

# UPSC CSE PRELIMS - 2023 ANSWER KEY



### PRELIMS TEST SERIES - 2023

- 1. In which one of the following regions was Dhanyakataka, which flourished as a prominent Buddhist centre under the Mahasanghikas, located?
  - a) Andhra
  - b) Gandhara
  - c) Kalinga
  - d) Magadha

**Explanation** - Dhanyakataka or Dharanikota was an ancient city located in present day Amravati. The city was the capital of Satavahana kingdom (known as Andhras as well). Buddhism gained patronage in the city from Satavahanas. It continued gaining patronage during the Ikshvaaku and Pallava dynasties as well. The city did not get the same patronage after the decline of Buddhism in India which resulted in abandonment of the city. It was rediscovered in the 19<sup>th</sup> century.

- 2. With reference to ancient India, consider the following statements:
  - 1. The concept of Stupa is Buddhist in origin.
  - 2. Stupa was generally a repository of relics.
  - 3. Stupa was a votive and commemorative structure in Buddhist tradition.

How many of the statements given above are correct?

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

**Explanation** – Archaeologists have found some stupas near pre-historic burials and megalithic sites. Some of them are also found closer to IVC sites. Thus, origin of stupas is much older than Buddhism itself. Stupas are currently seen as associated with Buddhism and are used as a sacred monument for housing relics of Buddhism.

Source - 1) "Stupas contain relics of Buddhas" - In Art & Culture - Mauryan Architecture - 32.34-32.38; 2) "begining of stupa on a remarkable scale on time of buddha, but tradition of funeral mound was found in vedic times" - In Art & Culture - Mauryan Architecture - 32.44 to 33.30;

- 3. With reference to ancient South India, Korkai, Poompuhar and Muchiri were well known as
  - a) capital cities
  - b) ports
  - c) centres of iron-and-steel making
  - d) shrines of Jain Tirthankaras

**Explanation** – Korkai was an important port, the capital, and a trade center of Pandyan kingdom located on the banks of Tamiraparani river.

Poompuhar (Poompattinam) was a port city in modern Tamil Nadu. It also served as the capital of early Chola Kings.

Muchiri (Muziris) was a major port city of Cheras.

Source - In ancient Indian history section, Video Name - History of South India -Mentioned word: Muziris. (Time stamp-0:12:22, 0:12:32-0:12:37, 0:28:54)

- 4. Which one of the following explains the practice of 'Vattakirutal' as mentioned in Sangam poems?
  - a) Kings employing women bodyguards
  - b) Learned persons assembling in royal courts to discuss religious and philosophical matters
  - c) Young girls keeping watch over agricultural fields and driving away birds and animals
  - d) A king defeated in a battle committing ritual suicide by starving himself to death

**Explanation** – Vattakirutal was ritual of fasting till death in Tamil traditions (in Sangam age). It was observed during battles. The Tamil kings, in order to save their honour, and prestige, were prepared to meet their death facing North ('Vatakkiruttal' - fasting facing north), and never would they turn their back in battle. It was a Tamil martial vow. This was either done alone or as a group with the supporters of the captured king.



- 5. Consider the following dynasties:
  - 1. Hoysala
  - 2. Gahadavala
  - 3. Kakatiya
  - 4. Yadava

How many of the above dynasties established their kingdoms in early eighth century AD?

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

**Explanation** – Hoysalas ruled modern Karnataka in 10<sup>th</sup> to 14<sup>th</sup> century.

Gahadavalas – a Rajput dynasty, belonged to Kannauj and ruled in parts of modern day U.P and Bihar during 11<sup>th</sup> and 12<sup>th</sup> century.

Kakatiyas – a Telugu dynasty, ruled in eastern Deccan during 12<sup>th</sup> to 14<sup>th</sup> century.

Yadavas ruled from Narmada in the north to Tungabhadra in the south in western Deccan. They mostly ruled between 12<sup>th</sup> and early 14<sup>th</sup> century.

Source - In medieval history section, Video name- History of Rajputs - mentioned word - gahadavala (time stamp - 0:6:23)

6. With reference to ancient Indian History, consider the following pairs:

	Literary work	Author		
1.	Devichandragupta	: Bilhana		
2.	Hammira-Mahakavya	: Nayachandra Suri		
3.	Milinda-panha	: Nagarjuna		
4.	Nitivakyamrita	: Somadeva Suri		
How many of the above pairs are correctly				
matched?				

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

**Explanation** – Devichandragupta (Sanskrit drama) was written by Vishakhadutta.

Hammira Mahakavya (Sanskrit poem from 15<sup>th</sup> century) was written by Nayachandra Suri. Milind-panha or Milindpanho (Buddhist Text) was written by Nagasena between  $1^{st}$  century to  $2^{nd}$  century AD.

Nitivakyamrita – a treatise on *niti* was written by Somadeva in 10<sup>th</sup> century.

Source - 1) Milinda Panho mentioned in Art and Culture - Literary Traditions in India -Development of Indian Literature from 600 BC to 300 AD - (21.51 to 22.00); 2) Bilhana's Vikramankadevacharita - mentioned in -Art and Culture - Literary Traditions in South India (33.55 to 34.00);

7. "Souls are not only the property of animal and plant life, but also of rocks, running water and many other natural objects not looked on us living by other religious sects."

The above statement reflects one of the core beliefs of which one of the following religious sects of ancient India?

- a) Buddhism
- b) Jainism
- c) Shaivism
- d) Vaishnavism

**Explanation** – The belief that not only animals and plant but even rocks and running water carry souls is associated with Jainism.

Source - "Even a stone had a jiva" - Ancient History - Rise of Heterodox Sects - Jainism (19.55)

- 8. Who among the following rulers of Vijayanagara Empire constructed a large dam across Tungabhadra River and a canal-cum-aqueduct several kilometres long from the river to the capital city?
  - a) Devaraya I
  - b) Mallikarjuna
  - c) Vira Vijaya
  - d) Virupaksha

**Explanation** - A large dam across Tungabhadra River and a canal-cumaqueduct several kilometers long from the river to the capital city of Vijayanagara empire was constructed during the rule of Deva Raya I.



- 9. Who among the following rulers of medieval Gujarat surrendered Diu to Portuguese?
  - a) Ahmad Shah
  - b) Mahmud Begarha
  - c) Bahadur Shah
  - d) Muhammad Shah

**Explanation** - Sultan Bahadur Shah surrendered the island of Diu in 1535 after a long siege by Portuguese led by Nuna da Cunha.

Source - In Modern India section, Video name- From Trading to ruling (Time stamp - 9:14-15)

- 10. By which one of the following Acts was the Governor General of Bengal designated as the Governor General of India?
  - a) The Regulating Act
  - b) The Pitt's India Act
  - c) The Charter Act of 1793
  - d) The Charter Act of 1833

**Explanation** - The Governor General of Bengal was designated as the Governor General of India by the GoI Act, 1833, also known as Charter Act of 1833. Lord William Bentinck became the first Governor General of India because of this provision of the Act.

Source - In Modern India section, Video name - Charter Act of 1833-1853 (Time stamp - 7:05-8:06)

- 11. In essence, what does 'Due Process of Law' mean?
  - a) The principle of natural justice
  - b) The procedure established by law
  - c) Fair application of law
  - d) Equality before law

**Explanation** – When a person is arrested, under the principle of 'Fair application of Law', a court will only judge on whether a law was available for making such an arrest, whether the law was valid and whether the procedures under the law were followed. It will not go beyond this to judge the fairness of the law itself. In essence, it will restrict itself to 'procedure established by law'. But, in 'due process of law', a court will increase its reach and will also judge whether the law under which the person was arrested was fair and just in itself. It will also judge that one party in the dispute is not punished ex-parte. Thus, in essence, it will follow the principles of natural justice. This was also mentioned by the Supreme Court in Maneka Gandhi vs UoI, 1978.

12. Consider the following statements:

**Statement-I:** In India, prisons are managed by State Governments with their own rules and regulations for the day-to-day administration of prisons.

**Statement-II:** In India, prisons are governed by the Prisons Act, 1894 which expressly kept the subject of prisons in the control of Provincial Governments.

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Under schedule seven of the Indian Constitution, Prison is a state subject. Thus, prison management is with state governments of India. The prisons are governed by the Prisons Act, 1894 which has provisions for accommodation, food, and clothing for the prisoners.

