaraj Party - MotilalaNeharu& Chittaranjan Das
Theosophical Society - Madame H. P. Blavatsky
Scientific Society - Sir Sayyed Ahmad Khan
Girl School - Jyotiba Phule
BahishkritHitkarani Sabha - Dr B.R.Ambedkar
Harijan Sevak Sangh - Mahatma Gandhi
Vanmahotsav - KM Munshi
Women's Indian Association - Annie Besant, Margaret Cousins, Dorothy Jinarajadasa, and others
.Lady Sadashiva Ayyar (Vice President)
Belur Mutt - Swami Vivekanand
Saryodaya, Bhoodan - Acharya Vinoba Bhave
Atmiya Sabha - Raja Ram Mohan Roy
Narmada Bachao - Medha Patkar
Prarthana Samaj - RG Bhandarkar & MG Ranade
Abhinav Bharat - Vir Savarkar
Arya Samaj - Swami Dayanand Saraswati

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Muslim League - Agha Khan & Salimullah
Ramakrishna Mission - Swami Vivekanand
Servants of People Society - Lala Lajpat Rai
Shuddhi Movement - Swami Dayanand Saraswati
Home Rule League - Annie Besant & Bal Gangadhar Tilak
National Congress - AO Hume
Young Bengal Movement - Henry Vivian Derozio
Vishva Bharti (Kolkata) - Rabindranath Tagore
Hindu Mahasabha - Madan Mohan Malviya
Bengal Gazette - James Augustus Hicky
Sarvajanik Sabha - Dada Bhai Naoroji
Brahmo Samaj - Raja Ram Mohan Roy
Poona Sarvajanik Sabha - MK Gandhi
Dev Samaj - Swami Satyanand Agnihotri
Satyashodhak Samaj - Jyotirao Phule
Azad Hind Sarkar - Subash Chandra Bose
Arya Samaj - Swami Dayanand Saraswati

Answer 10. C) All
Explanation

When the financial crisis hit, many banks worldwide faced a liquidity shock. They didn't have enough assets that could be converted into cash to avoid defaulting. Liquidity Cover Ratio (LCR) requires a bank to maintain a certain stock of High-Quality Liquid Assets (HQLA) to help it weather a stressful period, like the financial crisis of 2008.

Put simply, the liquidity coverage ratio is a term **that refers to the proportion of highly liquid assets held by financial institutions to ensure that they maintain an ongoing ability to meet their short-term obligations (i.e., cash outflows for 30 days)**. 30 days was selected because, in a financial crisis, a response from governments and central banks would typically take around 30 days. **Hence, statement 1 is correct.**

Developed by the Basel Committee on Banking Supervision (BCBS) – a group of representatives from global financial centres – the LCR ratio is the main takeaway from the Basel Accord. It was first proposed in 2010 before it was given final approval in 2014, although the 100% minimum wasn't required until 2019.

Calculating LCR

Liquidity Coverage Ratio = (High Quality Liquid Assets) / (Total net cash outflows over the next 30 calendar days)

Every asset that can be easily and instantly converted into cash at minimum or no cost of value is a High-Quality Liquid Asset.

The significance of LCR

The Liquidity Coverage Ratio in banking **resulted from the Basel III agreement**, which is a series of measures undertaken by the Basel Committee on Bank Supervision (BCBS). This international committee comprises 45 members in 28 jurisdictions across the world. **Hence, statement 2 is correct.**

Limitations of LCR

LCR ratio being a preventive measure, it is generally beneficial for a bank, especially during a financial crisis. But it has its share of limitations, too. Both LCR and NSFR require banks to hold more cash in terms of assets. Hence, the ability of a bank to disburse loans to companies and individuals reduces. **It can further lead to an economic slowdown, hence reducing the capacity of individuals to avail of loans and the ability of businesses to expand.** **Hence, statement 3 is correct.**

Answer 11. A)
Explanation

François Bernier was a French physician and traveller. He stayed (14 October 1658 – 20 February 1670) for around 12 years in India. He wrote Travels in the Mughal Empire, which is mainly about the reigns of Dara Shikoh and Aurangzeb. It is based on his own extensive journeys and observations, and on information from eminent Mughal courtiers who had witnessed the events firsthand.

In 1658 he debarked at Surat in India, in Gujarat state. He worked as a personal doctor for Dara Shikoh. He was installed as a medical doctor at the court of Aurangzeb, the last of the great Mughal emperors.

A tour of inspection by Aurangzeb (1664–65) gave Bernier the opportunity to describe Kashmir, the first and for a long time the only European to do so.

FOREIGN TRAVELLERS: <https://www.iasgyan.in/blogs/list-of-foreign-travellers-to-india>

Answer 12. C) All
Explanation

Voter ID Card

The Indian Voter ID Card (officially the Elector's Photo Identity Card (EPIC)) is an identity document issued by the Election Commission of India to adult



domiciles of India who have reached the age of 18, which primarily serves as an identity proof for Indian citizens while casting their ballot in the country's municipal, state, and national elections. It also serves as general identity, address, and age proof for other purposes such as buying a mobile phone SIM card or applying for a passport. It also serves as a Travel Document to travel to Nepal and Bhutan by Land or Air. It is also known as Electors Photo Identity Card (EPIC). It was **first introduced in 1993 during the tenure of the Chief Election Commissioner T. N. Seshan. Hence, statement 1 is correct.**

Initially, voter IDs were **printed with black ink on regular paper and laminated.** Starting in 2015, the Indian government started rolling out a less perishable **PVC colour version, compliant with the ISO/IEC 7810 size standard used by most payment and ATM cards.**

On the front, the Elector Photo Identity Card contains the voter's name, the name of a relative they have chosen (such as their father or mother), and the voter's picture, along with the voter's ID number. On the back of the card, the voter's home address is printed, along with an image of their Electoral Registration Officer's signature. The back **also mentions the voter's electoral district and their assembly constituency.** The **newer series also contains a 'part number'**, which lets voters and election officials locate voters on their electoral roll.

The voter card is issued to all Indian citizens who have attained the age of 18 years and qualify to be a voter. One has to apply on prescribed Form-6 of Election Commission attached with proof of ID, Indian nationality, age and residence.

Those of "unsound mind", convicted of "corrupt practices", or offenses related to elections are ineligible to vote.

Applicants have to submit paper Form-6 to their Booth Level officer (BLO) of the area.

Applicants can also apply online on the website of the chief electoral officer given for that State or can directly apply to the website named Voters' Service Portal.

Fake voter ID cards have occasionally been used fraudulently for other purposes by dubious parties and individuals to suit their personal needs.

EVM

An EVM is a device that allows voters to cast their votes using electronic means. According to the ECI, it assists in or oversees the casting and counting of votes. An EVM is made of two parts: the control unit

and the balloting unit.

Voters can use the VVPAT machine to verify if their votes were cast as intended by using a verification technique. A VVPAT prints a paper slip with the name, party symbol, and serial number of the candidate a voter selects. Election fraud and malfunctions are intended to be identified by VVPATs.

To ensure safety and transparency, the ECI has advised officials to match data from EVMs and VVPATs. Should there be a disparity between the data on VVPATs and EVMs, the polling station's specific paper slips are re-examined. The **count determined by the VVPAT paper slips takes precedence over the vote count recorded on the EVMs if the disparity continues.** Hence, **statement 2 is correct.**

Model Code of Conduct

Under its constitutional authority to ensure free and fair elections, the ECI has evolved the Model Code of Conduct, which establishes norms for political parties and candidates. The objective is to create a "level playing field".

Restrictions on government announcements:

- Ministers and other authorities are prohibited from announcing any financial grants or making promises thereof once the elections are announced, the election panel's guidelines say.
- After Lok Sabha election dates are announced, they are also restricted from laying foundation stones or initiating projects or schemes of any kind, except civil servants.
- Promises related to the construction of roads, provision of drinking water facilities, etc., are not permitted during this period.
- Ad-hoc appointments in government or Public Undertakings that could influence voters in favour of the ruling party are prohibited.

Discretionary funds and official visits:

- With the announcement of the Lok Sabha election schedule, ministers and other authorities cannot sanction grants or payments from discretionary funds once the elections are announced.

Use of government resources:

- After the Model Code of Conduct comes into force, official visits shall not be combined with electioneering work, and the use of official machinery or personnel for electioneering is



strictly prohibited, the ECI guidelines say.

- Government transport, including official aircraft, vehicles, machinery, and personnel, cannot be used to further the interests of the ruling party during elections.
- Public places like maidens for holding election meetings and helipads for air flights must be accessible to all parties and candidates on the same terms and conditions.

Accommodation and campaigning:

Rest houses, dak bungalows, or other government accommodations should not be monopolised by the ruling party or its candidates, the ECI says. But using them as campaign offices or for holding public meetings for election propaganda by any party is prohibited, the poll body adds.

Avoidance of partisan coverage:

The Election Commission of India prohibits the issue of advertisements at the cost of public exchequer in newspapers and other media during the election period. Misuse of official mass media for partisan coverage of political news and publicity regarding achievements to favour the ruling party should be strictly avoided, MCC guidelines note.

If a party or candidate violates MCC

The MCC does not have legal enforceability on its own. Nevertheless, specific provisions within it may find enforcement through corresponding clauses in other statutes, including the Indian Penal Code of 1860, the Code of Criminal Procedure of 1973, and the Representation of the People Act of 1951.

Additionally, the **ECI holds authority under paragraph 16A of the Election Symbols (Reservation and Allotment) Order of 1968 to suspend or withdraw a party's recognition. Hence, statement 3 is correct.**

Answer 13. B)

Explanation

The Mahalwari System, a modified rendition of the Zamindari settlement, emerged as a significant land revenue arrangement during British rule in India. Unlike the Zamindari system, it was implemented primarily in the Ganga valley, the North-West Provinces, parts of central India, and Punjab.

Key Features:

- **Revenue Settlement:** The Mahalwari System involved revenue settlement on a village-by-village or mahal (locality) basis. The property

managers or heads of families collectively claimed ownership of the village or locality.

- **Modified Structure:** Punjab witnessed a variation known as the village system under the Mahalwari framework, introducing alterations to suit local conditions.
- **Revenue Revisions:** Periodic revisions of land revenue occurred even in Mahalwari areas, unlike the fixed revenue characteristic of the Zamindari system.

Impact and Significance:

- **Encouragement of Agricultural Investment:** The Mahalwari System significantly impacted Indian agriculture and society by encouraging cultivators to invest in their land. This investment led to **improved agricultural productivity, ultimately resulting in increased food production. Hence, statement 3 is correct.**
- **Security of Tenure:** By providing security of tenure for cultivators, the system elevated their socio-economic status and reduced their dependence on intermediaries, empowering them within the agricultural landscape. **Hence, statement 2 is correct.**
- **Drawbacks and Challenges:**
 1. **High Revenue Burden:** The revenue fixed under the Mahalwari System often imposed a heavy burden on cultivators, straining their economic resources.
 2. **Lack of Land Redistribution:** The system's failure to redistribute land perpetuated existing inequalities, as landownership remained concentrated among a privileged few. **Hence, statement 1 is incorrect.**



Trivia

The Ryotwari system refers to a system of land revenue **instituted in late 18th century by Sir Thomas Munro**, who was the Governor of Madras in 1820. This was practised **mostly in Madras and Bombay areas as well as Assam and Coorg provinces**. The peasants or the cultivators are regarded as the owners of land and had ownership rights, could sell as well as mortgage or gift land.

In the Ryotwari system, the **taxes were directly collected by the government from peasants and the rates were 50 % in dry lands and 60 % in wetlands**. The rates are high and unlike Permanent system, they were **open to being increased**. If they failed in payment of the taxes and were evicted by the government. As in zamindari system, **in this system there is no middlemen**, and since high taxes had to be paid in cash only, the problem of moneylenders came to be shown and this **further came to burden the ryots with high interests**.

Answer 14. A) Only one**Explanation**

A bioactive compound is a compound that has an effect on a living organism, tissue or cell, usually demonstrated by basic research in vitro or in vivo in the laboratory. While dietary nutrients are essential to life, bioactive compounds have **not been proved to be essential** – as the body can function without them – or because their actions are obscured by nutrients fulfilling the function. **Hence, statement 1 is incorrect.**

Bioactive compounds lack sufficient evidence of effect or safety, and consequently they are usually unregulated and may be sold as dietary supplements.

Bioactive compounds are commonly derived from plants, animal products, or can be synthetically produced. Examples of plant bioactive compounds are carotenoids, polyphenols, or phytosterols. **Hence, statement 2 is correct.** Examples in animal products are fatty acids found in milk and fish. Other examples are flavonoids, caffeine, choline, coenzyme Q, creatine, dithiolthiones, polysaccharides, phytoestrogens, glucosinolates, and prebiotics. Bioactive compounds derived from medicinal plants/herbs has several Phytotherapeutic Applications.

According to a consensus established by, bioactive compounds are naturally occurring essential and non-essential compounds that can positively influence human health. Nutritionally, they have also been called nutraceuticals since 1979 because when ingested, they provide health benefits beyond basic nutrition. **Hence, statement 3 is correct.**

Answer 15. A) Climbing pads mimicking the biomechanics of gecko feet.**Explanation**

Biomimicry (literally: imitation of the living) aims to take inspiration from natural selection solutions adopted by nature and translate the principles to human engineering. The biomimicry approach aims to favor “choices” tested by nature which had millions of years to understand what works best and what doesn’t. Designs following biometrics will ultimately allow human productions to be more efficient, resilient and sustainable.

Biomimicry can be defined as “an approach to innovation that seeks sustainable solutions to human challenges by emulating nature’s time-tested patterns and strategies. The goal is to create products, processes, and policies—new ways of living—that are well-adapted to life on earth over the long haul.

Biomimicry concerns many sectors of human activity. From medicine to research, industry, economy, architecture and urban planning, agriculture and management.

The concept of biomimicry is based on a key idea: nature always operates on the principles of economy and efficiency while generating no waste. The biomimetic philosophy is part of a global strategy of responsible and sustainable development that aims to balance the way the planet’s resources are used.

Examples of Biomimicry

Climbing pads capable of supporting human weight are a mimic of the biomechanics of gecko feet. Hence, statement 1 is correct.

The aerodynamics of the famous Japanese Bullet train was inspired by the shape of a bird’s beak.

The first flying machine heavier than the air from the Wright brothers, in 1903, was inspired by flying pigeons.

Architecture is inspired by termite mounds to design passive cooling structures.

Velcro is born from the observation of the hooks implemented by some plants for the propagation of their seeds via animal’s coat.

The study of shark skin is at the origin of particularly effective swimming suits, as well as a varnish for planes fuselage

Answer 16. D)**Explanation**

Prominent mountain ranges along with their



highest peaks:**Himalayas:**

Highest Peak: Mount Everest (Sagarmatha/Chomolungma) - 8,848 meters (29,029 feet)

Andes:

Highest Peak: Mount Aconcagua - 6,960.8 meters (22,837 feet)

Rocky Mountains:

Highest Peak: Mount Elbert - 4,399 meters (14,440 feet)

Alps:

Highest Peak: Mont Blanc - 4,808.7 meters (15,777 feet)

Karakoram Range:

Highest Peak: K2 (Mount Godwin-Austen) - 8,611 meters (28,251 feet)

Cascade Range:

Highest Peak: Mount Rainier - 4,392 meters (14,411 feet)

Sierra Nevada:

Highest Peak: Mount Whitney - 4,421 meters (14,505 feet)

Appalachian Mountains:

Highest Peak: Mount Mitchell - 2,037 meters (6,684 feet)

Urals:

Highest Peak: Mount Narodnaya - 1,895 meters (6,217 feet)

Transantarctic Mountains:

Highest Peak: Mount Kirkpatrick - 4,528 meters (14,856 feet)

Central Asian Ranges:

Highest Peak: Khan Tengri - 7,010 meters (22,999 feet)

Great Dividing Range:

Highest Peak: Mount Kosciuszko - 2,228 meters (7,310 feet)

Southern Alps (New Zealand):

Highest Peak: Aoraki/Mount Cook - 3,724 meters (12,218 feet)

Tien Shan:

Highest Peak: JengishChokusu (Pik Pobedy) - 7,439 meters (24,406 feet)

Atlas Mountains:

Highest Peak: Toubkal - 4,167 meters (13,671 feet)

Western Ghats:

Highest Peak: Anamudi - 2,695 meters (8,842 feet)

Drakensberg Range:

Highest Peak: ThabanaNtlenyana - 3,482 meters (11,423 feet)

Caucasus Mountains:

Highest Peak: Mount Elbrus - 5,642 meters (18,510 feet)

Dolomites:

Highest Peak: Marmolada - 3,343 meters (10,968 feet)

Southern Carpathians:

Highest Peak: Moldoveanu Peak - 2,544 meters (8,346 feet)

Pamir Mountains:

Highest Peak: Kongur Tagh - 7,649 meters (25,095 feet)

Japanese Alps:

Highest Peak: Mount Fuji - 3,776 meters (12,389 feet)

Altai Mountains:

Highest Peak: Belukha Mountain - 4,506 meters (14,783 feet)

Ural Mountains:

Highest Peak: Mount Narodnaya - 1,895 meters (6,217 feet)

Southern Rocky Mountains:

Highest Peak: Blanca Peak - 4,372 meters (14,351 feet)

Rila Mountains:

Highest Peak: Musala - 2,925 meters (9,596 feet)

Balkan Mountains:

Highest Peak: Botev Peak - 2,376 meters (7,795 feet)



Kurdistan Mountains:

Highest Peak: Mount Halgurd - 3,607 meters (11,834 feet)

Zagros Mountains:

Highest Peak: Mount Dena

Answer 17. C) Shreya Singhal vs. Union of India**Explanation**

In 2015, the Supreme Court of India delivered a landmark judgment on online speech and intermediary liability in the **Shreya Singhal v. Union of India**. **Hence, the correct option is C)**

The judgment struck down Section 66A of the Information Technology Act, 2000, as unconstitutional for violating the freedom of speech guaranteed under Article 19(1)(a) of the Constitution of India.

Section 66A, which made it an offence to send 'grossly offensive' or 'menacing' information online, was deemed vague and arbitrary, leading to misuse and unwarranted criminal cases.

Additionally, the Supreme Court read down Section 79 and its rules, imposing obligations on online intermediaries to take down content only upon court or government order.

This decision is considered a watershed moment for online free speech in India, safeguarding it against arbitrary restrictions and protecting individuals' rights in the digital realm.

The judgment relieved internet intermediaries from an onerous liability regime and upheld the principles of free expression in the online space.

Trivia

The Harbans Singh Jalal Case affirmed that the Model Code of Conduct (MCC) comes into effect immediately upon the announcement of elections by the Election Commission of India. **Hence, option B is incorrect.**

The Lily Thomas Case established that legislators convicted of a crime with a minimum 2-year sentence are immediately disqualified under the Representation of People Act, 1951. **Hence, option A is incorrect.**

In the Shyam Narayan Chouksey Case, judicial overreach was criticized for mandating the national anthem before film screenings, potentially infringing on individual freedoms and disregarding previous rulings. **Hence, option D is incorrect.**

Supreme Court Judgements

A.K. Gopalan Case (1950): The Supreme Court contended that adherence to the procedure

established by law in preventive detention did not violate Fundamental Rights under Articles 13, 19, 21, and 22.

Shankari Prasad Case (1951): This case affirmed Parliament's authority to amend Fundamental Rights, including those in Part III of the Constitution, under Article 368.

Berubari Union case (1960): Examined Parliament's power to transfer Berubari territory to Pakistan, concluding that such action couldn't be done through Article 3, leading to the 9th Amendment Act.

Golaknath case (1967): Highlighted that Fundamental Rights couldn't be amended by Parliament under Article 13, requiring a new Constituent Assembly for changes.

Kesavananda Bharati case (1973): Defined the basic structure of the Constitution, limiting Parliament's power to amend Fundamental Rights, protecting the Constitution's core.

Indira Nehru Gandhi v. Raj Narain case (1975): Applied the basic structure theory, striking down an amendment that violated the Constitution's fundamental features.

Maneka Gandhi case (1978): Established that personal liberty under Article 21 includes the right to travel abroad, emphasizing laws restricting liberty must be just, fair, and reasonable.

Minerva Mills case (1980): Reinforced the basic structure doctrine, emphasizing the supremacy of the Constitution over Parliament.

Waman Rao Case (1981): Reiterated the basic structure doctrine, setting a cutoff date and limiting retroactive application of judicial review.

Shah Bano Begum case (1985): Upheld the rights of Muslim women to alimony, sparking political controversy and subsequent legislative action.

MC Mehta and Union Of India (1986): Expanded the scope of Article 32, introduced Absolute Liability for hazardous industries, and linked compensation to industry capacity.

Indra Sawhney and Union of India (1992): Validated OBC reservation with conditions, including creamy layer exclusion and quota limits.

S. R. Bommai case (1994): Addressed misuse of Article 356, seeking to prevent arbitrary imposition of President's Rule.

Vishaka and State of Rajasthan (1997): Established guidelines against sexual harassment at the workplace



until legislation was enacted.

Samatha and State of Andhra Pradesh (1997): Nullified mining leases in tribal areas, restricting industrial operations to government undertakings.

I.R Coelho and State of Tamil Nadu (2007): Allowed examination of laws in the 9th Schedule and restricted future amendments.

Aruna Shanbaug Case (2011): Recognized the right to die with dignity, permitting passive euthanasia under guidelines.

NOTA judgement (2013): Introduced the NOTA option for Indian voters.

Nirbhaya Case (2014): Led to legislative changes and redefinition of rape laws.

National Legal Services Authority and Union of India (2014): Recognized transgender individuals as a third gender, directing government support.

Triple Talaq Judgement (2016): Banned instant 'triple talaq' among Muslim men, addressing gender rights.

Right To Privacy (2017): Declared privacy a Fundamental Right under the Indian Constitution.

Repealing Section 377 (2018): Decriminalized consensual same-sex relationships under Section 377.

L Chandra Kumar Case (1997): Affirmed judicial review as part of the Constitution's basic structure.

Puttuswamy Case (2017): Protected individual privacy rights against intrusion.

Habeas Corpus Case (1976): Controversial ruling criticized for favoring the state over individual freedoms.

Romesh Thapar Case (1950): Affirmed freedom of speech and expression, including the circulation of ideas.

Answer 18. A) 1, 2 and 4 only

Explanation

India and the Netherlands established diplomatic relations in 1947. The **year 2022 marked 75 years of the establishment of diplomatic relations. Hence, statement 3 is incorrect.**

INDIA-NETHERLAND TRADE

The Netherlands is the 4th largest trading partner with India in Europe (From April 2000-March 2023).

It is also the 4th largest investor in India.

Bilateral trade reached an all-time high of US\$ 27.58

billion during 2022-23.

Bilateral trade between India and Netherlands stood at US\$ 4.20 billion from April-May 2023-24.

The Netherlands is India's 11th largest merchandise trading partner in the world and the largest in the European Union.

The Netherlands is India's largest merchandise export destination in Europe and third largest in the world. **Hence, statement 1 is correct.**

MAJOR EXPORTED ITEMS FROM INDIA TO THE NETHERLANDS WITH AMOUNT & QUANTITY

India exported 4,679 commodities to the Netherlands in FY23.

India's exports to the Netherlands stood at US\$ 21.62 billion during 2022-23.

Major exported items from India to the Netherlands include petroleum products (US\$ 12.52 billion), telecom instruments (US\$ 1.25 billion), aluminium & products of aluminium (US\$ 0.85 billion), organic chemicals (US\$ 0.58 billion), residual chemical (US\$ 0.45 billion), drug formulations, biologicals (US\$ 0.44 billion), etc. during 2022-23. Hence, statement 2 is correct.

India's exports to the Netherlands stood at US\$ 13.50 billion from April-November 2023-24.

Major exported items from India to the Netherlands include petroleum products (US\$ 8.37 billion), engineering goods (US\$ 1.28 billion), electronic goods (US\$ 1.02 billion), organic chemicals (US\$ 672 million), drugs and pharmaceuticals (US\$ 496 million), etc. during April-November 2023-24.

MAJOR IMPORTED ITEMS BY INDIA FROM THE NETHERLANDS WITH AMOUNT & QUANTITY

India imported 4,109 commodities from the Netherlands in FY23.

India's imports from the Netherlands stood at US\$ 5.96 billion during 2022-23.

Major items imported by India from the Netherlands include petroleum; crude (US\$ 0.58 billion), vegetable oils (US\$ 0.44 billion), iron and steel (US\$ 0.31 billion), plastic raw materials (US\$ 0.29 billion), organic chemicals (US\$ 0.29 billion), industrial machinery for dairy (US\$ 0.27 billion), medical and scientific instruments (US\$ 0.27 billion), electric machinery (US\$ 0.25 billion), etc. during 2022-23.

India's imports to the Netherlands stood at US\$ 3.52 billion from April-November 2023-24.

Major imported items by India from the Netherlands

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include Nuclear Reactors (US\$ 537 million), electrical machinery (US\$ 469 million), optical and photographic apparatus (US\$ 355 million), organic chemicals (US\$ 256 million), plastic and plastic articles (US\$ 215 million), etc. during April-November 2023-24.

Other

The Netherlands has emerged as India's third largest exports destination after the US and UAE. **India's trade surplus with the Netherlands has also increased from USD 1.5 billion in 2017 to USD 12.3 billion in 2022. Hence, statement 4 is correct.**

According to economic think tank GTRI (Global Trade Research Initiative), ATF (aviation turbine fuel) and diesel were the key petroleum products exported from India to that country. The Netherlands is among top trading partners of India in Europe, after Germany, Switzerland, the UK and Belgium. It is also a major investor in India.

Answer 19. A) Only one

Explanation

The Wildlife (Protection) Act, 1972, is a landmark legislation aimed at protecting various species of wild animals and plants, managing their habitats, and regulating trade in wildlife and their products. It facilitates India's compliance with international conventions such as CITES, streamlining efforts to combat wildlife trafficking.

Constitutional amendments, including the 42nd Amendment Act, 1976, transferred wildlife protection from the State to the Concurrent List, emphasizing the importance of national-level conservation efforts. Articles 51 A (g) and 48 A underscore citizens' fundamental duty to protect the environment and promote wildlife conservation.

Bodies established under the Wildlife (Protection) Act, 1972:

National Board for Wildlife (NBWL): This is the apex body responsible for reviewing all matters concerning wildlife and granting approval for projects within and around national parks and sanctuaries.

State Board for Wildlife (SBWL): Chaired by the respective Chief Ministers of states or Union Territories, this board focuses on addressing wildlife-related issues at the state level.

Central Zoo Authority (CZA): Consisting of 10 members, including the Chairperson and a Member-Secretary, the CZA regulates and accredits zoos across the country. It also establishes guidelines for the transfer of animals between zoos nationally and

internationally. **Hence, option 1 is correct.**

National Tiger Conservation Authority (NTCA):

Established in 2005 to strengthen tiger conservation efforts, the NTCA is chaired by the Union Environment Minister, with the State Environment Minister serving as the Vice-Chairperson. It facilitates the designation of areas as Tiger Reserves by the Central Government.

Wildlife Crime Control Bureau (WCCB): Tasked with combating organized wildlife crime, the WCCB works to prevent illegal activities associated with wildlife.

