SHANKAR IAS ACADEMY™
SINCE 2004
Best Academy for Civil Services Exam Coaching

ALL INDIA MOCK TEST I – 2024

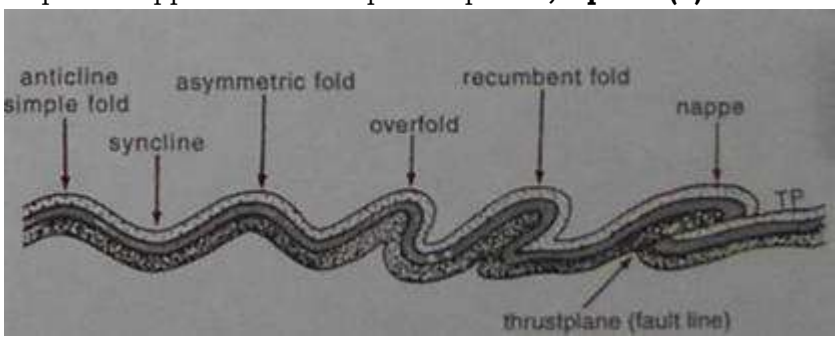
EXPLANATION

INDEX

1. Which one of the following best describes the term "monadnocks"?
   (a) A large body of rock moved from its original position by folding or faulting.
   (b) An isolated mountain located prominently in the midst of the surrounding plain.
   (c) A steep-sided and narrow-floored valley in the mountains.
   (d) An underwater flat surfaced mountain known for rich biodiversity.

EXPLANATION:

Nappe is a large body or sheet of rock that has been moved a distance from its original position by faulting or folding. A nappe may be the hanging wall of a low-angle thrust fault (a fracture in the rocks of the Earth's crust caused by contraction), or it may be a large recumbent fold (i.e., an undulation in the stratified rocks of the Earth's crust having an essentially horizontal axial plane); both processes position older rocks over younger rocks. An example of nappes is the European Alps. **So, Option (a) is not correct.**



Monadnock is an isolated hill of bedrock standing conspicuously above the general level of the surrounding plain. Monadnocks are left as erosional remnants because of their more resistant rock composition; commonly, they consist of quartzite or less jointed massive volcanic rocks.
In contrast to inselbergs (island mountains), a similar tropical landform, monadnocks are formed in humid, temperate regions. They take their name from Mt. Monadnock, a solitary mass of rock 3,165 feet in Monadnock State Park, southwestern New Hampshire, United States. A well-known example is Stone Mountain in Georgia, U.S. **So, Option (b) is correct.**

A gorge is a narrow valley with steep, rocky walls located between hills or mountains. A gorge is often smaller than a canyon, although both words are used to describe deep, narrow valleys with a stream or river running along their bottom.
A number of natural forces form gorges. The most common is erosion due to streams or rivers. Streams carve through hard layers of rock, breaking down or eroding it. Sediment from the worn-away rock is then carried downstream. Over time, this erosion will form the steep walls of a gorge. Example the Indus Gorge in Kashmir. **So, Option (c) is not correct.**

Seamounts are extinct submarine volcanoes that are conically shaped and often flat-topped. They rise abruptly from the abyssal plain to heights at least 3,300 feet (1,000 metres) above the ocean floor. Scientists recognise them as hotspots for marine life. Most seamounts are formed near mid-ocean ridges, where the earth's tectonic plates are moving apart, allowing molten rock to rise to the seafloor.
Seamounts are home to diverse biological communities. They are good places for life because they can cause localised ocean upwelling – the process by which nutrient-rich water from deep within the ocean moves up to the surface. Seamounts are not the Monadnocks. **So, Option (d) is not correct.**

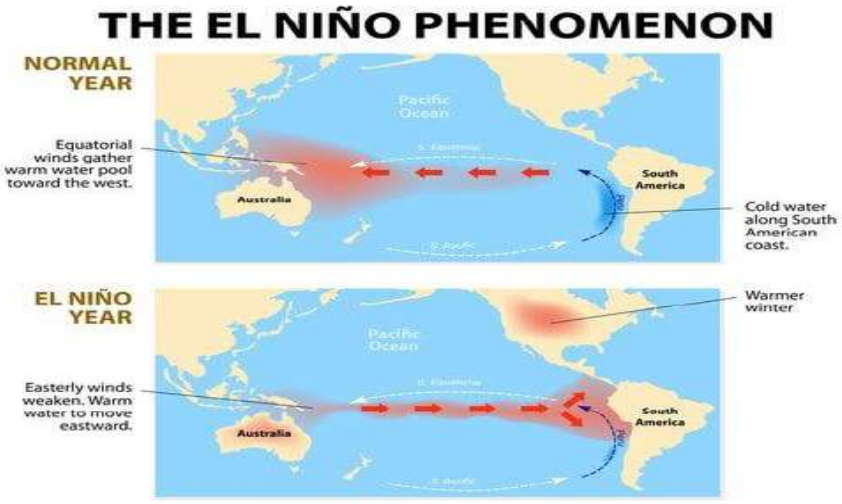
2. Which of the following events are attributed to the impact of El Nino?
   1. Water rises from the depths of the ocean to the surface along the Australian coast
   2. Weakening of southeast trade winds in the Pacific Ocean
   3. Abnormal floods in Indonesia and Australia
   4. Dry conditions in South American Countries
   5. Increased frequency of Hurricanes on the Pacific Coast of North America

   Select the correct answer using the code given below:

   (a) 1, 2 and 5 only
   (b) 1 and 5 only
   (c) 1, 3 and 5 only
   (d) 2, 3 and 4 only

EXPLANATION:

El Niño is a natural climate phenomenon in which sea surface temperatures in the tropical Pacific are warmer than average.
Under normal (or neutral) atmospheric conditions, trade winds blow in the east-to-west direction along the earth's equator – transporting warm water from South America to Asia, which is then replaced by cooler water from lower depths. This process, referred to as upwelling, brings nutrients to the surface water, creating fertile fishing grounds.
During an El Niño event, westward-blowing trade winds (Southeast trade winds) weaken along the Equator. These changes in air pressure and wind speed cause warm surface water to move eastward along the Equator, from the western Pacific to the coast of northern South America. This thick layer of warm water does not allow normal upwelling to occur along the western South American coast. On the contrary, water rises from the depths of the ocean to the surface along the Eastern Australian coast. **So, Statements 1 and 2 are correct.**



In the equatorial Pacific, as the warm pool propagates eastward, clouds and rainfall move with it and leave the Western Pacific in dry conditions that often lead to drought across Indonesia, Southeast Asia, and northern Australia. Therefore, during El Nino, drought (Not floods) prevails over Australia and Indonesia. **So, Statement 3 is not correct.**

El Niño also produces widespread and sometimes severe changes in the climate. Convection above warmer surface waters along the Eastern Pacific region brings increased precipitation (Not drought) in South American countries. Rainfall increases drastically in Ecuador and northern Peru, contributing to coastal flooding and erosion.
El Niño favors stronger hurricane activity in the central and eastern Pacific basins (North America) and suppresses it in the Atlantic basin. **So, Statement 4 is not correct, and Statement 5 is correct.**

3. Consider the following statements:

Statement-I:

Onshore winds are the winds that blow from the water surface to the land surface.

Statement-II:

Onshore winds can help in bringing rainfall to the continental region when obstructed by the highlands.

Which 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:

Onshore winds are moisture-laden as they come from sea or ocean and, therefore, bring rain to land over there, whereas off-shore winds originate from land and are dry. These onshore moisture laden winds bring heavy rainfall in the windward slopes. For example, the Arabian Sea branch of the Southwest monsoon brings heavy rain along the windward slopes of Western Ghats.
After crossing the windward slopes, they descend over the leeward eastern slopes, where they get warmed up adiabatically. So, these continental regions are actually rain shadow areas as the amount of rain received here is quite low compared to the windward slopes. Therefore, Onshore winds can help in bringing rainfall (Little rainfall) to the continental region even though obstructed by highlands.
Both Statement I and Statement II are correct, and Statement II is not the correct explanation for Statement I.

4. Straits play a vital role in international trade and transportation. In this context, consider the following statements:
   1. The Strait of Gibraltar connects the Atlantic Ocean to the Mediterranean Sea.
   2. Bab el-Mandeb connects the Persian Gulf and the Gulf of Oman
   3. The Bosphorus Strait connects the Black Sea and the Sea of Azov
   4. The Strait of Hormuz connects the Red Sea and the Gulf of Aden.

   How many of the above statements are ***not*** correct?

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

EXPLANATION:

The Strait of Gibraltar connects the Mediterranean Sea with the Atlantic Ocean and separates southernmost Spain from northernmost Africa. The Strait is strategically positioned between the southern part of the European continent and the northwestern part of the continent of Africa. The Strait is bordered by Spain and the British Overseas Territory of Gibraltar in the north and by the African country of Morocco and the Spanish exclave of Ceuta in the south. The Strait of Gibraltar is about 58 km long and has a width of about 13 km at its narrowest point. **So, Statement 1 is correct.**

The Strait of Hormuz is a narrow waterway between Iran and the Arabian Peninsula, specifically the United Arab Emirates and Musandam (Oman). Iran is located on the north coast, while the UAE is on the south coast. The Gulf of Oman is on the Strait's east, while the Persian Gulf is on the west. It lies between Oman and Iran, linking the sea passage from the countries in the Gulf (Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar and the United Arab Emirates) with the Arabian Sea and beyond.

The Gulf of Oman is on the Strait's east, while the Persian Gulf is on the west. The strait is 167 kilometres long, with its width varying from 39 kilometres to 95 kilometres. Its width narrows towards the north but still allows for the passage of large vessels. The narrowest point in the strait is just 33km wide. Therefore, the Strait of Hormuz connects the Persian Gulf with the Gulf of Oman and the Arabian Sea. **So, Statement 2 is not correct.**

Bosphorus Strait is the narrowest strait in the world, connecting the Black Sea with the Sea of Marmara (Not the Sea of Azov). The Sea of Marmara connects with the Mediterranean and Aegean Seas via the Dardanelles Strait. It is one of the few straits that act as a boundary between two continents and, at the same time, divides a country into two portions. It is a narrow strait with a maximum length of 31 kilometres and a maximum width of 3.7 kilometres. **So, Statement 3 is not correct.**

The Bab el-Mandeb Strait is a strait of great strategic and economic importance, connecting the Red Sea in the northwest to the Gulf of Aden and the Indian Ocean in the southeast. The strait also separates Arabia in the northeast from the African continent in the southwest. The Bab el-Mandeb further acts as a link between the Indian Ocean and the Mediterranean Sea via the Red Sea and the Suez Canal. Therefore, Bab el-Mandeb Strait connects the Red Sea with the Gulf of Aden and the Indian Ocean. **So, Statement 4 is not correct.**

5. Consider the following pairs:

	Bridges		***Situated in the State of***
1.	Atal Setu	-	Maharashtra
2.	Sudarshan Setu	-	Gujarat
3.	Chenab Rail Bridge	-	Himachal Pradesh
4.	Zuari bridge	-	Tripura

How many of the above pairs are matched correctly?

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

EXPLANATION:

The Mumbai Trans Harbour Link (MTHL), also known as the Atal Bihari Vajpayee Sewri Nhava Sheva Atal Setu bridge, is India's longest sea bridge, covering 21.8 km out of which 16.5 km is over the sea, is expected to see the movement of more than 70,000 vehicles every day.