- 13. Which one of the following statements best reflects the Chief purpose of the 'Constitution' of a country?
  - a) It determines the objective for the making of necessary laws.
  - b) It enables the creation of political offices and a government.
  - c) It defines and limits the powers of government.
  - d) It secures social justice, social equality and social security.

**Explanation** – The primary purpose of the Constitution is to provide a framework of governance and providing both limits to the and power of the government. It provides a structure of government and defines its functions as well.



- 14. In India, which one of the following Constitutional Amendments was widely believed to be enacted to overcome the judicial interpretations of the Fundamental Rights?
  - a) 1st Amendment
  - b) 42nd Amendment
  - c) 44th Amendment
  - d) 86th Amendment

Explanation - In State of Madras vs Srimathi Champakam (1951), Supreme Court gave a literal interpretation to the constitutional provisions and held that reserving seats for backward classes in public institutions violated Article 15(1) -"The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex, place of birth or any of them" and Article 29(2) - "No citizen shall be denied admission into any educational institution maintained by the State or receiving aid out of State funds on grounds only of religion, race, caste, language or any of them." To overcome this order, Government of India brought First Amendment Act, 1951 and added a fourth clause to Article 15, which said that government could make a law for the upliftment of socially and educationally backward classes. [Article 15(4) - Nothing in this article or in clause (2) of article 29 shall prevent the State from making any special provision for the advancement of any socially and educationally backward classes of citizens or for the Scheduled Castes and the Scheduled Tribes]. The First Amendment Act also added Article 31A and 31B to the constitution through which Government could take over the estates and properties without violating Article 14, 19 or 31. This was done to overcome the orders of Patna High Court which had held acquisition of land under the Zamindari Acts as violative of Article 14, 19 and 31. Thus, the first amendment is believed to have been enacted to overcome the judicial interpretation of Fundamental Rights.

- 15. Consider the following organizations/bodies in India:
  - 1. The National Commission for Backward Classes
  - 2. The National Human Rights Commission
  - 3. The National Law Commission
  - 4. The National Consumer Disputes Redressal Commission

How many of the above are constitutional bodies?

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

**Explanation** – National Commission for Backward Classes is a constitutional body under Article 338B established through 102<sup>nd</sup> Amendment Act, 2018. The commission was first established through National Commission for Backward Classes Act, 1993.

NHRC is a statutory body established through Protection of Human Rights Act, 1993.

National Law Commission is neither a statutory nor a constitutional body. It is notified by the Government of India as and when needed.

National Consumer Disputes Redressal Commission is a statutory body established under Consumer Protection Act, 1986.

- 16. Consider the following statements:
  - 1. If the election of the President of India is declared void by the Supreme Court of India, all acts done by him/her in the performance of duties of his/her office of President before the date of decision become invalid.
  - 2. Election for the post of the President of India can be postponed on the ground that some Legislative Assemblies have been dissolved and elections are yet to take place.
  - 3. When a Bill is presented to the President of India, the Constitution prescribes time limits within which he/she has to declare his/her assent.

How many of the above statements are correct?

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



**Explanation** – Statement 1 is incorrect - All acts done by President before his/her election being held as void, remains valid and in effect unless specifically declared otherwise.

Statement 2 is incorrect – The elections for the post of President cannot be postponed on the grounds that some legislative assemblies are in dissolved state.

Statement 3 is incorrect – The Constitution of India does not mention any time limit for the President to take a decision on a bill. Thus, the President can keep the bills for indefinite period. This is known as Pocket Veto.

- 17. With reference to Finance Bill and Money Bill in the Indian Parliament, consider the following statements:
  - 1. When the Lok Sabha transmits Finance Bill to the Rajya Sabha, it can amend or reject the bill.
  - 2. When the Lok Sabha transmits Money Bill to the Rajya Sabha, it cannot amend or reject the Bill, it can only make recommendations.
  - 3. In the case of disagreement between the Lok Sabha and the Rajya Sabha, there is no joint sitting for Money Bill, but a joint sitting becomes necessary for Finance Bill.

How many of the above statements are correct?

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

**Explanation** – Statement 1 is correct – Rajya Sabha has powers to amend, reject or not take any action of the Finance bill.

Statement 2 is correct – In case of money bill, Rajya Sabha has lesser power than Lok Sabha. It cannot amend or reject a money bill. And if no action was taken by it for 14 days, it is deemed to have been passed by both the houses.

Statement 3 is incorrect – A joint sitting in case of disagreement is not necessary in case of Finance bill. President may or may not call a joint sitting.

- Consider the following statements: Once the Central Government notifies an area as a 'Community Reserve'
  - the Chief Wildlife Warden of the State becomes the governing authority of such forest
  - 2. hunting is not allowed in such area
  - 3. people of such area are allowed to collect non-timber forest produce
  - 4. people of such area are allowed traditional agricultural practicesHow many of the above statements are

correct?

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

**Explanation** – Once an area is notified as a 'Community Reserve', the Chief Wildlife Warden of the state becomes the governing authority of such forest. In a community reserve, hunting is not allowed and collection of non-timber produce is regulated or restricted for sustainable management of forest resources. Such areas are not allowed for traditional agricultural practices like Jhum Cultivation.

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

How many of the above statements are correct?

- a) Only one
- b) Only two
- c) All Three
- d) None

**Explanation** – Statement 1 is correct – The notification of an area as Scheduled area is done through a Presidential order.

Statement 2 is correct – The district is the largest administrative unit in a district. The smaller units are blocks and villages.



Statement 3 is incorrect – As per the fifth schedule, it is the Governor of the state having scheduled areas therein, who is responsible for submitting reports to the President annually or whenever required.

20. Consider the following statements:

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

**Statement-II:** Article 335 of the Constitution of India defines the term 'efficiency of administration'.

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Statement 1 is correct – It has been held by the Supreme Court that opportunities given to backward classes through Article 16(4) should not hinder the efficiency of administration under Article 335.

Statement 2 is incorrect – Article 335 does not specifically define 'Efficiency'.

21. Consider the following statements:

**Statement-I:** India, despite having uranium deposits, depends on coal for most of its electricity production.

**Statement-II:** Uranium, enriched to the extent of at least 60%, is required for the production of electricity.

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Statement 1 is correct – Electricity generation through coal-based power plants are the primary source of power in India. This is in spite of the fact that Uranium deposits are available in India which can be used in Nuclear Power Plants.

Statement 2 is incorrect – Enrichment of Uranium for power generation depends on type of reactor. Typically, this number varies between 3 to 5% and not 60%.

- 22. Consider the following statements: Statement-I: Marsupials are not naturally found in India. Statement-II: Marsupials can thrive only in montane grasslands with no predators. Which one of the following is correct in
  - respect of the above statements?a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-l
  - b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
  - c) Statement-I is correct but Statement-II is incorrect
  - d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Statement 1 is correct – Marsupials are mammals which carry their young in a pouch. They are not naturally found in India. Statement 2 is incorrect – Marsupials are not only found in montane grassland but are found in various others habitats such as deserts. E.g.- Macrotis.

- 23. Invasive Species Specialist Group (that develops Global Invasive Species Database) belongs to which one of the following organizations?
  - a) The International Union for Conservation of Nature
  - b) The United Nations Environment Programme
  - c) The United Nations World Commission for Environment and Development
  - d) The World Wide Fund for Nature

**Explanation:** Invasive Species Specialist Group (that develops Global Invasive Species Database) belongs to IUCN. Invasive Species Specialist Group studies invasive species and their impact on biodiversity and ecosystems.

- 24. Consider the following fauna:
  - 1. Lion-tailed Macaque
  - 2. Malabar Civet
  - 3. Sambar Deer

How many of the above are generally nocturnal or most active after sunset?

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

**Explanation:** Lion-tailed Macaque is diurnal in nature.

Malabar civet found in western ghats is nocturnal in nature.

Sambar Deer is crepuscular, meaning it is active during dusk and night.

- 25. Which of the following organisms perform waggle dance for others of their kin to indicate the direction and the distance to a source of their food?
  - a) Butterflies
  - b) Dragonflies
  - c) Honeybees
  - d) Wasps

**Explanation** – Honeybees are known to perform waggle dance. This is performed by worker bees to inform other bees about the location and direction of source of food. The waggle dance refers to moving in the pattern of figure eight.