Schedules under Wildlife (Protection) Act, 1972

Schedule I: This category includes critically endangered species that necessitate strict protection. Hunting these animals is prohibited across India, except in situations where there's a direct threat to human life or in cases of incurable diseases.

Schedule II: Animals listed in this category are also granted high protection, with strict regulations on their trade.

Schedule III & IV: These schedules encompass species that are not in immediate danger of extinction. While hunting them is banned, the penalties for violations are less severe compared to those in Schedules I and II.

Schedule V: Animals listed in this schedule are classified as vermin and can be hunted.

Schedule VI: This schedule regulates the cultivation, possession, sale, and transportation of specific plants. Cultivating and trading these plants require prior permission.

The Act recognizes five types of protected areas, including sanctuaries, national parks, conservation reserves, community reserves, and tiger reserves, providing essential habitats for India's rich biodiversity.

Initiatives of Wildlife Development Under WPA, 1972: Flagship initiatives like Project Tiger, Project Elephant.

Answer 20. B) 2 – 1 – 3 – 4

Explanation

The 1974 railway strike in India was a major strike by the workers of Indian Railways in 1974. The strike lasted from 8 to 27 May 1974. **(Option 2)**

The 20-day strike by 1.7 million (17 lakh) workers is the largest recorded industrial action in the world. The strike was held to demand an eight-hour working day for locomotive staff by the All India Railwaymen's Federation and a raise in pay scale, which had remained stagnant over many years. As President



of the All India Railwaymen's Federation, George Fernandes led the strike. The strike was suppressed by the Indira Gandhi government with thousands being sent to jail and losing their jobs. The strike was called off on 27 May 1974.

India conducted its first nuclear tests on **May 18, 1974**, in Pokhran, Rajasthan, as part of the 'Smiling Buddha' operation. **(Option 1)**

Pokhran-I was also the first confirmed nuclear weapons test by a nation outside the five permanent members of the United Nations Security Council. Indira Gandhi, then the Prime Minister of India, saw a massive rise in popularity following this test. After this, a series of nuclear tests were carried out in 1998 under the name Pokhran-II.

The Aryabhata spacecraft, named after the famous Indian astronomer, was India's first satellite; it was completely designed and fabricated in India and launched by a Soviet Kosmos-3M rocket from Kapustin Yar on April 19, 1975. **(Option 3)**

In March 1977, India held general elections for the sixth Lok Sabha amid the Emergency period, which ended just before the final results were declared. The elections marked a significant defeat for the ruling Indian National Congress (R) party, with Prime Minister Indira Gandhi and her son Sanjay losing their seats. The opposition Janata Alliance, advocating for the restoration of democracy, secured a sweeping victory. Morarji Desai of the Janata Alliance became India's fourth Prime Minister on March 24 leading to the formation of India's first non-Congress government at the center. **(Option 4)**

Answer 21. D) None

Explanation

The NEP 2020 is the first education policy of the 21st century and replaces the thirty-four year old National Policy on Education (NPE), 1986. Built on the foundational pillars of Access, Equity, Quality, Affordability and Accountability, this policy is aligned to the 2030 Agenda for Sustainable Development and aims to transform India into a vibrant knowledge society and global knowledge superpower by making both school and college education more holistic, flexible, multidisciplinary, suited to 21st century needs and aimed at bringing out the unique capabilities of each student.

Salient features of the NEP 2020

School Education

Ensuring Universal Access at all levels of school education

NEP 2020 emphasizes on ensuring universal access to school education at all levels- pre school to secondary. Infrastructure support, innovative education centres to bring back dropouts into the mainstream, tracking of students and their learning levels, facilitating multiple pathways to learning involving both formal and non-formal education modes, association of counselors or well-trained social workers with schools, open learning for classes 3,5 and 8 through NIOS and State Open Schools, secondary education programs equivalent to Grades 10 and 12, vocational courses, adult literacy and life-enrichment programs are some of the proposed ways for achieving this.

Early Childhood Care & Education with new Curricular and Pedagogical Structure

With emphasis on Early Childhood Care and Education, the 10+2 structure of school curricula is to be replaced by a 5+3+3+4 curricular structure corresponding to ages 3-8, 8-11, 11-14, and 14-18 years respectively. This will bring the hitherto uncovered age group of 3-6 years under school curriculum, which has been recognized globally as the crucial stage for development of mental faculties of a child. The new system will have 12 years of schooling with three years of Anganwadi/ pre schooling.

NCERT will develop a National Curricular and Pedagogical Framework for Early Childhood Care and Education (NCPFECCE) for children up to the age of 8. ECCE will be delivered through a significantly expanded and strengthened system of institutions including Anganwadis and pre-schools that will have teachers and Anganwadi workers trained in the ECCE pedagogy and curriculum. The planning and implementation of ECCE will be carried out jointly by the Ministries of HRD, Women and Child Development (WCD), Health and Family Welfare (HFW), and Tribal Affairs.

Attaining Foundational Literacy and Numeracy

Recognizing Foundational Literacy and Numeracy as an urgent and necessary prerequisite to learning, NEP 2020 calls for setting up of a National Mission on Foundational Literacy and Numeracy by MHRD. States will prepare an implementation plan for attaining universal foundational literacy and numeracy in all primary schools for all learners by grade 3 by 2025. A National Book Promotion Policy is to be formulated.

Reforms in school curricula and pedagogy

The school curricula and pedagogy will aim for holistic development of learners by equipping them with the key 21st century skills, reduction in curricular content to enhance essential learning and critical thinking and

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greater focus on experiential learning. Students will have increased flexibility and choice of subjects. There will be no rigid separations between arts and sciences, between curricular and extra-curricular activities, between vocational and academic streams.

Vocational education will start in schools from the 6th grade, and will include internships. Hence, statement 2 is incorrect.

A new and comprehensive National Curricular Framework for School Education, NCFSE 2020-21, will be developed by the NCERT.

Multilingualism and the power of language

The policy has emphasized mother tongue/local language/regional language as the medium of instruction at least till Grade 5, but preferably till Grade 8 and beyond. Sanskrit to be offered at all levels of school and higher education as an option for students, including in the three-language formula. Other classical languages and literatures of India also to be available as options. No language will be imposed on any student. Students to participate in a fun project/activity on 'The Languages of India', sometime in Grades 6-8, such as, under the 'Ek Bharat Shrestha Bharat' initiative. Several foreign languages will also be offered at the secondary level. Indian Sign Language (ISL) will be standardized across the country, and National and State curriculum materials developed, for use by students with hearing impairment.

Assessment Reforms

NEP 2020 envisages a shift from summative assessment to regular and formative assessment, which is more competency-based, promotes learning and development, and tests higher-order skills, such as analysis, critical thinking, and conceptual clarity. All students will take school examinations in Grades 3, 5, and 8 which will be conducted by the appropriate authority. Board exams for Grades 10 and 12 will be continued, but redesigned with holistic development as the aim. A new National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development), will be set up as a standard-setting body.

Equitable and Inclusive Education

NEP 2020 aims to ensure that no child loses any opportunity to learn and excel because of the circumstances of birth or background. Special emphasis will be given on Socially and Economically Disadvantaged Groups (SEDGs) which include gender,

socio-cultural, and geographical identities and disabilities. This includes setting up of Gender Inclusion Fund and also Special Education Zones for disadvantaged regions and groups. Children with disabilities will be enabled to fully participate in the regular schooling process from the foundational stage to higher education, with support of educators with cross disability training, resource centres, accommodations, assistive devices, appropriate technology-based tools and other support mechanisms tailored to suit their needs. **Every state/district will be encouraged to establish "Bal Bhavans" as a special daytime boarding school, to participate in art-related, career-related, and play-related activities. Hence, statement 3 is incorrect. Note: It is not mandatory.**

Free school infrastructure can be used as Samajik Chetna Kendras.

Robust Teacher Recruitment and Career Path

Teachers will be recruited through robust, transparent processes. Promotions will be merit-based, with a mechanism for multi-source periodic performance appraisals and available progression paths to become educational administrators or teacher educators. A common National Professional Standards for Teachers (NPST) will be developed by the National Council for Teacher Education by 2022, in consultation with NCERT, SCERTs, teachers and expert organizations from across levels and regions.

School Governance

Schools can be organized into complexes or clusters which will be the basic unit of governance and ensure availability of all resources including infrastructure, academic libraries and a strong professional teacher community.

Standard-setting and Accreditation for School Education

NEP 2020 envisages clear, separate systems for policy making, regulation, operations and academic matters. States/UTs will set up independent State School Standards Authority (SSSA). Transparent public self-disclosure of all the basic regulatory information, as laid down by the SSSA, will be used extensively for public oversight and accountability. The SCERT will develop a School Quality Assessment and Accreditation Framework (SQAAF) through consultations with all stakeholders.

Higher Education

Increase GER to 50 % by 2035

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NEP 2020 aims to increase **the Gross Enrolment Ratio in higher education including vocational education from 26.3% (2018) to 50% by 2035. Hence, statement 1 is incorrect.** 3.5 Crore new seats will be added to Higher education institutions.

Holistic Multidisciplinary Education

The policy envisages broad based, multi-disciplinary, holistic Under Graduate education with flexible curricula, creative combinations of subjects, integration of vocational education and multiple entry and exit points with appropriate certification. UG education can be of 3 or 4 years with multiple exit options and appropriate certification within this period. For example, Certificate after 1 year, Advanced Diploma after 2 years, Bachelor's Degree after 3 years and Bachelor's with Research after 4 years.

An Academic Bank of Credit is to be established for digitally storing academic credits earned from different HEIs so that these can be transferred and counted towards final degree earned.

Multidisciplinary Education and Research Universities (MERUs), at par with IITs, IIMs, to be set up as models of best multidisciplinary education of global standards in the country.

The National Research Foundation will be created as an apex body for fostering a strong research culture and building research capacity across higher education.

Regulation

Higher Education Commission of India(HECI) will be set up as a single overarching umbrella body for entire higher education, excluding medical and legal education. HECI to have four independent verticals - National Higher Education Regulatory Council (NHERC) for regulation, General Education Council (GEC) for standard setting, Higher Education Grants Council (HEGC) for funding, and National Accreditation Council(NAC) for accreditation. HECI will function through faceless intervention through technology, & will have powers to penalise HEIs not conforming to norms and standards. Public and private higher education institutions will be governed by the same set of norms for regulation, accreditation and academic standards.

Rationalised Institutional Architecture

Higher education institutions will be transformed into large, well resourced, vibrant multidisciplinary institutions providing high quality teaching, research, and community engagement. The definition of university will allow a spectrum of institutions

that range from Research-intensive Universities to Teaching-intensive Universities and Autonomous degree-granting Colleges.

Affiliation of colleges is to be phased out in 15 years and a stage-wise mechanism is to be established for granting graded autonomy to colleges. Over a period of time, it is envisaged that every college would develop into either an Autonomous degree-granting College, or a constituent college of a university.

Motivated, Energized, and Capable Faculty

NEP makes recommendations for motivating, energizing, and building capacity of faculty through clearly defined, independent, transparent recruitment, freedom to design curricula/pedagogy, incentivising excellence, movement into institutional leadership. Faculty not delivering on basic norms will be held accountable

Teacher Education

A new and comprehensive National Curriculum Framework for Teacher Education, NCFTE 2021, will be formulated by the NCTE in consultation with NCERT. By 2030, the minimum degree qualification for teaching will be a 4-year integrated B.Ed. degree. Stringent action will be taken against substandard stand-alone Teacher Education Institutions (TEIs).

Mentoring Mission

A National Mission for Mentoring will be established, with a large pool of outstanding senior/retired faculty – including those with the ability to teach in Indian languages – who would be willing to provide short and long-term mentoring/professional support to university/college teachers.

Financial support for students

Efforts will be made to incentivize the merit of students belonging to SC, ST, OBC, and other SEDGs. The National Scholarship Portal will be expanded to support, foster, and track the progress of students receiving scholarships. Private HEIs will be encouraged to offer larger numbers of free ships and scholarships to their students.

Open and Distance Learning

This will be expanded to play a significant role in increasing GER. Measures such as online courses and digital repositories, funding for research, improved student services, credit-based recognition of MOOCs, etc., will be taken to ensure it is at par with the highest quality in-class programmes.



Online Education and Digital Education:

A comprehensive set of recommendations for promoting online education consequent to the recent rise in epidemics and pandemics in order to ensure preparedness with alternative modes of quality education whenever and wherever traditional and in-person modes of education are not possible, has been covered. A dedicated unit for the purpose of orchestrating the building of digital infrastructure, digital content and capacity building will be created in the MHRD to look after the e-education needs of both school and higher education.

Technology in education

An autonomous body, the National Educational Technology Forum (NETF), will be created to provide a platform for the free exchange of ideas on the use of technology to enhance learning, assessment, planning, administration. Appropriate integration of technology into all levels of education will be done to improve classroom processes, support teacher professional development, enhance educational access for disadvantaged groups and streamline educational planning, administration and management

Promotion of Indian languages

To ensure the preservation, growth, and vibrancy of all Indian languages, NEP recommends setting an Indian Institute of Translation and Interpretation (ITI), National Institute (or Institutes) for Pali, Persian and Prakrit, strengthening of Sanskrit and all language departments in HEIs, and use mother tongue/local language as a medium of instruction in more HEI programmes .

Internationalization of education will be facilitated through both institutional collaborations, and student and faculty mobility and allowing entry of top world ranked Universities to open campuses in our country.

Professional Education

All professional education will be an integral part of the higher education system. Stand-alone technical universities, health science universities, legal and agricultural universities etc will aim to become multi-disciplinary institutions.

Adult Education

Policy aims to achieve 100% youth and adult literacy.

Financing Education

The Centre and the States will work together to

increase the public investment in Education sector to reach 6% of GDP at the earliest.

Outcomes of NEP 2020

- Universalization from ECCE to Secondary Education by 2030, aligning with SDG 4
- Attaining Foundational Learning & Numeracy Skills through National Mission by 2025
- 100% GER in Pre-School to Secondary Level by 2030
- Bring Back 2 Cr Out of School Children
- Teachers to be prepared for assessment reforms by 2023
- Inclusive & Equitable Education System by 2030
- Board Exams to test core concepts and application of knowledge
- Every Child will come out of School adept in at least one Skill
- Common Standards of Learning in Public & Private Schools

Answer 22. B) Ramananda Chatterjee**Explanation**

Ramananda Chatterjee was the founder, editor, and owner of the Calcutta based magazine, the Modern Review. He has been described as the Father of Indian Journalism. In 1897, he became the chief editor of Bengali literary magazine Pradip. Vishal Bharat (lit. 'Greater India') was an Indian Hindi-language magazine founded by Ramananda Chatterjee in 1929, initially edited by the prominent journalist Banarsidas Chaturvedi. It was nationalist and pro-Gandhi, covering the whole of India and its diaspora, with a particular emphasis on rural matters (particularly through its column 'Hamaare Gram' ['our villages']).

Trivia: Authors and their books/publications:

Lala Lajpat Rai The Arya Samaj; The United States of America: A Hindu's Impression and a Study; The Story of My Deportation; The Problems of National Education in India.

Bal Gangadhar Tilak — Gita Rahasya/ KarmayogShashtra; The Orion: Or Researches into the Antiquity of the Vedas; The Arctic Home in the Vedas.

Mahatma Gandhi — The Story of My Experiments with Truth; Gokhale: My Political Guru.

BR Ambedkar —The Buddha and his Dhamma; Pakistan or the Partition of India; Riddles in Hinduism; Who were the Shudras?



JL Nehru — Glimpses of World History; Letters from a Father to his Daughter.

Rajendra Prasad — At the Feet of Mahatma Gandhi; Satyagraha in Champaran.

Rabindranath Tagore — The Post Office; Chokher Bali; Kabuliwala; My Reminiscences; The Crescent Moon, Home and The World, Hungry Stones, Chandalika, Visarjan

Bankim Chandra Chatterjee — Kapalkundala; Mrinalini; Devi Chaudharani.

Aurobindo Ghosh — Essays on the Geeta; The Life Divine.

Vinayak Damodar Sawarkar — The Indian War of Independence; Hindu Pad Padashahi; Hindutva: Who is a Hindu?

Abul Kalam Azad — Ghubar-e-Khatir, Al Hilal

Dayanand Saraswati — Satyarth Prakash; The Value of Values.

Subhash Chandra Bose — An Indian Pilgrim.

Sarojini Naidu — The Bird of Time; The Feather of the Dawn.

Annie Besant — The Ancient Wisdom; My Path to Atheism.

Lala Har Dayal — Hints for Self Culture; Glimpses of World Religions.

Romesh Chunder Dutt — Economic History of India; The Civilization of India.

MG Ranade — Religious and Social Reform: A collection of Essays and Speeches; Essays on Indian Economics.

Dadabhai Naoroji — Poverty and Un-British Rule in India.

Sir Surendranath Banerjee — A Nation in Making.

Sachindra Nath Sanyal — Bandi Jeevan.

Deenbandhu Mitra — Neel Darpan.

Santi Ghose — Arun Bahni

Sarat Chandra Chattopadhyay — Pather Dabi.

Rajani Palme Dutt — India Today.

CF Andrews — The Renaissance in India.

Ram Manohar Lohia — Guilty Men of India's Partition.

Valentine Chirol (*not a freedom fighter*) — India Unrest.

Lala Hardayal – Hints For Self Culture

Veer Savarkar – War Of Indian Independence

Some more.....

Book	Author	Publication year
The life divine	Arvind Ghosh	1944
Savitri	Arvind Ghosh	1940
New lamps for old	Arvind Ghosh	1893
B h a v a n i Mandir	Arvind Ghosh	1905
White	Rabindranath Tagore	1910
Ghar baire	Rabindranath Tagore	1916
India a search	Jawaharlal Nehru	1946
Essays on Indian Economics	Mahadev Govind Ranade	1906

Rise of the Maratha Power	Mahadev Govind Ranade	1900
Durgesh Nandini	Bankim Chandra Chatterjee	1865
Bang darshan	Bankim Chandra Chatterjee	1872
India in transition	M. N. Rai	1922

Economic History of British India	R. C. Dutt	1893
Indian Muslim	Hunter	1871
Gandevata	Tarashankar Bandyopadhyay	1978
Philosophy of the Bomb	Bhagwati Charan Bohra	1929
Why socialism	Jayaprakash Narayan	1936
Gandhi vs Lenin	S.A. Dange	1921
Problem of the east	Lord Curzon	1894



Blue mirror	Deenbandhu Mitra	1860
India Today	R. P. Dutt	1940

ThakurmarJhuli	D. M. Mazumdar	1907
Indian Unrest	Valentine Shirol	1910
Oriental and western	Swami Vivekananda	1938
Essay series	Vishnukrishna Chiplunkar	1881
Gokarunanidhi	Swami Dayanand Saraswati	1881
Letters from Russia	Rabindranath Tagore	1960
Wither India	Rabindranath Tagore	1933
Soviet Asia	Jawaharlal Nehru	1949
Pather Dabi	Abanindranath Tagore	1926
History of Hindu Chemistry	P. C. Rai	1902
Peasantry of Bengal	R. C. Dutt	

Answer 23. C) A situation when the circumstances of one individual cannot be made better without making the situation worse for another individual.
Explanation

Pareto efficiency, or Pareto optimality, is an economic state where resources cannot be reallocated to make one individual better off without making at least one individual worse off. Pareto efficiency implies that resources are allocated in the most economically efficient manner, but does not imply equality or fairness. Pareto's efficiency takes place when the resources are most optimally used. Pareto's efficiency was theorized by the Italian economist and engineer Vilfredo Pareto.

It is a purely economic concept and has no relationship with the concept of equal or fair utilization of resources. It has wide applications in the field of economics and engineering.

Trivia: Other Economic Terms

'Catch Up Effect'

Catch up effect, alternatively called the **theory of convergence**, states that poor or developing economies grow faster compared to economies with a higher per capita income and gradually reach similar high levels of per capita income. Thus, all economies,

over time, may converge in terms of income per head.

Deadweight loss

Deadweight loss can be stated as the loss of total welfare or the social surplus due to reasons like taxes or subsidies, price ceilings or floors, externalities and monopoly pricing. It is the excess burden created due to loss of benefit to the participants in trade which are individuals as consumers, producers or the government.

'Seigniorage'

Seigniorage is the difference between the value of currency/money and the cost of producing it. It is essentially the profit earned by the government by printing currency.

'Tulip Mania'

Tulip mania is used as a metaphor to describe an economic bubble. Tulip mania was a period when tulips were recently introduced and bought in large quantities by many people. This caused tulip prices to shoot up. They were sold at prices higher than skilled workers' income. After reaching a peak, tulip prices crashed, leaving tulip holders bankrupt. It was the first major economic bubble.

Present analogy: People start investing in a particular asset in large quantities because of positive sentiments about it. This pushes the prices of that asset to very high levels. After reaching a peak, prices suffer a sharp fall due to an extensive sell off, leaving the asset holders bankrupt. These assets are metaphorically called tulips.

Windfall gain

Windfall gain (or windfall profit) is an unexpected gain in income which could be due to winning a lottery, unforeseen inheritance or shortage of supply. Windfall gains are transitory in nature.

For instance, when real estate property prices rise dramatically, the owner can make a substantial amount of profit by selling property. This sudden and unexpected rise in income is called windfall profit. Many countries define proper laws to tax windfall profits.

True Cost Economics

True cost economics is an economic model that includes the cost of negative externalities associated with goods and services.

If the prices of goods and services do not include the



cost of negative externalities or the cost of harmful effects they have on the environment, people might misuse them and use them in large quantities without thinking about their ill effects on the environment. Therefore, environmentalists support true cost economics to counter the impact of negative externalities.

Ceteris Paribus

This commonly-used phrase stands for **'all other things being unchanged or constant'**. It is used in economics to rule out the possibility of 'other' factors changing, i.e. the specific causal relation between two variables is focused.

It is particularly crucial in the study of cause and effect relationship between two specific variables such that other relevant factors influencing these are assumed to be constant by the assumption of Ceteris Paribus.

The opposite for this is the phrase **'mutatis mutandis'**, which states changing some factors that need to be changed. Ceteris paribus is often a fundamental assumption to the predictive purpose of scrutiny.

Contagion

In economics and finance, a contagion can be explained as a situation where a shock in a particular economy or region spreads out and affects others by way of, say, price movements.

'Paradox of Thrift'

Paradox of thrift was popularized by the renowned economist John Maynard Keynes.

It states that individuals try to save more during an economic recession, which essentially leads to a fall in aggregate demand and hence in economic growth. Such a situation is harmful for everybody as investments give lower returns than normal.

Rent-Seeking

When a firm uses its resources to procure an unwarranted monetary gain from external elements, be it directly or indirectly, without giving anything in return to them or the society, it is termed as rent-seeking.

A popular example for rent-seeking is political lobbying by companies. These are primarily done by companies in order to make economic gains through government action.

This might be done by a company to get subsidy from the government for the product which it produces

or increasing tariff rates by the government for its services, etc. Such a practice neither leads to creation of new wealth, nor does it benefit the society.

'Principle Agent Problem'

The principle agent problem arises when one party (agent) agrees to work in favor of another party (principal) in return for some incentives. Such an agreement may incur huge costs for the agent, thereby leading to the problems of moral hazard and conflict of interest. Owing to the costs incurred, the agent might begin to pursue his own agenda and ignore the best interest of the principal, thereby causing the principal agent problem to occur.

For example: Shareholders of a company appoint managers to look after the proceedings of the company and earn profits on their behalf. The shareholders expect the managers to distribute all the profits to the shareholders. But the managers sensing their own growth and salary expectation try to retain the profits for future as a safe side. This can lead to principle agent problem. It is one of the most noticed problems in the current situation when most companies are not being managed by the owners themselves.

Interest Coverage Ratio (ICR)

The Interest Coverage Ratio (ICR) is a financial ratio that is used to determine how well a company can pay the interest on its outstanding debts. The ICR is commonly used by lenders, creditors, and investors to determine the riskiness of lending capital to a company. The interest coverage ratio is also called the "times interest earned" ratio.

'Off Price Retailers'

Off-price retailers are retailers who provide high quality goods at cheap prices. They usually sell second-hand goods, off-the-season items etc.

Equity Style Box

An equity style box is a visual representation of the key investment characteristics of stocks and stock mutual funds. The style box is a valuable tool for investors to use to determine the risk-return structures of their stocks/stock portfolios and/or how these investments fit into their investing criteria.

Sharpe Ratio and the Sortino Ratio

The Sharpe ratio and the Sortino ratio are both **risk-adjusted evaluations** of return on investment. The Sharpe ratio indicates how well an equity investment is



performing compared to a risk-free investment, taking into consideration the additional risk level involved with holding the equity investment. The Sortino ratio is a variation of the Sharpe ratio that only factors in downside risk. Before selecting an investment vehicle, investors should seek the risk-adjusted return and not just the simple return.

'Dead Cat Bounce'

'Dead Cat Bounce' is a market jargon for a situation where a security (stock) or an index experiences a short-lived burst of upward movement in a largely downward trend. It is a temporary rally in the price of a security or an index after a major correction or downward trend.

It is a pricing pattern used by stock analysts to determine whether a spurt in the price of a stock after a major correction is a reversal of the downward trend or just a dead cat bounce.

Stop Loss

Stop-loss can be defined as an advance order to sell an asset when it reaches a particular price point. It is used to limit loss or gain in a trade. The concept can be used for short-term as well as long-term trading. This is an automatic order that an investor places with the broker/agent by paying a certain amount of brokerage. Stop-loss is also known as 'stop order' or 'stop-market order'. By placing a stop-loss order, the investor instructs the broker/agent to sell a security when it reaches a pre-set price limit.

'Margin Trading'

In the stock market, margin trading refers to the process whereby individual investors buy more stocks than they can afford to.

Contra Fund

A contra fund is defined by its against-the-wind kind of investing style. The manager of a contra fund bets against the prevailing market trends by buying assets that are either under-performing or depressed at that point in time. This is done with the belief that the herd mentality followed by investors on the Street will lead to mispricing of assets, which will pick up steam in the long run, creating opportunities for investors to generate superlative returns.

Floating Stock

Floating stock can be defined as the total number of shares of a stock that are available for trading in an open market. It can be calculated by subtracting the

sum of closely-held shares (shares that are not publicly traded) plus restricted stock (non-transferable stock of a company) from the company's total outstanding shares.

Answer 24. C) Government announces a decrease in public spending

Explanation:

When the government announces a decrease in public spending, it implies a reduction in the issuance of new bonds to finance government expenditures. With fewer bonds being issued, the supply of bonds in the market decreases. According to the principles of supply and demand, a decrease in supply leads to an increase in bond prices and a decrease in yields. Therefore, a decrease in public spending would likely lead to an increase in bond yields. **Hence, statement C is correct.**

A) Central bank announces an expansionary monetary policy:

An expansionary monetary policy typically involves lowering interest rates and increasing money supply to stimulate economic activity. Lower interest rates usually lead to lower bond yields, as investors seek higher returns elsewhere. **Hence, statement A is incorrect.**

B) Investors become more risk-averse and seek safe-haven assets:

When investors become more risk-averse, they tend to flock towards safer assets such as government bonds. This increased demand for bonds would typically drive bond prices up and yields down. **Hence, statement B is incorrect.**

D) Inflation expectations decrease due to a decrease in oil prices:

A decrease in inflation expectations often leads to lower bond yields. Investors anticipate lower future inflation, which makes fixed-income securities like bonds more attractive, driving up demand and pushing yields down. **Hence, statement D is incorrect.**

Therefore, option C) Government announces a decrease in public spending, is the most likely scenario to lead to an increase in bond yields.