The bridge originates from Sewri in Mumbai and ends at Nhava Sheva in Uran taluka in Raigad district. It is expected to boost economic development in Navi Mumbai and other nearby areas. The construction of the bridge began in 2018. It is the 12th longest sea bridge in the world. Thus, Atal Setu Bridge is located in Maharashtra. **So, Pair (1) is correct.**

'Sudarshan Setu', the country's longest cable-stayed bridge of 2.32 km, was inaugurated in February 2024 on the Arabian Sea connecting Beyt Dwarka island to mainland Okha in Gujarat's Dwarka district. The bridge, which was known as 'Signature Bridge', has been renamed as 'Sudarshan Setu' or Sudarshan Bridge. Beyt Dwarka is an island near Okha port, which is nearly 30 km from Dwarka town, where the famous Dwarkadhish temple of Lord Krishna is situated. At present, devotees visiting the temple at Beyt Dwarka can travel only during the day by boat, while the construction of the bridge will allow them to travel at all times. **So, Pair (2) is correct.**

Chenab Rail Bridge is located between Bakkal and Kauri in the Reasi district of Jammu and Kashmir (J&K) (Not Himachal Pradesh), India. The 1,315m-long structure built at a height of 359m is the tallest rail bridge in the world, Taller than the Eiffel Tower in Paris. The bridge is a part of the Jammu-Udhampur-Srinagar-Baramulla Rail Line (JUSBRL) project being undertaken by the Ministry of Indian Railways. It forms a crucial link from Katra to Banihal.

Chenab Bridge forms a large steel arch, the first of its kind in India. The bridge includes 17 spans, as well as the 469m main arch span across the Chenab River and viaducts on either side. The bridge is expected to have a shelf life of around 120 years. It will also be able to withstand winds with speeds up to 260 km/per hour and is designed to be earthquake-resistant. **So, Pair (3) is not correct.**

Zuari Bridge is Located on the Zuari River at Cortalim village on the Margao-Panaji National Highway in Goa. The bridge aims to ease the traffic woes of the state. It is the 2nd longest cable-stayed bridge in India. Therefore, Zuari Bridge is located in Goa (Not in Tripura). **So, Pair (4) is not correct.**

6. Consider the following statements regarding wildfires in India:
   1. Human activities such as agricultural burning, mischief and negligence contribute significantly to the occurrence of wildfires in India.
   2. The practice of shifting cultivation reduces the risk of wildfires.
   3. It primarily occurs in montane temperate forests due to the abundance of dry leaves.
   4. Backfires can be a useful tool for controlling wildfires.

   How many of the above statements are correct?

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

EXPLANATION:

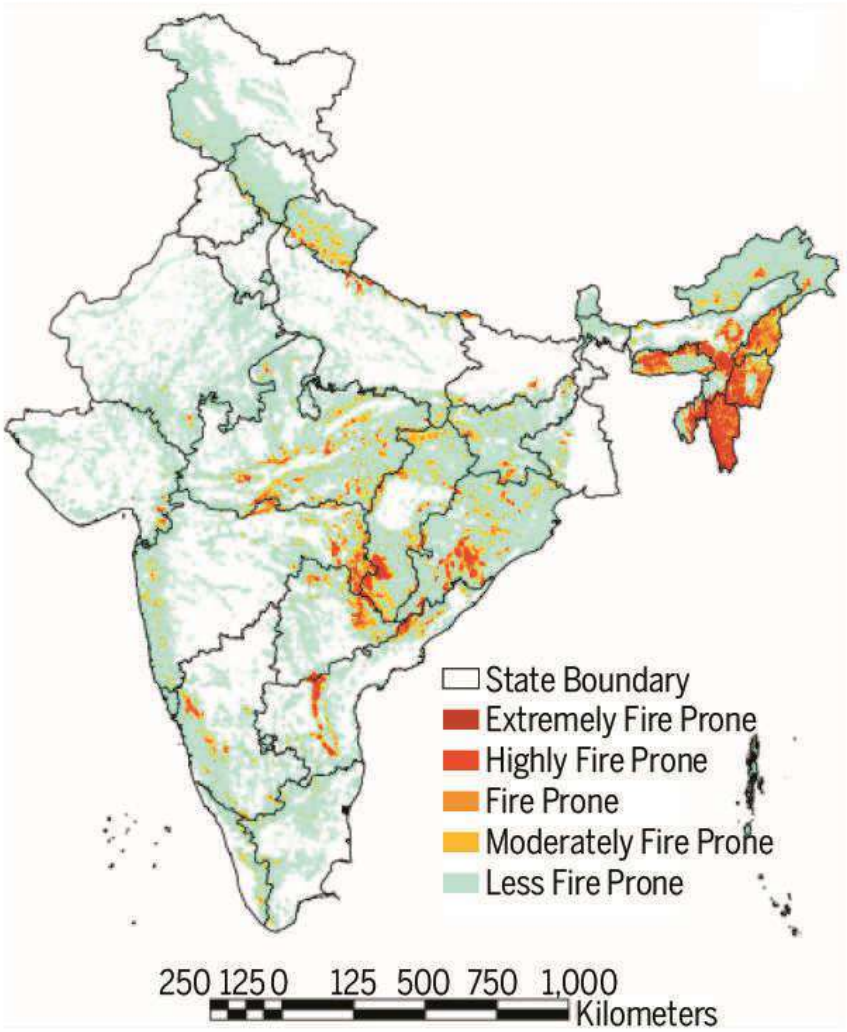
Forest fires, also called wildfires and bush or vegetation fires, are described as uncontrolled, often widespread burning of plants in forests, grasslands, brushlands, and tundra.
Forest fires can be of three types – surface fires, ground fires, and crown fires.

- Surface fires are the easiest fires to control and cause the least damage as they burn only surface plant litter.
- Ground fires, also called underground or subsurface fires, burn within humus, peat, and piles of vegetation that are dry enough to burn. Although such fires spread very slowly, they are often difficult to suppress or fully extinguish, which makes them dangerous.
- Crown fires are the most intense and dangerous forest fires as they burn whole trees and can spread rapidly by spreading across tree tops due to winds.

In India, fires are primarily caused by human activities, according to the Forest Survey of India (FSI), with over 95% of fire incidents of anthropogenic origin. Naturally occurring forest fires can be caused by lightning, volcanic activity, and coal seam fires, though these are relatively rare. Typically, human negligence – often in the form of a carelessly thrown matchstick or cigarette, intentional fires for inducing growth of grass for animal grazing or crop rotation, or a smouldering campfire left unattended – can start an uncontrolled blaze. In many cases, active arson is also suspected. **So, Statement 1 is correct.**

Forest fire is a major cause of changes in forest structure and function. Among various floristic regions, the northeast region of India suffers maximum from the fires due to the age-old practice of shifting cultivation and spread of fires from jhum fields. Hence, the practice of shifting cultivation increases the risk of wildfires. **So, Statement 2 is not correct.**

According to a Forest Survey of India (FSI) report on fire-prone forest areas, more than 36% of Indian forest cover is prone to frequent forest fires, and of this, 10% is highly prone; around 21% of the total forest cover is high to extremely fire-prone.
The dry deciduous forests, which receive low rainfall, face 5-6 dry months and have nutrient-poor soil, such as those in tropical and subtropical latitudes, are more vulnerable to wildfire compared to others. Dry leaves are found in abundance in dry deciduous, as trees in this forest shed their leaves in the dry season to prevent water loss. These areas are in Odisha, Chhattisgarh, Madhya Pradesh and the southern states. Chir pine forests in hilly states are equally prone.
Therefore, wildfires primarily occur in Tropical dry deciduous forests due to the abundance of dry leaves.
So, Statement 3 is not correct.



Map Showing fire prone forest areas under different fire prone classes

A backfire is a fire that is deliberately initiated in front of an active firefront, usually a forest fire, grass fire, or some other type of wildfire. The backfire consumes some of the combustible material and creates a fire belt that the wildfire has difficulty crossing.

At best, the backfire can completely prevent the fire from spreading, but at the same time, there is a risk that the counterfire will spread and may even worsen the wildfire. Backfiring is used only as a last resort. Therefore, Backfires is a useful tool for controlling wildfires. **So, Statement 4 is correct.**

7. Consider the following statements about ocean currents:
   1. In general, warm ocean currents flow from the equator towards the poles, while cold currents flow from the poles towards the equator.
   2. At higher latitudes in the northern hemisphere, warm ocean currents are on the eastern coast of continents.
   3. At lower latitudes in the northern hemisphere, cold ocean currents are on the eastern coast of continents.

   Which of the statements given above is/are correct?

   (a) 1 only

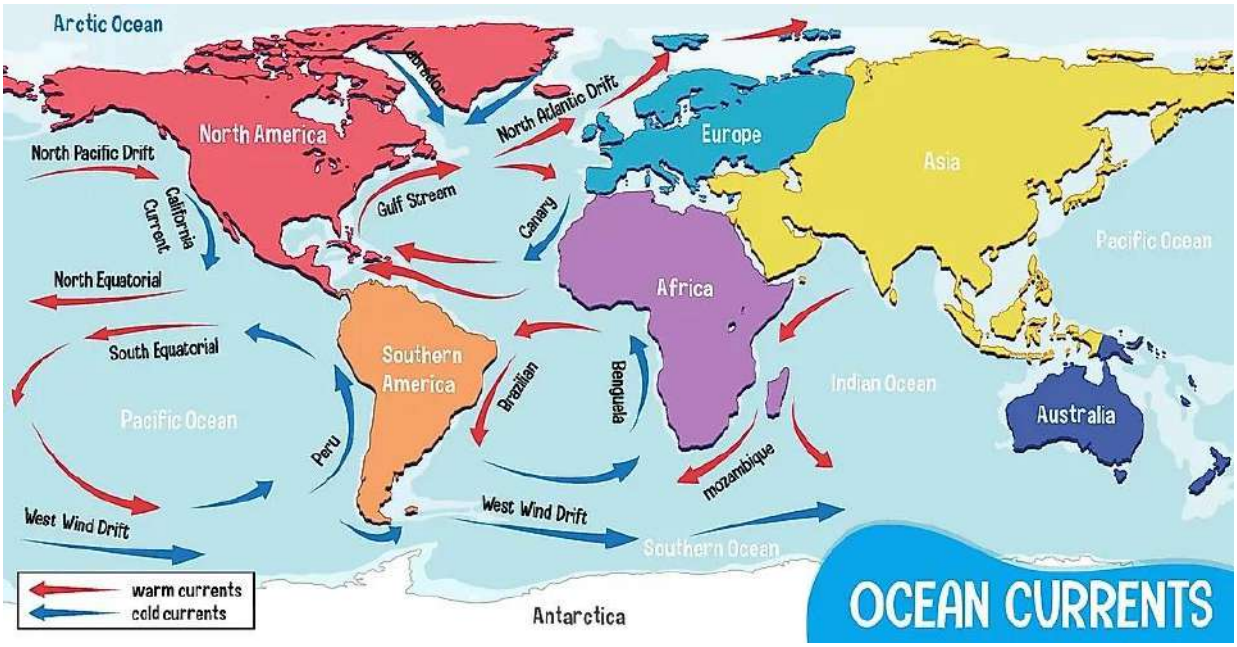
(b) 2 only
(c) 2 and 3 only
(d) 1, 2 and 3

EXPLANATION:

The oceanic circulation transports heat from one latitude belt to another in a manner similar to the heat transported by the general circulation of the atmosphere. The cold waters of the Arctic and Antarctic circles move towards warmer water in tropical and equatorial regions, while the warm waters of the lower latitudes (Near Equator) move poleward. **So, Statement 1 is correct.**

Ocean currents can also be classified based on temperature as cold currents and warm currents:

- Warm currents bring warm water into cold water areas and are usually observed on the east coast of continents in the low and middle latitudes (true in both hemispheres). In the high latitudes of the northern hemisphere, they are found on the west coasts (Not the Eastern Coast) of continents as the westerlies wind system pushes the current along the western coast of the continents. Ex: North Atlantic drift. **So, Statement 2 is not correct.**
- Cold currents bring cold water into warm water areas. These currents are usually found on the west coast of the continents in the low and middle latitudes (true in both hemispheres) and on the east coast in the higher latitudes in the Northern Hemisphere due to the influence of polar easterlies.
  At lower latitudes, the cold currents are on the western coast of the continent due to the presence of the cold polar easterlies under the influence of the Coriolis force. For example, Labrador and Oyashio cold currents. **So, Statement 3 is not correct.**



8. Global Biodiversity Framework Fund will scale up financing for the implementation of which one of the following ?
   (a) Nagoya Protocol on Access to Genetic Resources
   (b) Cartagena Protocol on Biosafety to the Convention on Biological Diversity
   (c) Kunming-Montreal Global Biodiversity Framework
   (d) Doha Amendment to the Kyoto Protocol for emission reduction

EXPLANATION:

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity is an international agreement that aims to share the benefits arising from the utilisation of genetic resources in a fair and equitable way.
It is also known as the Nagoya Protocol on Access and Benefit Sharing (ABS).It was adopted on 29 October 2010 in Nagoya, Japan and entered into force on 12 October 2014, 90 days after the deposit of the fiftieth instrument of ratification.
The Protocol's objective is the fair and equitable sharing of benefits arising from the utilisation of genetic resources, thereby contributing to the conservation and sustainable use of biodiversity.
The Nagoya Protocol sets out core obligations for its contracting Parties to take measures in relation to access to genetic resources, benefit-sharing and compliance.
The Nagoya Protocol will create greater legal certainty and transparency for both providers and users of genetic resources by:

- Establishing more predictable conditions for access to genetic resources.
- Helping to ensure benefit-sharing when genetic resources leave the country providing the genetic resources. **So, Option (a) is not correct.**

The Cartagena Protocol on Biosafety to the Convention on Biological Diversity is an international agreement which aims to ensure the safe handling, transport and use of living-modified organisms (LMOs) resulting from modern biotechnology that may have adverse effects on biological diversity, also taking into account risks to human health.

- It was adopted on 29 January 2000 and entered into force on 11 September 2003.

It establishes an Advance Informed Agreement (AIA) procedure to provide countries with the necessary information for informed decisions before importing such organisms. The Protocol also references a precautionary approach and reaffirms Principle 15 of the Rio Declaration on Environment and Development. It also establishes a Biosafety clearing house to facilitate information exchange and aid countries in implementing the Protocol. **So, Option (b) is not correct.**

The Global Biodiversity Framework Fund (GBFF), established in response to the Convention on Biological Diversity COP15 decisions, will increase financing for the implementation of the Kunming-Montreal Global Biodiversity Framework.

- The fund was ratified by 186 countries and was launched at the Seventh GEF Assembly in Vancouver, Canada, in August 2023.

The GBFF aims to help countries achieve the Kunming-Montreal Global Biodiversity Framework goals and targets, with a strategic focus on strengthening national-level biodiversity management, planning, policy, governance, and finance approaches. **So, Option (c) is correct.**

The Doha Amendment to the Kyoto Protocol is an international agreement that establishes a second commitment period for the Kyoto Protocol, running from 2013 to 2020. The amendment sets a goal of reducing greenhouse gas emissions by 18% compared to 1990 levels for participating countries, which becomes legally binding once the amendment is in force. The amendment also includes:

- A revised list of greenhouse gases is to be reported on by parties in the second commitment period.
- Amendments to several articles of the Kyoto Protocol that specifically referenced issues pertaining to the first commitment period. **So, Option (d) is not correct.**

9. Consider the following statements with respect to the Forest (Conservation) Amendment Act, 2023 :
   1. Forest land situated alongside a rail line or a public road maintained by the Government is exempt from the Act's purview.
   2. The act empowers the central government to issue any direction for the use of forest land for non-forest purposes to any authority in the country.
   3. As per the act, the central government must approve forest diversion plans made by the state governments and the UT administration.

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

   (a) Only one

(b) Only two
(c) All three
(d) None

EXPLANATION:

The Forest (Conservation) Amendment Act, 2023 exempts certain types of land from the provisions of the Act, such as forest land along a rail line or a public road maintained by the government providing access to habitation or to a rail and roadside amenities up to a maximum size of 0.10 hectare.
Forest land that will also be exempted includes:

- Land situated within 100 km from international borders, Line of Control, or Line of Actual Control, for construction of a strategic linear project of national importance and concerning national security,
- Land up to 10 hectares for constructing security-related infrastructure or
- Land proposed to be used for constructing defence-related projects, camps for paramilitary forces, or public utility projects up to five hectares in a left-wing extremism-affected
- area.

These exemptions will be subject to the terms and conditions specified by the central government by guidelines. **So, Statement 1 is correct.**

As per the Forest (Conservation) Amendment Act, 2023, The Central Government may, from time to time, issue such directions (like the use of forest land for non-forest purposes) to any authority under the Central Government, State Government or Union territory Administration or to any organization, entity, or body recognised by the Central Government, State Government or Union territory Administration, as may be necessary for the implementation of this Act. **So, Statement 2 is correct.**

The Act removes the mandatory central government approval for the diversion of forests in certain cases. This means that decisions regarding the diversion of forest land would be taken by state governments and the UT administration only. **So, Statement 3 is not correct.**

10. Which one of the following is ***not*** established under the Wildlife (Protection) Act of 1972?
(a) Central Zoo Authority
(b) National Tiger Conservation Authority
(c) Animal Welfare Board of India
(d) National Board for Wildlife

EXPLANATION:

Central Zoo Authority was established under the Wildlife (Protection) Act of 1972 with a separate chapter, Chapter IVA, which contains Sections 38 A to 38 J .
Accordingly, the Central Zoo Authority was established as a statutory body under the Ministry of Environment & Forests by the Government of India in the year 1992. The Authority consists of a Chairman, ten members and a Member Secretary.
The main objective of this authority is to complement and strengthen the national effort to conserve the country's rich biodiversity, particularly fauna, as per the National Zoo Policy, 1998. Other objectives of this Authority include enforcing minimum standards and norms for the upkeep and healthcare of animals in Indian zoos and controlling the mushrooming of unplanned and ill-conceived zoos.
So, Option (a) is not correct.

The National Tiger Conservation Authority (NTCA) has been constituted under section 38 L (1) of the Wildlife (Protection) Act, 1972. Further, as per section 38 L (2), the authority consists of the Minister in charge of the Ministry of Environment and Forests (as Chairperson), the Minister of State in the Ministry of Environment and Forests (as Vice-Chairperson), three members of Parliament, the Secretary of the Ministry of Environment and Forests, and other members.
The authority derives its power from the Wildlife (Protection) Act of 1972 and functions under the guidance of the Chairperson, Vice-Chairperson and members. **So, Option (b) is not correct.**

The Animal Welfare Board of India is a statutory advisory body on Animal Welfare Laws and promotes animal welfare in the country. It was established in 1962 under Section 4 of the Prevention of Cruelty to Animals Act, 1960 (not under the Wildlife Protection Act of 1972).

From ensuring that animal welfare laws in the country are diligently followed to providing grants to Animal Welfare Organizations and advising the Government of India on animal welfare issues, the Board has been the face of the animal welfare movement in the country for the last 60 years. The Board consists of 28 Members, including 6 Members of Parliament (2 Members of Parliament from Rajya Sabha and 4 Members of Parliament from Lok Sabha). The term of office of Members is for 3 years. **So, Option (c) is correct.**

Due to the rapid decline in the wildlife population, the Government of India constituted an advisory body designated as the Indian Board for Wildlife (IBWL) in 1952. As per the amendment to The Wildlife (Protection) Act in 2002, a provision was incorporated for the constitution of the National Board for Wildlife, replacing the Indian Board for Wildlife.

The National Board for Wildlife has 47 members, with the Prime Minister in the Chair. The Minister in charge of the Ministry of Environment & Forests in the Central Government is the Vice-Chairperson. The Board is responsible for the promotion of conservation and development of wildlife and forests. Thus, the National Board for Wildlife was established under the Wildlife (Protection) Act of 1972. **So, Option (d) is not correct.**

11. Consider the following statements:

Statement-I:

Volatile organic compounds (VOCs) are a common contaminant of groundwater.

Statement-II:

VOCs are compounds that have a low vapour pressure and high water solubility.

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:

Volatile organic compounds (VOCs) are chemicals that dissolve in water and vaporize into the air. They are common groundwater contaminants in industries, agriculture, transportation, and daily activities. Once released into groundwater, many VOCs are persistent and can migrate to drinking-water supply wells.

Many VOCs are human-made chemicals used in paints, pharmaceuticals, and refrigerants. They are typically industrial solvents like trichloroethylene, fuel oxygenates like methyl tertiary butyl ether (MTBE), or by-products produced by chlorination in water treatment, such as chloroform. Volatile organic compounds (VOCs) are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects.

VOCs are organic compounds with high vapour pressure and low water solubility. They prefer to evaporate into the atmosphere rather than remain dissolved in water.

So, Statement I is correct and Statement II is incorrect.

12. Consider the following statements with respect to the cadmium:

1. It is a heavy metal used in batteries, paints, plastics and electroplating.
2. It is released into the atmospheric environment from metal production and fossil fuel combustion.
3. Fertilizers sourced from phosphate rock have the potential to release cadmium into the soil.
4. Cadmium is considered a class one carcinogen by the World Health Organization.

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

(a) Only one

(b) Only two

(c) Only three

(d) All four

EXPLANATION:

Cadmium is a non-essential and toxic element for humans, mainly affecting the kidneys and skeleton. It is also a carcinogen by inhalation. Cadmium accumulates in bone and may serve as a source of exposure later in life. Cadmium is used in batteries, paints, plastics, and electroplating, among other things. Cadmium is considered a class one carcinogen by the World Health Organization (WHO), which means there is strong evidence that cadmium causes cancer. **So, Statements 1 and 4 are correct.**

Cadmium is released into the atmospheric environment from metal production and fossil fuel combustion. It is naturally present in the earth's crust and oceans but can also be added to the soil through natural and anthropogenic activities, such as irrigation waters, manure and fertilisers derived from phosphate rock. When these phosphate rocks are mined, they can release cadmium concentrations of as much as 300mg/kg when used in the soil as fertilisers. Phosphorous fertilisers and sewage sludges are also major sources of environmental releases of cadmium.
So, Statements 2 and 3 are correct.

13. Consider the following pairs:

Sl.No	*(Ramsar sites)*		*(States)*
1.	Longwood Shola Reserve Forest	-	Kerala
2.	Karaivetti Bird Sanctuary	-	Tamil Nadu
3.	Magadi kere Conservation Reserve	-	Andhra Pradesh
4.	Aghanashini Estuary	-	Karnataka
5.	Ankasamudra Bird Conservation Reserve	-	Goa

How many of the pairs given above are correctly matched?