- 26. Consider the following statements
  - 1. Some mushrooms have medicinal properties
  - 2. Some mushrooms have psycho-active properties
  - 3. Some mushrooms have insecticidal properties
  - 4. Some mushrooms have bioluminescent properties

How many of the above statements are correct?

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

**Explanation** – Some mushrooms like Reishi, maitake and Turkey tail have medicinal properties.

Some mushrooms such as Magic mushrooms contain psilocybin and psilocin, which can produce hallucinogenic effects.

Some mushrooms have insecticidal properties as well. E.g. - Beauveria bassiana is used against insects.

Some mushrooms have bioluminescence properties too. E.g. - Jack-o-Lantern which emits a faint greenish glow in the dark.

- 27. Consider the following statements regarding the Indian squirrels:
  - 1. They build nests by making burrows in the ground.
  - 2. They store their food materials like nuts and seeds in the ground.
  - 3. They are omnivorous.

How many of the above statements are correct?

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

**Explanation** – Indian squirrels build their nest (dreys) in tree branches or tree hollows and not in burrows in the ground. As they make their dreys in trees, they also store their food in tree burrows and crevices. Squirrels are omnivorous as they feed on nuts, seeds and small insects and caterpillars.

- 28. Consider the following statements:
  - 1. Some microorganisms can grow in environments with temperature above the boiling point of water.
  - 2. Some microorganisms can grow in environments with temperature below the freezing point of water.
  - 3. Some microorganisms can grow in highly acidic environment with a pH below 3.

How many of the above statements are correct?

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

**Explanation:** Some microorganisms can withstand extreme heat (at over 100-degree Celsius) and survive in even hot springs. These are known as Thermophiles. E.g. -



Pyrolobus fumarii survives at a temperature of 113-degree celcius.

Some microorganisms are known to survive in glaciers, well below the freezing point of water. They are known as cryophiles.

Some microorganisms can survive in highly acidic environment (pH less than 3) like volcanic areas. They are known as acidophiles.

- 29. Which one of the following makes a tool with a stick to scrape insects from a hole in a tree or a log of wood?
  - a) Fishing cat
  - b) Orangutan
  - c) Otter
  - d) Sloth bear

**Explanation** - Orangutans are known to make tools and use them to obtain their food. They break branches of a tree and then strip them of leaves and use the branch as a tool to obtain food from holes in trees.

- 30. Consider the following:
  - 1. Aerosols
  - 2. Foam agents
  - 3. Fire retardants
  - 4. Lubricants

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

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

**Explanation** – Hydrofluorocarbons or HFCs are commonly used as a propellant in aerosol products such as room fresheners and sprays.

HFCs are used a blowing agent in foam related materials such as cushions.

HFCs are used in fire extinguishing systems.

In aerospace industry, HFCs are used as lubricants.

- 31. Consider the following statements:
  - 1. Jhelum River passes through Wular Lake.
  - 2. Krishna River directly feeds Kolleru Lake.
  - 3. Meandering of Gandak River formed Kanwar Lake.

How many of the statements given above are correct?

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

**Explanation** - Statement 1 is correct – River Jhelum is the primary source of Wular Lake.

Statement 2 is not correct – Krishna and Godavari Rivers make a delta near Kolleru lake but Krishna river does not feed Lake Kolleru directly. Kolleru lake is fed by seasonal streams of Budameru and Tammileru.

Statement 3 is correct – Kanwar lake draws water from river Gandak. The lake was formed because of the meandering of river Gandak.

Source - 1. Mentioned at 08:03 in Indus, Ganga and Damodar River System

32. Consider the following pairs:

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

How many of the above pairs are correctly matched?

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

**Explanation** – Pair 1 is correctly matched – Kamarajar Port is located on Coromandel coast, north of Chennai. It was the first port which was made a public company.



Pair 2 is correctly matched – Mundra port, located in Kutcch, Gujrat is the largest privately owned port of India. It is owned by Adani Ports.

Pair 3 is not correct – Mundra port has become the largest container port in India, overtaking JNPT.

#### 33. Consider the following trees

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

How many of the above are deciduous trees?

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

**Explanation** – Statement 1 is incorrect as Jackfruit is an evergreen tree. Statement 2 and 3 are correct as Mahua and Teak are well known deciduous trees.

Source - 2 and 3 are mentioned at 38:35 in Forest: Introduction and types

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

How many of the above statements are correct?

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

**Explanation** - Statement 1 is correct – India has the largest arable area in the world with approximate 180 hectares.

Statement 2 is correct – India's irrigated area is 48% as compared to China's 41%.

Statement 3 is incorrect – Even with more arable area and proportionately more irrigated area, India's agricultural output is only one third of that of China's. The agriculture productivity of China is 50-100% higher than India in most crops.

- 35. Which one of the following is the best example of repeated falls in sea level, giving rise to present-day extensive marshland?
  - a) Bhitarkanika Mangroves
  - b) Marakkanam Salt Pans
  - c) Naupada Swamp
  - d) Rann of Kutch

**Explanation** – Rann of Kutch, located in Gujarat gets flooded in Monsoons and remains dry during rest of the year. This ecosystem was formed because of repeated falls in sea level over millions of years. Once, a part of Arabian Sea, Rann of Kutch now remains a salt pan most of the year.

- 36. Ilmenite and rutile, abundantly available in certain coastal tracts of India, are rich sources of which one of the following?
  - a) Aluminium
  - b) Copper
  - c) Iron
  - d) Titanium

**Explanation** – Some coastal areas in India are known for presence of heavy mineral sand. Heavy mineral sands comprise of ilmenite, leucoxene, rutile, zircon, silimanite, garnet, and monazite. Ilmenite and rutile are two chief minerals of titanium. Titanium is known for high strength to weight ratio and is used in aerospace, automotive industry.

- 37. About three-fourths of world's cobalt, a metal required for the manufacture of batteries for electric motor vehicles, is produced by
  - a) Argentina
  - b) Botswana
  - c) the Democratic Republic of the Congo
  - d) Kazakhstan

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



- 38. Which one of the following is a part of the Congo Basin?
  - a) Cameroon
  - b) Nigeria
  - c) South Sudan
  - d) Uganda

**Explanation** – The Congo basin in Central Africa is a region spreading through six countries – Cameroon, Central African Republic, Democratic Republic of Congo, Republic of Congo, Equatorial Guinea and Gabon.

- 39. Consider the following statements:
  - a) Amarkantak Hills are at the confluence of Vindhya and Sahyadri Ranges.
  - b) Biligirirangan Hills constitute the easternmost part of Satpura Range.
  - c) Seshachalam Hills constitute the southernmost part of Western Ghats.

How many of the statements given above are correct?

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

**Explanation** – Amarkantak Hills, in Madhya Pradesh is at the confluence of Vindhya and Satpura ranges. Hence Statement is incorrect.

Biligirirangan Hills are in south-western Karnataka and not in Satpura ranges. Hence Statement 2 is incorrect. Seshachalam Hills are in eastern Ghats of

India. Hence statement 3 is incorrect.

- 40. With reference to India's projects on connectivity, consider the following statements:
  - 1. East-West Corridor under Golden Quadrilateral Project connects Dibrugarh and Surat.
  - 2. Trilateral Highway connects Moreh in Manipur and Chiang Mai in Thailand via Myanmar.
  - 3. Bangladesh-China-India-Myanmar Economic Corridor connects Varanasi in Uttar Pradesh with Kunming in China.

How many of the above statements are correct?

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

**Explanation** – Statement 1 is incorrect -East West Corridor connects Silchar in Assam with Porbandar in Gujarat. It a 3300 km corridor via NH 27.

Statement 2 is incorrect – Trilateral Highway connects Moreh in Manipur, with Mae Sot in Thailand via Myanmar.

Statement 3 is incorrect – BCIM corridor connects Kunming in China with Kolkata in India.

Source - 1. Second & Third Statement - IR--India and Neighborhood -- India and Myanmar--- Areas of Cooperation -Pushpesh Pant Sir mentioned the Trilateral Highway & BCIM at 05:30 2. About BCIM-- IR----India and Neighborhood---India and Bangladesh--Areas of Cooperation--- Sir has mentioned the BCIM and Places can be seen in the Image at 08:02

41. Consider the following Statements:

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

**Statement-II:** InvITs are recognized as borrowers under the 'Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002'. Which one of the following is correct in respect of the above statements?