Answer 25. D) 1, 2 and 3

Explanation:

Tapti – Burhanpur: This pair is correct. Burhanpur is a historical city in the Indian state of Madhya Pradesh. It is situated on the north bank of the Tapti River.

Palar – Vellore: This pair is correctly matched. Vellore lies in the Eastern Ghats region and Palar river basin in the northeastern part of Tamil Nadu. Vellore is



located on the Mumbai–Chennai arm of the Golden Quadrilateral.

Netravati – Bantwal: This pair is also correctly matched. Bantwal is a suburb of Mangalore in Dakshina Kannada district, Karnataka. Bantwal is located along the coast of river Netravathi. Every year due to heavy rains the river floods.

Trivia: Important Cities on banks of Rivers

City	River	State
Gangakhed	Godavari	Maharashtra
Agra	Yamuna	Uttar Pradesh
Ahmedabad	Sabarmati	Gujarat
Allahabad	At the confluence of Ganga, Yamuna and Saraswati	Uttar Pradesh
Ayodhya	Sarayu	Uttar Pradesh
Badrinath	Alaknanda	Uttarakhand
Banki	Mahanadi	Odisha
Cuttack	Mahanadi	Odisha
Baranagar	Ganges	West Bengal
Brahmapur	Rushikulya	Odisha
Chhatrapur	Rushikulya	Odisha
Bhagalpur	Ganges	Bihar
Kolkata	Hooghly	West Bengal
New Delhi	Yamuna	Delhi
Dibrugarh	Brahmaputra	Assam
Deesa	Banas	Gujarat
Ferozpur	Sutlej	Punjab
Guwahati	Brahmaputra	Assam
Haridwar	Ganges	Uttarakhand

City	River	State
Hyderabad	Musi	Telangana
Karimnagar	Maner	Telangana
Ramagundam	Godavari	Telangana
Jabalpur	Narmada	Madhya Pradesh
Kanpur	Ganges	Uttar Pradesh
Kota	Chambal	Rajasthan
Jammu	Tawi	Jammu & Kashmir
Jaunpur	Gomti	Uttar Pradesh
Patna	Ganges	Bihar
Rajahmundry	Godavari	Andhra Pradesh
Srinagar	Jhelum	Jammu & Kashmir
Surat	Tapi	Gujarat
Varanasi	Ganges	Uttar Pradesh
Vijayawada	Krishna	Andhra Pradesh
Vadodara	Vishwamitri	Gujarat
Mathura	Yamuna	Uttar Pradesh
Modasa	Mazum	Gujarat
Mirzapur	Ganga	Uttar Pradesh
Morbi	Machchu	Gujarat
Auraiya	Yamuna	Uttar Pradesh
Etawah	Yamuna	Uttar Pradesh
Bangalore	Vrishabhavathi	Karnataka
Farrukhabad	Ganges	Uttar Pradesh
Rangpo	Teesta	Sikkim



City	River	State
Rajkot	Aji	Gujarat
Gaya	Falgu (Neeran-jana)	Bihar
Fatehgarh	Ganges	Uttar Pradesh
Kannauj	Ganges	Uttar Pradesh
Mangalore	Netravati, Gurupura	Karnataka
Shimoga	Tunga River	Karnataka
Bhadravathi	Bhadra	Karnataka
Hospet	Tungabhadra	Karnataka
Karwar	Kali	Karnataka
Bagalkot	Ghataprabha	Karnataka
Honnavar	Sharavathi	Karnataka
Himmatnagar	Hathmati	Gujarat
Gwalior	Chambal	Madhya Pradesh
Gorakhpur	Rapti	Uttar Pradesh
Lucknow	Gomti	Uttar Pradesh
Kanpur Cantonment	Ganges	Uttar Pradesh
Shuklaganj	Ganges	Uttar Pradesh
Chakeri	Ganges	Uttar Pradesh
Malegaon	Girna River	Maharashtra
Sambalpur	Mahanadi	Odisha
Rourkela	Brahmani	Odisha
Patan	Saraswati	Gujarat
Pune	Mula, Mutha	Maharashtra
Rairangpur	Khadkhai	Odisha
Valsad	Auranga	Gujarat

City	River	State
Madurai	Vaigai	Tamil Nadu
Thiruchirapalli	Kaveri	Tamil Nadu
Chennai	Cooum, Adyar	Tamil Nadu
Coimbatore	Noyyal	Tamil Nadu
Erode	Kaveri	Tamil Nadu
Tirunelveli	Thamirabarani	Tamil Nadu
Bharuch	Narmada	Gujarat
Karjat	Ulhas	Maharashtra
Nashik	Godavari	Maharashtra
Mahad	Savitri	Maharashtra
Nanded	Godavari	Maharashtra
Navsari	Purna	Gujarat
Kolhapur	Panchaganga	Maharashtra
Nellore	Pennar	Andhra Pradesh
Kurnool	Tungabhadra	Andhra Pradesh
Nizamabad	Godavari	Telangana
Sangli	Krishna	Maharashtra
Karad	Krishna, Koyna	Maharashtra
Hajipur	Ganges	Bihar
Ujjain	Shipra	Madhya Pradesh
Ashta	Parwati	Madhya Pradesh
Kanchipuram	Vegavathi, Palar	Tamil Nadu
Thanjavur	Vennaaru, Vadavaaru	Tamil Nadu



City	River	State
Murshidabad	Hooghly	West Bengal
Munger	Ganges	Bihar
Jamalpur	Ganges	Bihar
Purnia	Koshi	Bihar
Golegaon	Godavari	Maharashtra
Budaun	Sot	Uttar Pradesh
Amaravati	Krishna	Andhra Pradesh

Answer 26. C) All
Explanation:
Sangam Literature

Sangam (Cankam) Literature denotes the ancient Tamil literary tradition developed from approximately 300 BCE to 300 CE.

It comprises a vast collection of approximately 2381 poems attributed to 473 poets, along with a corpus of literature by 102 anonymous poets.

Origin: Originating from the Sangam period, named after scholarly assemblies patronized by Pandyan kings in Madurai, it evolved from the rich oral tradition of Tamil culture, including poetry, folk songs, and religious practices.

Classification of Sangam Literature:

- **Meaning of Sangam:** Derived from the Tamil word meaning "fraternity, meeting, gathering, academy," Sangam literature reflects the collective literary tradition of ancient Tamil society, focusing on its culture and people.

Genres:

- **Poetry:** Sangam literature primarily comprises poetry, encompassing diverse themes such as love, war, nature, and didactic teachings.
- **Prose:** While poetry dominates Sangam literature, there are also prose texts, including grammatical treatises and commentaries, providing additional insights into language and literary analysis.

Periods:

- **Early Sangam:** Spanning from 300 BCE to 200 CE, the Early Sangam period represents the oldest

layer of Sangam literature, characterized by foundational works and themes.

- **Middle Sangam:** Extending from 200 to 600 CE, the Middle Sangam period signifies a continuation of literary activity, marked by the exploration of new themes and stylistic developments.
- **Later Sangam:** Covering the period from 600 to 900 CE, the Later Sangam era marks a decline in the Sangam tradition, with fewer literary works produced compared to earlier periods.

Themes:

- **Love:** Sangam poetry extensively explores themes of love and romance, depicting various facets of romantic relationships and emotions.
- **War:** War poems in Sangam literature glorify the heroic deeds of warriors, narrating battles, describing weapons, and celebrating the valor of soldiers.
- **Nature:** Nature poems in Sangam literature celebrate the beauty of the natural world, portraying landscapes, flora, fauna, and the changing seasons.
- **Ethics:** Didactic poems in Sangam literature impart moral lessons and ethical principles, offering guidance on virtuous living and social conduct.

Collections:

- **Ettuthokai:** Meaning "Eight Anthologies," Ettuthokai comprises a collection of eight Sangam literary works, showcasing the richness and diversity of Tamil poetry.
- **Pattupattu:** Meaning "Ten Idylls," Pattupattu consists of Sangam poems celebrating various aspects of life and nature, reflecting the cultural ethos of ancient Tamil society.
- **Pathuppattu:** Pathuppattu is a collection of ten poetic works belonging to the Sangam literary tradition, offering a comprehensive representation of Tamil poetic heritage.
- **Purananuru:** An anthology of 400 poems, Purananuru provides historical and sociocultural insights into ancient Tamil society, serving as a valuable historical source.

Three Sangam

The tradition of Sangam literature is associated with three literary gatherings held around Madurai, the capital of the Pandya Kingdom. While Tamil legends date these gatherings to over 4,440 years, 3,700 years, and 1,850 years before the common era, historians



consider this chronology as mythical and ahistorical. Instead, they suggest that three Sangams were organized over a span of 600-700 years.

Sangam	Kingdom	Place Organized	Books
First	Pandya	Madurai	No books survived. Used Agattiyam as grammar.
Second or Middle	Pandya	Kapatapuram	Around 2000 poems collected and compiled into Tolkappiyam (textbook on grammar), includes the classification of animals, plants, and human beings.
Third	Pandya	Madurai	Most of the existing corpus of Sangam literature was written during this period.

Sangam Corpus:

- **Ezhuthu:** Letters and Phonetics
- **Porul:** Subject-Matter and Poetics
- **Chol:** Words and Syntax

Sangam Classification Based on Period of Composition:

- **Early Sangam:** Includes Agattiyam, Ettutogai, Tolkappiyam, and Pattuppattu, providing insights into the social, literary, and cultural aspects of ancient Tamil kingdoms.
- **Later Sangam Literature:** Comprises mainly poetic works known as Patinenkilkanakku (The Eighteen Lesser Texts) and five great epics, focusing on Tamil society's economic and political changes. Notable works include

Silappadikaram (Tales of an Anklet) by Ilango Adigal and Manimekalai (The Story of Manimekalai) by Satan.

Sangam Classification Based on Context and Interpretation:

- **Sangam and Tolkappiyam:** Tolkappiyam divides poetry into two categories: Aham (inner) and Puram (outer).
 - **Akam:** Focuses on emotions and feelings in the context of romantic love, sexual union, and eroticism. Approximately three-fourths of Sangam poetry is Akam-themed.
 - **Puram:** Centers on exploits and heroic deeds in the context of war and public life. About one-fourth of Sangam poetry is Puram-themed. **Hence, statements 1 and 2 are incorrect.**

Major Works in Sangam Literature:

- **Tolkappiyam:**
 - Oldest extant Tamil grammar text.
 - Authored by Tolkappiyar.
 - Covers spelling, phonology, etymology, morphology, semantics, prosody, and sentence structure.
- **Ettutogai:**
 - Part of the Eighteen Greater Texts anthology series.
 - Comprises eight anthologies of Sangam literature.
- **Pattuppattu:**
 - Also known as Ten Idylls or Ten Lays.
 - Collection of ten longer poems covering various aspects of life and nature.
- **Pathinenkilkanakku:**
 - Eighteen Lesser Texts anthology.
 - Includes poetry compositions, primarily post-Sangam period.
 - Most notable work: Tirukkural.
- **Manimekalai:**
 - Tamil-Buddhist epic, possibly written



- in the 6th century.
- Sequel to Silappatikaram.
- Explores spirituality and mysticism against the backdrop of South India and Jaffna.

• **Silappathikaram:**

- First Tamil epic poem.
- Authored by Ilango Adigal.
- Narrative revolves around Kannaki and Kovalan, telling a tragic love story.

Post-Sangam Period (200-600 CE):

• **Silapadikaram:**

- Written by Prince Ilanko Adikal in the 5th–6th century AD.
- Detailed poetic portrayal of Tamil culture, religions, town planning, and arts.

• **Manimekalai:**

- Epic poem by Poet Sathanar in the 2nd century AD.
- Explores spirituality and mysticism in South India and Jaffna.

• **Jivakachintamani:**

- Written in the early 10th century by Tiruttakkatvar, a Jain monk.
- Narrative blends martial exploits with intimate depictions and ethical reflections.

• **Valaiyapati:**

- One of the five major Tamil epics.
- Revolves around love and instilling Jain values.

• **Kundalakesi:**

- Tamil Buddhist epic authored by Nathakuthanaar around the 10th century. **Hence, statement 3 is incorrect.**
- Explores themes of love, marriage, murder, and religious discovery.

• **Art and Architecture During Sangam Age:**

• **Viman Style Architecture:**

- Flourished during the period.
- Characterized by intricate sculptures and towering structures.

• **Hero Stone Worship:**

- Commemorated warrior valor in battle.
- Legends carved on stones excavated from various regions.

• **Port Cities:**

- References to port cities like Puhar in texts like Pattinappalai.
- Other notable seaports: Tondi, Musiri, Korkai.

• **Irrigation Systems:**

- Notable constructions include Kallanai across the Kaveri River, attributed to Karaikala, a Chola king.

Answer 27. C) Only four Explanation

Nigeria is a country in West Africa. It shares land borders with the Republic of **Benin** to the west, **Chad and Cameroon** to the east, and **Niger** to the north. Its coast lies on the Gulf of Guinea in the south and it borders Lake Chad to the northeast. Notable geographical features in Nigeria include the Adamawa Plateau, Mambilla Plateau, Jos Plateau, Obudu Plateau, the Niger River, Benue River, and Niger Delta.



Answer 28. B) 1 and 3 only Explanation

The GCM is an intergovernmental negotiated agreement facilitated by the United Nations, aiming

to address various aspects of international migration comprehensively. **Hence, statement 1 is correct.**

Formally endorsed by the United Nations General Assembly on December 19, 2018. **Hence, statement 3 is correct.**

Described as a “**non-binding cooperative framework**,” implying its limited legal weight under International Law. **Hence, statement 2 is incorrect.**

Out of the 193-member states, 164 countries have adopted the compact **including India.**

Trivia

The International Organization for Migration (IOM), a United Nations agency, was established in 1951 as the Intergovernmental Committee for European Migration (ICEM) to aid in the resettlement of those displaced by World War II, initially known as the Provisional Intergovernmental Committee for the Movement of Migrants from Europe (PICMME). In 2016, it transitioned into a United Nations agency. The IOM serves as the principal UN body dedicated to migration, offering guidance and services to governments and migrants, including internally displaced persons, refugees, and migrant workers. Its mandate encompasses promoting humane and orderly migration across four key areas: migration and development, facilitating migration, regulating migration, and addressing forced migration. Activities of the IOM include ensuring orderly and humane migration management, fostering international cooperation on migration issues, seeking practical solutions to migration challenges, and providing humanitarian assistance to migrants in need. Notably, the IOM played a significant role in the establishment of the Global Compact for Migration, the first-ever intergovernmental agreement on international migration, adopted in Marrakech, Morocco, in December 2018. With 175 member states and 8 observer states as of 2023, the IOM continues to play a crucial role in managing global migration challenges.

Answer 29. B) Only two

Explanation

Difference Between Synthetic Aperture Radar (SAR) vs LiDAR

Synthetic Aperture Radar (SAR) and LiDAR are two distinct remote sensing technologies that serve different purposes and work based on different principles.

Principle of Operation: **SAR uses microwave radar signals** to create 2D or 3D images by bouncing signals off the Earth's surface. LiDAR employs laser

pulses to measure distances and create highly detailed 3D maps. **Hence, statement 1 is incorrect.**

- Wavelength: SAR uses microwaves, while LiDAR uses laser light with short wavelengths.
- Environmental Interaction: **SAR can penetrate clouds and vegetation, is sensitive to surface moisture and roughness.** LiDAR primarily operates in clear conditions and excels at capturing fine surface details. **Hence, statement 2 is correct.**
- Resolution: SAR offers high-resolution images, dependent on radar frequency and antenna size. LiDAR is known for exceptionally high spatial resolution, capturing fine details.
- Coverage: SAR is suitable for large-scale area mapping and monitoring changes in wide regions. LiDAR is often used for localized and detailed mapping.
- Weather and Day/Night Operation: SAR **works in all weather conditions and day or night.** **Hence, statement 3 is correct.** LiDAR can be affected by adverse weather and operates in daylight.

How Does Sonar Technology Work, and How Does it Differ from LiDAR and Radar

Sonar, or “Sound Navigation and Ranging,” works by emitting sound waves into water. When these waves encounter objects, they bounce back to the sonar system.

Measuring the time it takes for the waves to return allows the system to calculate distances and create underwater maps.

Differences from LiDAR and Radar:

- Medium: Sonar works underwater, LiDAR in the air or on land, and Radar in the atmosphere.
- Wavelength: Sonar uses sound waves, LiDAR employs laser light with short wavelengths, and Radar uses longer radio waves.
- Applications: Sonar is for underwater tasks. LiDAR creates 3D land maps, and Radar is versatile for atmospheric applications.
- Propagation Speed: Sound waves in water are slower than electromagnetic waves in LiDAR and Radar.
- Environmental Factors: Sonar excels in poor underwater visibility, while LiDAR and Radar can be affected by atmospheric conditions like fog or rain.

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Difference Between Radar and LiDAR and Ultrasonic Sensor

Radar and LiDAR are active sensing technologies that employ radio waves and laser light, respectively, for object detection. Ultrasonic sensors use high-frequency sound waves (ultrasonic waves) to detect objects. These sensors emit sound waves and measure the time it takes for these waves to bounce off objects and return to the sensor.

Ultrasonic sensors are typically employed for close-range applications, such as obstacle detection and proximity sensing in robotics, parking assistance systems, and certain industrial automation tasks. While they are cost-effective and reliable for short distances, they may not provide the same level of accuracy and long-range capabilities as Radar and LiDAR.

LiDAR vs Radar vs Camera, Which is the Right Choice for Autonomous Vehicle

Autonomous vehicles rely on a combination of sensor technologies, with LiDAR, Radar, and Cameras being the most prominent options. Each of these sensor types has its own set of advantages and challenges.

LiDAR employs laser beams to provide precise distance measurements and creates detailed 3D maps of a 360-degree view around the vehicle. It's highly accurate but can be expensive.

Radar uses radio waves for long-range object detection, especially useful in adverse weather conditions. It's cost-effective but provides less detailed object information.

Cameras capture visual data, aiding in object recognition, traffic sign detection, and more. They're cost-effective but can be affected by poor lighting and weather conditions.

In practice, many autonomous vehicles combine these sensors to leverage their strengths and ensure reliability in various driving scenarios. The choice depends on specific needs, cost considerations, and performance requirements.

Answer 30. D) 2 and 3 only

Repo rate is the rate at which banks borrow from RBI on a short-term basis against a repurchase agreement. Under this policy, banks are required to provide government securities as collateral and later buy them back after a pre-defined time.

Impact of rise in Repo Rate

Impact

[Stock market]

- An increase in interest rates means **an increase in savings and a reduction in the flow of capital to the economy, which results in slump in stock markets.** Hence, **statement 1 is incorrect.**
- The stock market and the interest rates have an inverse relationship. Every time the central bank increases the repo rate, it prompts companies to also cut back on the spending on the expansion, which leads to a dip in growth and affects the profit and future cash flows, **resulting in a fall in stock prices.**

[Loan and EMI Rates]

- The increase in repo rate will push banks and non-banking financial companies (NBFCs) to hike lending and deposit rates.
- This means the interest rates on loans will go up. Equated monthly installments (EMIs) on home, vehicle and other personal and corporate loans are likely to rise. Hence, **statement 2 is correct.**

[Unequal impact]

- Capital-intensive sectors such as capital goods, infrastructure, etc, are **more vulnerable** to these changes due to high capital or debt on the books of these companies. Hence, **statement 3 is correct.**
- While stocks of sectors like Information Technology (IT) or Fast-moving consumer goods (FMCG) usually see a lesser impact.

[Inflation]

- During high levels of inflation, RBI makes strong attempts to bring down the flow of money in the economy.
- One way to do this is by increasing the repo rate. This makes borrowing a costly affair for businesses and industries, which in turn slows down investment and money supply in the market.
- As a result, it negatively impacts the growth of the economy, which helps in controlling inflation.

Answer 31. C) 1,2, 3 and 4 Explanation

The All-India States Peoples' Conference (AISPC) was a gathering of political groups from the princely states



of British India. **The first session of the organisation was held in Bombay in December 1927. Hence, statement 1 is correct.**

First, it wanted support from the Indian National Congress, but didn't get much until Jawaharlal Nehru became its leader in 1939. He stayed in charge until 1946. After India got independence, the Congress didn't work with the AISPC anymore. Instead, it worked with the princes through the government. **Hence, statements 2 and 4 are correct.**

The AISPC ended on April 25, 1948, and most of its groups joined the Congress. But one group, led by Sheikh Abdullah in Jammu & Kashmir, stayed independent, with some joining the Congress later.

The Conference brought together representatives from hundreds of Indian princely states, including Baroda, Bhopal, Travancore and Hyderabad. **It was established to encourage political dialogue between the princely class of India, and the British Raj, upon the issues of governance, political stability and future of India. Hence, statement 3 is correct.**

At first, it didn't like the Indian independence movement. But later, it accepted different political views.

Jawaharlal Nehru became the President of the Conference in 1935 and stayed until 1946. He and others like Vallabhbhai Patel helped bring together many princely states to form one India after 1947.

Answer 32. D) All

Explanation

The government issues Treasury Bills, commonly known as T Bills, as debt securities to raise capital. Treasury Bills have relatively short-term maturities, typically ranging from 91 days to 364 days. This allows investors to have quick access to their funds when needed. The high liquidity of T Bills can make them a good option for those seeking flexibility in managing their T Bill investments. Investors in Treasury Bills receive regular income in the form of interest payments. These payments are earned by purchasing the bills at a discount to their face value and receiving the full-face value at maturity. The overall economic conditions, **such as inflation levels, economic growth, and unemployment rates**, can affect Treasury Bill prices. Inflation expectations, in particular, can impact the demand for T Bills as investors seek to protect their purchasing power. The supply and demand for Treasury Bills in the market can influence their prices. If there is high demand for T Bills relative to their supply, prices may rise. Conversely, if demand is low or there is an oversupply of T Bills, prices may decline.

Since Treasury bills are issued by the RBI, on behalf of the Government, its policies and actions can impact Treasury Bill prices. For example, the decisions made by the central bank regarding treasury bills rates or **the government's fiscal policies can affect investor sentiment and, subsequently, Treasury Bill prices.** Market sentiment and investor confidence play a role in determining the demand for T Bills. Uncertainties in the market, geopolitical events, or financial crises can influence investor behaviour and affect the pricing of Treasury Bills. **Hence, all the options are correct.**

Answer 33. C) Starquakes disturbing the magnetic field on the surface of the magnetar

Explanation

A magnetar, a type of neutron star, distinguishes itself with an exceptionally potent magnetic field ranging from approximately 10^9 to 10^{11} teslas, or 10^{13} to 10^{15} gauss. This intense magnetic field decay catalyzes the emission of high-energy electromagnetic radiation, predominantly in the form of X-rays and gamma rays. First theorized in 1992 by Robert Duncan and Christopher Thompson, magnetars explain the characteristics of transient gamma-ray sources, now recognized as soft gamma repeaters (SGRs). With further research, the magnetar hypothesis extended to account for anomalous X-ray pulsars (AXPs). Presently, 24 confirmed magnetars are documented. Recent investigations suggest that magnetars might be implicated in the occurrence of fast radio bursts (FRBs), particularly highlighted by findings from the Australian Square Kilometre Array Pathfinder (ASKAP) radio telescope in 2020.

Magnetars, akin to other neutron stars, typically span around 20 kilometers in diameter and possess a mass roughly equivalent to 1.4 solar masses. Formed through the gravitational collapse of stars with masses between 10 and 25 times that of the Sun, the interior density of a magnetar is so extreme that a mere tablespoon of its substance would weigh over 100 million tons. Characterized by even more formidable magnetic fields and comparatively slower rotation rates, magnetars usually rotate every two to ten seconds, contrasting with the faster rotations observed in typical neutron stars or radio pulsars.

The magnetic field of a magnetar engenders potent bursts of X-rays and gamma rays, which eventually diminish as the star's magnetic fields wane over approximately 10,000 years, leading to a cessation of activity and intense X-ray emissions. Although magnetars have relatively short active lifespans, their numbers are significant. It's estimated that there are over 30 million inactive magnetars within the Milky



Way.

Starquakes, events triggered on the surface of a magnetar, perturb the enveloping magnetic field, often culminating in immensely powerful gamma-ray flare emissions. These events, recorded on Earth in 1979, 1998, and 2004, offer insights into the dynamic behavior of magnetars and their impact on the surrounding cosmos.

The origin of the superlative magnetic fields characterizing magnetars remains a subject of intense scrutiny. One prevailing theory posits a magnetohydrodynamic dynamo process occurring in the turbulent, dense conducting fluid precluding the neutron star's equilibrium formation. Alternatively, it's proposed that the magnetar's magnetic fields arise from the collapse of stars harboring unusually robust magnetic fields.

Answer 34. C) 2 and 4 only

Explanation

The pampero is a burst of cold polar air from the west, southwest, or south on the pampas in the south of Brazil, Argentina, Uruguay, Paraguay and Bolivia.

Hence, statement 1 is incorrect.

The Gregale is a Mediterranean wind that can occur during times when a low-pressure area moves through the area to the south of Malta and causes a strong, cool, northeasterly wind to affect the island. 'Hence, statement 2 is correct.

The bora is a northerly to north-easterly katabatic wind in areas near the Adriatic Sea. Similar nomenclature is used for north-eastern winds in other littoral areas of eastern Mediterranean and Black Sea basins. **Hence, statement 3 is incorrect.**

Foehn occurs wherever strong winds sweep across mountain ranges. One of the major effects of foehn is that it brings warm and, above all, dry downdraughts on the leeward slopes, with winds often reaching gale force. Foehn winds are rather common in mountainous regions around the world, such as the Alps in Europe, Rockies in the United States, Tianshan and Qinling in China. **Hence, statement 4 is correct.**

Major Cold Winds

- Pampero
- Gregale
- Bora
- Tramontane
- Mistral

Major Warm Winds

- Foehn
- Chinook
- Zonda
- Loo
- Sirocco



Austru: A east or southeast wind in Romania. They are cold in winter and may be a local name for a foehn wind.

Abroholos: A squall frequent from May through August between Cabo de Sao Tome and Cabo Frio on the coast of Brazil.

Alizé: Maritime wet, fresh northerly wind across west-central Africa and the Caribbean

Bora: north to the north-eastern katabatic wind in areas near the Adriatic Sea. Blows northeasterly from eastern Europe to northeastern Italy.

Bayamo: A violent wind blowing from the land on the south coast of Cuba, especially near the Bight of Bayamo.

Borasco: A thunderstorm or violent squall, especially in the Mediterranean.

Brickfielder: Hot and dry wind in Southern Australia that develops in the country's deserts in late spring and summer, which heavily raises temperatures in the coastal areas

Cape Doctor: dry south-easterly wind that blows on the South African coast in summer. It is known as the Cape Doctor because of a local belief that it clears Cape Town of pollution and 'pestilence'.

Chinook: warm, dry wind descending the eastern slopes of the Rocky Mountains in North America, primarily in winter

Chubasco: A violent squall with thunder and lightning, encountered during the rainy season along the west coast of Central America.

Coromell: A night land breeze prevailing from November to May at La Paz, near the southern extremity of the Gulf of California.