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

EXPLANATION:

A Ramsar site is a wetland designated to be of international importance under the Ramsar Convention, an international environmental treaty signed in February 1971 in Ramsar, Iran, under the auspices of UNESCO. The pact is also known as The Convention on Wetlands.
Longwood Shola Reserve Forest is located in the Nilgiris District, which is one of the Important Bird Areas (IBAs) of Tamil Nadu (not in Kerala). It has been declared as a Ramsar Site in 2024. It features intermittent freshwater marshes and streams nested within a "shola" (a tropical montane forest of southern India which is usually found in patches separated by grasslands). It is the only natural shola forest remaining in the vicinity of Kothagiri and has very high species endemism.
It is one of the key conservation areas of the endangered black-chinned Nilgiri laughing thrush, the Nilgiri blue robin and the vulnerable Nilgiri wood pigeon. Encroachment, invasive species and deforestation mainly threaten it. **So, Pair (1) is not correct.**

Karaivetti Bird Sanctuary, located in the Ariyalur district of Tamil Nadu, was recognised as a Ramsar site in 2024. It is one of the largest inland freshwater lakes in the State and provides an important stopover and foraging ground for birds migrating along the Central Asian Flyway.
When the water level starts receding after January, larger birds such as painted storks flock to the Site; it has recorded one of the largest congregations of water birds among all lakes in the State of Tamil Nadu. The Site also provides a breeding habitat for the vulnerable Indian flap-shelled turtle. During the driest period, between July and October, the water level of the Site is maintained with water from the Mettur Dam. The lake water is used to irrigate about 4,000 hectares of surrounding farmland. **So, Pair (2) is correct.**

Magadi Kere Conservation Reserve is a human-made wetland primarily constructed to store monsoon rainwater for irrigation in a rural area of the Gadag district, Karnataka (not in Andhra Pradesh). In January 2024, the reserve was recognized as a Ramsar Protected Site. The Site now provides stable habitat conditions

for more than 165 bird species and has been declared a conservation reserve nationally and an Important Bird and Biodiversity Area (IBA) globally.
It is one of the largest wintering grounds for bar-headed goose in southern India. The globally endangered Indian pangolin has also been observed in the vicinity of the Site. **So, Pair (3) is not correct.**

Aghanashini Estuary, a Ramsar site declared in 2024, is an estuary where the Aghanashini River flows into the Arabian Sea in the Uttar Kannada district of Karnataka State. In addition to its estuarine and shallow marine waters, it features rocky and pebble shores, intertidal mudflats, some aquaculture ponds, and rice fields.
These diverse environments provide habitats to more than 80 fish, 115 birds and 45 mangroves and mangrove-associated species, including globally threatened species such as halavi guitarfish, lesser adjutant and Indian river tern.
In the estuary, farmers practice traditional farming to grow salt-tolerant rice called "kagga", which is one of the specialities of the region. **So, Pair (4) is correct.**

Ankasamudra Bird Conservation Reserve, a Ramsar site, is a human-made wetland built for storing monsoon run-off water coming from the Tungabhadra River and providing irrigation to surrounding drought-risk areas.
There are also nine endemic fish species in the Reserve, three of which are globally endangered: tiger loach, aruli barb and nukta. Excessive growth of the invasive alligator weed, the shrub *Prosopis juliflora* and the African catfish are threatening the native fish and waterbirds.
Ankasamudra Bird Conservation Reserve (ABCR) is the first bird conservation reserve in the North Karnataka or Kalyan Karnataka region (not in Goa). It was declared as a Conservation Reserve for the protection and conservation of resident and migratory aquatic birds under section 36-A of the Wildlife (Protection) Act, 1972. **So, Pair (5) is not correct.**

14. With reference to the United Nations Forum on Forests (UNFF), consider the following statements:
    1. UNFF reviews the implementation of the first-ever UN Strategic Plan for Forests 2017-2030.
    2. The Global Forest Goals and targets, part of the UN Strategic Plan for Forests 2017-2030, are binding on the members of UNFF.
    3. India is a founding member of UNFF.

    How many of the statements given above is/are correct?
    (a) Only one
    (b) Only two
    (c) All three
    (d) None

EXPLANATION:

The United Nations Strategic Plan for Forests 2017–2030 (UNSPF) provides a global framework for actions at all levels to sustainably manage all types of forests and trees outside forests and halt deforestation and forest degradation. The United Nations Forum on Forests (UNFF) reviewed the implementation of the UN Strategic Plan for Forests 2017–2030 in April 2021. The plan includes six Global Forest Goals and 26 targets, including a 3% increase in forest area by 2030, which would be an increase of 120 million hectares. The plan also aims to stop deforestation and forest degradation and eradicate extreme poverty for people who depend on forests. **So, Statement 1 is correct.**

The Global Forest Goals and targets are voluntary (not binding) and universal. They support the objectives of the international arrangement on forests. They are aimed at contributing to progress on the Sustainable Development Goals, the Aichi Biodiversity Targets, the Paris Agreement adopted under the United Nations Framework Convention on Climate Change and other international forest-related instruments, processes, commitments and goals. **So, Statement 2 is not correct.**

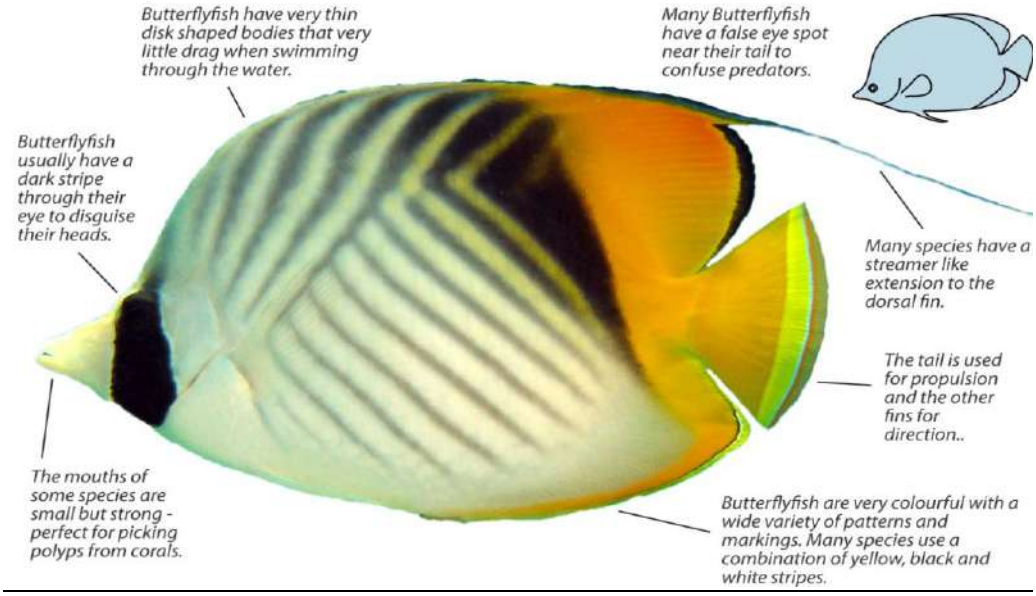
India is a founding member of the UNFF, which promotes the management, conservation, and sustainable development of all types of forests.The UN Forum on Forests is a functional commission of the UN Economic and Social Council (ECOSOC) with universal membership. Since its establishment in 2000, the Forum has set many milestones including the first UN Forest Instrument in 2007, the Global Forest Financing

Facilitation Network (GFFFN) in 2015, and adoption of the first UN Strategic Plan for Forests 2030 and its six Global Forest Goals in 2017.
So, Statement 3 is correct.

15. It is one of the highly coveted fish among marine aquarium enthusiasts. It relies primarily on coral reefs to obtain a significant portion of its food. Lakshadweep has declared the species as its state animal due to its significance. Which of the following best fits the above description?
    (a) Peppermint Angelfish
    (b) Silver Arowana
    (c) Yellow Watchman Goby
    (d) Threadfin Butterflyfish

EXPLANATION:

Recently, Lakshadweep has declared Threadfin butterflyfish as its State animal owing to its importance. The fish is featured in the official seal of Lakshadweep in pair, flanking Ashoka Chakra crested by a palm tree, below which a banner in the colours of the Indian flag. It is one of the most sought-after fish for marine aquariums. Its common name comes from the distinctive threadlike extension that hangs off the rear end of the dorsal fin of the adult fish. Threadfin butterflyfish are dependent on coral reefs to obtain much of their food. Hence, the fish may be used as a bio-indicator in order to monitor coral reef ecosystems. **So, Option (d) is correct.**



16. Consider the following statements with respect to the Peatland Ecosystem:
    1. Peatlands are characterised by waterlogged, acidic conditions that slow down the decomposition of organic matter.
    2. Peatlands cover approximately 3% of the Earth's land surface and 5% of global anthropogenic gas emissions from its degradation.
    3. Peatlands store more carbon than all other vegetation types in the world combined.

    Which of the statements given above are correct ?
    (a) 1 and 2 only
    (b) 2 and 3 only
    (c) 1 and 3 only
    (d) 1, 2 and 3

EXPLANATION:

Peatlands develop in areas with waterlogged, acidic, and low-oxygen conditions that prevent plant material from fully decomposing. These conditions are controlled by climatic conditions such as precipitation and

temperature, although terrain relief is a major factor as waterlogging occurs more easily on flatter ground and in basins. Consequently, the production of organic matter exceeds its decomposition, which results in a net accumulation of peat.
In peatlands, year-round waterlogged conditions slow plant decomposition to the extent that dead plants accumulate to form peat. This stores the carbon the plants absorb from the atmosphere within peat soils, providing a net-cooling effect and helping to mitigate the climate crisis.
So, Statement 1 is correct.

Peatlands are a type of wetland that occurs in almost every country and covers at least 3% of the global land surface. The term 'peatland' refers to the peat soil and wetland habitats growing on the surface. Peatlands cover about 3% of the Earth's surface but store almost a third of the world's carbon.
They are the largest natural terrestrial carbon store, storing more carbon than all other vegetation types combined. Damaged peatlands are a major source of greenhouse gas emissions, responsible for almost 5% of global anthropogenic CO2 emissions. Peatland restoration can significantly reduce emissions. **So, Statements 2 and 3 are correct.**

17. In the context of ecological succession, which of the following circumstances results in the occurrence of an 'Autogenic' succession?
    (a) When a community modifies its own environment, it becomes unsuitable for that community and is replaced by a new community.
    (b) When the replacement of an existing community takes place due to some external forces.
    (c) When an area previously occupied by a community is denuded by some natural or human activity.
    (d) When primary producers in a community are in the majority during ecological succession.

EXPLANTION:

Ecological succession is the process of change in the species and habitat that makes up an area changes over time. Gradually, these communities replace one another until a "climax community" like a mature forest, is reached or until a disturbance, like a fire, occurs.
After the succession has begun, sometimes the community itself modifies its environment, which becomes unsuitable for that community, and it is replaced by a new community. This type of succession is known as autogenic succession, as it is self-made succession. **So, Option (a) is correct.**

In some cases, the replacement of the existing community takes place due to some external force (e.g., fire or human activities) and not by the existing community. This is called allogenic succession. **So, Option (b) is not correct.**

Secondary succession starts in an area which is previously occupied by a community. Still, it is now denuded by some natural or human activities like fire, storms, tree cutting, disease outbreaks, cultivation, biotic interventions, etc. After several years, some new community again occupies that area. It is called secondary succession. The area does not have living matter above ground. Still, its substratum is built up with the nutrients, organic matter or propagules deposited by previously occupied communities. Thus, the process of secondary succession is comparatively more rapid than primary succession. **So, Option (c) is not correct.**

The dominance of green plants and trees characterises autotrophic succession. It starts in a predominantly inorganic environment, and energy flow is maintained indefinitely, followed by an increase in the organic matter content in the ecosystem. In this type of succession, the rate of production (P) is more than the rate of respiration (R). Initially, primary producers are in the majority, but later on biomass of organisms' increases, and the ratio of production and respiration remains one. The diversity of species increases with an increase in organic matter content. **So, Option (d) is not correct.**

18. Which of the following taxes of the Government of India is/are direct taxes?
    1. Securities Transaction Tax
    2. Minimum Alternate Tax
    3. Equalization Levy
    4. Excise Duty

    Select the correct answer using the codes given below:
    (a) 1 and 2 only

(b) 3 and 4 only
(c) 1, 2 and 3 only
(d) 2 and 3 only

EXPLANATION:

As the name suggests, direct taxes are those that are levied directly on taxpayers, which are the income tax, wealth tax, corporation tax, etc. In other words, it is a type of tax where the impact and the incidence fall under the same category. Direct taxes in India are overseen by the Central Board of Direct Taxes (CBDT). It was formed as a result of the Central Board of Revenue Act 1924.
Securities Transaction Tax (STT) is a direct tax levied on transactions involving the purchase or sale of securities such as stocks, derivatives, and equity-oriented mutual funds in the Indian stock market. Introduced in India in 2004, STT is collected by the government to help regulate and generate revenue from stock market transactions. The Securities Transaction Tax is imposed on both the buyer and the seller of securities and is calculated as a percentage of the transaction value. **So, Statement 1 is correct.**

MAT, or Minimum Alternate Tax, is a provision in Direct tax laws to limit tax exemptions availed by companies so that they pay at least a minimum amount of corporate tax to the government. The key reason for the introduction of MAT is to ensure minimum levels of taxation for all domestic and foreign companies in India. **So, Statement 2 is correct.**

The Equalisation Levy is a direct tax. It was introduced in India in 2016 with the intention of taxing digital transactions, i.e. the income accruing to foreign e-commerce companies from India. It is aimed at taxing business-to-business transactions. The applicability of the Equalisation Levy depends on the following factors:

- The equalisation levy applies only to specified services such as online advertising, digital platforms, and e-commerce.
- The amount of consideration received by the non-resident exceeds ₹ 1 lakh in a financial year.
- Suppose the recipient is a resident of India or has a permanent establishment in India. **So, Statement 3 is correct.**

Excise Duty is an indirect tax levied and collected on the goods for their production, licensing and sale. An indirect tax paid to the Government of India by producers of goods, excise duty, is the opposite of Customs duty in that it applies to goods manufactured domestically in the country. At the same time, Customs is levied on those coming from outside of the country.
At the central level, excise duty earlier used to be levied as Central Excise Duty, Additional Excise Duty, etc. However, the Goods and Services Tax (GST), introduction in July 2017, subsumed many types of excise duty. Today, excise duty applies only to petroleum and liquor. **So, Statement 4 is not correct.**

19. Which of the following is ***not*** correct with respect to money ?
(a) Money acts as an intermediary between buyers and sellers.
(b) Fiat money derives its value from the material using which it is made.
(c) A currency's legal tender status imposes a binding obligation on the receiver to accept it in the settlement of claims.
(d) Money has the utility of being a unit of account.

EXPLANATION:

Money is a system of value that facilitates the exchange of goods in an economy. Using money allows buyers and sellers to pay less in transaction costs compared to barter trading.
Money can act as a unit of account, can store value and be used for repayment of debt. It is a unit of account - a socially accepted standard unit with which things are priced. **So, Option (a) and Option (d) is correct.**

Though a hundred-rupee note can be used to obtain commodities worth Rs 100 from a shop, the value of the paper itself is negligible – certainly less than Rs 100. Similarly, the value of the metal in a five-rupee coin is probably not worth Rs 5. The value of the currency notes and coins is derived from the guarantee provided by the issuing authority of these items. Every currency note bears on its face a promise from the Governor of RBI that if someone produces the note to RBI or any other commercial bank, RBI will be responsible for giving the person purchasing power equal to the value printed on the note. The same is also true of coins. Currency notes and coins are, therefore, called fiat money. They do not have intrinsic value

like a gold or silver coin. Thus, fiat money does not derive its value from the material using which it is made. **So, Option (b) is not correct.**

Currency and coins are also called legal tenders as any citizen of the country cannot refuse them for settlement of any transaction. Cheques drawn on savings or current accounts, however, can be refused by anyone as a mode of payment. Hence, demand deposits are not legal tenders. **So, Option (c) is correct.**

20. Consider the following statements about the budget of the Government of India:
    1. Effective Revenue Deficit is the difference between Revenue Deficit and the portion of Capital Expenditure used for the creation of assets.
    2. Effective Capital Expenditure is the difference between Capital Expenditure and the portion of Revenue Expenditure used for the creation of capital assets.

    Which of the above statements is/are ***not*** correct?
    (a) 1 only
    (b) 2 only
    (c) Both 1 and 2
    (d) Neither 1 nor 2

EXPLANATION:

When a government spends more than it collects by way of revenue, it incurs a budget deficit. There are various measures that capture government deficits, and they have their implications for the economy.
The revenue deficit refers to the excess of the government's revenue expenditure over revenue receipts.
Revenue deficit = Revenue expenditure – Revenue receipts
A fiscal indicator of effective revenue deficit was introduced in the Union Budget of 2011-12 to segregate the grants-in-aid, which were used to finance current expenditures and those used to create capital assets. Section 2(aa) of the amended FRBM Act (May 2012) defined 'effective revenue deficit' as the difference between the revenue deficit and grants (part of revenue expenditure, not the portion of Capital Expenditure) for the creation of capital assets. **So, Statement 1 is not correct.**

Capital expenditure (Capex) is the money spent by the government on the development of machinery, equipment, buildings, health facilities, education, etc. It also includes the expenditure incurred on acquiring fixed assets like land and investments by the government that give profits or dividends in future.
Effective Capital Expenditure (Eff-Capex) refers to the sum (not the difference) of Capital Expenditure and Grants-in-Aid (a portion of Revenue Expenditure) for Creation of Capital Assets. **So, Statement 2 is not correct.**

21. Consider the following statements about inflation:
    1. It is a situation where there is a fall in the purchasing power of money.
    2. It is a situation where there is a rise in the price level of goods and services.

    Which of the above statements is/are correct?
    (a) 1 only
    (b) 2 only
    (c) Both 1 and 2
    (d) Neither 1 nor 2

EXPLANATION:

Inflation is the rate of increase in prices over a given period. It is typically a broad measure, such as the overall increase in prices or the increase in the cost of living in a country. Inflation also results in a fall in the purchasing power of money. **So, Statement 1 is correct.**

Inflation refers to the rise in the price level of most goods and services of daily or common use, such as food, clothing, housing, recreation, transport, consumer staples, etc. Inflation measures the average price change in a basket of commodities and services over time. Commodity prices and consumer inflation are quite different phenomena. Basic commodity prices no longer have any significant effect on long-term inflation. Consumer inflation figures are based on the prices consumers pay for the things they ordinarily buy directly.

Consumers do not buy commodities directly. They buy manufactured consumer products. Commodity prices affect consumer prices indirectly, and partially. **So, Statement 2 is correct.**

22. Consider the following statements about the Index of Industrial Production (IIP) in India:
    1. IIP data is released by the Ministry of Commerce and Industry on a monthly basis.
    2. The mining sector is assigned the least weightage in the IIP data.
    3. The performance of IIP data is an indication of the overall growth of all three sectors of our economy.

    How many of the above statements are ***not*** correct?
    (a) Only one
    (b) Only two
    (c) All three
    (d) None of the above

EXPLANATION:

The Index of Industrial Production (IIP) data is compiled and published by the Central Statistical Organisation (CSO) every month, which operates under the Ministry of Statistics and Programme Implementation (not the Ministry of Commerce and Industry). **So, Statement 1 is not correct.**

The industrial sector in India is divided into three broad sectors - mining, manufacturing and electricity. Manufacturing accounts for 79.4 per cent of the weight in IIP, and the weights assigned to mining and electricity are 10.5 per cent and 1.2 per cent, respectively. Thus, Electricity is assigned the least weightage in the IIP data. **So, Statement 2 is not correct.**

The Index of Industrial Production (IIP) is the only official monthly indicator which gives us an idea about the level of economic activity in manufacturing in the Indian economy. Three-fourths of the IIP basket is manufacturing. What makes the IIP even more useful is the fact that it also gives a use-based classification – capital goods, consumer goods, etc. – of industrial activity. Thus, IIP data is an indication of not the overall growth of all three sectors of our economy; rather, it is an indication of the manufacturing sector. **So, Statement 3 is not correct.**

23. "Vocal for Local" is an initiative of which of the following?
    (a) SIDBI
    (b) EXIM
    (c) NABARD
    (d) NITI Aayog

EXPLANATION:

NITI Aayog launched the 'Vocal for Local' initiative under its Aspirational Blocks Programme on 13th March 2024. This initiative aims to encourage a spirit of self-reliance among the populace of Aspirational Blocks, propelling them towards sustainable growth and prosperity.

- It is being implemented in partnership with Government e-marketplace (GeM) and Open Network for Digital Commerce (ONDC) platforms. GeM and ONDC will provide technical and operational support for e-commerce onboarding, establishing linkages, enhancing financial and digital literacy, facilitating documentation and certification, and promoting skill development, among other supportive measures.
- The logo for 'Aakanksha' was also unveiled under the 'Vocal for Local' initiative. As a part of this initiative, indigenous local products from 500 Aspirational Blocks have been mapped and consolidated under Aakanksha.

So, Option (d) is correct.

24. In the context of the Indian economy, jobless growth is predominant in which of the following sectors?
    1. Primary sector
    2. Secondary sector
    3. Tertiary sector

    Select the correct answer using the codes given below :
    (a) 1 only

(b) 1 and 2 only
(c) 3 only
(d) 1, 2 and 3

EXPLANATION:

The concept of jobless growth refers to a situation where economic growth does not lead to job creation. In India, jobless growth has become a significant problem. Even though India is one of the world's fastest-growing economies, with a projected growth rate of 6.9% in the current year, unemployment is currently at a three-month high of 7.8%. Experts attribute India's jobless growth to several factors. For instance, much of the country's economic growth is driven by finance, real estate, and IT sectors (Tertiary sector), which are not major job creators. Therefore, Jobless growth is predominant in the Tertiary sector. **So, Option (c) is correct.**

Trends in Employment Pattern (Sector-wise and Status-wise), 1972-2012 (in %)

Item	*1972-73*	*1983*	*1993-94*	*1999-2000*	*2011-2012*
Sector					
Primary	74.3	68.6	64	60.4	48.9
Secondary	10.9	11.5	16	15.8	24.3
Services	14.8	16.9	20	23.8	26.8
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Status					
Self-employed	61.4	57.3	54.6	52.6	52.0
Regular Salaried Employees	15.4	13.8	13.6	14.6	18.0
Casual Wage Labourers	23.2	28.9	31.8	32.8	30.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

25. Consider the following statements about deposits into a banking system:
1. An increase in time deposits is likely to increase the money supply in an economy.
2. Demand deposits tend to fetch a higher interest rate for the depositor than time deposits.
3. While demand deposits are classified as liabilities for a bank, time deposits are classified as assets.

How many of the above statements is/are correct?