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Statement 1 is incorrect – Budget 2023-24 made all incomes from InvITs – interest, dividend and rental – taxable. Earlier, only the dividend distributed by InvITs was taxable. However, income distributed by Real Estate Investment Trusts (REITs) is not taxable.

Statement 2 is correct - InvITs are recognized as borrowers under the 'Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002'.

42. Consider the following statements:

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

**Statement-II:** Central Banks generally assume that they have the ability to counteract the rising

consumer prices via monetary policy means.

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-1
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Statement 1 is correct - In the post-pandemic period, economies started battling inflationary pressures during the recovery. To contain the inflation, Central banks worldwide hiked interest rates. Statement 2 is correct – Central banks control inflation through monetary policy by raising interest rates. This reduces the borrowing and spending.

Source - Chapter 5 of Economic Survey (from 2:00 to 7:10)

43. Consider the following statements **Statement-I:** Carbon markets are likely to be one of the most widespread tools in the fight against climate change

**Statement-II:** Carbon markets transfer resources from the private sector to the State.

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Statement 1 is correct – Carbon market with instruments such as cap and trade, emission trading has become one of the most important tool in the fight against climate change.

Statement 2 is correct – Private entities purchase carbon credits from State to cover for their emissions. The funds generated by this enables the State to spend more on climate fight tools.

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

**Explanation** - Sterilization refers to the intervention taken by the central bank to offset the impact of foreign exchange fluctuations on domestic money supply. An increase in FDI, will lead to excess supply of rupees in the market (More \$ -> Rupee conversion). This will lead to an inflationary tendency in the market. RBI thus conducts OMO through which it will suck out the excess liquidity infused in the market. Vice versa is true during outflow of forex.

- 45. Consider the following markets:
  - 1. Government Bond Market
  - 2. Call Money Market
  - 3. Treasury Bill Market
  - 4. Stock Market

How many of the above are included in capital markets?

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

**Explanation** – Money market refers to the market where short-term instruments are traded such as T-Bills, Ways and Means etc. Capital market refers to the market where long-term securities such as stock and bonds are traded.



Call money and T-bills are short term money market instruments while Government bonds and stocks are capital market instruments.

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

**Explanation** – Indian agriculture suffers from the problem of fragmentation of land which means that there are too many small and marginal farmers which affects the productivity and efficiency. This problem can be overcome by pooling the land of all marginal farmers in an area and working on it in a synchronized manner. This improves the economies of scale, efficiency and in effect, productivity. This is referred to as 'Small Farmer Large Field'.

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

How many of the above statements are correct?

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

**Explanation** – Minimum Support Prices is a form of market intervention by the government to provide a hedge against fall of prices in agricultural commodities. There are 23 crops included in this list as of now and for the year 2022-23, GoI has announced an MSP of Rs. 6930 per quintal for niger seeds.

Niger, a Kharif crop is a minor oilseed crop produced in rainfed areas of India. Niger oil is used for cooking, perfume and medicinal purposes.

Niger seed oil is used for cooking by many, including some tribal communities.

- 48. Consider the investments in the following assets
  - 1. Brand recognition
  - 2. Inventory
  - 3. Intellectual property
  - 4. Mailing list of clients

How many of the above are considered intangible investments?

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

**Explanation** – Intangible investments are those which do not increase the sale or revenue of a company directly like tangible investments (investment in better machinery, huge inventory, etc.) do. But they can indirectly affect the mindset of consumer and increase the sale and revenue in long run. These can include brand recognition such as symbol, logo etc., intellectual property such as patents, trade secrets and copyrights etc., and mailing list of consumers which help company to target its regular consumers with new products and offers.

Source - Tablet S&T - IPR 00:06:17 (Need for IPR) 00:27: 30 (Trademark explanation)

#### 49. Consider the following:

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

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

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

**Explanation** - Fifteenth Finance Commission used the following criteria for Horizontal tax devolution

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

- 50. Consider the following infrastructure sectors:
  - 1. Affordable housing
  - 2. Mass rapid transport
  - 3. Health care
  - 4. Renewable energy

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

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

**Explanation** - The UNOPS Sustainable Investments in Infrastructure and Innovation (S3i) initiative invests in affordable housing, health care, and renewable energy. The S3i initiative was launched in 2018 with the aim of mobilizing private sector investment in sustainable infrastructure projects in developing countries.

The mass rapid transport is not part of UNOPS S3i initiative.

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

How many of the above statements are correct?

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

**Explanation** – 1<sup>st</sup> Statement is incorrect: Home Guards' is a voluntary force, first raised in India in December 1946, to assist the police in controlling civil disturbance and communal riots. Subsequently, the concept of the voluntary citizen's force was adopted by several States. In the wake of Chinese aggression in 1962, the Centre advised the States and Union Territories to their existing merge voluntary organization into one uniform voluntary force known as Home Guards. Home Guards are raised under the Home Guards Act and Rules of the States/Union Territories.

The role of Home Guards is to serve as an auxiliary Force to the Police in maintenance of internal security situations, help the community in any kind of emergency such as an air-raid, fire, cyclone, earthquake, epidemic etc., help in maintenance of essential services, promote communal harmony and assist the administration in protecting weaker sections, participate in socio-economic and welfare activities and perform Civil Defense duties. Home Guards are of two types – rural and urban.

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

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



	Action	The Act under which it is covered
1.	Unauthorized	The Official
	wearing of Police or	Secrets Act, 1923
	Police or military	
	uniforms	
2.	Knowingly	The Indian
	misleading or	Evidence Act,
	otherwise	1872
	interfering with	
	a police officer	
	or military	
	officer when	
	engaged in	
	their duties	
3.	Celebratory	The Arms
	gunfire which	(Amendment) Act,
	can endanger	2019
	the personal	
	safety of others	

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

How many of the above pairs are correctly matched?

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

**Explanation** – Pair 1 is correct – Unauthorized use of uniforms, falsification of reports, forgery, personation, and false documents have been dealt with in Section 6 of Official Secrets Act 1923.

Pair 2 is incorrect - Knowingly misleading or otherwise interfering with a police officer or military officer when engaged in their duties, has also been dealt with in Official Secrets Act and not in Indian Evidence Act.

Pair 3 is correct - The Centre amended The Arms Act in December 2019 and made celebratory firing even with licensed guns at public gatherings, religious places, marriage, or other functions a criminal offense attracting two years' imprisonment and a fine. 53. Consider the following pairs:

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

How many of the above pairs are correctly matched?

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

**Explanation** – Pair 1 is incorrect – North Kivu and Ituri are provinces in Democratic republic of Congo. The areas were in the news because of increased violence in the provinces which has displaced more than 1.5 million people.

Pair 2 is incorrect – Nagorno-Karabakh region is in Azerbaijan. The region was in the news because of the disputes over the region between Armenia and Azerbaijan.

Pair 3 in incorrect – Kherson and Zaporizhzhia are regions of Ukraine where Russia claimed support for its rule.









54. Consider the following statements **Statement-I:** Israel has established diplomatic relations with some Arab States. **Statement-II:** The 'Arab Peace Initiative' mediated by Saudi Arabia was signed by Israel and Arab League.

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

- a) Both Statement-I and Statement-II are correct, and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct, and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation:** Israel currently has official diplomatic ties with five Arab countries: Egypt, Jordan, the UAE, Bahrain, and Morocco. Thus, statement I is correct. Arab Peace initiative though signed by all the members of the Arab League has not yet been signed by Israel. Thus, statement II is incorrect.

#### Source:

https://www.mei.edu/publications/slow ing-down-israel-arab-relations-undernetanyahu-government https://www.mei.edu/publications/arab -peace-initiative-returns-will-it-supplant-

abraham-accords

IR--India and World--Abraham Accords--Introduction--History of the Region (at 09:05 - Arab Peace Initiative mentioned in the Slide) 55. Consider the following pairs with regards to sports awards:

-	14.1 51	
1.	Major Dhyan	For the most
	Chand Khel	spectacular and
	Ratna Award	outstanding
		performance by a
		sports person
		over period of last
		four years
2.	Arjuna Award	For the lifetime
		achievement by a
		sportspersons
3.	Dronacharya	To honour
	Award	eminent coaches
		who have
		successfully
		trained
		sportsperson or
		teams
4.	Rashtriya Khel	To recognize the
	Protsahan	contribution
	Puraskar	made by
		sportspersons
		even after their
		retirement

How many of the above pairs are correctly Matched?