Diablo: hot, dry wind from the northeast that typically occurs in the San Francisco Bay Area of Northern

California, during the spring and fall.

Etesian: blow northerly across Greece and Turkey. Etesian winds are a dominant weather influence in the Aegean Basin.

Elephanta: strong southerly or southeasterly wind which blows on the Malabar coast of India during the months of September and October and marks the onset of the southwest monsoon.

Foehn: A warm dry wind on the lee side of a mountain range, whose temperature is increased as the wind descends down the slope. It is created when air flows downhill from a high elevation, raising the temperature by adiabatic compression. Examples include the Chinook wind and the Santa Ana wind. Classified as a katabatic wind.

Fremantle Doctor: afternoon sea breeze from the Indian Ocean which cools Perth, Western Australia during summer. The sea breeze occurs because of the major temperature difference between the land and sea.

Gregale: A strong northeast wind of the central Mediterranean.

Harmattan: dry northerly wind across central Africa. Characterized by the dry and dusty northeasterly trade wind, of the same name, which blows from the Sahara Desert over West Africa into the Gulf of Guinea.

Haboob: A strong wind and sandstorm (or duststorm) in northern and central Sudan, especially around Khartoum, where the average number is about 24 per year. The name come from the Arabic word, "habb", meaning wind.

Kali Andhi: the violent dust squalls that occur before the monsoon in the northwestern parts of the Indo-Gangetic Plain region of the Indian Subcontinent.

Karaburan: A violent northeast wind of Central Asia occurring during spring and summer. It resembles the white buran of winter but, instead of snow, it carries clouds of dust that darken the sky.

Khamsin: southeasterly wind from North Africa to the eastern Mediterranean

Knik Wind: A strong southeast wind in the vicinity of Palmer, Alaska, most frequent in the winter.

Loo: hot wind which blows over plains of India and Pakistan.

Leste: A hot, dry, easterly wind of the Madeira and Canary Islands

Levanter: A strong easterly wind of the Mediterranean, especially in the Strait of Gibraltar, attended by cloudy, foggy, and sometimes rainy weather especially in winter.

Levantera: A persistent east wind of the Adriatic,

usually accompanied by cloudy weather.

Levanto: A hot southeasterly wind that blows over the Canary Islands.

Leveche: A warm wind in Spain, either a foehn or a hot southerly wind in advance of a low-pressure area moving from the Sahara Desert. Called a SIROCCO in other parts of the Mediterranean area.

Maestro: A northwesterly wind with fine weather which blows, especially in summer, in the Adriatic. It is most frequent on the western shore. This wind is also found on the coasts of Corsica and Sardinia.

Matanuska Wind: A strong, gusty, northeast wind that occasionally occurs during the winter in the vicinity of Palmer, Alaska.

Mistral: strong, cold, northwesterly wind blowing from the north over the northwest coast of the Mediterranean Sea, particularly over the Gulf of Lions.

Monsoon: mainly south-westerly winds combined with heavy rain in various areas close to the equator.

Nashi, N'aschi: A northeast wind that occurs in winter on the Iranian coast of the Persian Gulf, especially near the entrance to the gulf, and also on the Makran coast. It is probably associated with an outflow from the central Asiatic anticyclone which extends over the high land of Iran. It is similar in character but less severe than the BORA.

Norte: A strong cold northeasterly wind that blows in Mexico and on the shores of the Gulf of Mexico. It results from an outbreak of cold air from the north. It is the Mexican extension of a norther.

Nor'easter: strong storm with winds from the northeast on the northeastern coast of the United States (particularly New England states) and the east coast of Canada (Atlantic Canada))

Nor'wester: wind that brings rain to the West Coast, and warm dry winds to the East Coast of New Zealand's South Island, caused by the moist prevailing winds being uplifted over the Southern Alps, often accompanied by a distinctive arched cloud pattern.

Ostria: A warm southerly wind on the Bulgarian coast; considered a precursor of bad weather

Pampero: A west or southwest wind in Southern Argentina. This wind (often violently) picks up during the passage of a cold front of an active low passing by.

Papagayo: A violent northeasterly fall wind on the Pacific coast of Nicaragua and Guatemala. It consists of the cold air mass of a norte which has overridden the mountains of Central America.

Passat: medium-strong, constant blowing wind at sea in tropical areas



Pali: A local name for strong winds which blow through the Pali Pass above Honolulu, HI. (Michael Polansky, San Francisco)

Rashabar ("black wind"): a strong wind in the Kurdistan Region of Iraq, particularly in Sulaimaniya.

Santa Ana: A strong, hot, dry wind blowing out into San Pedro Channel from the southern California desert through Santa Ana Pass.

Shamal: a summer northwesterly wind blowing over Iraq and the Persian Gulf states

Sharki: A southeasterly wind that sometimes blows in the Persian Gulf.

Simoom: strong, dry, desert wind that blows in the Sahara, Israel, Jordan, Syria, and the desert of Arabia

Suestado: A storm with southeast gales, caused by intense cyclonic activity off the coasts of Argentina and Uruguay, which affects the southern part of the coast of Brazil in the winter.

Sirocco: originate in hot, dry air over the Saharan desert. They pick up dust as they blow northward over North Africa. This dust is then carried offshore and over the southern Mediterranean Sea picks up moisture and blows towards Southern Europe, especially during the summer season.

Southerly Buster: rapidly arriving low-pressure cell that dramatically cools Sydney, Australia during summer

Sou'wester: strong wind which blows from the southwest, and also a type of waterproof hat designed to protect from and repel wind and rain

Squamish: strong and often violent wind occurring in many of the fjords, inlets, and valleys of British Columbia.

Taku Wind: A strong, gusty, east-northeast wind, occurring in the vicinity of Juneau, Alaska, between October and March. At the mouth of the Taku River, after which it is named, it sometimes attains hurricane force.

Tramontana: A northeasterly or northerly winter wind off the west coast of Italy. It is a fresh wind of the fine weather mistral type.

Vardar: A cold fall wind blowing from the northwest down the Vardar valley in Greece to the Gulf of Salonica. It occurs when atmospheric pressure over eastern Europe is higher than over the Aegean Sea, as is often the case in winter. Also called VARDARAC.

Vendavel: a westerly wind that blows into the Mediterranean Sea around the area of the Straits of Gibraltar and Morocco.

Warm Braw: A foehn wind in the Schouten Islands north of New Guinea.

Williwaw: A sudden blast of wind descending from a mountainous coast to the sea, in the Strait of Magellan or the Aleutian Islands.

Zonda: Zonda, also called sondo, winter foehn (that is, a warm dry wind blowing down the side of a mountain) in Argentina, where it blows from the west across the Andes Mountains. The name zonda in Argentina also refers to a hot humid wind that blows from the north over the plains and precedes a low-pressure centre.

Answer 35. D) All

Explanation

One year after the start of the war in Sudan, **children are dying of hunger and sick people are not buying medicine so that they can afford food as the population slips towards famine.** In mid-April last year, a rivalry between army chief Abdel Fattah al-Burhan and the head of the paramilitary Rapid Support Forces (RSF), Mohamad Hamdan "Hemedti" Dagalo broke into open conflict. Since then, the fighting and significant destruction, paired with much lower agricultural production, have sent food prices soaring and made it extremely hard to find enough to eat. **Hence, statement 1 is correct.**

INS Tir and INS Sujata participated in the forthcoming **second edition of India Mozambique Tanzania (IMT) Tri Lateral (TRILAT) Exercise, a joint maritime exercise.** The first edition of IMT TRILAT exercise conducted in Oct 22, saw participation of INS Tarkash with the Tanzanian and Mozambique Navies. **Hence, statement 2 is correct.**

The Indian embassy in Phnom Penh has received around 130 complaints of Indians trapped in Cambodia, with 75 people rescued so far. Allegedly, over 5,000 Indians are being held against their will in Cambodia and **forced into cyber fraud activities.** These "fraudsters" have reportedly duped people in India of at least Rs 500 crore over the last six months. Victims in Cambodia are coerced into extorting money by impersonating law enforcement officials and claiming to have found suspicious materials in parcels. **Hence, statement 3 is correct.**

France is about to become the **first country in the world to pass nationwide legislation to combat hair discrimination in the workplace and in public.** Lawmakers in France's lower house of parliament approved a bill that would ban discrimination over the texture, length, colour or style of someone's hair. The authors of the bill hope the groundbreaking legislation sends a message of support to Black people and others who have faced hostility in the workplace



and beyond because of their hair. **Hence, statement 4 is correct.**

Answer 36. B) Only one pair

Explanation

ANCIENT INDIA POETS AND KINGS

Poet	King
Ashvaghosa	Kanishka
Nagarjuna, Vasumitra	
Harisena	Samudragupta II
Amarsimha	Chandra gupta II
kalidasa	Chandragupta II
Banabhatta	Harshavardhana
Ravikirti	Pulkesin II
Bhavabhuti	Yasovarman
Mahaviracharya	Amoghavarsha
Jinsena	Amoghavarsha
	(Hence pair 1 is incorrect)
Dandin	Narsimhavarman
Rajashekhar	Mahindrapala
Bilhana	Vikramaditya VI
Viknanesvara	Vikramaditya VI
Kamban	Chola

Trivia

Book	Author
Astadhyayi	Panini
Mahabhasya	Patanjali
Nagananda	Harshvardhana
Naishadhacharita	Sri Harsha
Mrichhakatika	Sudraka
Gitagovinda	Jayadev
Navratna	Virsen
Mudrarakshasa	Visakdatta
Rajtarangini	Kalhana
Kathasaritsagar	Somdeva
Kamasutra	Vatsayana
Prashnottarmalika	Amoghavarsha
Swapanvasdattam	Bhasa
Buddha charita	Asvaghosa
Natyashastra	Bharata
Abhigyan	Kalidasa
Shakuntalam	
Vikramorvashi	Kalidasa
Raghuvansan	Kalidasa
Amarkosa	Amarshmha

Panchsidhantika and	Varharmihara
Brihat Samhita	
Surya Sidhanta and	Aryabhata
Aryabhata	
Panch tantra	Vishnu Sharma
Nitisara	Kamandaka
AiholePrasasti	Ravi Kriti
Indica	Megasthanese
Arthasastra	Kautilya
Charaka Samhita	Charaka
Lilawati	Bhaskara II
Harshacharita and	Harsha vardhan
Kadambari	
Ratnavali	Harsha vardhan
Gathasaptashati	Hala
Nitisara	Kamandaka

Answer 37. A) 1 and 2 only

Explanation

The Amazon is the world's largest rainforest. Located in the heart of South America the Amazon covers 2.6 million square miles of land, and over 44% of that is protected, that's an area larger than Greenland! Not only does the Amazon have a great deal of important and unique wildlife and plant life, but it is also a carbon sink, which means it helps to maintain the Earth's climate naturally. This is why for decades now conservationists have worked hard to ensure parts of the Amazon Rainforest are being protected and preserved.

Here's a glimpse of some of the top National Parks within the Amazon:

National Park	Location	Description
Yasuni National Park	Ecuador	Sprawling across the Napo and Curaray Rivers, renowned for its incredible biodiversity.
Mamiraua Sustainable Development Reserve	Brazil	Brazil's largest wildlife reserve, home to diverse species including pink river dolphins.
Tu-mucumaque National Park	Brazil	One of the wildest parts of the Amazon, encompassing waterfalls and rapids.



National Park	Location	Description
Jau National Park	Brazil	The largest national forest reserve in South America, teeming with diverse wildlife.
Pico de Neblina National Park	Brazil	Features Brazil's highest mountain range and dense Amazon Rainforest.
Amacayacu National Natural Park	Colombia	Situated on the Amazon River, offering unique flooded jungle experiences.
Manu National Park	Peru	Peru's largest protected area, home to rare species and diverse terrain.
Paucaya-Samiria National Reserve	Peru	Peru's largest natural reserve, boasting dense wildlife habitats and wetlands.
Madidi National Park	Bolivia	Bolivia's Amazonian paradise, featuring snow-capped mountains and tropical jungle.
Sierra Del Divisor National Park	Peru/Brazil border	A hidden gem stretching across the Peru-Brazil border, with pristine rainforest and more.
Anavilhanas National Park	Brazil	Famous for its archipelago of flooded islands and remarkable biodiversity.

Note:

Banff National Park: Location: Canada

Triglav National Park:

Location: Slovenia

Description: Slovenia's only national park, Triglav is named after the country's highest peak, Mount Triglav.

Answer 38. C) 1, 2, 3 and 4

Explanation

Judicial Review is a critical legal process wherein a judge assesses the legality of a decision or action taken by a public authority. Essentially, it scrutinizes the manner in which a decision was made rather than

the decision itself.

In India, we adhere to the concept of "Procedure Established by Law," which mandates that a law is valid only if the correct procedural steps were followed during its enactment. However, the broader notion of "Due Process of Law" ensures not just the existence of a law but also its fairness and justice.

This review empowers the courts to evaluate governmental actions, including those of the legislature and executive, to ensure their alignment with the constitution. It serves to legitimize government actions while safeguarding the constitution against undue governmental overreach.

Judicial review in India has been pivotal in upholding the constitution's sanctity, as evidenced by landmark cases like the **Indira Gandhi vs Raj Narain Case of 1975**. Suo Moto cases and Public Interest Litigations (PILs) have further expanded the judiciary's role in addressing public grievances, even without direct complaints.

Various types of judicial review exist, including reviews of legislative, administrative, and judicial decisions, each aimed at maintaining constitutional discipline and correcting legal discrepancies.

While judicial review is vital for upholding constitutional supremacy and protecting citizen rights, it is not without challenges. Issues like potential governmental limitations, adherence to separation of powers, and public faith in government efficiency may arise.

Problems associated with judicial review:

Limitation of Government Functioning: Judicial review may impose constraints on the government's ability to function effectively.

Violation of Constitutional Limits: There's a risk of exceeding the constitutional boundaries when judicial review overrides existing laws.

Lack of Strict Separation of Powers: In India, a separation of functions rather than powers is followed, leading to potential conflicts between branches of government.

Influence on Legislative Authority: The judiciary's authority to strike down laws challenges the legislative power, affecting the balance of powers established by the constitution.

Precedent Setting: Judicial opinions in one case may set standards for future rulings, potentially limiting legal flexibility and adaptation to evolving societal needs.

Potential Bias and Motives: Judicial decisions in judicial review cases may be influenced by personal or selfish motives, undermining impartiality and fairness.

Impact on Public Trust: Repeated court interventions can erode public trust in the government's integrity, quality, and efficiency, affecting faith in democratic institutions.

Constitutional provisions in India, such as Articles 13, 32, and 226, empower the courts to invalidate laws or actions that contravene constitutional provisions. These provisions underscore the judiciary's role as the guardian of fundamental rights and the arbiter of constitutional disputes.

Answer 39. C) Only three pairs

Explanation

Statement	Description
Scott-Moncrieff Commission (Irrigation) by Curzon in 1901	Commission established for irrigation purposes during Lord Curzon's tenure as Viceroy in 1901.
Fraser Commission (Police Reforms) by Curzon in 1902	Commission instituted by Lord Curzon in 1902 to address police reforms.
Hunter Commission (Punjab Disturbances) by Chelmsford in 1919	Commission appointed by Lord Chelmsford in 1919 to investigate disturbances in Punjab.
Butler Commission (Indian States relation with British Crown) by Irwin in 1927	Commission formed by Lord Irwin in 1927 to assess the relationship between Indian states and the British Crown.
Whiteley Commission (Labour) by Irwin in 1929	Commission established by Lord Irwin in 1929 to address labor-related issues.
Sapru Commission (Unemployment) by Linlithgow in 1935	Commission initiated by Lord Linlithgow in 1935 to tackle unemployment problems.
Chalfield Commission (Army) by Linlithgow in 1939	Commission formed by Lord Linlithgow in 1939 to review matters concerning the army.
Floud Commission (Tenancy in Bengal) by Linlithgow in 1940	Commission established by Lord Linlithgow in 1940 to study tenancy issues in Bengal.

Top of Form

Hence, only the 4th pair is incorrect.

Other

Name of Committees/ Commissions	Year	Governor-General/ Viceroy	Subjects of the Committees/ Commissions
ADVERTISING			
Charles Wood Despatch	1854	Lord Dalhousie	Education
Hunter Commission	1882	Lord Ripon	Education
Raleigh Commission	1902	Lord Curzon	Education
Sadler Commission	1917	Lord Chelmsford	Education
Hartog Commission	1929	Lord Irwin	Education
Sargent Plan	1944	Lord Wavell	Education
Campbell Commission	1866	Sir John Lawrence	Famine
Strachy Commission	1880	Lord Lytton ,	Famine
Lyll Commission	1886	Lord d Elgin-II	Famine
MacDonnell Commission	1900	Lord Curzon	Famine
Mansfield Commission	1886	Lord Dufferin	Currency
Fowler Commission	1898	Lord Elgin-II	Currency
Fraser Commission	1902	Lord Curzon	Agriculture
Babington Smith Commission	1919	Lord Chelmsford	Currency

Hunter Committee Report	1919	Lord Chelmsford	Punjab Disturbances
Muddiman Committee	1924	Lord Reading	To examine the working of Diarchy of the Montague-Chelmsford reforms
Butler Commission	1927	Lord Irwin	Indian States

covering 6,41,449 km and strategically placed camera traps at 32,803 locations, resulting in 4,70,81,881 photographs.

Key Findings of the Report

- **Leopard Population Estimate:** The report estimates India’s leopard population at 13,874 individuals, with a stable population compared to the 2018 estimate of 12,852 individuals. The survey covered 70% of the leopard habitat, excluding areas like the Himalayas and semi-arid regions not included in tiger habitats.
- **Regional Variations:** Central India shows a stable or slightly growing leopard population, while the Shivalik hills and Gangetic plains experienced a decline. Across India, in areas sampled both in 2018 and 2022, there is a 1.08% per annum growth. The Shivalik hills and Gangetic plains show a 3.4% decline per annum, with the largest growth rate observed in Central India and Eastern Ghats at 1.5%.
- **State-wise Distribution: Madhya Pradesh houses the largest leopard population in the country** (3907), followed by Maharashtra, Karnataka, and Tamil Nadu. Tiger reserves or sites with the **highest leopard populations include Nagarajunasagar Srisailem (Andhra Pradesh), Panna (Madhya Pradesh), and Satpura (Madhya Pradesh).**
- **Conservation Challenges:** The report underscores the critical role of Protected Areas in conserving leopard populations. While tiger reserves are important strongholds, addressing conservation gaps outside protected areas is equally vital. Rising incidents of human-wildlife conflict pose challenges, highlighting the need for collaborative efforts involving government agencies, conservation organizations, and local communities.

Answer 40. B) 2 and 4 only

Explanation:

Statement 2 is correct: The survey focused on forested habitats within 18 tiger states and did not include non-forested habitats and high Himalayan regions.

Statement 4 is correct: Shivalik hills and Gangetic plains experienced a decline in the number of leopards. Statements 1 and 3 are incorrect:

Statement 1 is incorrect: The report indicates a stable leopard population of 13,874 individuals, with a slight increase compared to the 2018 estimate, not a decrease.

Statement 3 is incorrect: Madhya Pradesh actually houses the largest leopard population in the country, as mentioned in the report.

THE REPORT IN DETAIL

The National Tiger Conservation Authority and Wildlife Institute of India presented the fifth cycle leopard population estimation in India, indicating a stable leopard population of 13,874 individuals, with noteworthy variations observed across different regions of the country.

Details

- **The Status of Leopards in India report was released by the Union Minister for Environment, Forest and Climate Change,** providing valuable insights into the population dynamics and conservation status of leopards in the country.
- **The fifth cycle of leopard population estimation focused on forested habitats within 18 tiger states, covering major tiger conservation landscapes.** Non-forested habitats and high Himalayas were not sampled. The survey included a foot survey



Answer 41. D) None**Explanation:**

Toll-like receptors (TLRs) are a class of proteins that play a key role in the innate immune system. They are single-spanning receptors usually expressed on sentinel cells such as macrophages and dendritic cells, that recognize structurally conserved molecules derived from microbes. Once these microbes have reached physical barriers such as the skin or intestinal tract mucosa, they are recognized by TLRs, which activate immune cell responses.

Toll-like receptors (TLRs) are the important mediators of inflammatory pathways in the gut which play a major role in mediating the immune responses towards a wide variety of pathogen-derived ligands and link adaptive immunity with the innate immunity. The ability of the immune system to recognize molecules that are broadly shared by pathogens is, in part, due to the presence of immune receptors called toll-like receptors (TLRs) that are expressed on the membranes of leukocytes including dendritic cells, macrophages, natural killer cells, cells of the adaptive immunity T cells, and B cells, and non-immune cells (epithelial and endothelial cells, and fibroblasts). **Hence, statement 1 is correct.**

Sponge iron, also known as direct reduced iron (DRI), is a high-purity, metallurgical-grade iron (Fe) product produced by the direct reduction of iron ore in the form of lumps, pellets, or fines into iron by a reducing gas or carbon monoxide produced from natural gas or coal.

This process reduces the oxygen content in the iron ore, resulting in a highly porous and spongy material, hence the name "sponge iron." Sponge iron has high iron content (typically 90% or more) and low levels of impurities.

It is used as a raw material in electric arc and induction furnaces for steelmaking, where it is melted and alloyed with other metals and carbon to produce steel. Sponge iron is preferred for steelmaking due to its high purity, low sulfur, and phosphorus content, which helps in producing high-quality steel. **India has been the world's largest sponge iron-producing nation since 2003.** 30% of India's steel production come via this route. **Hence, statement 2 is correct.**

Researchers at the Spanish National Cancer Research Centre (CNIO) discovered a new anti-error system involving the RAD51 protein. **It serves as a key checkpoint during DNA replication, ensuring that each DNA segment is only duplicated once.**

Uncontrolled re-replication of DNA segments can result in branch breakage and chromosome

instability. This could also result in the activation of cancer-causing genes (oncogenes). By limiting re-replication, RAD51 protects DNA and minimizes the chance of oncogene amplification, acting as a tumour suppressor. **Hence, statement 3 is correct.**

Answer 42. C) Only three**Explanation**

Polytetrafluoroethylene (PTFE) is a **synthetic fluoropolymer of tetrafluoroethylene**. It belongs to the **per- and polyfluoroalkyl substances (PFAS)** and has numerous applications. The commonly known brand name of PTFE-based composition is **Teflon** by Chemours, a spin-off from DuPont, which originally discovered the compound in 1938. Polytetrafluoroethylene is a fluorocarbon solid, as it is a high-molecular-weight polymer consisting wholly of carbon and fluorine. **PTFE is hydrophobic:** neither water nor water-containing substances wet PTFE. **Polytetrafluoroethylene is used as a non-stick coating for pans and other cookware. Hence, statement 4 is correct.**

It is non-reactive, partly because of the strength of carbon-fluorine bonds, so it is often used in containers and pipework for reactive and corrosive chemicals. Where used as a lubricant, PTFE reduces friction, wear, and energy consumption of machinery. It is used as a graft material in surgery and as a coating on catheters. PTFE is one of the best-known and widely applied PFAS commonly described as persistent organic pollutants or "**forever chemicals**". **PTFE is a thermoplastic polymer**, which is a white solid at room temperature. PTFE gains its properties from the aggregate effect of carbon-fluorine bonds, as do all fluorocarbons. The only chemicals known to affect these carbon-fluorine bonds are highly reactive metals like the alkali metals, and at higher temperatures also such metals as aluminium and magnesium, and fluorinating agents such as xenon difluoride and cobalt(III) fluoride. **PTFE's coefficient of friction is 0.05 to 0.10, which is the third-lowest of any known solid material** (aluminium magnesium boride (BAM) being the first, with a coefficient of friction of 0.02; diamond-like carbon being second-lowest at 0.05). **Hence, statement 3 is incorrect.**

PTFE's resistance to van der Waals forces means that it is the only known surface to which a gecko cannot stick. In fact, **PTFE can be used to prevent insects from climbing up surfaces painted with the material.** PTFE is **so slippery that insects cannot get a grip and tend to fall off.** For example, PTFE is used to prevent ants from climbing out of formicaria. **Hence, statement 1 is correct.**



PTFE has excellent dielectric properties, specifically low group velocity dispersion, especially at high radio frequencies, making it suitable for use as an excellent insulator in connector assemblies and cables, and in printed circuit boards used at microwave frequencies.

Hence, statement 2 is correct.

Answer 43. B) Mountain Soils

Explanation

Forest – Mountain Soils

Coverage: 2.85 lakh sq km or 8.67% of the total land area of India.

Genesis: Deposition of organic matter derived from forests

Nature:

- Acidic
- Heterogeneous, character changes with parent rocks and climate.
- Require good deal of fertilizers.

Composition

- Poor in potash
- Poor in phosphorus
- Poor in lime
- Rich in Humus

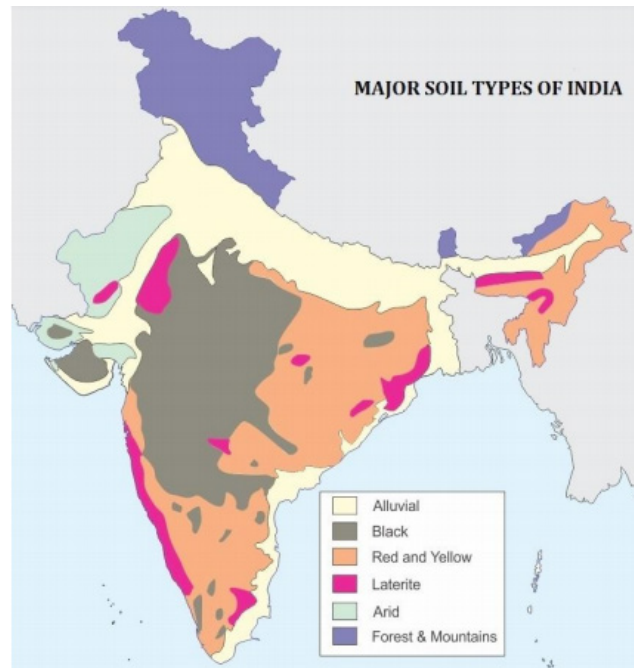
Distribution: Himalayan region. Western and Eastern Ghats

Crops: Wheat, maize, barley, Temperate fruits, spices, tea, coffee.

Trivia: PROPERTIES OF SOILS IN INDIA

On the basis of genesis, colour, composition and location, the soils of India have been classified into:

- Alluvial soils
- Black soils
- Red soils
- Lateritic soils
- Forest and Mountain soils
- Arid and Desert soils
- Saline and Alkaline soils
- Peaty and Marshy soils



Alluvial Soil

Coverage: 15 lakh sq km (**46 per cent** of the total area).

Parent Material: Himalayan Rocks (Hence, Transported Soil- Brought by rivers)

Type: Immature and azonal Soil (Since, of Recent Origin)

Nature:

- Loamy (equal proportion of sand and clay)
- Highly porous
- Good Drainage
- Very Fertile (Comprise of Khadar and Bhargar alluvium)

Chemical Composition:

- Poor in Nitrogen
- Poor in Phosphorus
- Poor in Humus
- Rich in Lime
- Rich in Potash
- Adequate Phosphoric acid, alkali



Distribution: Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, Bihar and West Bengal

Crops: Rice, Wheat, Sugarcane, Cotton, Oilseeds and Jute

Black Soil (Regur)

Coverage: 5.46 lakh sq km (16.6 % of total geographical area)

Origin: Weathering of volcanic rocks

Parent Material: Gneisses and schists; weathering of Basaltic rock formed due to solidification of lava.