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

EXPLANATION:

Term deposits, also known as time deposits, are investment deposits made for a predetermined period, ranging from a few months to several years. The depositor receives a predetermined rate of interest on the term deposit over the specified period. Whenever rupees (currency) are deposited into a bank account, the bank's total reserves increase. The bank keeps some of it on hand as required reserves, but it loans the excess reserves out. When that loan is made, it increases the money supply. Thus, increase in time deposit with bank leads to more money in the banks to lend with low interest rate, it rises money supply in the economy. **So, Statement 1 is correct.**

When compared to demand deposits, term deposits often offer higher interest rates. Typically, a term deposit's interest rate is predetermined at the time the account is opened and remains that way for the duration of the term. In exchange for liquidity, demand deposits typically have lower interest rates as their main purpose is to offer simple transactional services rather than produce a sizable interest revenue. **So, Statement 2 is not correct.**

A bank deposit is a liability that the bank owes to the depositor. When a customer opens an account and deposits cash, they give up legal title to the cash, which becomes an asset of the bank. In turn, the account is a liability to the bank.
According to the Reserve Bank of India (RBI) Act, 1934, a bank's liabilities can be in the form of time deposits, demand deposits, borrowings, or other miscellaneous items.
Demand deposits are liabilities for a bank because the bank is required to pay the depositor on demand. Demand deposits are considered current liabilities in a bank's books because the bank must pay the depositor whenever required.
A time deposit is a bank account with a fixed interest rate and a pre-set maturity date. The money must remain in the account for the fixed term to earn the stated interest rate. Time deposits are also known as term deposits or certificates of deposit (CDs). Thus, time deposits are classified as liabilities for a bank. **So, Statement 3 is not correct.**

26. Consider the following statements :
    1. Maintaining price stability
    2. Protecting depositors' interest
    3. Facilitating external trade
    4. Circulating an adequate quantity of currency notes and coins to the public
    5. Performing a developmental role to support national objectives

    How many of the above are functions of the Reserve Bank of India ?
    (a) Only two
    (b) Only three
    (c) Only four
    (d) All five

EXPLANATION:

The Reserve Bank of India (RBI), the central bank of India, began operations on April 1, 1935, under the Reserve Bank of India Act of 1934. It has a monopoly over the issue of bank notes and the monetary system of the country. These powers and functions as to issue of bank notes and currency systems are governed by the Reserve Bank of India Act, 1934. Besides, the Banking Regulation Act of 1949 also empowers certain powers and Functions of the Reserve Bank.
The main purpose of the RBI is to conduct consolidated supervision of the financial sector in India, which is made up of commercial banks, financial institutions, and non-banking finance firms. The Main functions of the Reserve Bank of India are as follows:

- Monetary Authority:
  - Formulates, implements, and monitors the monetary policy.
  - Objective: maintaining price stability while keeping in mind the objective of growth. **So, Statement 1 is correct.**
- Regulator and supervisor of the financial system:
  - Prescribes broad parameters of banking operations within which the country's banking and financial system functions.
  - Objective: maintain public confidence in the system, protect depositors' interest and provide cost-effective banking services to the public. **So, Statement 2 is correct.**
- Manager of Foreign Exchange
  - Manages the Foreign Exchange Management Act, 1999.
  - Objective: to facilitate external trade and payment and promote orderly development and maintenance of the foreign exchange market in India. **So, Statement 3 is correct.**
- Issuer of currency:
  - Issues, exchanges and destroys currency notes as well as put into circulation coins minted by the Government of India. **So, Statement 4 is correct.**

- Objective: to give the public an adequate quantity of supplies of currency notes and coins in good quality.

➢ Developmental role
- Performs a wide range of promotional functions to support national objectives. **So, Statement 5 is correct.**

➢ Regulator and Supervisor of Payment and Settlement Systems:
- Introduces and upgrades safe and efficient modes of payment systems in the country to meet the requirements of the public at large.
- Objective: maintain public confidence in the payment and settlement system

➢ Related Functions
- Banker to the Government: performs merchant banking function for the central and the state governments; also acts as their banker.
- Banker to banks: maintains banking accounts of all scheduled banks.

27. How many of the following are instruments of the capital market ?
1. Commercial Papers
2. Debentures
3. Dated Government Securities
4. Equity shares

Select the correct answer using the codes given below:
(a) Only one
(b) Only two
(c) Only three
(d) All four

EXPLANATION:

Capital markets refer to the venues where funds are exchanged between suppliers and those who seek capital for their own use. Suppliers in capital markets are typically banks and investors while those who seek capital are businesses, governments, and individuals. Capital markets are used to sell different financial instruments, including equities and debt securities. These markets are divided into two categories: primary and secondary markets. The best-known capital markets include the stock market and the bond markets.

The main instruments traded in the capital market are –
➢ Equity shares. **So, Statement 4 is correct.**
➢ Debentures. **So, Statement 2 is correct.**
➢ Bonds
➢ Preference shares etc.
➢ Dated Government Securities. **So, Statement 3 is correct.**

The money market is a market for short term funds which deals in monetary assets whose period of maturity is upto one year. These assets are close substitutes for money.

The main instruments traded in the money market are short term debt instruments such as
➢ T-bills
➢ Trade bills reports
➢ Commercial paper
➢ Certificates of deposit. **So, Statement 1 is not correct.**

28. Consider the following statements with respect to the Comptroller and Auditor General of India (CAG):
1. The office of the CAG was created by a law of the Parliament.
2. CAG is the head of the Indian audit & account department and the chief guardian of public purse.

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 Constitution of India under Article 148 provides for an independent office of the Comptroller and Auditor General of India (CAG). He is appointed by the President of India by a warrant under his/her hand and seal. The CAG holds office for six years or up to the age of 65 years, whichever is earlier.
Thus, the Office of the CAG of India was not created by a Law passed by the Parliament of India. **So, Statement 1 is not correct.**

- The Comptroller and Auditor General of India is the head of the Indian Audit and Accounts Department. He/she is the guardian of the public purse and controls the entire financial system of the country at both the levels of the Centre and the state. His/ her duty is to uphold the Constitution of India and the laws of Parliament in the field of financial administration.
- The Constitution (Article 149) authorizes the Parliament to prescribe the duties and powers of the CAG concerning the accounts of the Union and the states and any other authority or body. Accordingly, the Parliament enacted the CAG's (Duties, Powers, and Conditions of Service) Act, 1971.
- The CAG acts as a guide, friend, and philosopher of the Public Accounts Committee of the Parliament. He/she audits the accounts of all Government Companies in accordance · with the provisions of the Companies Act. **So, Statement 2 is correct.**

29. Which of the following statements are the features of the Fundamental Rights provided in the Constitution of India?
    1. They strike a balance between individual liberty and social control.
    2. Some fundamental rights are available against the arbitrary action of private individuals.
    3. Some fundamental rights are available only to the citizens of India.
    4. All the fundamental rights are self-executory in nature.

    Select the correct answer using the codes given below:

    (a) 1, 2 and 3 only
    (b) 2 and 4 only
    (c) 1 and 3 only
    (d) 1, 2, 3 and 4

EXPLANATION:

- The Fundamental Rights are enshrined in Part III of the Constitution from Articles 12 to 35. Part III of the Constitution is rightly described as the Magna Carta of India. It contains a very long and comprehensive list of 'justiciable' Fundamental Rights.
- Fundamental Rights are not absolute but qualified. The state can impose reasonable restrictions on them. However, whether such restrictions are reasonable or not is to be decided by the courts. Thus, they strike a balance between the rights of the individual and those of the society as a whole, between individual liberty and social control.
- Articles 14 (Equality before the law and equal protection of law), 19 (Right to Freedom), and 21(Protection of life and personal liberty) provide for individual liberty. But Article 19 also contains reasonable restrictions which provide for social control. **So, Statement 1 is correct.**

- The Fundamental Rights are available against the arbitrary action of the state. However, some of them are also available against the actions of private individuals.
- For example, Article 17 abolishes 'untouchability' and forbids its practice in any form. The Supreme Court held that the right under Article 17 is available against private individuals, and it is the constitutional obligation of the State to take necessary action to ensure that this right is not violated. Article 23 prohibits traffic in human beings. This article protects individuals not only against the State but also against private persons. **So, Statement 2 is correct.**

Some of the Fundamental Rights are available only to the citizens of India, while others are available to all persons, whether citizens, foreigners, or legal persons like corporations or companies.

For example, the Prohibition of discrimination on the grounds of religion, race, caste, sex, or place of birth (Article 15), Equality of opportunity in matters of public employment (Article 16), the Protection of life and personal liberty (Article 21) are available only to citizens of India. **So, Statement 3 is correct.**

- Most of the Fundamental Rights are directly enforceable (self-executory), while a few of them can be enforced based on a law made to give effect to them. Such a law can be made only by the Parliament and not by state legislatures so that uniformity throughout the country is maintained (Article 35).
- In the case of non-self-executory fundamental rights, the makers have entrusted the parliament to give effect to these rights in the future
- These include the following: Abolition of Untouchability (Article 17), The right to elementary education (Article 21A), Prohibition of traffic in human beings and forced labor (Article 23), Prohibition of employment of children in factories (Article 24).
- Further, the Parliament shall, after the commencement of the Constitution, make laws for prescribing punishment for the above acts, thus making it obligatory on the part of the Parliament to enact such laws.
- Thus, not all the fundamental rights are self-executory. **So, Statement 4 is not correct.**

30. With respect to Committees of Constituent Assembly, match the following:

Constituent Assembly Committee		***Chairman***
1. Union Constitution Committee	-	A. Sardar Patel
2. Rules of Procedure committee	-	B. Dr.B.R Ambedkar
3. Provincial Constitution committee	-	C. Dr.Rajendra Prasad
4. Drafting committee	-	D. Jawaharlal Nehru

Select the correct answer using the codes given below :

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

EXPLANATION:

The Constituent Assembly appointed a number of committees to deal with different tasks of constitution-making. Out of these, eight were major committees, and the others were minor committees. The Major Committees and their Chairman include,

- Union Constitution Committee - Jawaharlal Nehru
- Rules of Procedure Committee - Dr. Rajendra Prasad
- Provincial Constitution Committee - Sardar Patel
- Drafting Committee - Dr. B.R. Ambedkar
- Union Powers Committee - Jawaharlal Nehru
- States Committee (Committee for Negotiating with States) - Jawaharlal Nehru
- Steering Committee - Dr. Rajendra Prasad
- Advisory Committee on Fundamental Rights, Minorities and Tribal and Excluded Areas - Sardar Patel.

Thus, the correct match of committees and chairman is 1-D, 2-C, 3-A, 4-B. **So, Option (b) is correct.**

31. Which one of the following authorities cannot organise Lok Adalats?

(a) Panchayat Committee
(b) Taluk Legal Services Committee
(c) District Authority
(d) High Court Legal Services Committee

EXPLANATION:

- The word 'Lok Adalat' means 'People's Court'. This system is based on Gandhian principles. It is one of the components of the ADR (Alternative Dispute Resolution) system. The Indian courts are overburdened with the backlog of cases and the regular courts are to decide the cases involving a lengthy, expensive, and tedious procedure. The court takes years together to settle even petty cases. The Lok Adalat, therefore, provides alternative resolutions or devices for expeditious and inexpensive justice.
- The institution of Lok Adalat has been given statutory status under the Legal Services Authorities Act 1987.
- The State Legal Services Authority, the District Legal Services Authority, the Supreme Court Legal Services Committee, the High Court Legal Services Committee, or the Taluk Legal Services Committee may organize Lok Adalats at such intervals and places and for exercising such jurisdiction and for such areas as it thinks fit.
- Thus, the Panchayat Committees cannot organize Lok Adalats. **So, Option (a) is correct.**

32. In the context of India's Law on Bail, consider the following statements:
    1. The Criminal Penal Code (CrPC) empowers magistrates to grant bail for bailable offences as a matter of right.
    2. The CrPC defines the word bail and categorises offences under the Indian Penal Code as 'bailable' and 'non-bailable'.
    3. Non-bailable offences are cognisable, which enables the police officer to arrest without a warrant.