- a) Only one
- b) Only two
- c) Only three
- d) All Four

**Explanation** – Pair 1 is correct - Major Dhyan Chand Khel Ratna, instituted in 1991-92, are given for the most spectacular and outstanding performance in the field of sports by a sportsperson at international level over a period of four years immediately preceding the year during which award is to be given. It is the highest sporting honour in India.

Pair 2 is incorrect - Arjuna Awards, instituted in 1961, are given to players who have exhibited good performance consistently for the previous four years at the international level and have shown qualities of leadership, sportsmanship, and a sense of discipline. It is the second highest sporting honour in India.

Pair 3 is correct - Dronacharya Awards, instituted in 1985, are given to honour eminent Coaches who have successfully trained sportspersons or teams and



enabled them to achieve outstanding results in International competitions.

Pair 4 is incorrect - To recognize the contribution made to sports development by entities other than sportspersons and coaches, Government has instituted a new award - Rashtriya Khel Protsahan Purushkar from the year 2009. This award recognizes the contribution of corporates, voluntary organisations and sport control boards.

Source - All Awards Have been covered in - Art and Culture - Awards and Honours -07.18 to 09.41

- 56. Consider the following statements in respect of the 44th Chess Olympiad, 2022:
  - 1. It was the first time that Chess Olympiad was held in India.
  - 2. The official mascot was named 'Thambi'.
  - 3. The trophy for the winning team in the open section is the Vera Menchik Cup.
  - 4. The trophy for the winning team in the women's section is the Hamilton-Russell Cup.

How many of the statements given above are correct?

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

**Explanation:** Statement 1 and Statement 2 are correct – The 44<sup>th</sup> Chess Olympiad was supposed to be held in Russia but its hosting rights were stripped because of its invasion of Ukraine. This was the first time that the Chess Olympiad was held in India. 'Thambi' was the official mascot for the Olympiad.

Statement 3 and 4 are wrong – Hamilton Russel cup is for open section while Vera Menchik Cup is given in women's section.

#### 57. Consider the following pairs:

Area of conflict mentioned in news-Country where it is located

- 1. Donbas: Syria
- 2. Kachin: Ethiopia
- 3. Tigray: North Yemen

How many of the above pairs are correctly matched?

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

**Explanation** – Pair 1 is incorrect – Donetsk and Luhansk are provinces in eastern Ukraine. Together, they are known as Dobas. It is a coal rich region and is currently under control of Russia.

Pair 2 is incorrect – Kachin is a state in northern Myanmar.

Pair 3 is incorrect – Tigray region is northern part of Europe. Ethiopia was in news because of peace talks between Tigray forces and Ethiopian government.









- 58. In the recent years Chad, Guinea, Mali and Sudan caught the international attention for which one of the following reasons common to all of them?
  - a) Discovery of rich deposits of rare earth elements
  - b) Establishment of Chinese military bases
  - c) Southward expansion of Sahara Desert
  - d) Successful coups

**Explanation:** There have been nine attempted or successful coups d'état in Africa since 2020. The African continent saw a significant increase in coups in the last year and a half, with military figures carrying out coups in Burkina Faso, Sudan, Guinea, Chad, and Mali.

Source:

https://projects.voanews.com/africancoups/

https://www.nature.com/articles/s41598 -020-61085-

0#:~:text=The%20largest%20southward%2 0expansion%20occurs,of%20the%20area% 20of%20France).&text=The%20Sahara%20 Desert%20(SD)%20extent,on%20climate% 20and%20vegetation%20indices.

- 59. Consider the following heavy industries:
  - 1. Fertilizer plants
  - 2. Oil refineries
  - 3. Steel plants

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

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

**Explanation: Green hydrogen** is defined as hydrogen produced by splitting water into hydrogen and oxygen using renewable electricity. This is a very different pathway compared to both grey and blue. Green hydrogen is quickly becoming a new alternative to all other non-renewable sources of energy. Contributing 7% of total carbon dioxide (CO2) emissions worldwide, the steel industry has an important opportunity to achieve decarbonization and reduce its footprint.

One of the solutions on the table is the injection of hydrogen into blast furnaces, where steel is made, thus substituting coke oven gas for a clean fuel (green hydrogen). Refineries are responsible for 4% of world CO2 emissions. Green hydrogen in this sector is used as a substitute for fuels and hydrogen of fossil origin in various processes currently performed in refineries and petrochemical plants.

The global production of fertilizers is responsible for around 1.4% of annual CO2 emissions. Usage of Green Hydrogen can substantially reduce the GHG emissions.

Source: https://www.activesustainability.c om/sustainable-development/greenhydrogendecarbonizing/?\_adin=02021864894 https://www.carbonbrief.org/qa-whatdoes-the-worlds-reliance-on-fertilisersmean-for-climatechange/#:~:text=The%20global%20produ ction%20of%20fertilisers,non%2DCO2%20 greenhouse%20gas%20emissions.



Source: weforum.org



Source: weforum.org



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

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Explanation:** The G20 was founded in 1999 after the Asian financial crisis as a forum for the Finance Ministers and Central Bank Governors to discuss global economic and financial issues.

'Digital Public Infrastructure to Boost the Attainment of SDGs' side event of the 1st Digital Economy Working Group meeting under India's G20 Presidency was held in February 2023 in Lucknow.

Source: <u>https://www.g20.org/en/about-g20/#overview</u> https://www.undp.org/news/inspiring-

collective-action-digital-india-sets-stageg20

- 61. With reference to the Indian History, Alexander Rea, A. H. Longhurst, Robert Sewell, James Burgess and Walter Elliot were associated with
  - a) Archaeological excavations
  - b) Establishment of English Press in Colonial India
  - c) Establishment of Churches in Princely States
  - d) Construction of Railways in Colonial India

**Explanation:** Alexander Rea (1858-1924) was a British archaeologist who worked mainly in South British India.

Albert Henry Longhurst (1876 – 1955) was a British archaeologist and art historian. He was in charge of the systematic digging of Nagarjunakonda.

Robert Sewell (1845–1925) undertook archaeological work at the Buddhist stupa at Amaravati. James Burgess (1832 – 1916), was an important archaeologist of British India in the 19th century. From 1886-89 he was Director General of the Archaeological Survey of India.

62. Consider the following pairs:

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

How many of the above pairs are correctly matched?

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

#### Explanation:

An important Prakrit inscription at Besnagar (Bhilsa district) of the late 2nd century BCE, inscribed at the instance of Heliodorus, a Greek envoy of Antialcidas of Taxila, records his devotion to the Vaishnava Vasudeva sect.

Bhaja Caves is a group of 22 rock-cut Buddhist caves located in Pune district of Maharashtra.

Sittanavasal caves are the Jain caves in the Pudukkottai district of Tamil Nadu.

63. Consider the following Statements:

**Statement-I:** 7th August is declared as the national Handloom Day

**Statement-II:** It was in 1905 that the Swadeshi Movement was Launched on the same day

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation:** The Swadeshi Movement which was launched on 7th August, 1905 had encouraged indigenous industries and in particular handloom weavers. In 2015, the Government of India decided to designate the 7th August every year, as the



National Handloom Day. The first National Handloom Day was inaugurated on 7 August 2015 by Prime Minister Narendra Modi in Chennai.

Source:

https://www.mygov.in/campaigns/natio nal-handloom-day/

64. Consider the following statements in respect of the National Flag of India according to the Flag Code of India, 2002: **Statement-I:** One of the standard sizes of the National Flag of India is 600 mm x 400 mm.

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

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

- a) Both Statement-1 and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation:** As per the Flag Code of India, 2002 the national flag shall be rectangular in shape. The ratio of length to height is 3:2. There are 9 standard sizes that are mentioned in the flag code of which 600x400 mm does not exist.

#### Source:

https://www.mha.gov.in/sites/default/f iles/flagcodeofindia\_070214.pdf

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

**Statement-I:** The Constitution Day is celebrated on 26<sup>th</sup> November every year to promote constitutional values among citizens.