Type: Mature and zonal Soil

Nature:

- Clayey (62% of composition)
- High water retention capacity
- Extraordinary fertility
- Black in colour due to **Titaniferous Magnetite**

Composition

- Poor in Nitrogen
- Poor in Humus
- Poor in Phosphate
- Rich in potash
- Rich in lime
- Rich in aluminium, calcium
- Rich in iron, magnesium

Distribution: Maharashtra, Madhya Pradesh, Gujarat, Andhra Pradesh, and Tamil Nadu

Crops: Cotton, Sugarcane, oilseeds and Tobacco, jowar, linseed, virginia tobacco, castor, sunflower and millets. Rice and sugarcane are equally important.

Red Soil

Coverage: 3.5 lakhs sq km (10.6% of the total geographical area of India).

Parent Rock: Decomposition of granite, gneiss and metamorphic rocks. Formed in **Low rainfall areas.**

Nature:

- Mostly Loamy
- Gravelly, and porous in Uplands

- Rich and fertile in lowlands
- Cannot retain water
- Red colour due to the presence of **iron oxide**
- Acidic in nature
- Productive when fertilizers added

Composition:

- Poor in Nitrogen
- Poor in Humus
- Poor in Lime
- Poor in Phosphorous
- Poor in calcium
- Rich in Iron
- Rich in Potash
- Rich in Potassium

Distribution: Whole of Tamil Nadu, parts of Kerala, and Karnataka, Telangana, Andhra Pradesh, Madhya Pradesh, Chhattisgarh, Odisha, Chota Nagpur plateau; parts of south Bihar, West Bengal, Uttar Pradesh; Aravalis and the eastern half of Rajasthan (Mewar or Marwar Plateau), parts of North-Eastern states.

Crops: Bajra, maize, pulses, potatoes, fruits, cotton, wheat, rice, millets, tobacco, oil seeds.

Laterite Soil

Coverage: 2.48 lakh sq km

Parent Rock: Leaching of laterite rocks. **Conditions** - High temperature and heavy rainfall with alternate wet and dry periods.

Nature:

- **little clay and more gravel of red sand-stones**
- Lacks fertility(Since intensive leaching)
- Agriculturally less important
- Hardens like iron when exposed to air
- Durable and valuable building material – Bricks made for construction

Composition

- Poor in Lime
- Poor in Potash
- Poor in Magnesia
- Poor in phosphorous
- Poor in calcium



- Poor in Nitrogen
- Rich in Iron and ferric oxides
- Rich in Aluminum Oxides
- Rich in Iron Phosphate

Distribution: Andhra Pradesh, Tamil Nadu, West Bengal, Odisha, summits of Western Ghats, Eastern Ghats, the Rajmahal Hills, Vindhyan, Satpuras and Malwa Plateau.

Crops: Plantation Crops - Cashew, Tapioca, Coffee and Rubber, cinchona, coconut, arecanut, etc.

Forest – Mountain Soils

Coverage: 2.85 lakh sq km or 8.67% of the total land area of India.

Genesis: Deposition of organic matter derived from forests

Nature:

- Acidic
- Heterogeneous, character changes with parent rocks and climate.
- Require good deal of fertilizers.

Composition

- Poor in potash
- Poor in phosphorus
- Poor in lime
- Rich in Humus

Distribution: Himalayan region. Western and Eastern Ghats

Crops: Wheat, maize, barley, Temperate fruits, spices, tea, coffee\

Arid and Desert Soil

Coverage: 1.42 lakh sq km (4.32%).

Nature:

- Poor in organic matter
- Aeolian sand (90 to 95 per cent) and clay (5 to 10 per cent)
- Alkaline

Composition:

- Poor in Nitrogen

- High in Calcium
- Rich in Calcium Carbonate
- Rich in Phosphate
- High in Nitrates

Distribution: Rajasthan, Punjab and Haryana

Crops: Drought resistant barley, cotton, millets, maize and pulses are grown.

Saline Soil (Usara Soil)

Formation: Accumulation of soluble salt

Nature:

- Unproductive soil
- poor drainage
- In Punjab and Haryana gypsum is added to improve the soil

Composition:

- Rich in Chloride
- Rich in Calcium
- Rich in Magnesium

Distribution: Bihar, Uttar Pradesh, Haryana, Punjab, Rajasthan and Maharashtra

Crops: Barseem, Dhaincha and leguminous crops

Peaty and Marshy Soil

Nature:

- large amount of organic matter
- considerable amount of soluble salts
- black, heavy and highly acidic
- heavy rainfall and high humidity

Composition:

- Poor in Potash
- Poor in Phosphate
- Rich in humus and Organic Matter

Distribution: Kottayam and Alappuzha districts of Kerala(Kari soil); Odisha and Tamil Nadu, Sunderbans of West Bengal, in Bihar and Almora district of Uttarakhand.

Crops: Paddy cultivation



Answer 44. A) Polyethylene Terephthalate**Explanation**

Polyethylene Terephthalate (PET or PETE or Polyester) is also known as a wrinkle-free fiber. It's different from the plastic bag that we commonly see at the supermarket. PET is mostly used for food and drink packaging purposes due to its strong ability to prevent oxygen from getting in and spoiling the product inside. It also helps to keep the carbon dioxide in carbonated drinks from getting out.

Although PET is most likely to be picked up by recycling programs, this type of plastic contains antimony trioxide—a matter that is considered as a carcinogen—capable of causing cancer in a living tissue.

The longer a liquid is left in a PET container the greater the potential for the release of the antimony. Warm temperatures inside cars, garages, and enclosed storage could also increase the release of the hazardous matter.

TRIVIA

There are approximately 45 unique types of plastics, each with numerous variations. Manufacturers can tweak physical structures such as molecular weight distribution, density, or melt indices to create plastics with specific properties tailored for various applications.

Two Plastic Categories

Plastics are broadly categorized into thermoset plastics and thermoplastics. Thermoset plastics, like epoxy resins and polyurethanes, retain their shape long-term and cannot be remelted, finding use in tires, auto parts, and composites. Thermoplastics, on the other hand, return to their original form when heated, allowing for diverse applications such as films and fibers.

Principal Classes of Polymers

There are three principal classes of polymers: thermoplastics, thermosets, and elastomers, distinguished by their behavior under applied heat. Thermoplastic polymers can be either amorphous or crystalline and can be melted and remelted, facilitating recycling. Thermosetting plastics form a network of cross-linked bonds upon curing, rendering them rigid and non-meltable. Elastomers exhibit elastic deformation properties and can revert to their original form following deformation.

Types of Plastics**1 – Polyethylene Terephthalate (PET or PETE or Polyester)**

PET, known for its wrinkle-free fiber, is primarily used in food and drink packaging due to its ability to prevent oxygen ingress and maintain product freshness. However, PET contains antimony trioxide, a carcinogenic substance, which can be released over time, especially in warm environments like cars or storage areas.

2 – High-Density Polyethylene (HDPE)

HDPE, commonly found in disposable products like gloves and garbage bags, boasts strong and dense polymer chains, making it suitable for various applications including grocery bags and milk containers. Although considered relatively stable and recyclable, HDPE may leach estrogen-mimicking chemicals under certain conditions.

3 – Polyvinyl Chloride (PVC)

PVC, used in wraps and various consumer products, is known for its impermeability but is considered highly hazardous due to leaching toxic chemicals like BPA and phthalates. Despite its widespread use, PVC is rarely accepted by recycling programs.

4 – Low-Density Polyethylene (LDPE)

LDPE, with its simple polymer structure, is commonly used in bags, wraps, and coatings. While LDPE is deemed safer for food use, it poses challenges for recycling and may have adverse hormonal effects in humans.

5 – Polypropylene (PP)

PP, prized for its heat resistance, finds use in hot food containers and sanitary products. Although considered safer than some plastics, PP has limited recyclability and may pose risks of asthma and hormone disruption.

6 – Polystyrene (PS)

PS, known as Styrofoam, is lightweight and insulating but poses environmental concerns due to its low recycling rate and potential to leach toxic styrene when exposed to heat and oily foods.

7 – Other

Plastics outside the identified categories, including polycarbonate (PC), are associated with health risks such as hormonal disruption and cancer. Despite widespread use, PC has a low recycling rate and is increasingly restricted in certain applications due to



its toxicity.

Answer 45. B) 2 and 3 only

Explanation

India being a democracy, voting and elections play a very vital role. But these two very important processes have been facing a lot of issues in a big democracy like India. Some of these issues may include- Communalism and politics, Money Power, Booth Capturing, Violence, and Criminalization of Politics. Therefore, the need for electoral reforms has been ever increasing. This was the view of many committees formed for this matter, some of which are-

- Tarkunde Committee (1974)
- Jaya Prakash Narayan Committee (1974)
- Goswami Committee on Electoral Reforms (1990)
- Vohra Committee Report (1993)
- Indrajit Gupta Committee on State Funding of Elections (1998)
- Law Commission Report on Reform of the Electoral Laws (1999)
- National Commission to Review the Working of the Constitution (2001)
- Election Commission of India - Proposed Electoral Reforms(2004)
- Jeevan Reddy Committee (2004)
- The Second Administrative Reforms Commission (2008)

Answer 46. D) 1-a, 2-c, 3-d, 4-b

Explanation

Brighton Declaration 1994

This Declaration is meant to complement all sporting, local, national and international charters, laws, codes, rules and regulations Debating to women or sport. The overriding aim is to develop a sporting culture that enables and values the full involvement of women in every aspect of sport.

Great Barrington Declaration

The Great Barrington Declaration, issued in October 2020 during the COVID-19 pandemic, proposed "focused protection" as an alternative to widespread lockdowns. It suggested safeguarding vulnerable groups while allowing the virus to spread through the broader population to achieve herd immunity within three months. This approach sparked debate, with critics cautioning about potential harm and effectiveness.

London Declaration

The London Declaration, crafted during the 1949 Commonwealth Prime Ministers' Conference, addressed India's status within the Commonwealth of Nations following its adoption of a republican constitution. Drafted by Indian statesman V. K. Krishna Menon, the declaration reaffirmed India's membership in the Commonwealth despite its transition away from monarchical rule. This pivotal document underscored the evolving nature of the Commonwealth and its commitment to inclusivity amidst geopolitical shifts.

Declaration of Helsinki

The Declaration of Helsinki, established in 1964 by the World Medical Association (WMA), serves as a fundamental guide for ethical standards in human experimentation within the medical community. Though not legally binding internationally, its influence is profound, shaping legislation and regulations worldwide. It holds physicians to a moral obligation that supersedes local laws, emphasizing the paramount importance of protecting human subjects in research. This ethical framework underscores a global commitment to safeguarding the welfare of individuals involved in medical studies.

Hence, the correct match is : D) 1-a, 2-c, 3-d, 4-b

Answer 47. C) 3, 4, 2, 1

Explanation

- Abolition of dual government in Bengal-- 1772 CE
- First Regulating Act—1773
- First Anglo-Maratha war-- 1775 to 1782 CE
- Treaty of Salbai—1782

Indian History Timeline

Timeline	Event
9000 BCE	Early Neolithic Period
7000 to 3300 BCE	Mehrgarh Culture

Timeline	Event
3000 to 1500 BCE	<ul style="list-style-type: none"> 3000 – 2600 BCE 2600 – 1700 BCE 1700 – 1500 BCE Indus Valley Civilization, Early Harappan Phase, Mature Harappan Phase, Late Harappan Phase
1400 BCE	Complete disappearance of Harappan towns
1500 to 1000 BCE	Early Vedic age, also known as the Rigveda age
1000 BCE	Iron age of India
1000 to 500 BCE	Later Vedic Age
600 BCE	Emergence of 16 Mahajana-padas
563 BCE	Birth of Gautama Buddha (Founder of Buddhism)
540 BCE	Birth of Vardhamana Mahavira (Founder of Jainism)
516 BCE	Penetration of Iranian ruler, Darius into Northwest India
326 BCE	Invasion of India by Alexander of Macedonia (Battle of Hydaspes)
322 BCE	Establishment of the Mauryan dynasty
273 to 232 BCE	Reign of Ashoka
265 BCE	Beginning of Kalinga war
261 BCE	End of the Kalinga war
250 BCE	The Third Buddhist Council was held

Timeline	Event
200 BCE	Beginning of Central Asian contacts and invasion of Bactrian Greeks
184 BCE	The decline of the Mauryan Empire
100 BCE	Establishment of Satavahana Dynasty in Deccan
78 BCE	Shaka era was started by the Kushan ruler, Kanishka
57 BCE	Beginning of the Vikram era
Common Era	
78 CE	Gautamiputra Satakarni becomes Satavahana ruler
240 CE	Establishment of the Gupta Empire by Sri Gupta
319 CE	Beginning of the Gupta era by Chandragupta I
319 to 334 CE	Reign of Chandragupta I
335 to 380 CE	Reign of Samudragupta
380 to 412 CE	Reign of Chandragupta II
450 CE	Hunas invasion and end of Gupta Empire
606 to 647 CE	Period of King Harshavardhana
973 to 1190 CE	Reign of Chalukyas of Kalyani
753 CE	Establishment of the Rashtrakuta dynasty by Danti Durga
760 to 1142 CE	Reign of Palas in Eastern India
788 CE	Birth of Adi Sankaracharya
985 to 1014 CE	Reign of Rajaraja Chola



Timeline	Event
1014 to 1044 CE	Reign of Rajendra Chola
1000 to 1027 CE	Invasion of India by Mahmud of Ghazni
1191 CE	First Battle of Tarain (Mohammad Ghori defeated by Prithviraj III)
1192 CE	Second Battle of Tarain (Prithviraj III defeated by Mohammad Ghori)
1192 to 1206 CE	Ganga-Jamuna doab and its surrounding was under Turkish rule
1206 CE	Establishment of the Delhi Sultanate by Qutbuddin Aibak
1210 CE	Death of Qutbuddin Aibak
1210 to 1236 CE	Reign of Iltutmish
1236 to 1240 CE	Reign of Raziya
1265 to 1287 CE	Reign of Balban
1290 CE	Establishment of the Khalji dynasty by Jalaluddin Khalji
1290 to 1296 CE	Reign of Jalaluddin Khalji
1296 to 1316 CE	Reign of Alauddin Khalji
1320 CE	Establishment of the Tughlaq dynasty by Ghiyasuddin Tughlaq
1320 to 1325 CE	Reign of Ghiyasuddin Tughlaq
1325 to 1351 CE	Reign of Muhammad-bin-Tughlaq
1327 CE	Transfer of capital from Delhi to Daulatabad (by Muhammad-bin-Tughlaq)
1333 CE	Arrival of Ibn Batuta to India

Timeline	Event
1351 to 1388 CE	Reign of Firuz Tughlaq
1394 to 1412 CE	Reign of Nasiruddin Mahmud
1398 CE	Invasion of Delhi by Timur
1412 CE	The Reign of the Tughlaq dynasty came to an end
1414 to 1451 CE	Reign of the Sayyid dynasty
1451 CE	Establishment of the Lodi dynasty
1451 to 1489 CE	Reign of Bahlul Lodhi
1489 to 1517 CE	Reign of Sikandar Lodhi
1517 to 1526 CE	Reign of Ibrahim Lodhi
1526 CE	First Battle of Panipat
1336 CE	Establishment of the Vijayanagara Empire by Harihara and Bukka
1377 to 1404	Reign of Harihara II
1404 to 1422 CE	Reign of Deva Raya I
1425 to 1446 CE	Reign of Deva Raya II
1509 CE	Tuluva dynasty was founded by Krishna Deva Raya
1509 to 1530 CE	Reign of Krishnadeva Raya
1565 CE	Battle of Talikota or Battle of Rakshasa-Tangadi. Marked the decline of the Vijayanagara empire
1346 CE	Establishment of Bahmani Kingdom
1327 to 1358 CE	Reign of Ala-ud-din Hasan Bahman Shah



Timeline	Event	Timeline	Event
1397 to 1422 CE	Reign of Firuz Shah Bahmani	1575 CE	Ibadat Khana (Hall of Prayer) was constructed in Fatehpur Sikri
1419 CE	Defeat of Firuz Shah Bahmani by Deva Raya I	1576 CE	Battle of Haldighati (Defeat of Maharana Pratap by Akbar)
1498 CE	Arrival of Vasco da Gama at Calicut	1581 CE	Promulgation of Din-i-Ilahi by Akbar
1510 CE	The Portuguese Governor, Alfonso Albuquerque captured Goa from the ruler of Bijapur.	1605 to 1627 CE	Reign of Jahangir
1526 CE	First Battle of Panipat (Defeat of Ibrahim Lodi by Babur)	1628 to 1658 CE	Reign of Shah Jahan
1526 CE	Establishment of the Mughal Empire by Babur	1658 to 1707 CE	Coronation of Aurangzeb
1527 CE	Battle of Khanwa	1679 CE	Jizyah system was reintroduced by Aurangzeb
1530 CE	Accession of Humayun to the throne	1707 CE	Death of Aurangzeb
1539 CE	Defeat of Humayun by Sher Khan at Chausa	1709 to 1712 CE	Reign of Bahadur Shah I
1540 CE	Battle of Kanauj between Sher Khan and Mughals	1712 to 1713 CE	Reign of Jahandar Shah
1540 CE	Establishment of Sur Empire by Sher Shah	1713 to 1719 CE	Reign of Farrukhsiyar
1555 CE	Humayun recaptured the throne by defeating Sikan-dur Suri in the Battle of Sirhind.	1719 to 1748 CE	Reign of Muhammad Shah
1556 CE	Accession of Akbar to the throne	1738 to 1739 CE	Persian emperor, Nadir Shah invaded India
1556 CE	Second Battle of Panipat	1739 CE	Battle of Karnal (Mughals were defeated by Nadir Shah)
1556 – 1605 CE	Reign of Akbar	1740 to 1748 CE	First Carnatic War
1564 CE	Abolition of the Jizyah system by Akbar	1748 to 1754 CE	Reign of Ahmad Shah
1565 CE	Battle of Talikota and end of Vijayanagar empire	1754 to 1758 CE	Reign of Alamgir II
		1757 CE	Battle of Plassey
		1758 to 1759 CE	Reign of Shahjehan II
		1759 to 1806 CE	Reign of Shah Alam II
		1760 CE	Battle of Wandiwash



Timeline	Event
1761 CE	Third Battle of Panipat
1764 CE	Battle of Buxar
1765 CE	Diwani rights of Bengal, Bihar, and Orissa were granted to the British East India Company by Shah Alam II
1765 to 1772 CE	Dual Government in Bengal
1767 to 1769 CE	First Anglo-Mysore war
1770 CE	Great Bengal Famine
1772 CE	Warren Hastings was appointed as Governor of Bengal
1772 CE	Abolition of dual government in Bengal
1773 CE	The Regulating Act of 1773 was passed
1775 to 1782 CE	First Anglo-Maratha war
1776 CE	Treaty of Purandhar
1780 to 1784 CE	Second Anglo-Mysore war
1782 CE	Treaty of Salbai
1784 CE	Pitt's India Act was passed
1786 to 1793 CE	Lord Cornwallis served as the Governor-General
1790 to 1792 CE	Third Anglo-Mysore War and Treaty of Srirangapatnam (1792)
1793 CE	The Charter Act of 1793 was passed
1793 to 1798 CE	Sir John Shore served as the Governor-General
1798 CE	Lord Wellesley was appointed as Governor-General

Timeline	Event
1798 CE	Introduction of Subsidiary Alliance
1799 CE	Fourth Anglo-Mysore war
1802 CE	Treaty of Bassein
1803 to 1805 CE	Second Anglo-Maratha war
1806 to 1837 CE	Reign of Akbar II
1807 to 1813 CE	Lord Minto served as the Governor-General
1813 CE	The Charter Act of 1813 was passed
1813 to 1823 CE	Lord Warren Hastings served as the Governor-General
1817 to 1819 CE	Third Anglo-Maratha war
1823 to 1828 CE	Lord Amherst served as the Governor-General
1828 CE	Brahmo Sabha was founded by Raja Rammohan Roy
1828 to 1835 CE	Lord William Bentinck served as the Governor-General
1833 CE	The Charter Act of 1833 was passed
1836 to 1842 CE	Lord Auckland served as the Governor-General
1837 to 1857 CE	Reign of Bahadur Shah II and the end of the Mughal empire
1842 to 1844 CE	Lord Ellenborough served as the Governor-General
1844 to 1848 CE	Lord Hardinge served as the Governor-General
1845 to 1846 CE	First Anglo-Sikh War
1848 to 1849 CE	Second Anglo-Sikh War



Timeline	Event
1848 to 1856 CE	Lord Dalhousie served as the Governor-General
1853 CE	The Charter Act of 1853 was passed
1854 CE	Charles Wood's despatch on Education
1856 to 1858 CE	Lord Canning served as the Governor-General
1857 CE	Revolt of 1857
1858 CE	Lord Canning was appointed as the Viceroy
1861 CE	Indian Council Act of 1861 was passed
1861 CE	Indian Civil Service Act of 1861 was passed
1862 to 1863 CE	Lord Elgin served as Viceroy
1864 to 1869 CE	Sir John Lawrence served as Viceroy
1866 CE	East India Association was formed by Dadabhai Naoroji
1867 CE	Poona Sarvajanik Sabha was founded by M.G.Ranade
1869 to 1872 CE	Lord Mayo served as Viceroy
1875 CE	Arya Samaj founded by Swami Dayananda
1876 CE	Indian National Association was formed by Surendranath Banerjee and Ananda Mohan Bose
1878 CE	The Vernacular Press Act was passed
1880 to 1884 CE	Lord Ripon served as Viceroy

Timeline	Event
1883 to 1884 CE	Ilbert Bill Controversy
1884 to 1888 CE	Lord Dufferin served as Viceroy
1885 CE	The first session of the Indian National Congress
1888 to 1893 CE	Lord Lansdowne served as Viceroy
1892 CE	Indian Councils Act of 1892 was passed
1893 to 1899 CE	Lord Elgin II served as Viceroy
1899 to 1905 CE	Lord Curzon served as Viceroy
1905 CE	Partition of Bengal
1905 to 1910 CE	Lord Minto II served as Viceroy
1906 CE	Swaraj was declared the goal of the Congress by Dadabhai Naoroji
1906 CE	Formation of the Muslim League
1907 CE	Surat Split of the Congress
1907 CE	Seditious meeting act was passed
1908 CE	Indian Newspapers Act was passed
1909 CE	Morley-Minto Reforms
1909 CE	Indian Councils Act of 1909 was passed
1910 CE	Indian Press Act was passed
1910 to 1916 CE	Lord Hardinge II served as Viceroy



Timeline	Event	Timeline	Event
1911 CE	Annulment of Bengal Partition of 1905	1922 CE	Chauri Chaura incident
1914 to 1919 CE	First World War	1926 to 1931 CE	Lord Irwin served as Viceroy
1914 CE	The arrival of Mohandas Karamchand Gandhi in India	1927 CE	All India Women's Conference was founded by Margaret Cousins
1916 to 1921 CE	Lord Chelmsford served as Viceroy	1927 CE	Appointment of Simon Commission
1916 CE	Home Rule League was set up by Tilak and Annie Besant	1928 CE	Nehru Report was put forth
1916 CE	Lucknow pact between Congress and Muslim League	1929 CE	Jinnah's Fourteen points were proposed
1916 CE	Readmission of Extremists into Congress at Lucknow session of Congress	1930 CE	Gandhiji's Dandi March and Civil Disobedience Movement
1917 CE	August declaration was made by Edwin Samuel Montagu	1930 to 1931 CE	First-round Table Conference
1917 CE	Champaran Satyagraha	1931 CE	Second Round Table Conference
1918 CE	Ahmedabad Mill Strike	1931 CE	Gandhi-Irwin Pact
1918 CE	Kheda Satyagraha	1931 to 1936 CE	Lord Wellington served as Viceroy
1919 CE	Montagu-Chelmsford Reform was introduced	1932 CE	Third Round Table Conference
1919 CE	Government of India Act of 1919 was passed	1932 CE	Announcement of communal award
1919 CE	Rowlatt Act was passed	1932 CE	Poona Pact was signed
1919 CE	Jallianwala Bagh Massacre	1935 CE	Government of India Act of 1935 was passed
1920 CE	Khilafat and Non-Cooperation Movement	1936 to 1944 CE	Lord Linlithgow served as Viceroy
1920 to 1930 CE	Several revolutionary movements took place	1939 to 1945 CE	Second World War
1921 to 1926 CE	Lord Reading served as Viceroy	1940 CE	August Offer was announced



Timeline	Event
1942 CE	Cripps Mission headed by Sir Stafford Cripps was sent to India
1943 CE	The Bengal Famine
1944 to 1947 CE	Lord Wavell served as Viceroy
1945 CE	Wavell Plan
1946 CE	Cabinet Mission was sent to India
1947 CE	Mountbatten Plan was announced
1947 CE	Indian Independence Act was passed
1947 CE	Partition of India into India and Pakistan
1948 CE	Assassination of Gandhi
1949 CE	The Constitution of India was adopted
1950 CE	The Constitution of India came into force

Answer 48. A) Lake Poopó
Explanation
Shrinking Lakes Around the World
Lake Poopó

Located in west-central Bolivia.

Historically Bolivia's second-largest lake.

Completely dried up by December 2015 due to climate change-exacerbated drought and sediment buildup from local mining.

Lake Eyre

Also known as Kati Thanda–Lake Eyre, situated in central South Australia.

Lies in the southwestern corner of the Great Artesian Basin.

Typically dry but occasionally floods; lowest point on the Australian continent.

Aral Sea

Once the world's fourth-largest inland body of water. Located in Central Asia, east of the Caspian Sea. Significant shrinkage due to diversion of the Syr Darya and Amu Darya rivers for irrigation purposes.

Lake Mead

Reservoir of Hoover Dam, Arizona-Nevada border. Experienced a 120-foot drop in water level between 2000 and 2015 due to a multiyear drought in the American Southwest.

Lake Chad

Freshwater lake in the Sahelian zone of west-central Africa.

Historically one of Africa's largest lakes, but its surface area varies greatly seasonally and annually.

Lake Urmia

Largest lake in the Middle East, located in northwestern Iran.

Surface area declined by about 90 percent since the 1970s due to damming of inflowing rivers.

Dead Sea

Salt lake located between Israel and Jordan in southwestern Asia.

Lowest elevation and lowest body of water on Earth's surface.

Experienced a significant drop in water level due to diversion of the Jordan River and increased water usage for commercial purposes since the 1960s.

Note:

Lake Sevan, in Armenia, has seen an increase in water storage in the last 20 years, linked to enforcement of conservation laws on water withdrawal since the early 2000s.

The Kenyan lakes in the Rift have witnessed significant water level increases. Recent increases in lake areas range from 21 per cent for Lake Naivasha to 123 per cent for Solai.

Answer 49. C) Lake Assal
Explanation

The Afar Triangle, also referred to as the Afar Depression, is a geological depression formed by the Afar Triple Junction, a significant point within the Great



Rift Valley in East Africa. This Depression spans across the territories of Eritrea, Djibouti, and the **entire Afar Region of Ethiopia, encompassing Lake Assal in Djibouti, which marks the lowest point in Africa at 155 meters (509 feet) below sea level.**

The primary water source for the region is the Awash River, although it often ceases to flow during the annual dry season, leaving behind a series of saline lakes. The northern section of the Afar Depression is also identified as the Danakil Depression.