    How many of the statements given above are correct?
    (a) Only one
    (b) Only two
    (c) All three
    (d) None

EXPLANATION:

Section 436 of Criminal Procedure Code (CrPC) which pertains to empowers magistrates to grant bail for bailable offences as a matter of right. This would involve release on furnishing a bail bond with or without security. In cases where the offence is bailable, the accused person has a right to be released on bail upon furnishing the required bail bond. **So, Statement 1 is correct.**

The Criminal Procedure Code, 1973, does not define the word bail. Only the terms 'Bailable Offence' and 'Non-Bailable Offence' have been defined under Section 2(a) of Cr.P.C. The provisions relating to bail and bail bonds are mentioned under Section 436-450 of the Criminal Procedure Code. Hence, The Code of Criminal Procedure 1973 classifies offences into two categories- Bailable and Non Bailable offences, not under the Indian Penal Code. **So, Statement 2 is not correct.**

Non-bailable offences are cognisable, which enables the police officer to arrest without a warrant. In such cases, a magistrate would determine if the accused is fit to be released on bail. Non-bailable offences are of the most serious nature. Examples of such offences include terrorism, robbery, and murder. **So, Statement 3 is correct.**

33. Which one of the following statements regarding the Directive Principles of state policy (DPSP) is ***not*** correct?
    (a) The state shall follow the DPSP both in the matter of administration and legislation.
    (b) The DPSP embody the object of the state under the Republican constitution
    (c) In case of conflict, the DPSP have precedence over the Fundamental Rights.
    (d) The Directive Principles can be implemented by amending the Fundamental Rights.

EXPLANATION:

The Directive Principles of State Policy (DPSP) have been taken from the Irish constitution and enumerated in Part IV of the Indian Constitution. Article 37 mandates that the provisions of DPSP shall not be enforceable by any court, but the principles laid down therein are nevertheless fundamental in the country's

governance, and it shall be the duty of the State to apply these principles in making laws. **So, Option (a) is correct.**

The Directive Principles embody the object of the State under the Republican Constitution, namely, that it is to be a 'Welfare State' and not a mere 'Police State'. Most of these Directives aim to establish the economic and social democracy pledged in the Preamble. **So, Option (b) is correct.**

In Kesavananda Bharati's case, the Supreme Court (SC) ruled that in any case of conflict between Fundamental Rights and DPSPs, the provisions of the former would prevail. DPSPs were regarded as a subsidiary of Fundamental Rights. SC also ruled that Parliament can amend Fundamental Rights through the Constitutional Amendment Act to implement DPSPs. **So, Option (c) is not correct.**

Fundamental Rights are negative or prohibitive in nature because they put limitations on the State. Directive Principles are affirmative directions. They declare the duty of the State to achieve certain social and economic objectives. It means that Fundamental Rights deny (something negative) the state the authority to encroach upon these rights. It also means that Directive Principles of State Policy are not about denial but about providing (something positive) benefits from the state to the people. **So, Option (d) is correct.**

34. With reference to the Vice-President election, consider the following statements:
    1. It is in accordance with the system of proportional representation by means of the single transferable vote.
    2. The electoral college to elect a person to the office of the Vice-President consists of only members of the Rajya Sabha.

    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:

Election of Vice-President under Article 66 (1) states that the Vice-President shall be elected by the members of an electoral college consisting of the members of both Houses of Parliament in accordance with the system of proportional representation by means of the single transferable vote and the voting at such election shall be by secret ballot. **So, Statement 1 is correct.**

The Electoral College to elect a person to the office of the Vice-President consists of all members of both Houses of Parliament. It consists of both elected and nominated members of the Parliament – Lok Sabha and Rajya Sabha (in the case of the president, only elected members). It does not include the members of the state legislative assemblies (in the case of the President, the elected members of the state legislative assemblies are included). **So, Statement 2 is not correct.**

35. Consider the following statements:
    1. The President of India shall constitute a Finance Commission to review the financial position of the Panchayats.
    2. The state finance commission shall recommend the principles that should govern the grants in aid to the Panchayat from the Consolidated Fund of India.
    3. The property tax on land and buildings is the mainstay of urban bodies' own revenue.

    How many of the statements given above are correct?

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

EXPLANATION:

In terms of Article 243-I, the Governor (no by the President) shall constitute State Finance Commission every five years to review the financial position of the Panchayats and make recommendations to the

Governor as to the principles which should govern the distribution between the State and the Panchayats of the net proceeds of the taxes, duties, tolls and fees leviable by the State, which may be divided between them and the allocation between the Panchayats at all levels of their respective shares of such proceeds. **So, Statement 1 is not correct.**

Article 280(1) of the Constitution lays down the modalities for setting up a Finance Commission to make recommendations on the distribution of net proceeds of taxes between the Union and the States, the allocation between the States of respective shares of such proceeds, grants-in-aid and the revenues of the States and measures needed to supplement the resources of the Panchayats during the award period.
The Finance Commission (not by State Finance Commission) shall make recommendations as to the following matters, namely:

- The distribution between the Union and the States of the net proceeds of taxes which are to be, or maybe, divided between them under Chapter I, Part XII of the Constitution and the allocation between the States of the respective shares of such proceeds.
- The principles which should govern the grants-in-aid of the revenues of the States out of the Consolidated Fund of India and the sums to be paid to the States by way of grants-in-aid of their revenues under Article 275 of the Constitution for purposes other than those specified in the provisos to clause (1) of that article.
- The measures needed to augment the Consolidated Fund of a State to supplement the resources of the Panchayats and Municipalities in the State are based on the recommendations made by the Finance Commission of the State. **So, Statement 2 is not correct.**

Urban Local Bodies (ULB) do not have a large independent tax domain, but the property tax, fire-brigade tax, taxes on vehicles, taxes on boats, education cess, development fees, and rent on municipal property are collected by ULB. The Property Tax on land and buildings is the mainstay of Urban Local Bodies' Own Revenue. ULBs also have non-tax revenue, which includes Rent from assets, Advertisement Tax, Trade license fees, Fees for issuing various certificates, such as birth and death certificates, transfer of properties, and road-cutting charges, User charges and Income from contracts on parking **So, Statement 3 is correct.**

36. Consider the following statements :

Assertion (A):

'Whip' has neither constitutional nor legal sanction but is followed only through parliamentary convention.

Reason (R):

The tenth schedule to the Constitution speaks about the 'directions of a political party' rather than that of a 'whip'.

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

(a) Both A and R are true, and R is a correct explanation of A.
(b) Both A and R are true, but R is not a correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

EXPLANATION:

In Indian Parliamentary practice, a whip is a designated official of the party who is authorized to issue such a direction, or it may refer to a written order to members of a party in the House to abide by a certain direction.
The office of 'whip' is mentioned neither in the Constitution of India nor the Rules of the House nor in a Parliamentary Statute, Although the concept of the whip has no legal sanction. It is based on the conventions of the parliamentary government. **So, Assertion is correct.**

The 52nd Amendment Act of 1985 provided for the disqualification of the members of Parliament and the State Legislatures on the grounds of defection from one political party to another. The Tenth Schedule provides that a member of a House of Parliament or State Legislature who voluntarily gives up the membership of their political party or votes against the directions issued by their political party in a House

is liable for disqualification from said House. Thus, under the Tenth Schedule, the concept of the whip is not mentioned in the Constitution. **So, Reason is correct.**

Both Assertion (A) and Reason (R) are true, but Reason (R) is not a correct explanation of Assertion (A).

37. Consider the following pairs:

	(Lists)		***(Subjects)***
1.	State list	-	Public health and sanitation
2.	Union list	-	Citizenship, naturalisation and aliens
3.	Concurrent list	-	Legal, medical and other professions

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

(a) 1 only
(b) 1, 2 and 3
(c) 2 and 3 only
(d) 3 only

EXPLANATION:

The Constitution provides for a three-fold distribution of legislative subjects between the Centre and the states, viz., List-I (the Union List), List-II (the State List) and List-III (the Concurrent List) in the Seventh Schedule. The state legislature has "in normal circumstances" exclusive powers to make laws with respect to any of the matters enumerated in the State List.

The state list is a list of 61 subjects that state legislatures enjoy jurisdiction over. The state list specifies jurisdiction over subjects such as public order, prisons, public health, sanitation, hospitals and dispensaries, production, manufacture, transport, purchase and sale of intoxicating liquors, agricultural education and research, fisheries, state public services, etc. **So, Pair (1) is correct.**

The Parliament has exclusive powers to make laws with respect to any of the matters enumerated in the Union List.

This list has, at present, 98 subjects (originally 97 subjects) like citizenship, naturalisation and aliens, defence, banking, foreign affairs, currency, atomic energy, insurance, communication, inter-state trade and commerce, census, audit and so on. **So, Pair (2) is correct.**

Both the Parliament and State legislature can make laws with respect to any of the matters enumerated in the Concurrent List.

This list has at present 52 subjects (originally 47 subjects) like criminal law and procedure, civil procedure, Legal, medical and other professions, marriage and divorce, population control and family planning, electricity, labour welfare, economic and social planning, drugs, newspapers, books and printing press, and others. **So, Pair (3) is correct.**

38. Consider the following statements with respect to the Delimitation Commission:

1. Since the commencement of the Constitution of India, the Delimitation exercise has taken place only three times.
2. The Constitution mandates that the Commission's orders are final and cannot be questioned before any court.

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

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

EXPLANATION:

The Election Commission defines delimitation as the process of drawing the boundaries of states into territorial constituencies for elections to the State Legislative Assemblies and House of the People based on the population in the most recent Census. The President of India appoints the Delimitation Commission and works in collaboration with the Election Commission of India. Since the Independence of India, the

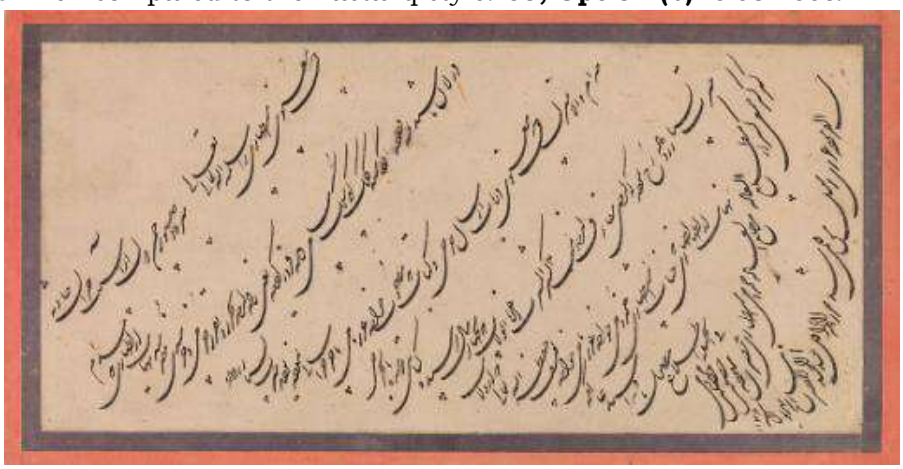
census has been carried out seven times (1951-2011).
However, the delimitation exercise was conducted four times in 1952 under the Delimitation Commission Act, 1952; in 1963 under the Delimitation Commission Act, 1962; in 1973 under the Delimitation Act, 1972; and in 2002 under the Delimitation Act, 2002, as per the Election Commission of India. **So, Statement 1 is not correct.**

The Commission, in consultation with State Election Commissions, examines changes in the population to redraw constituencies or create new ones. It then publishes in the Gazette of India its draft report, which is open for public feedback. After accounting for the feedback, the Commission publishes its final report.
The Delimitation Commission is to work without any executive influence. The Constitution mandates that the Commission's orders are final and cannot be questioned before any court as it would hold up an election indefinitely. **So, Statement 2 is correct.**

39. In the context of the cultural history of India, the terms 'Nastaliq' and 'Shikaste' refer to:
    (a) Style of mosque architecture
    (b) **Writing styles**
    (c) Forms of poetry in Persia
    (d) Islamic sacred sites.