**Statement-II:** On 26<sup>th</sup> November, 1949 the Constituent Assembly of India set up a Drafting Committee under the Chairmanship of Dr. B. R. Ambedkar to prepare a Draft Constitution of India.

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation:** The Ministry of Social Justice and Empowerment on 19th November, 2015 notified the decision of Government of India to celebrate the 26th day of November every year as 'Constitution Day' to promote Constitution values among citizens.

On 26th November 1949, the Constituent Assembly of India adopted the Constitution of India, which came into effect from 26th January 1950. Thus, statement II is incorrect.

66. Consider the following statements:

**Statement-I:** Switzerland is one of the leading exporters of gold in terms of value. **Statement-II:** Switzerland has the second largest gold reserves in the world. Which one of the following is correct in

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation:** In 2021 the top exporters of Gold were Switzerland (\$86.7B), United Arab Emirates (\$32.8B), United Kingdom (\$29.7B), United States (\$26.6B), and South Africa (\$20.1B).

Germany has the second-largest gold reserve after the US.

Source: https://oec.world/en/profile/hs/gold#:

~:text=Exports%20In%202021%20the%20t op,South%20Africa%20(%2420.1B). 67. Consider the following statements:

**Statement-I:** Recently, the United States of America (USA) and the European Union (EU)

have launched the 'Trade and Technology Council'.

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

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

- a) Both Statement-I and Statement-II are correct, and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct, and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Statement 1 is correct – Trade and Technology Council was formed between EU and USA in 2021.

Statement 2 is incorrect – The council does not aim to bring the technological progress and physical productivity under control but aims to pool resources and to find solutions to newer challenges and pass the benefits to partner countries.

#### Source:

https://commission.europa.eu/strategyand-policy/priorities-2019-2024/strongereurope-world/eu-us-trade-andtechnology-council\_en

- 68. Consider the following statements:
  Statement-I: India accounts for 3.2% of global export of goods.
  Statement-II: Many local companies and some foreign companies operating in India have taken advantage of India's 'Production-linked Incentive' scheme. Which one of the following is correct in respect of the above statements?
  - a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
  - b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
  - c) Statement-I is correct but Statement-II is incorrect
  - d) Statement-I is incorrect but Statement-II is correct

**Explanation:** As per the latest Economic Survey of 2022-23, India accounts for 1.8% of the Global exports of goods in 2021. Thus, statement I is incorrect.

Production Linked Incentive scheme does not discriminate between domestic and foreign firms operating in India. Its main objective is to boost domestic production.

#### Source:

https://www.indiabudget.gov.in/econo micsurvey/doc/eschapter/echap11.pdf https://www.meity.gov.in/esdm/pli

- 69. Consider the following statements: The 'Stability and Growth Pact' of the European Union is a treaty that
  - 1. limits the levels of the budgetary deficit of the countries of the European Union
  - 2. makes the countries of the European Union to share their infrastructure facilities
  - 3. enables the countries of the European Union to share their technologies

How many of the above statements are correct?

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



**Explanation** – Statement 1 is correct - 27 EU nations have signed a pact to maintain the fiscal discipline in their respective countries with the objective of maintaining economic stability in EU countries. This pact is known as the Stability and Growth pact. The monitoring under this pact is done by the European Commission and Council of European Union.

Statements 2 and 3 are incorrect – The pact does not make the countries share their technologies or infrastructure facilities.

Source: <u>https://economy-</u> <u>finance.ec.europa.eu/economic-and-fiscal-</u> governance/stability-and-growth-pact\_en

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

How many of the above statements are correct?

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

**Explanation** - 'Global Compact for Safe, Orderly and Regular Migration (GCM)' is the first ever inter-governmental agreement which deals with international migration. Though it was prepared and signed under the aegis of UN, it has not been signed by all countries. The compact is not legally binding but aspires to create a co-operative framework. GCM does not deal with internal migration or internally displaced people.

Source:

https://news.un.org/en/story/2018/07/ 1014632 https://www.euractiv.com/section/globa

l-europe/news/nine-eu-members-stayaway-from-un-migration-pact/

- 71. Consider the Following countries:
  - 1. Bulgaria
  - 2. Czech Republic
  - 3. Hungary
  - 4. Latvia
  - 5. Lithuania
  - 6. Romania

How many of the above-mentioned counties share a land border with Ukraine

- a) Only two
- b) Only three
- c) Only four
- d) Only five

Explanation:



- 72. With reference to the Earth's atmosphere, which one of the following statements is correct?
  - a) The total amount of insolation received at the equator is roughly about 10 times of that received at the poles.
  - b) Infrared rays constitute roughly twothirds of insolation.
  - c) Infrared waves are largely absorbed by water vapour that is concentrated in the lower atmosphere.
  - d) Infrared waves are a part of visible spectrum of electromagnetic waves of solar radiation

**Explanation** - The total amount of insolation received at the poles is about 40% of that received at the equator. Hence Statement 1 is incorrect.

Roughly 49% of solar radiation is infrared between 700nm-1mm; about 7% is from ultra-violet between 100-400mm; less than 1% of solar radiation is emitted as x-rays, gamma rays and radio waves. Hence Statement 2 is incorrect.

Water Vapour acts as the most prominent greenhouse gas in the lower atmosphere but as most of it is produced naturally, it is



not considered harmful. Nevertheless, water vapour is the greatest absorber of infrared radiation. Hence Statement 3 is correct.

Statement 4 is incorrect – IR waves are not part of visible spectrum.

73. Consider the Following Statements:

**Statement I:** The soil in tropical rain forest is rich in nutrients.

**Statement II:** The high temperature and moisture of tropical rain forests cause dead organic matter in the soil to decompose quickly.

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation:** The soil in tropical rainforests is very poor. This is due to many reasons like, the type of clay particles present in tropical rainforest soil has a poor ability to trap nutrients and stop them from washing away; The high temperature and moisture of tropical rainforests cause dead organic matter in the soil to decompose more quickly than in other climates, thus releasing nutrients rapidly; The heavy rainfall in tropical rainforests washes nutrients out of the soil more quickly than in other climates.

Source:

https://www.wtamu.edu/~cbaird/sq/20 13/07/12/what-makes-the-soil-intropical-rainforests-so-rich/ 74. Consider the following statements.

**Statement-I:** The temperature contrast between continents and oceans is greater during summer than in winter. **Statement-II:** The specific heat of water is more than that of land surface

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

#### **Explanation:**

- Due to a various factors, including surface characteristics, specific heat, and air circulation patterns, the temperature contrast between land and ocean is greater in the summer than in the winter.
- Water can absorb and store more heat energy for a given variation in temperature than land, which has a lower heat capacity.
- So, compared to land, water takes longer to heat up and cool down.
- So, both land and water are heated by the sun's rays throughout the summer, but because land has a lesser specific heat capacity than water, it heats up more quickly.



**Figure:** Distribution of temperature during winter in the Northern Hemisphere





Figure: Distribution of temperature during summer in the Northern Hemisphere Source: NCERT

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

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Explanation - P waves** or **Primary waves** are the first waves to hit the seismographs when an earthquake strikes. They are longitudinal waves which means that the direction of motion of particles through which wave passes and propagation of the wave are the same.

**S waves**, also called **secondary waves** and **shear waves**, are the second waves to hit the seismographs. They are transverse waves, which means that the motion of the object through which it passes is perpendicular to the direction of wave propagation.

Source:

https://earthquake.usgs.gov/earthquakes /events/1906calif/18april/earthwaves.ph p



- 76. With reference to coal-based thermal power plants in India, consider the following statements:
  - 1. None of them uses seawater.
  - 2. None of them is set up in waterstressed district.
  - 3. None of them is privately owned

How many of the above statements are correct?

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

**Explanation** – Water is used in cooling and operational requirements of power plants. Statement 1 is correct – Coal based thermal power plants in India are using surface or ground water. However, a new research paper has suggested using sea water instead, which will save millions of litres of clean drinking water.

Statement 2 is incorrect – As per World Resources Institute, more than 40% of India's coal-based power plants are based in water-stressed districts.

Statement 3 is incorrect – Almost half of coal based thermal power plants in India are privately owned.