Geographically, the Afar Triangle is bounded by the Ethiopian Plateau and escarpment to the west, the Danakil block to the northeast (between it and the Red Sea), the Somali Plateau and escarpment to the south, and the Ali-Sabieh block to the southeast (adjoining the Somali Plateau).

Answer 50. D) None
Explanation

The betel, Piper betle, is a species of flowering plant in the pepper family Piperaceae, native to Southeast Asia. **It is an evergreen, dioecious vine, with glossy heart-shaped leaves and white catkins.** Betel plants are cultivated for their leaves which are most commonly used as flavoring in chewing areca nut (betel nut chewing). **Hence, statement 1 is correct.**

Saffron, revered as one of the world's most precious spices, is derived from the vibrant crimson stigmas of the Crocus sativus flower. This perennial plant, a member of the iris family, blooms in autumn, presenting delicate lilac-purple flowers with deep red stigmas protruding from their centers. Cultivation of saffron spans millennia, primarily concentrated in regions with a Mediterranean climate, including Iran, Spain, and Kashmir.

In humans, saffron with doses between 1.2 and 2 g induced nausea, vomiting, diarrhea and bleeding. **Taking large amounts of saffron by mouth is possibly unsafe. High doses of 5 grams or more can cause poisoning. Doses of 12-20 grams can cause death.** **Hence, statement 2 is correct.**

Basmati, renowned for its lengthy grains and aromatic essence, is a sought-after rice variety cultivated primarily in the Indian subcontinent, notably in India, Pakistan, Sri Lanka, and Nepal. India accounted for a substantial 65% share of the global basmati rice trade in 2019, with Pakistan contributing the remaining 35%. Despite basmati rice being grown in various countries, its geographical indication is confined to specific regions within India and Pakistan. As per the Indian Agricultural and Processed Food Products Export Development Authority (APEDA), rice must meet specific criteria, including a minimum average

precooked milled rice length of 6.61 mm (0.260 in) and a breadth of up to 2 mm (0.079 in), to qualify as basmati.

The Basmati Mark is a DNA-fingerprinting-based certification done by the laboratory of Basmati Export Development Foundation (BEDF). Hence, statement 3 is correct.

In 2016, the Agricultural & Processed Food Products Export Development Authority (APEDA), an autonomous organisation under the Department of Commerce in India, registered basmati rice as a product with Geographical Indication (GI).

Phyllostachys aurea, commonly known as fishpole bamboo or golden bamboo is **a highly invasive running bamboo native to Southeast China** that is now widespread globally and especially problematic in Australia and North America. This woody, rhizomatous perennial grass rapidly forms a dense monoculture, suffocating other native plants and altering the entire ecosystem. **Hence, statement 4 is correct.**

All statements are correct.

Answer 51. C) All four
Explanation

The pricing policy for sugarcane is regulated by the Sugarcane (Control) Order, 1966, mandated under the Essential Commodities Act (ECA), 1955. Before the 2009-10 sugar season, the Central Government determined the Statutory Minimum Price (SMP) of sugarcane, with farmers entitled to a 50:50 share of profits from sugar mills. However, this profit-sharing mechanism was rarely implemented. In October 2009, the concept of SMP was replaced by the Fair and Remunerative Price (FRP) of sugarcane. This change aimed to ensure fair compensation for growers. A significant addition to the amended order was the inclusion of 'reasonable margins for growers of sugarcane on account of risk and profits,' effective from the 2009-10 sugar season. Consequently, the Commission for Agricultural Costs and Prices (CACP) must consider various statutory factors outlined in the Control Order, including the cost of sugarcane production, returns from alternative crops, sugar availability to consumers at a fair price, sugar prices, sugar recovery rates, and income from by-products such as molasses, bagasse, and press mud.

Answer 52. C) Acquired brands
Explanation

Current assets are cash and short-term assets that can be quickly converted to cash within one year or operating cycle. They're also referred to as liquid



assets. When an asset is liquid, it can be converted to cash in a short timeframe.

Below is a list of current assets often listed on a company's balance sheet:

- Cash.
- Cash equivalents.
- Accounts receivable.
- Inventory.
- Prepaid expenses and liabilities.
- Short-term, liquid investments.

Current assets will turn into cash within a year from the date displayed at the top of the balance sheet. A balance sheet is a financial statement that shows a business' assets and how they're financed, through debt or equity.

The balance sheet reports on an accounting period, which is typically a 12-month timeframe. Current assets can be found at the top of a company's balance sheet.

Non-current assets differ from current assets in that companies can convert current assets into cash within a year.

Here are some examples of non-current assets:

- Land
- Office buildings
- Manufacturing plants
- Vehicles
- Natural resources
- Investments, like bonds
- Patents and trademarks
- Equipment
- Inherited customer bases
- Acquired brands

Answer 53. B) 2 only

Explanation

Taiwan is the largest producer of semiconductors in the world, followed by South Korea, China, and the United States. However, many other countries including Japan, Germany, and Israel also have a significant presence in the semiconductor industry. **Hence, statement 1 is incorrect.**

Neon gas is used in the photolithography process that is the most common method for fabricating integrated circuits. Specifically, the neon gas is used in the laser machines that carve the integrated circuits.

For use of neon gas in the semiconductor industry, the gas has to reach 99.99% purity levels — which makes it a rarity. **Hence, statement 2 is correct.** More than half of semiconductor-grade neon comes from Ukrainian companies Incas and Cryoin.

PM Narendra Modi laid the foundation stone of the chip fabrication unit of Tata-Powerchip Semiconductor fabrication unit at Dholera in Gujarat. Dholera will be the first commercial semiconductor fabrication facility in India. **Hence, statement 3 is incorrect.**

Answer 54. C) 1 and 3 only

Explanation

Pattadakal, also known as Raktapura, stands as a testament to the architectural and cultural prowess of ancient India. **Situated on the west bank of the Malaprabha River in the Bagalkot district of Karnataka**, this UNESCO World Heritage Site dates back to the 7th and 8th centuries CE. **Hence, statement 1 is incorrect.** Positioned approximately 23 kilometers from Badami and 9.7 kilometers from Aihole, significant centers of Chalukya monuments, Pattadakal occupies a pivotal place in India's historical landscape. Managed by the Archaeological Survey of India (ASI), the site encompasses both Hindu and Jain temples, predominantly dedicated to Shiva but also incorporating elements of Vaishnavism and Shaktism theology. The intricately carved friezes on the Hindu temples narrate tales from Hindu epics like the Ramayana and the Mahabharata, along with other texts like the Bhagavata Purana and the Panchatantra. The fusion of Northern and Southern architectural styles is most pronounced in temples like Papanatha and Virupaksha, showcasing complex friezes and exquisite craftsmanship. While the Virupaksha temple remains an active site of Hindu worship, the Mallaprabha River, coursing through the valley of mountains and plains, adds to the historical significance of this remarkable site in South India's rich heritage.

The Virupaksha Temple, nestled in the heart of Hampi, Karnataka, stands as a majestic testament to the rich cultural and architectural heritage of India. Dedicated to Sri Virupaksha, this temple is a revered center of pilgrimage within the **Group of Monuments at Hampi, designated as a UNESCO World Heritage Site.**

Constructed by LakkanDandasha, a nayaka under the reign of Deva Raya II of the Vijayanagara Empire, the temple has retained its sanctity over centuries. Adorned with delicately carved pillars and surrounded by a complex of shrines and courtyards, it remains a vibrant center of worship to this day. The temple complex features a nine-tiered eastern



gateway, a testament to the architectural marvels of its time, leading to inner sanctums and courtyards. **Of particular note is the temple's intricate design, showcasing repeated patterns that exemplify the concept of fractals, demonstrating a remarkable fusion of artistry and mathematical precision. Hence, statement 2 is correct.** Commissioned by the illustrious King Krishnadevaraya, the temple's central pillared hall and gateway tower stand as enduring symbols of his patronage and architectural vision. As a hub of religious and cultural activities, the temple continues to resonate with the echoes of ancient rituals, music, and dance, inviting visitors to immerse themselves in its timeless splendor.

The Ravana Phadi Cave Temples stand as the earliest monument crafted by the Badami branch of the Chalukyas, dating back to the 6th century. **Dedicated to Shiva**, the destroyer in the Hindu Trimurti, this temple boasts a simple exterior adorned with four pillars at the entrance, featuring bas-relief sculptures of Shiva and Parvati. **Hence, statement 3 is incorrect.** Inside, the mandapa reveals an array of bas-relief sculptures depicting avatars of Vishnu and Shiva. Situated just north of Aihole's main temple complex, it offers a distinct architectural style compared to the surrounding temples. Within the cave, visitors encounter intricate carvings illustrating Hindu mythologies, including depictions of Shiva, Parvati, Lord Ganesha, and the divine mothers. Notable reliefs such as Nataraja, along with carvings of Vishnu, Garuda, Indra, and Goddess Durga, enrich the temple's interior, making it a compelling site for exploration within the Aihole monuments.

Answer 55. B) 2 and 3 only

Explanation

Established in 1991 as a specialized rapid reaction **unit under the Central Reserve Police Force (CRPF)**, the Rapid Action Force (RAF) of India is dedicated to managing riot and crowd control situations. **Hence, statement 1 is incorrect.** It operates nationwide, employing trained personnel equipped with non-lethal weapons to ensure minimum harm during dispersal.

Formed on December 11, 1991, and fully operational by October 7, 1992, RAF addresses riots, crowd disturbances, and rescue operations. Recognized for its service, it was awarded the President's colors in October 2003. RAF's primary role is riot and crowd control, deployed during communal violence, elections, and agitations. It also contributes to United Nations Peacekeeping Operations since 2007 and engages in humanitarian efforts during natural

disasters. During the 2008 Mumbai Terror Attacks, RAF played a crucial role in securing areas surrounding prominent targets.

The force is equipped with non-lethal weapons for dispersing the crowd with minimum harm and losses. It is always kept in readiness for rapid deployment when the situation so demands and are only deployed by the orders of **Ministry of Home Affairs on specific demands from state governments for a short duration. Hence, statement 2 is correct.**

RAF exemplifies a balance between effective law enforcement and humanitarian service, embodying its motto: **"Serving Humanity with Sensitive Policing."** **Hence, statement 3 is correct.**

Answer 56. D) 1-a, 2-b, 3-d, 4-c

Explanation

- **Operation Sukoon(2006)** - a relief operation to evacuate Indian, Sri Lankan and Nepalese nationals, as well as Lebanese nationals with Indian spouses, from the conflict zone during the 2006 Lebanon War
- **Operation Searchlight(2014)** -The Search Operation Undertaken by Indian Navy to find the missing Boeing 777 M.H 17 Malaysian Flight
- **Operation Raahat(2015)** - Operation by the Indian Armed Forces to evacuate Indian citizens and other foreign nationals from Yemen during the 2015 military intervention by Saudi Arabia and its allies in that country during the Yemeni Crisis.
- **Operation Nistar(India)(2018)** - Operation by the Indian Navy using INS Sunayna to evacuate Indian citizens from Yemen Island of Socotra who were stranded by Cyclone Mekenu.

Trivia

Army operations

This includes a list of Army operations, both old one as well as ongoing operations, as well as humanitarian military operations:



Sr. No.	Names of Operation	Year	Location	Notes
1	Operation Polo	1948	Hyderabad	Indian armed forces ended the rule of the Nizam of Hyderabad and led to the incorporation of the princely state of Hyderabad in Southern India , into the Indian Union .
2	Golden Temple Raid I	1955	Punjab	To curb the Punjabi Suba Morcha .
3	Operation Vijay	1961	Goa , Daman & Diu	The operation by the Military of India that led to the incorporation of Portuguese India (Goa, Daman, and Diu) into India .
4	Operation Steeplechase	1971	Red Corridor	Combined operation against Naxalites .
5	Amalgamation of Sikkim		Sikkim	Indian Army disarmed and disbanded the Royal Guard of the Sikkimese King , after which Sikkim joined India as a State of India .
6	Operation Blue Star	1984	Punjab	Carried out to remove religious leader Jarnail Singh Bhindranwale and his followers from the buildings of the Harmandir Sahib complex in Amritsar, Punjab .
7	Operation Woodrose	1984	Punjab	
8	Operation Red Rose	1984	Punjab	
9	Operation Shivalik	1985	Karnataka , Madhya Pradesh , Maharashtra , Himachal Pradesh , Haryana and Uttar Pradesh (mainly Terai Regions)	To capture Sikh militant leaders outside the confines of the Punjab state . 1 Sikh militant captured and detained, 38 sympathizers detained.
10	Operation Black Thunder I	1986	Punjab	Capture of the Golden Temple over suspected militants. No casualties on militant side, 2 civilians killed and 1 soldier killed.

Sr. No.	Names of Operation	Year	Location	Notes
11	Operation Pacification	1986	Punjab	
12	Operation Mand	1986	Punjab	To capture or kill Avatar Singh Bramha , a Sikh militant. 1 helicopter lost, no militant detained.
13	Operation Bluebird	1987	Manipur	Indian retaliation operation to the 1987 attacks on the Assam Rifles' outpost .
14	Golden Temple Raid II	1987	Punjab	Rumor that militant Gurjit Singh was in the Golden Temple complex . Not found.
15	Operation Pawan	1987	Sri Lanka	Operations by the Indian Peace Keeping Force to take control of Jaffna from the LTTE in late 1987 to enforce the disarmament of the LTTE as a part of the Indo-Sri Lankan Accord . Operation Viraat , which occurred in 1988, after Operation Pawan , was an anti-insurgency operation launched by the IPKF against the LTTE in April 1988 in Northern Sri Lanka .
16	Operation Black Thunder II	1988	Punjab	Capture of Golden Temple , 90+ militants surrendered, 2 soldiers killed, many militants escaped.
17	Operation Night Dominance	1990-1994	Punjab	To control the landscape of Punjab at night.
18	Operation Rakshak I	1990	Punjab	To curb Sikh militancy.
19	Operation Vadhi Pahar	1991	Punjab	Indian Police and Army operation to kill militant member Seetal Singh Mattewal .
20	Operation Election	1992	Punjab	To bring a secure election, did not succeed as militants boycotted election, data suggests only 21% of Punjab voted.
21	Golden Temple Raid III	1992	Punjab	To stop commemoration of the assassins of General Shidhar Vaidya .



Sr. No.	Names of Operation	Year	Location	Notes
22	Operation Sarg Vinash	2003	Jammu and Kashmir	An assault on the largest system of hideouts used by insurgents in Jammu and Kashmir in which over 60 militants were killed ^{[1][2]}
23	Operation Black Tornado	2008	Mumbai, Maharashtra	Against the 2008 Mumbai Terror Attacks
24	Operation All Out	1990		for flushing out militants from specially Kashmir region of Jammu and Kashmir state of India.
25	2015 Indian counter-insurgency operation in Myanmar	2015	Myanmar	Indian Army allegedly conducted hot pursuit of Naga terror outfit NSCN-Imphal along the India-Myanmar border.
26	Operation Calm Down	2016	Jammu and Kashmir	
27	Operation Randon Behak	2020	Jammu and Kashmir	
28	Operation Devi Shakti	2021	Punjab, Haryana, Delhi, Afghanistan	To help fleeing Hindus and Sikhs from the Islamic Republic of Afghanistan.
29	Operation Ganga	2022	Ukraine	To evacuate the Indian citizens amidst the 2022 Russian invasion of Ukraine, who had crossed over to neighboring countries

Navy operations

- **Operation Vijay(1961)** - Annexation of Goa
- **Operation Trident(1971)** - an offensive operation launched on Pakistan's port city of [Karachi](#) during the [Indo-Pakistani War of 1971](#).
- **Operation Python(1971)** - Follow-up to Operation Trident on Karachi, Pakistan's port city in 1971.
- **Operation Cactus(1988)** - Against the coup to overthrow the Government of Maldives.
- **Operation Talwar(1999)** - Blockage of Karachi Port
- During [2004 Indian Ocean](#)

earthquake(**Operation Madath, Operation Sea Waves, Operation Castor, Operation Rainbow, Operation Gambhir & Operation Rahat-II**)

- **Operation Madad(2018)** - Indian Navy had launched Operation Madad, major rescue, and relief operation in flood-hit Kerala. The operation was launched to assist state administration and undertake disaster relief operations due to flooding in many parts of Kerala.
- **Operation Samudra Setu(2020)** - This operation was launched to bring back Indian citizens struck at overseas during Covid-19 pandemic.

Answer 57. C) When interest rates are high, people prefer holding more cash as the opportunity cost of not earning interest becomes significant.

Explanation

Liquidity preference theory, first introduced by economist John Maynard Keynes in his seminal work "The General Theory of Employment, Interest, and Money," delves into the dynamics of cash holdings within an economy. This theory elucidates how individuals and businesses prioritize liquidity, or the ease of converting assets into cash, to fulfill short-term needs and navigate economic uncertainties.

Key Insights:

- **Motives for Holding Money:** Liquidity preference theory identifies three primary motives behind holding money: transaction, precautionary, and speculative. These motives reflect the necessity for cash to facilitate daily transactions, serve as a buffer against unforeseen expenses, and capitalize on investment opportunities influenced by interest rates and market conditions.
- **Trade-Off Between Liquidity and Returns:** Individuals weigh the convenience of holding readily available cash against the potential returns from investing in less liquid assets like stocks or bonds. This trade-off underscores the significance of factors such as income levels and prevailing interest rates in shaping liquidity preferences.
- **Influence of Factors:** The demand for money is not solely based on personal preferences but is also influenced by external factors. One of these factors is income level. Individuals with higher incomes tend to have higher liquidity preferences as they can afford to

hold more cash without compromising their ability to meet financial obligations. Another factor influencing liquidity preferences is interest rates. When interest rates are low, individuals may choose to hold less cash since there are better opportunities for earning returns through investments in other assets. Conversely, when interest rates are high, people may prefer holding more cash as the opportunity cost of not earning interest becomes significant.

- **Preference Curve and Preferred Habitat Theory:** Economists utilize tools like the preference curve to illustrate the relationship between money demand and interest rates. Additionally, the Preferred Habitat Theory suggests that investors have specific preferences for different bond maturities, further emphasizing the nuanced interplay between liquidity preferences and interest rate dynamics.
- **Role in Economic Analysis:** Liquidity preference theory holds significance in analyzing interest rate fluctuations and their broader economic implications. Rooted in Keynesian economics, this theory underscores the role of monetary policy and individuals' expectations in shaping economic activity and financial markets.

By comprehending liquidity preference theory and its underlying motives, individuals and businesses can make informed decisions regarding cash management and respond adeptly to evolving economic conditions and policy changes.

Answer 58. C) Japan
Explanation

The South China Sea is situated just south of the Chinese mainland and is bordered by the countries of **Brunei, China, Indonesia, Malaysia, Philippines, Taiwan and Vietnam**. The countries have bickered over territorial control in the sea for centuries, but in recent years tensions have soared to new heights.



Answer 59. A) 1, 2, 4, 3

Explanation

Chronological list of some tribal movements in the following table since 1768:

S.N.	Movement	Period	Place	Leader
1	Chuar uprising	1768	Midnapur	Jagannath Singh, the zamindar of Ghatshila or the king of Dhalbhum
2	Halba rebellion	1774-79	Donger, Chhatisgarh	-
3	Chakma rebellion	1776-1787	North East India	-
4	Pahariya Sardar's Revolution	1778	Chhotanagpur	Raja Jagganath
5	Tamar's revolution	1794-1795	Chhotanagpur	Chief Bisoi
6	Bhopalpatnam Struggle	1795	Bhopalpatnam	-
7	Chuar rebellion in Bengal	1795-1800	Midnapur	Jagannath Singh, Dhadkar Shyamganjan and Durjol Singh
8	Kol Rebellion	1795-1831	Chhotanagpur	Bir Budhu Bhagat, Joa Bhagat, Jhindrai Manki and Sui Munda
9	Tribal Revolt against the sale of Panchet estate	1798	Chhotanagpur	Raja Jagganath
10	Mizo Movement	1810	Mizoram	-
11	Khurda Rebellion	1817	Orisha	-
12	Kondhas Rebellion	1817	Orissa	-
13	Bhil rebellion	1822-1857	Rajasthan and Madhy-apradesh	Bhagoji Naik and Kajar Singh
14	Paralkot Rebellion	1825	Bastar	Gend Singh
15	Khasi and Garo Rebellion	1829	Meghalaya	-
16	Tarapur rebellion	1842-54	Bastar	-
17	Maria rebellion	1842-63	Bastar	-

18	J h a r k h a n d Movement	1845	Jharkhand	-
19	Kond Revolution	1850	Orissa	Chief Bisoi.
20	First Freedom Struggle	1856-57	Sidu Murmu and Murmu Kanu	-
21	Bhil rebellion	1858	Banswara	Tantya Tope
22	Koi revolt	1859	Bastar	
23	Gond rebellion	1860	Ramji Gond	Adilabad
24	Synteng tribal	1860-1862	North East India	-
25	Kuki Invasion	1860s	Manipur	-
26	Juang tribal	1861	Orissa	-
27	Koya	1862	Andhra Pradesh	Tammandora
28	Bhuiyas Rebellion	1868	Keonjhar	-
29	Daflas Rebellion	1875	North East India	-
30	Rani of Nagas rebellion	1878-82	Manipur	-
31	1st Rampa Rebellion	1879	Vizagapatnam	-
32	Naga Movement	1879	North East India	Tikendraji Singh
33	Sentinelese tribal people	1883	A n d a m a n and Nicobar Islands	-
34	Santhal Revolt	1885-1886	Dhanbad	Sidhu and Kanhu
35	Muria Gond Rebellion	1886	Eastern Madhya Pradesh	-
36	Mundal rebellion	1889	Orissa	Birsa Munda
37	Lushei rebellion	1892	Tripura	-
38	Bhumkal	1910	Bastar, Chhattisgarh	-
39	Samp sabha Movement	1913	Rajasthan	Guru Govind
40	Tana Bhagat movement	1913-1914	Bihar	Tana Bhagat
41	Kuki Movement	1917-1919	Manipur	chieftains called
42	Tana Bhagat movement	1920-1921	Jharkhand	Tana Bhagat
43	2nd Rampa Rebellion	1921-1923	Visakhapatnam	-

44	Koya Rebellion	1922	Andrapradesh	Alluri Sree Rama
45	Naga Rebellion	1932	Nagaland	Rani Guidallo
46	Gond and the Kolam	1941	Adilabad in Andhra Pradesh	-
47	Koraput Revolution	1942	Orissa	Lakshmana Naik
48	A n d a m a n e s e Revolution	1942-1945	Andaman and Nicobar	-
49	Bodo Movement	1987	Assam	Upendranath Brahma
50	Dongria Kondh Movement		2008	Odisha

Answer 60.C) All Explanation

Indo-Saracenic architecture was an architectural style commonly used in the British colonies in the late 1800s.

After the Indian Rebellion of 1857 and the subsequent transfer of East India Company colonies to the British government, British architects in India began to explore ways to legitimize their colonial rule through relating themselves to previous Indian rulers.

As mentioned earlier, the main inspiration for this new style of architecture came from the Mughal Empire, which began in northern India and expanded to most of South Asia in the 1500s and 1600s.

The **Victoria Memorial Hall of Kolkata**, for instance, inculcates numerous Mughal elements and presents a true example of the Indo-Saracenic style. **Hence, statement 2 is correct.**

Chepauk Palace in Chennai designed by Paul Benfield is said to be the first Indo-Saracenic building in India, which incorporated elements and motifs of Hindu and Islamic precedents. **Hence, statement 1 is correct.**

Typical elements found include:

- onion (bulbous) domes
- **Chhajja, overhanging eaves, often supported by conspicuous brackets**
- pointed arches, cusped arches, or scalloped arches
- horseshoe arches, in fact characteristic of Islamic Spain or North Africa, but often used
- contrasting colours of voussoirs round an arch, especially red and white; another feature more typical of North Africa and Spain



- curved roofs in Bengali styles such as char-chala
- domed chhatri kiosks on the roofline
- pinnacles
- **towers or minarets**
- open pavilions or pavilions with Bangala roofs
- jalis or openwork screens
- **Mashrabiya or jharokha-style screened windows**
- Iwans, in the form of entrances set back from the facade, under an arch.

Hence, statement 3 is correct.

Chief proponents of this style of architecture included Robert Fellowes Chisholm, Sir Samuel Swinton Jacob, Charles Mant, Henry Irwin, William Emerson, George Wittet and Frederick Stevens, along with numerous other skilled professionals and artisans throughout Europe and the Americas.

Answer 61. A) 2 and 3 only

Explanation

Grasses like switchgrass and Miscanthus have deep, complex root systems that are ideal for storing carbon in the soil. Their root structures also help stabilize the soil, increase moisture levels, and retain nutrients. As perennial plants, native grasses are able to sequester carbon year-round without releasing it.

Agaves are naturally adapted succulents and deep-rooted trees that are resistant to drought and rising temperatures. By planting, pruning, and intercropping agaves, these carbon sinks can suck in and store around 30 to 60 tons of CO₂ per hectare.

Hence, options 1 and 4 are incorrect.

Note: Wildebeest, wolves, elephants, sharks and whales are among those species whose natural functions contribute to carbon sequestration.

Answer 62.B) The range of cells and tissues within a host that support the growth and replication of a particular pathogen.

Explanation

Tissue tropism refers to the specific range of cells and tissues within a host organism that are susceptible to infection and provide a conducive environment for the growth and replication of a particular pathogen, such as viruses, bacteria, or parasites. While some

pathogens exhibit a broad tissue tropism, capable of infecting multiple types of cells and tissues throughout the body, others may have a more restricted range and primarily target a single tissue. For instance, the rabies virus predominantly affects neuronal tissue.

Several factors influence viral tissue tropism, including the presence of cellular receptors that permit viral entry, the availability of transcription factors necessary for viral replication, and the molecular characteristics of viral proteins, such as glycoproteins, which interact with specific cell receptors. Cellular receptors act as binding sites on both host and viral surfaces, facilitating the fusion or attachment of the viral cell to the host cell. This interaction initiates a series of events leading to viral replication within the host cell.

An illustrative example of tissue tropism can be seen in the case of HIV. The HIV virus possesses a glycoprotein gp120, which precisely binds to the CD4 marker present on the surface of T cells and macrophages. This enables HIV to enter these immune cells, initiating the infection cycle and subsequent viral replication. As the infection progresses, HIV undergoes tissue tropism, acquiring new tissues with the necessary receptors to sustain its replication and spread throughout the host organism.

In summary, tissue tropism plays a crucial role in the pathogenesis of infectious diseases, determining the specific sites of infection within the host and influencing the clinical manifestations of the disease. Understanding the mechanisms of tissue tropism is essential for developing effective therapeutic interventions and strategies for combating infectious pathogens.