#### Source:

https://www.downtoearth.org.in/blog/p ollution/it-is-imperative-to-improvewater-efficiency-in-india-s-coal-firedthermal-power-plants-89484



- 77. 'Wolbachia method' is sometimes talked about with reference to which one of the following?
  - a) Controlling the viral diseases spread by mosquitoes
  - b) Converting crop residues into packing material
  - c) Producing biodegradable plastics
  - d) Producing biochar from thermochemical conversion of biomass

Explanation - Wolbachia refers to the naturally occurring bacterium which is found in many insects including mosquitos. It can also be artificially introduced in mosquitoes. When a male mosquito carrying 'Wolbachia' mates with female mosquito, the resulting egg does not hatch. Over a period, this can decrease the population of mosquitoes in a region. This of introducing wolbachia technique induced mosquito in the population and the resulting decrease in population is known as 'Wolbachia Method'. This helps in reduction of viral disease spread through mosquitos.

Source:

http://www.eliminatedengue.com/ourresearch/Wolbachia#:~:text=This%20tech nique%20requires%20the%20release,popul ation%20of%20mosquitoes%20gradually% 20returns.

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

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

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

**Explanation:** Spreading finely ground basalt rock on farmlands extensively: This activity, known as enhanced weathering, to accelerate the natural process of carbon dioxide capture from the atmosphere.

The process of adding lime enhances the capacity of the oceans to absorb and store carbon dioxide from the atmosphere, thereby aiding in carbon sequestration. Capturing carbon dioxide released by various industries and pumping it into abandoned subterranean mines in the form of carbonated waters is known as carbon capture and storage.

Source: https://www.iea.org/fuels-andtechnologies/carbon-capture-utilisationand-storage https://un-do.com/farmers-landowners/ https://science.howstuffworks.com/envir onmental/green-science/limeseawater1.htm#:~:text=When%20you%20a dd%20lime%20to,released%20by%20an%2 0overwhelmed%20ocean.

- 79. Aerial metagenomics' best refers to which one of the following situations?
  - a) Collecting DNA samples from air in a habitat at one go
  - b) Understanding the genetic makeup of avian species of a habitat
  - c) Using air-borne devices to collect blood samples from moving animals
  - d) Sending drones to inaccessible areas to collect plant and animal samples from land surfaces and water bodies

**Explanation** - DNA samples in air of a specific habitat can be collected and analysed through the method of 'Aerial metagenomics.' In this method, microorganisms present in the air are captured and their DNA is sequenced.

#### Source:

https://www.economist.com/scienceand-technology/2022/01/08/wildlife-cannow-be-detected-by-sniffing-dna-in-theair

- 80. 'Microsatellite DNA' is used in the case of which one of the following?
  - a) Studying the evolutionary relationships among species of fauna
  - b) Stimulating 'stem cells' to transform into diverse functional tissues
  - c) Promoting clonal propagation of horticultural plants
  - d) Assessing the efficacy of drugs by conducting series of drug trials in a population



#### **Explanation:**

Source: <u>https://www.genome.gov/genetics-glossary/Microsatellite</u> <u>https://www.cancer.gov/publications/dictio</u> <u>naries/genetics-dictionary/def/microsatellite</u>

Explanation – Microsatellites or "short tandem repeats" consists of short repeating sequences of DNA (mostly not more than 6 pairs in length). Scientists can read the variations in microsatellite DNAs of different species and compare them to study the evolution of relationships among distinct species. It can also be used to study population structure and genetic diversity.

- 81. Consider the following statements in relation to Janani Suraksha Yojana:
  - 1. It is a safe motherhood intervention of the State Health Departments.
  - 2. Its objective is to reduce maternal and neonatal mortality among poor pregnant women.
  - 3. It aims to promote institutional delivery among poor pregnant women.
  - 4. Its objective includes providing public health facilities to sick infants up to one year of age.

How many of the statements given above are correct?

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

**Explanation** – Statement 1 incorrect – JSY is a centrally sponsored scheme and not of the state health departments.

Statement 2 and 3 are correct – It's objective is to reduce maternal and neonatal mortality among pregnant poor women through institutional deliveries.

Statement 4 is incorrect – The provision of public health facilities for sick infants is not a direct objective of JSY.

- 82. Consider the following statements in the context of interventions being undertaken under Anaemia Mukt Bharat Strategy:
  - 1. It provides prophylactic calcium supplementation for pre-school children, adolescents and pregnant women.
  - 2. It runs a campaign for delayed cord clamping at the time of child- birth.
  - 3. It provides for periodic deworming to children and adolescents.
  - 4. It addresses non-nutritional causes of anaemia in endemic pockets with special focus on malaria, hemoglobinopathies and fluorosis.

How many of the statements given above are correct?

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

**Explanation** – Statement 1 incorrect – Anaemia Mukt Bharat focuses on Prophylactic iron and folic acid supplementation and not of calcium.

Statement 2 is incorrect – The strategy focuses on addressing Anaemia in the country. Delayed cord clamping is not specifically part of the strategy.

Statement 3 is correct – Anaemia Mukt Bharat focuses on deworming of women of reproductive age, children and adolescents. Statement 4 is correct – The strategy also makes an intervention to address nonnutritional causes of anaemia in endemic pockets with special focus on malaria, hemoglobinopathies and fluorosis.

- 83. Consider the following statements:
  - 1. Carbon fibres are used in the manufacture of components used in automobiles and aircrafts.
  - 2. Carbon fibres once used cannot be recycled.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2



**Explanation** – Statement 1 is correct – Carbon fibres have superior strength to weight ratio which makes them highly usable in automobiles and aircraft industry.

Statement 2 is incorrect – Carbon fibres are recyclable but the process for carbon fibres is more complex than for other materials.

- 84. Consider the following actions:
  - 1. Detection of car crash/collision which results in the deployment of airbags almost instantaneously
  - 2. Detection of accidental free fall of a laptop towards the ground which results in the immediate turning off of the hard drive
  - 3. Detection of the tilt of the smart- phone which results in the rotation of display between portrait and landscape mode

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

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

**Explanation** - The Applications of Accelerometer sensor are as follows:

- For inertial navigation systems, highly sensitive accelerometers are used.
- To detect and monitor vibrations in rotating machinery.
- To display images in an upright position on screens of digital cameras.
- For flight stabilization in drones.
- Accelerometers are used to sense orientation, coordinate acceleration, vibration, shock.
- Used to detect the position of the device in laptops and mobiles.
- High-frequency recording of biaxial and triaxial acceleration in biological applications for discrimination of behavioral patterns of animals.
- Machinery health monitoring.
- To detect faults in rotator machines.
- These are also used for building and structural monitoring to measure the motion and vibration of the structure when exposed to dynamic loads.
- To measure the depth of CPR chest compressions.

- Navigation systems make use of accelerometer sensors for knowing the direction.
- Remote sensing devices also use accelerometers to monitor active volcanoes.
- 85. With reference to the role of biofilters in Recirculating Aquaculture System, consider the following statements:
  - 1. Biofilters provide waste treatment by removing uneaten fish feed.
  - 2. Biofilters convert ammonia present in fish waste to nitrate.
  - 3. Biofilters increase phosphorus as nutrient for fish in water.

How many of the statements given above are correct?

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

**Explanation** – Statement 1 is correct – Biofilters uses bacteria which feast on uneaten fish feed and remove other organic matter.

Statement 2 is correct – The ammonia in the excreta produced by fish is converted into nitrate through the process of nitrification in Biofilters.

Statement 3 is incorrect – Biofilters remove organic waste, sometimes nitrogen and phosphorus too and do not increase the amount of phosphorus.

86. Consider the following pairs:

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

How many of the above pairs are correctly matched?

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

**Explanation** – Pair 1 is incorrect – Cepheids are stars which brighten and dim periodically.

Pair 2 is incorrect – Nebulae is a giant cloud of dust and gas in space.

Pair 3 is correct – Pulsars are neutron stars which are formed when massive stars run out of fuel and collapse.

Source - Stars - Nebulae and Galaxy Video

- 87. Which one of the following countries has its own Satellite Navigation System?
  - a) Australia
  - b) Canada
  - c) Israel
  - d) Japan

**Explanation** - Out of the options mentioned, only Japan has its own satellite navigation system known as Quasi-Zenith Satellite System Or QZSS. It has four operational satellites.

Source – Crash Course – S&T - 1 – countries with satellite navigation system (33:46).

- 88. Consider the following statements:
  - 1. Ballistic missiles are jet-propelled at subsonic speeds throughout their flights, while cruise missiles are rocketpowered only in the initial phase of flight.
  - 2. Agni-V is a medium-range supersonic cruise missile, while BrahMos is a solid-fuelled intercontinental ballistic missile.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Explanation** – Both the statements are incorrect. Cruise missiles are jet propelled throughout their flights and not in the initial phase only. Ballistic missiles are rocket powered in the initial phase.

Agni V is an intercontinental ballistic missile and Brahmos is a medium range supersonic cruise missile.

Source – Crash Course – S&T - 3 – Ballistic Missile and Agni (1:33:46)

- 89. Consider the following statements regarding mercury pollution:
  - 1. Gold mining activity is a source of mercury pollution in the world.
  - 2. Coal-based thermal power plants cause mercury pollution.
  - 3. There is no known safe level of exposure to mercury.

How many of the above statements are correct?

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

**Explanation** – All statements are correct.

Gold is separated during mining with the use of liquid mercury which forms a layer around gold. This has been polluting areas of gold mining with mercury.

Burning of coal in thermal power plants releases mercury in the environment which gets deposited in water bodies and soil.

Mercury is known to be a highly toxic element with no minimum threshold for safe exposure. Even a small amount of exposure can get deposited in the body and over time cause damage to the nervous system.

- 90. With reference to green hydrogen, consider the following statements:
  - 1. It can be used directly as a fuel for internal combustion.
  - 2. It can be blended with natural gas and used as fuel for heat or power generation.
  - 3. It can be used in the hydrogen fuel cell to run vehicles.

How many of the above statements are correct?

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

**Explanation** – All statements are correct.

Green hydrogen can replace fossil fuel entirely and can power the internal combustion engines but with lesser efficiency.

In certain proportions, it can also be added with natural gas and used as a fuel. (HCNG)



Green hydrogen can also be used in fuel cells to generate electricity to power electric vehicles.

Source – Crash Course – S&T – 3

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

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Explanation** – Statement 1 is incorrect – The maximum investment for medium enterprises is 50 crores.

Statement 2 is correct – per the criteria outlined in Priority Sector Lending – Targets and Classifications - All bank loans to the Micro, Small and Medium Enterprises qualify under the priority sector.

- 92. With reference to Central Bank digital currencies, consider the following statements:
  - 1. It is possible to make payments in a digital currency without using US dollar or SWIFT system.
  - 2. A digital currency can be distributed with a condition programmed into it such as a time-frame for spending it.

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Explanation** – Statement 1 is correct – It is possible to make payments in a digital currency without using US dollar or SWIFT system. This is one of the benefits of CBDCs that removes the dependency of traditional instruments such as US Dollar or SWIFT transaction mechanism.

Statement 2 is correct – CBDCs are programmable currencies, and they could be programmed with an expiry date which encourages spending. China's Yuan is an example.

- 93. In the context of finance, the term "beta" refers to,
  - a) The process of simultaneous buying and selling of an asset from different platforms
  - b) An investment strategy of a portfolio manager to balance risk versus reward.
  - c) A type of systemic risk that arises where perfect hedging is not possible.
  - d) A numeric value that measures the fluctuations of a stock to changes in the overall stock market

**Explanation** - Beta is a statistical measure of a stock's volatility that may in turn be used to determine how volatile a stock is in comparison to the rest of the market. In other words, the stock's beta value suggests the extent of its volatility and measures the responsiveness of a stock's price to changes in the market.

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

How many of the above statements are correct?

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

**Explanation** – Statement 1 is incorrect – SHGs were originally initiated by NGOs and later a more concrete shape was given to it when NABARD started promoting them from 1991-92.

Statement 2 is correct – This is one of the most important features of SHG that a loan taken by one individual of the SHG become



the collective responsibility of whole SHG. This infuses a sense of responsibility and social burden on the individual and encourages them to pay back the loan. Statement 3 is correct – Regional Rural Banks (RRBs) and Schedule Commercial Banks (SCBs) provide financial assistance like credit and fulfill other banking needs of the SHGs.

95. Consider the following statements:

**Statement-1:** India's public sector health care system largely focuses on curative care with limited preventive, promotive and rehabilitative care.

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

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct, but Statement-II is incorrect
- d) Statement-l is incorrect, but Statement-II is correct

**Explanation** – Statement 1 is correct -India's public sector health care system largely focuses on curative care with limited preventive, promotive and rehabilitative care. But the recent National Health Policy, 2017 has focused on preventive, promotive and rehabilitative care too.

Statement 2 is correct – Health is a state subject under schedule seven of Indian constitution which makes the states as the primarily responsible for providing health services to citizens.

India's focus on curative care is not because of decentralized health care delivery but because lack of availability of resources with the government. 96. Consider the following statements

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

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

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

- a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
- b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
- c) Statement-I is correct but Statement-II is incorrect
- d) Statement-I is incorrect but Statement-II is correct

**Explanation** – Statement 1 is correct - As per the United Nations' World Water Development Report, 2022, India is the world's greatest extractor of groundwater. India's groundwater extraction constitutes more than a quarter of the whole worlds. Statement 2 is correct – India's groundwater extraction demand is higher because of its high population.

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

How many of the above statements are correct?

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



**Explanation** – Statement 1 is correct – Under Article 355 of the Indian Constitution, it is the duty of Union government to protect every state from external aggression and internal disturbances.

Statement 2 is incorrect – Article 22 of Indian Constitution confers all citizens with the fundamental right of a counsel. This FR does not apply to enemy aliens or those arrested under preventive detention. But the constitution also does not make an explicit exemption of states from providing legal counsel to such detenus.

Statement 3 is incorrect - As per Section 32(1) of POTA, 2002, "Notwithstanding anything in the Code or in the Indian Evidence Act, 1872 (1 of 1872), but subject to the provisions of this section, a confession made by a person before a police officer not lower in rank than a Superintendent of Police and recorded by such police officer either in writing or on any mechanical or electronic device like cassettes, tapes or sound tracks from out of which sound or images can be reproduced, shall be admissible in the trial of such person for an offence under this Act or the rules made thereunder." This was one of the most stringent provisions of POTA, 2002.

- 98. Which one of the following countries has been suffering from decades of civil strife and food shortages and was in news in the recent past for its very severe famine?
  - a) Angola
  - b) Costa Rica
  - c) Ecuador
  - d) Somalia

**Explanation** – Somalia has been witnessing a civil strife for over three decades now and a recent severe drought has brought the suffering of people to international attention again.

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

Which of the statements given above is/are correct?

- a) 1 only
- b) 2 only
- c) Both 1 and 2
- d) Neither 1 nor 2

**Explanation** – Statement 1 is correct - The Biodiversity Management Committees (BMCs) are statutory bodies that are formed by the 'local bodies' as per Section 41 of the Biological Diversity Act 2002. These committees promote biological diversity conservation. Since the Nagoya Protocol also aimed the same, BMCs can be termed as key to the realization of objectives of Nagoya protocol.

Statement 2 is correct – Under Biological Diversity Act, 202, the Biodiversity Management Committees have important functions in determining access and benefit sharing, including the power to levy collection fees on the access of biological resources within its jurisdiction.

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



How many of the above statements are correct

- a) Only one
- b) Only two
- c) Only three
- d) All Four

**Explanation** – Statement 1 is incorrect – Only elected members of both Houses of Parliament and of the State Legislative Assemblies are members of the Electoral College for Presidential Election. Therefore, nominated members cannot vote in this election.

Statement 2 is incorrect – The value of vote of each MLA of a state depends on the ratio of state's population and number of MLAs in legislative assembly of that state. Since ratio is obtained by dividing the state population with number of MLAs, the value decreases with increased number of assembly seats.

Statement 3 is incorrect - The value of vote of each MLA of Madhya Pradesh (230 assembly seats and a population of 30016626 as per 1971 census) is lesser than that of Kerala because of lower population of Kerala (21347375 as per 1971 census) and number of seats (140).

Statement 4 is correct - The value of vote of each MLA of Puducherry (16 in 2022 elections) is higher than that of Arunachal Pradesh (8 in 2022 elections) because the ratio of total population to total number of elective seats in Puducherry is greater as compared to Arunachal Pradesh.





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