Answer 63. D) All

Explanation

Name of Committees/ Commissions	Year	Governor-General/ Viceroy	Subjects of the Committees/ Commissions
Charles Wood Despatch	1854	Lord Dalhousie	Education
Hunter Commission	1882	Lord Ripon	Education
Raleigh Commission	1902	Lord Curzon	Education (Indian Universities Act)
Sadler Commission	1917	Lord Chelmsford	Education
Hartog Commission	1929	Lord Irwin	Education
Sargent Plan	1944	Lord Wavell	Education
Campbell Commission	1866	Sir John Lawrence	Famine

Strachy Commission	1880	Lord Lytton	Famine
Lyall Commission	1886	Lord d Elgin-II	Famine
MacDonnell Commission	1900	Lord Curzon	Famine
Mansfield Commission	1886	Lord Dufferin	Currency
Fowler Commission	1898	Lord Elgin-II	Currency
Hilton Young Commission	1926	Lord Linlithgow	Currency
Fraser Commission	1902	Lord Curzon	Agriculture
Scott-Moncrieff Commission	1901	Lord Curzon	Irrigation
Babington Smith Commission	1919	Lord Chelmsford	Currency
Hunter Committee Report	1919	Lord Chelmsford	Punjab Disturbances
Muddiman Committee	1924	Lord Reading	To examine the working of Diarchy of the Montague-Chelmsford reforms
Butler Commission	1927	Lord Irwin	Indian States
Whitley Commission	1929	Lord Irwin	Labour
Simon Commission		Lord Irwin	To investigate the progress of the governance scheme and suggest new steps for reform
Sapru Commission	1935	Lord Linlithgow	Unemployment
Chatfield Commission	1939	Lord Linlithgow	Army
Floud Commission	1940	Lord Linlithgow	Tenancy in Bengal

Answer 64. B) An insecticide
Explanation

Monocrotophos, classified as **an organophosphate insecticide**, poses acute toxicity risks to both birds and humans, leading to its prohibition in various regions including the U.S., the E.U., India, and numerous other countries. Primarily utilized in agriculture due to its cost-effectiveness as a pesticide, it unfortunately doubles as a method of self-harm, often employed in cases of suicide. Notably, Monocrotophos gained notoriety due to its involvement in a tragic incident in Bihar, India, where 23 schoolchildren lost their lives after consuming a state-provided meal contaminated with the pesticide.

TRIVIA
LIST OF PESTICIDES WHICH ARE BANNED AND RESTRICTED USE :

(As on 01.10.2022)

I. PESTICIDES / FORMULATIONS BANNED IN INDIA

Pesticides Banned for manufacture, import and use.	
1.	Alachlor(Vide S.O. 3951(E), dated 08.08.2018)
2.	Aldicarb (vide S.O. 682 (E) dated 17th July 2001)
3.	Aldrin
4.	Benzene Hexachloride
5.	Benomyl (vide S.O 3951(E) dated 8th August, 2018)
6.	Calcium Cyanide
7.	Carbaryl (vide S.O 3951(E) dated 8th August, 2018)
8.	Chlorbenzilate (vide S.O. 682 (E) dated 17th July 2001)
9.	Chlordane
10.	Chlorofenvinphos
A. 11.	Copper Acetoarsenite
12.	Diazinon (vide S.O 3951(E) dated 8th August, 2018)
13.	Dibromochloropropane (DBCP) (vide S.O. 569 (E) dated 25th July 1989)
14.	Dichlorovos(Vide S.O. 3951(E), dated 08.08.2018)
15.	Dieldrin (vide S.O. 682 (E) dated 17th July 2001)
16.	Endosulfan (vide ad-Interim order of the Supreme Court of India in the Writ Petition (Civil) No. 213 of 2011 dated 13th May, 2011 and finally disposed of dated 10th January, 2017)
17.	Endrin
18.	Ethyl Mercury Chloride
19.	Ethyl Parathion
20.	Ethylene Dibromide (EDB) (vide S.O. 682 (E) dated 17th July 2001)
21.	Fenarimol (vide S.O 3951(E) dated 8th August, 2018)
22.	Fenthion (vide S.O 3951(E) dated 8th August, 2018)
23.	Heptachlor
24.	Lindane (Gamma-HCH)
25.	Linuron (vide S.O 3951(E) dated 8th August, 2018)
26.	Maleic Hydrazide (vide S.O. 682 (E) dated 17th July 2001)
27.	Menazon



	28.	Methoxy Ethyl Mercury Chloride (vide S.O 3951(E) dated 8th August, 2018)
	29.	Methyl Parathion (vide S.O 3951(E) dated 8th August, 2018)
	30.	Metoxuron
	31.	Nitrofen
	32.	Paraquat Dimethyl Sulphate
	33.	Pentachloro Nitrobenzene (PCNB) (vide S.O. 569 (E) dated 25th July 1989)
	34.	Pentachlorophenol
	35.	Phenyl Mercury Acetate
	36.	Phorate(Vide S.O. 3951(E), dated 08.08.2018)
	37.	Phosphamidon(Vide S.O. 3951(E), dated 08.08.2018)
	38.	Sodium Cyanide (banned for Insecticidal purpose only vide S.O 3951(E) dated 8th August, 2018)*
	(*Regulation to be continued in the extant manner for non-insecticidal uses)	
	39.	Sodium Methane Arsonate
	40.	Tetradifon
	41.	Thiometon (vide S.O 3951(E) dated 8th August, 2018)
	42.	Toxaphene(Camphechlor) (vide S.O. 569 (E) dated 25th July 1989)
	43.	Triazophos(Vide S.O. 3951(E), dated 08.08.2018)
	44.	Tridemorph (vide S.O 3951(E) dated 8th August, 2018)
	45.	Trichloro acetic acid (TCA) (vide S.O. 682 (E) dated 17th July 2001)
	46.	Trichlorfon(Vide S.O. 3951(E), dated 08.08.2018)
B.	Pesticide formulations banned for import, manufacture and use	
	1.	Carbofuron 50% SP (vide S.O. 678 (E) dated 17th July 2001)
	2.	Methomyl 12.5% L
	3.	Methomyl 24% formulation
	4.	Phosphamidon 85% SL

C. Pesticides Withdrawn (Withdrawal may become inoperative as soon as required complete data as per the guidelines is generated and submitted by the Pesticides Industry to the Government and accepted by the Registration Committee. (S.O 915(E) dated 15thJun,2006)	
1.	Dalapon
2.	Ferbam
3.	Formothion
4.	Nickel Chloride
5.	Paradichlorobenzene (PDCB)
6.	Simazine
7.	Sirmate (S.O. 2485 (E) dated 24th September 2014)
8.	Warfarin (vide S.O. 915 (E) dated 15th June 2006)

II. PESTICIDES RESTRICTED FOR USE IN THE COUNTRY

S.No.	Name of Pesticides	Details of Restrictions
1.	Aluminium Phosphide	<p>The Pest Control Operations with Aluminium Phosphide may be undertaken only by Govt./Govt. undertakings / Govt. Organizations / pest control operators under the strict supervision of Govt. Experts or experts whose expertise is approved by the Plant Protection Advisor to Govt. of India except ¹Aluminium Phosphide 15 % 12 g tablet and ²Aluminium Phosphide 6 % tablet. [RC decision circular F No. 14-11(2)-CIR-II (Vol. II) dated 21-09-1984 and G.S.R. 371(E) dated 20th may 1999]. ¹Decision of 282nd RC held on 02-11-2007 and, ²Decision of 326th RC held on 15-02-2012.</p> <p>The production, marketing and use of Aluminium Phosphide tube packs with a capacity of 10 and 20 tablets of 3 g each of Aluminium Phosphide are banned completely. (S.O.677 (E) dated 17thJuly, 2001)</p>



2.	Captafol	<p>The use of Captafol as foliar spray is banned. Captafol shall be used only as seeddresser.</p> <p>(S.O.569 (E) dated 25thJuly, 1989)</p> <p>The manufacture of Captafol 80 % powder for dry seed treatment (DS) is banned for use in the country except manufacture for export.</p> <p>(S.O.679 (E) dated 17thJuly, 2001)</p>	5.	<p>Dichloro Diphenyl Trichloro ethane (DDT)</p>	<p>The use of DDT for the domestic Public Health Programme is restricted up to 10,000 Metric Tonnes per annum, except in case of any major outbreak of epidemic. M/s Hindustan Insecticides Ltd., the sole manufacturer of DDT in the country may manufacture DDT for export to other countries for use in vector control for public health purpose. The export of DDT to Parties and State non- Parties shall be strictly in accordance with the paragraph 2(b) article 3 of the Stockholm Convention on Persistent Organic Pollutants (POPs). (S.O.295 (E) dated 8th March, 2006)</p> <p>Use of DDT in Agriculture is withdrawn. In very special circumstances warranting the use of DDT for plant protection work, the state or central Govt. may purchase it directly from M/s Hindustan Insecticides Ltd. to be used under expert Governmental supervision. (S.O.378 (E) dated 26thMay, 1989).</p>
3.	Cypermethrin	<p>Cypermethrin 3 % Smoke Generator is to be used only through Pest Control Operators and not allowed to be used by the General Public. [Order of Hon.ble High Court of Delhi in WP(C) 10052 of 2009 dated 14-07- 2009 and LPA-429/2009 dated 08-09-2009]</p>			
4.	Dazomet	<p>The use of Dazomet is not permitted on Tea. (S.O.3006 (E) dated 31st Dec, 2008)</p>	6.	Fenitrothion	<p>The use of Fenitrothion is banned in Agriculture except for locust control in scheduled desert area and public health.</p> <p>(S.O.706 (E) dated 03rd-May, 2007)</p>



7.	Methyl Bromide	<p>Methyl Bromide may be used only by Govt./Govt. undertakings/Govt. Organizations / Pest control operators under the strict supervision of Govt. Experts or Experts whose expertise is approved by the Plant Protection Advisor.</p> <p>[G.S.R.371 (E) dated 20thMay, 1999 and earlier RC decision]</p>
8.	Monocrotophos	<p>Monocrotophos is banned for use on vegetables. (S.O.1482 (E) dated 10thOct, 2005)</p>
9.	Trifluralin	<p>(i) The Registration, import, manufacture, formulation, transport, sell and its all uses except use in wheat shall be prohibited and completely banned from 8th August, 2018.</p> <p>(ii) A cautionary statement has to be incorporated in the label and leaflet that it is toxic to aquatic organism, hence should not be used near water bodies, aquaculture or pisciculture area.</p> <p>(vide S.O 3951(E) dated 8th August, 2018)</p>

for property law in India. The **Interpretation of the Act, says "Immovable property does not include standing timber, growing crops or grass"**. Section 3(26), The General Clauses Act, 1897, defines, "immovable property" shall include land, benefits to arise out of the land, and things attached to the earth, or permanently fastened to anything attached to the earth. **Hence, statement 1 is correct.**

The Registration Act of 1908 outlines the procedures and regulations governing the registration of documents in India. It designates the Registrar and Sub-Registrars as authorized entities for registration and specifies the types of deeds that must be registered. Additionally, the Act addresses the timing, location, and fees associated with registration, with variations in fees across different states. Parts I and II of the Act cover preliminary information and the establishment responsible for registration, while Part III details the documents to be registered and the conditions for rejection. Notably, Section 17 lists documents that must be compulsorily registered, including gift deeds and leases exceeding one year. Parts IV and V discuss the timing and location of registration, with penalties imposed for delayed registration. The Act plays a crucial role in ensuring legal authenticity and protecting the interests of parties involved in property transactions. **A document not registered within the stipulated time frame may incur a fine, capped at ten times the registration fee. Hence, statement 2 is incorrect.**

The Right to Information (RTI) Act, enacted by the Parliament of India in 2005, replaced the former Freedom of Information Act, 2002, establishing rules and procedures for citizens' access to information. Any Indian citizen can request information from a "public authority," **which must respond promptly, typically within thirty days.** Urgent matters concerning life and liberty require a response within 48 hours. The Act mandates public authorities to digitize records for easy access and proactively disclose certain information to minimize formal requests. While not explicitly a Fundamental Right, RTI protects the rights to Freedom of Expression and Speech and Right to Life and Personal Liberty under the Indian Constitution. The Act aims to consolidate these rights by empowering citizens to access information. It overrides previous laws restricting information disclosure, promoting transparency and accountability. Despite its utility, RTI faces challenges, including amendments that critics argue weaken its independence. Notably, a 2019 Supreme Court ruling brought the Chief Justice of India's office under RTI scrutiny, enhancing transparency. The Act's

Answer 65.B) Only two Explanation

The Transfer of Property Act, 1882, is a legislation in India governing property transfers, defining the act of transfer, its conditions, and interpretations. It classifies property into immovable and movable categories, with specific provisions for each. The Act allows for transfers by competent individuals, subject to certain conditions, and protects the rights of bona fide transferees. Additionally, it outlines the conditions under which property can be transferred and the rights of the transferees. Various related legislations such as the Trusts Act, 1882, and the Sale of Goods Act, 1930, complement the Transfer of Property Act, forming a comprehensive framework



implementation is overseen by bodies like the Central Information Commission and State Information Commissions, ensuring citizens' access to information. Fees may apply for requests, though exemptions exist for disadvantaged individuals. Additionally, digital portals like the RTI Portal facilitate access to information, reflecting ongoing efforts to enhance transparency and accountability. **Hence, statement 3 is correct.**

Answer 66. B) Only two

Explanation

Money market basically refers to a section of the financial market where financial instruments with high liquidity and short-term maturities are traded. Money market has become a component of the financial market for buying and selling of securities of short-term maturities, of one year or less, such as treasury bills and commercial papers.

Over-the-counter trading is done in the money market and it is a wholesale process. It is used by the participants as a way of borrowing and lending for the short term.

Money market consists of **negotiable instruments such as treasury bills, commercial papers, and certificates of deposit.** **Hence, statement 1 is correct.**

It is used by many participants, including companies, to raise funds by selling commercial papers in the market. Money market is considered a safe place to invest due to the high liquidity of securities.

It has certain risks which investors should be aware of, one of them being default on securities such as commercial papers. Money market consists of various financial institutions and dealers, who seek to borrow or loan securities. It is the best source to invest in liquid assets.

The money market is **an unregulated and informal market and not structured like the capital markets, where things are organised in a formal way.** **Hence, statement 2 is incorrect.** Money market gives lesser return to investors who invest in it but provides a variety of products.

Withdrawing money from the money market is easier. **Hence, statement 3 is incorrect.** Money markets are different from capital markets as they are for a shorter period of time while capital markets are used for longer time periods.

Meanwhile, a mortgage lender can create protection against a fallout risk by entering an agreement with an agency or private conduit for operational, rather

than mandatory, delivery of the mortgage. In such an agreement, the mortgage originator effectively buys an option, which gives the lender the right, but not the obligation, to deliver the mortgage. Against that, the private conduit charges a fee for allowing optional delivery.

Answer 67. B) CITES, Ramsar Convention, Bonn Convention, Vienna Convention, Stockholm Convention, Convention on Biological Diversity (CBD)

Explanation

1. CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) - 1963
2. Ramsar Convention (Convention on Wetlands) - 1971
3. Bonn Convention (Convention on the Conservation of Migratory Species of Wild Animals) - 1979
4. Vienna Convention (Convention for the Protection of Ozone Layer) - 1985
5. Stockholm Convention (Convention on Persistent Organic Pollutants) - 2001
6. Convention on Biological Diversity (CBD) - 1992

TRIVIA

Environment Conventions and Protocols				
Name	Establishment Year	Adopted in	Came into force in	Description
Ramsar Convention	1971	1971	1975	Known as the Ramsar Convention, it was adopted in the city of Ramsar, Iran.

Stockholm Convention	2001	2001	2004	The Convention on Persistent Organic Pollutants (POPs) was adopted in Geneva, Switzerland.	Vienna Convention	1985	1985	1988	The International Protocol on Substances that Deplete the Ozone Layer is a global agreement to regulate substances that contribute to ozone depletion.
CITES	1963	1963	1975	The Convention on International Trade in Endangered Species of Wild Fauna and Flora is an international treaty for the conservation of biological diversity.	Montreal Protocol	1987	1987	1989	The International Protocol to Reduce Greenhouse Gas Emissions is aimed at mitigating climate change by reducing greenhouse gas emissions.
Convention on Biological Diversity (CBD)	1992	1992	1993	The Convention on the Conservation of Migratory Species of Wild Animals aims to protect migratory species and their habitats.	Kyoto Protocol	1997	1997	2005	The Treaty to Combat Climate Change focuses on adaptation and mitigation efforts to control greenhouse gas emissions causing global warming.
Bonn Convention	1979	1979	1983	The Convention for the Protection of the Ozone Layer is an international treaty to safeguard the ozone layer.					



United Nations Framework Convention on Climate Change (UNFCCC)	1992	1992	1994	The United Nations Conference on Environment and Development was held in 1992 in Rio de Janeiro, Brazil.
Rio Summit	1992	–	–	The United Nations Convention to Combat Desertification aims to combat desertification and mitigate the effects of drought.
UNCCD	1994	1994	1996	The Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal regulates the transboundary movement of hazardous wastes.

Basel Convention	1989	1989	1992	The International Protocol on Bio-safety to the Convention on Biological Diversity ensures the safe handling, transport, and use of genetically modified organisms.
Cartagena Protocol	2000	2000	2003	The United Nations Programme on Reducing Emissions from Deforestation and Forest Degradation addresses deforestation and forest degradation.
UN-REDD	2008	–	–	The International Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization aims to ensure fair and equitable sharing of benefits from genetic resources.



Nagoya Protocol	2010	2010	2014	The 24th meeting of the Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) aimed to address climate change issues.
COP24	2018	–	–	The 21st meeting of the Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) focused on climate change mitigation and adaptation efforts.
COP21	2016	–	–	The Amendment to the Montreal Protocol aims to strengthen measures to protect the ozone layer.

Kigali Amendment	2016	2016	2019	The International Environmental Treaty on Mercury aims to protect human health and the environment from mercury pollution.
Minamata Convention	2013	2013	2017	The International Environmental Convention on Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides in International Trade aims to regulate the international trade of hazardous chemicals and pesticides.



Rotterdam Convention	1998	1998	2004	The 25th meeting of the Conference of Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC) focused on climate change mitigation and adaptation efforts.
COP25	2019	–	–	Known as the Ramsar Convention, it was adopted in the city of Ramsar, Iran.

Four types:

1. Hanumanti – for technical superiority
2. Jambuvanti – focuses on locking and holding till opponent gives up
 - Jarasandhi – breaking limbs and joints

1. Bhimaseni – focuses on sheer strength

3. Silambam (Tamil Nadu)

- Weapon based type
- Variety of weapons used.
- Majorly used “Silambam staff” as a weapon. (staff – a traditional pole weapon. It has many variants from just a stick to having knife at one end)
- Foot movements plays a key role
- Movements of animals like snake, tiger, elephant and eagle used
- “Kuttu varisai” – a variant of silambam& uses no weapon
- Associated Legend: this martial art was developed by Lord Muruga (son of Lord Shiva, other name – Kartekeya) & sage Agasthya
- Travelled from Tamil Nadu to Malaysia

4. Gatka (Punjab)

- Weapon based
- Used by Sikhs mainly
- Gatka means – “One whose freedom belongs to race”
- Stick, Sword, kirpan or kataar used as weapon

5. Musti Yuddha (Varanasi)

- Unarmed type
- Punches, kicks, knees and elbow strikes used

6. Thang Ta (Manipur)

- Weapon Based
- “Thang” means sword. “Ta” means spear.
- Anything from sword or spear can be used.
- Other weapons used are shield and axe.
- Used in three different ways
 1. As absolutely ritual in nature
 2. As spectacular performance
- As actual Fighting technique

Answer 68. A) Inbuan Wrestling
Explanation
1. Kalarippayattu (Kerala specially) & rest of south

- Weapon based type
- “Kalari” means arena. “Payattu” means combat/fighting.
- Involves strikes, kicks, grappling, preset forms, weaponry and healing methods, the footwork movement
- Kerala’s “Kathakali” incorporates greatly of this in their routines
- Considered older than Chinese martial arts
- Associated Legend: This art form was taught to early masters of this by Parashurama (an incarnation of Lord Vishnu) to protect the land he created.

2. Malla-Yuddha (South India)

- Combat-Wrestling type.
- Unarmed type.



7. Lathi (Punjab & Bengal)

- Weapon Based
- Cane Sticks used.
- Popular more in villages

8. Mardani Khel (Kolhapur, Maharashtra)

- Weapon Based
- Created by Marathas
- Suitable for hilly regions
- Uses sword mainly & needs rapid movements

9. Pari-Khanda (Bihar, Jharkhand, Odisha)

- Weapon Based
- Created by Rajputs
- "Pari" means shield & "Khanda" means sword (according to Chhau rulers)
- Gave birth to Chhau dance

10. Inbuan Wrestling (Mizoram)

- Unarmed Type
- Has strict rules prohibiting kicking, stepping out of the circle and bending of the knees.
- Aim is to lift the opponent off his feet while strictly adhering to the rules
- Catching hold of the belt worn by the wrestlers around the waist; it has to remain tight all through the game.

11. Kuttu Varisai (South India)

- Unarmed Type
- "Kuttu Varisai" means empty hand combat
- used to improve footwork and athleticism through gymnastics, stretching, yoga and breathing exercises use of animal-based sets which includes tiger, snake, elephant, eagle and monkey.

12. Cheibi Gadga (Manipur)

- Weapon Based
- Uses sword & shield
- Victory depends more on skill than on muscle power

13. Sarit-Sarak (Manipur)

- Unarmed Type
- Used to fight with armed or unarmed opponent
- Perfect in its evasive and offensive action

14. Thoda (Himachal Pradesh)

- Weapon Based
- Originated from the times of Mahabharata
- Generally based on archery skills
- "Thoda" is the round piece of wood fixed to the head of the arrow

15. Mukna (Manipur)

- Unarmed
- Wrestling Type
- Two men with their hands holding clothe bands on each other waists wrestle with one another and attempts to throw the other down, and the victor should always be on top of the one falling down

16. Lakna-Phanaba (Manipur)

- Unarmed
- Wrestling Type

17. Karra Samu (Andhra Pradesh)

- Armed Type
- Basically stick fighting

18. Kathi Samu (Andhra Pradesh)

- Armed Type
- Basically sword fighting

Answer 69. D) All**Explanation**

The Tirukkural, also known as the Kural, is a revered Tamil text comprising 1,330 concise couplets, or kural, each consisting of seven words. Divided into three books, it imparts aphoristic teachings on distinct themes: virtue (aram), wealth (porul), and love (inbam). This ancient work is celebrated for its universality and secular essence. Traditionally attributed to Valluvar, also known as Thiruvalluvar, its origins have been variously dated from 300 BCE to the 5th century CE. While tradition places it as the culmination of the



third Sangam period, linguistic analysis suggests a later composition, possibly around 450 to 500 CE. Structured meticulously, the Kural comprises 133 chapters, each containing 10 kural, totaling 1,330 couplets. Written in the kuralvenba meter, every chapter revolves around an ethical theme, forming the essence of its three books: Aram (28.6%), Poruḷ (52.6%), and Inbam (18.8%). Book I, Aram, delves into the moral values of individuals and the essentials of yoga philosophy. Book II, Poruḷ, tackles socio-economic values, polity, society, and administration. Lastly, Book III, Inbam, explores psychological values and the intricacies of love. **Hence, all the pairs are correct.**

Answer 70. C) Only three

Explanation

Types of bonds.

1. Treasury Bonds

The central government issues treasury bonds. Hence, it is the safest type of bond because there is no credit risk. These bonds have a maturity period of ten to thirty years and pay a fixed interest rate, which is a factor in the prevailing market conditions.

2. Municipal Bonds

Local and state governments use these to gather funds for development projects such as schools, highways, and hospitals. Municipal Bonds are exempted from tax. They are available in both short-term and long-term maturities.

3. Corporate Bonds

Companies or business conglomerates issue corporate bonds to raise capital for their business operations. They are riskier than treasury bonds because the creditworthiness of the issuing company backs them. Corporate bonds can have varying maturities and interest rates, depending on the issuer's creditworthiness and market conditions.

4. High-yield Bonds

Companies issue high-yield bonds with lower credit ratings and are riskier than investment-grade bonds. They offer a higher yield to compensate for the higher risk. High-yield bonds are also known as junk bonds.

5. Mortgage-Backed Securities

Real estate companies create mortgage-backed securities by pooling many mortgages and issuing bonds against the underlying mortgage pool. The cash flow from the mortgages backs these securities, so they are safer than corporate bonds because they carry less credit risk.

6. Floating Rate Bonds

Floating rate bonds have an interest rate adjusted periodically based on a reference rate, such as the Reserve Bank of India's repo rate. It protects investors from interest rate risk because the rates move with prevailing market rates. The interest rate of these bonds is subject to market fluctuations and macroeconomic parameters. **Hence, pair 2 is correct.**

7. Zero-Coupon Bonds

Zero-coupon bonds are issued at a discount to their face value and **do not pay periodic interest**. Instead, they offer a fixed return at maturity, i.e., the difference between the issue price and face value. They are ideal for investors who want to lock in a fixed return for a specific period. **Hence, pair 1 is incorrect.**

8. Callable Bonds

The issuer can redeem callable bonds before maturity, **usually at a premium price**. They offer the issuer flexibility in managing their debt obligations but carry reinvestment risk for the investor. **Hence, pair 3 is correct.**

9. Convertible Bonds

The issuing company can convert these bonds into shares of the issuing company's stock at a pre-determined conversion ratio. They offer the investor the potential for capital appreciation and fixed income. **Hence, pair 4 is correct.**

10. Inflation-Protected Bonds

The government issues inflation-protected bonds intending to protect investors from inflation. They pay a fixed interest rate, which is adjusted periodically to reflect changes in the Consumer Price Index.

Answer 71. B) EdCIL Vidyanjali Scholarship Programme



Explanation

EdCILVidyanjali Scholarship Programme: Empowering Education Opportunities

Aligned with the National Education Policy 2020, the EdCILVidyanjali Scholarship Programme **aims to revolutionize access to quality education and higher education institutions.**

The initiative goes beyond mere enrollment, ensuring access to high-quality learning systems and facilitating a seamless transition from secondary to higher education.

It provides financial support to meritorious students from Navodaya Vidyalayas who lack means, thereby promoting educational equity and inclusion.

The programme extends financial assistance to economically marginalized and meritorious students of Navodaya Vidyalayas, enabling them to pursue higher education without financial constraints.

By supporting students from underprivileged backgrounds, it aims to bridge the gap in educational opportunities and promote socio-economic mobility.

In addition to government funding, the initiative encourages involvement from the private sector through Corporate Social Responsibility (CSR) initiatives.

This collaboration between the government and corporates aims to ensure that no child is left behind in the pursuit of education.

By joining forces, both sectors contribute towards building a more educated India, fostering national development and prosperity.

Answer 72.C)1, 2, 3 and 4

Explanation

World Economic Forum	<ul style="list-style-type: none"> • Inclusive Development Index • Global Environment Performance Index • Travel and Tourism Competitiveness Report • Global Energy Architecture Performance Index Report • Global Competitiveness Report • Global Gender Gap Index • Human Capital Index
International Energy Agency (IEA)	<ul style="list-style-type: none"> • World Energy Outlook (WEO)
United Nations Conference on Trade and Development (UNCTAD)	<ul style="list-style-type: none"> • The Technology and Innovation Report • World Investment Report • The Information Economy Report • The Trade & Development Report
UN-Habitat	<ul style="list-style-type: none"> • World Cities Report
International Labour Organisation	<ul style="list-style-type: none"> • World Employment and Social Outlook • Global Wage Report • World Social protection report
United Nations Environment Programme	<ul style="list-style-type: none"> • Emission Gap Report • Global Environment Outlook
Food and Agriculture Organisation	<ul style="list-style-type: none"> • World State of Forest Report
World Intellectual Property Organisation	<ul style="list-style-type: none"> • World Intellectual Property Report (WIPR)
Global Hunger Index Report	<ul style="list-style-type: none"> • International Food Policy Research Institute (IFPRI)
Reporters Without Borders	<ul style="list-style-type: none"> • World Press Freedom Index
UNDP (United Nations Development Programme)	<ul style="list-style-type: none"> • Gender Inequality Index



World Wide Fund for Nature (WWF)	<ul style="list-style-type: none"> The Energy Report & Living Planet Report
UN-Sustainable Development Solutions Network (SDSN)	<ul style="list-style-type: none"> World Happiness Report
United Nations Industrial Development Organisation (UNIDO)	<ul style="list-style-type: none"> Industrial Development Report
United Nations Office on Drugs and Crime (UNODC)	<ul style="list-style-type: none"> World Wildlife Crime Report
United Nations Educational, Scientific and Cultural Organisation (UNESCO)	<ul style="list-style-type: none"> Global Education Monitoring Report Gender Parity Index
Transparency International	<ul style="list-style-type: none"> Corruption Perception Index Global Corruption Report (GCR)
World Health Organisation (WHO)	<ul style="list-style-type: none"> Ambient Air pollution Report
Bank for International Settlements (BIS)	<ul style="list-style-type: none"> Global Financial System Report
Financial Action Task Force (FATF)	<ul style="list-style-type: none"> Global Money Laundering Report
International Monetary Fund (IMF)	<ul style="list-style-type: none"> World Economic Outlook Global Financial Stability Report
World Bank	<ul style="list-style-type: none"> Remittance Report Universal Health Coverage Index The Service trade restriction index Ease of Living Index Global Economic Prospect (GEP) Report World Development Report Ease of Doing Business

Answer 73. D) All
Explanation

Adulterated Food Item	Common Adulterants	Health Risks
Milk	Water, chalk, urea, caustic soda, skimmed milk, detergent, fat	Stomach disorders, compromised nutritional value
Tea/Coffee	Same-colored leaves, tamarind seeds, mustard seeds, chicory	Liver infection, diarrhea
Wheat and other grains	Ergot fungus	Poisoning, health complications
Vegetables	Malachite green, dyes, substances	Carcinogenic effects
Sweets	Aluminium (from silver vark), starch, tar dye in sugar	Adverse health effects, carcinogenic risks
Honey	Molasses sugar, antibiotics	Antibiotic resistance, liver damage
Dal	Metanil yellow, other non-permitted colors	Neurotoxicity, brain damage
Spices	Metanil yellow, red oxide of lead, soap stone, foreign resin	Carcinogenic effects, poisoning
Butter and cream	Water, cheaper plant oils	Reduced nutritional value, compromised quality
Ice cream	Pepperonil, ethylacetate, butraldehyde, emil acetate, nitrate, washing powder	Poisoning, lung, kidney, and heart diseases

Answer 74. C) Lead and polycyclic aromatic hydrocarbon
Explanation

The ink used to print the newspaper consist of components such as Lead, Naphthylamines aromatic hydrocarbon, and AhR (aryl hydrocarbon receptor) agonist that produce various major individual well-being implications such as neurotoxicity, cardiovascular diseases, kidney diseases, various cancer, liver failure, lung damages, weak bones and even death in cases of extremely high contagion.



Answer 75. D) All**Explanation**

In **Kesavananda Bharati's case**, Chief Justice Sikri articulated several fundamental elements considered as the 'basic structure'. These include the supremacy of the Constitution, republican and democratic forms of government, the secular nature of the Constitution, the division of powers between the legislative, executive, and judicial branches, and the federal character of the Constitution.

Justices Shelat and Grover, in the same case, added to this list the directive to create a welfare state found in the Directive Principles of State Policy, as well as the unity and integrity of the country.

Justices Hegde and Mukherjea separately emphasized the sovereignty of India, the democratic nature of the polity, the nation's unity, the core elements of individual freedoms secured to citizens, and the mandate to create a welfare state as basic characteristics.

According to **Jaganmohan Reddy, J., the Preamble of the Constitution** and the constitutional provisions translated from it, such as sovereign democratic republic, parliamentary democracy, and the three organs of the state, contain aspects of the basic features.

In the **Indira Gandhi v. Raj Narain (1975) case**, Justice K.K. Thomas emphasized the ability for judicial review as a crucial component. Justice Y.V. Chandrachud identified four fundamental principles that he believed could not be changed: sovereign democratic republic status, equality of status and opportunity for all people, secularism and freedom of conscience and religion, and the rule of law. This principle was also implied as a feature of the basic structure in the Golak Nath case (1967) by Justice Mudholkar.

In the **Minerva Mills judgement**, the judges with the concurring opinion from the majority ruled that 'limiting the amending power' itself is a basic feature of the Constitution.

According to the judgement in the **Central Coal Fields case** (1980), effective access to justice is a fundamental component of the basic structure.

In **KihotoHollohon v. Zachillhu** (1992) case, the Court hinted toward democracy along with a fair electoral process as being a feature of the basic structure.

Further in **S. R. Bommai v. Union of India (1994)**,

democracy and federalism, along with secularism were recognised as essential features of the basic structure.

In **M. Nagaraj v. Union of India (2006)**, the Court acknowledged the doctrine of equality as an essential feature of the basic structure.

Hence, all the pairs are correct.

Answer 76. C) Ramanandacharya**Explanation**

Ramananda, a 14th-century Vaishnava devotional poet saint, crafted his philosophy and devotional themes inspired by the teachings of Ramanuja. Additionally, evidence suggests that he drew influence from the Nathpanthi ascetics of the Yoga school of Hindu philosophy.

An advocate of early social reform, Ramananda embraced a progressive approach by accepting disciples without discrimination based on gender, class, caste, or religion. Traditional accounts suggest that among his disciples were prominent Bhakti movement poet-sants such as Kabir, Ravidas, Bhagat Pipa, and others. His verses are even referenced in the Sikh scripture Adi Granth.

Ramananda's literary contributions include "Gyan-lila" and "Yog-cintamani" in Hindi, as well as "Vaisnava Mata Bhajabhaskara" and "RamarcanaPaddhati" in Sanskrit.

MUST READ ARTICLE: <https://www.iasgyan.in/blogs/a-complete-list-of-saints-and-teachers-of-bhakti-movement>

Answer 77. C) Both**Explanation**

The first statement is true. India allows 100 percent FDI in the textile sector under the automatic route. This means that foreign investors can invest up to 100 percent of the capital in textile companies without requiring prior approval from the government.

Second statement is also correct:

- Manufacturing of Components: Up to 100 percent FDI is permitted under the automatic route for manufacturing components and systems or sub-



systems for satellites, ground segments, and user segments.

- Satellite Manufacturing: Up to 74 percent FDI is now permitted under the automatic route for satellite manufacturing and operation, satellite data products, and Ground Segment and User Segment.
- Launch Vehicles: Up to 49 percent FDI is permitted under the automatic route for launch vehicles and associated systems or subsystems, including the creation of spaceports. FDI beyond 49 percent in these activities will require government approval.

Answer 78. B) 1, 2 and 3**Explanation**

The Molucca Sea, situated in the western Pacific Ocean near Indonesia, is bordered by the Indonesian islands of Celebes (Sulawesi) to the west, Halmahera to the east, and the Sula Islands to the south. Covering a total surface area of 77,000 square miles (200,000 square kilometres), it is renowned for its coral richness and numerous diving sites due to its deep waters. The sea is divided into three zones to facilitate the transport of water from the Pacific Ocean to the surrounding shallower seas. The deepest point, the Batjan (Bacan) basin, plunges 15,780 feet (4,810 meters) deep. The Molucca Sea experiences periodic earthquakes due to its nature as a microplate, being subducted in opposite directions by the Eurasian Plate to the west and the Philippine Sea Plate to the east.

Location-wise, the Molucca Sea **borders the Banda Sea to the south and the Celebes Sea to the west, while the Philippine Sea lies to the north and the Halmahera Sea to the east. Hence, statement 1 is correct.**

Its neighboring islands include Halmahera to the northeast, Buru and Ceram in the center, and Sulawesi to the west. **The Talaud Islands mark the sea's northern border, although the Molucca Sea Plate extends further north. Hence, statement 2 is correct.**

According to the International Hydrographic Organization (IHO), the "Molukka Sea" is considered one of the waters of the East Indian Archipelago.

The **Portuguese, Dutch, British, and Spanish Empires fought each other for control of the spice**

islands that can only be accessed through the Molucca Sea. Hence, statement 3 is correct.

Answer 79. B) Aghanashini Estuary - Karnataka
Explanation

Location of New Ramsar Sites: Three sites (Ankasamudra Bird Conservation Reserve, Aghanashini Estuary, Magadi Kere Conservation Reserve) are in Karnataka. Two sites (Karaivetti Bird Sanctuary and Longwood Shola Reserve Forest) are in Tamil Nadu.

Tamil Nadu continues to have the maximum number of Ramsar Sites (16 sites), followed by Uttar Pradesh (10 sites).

India is one of the Contracting Parties to the Ramsar Convention, signed in Ramsar, Iran, in 1971.

The number of Ramsar sites in India has increased from 26 to 80 in the last ten years, with 38 added in the last three years alone.

Answer 80. D) Vijayanagara Empire
Explanation

In the Vijayanagara Empire, women held esteemed positions and played significant roles in various aspects of society. They actively participated in political affairs, social gatherings, and literary pursuits, showcasing their influence and capabilities. Women in the empire received education and training in diverse fields, including wrestling and the use of weapons for self-defense. Additionally, they excelled in music and fine arts, contributing to the cultural richness of the empire. Some women even attained education of a high order, demonstrating their intellectual prowess. Nuniz, a chronicler of the time, noted that women in the Vijayanagara court held diverse roles such as astrologers, clerks, accountants, guards, and wrestlers, highlighting their multifaceted contributions to the administration and society of the empire.

Answer 81. B) 1-a, 2-b, 3-d, 4-c**Explanation**

All the pairs are correctly matched. For more details. Refer to Prelims Express 2024.

Answer 82. A) Thanjavur painting**Explanation**

Thanjavur painting, also known as Tanjore painting, is a classical art form originating from southern India,

particularly associated with the town of Thanjavur in Tamil Nadu. Renowned for its rich cultural heritage, this traditional style of painting is a vibrant celebration of Hindu religious themes, characterized by elaborate depictions of deities adorned with vivid colors and opulent embellishments, notably gold foil. Recognized as a Geographical Indication by the Government of India, Thanjavur painting is distinguished by its intricate gesso work, overlaying of gold foil, and inlay of glass beads or gems. Influenced by diverse artistic styles including Deccani, Vijayanagar, Maratha, and even European traditions, these paintings predominantly feature Hindu gods, goddesses, and saints, often depicted within architecturally delineated spaces surrounded by subsidiary figures and decorative elements. Thanjavur paintings were created on various surfaces such as canvas, walls, wood, glass, and paper, with a meticulous technique involving the application of gesso, gold leaf, and vibrant colors. While natural dyes were historically used, contemporary artists employ chemical paints, maintaining the essence of this traditional art form. Characterized by its static, two-dimensional composition and symbolic portrayal of figures, Thanjavur painting continues to captivate art enthusiasts with its intricate craftsmanship and distinctly Indian aesthetic.

MUST READ ARTICLE: <https://www.iasgyan.in/blogs/paintings-of-south-india>

Answer 83. B) India

Explanation

India is set to chair the International Sugar Organization in 2024. The International Sugar Organization, headquartered in London, traces its roots back to the international sugar agreement of 1968. Unlike its predecessors, which had regulatory powers over the sugar trade such as price-setting and export quotas, the organization operates differently. Instead of direct regulation, its focus lies in promoting the trade and consumption of sugar. It achieves this objective by collecting and disseminating information on the sugar market, conducting research on innovative uses for sugar and its by-products, and serving as a platform for intergovernmental discussions on sugar-related matters. The organization boasted a membership of 88 countries including India. The history of the International Sugar Organization reflects a transition from temporary agreements since 1937 to a more permanent and structured arrangement

recommended by the United Nations Conference on Trade and Development in 1968.

Answer 84. C) All

Explanation

- India is the **largest producer (25% of global production), consumer (27% of world consumption) and importer (14%)** of pulses in the world.
- Pulses account for around **20 per cent of the area under foodgrains** and contribute around **7-10 per cent of the total foodgrains production** in the country.
- Though pulses are grown in both Kharif and Rabi seasons, **Rabi pulses contribute more than 60 per cent of the total production.**
- **Gram is the most dominant pulse** having a share of around 40 per cent in the total production followed by Tur/Arhar at 15 to 20 per cent and Urad/Black Matpe and Moong at around 8-10 per cent each.
- **Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Karnataka are the top five pulses producing States.**
- **Temperature:** Between 20-27°C
- **Rainfall:** Around 25-60 cm.
- **Soil Type:** Sandy-loamy soil.
- **Initiatives:** National Food Security Mission for Pulses, Pulses Development Scheme and Technological Mission on Pulses.

Hence, all the statements are incorrect.



Answer 85. A) Only one

Explanation

Brumation is a term used to describe a state of dormancy or slowed metabolic activity observed in certain **ectothermic** (cold-blooded) animals, particularly reptiles, during colder months. It is a survival strategy to cope with adverse environmental conditions, such as low temperatures and reduced food availability. **Hence, statement 1 is incorrect.**

Reptiles are the primary group of animals that undergo brumation. This includes various species of snakes, turtles, lizards, and even some amphibians. These animals rely on external heat sources to regulate their body temperature.

Aerogels represent a fascinating class of synthetic materials characterized by their ultralight and highly porous structure. Derived from gels, aerogels undergo a unique process where the liquid component is replaced with a gas, resulting in a solid material with remarkably low density and thermal conductivity. This allows aerogels to exhibit properties such as extreme lightweightness and exceptional insulation capabilities. While silica aerogels resemble fragile styrofoam in texture, polymer-based aerogels can feel more rigid. The production of aerogels involves specialized techniques like supercritical drying or freeze-drying, which prevent the collapse of the gel structure during the extraction of the liquid component. Initially developed using silica gels, aerogels have since been crafted from various chemical compounds, including alumina, chromia, tin dioxide, and carbon. This innovative material holds immense potential for applications ranging from insulation in aerospace and construction to advancements in energy storage and environmental remediation. **Hence, statement 2 is correct.**

Answer 86. B) To cultivate marine sponges in controlled environments to meet market demand while minimizing environmental impact.

Explanation

Sponge farming, also known as sponge mariculture, stands as an innovative solution in meeting the commercial demand for natural sponges while mitigating the environmental impacts typically associated with conventional harvesting methods. This sustainable practice not only addresses economic needs but also contributes to biodiversity conservation and the responsible utilization of marine resources.

In sponge farming, various sponge species are cultivated, including prized varieties such as the Mediterranean

bath sponge and the Caribbean reef sponge. Knowledge of the biology and ecology of these species is imperative for successful cultivation endeavors. Different methods are employed, ranging from attaching sponge fragments to artificial substrates to utilizing natural sea-bottom substrates. Environmental conditions play a critical role in the success of sponge farming, with factors like water temperature, salinity, nutrient levels, and light availability carefully managed to optimize sponge growth.

Harvesting involves meticulous cutting of mature sponges from the substrate, leaving the base intact for regeneration. Pruning techniques are utilized to stimulate branching and enhance the production of high-quality sponges. Sustainable harvesting practices are emphasized to prevent depletion of sponge populations.

The applications of cultivated sponges span across various industries, including cosmetics, pharmaceuticals, and personal care products, owing to their natural absorbency and exfoliating properties. Furthermore, sponge farming serves as a sustainable alternative to traditional harvesting methods, which often lead to the overexploitation of natural sponge populations. By cultivating sponges, it becomes feasible to meet market demands while simultaneously safeguarding wild sponge populations and preserving marine ecosystems.

Answer 87. B) L2 Point

Explanation

Lagrange Points:

L1 Point: It lies on the line connecting the two massive bodies (e.g., Earth and the Sun) and is located closer to the smaller mass (e.g., Earth). Objects at L1 maintain the same position relative to both bodies and are affected by the gravitational pull of both.

L2 Point: It is also on the line connecting the two massive bodies but lies on the opposite side of the smaller mass from L1. Satellites or space probes positioned at L2 are shielded from direct solar radiation and can be used for astronomical observations.

L3 Point: Similar to L2, but located on the opposite side of the larger mass (e.g., the Sun) from L1. It is less stable than L2 and has been less explored due to its unstable nature.

L4 and L5 Points: These points form equilateral triangles with the primary and secondary masses in their orbital paths. They are about 60 degrees ahead and behind the secondary body in its orbit around the



larger body, creating stable regions where objects can remain relatively stationary.

Characteristics of Lagrange Points:

Stability: L4 and L5 are considered stable equilibrium points, while L1, L2, and L3 are less stable and require constant correction due to gravitational perturbations.

Natural Satellite Orbits: Some of these points have natural satellites, such as asteroids or Trojan asteroids, occupying them due to their gravitational stability.

Use in Space Missions: Lagrange points have been utilized in space missions for various purposes, including astronomical observations, space telescopes (like the James Webb Space Telescope at L2), and potential locations for future space habitats or stations due to their relative stability.

Spacecraft and Satellites: Placing spacecraft or satellites at Lagrange points requires less fuel for station-keeping compared to maintaining a geostationary orbit, making them advantageous for certain missions.

Answer 88. C) North East India

Explanation

The Kopili fault zone, spanning 300 kilometers in a northwest-southeast direction, extends from the western section of Manipur to the borders with Bhutan, Arunachal Pradesh, and Assam. Identified by the National Centre for Seismology (NCS) as a significant contributor to seismic activity in Assam, this fault zone is a crucial component of the region's geology. Faults, characterized by fractures between rock formations, facilitate movements between blocks, which can occur abruptly, as in earthquakes, or gradually, as seen in creep. Being seismically active, the Kopili fault zone falls within the highest Seismic Hazard Zone V due to its association with collisional tectonics, where the Indian Plate subducts beneath the Eurasian Plate. This geological phenomenon, known as subduction, contributes to the region's susceptibility to seismic events. Notably, the presence of alluvial soils in the area further exacerbates the risk, as these soils possess a high capacity for trapping seismic waves. This combination of geological factors renders the Kopili fault zone the most earthquake-prone region in North East India, evidenced by historical seismic events such as the devastating earthquakes of 1869 and 1943.

Answer 89. C) They are primarily found in fast-flowing rivers.

Explanation

The yellow-spotted Amazon river turtle, scientifically known as *Podocnemis unifilis* and locally referred to as taricayas, is among the largest South American river turtles. These turtles boast a significant size, with the ability to reach lengths of up to 45 cm and weigh up to 8 kg. Recognizable by their distinctive black or brown oval carapace adorned with low keels on the second and third scutes, these turtles also bear yellow spots on the sides of their heads, from which they derive their common name. Native to the Amazon and **Orinoco basins of South America, as well as the river systems of the Guianas**, taricayas inhabit calm waters such as tributaries and large lakes. During flood seasons, they may venture into flooded forests or floodplain lakes, sustaining themselves on a diet comprising fruits, seeds, aquatic plants, fish, and small invertebrates. Despite their adaptability, taricayas face threats from predation by humans, birds, snakes, large fish, frogs, and mammals. While their importation is now strictly regulated by federal law, captive populations, both in zoos and under private ownership, contribute to their conservation efforts. With individuals in captivity known to live for more than 30 years, these resilient creatures continue to intrigue and inspire conservation initiatives.

Answer 90. B) Grasses

Explanation

Clethodim, an organic compound and a member of the cyclohexanedione family of herbicides, serves as an effective tool in controlling grasses, particularly Widely recognized and approved both in India and globally, Clethodim has established its reputation as a reliable *Lolium rigidum* herbicide over time.

Answer 91. C) Barents Sea

Explanation

Murmansk Commercial Seaport is a seaport located on the eastern shore of the Kola Bay of the Barents Sea. Murmansk Port stands as a pivotal hub for trade and transportation within Russia's Arctic expanse. Located approximately 2,000 km northwest of Moscow, its strategic positioning renders it a vital maritime conduit bridging Europe to the Arctic realm. The port's adjacency to the Arctic Ocean bestows upon it access to the Northern Sea Route (NSR), an



increasingly sought-after shipping passage boasting potential advantages over conventional routes such as the Suez Canal.

Answer 92. C) Inhalation of mist containing Legionella bacteria

Explanation

Legionella bacteria, commonly found in natural water sources like lakes and ponds, can also proliferate in man-made water systems such as tanks. These bacteria are notorious for causing Legionnaires' disease, an infection that affects the lungs. Inhalation of water contaminated with Legionella bacteria can lead to this illness, characterized by symptoms like cough, fever, and pneumonia. Despite its severity, Legionnaires' disease does not spread from person to person; instead, transmission occurs through mist, often originating from air-conditioning units in large buildings. Individuals over 50 and those with weakened immune systems are particularly vulnerable. While Legionnaires' disease has been reported worldwide, including sporadic cases in India, its prevalence remains relatively low in the country.

Answer 93. C) All

Explanation

Cotton holds significant importance in the Indian economy, primarily due to the country's textile industry being predominantly cotton-based. India stands as a global leader in both the production and export of raw cotton, cottonseed, and cotton textiles. Notably, India ranks as one of the largest producers and exporters of cotton yarn worldwide. The cotton textile sector emerges as the largest organized industry in India, employing millions of workers and constituting a significant portion of the country's capital and industrial labor force. With over 3000 textile mills, both large and small, the industry has witnessed substantial growth over the past four decades. Gujarat and Maharashtra lead the pack in cotton production, contributing nearly 50% of India's total cotton output, with Gujarat alone ginning the majority of it. This robust cotton industry has propelled India's annual cotton production to approximately 31 million bales, marking a remarkable 190% increase from 1991-92 to 2016-17.

Answer 94. A) Pauri Garhwal and Nainital

Explanation

Located in the Terai region of Uttarakhand, India, the Kalagarh Tiger Reserve sprawls across portions of Pauri **Garhwal and Nainital districts**, encompassing a substantial expanse of land. Renowned for its abundant biodiversity, the reserve stands as a testament to the region's ecological richness. Notably, it is celebrated for its dedicated endeavors towards the conservation of the majestic tiger species, contributing significantly to the preservation of these iconic apex predators in their natural habitat.

The reserve is bounded by the Ramganga River on the west and the Mandal River on the east.

Answer 95. C) Tankai method

Explanation

The Tankai method of shipbuilding is a method in which the ships are constructed by stitching the wooden planks together rather than joining them with the help of nails. This type of shipbuilding offers flexibility and durability thereby making the ships less susceptible to damage from sandbars and shoals.

Answer 96. B) 1, 2, 3, 4, 5 and 6

Explanation

Cicada

- These are **hemipteran insects**, also known as **true bugs**, belonging to the **superfamily of Cicadoidea**.
- There are **more than 3,000 known species of cicadas**.
- **Most diversity of this species** is found in **Indian and neighbouring country Bangladesh**.

Features

- These **generally have two pairs of membranous wings and prominent compound eyes**.
- The **length is in range of 2 to 5 cm** (0.8 to 2 inches).
- They **produce loud, high-pitched buzzing sounds during hot weather**.
- These are **generally found on large trees in natural forests**.
- They **also occur in deserts, grasslands**.



Usefulness of Cicadas

- They **help in aerating the soil.**
- They are **used in folk medicines.**
- In **some regions they act as religious and monetary symbols.**
- This species is **an indicator of soil health and vegetation.**
- The **dead body acts as a** nutrient source, **nitrogen** to be specific, **which helps in growth of the plants.**
- In some **community is an important source of food.**

Hence, all are correct.

Answer 97. B) Namda craft**Explanation**

Namda craft is a traditional craft originating from Kashmir, characterized by the creation of rugs primarily made of pure sheep wool. What sets Namda apart from regular rugs is its unique felting technique, which eliminates the need for traditional weaving processes. Instead, layers of old blankets are compressed to form the rug, giving it its distinctive texture and appearance. Believed to have been invented by nomadic tribes of the Central Asian steppes in the 11th century, Namda craft gained prominence in India during the reign of Mughal emperor Akbar. Currently, efforts are underway to secure a Geographical Indication (GI) tag certification for Namda craft, recognizing its cultural and historical significance.

Answer 98. B) Maputo Protocol**Explanation**

The Maputo Protocol, formally known as the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, stands as an essential international human rights instrument established by the African Union. Adopted in Maputo, Mozambique, in 2003, this protocol serves as an extension to the African Charter on Human and Peoples' Rights, enacted in 1986. Since its inception, the protocol has garnered significant ratification, with 44 out of 55 member states of the African Union endorsing its provisions on gender equality. Despite widespread ratification, the full integration of the protocol's provisions into national legislation has been slow and

sometimes ineffective. The Maputo Protocol holds a crucial mandate in safeguarding comprehensive rights for women, including participation in political processes, social and political equality with men, autonomy in reproductive health decisions, and the eradication of harmful traditional practices such as child marriage and female genital mutilation. By advancing the rights of African women and girls, the protocol addresses critical issues such as reproductive health, political empowerment, economic autonomy, and the prevention of violence against women.

Answer 99. C) All**Explanation**

The dark web, also referred to as the darknet, is an encrypted portion of the internet that is not indexed by search engines and requires specific configuration or authorization to access.

Although the dark web is sometimes portrayed as a domain frequented by criminal elements, it is also used by people who require privacy for entirely legal reasons, such as the exchange of proprietary business information or communication by political activists.

Information may be exchanged through an encrypted peer-to-peer (P2P) network connection or by using an overlay network, such as the Tor browser. The anonymity that these networks provide has contributed to the dark web's reputation for housing illegal activity.

The terms "dark web" and "deep web" are often used interchangeably, but they are not the same. Rather, the dark web is a small, less accessible part of the deep web.

Both the dark and deep web share one thing in common: **Neither can be found in search engine results. The difference between them primarily lies in how their content is accessed. Deep web pages can be accessed by anyone with a standard web browser who knows the URL.**

Dark web pages, in contrast, require special software with the correct decryption key, as well as access rights and knowledge of where to find the content.

If the web in three layers, at the very top would be the surface web, whose content is indexed by search engines like Google and Yahoo. Beneath it is the deep web, and then located underneath that is the dark web. Hence, all the statements are correct.



Answer 100. B)**Explanation**

Petcoke, short for petroleum coke, is a solid carbon byproduct of oil refining, existing in two forms: green and calcined petcoke. **While green petcoke is the raw material without treatment, calcined petcoke is the result of heating to remove moisture and volatile components. Hence, Statement B is incorrect.** Widely used as fuel in industries like cement, steel, power, and aluminum, petcoke presents both advantages and challenges. It boasts a high calorific value, low ash content, and economical price compared to other fossil fuels. However, its sulfur and heavy metal content pose environmental and health risks, contributing to greenhouse gas emissions. Despite these concerns, petcoke remains a significant energy source due to its efficiency and affordability.

Petcoke has a low ash content, which means it produces less solid waste and requires less maintenance for boilers and furnaces. The EIA estimates that the average ash content of petcoke is about 0.4%, compared to 10% for coal and 0.1% for natural gas. TVFBDDDBDop of Form.