EXPLANATION:

There are two popular types of writing styles called nastaliq and shikaste. The Nastaliq style is cursive and easy to read, whereas the shikasta or "broken script," developed in the seventeenth century, reached its peak in the eighteenth and nineteenth centuries. This script had little currency outside the borders of Iran. It was created to fill a need for quick and efficient yet beautiful writing that would be used primarily for private correspondence and administrative documents. The shikaste style of writing is denser and it isn't easy to understand when compared to the nastaliq style. **So, Option (b) is correct.**



40. With reference to stoneware bangles in the Indus Valley Civilisation, consider the following statements:
    1. These were an elite item that may be closely associated with the ruling class.
    2. These were made up of steatite stone.
    3. These have inscriptions or potter's marks inscribed on them.

    Which of the statements given above are correct?
    (a) 1 and 2 only
    (b) 2 and 3 only
    (c) 1 and 3 only
    (d) 1, 2 and 3

EXPLANATION:

Several faience objects in the form of beads, bangles, earrings, and figurines have been recovered from several Harappan sites. It is an artificial material manufactured from quartz. Given the complexity of its technology, it is called an elite item.

Stoneware Bangles are another elite item that may be closely associated with the ruling class. These bangles were only discovered at sites in Pakistan, such as Mohenjodaro, Harappa, Balakot and Nausharo. Their nature makes them considered elite. **So, Statement 1 is correct.**

Most stoneware bangles are covered with a regular pattern of parallel lines, and the size of the bangles appears to be very regular in diameter (between 5.5 and 6 cm interior diameter), width and thickness. They have a highly burnished surface fired to a red or grey-black colour.
The Stoneware objects were not made of stone but the bangles were made with terracotta. They are generally referred to as stoneware bangles because the finely levigated clay was fired at very high temperatures, 1050-1100° C. **So, Statement 2 is not correct.**

Stoneware Bangles have been recovered in special canisters sealed with an Indus seal. Unlike other bangles, they have inscriptions or potter marks inscribed on them. Some stoneware bangles have micro-inscriptions on them before firing, which may indicate ownership records.
So, Statement 3 is correct.

41. Consider the following statements:
    1. The Buddhist text Milinda Panha was linked with Kushanas.
    2. Kshaharatas and Kardamakas were two important dynasties of shaka Kshatrapas of western India.
    3. The names of many Indo-Greek rulers are known from their coins.

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

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

EXPLANATION:

One of the most important Indo-Greek rulers was Menander, who can be identified as King Milinda poses a number of questions to monk Nagasena in the Buddhist text, the Milindapanha. The historical background of Menander could be reconstructed from Milindapanha ('The Questions of Milinda' datable to the second-first century BCE), which contains his discussions with the Buddhist monk Nagasena and the coins.
The Pali version of Milindapanha suggests that he was born in a place called Kalasigama ('Kalasigamo Nama, Tatthaham Jati Ti'), Begram, Kavisi region. The Milindapanha states that his capital was Sagala, identified generally with Sialkot in Pakistan. Hence, Milindapanha is not linked with Kushans (30 CE- 375 CE) rather it was associated with Indo-greeks. **So, Statement 1 is not correct.**

The Scytho-Parthians (Shakas) ruled through their kshatrapas (viceroys or subordinate rulers). Some of them continued to have a hold over parts of western India during the Kushana period. An early Kshatrapa line of western India was represented by Mambarus, who is mentioned in the Periplus. In the early centuries C.E., there were two important lines of western Kshatrapa rulers, the Kshaharatas and Kardamakas. The Kshaharata dynasty included rulers such as Bhumaka and Nahapana.
So, Statement 2 is correct.

The coins of the Graeco-Bactrians, which circulated to the north of the Hindu Kush, were made of gold, silver, copper, and nickel. They followed the Attic weight standard and had Greek legends. The coins have

royal portraits on the obverse, while the reverse generally depicts Greek deities (such as Zeus, Apollo, and Athena) along with the name and title of the king. Out of the 42 Graeco-Bactrian and Indo-Greek kings, as many as 34 are known only through their coins. The coins of the Shakas, Parthians, and Kshatrapas followed the basic features of Indo- Greek coinage, including bilingual and bi-script legends. **So, Statement 3 is correct.**

Menander (o.); goddess Pallas (r.)

42. Consider the following dynasties:
    1. Chahamanas
    2. Paramaras
    3. Wodeyars
    4. Eastern Chalukyas

    How many of the above dynasties ruled over parts of India before the establishment of the Delhi Sultanate?
    (a) Only one
    (b) Only two
    (c) Only three
    (d) None

EXPLANATION:

The rulers who ruled substantial parts of North India between 1200AD to 1526AD were termed Sultans, and the period of their rule was the Delhi Sultanate. These rulers were of Turkish and Afghan origin. They established their rule in India after defeating the Indian ruling dynasties, which were mainly Rajputs in northern India.

Chahamanas came into prominence after the decline of the Gurjara-Pratiharas. There were numerous branches of the Chahamanas, but some of them were unquestionably the feudatories of the Pratiharas of Avanti and Kannauj. It also remains a fact that during 750-950 CE most of the regions ruled by the Chahamanas formed part of Pratihara dominion. In 973 CE, they became practically independent. Hence, Chahamanas ruled part of India before the establishment of the Delhi Sultanate.

So, Statement 1 is correct.

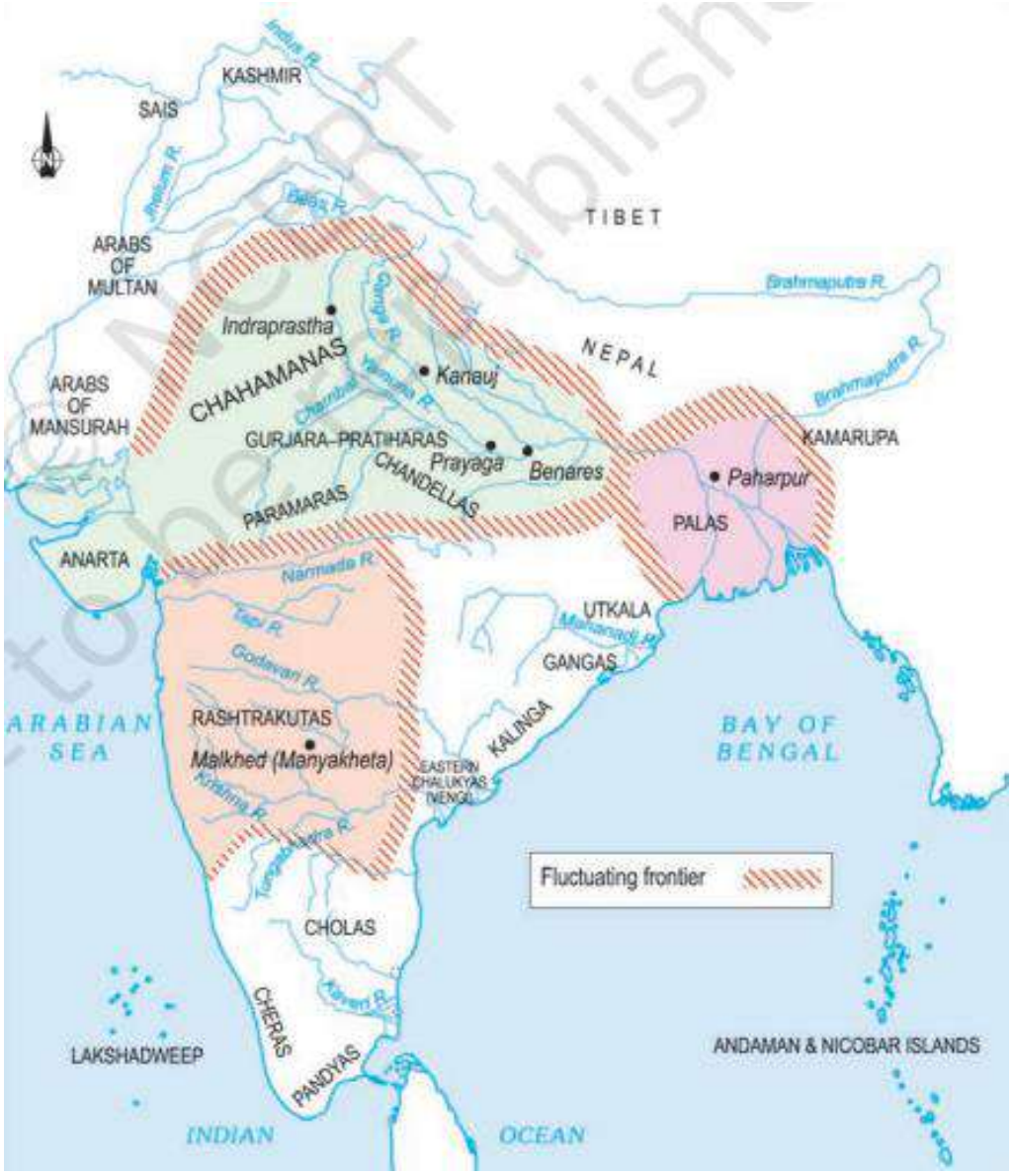
The region of Gujarat and Kathiawad was possessed by the Chalukyas around 950 CE as the feudatories of the Gurjara-Pratiharas. Adjoining the kingdom of the Chalukyas was that of the Paramaras (9th to 14th Century) in Malava, with minor branches in the territories just to the north (Mount Abu, Banswara, Cungarpur, and Bhinmal). The Paramaras emerged as feudatories of the Rashtrakutas and rose to eminence during the reign of Bhoja. Hence, Paramaras ruled Malwa before the establishment of the Delhi Sultanate.

So, Statement 2 is correct.

The Wodeyar dynasty was an Indian royal dynasty that ruled the Kingdom of Mysuru from 1399AD to 1947 AD until the independence of India from British rule and the subsequent unification of Indian dominion and princely states into the Republic of India. The dynasty was established by Vijaya. The Wodeyars of Vijaya's dynasty belong to the Arasu Wadiyar community of Karnataka, which includes many of the noble clans of

the region. Hence, the Wodeyar dynasty ruled the part of India after the establishment of the Delhi Sultanates. **So, Statement 3 is not correct.**

The Eastern Chalukya lasted for around five hundred years from the 7th century until 1075 AD, when the Vengi kingdom fell to the Chola empire. Originally, the Eastern Chalukyan capital was at Vengi, near Nidadavole in the West Godavari district, but this was later moved to Rajamahendravaram (Rajamundry). Hence, the Eastern Chalukyas ruled the part of India before the establishment of the Delhi Sultanates. **So, Statement 4 is correct.**



43. Consider the following statements about the 'Sabhas' mentioned in the Chola inscriptions:
    1. Only those with knowledge of Vedas can be members of the Sabha
    2. Only those with their own homes can become members of the Sabha
    3. Only those between the ages of 35 and 70 can become members of the Sabha.
    4. Only those well-versed in administrative matters can become members of the Sabha.

    How many of the statements given above are correct?
    (a) Only two
    (b) Only three
    (c) All four
    (d) None

EXPLANATION:

The Uttaramerur inscriptions discovered in the Vaikunta Perumal temple at Uttaramerur in the Chengalput district of Tamilnadu and issued by the Chola monarch Parantaka I in the year 919CE and 921CE are the main source of information to reconstruct the village administration of the Chola period.

These inscriptions furnish detailed information regarding the nature of the composition of committees, the qualification of the candidate for the membership of these committees and the procedure adopted to appoint the members of these committees. The first inscription laid down rules for the election of the various committees, and the second inscription, plated two years later, amended these rules with a view to removing some practical difficulties that had been experienced in their working. Each of the thirty wards of the village was to nominate for selection of persons possessing the following qualifications.

- Ownership of more than one-fourth of Veli (about one acre and a half) of land
- The knowledge of Vedic literature. **So, Statement 1 is correct.**
- Residence in a house built on one's site. **So, Statement 2 is correct.**
- Age between thirty-five and seventy. **So, Statement 3 is correct.**
- They should be well-versed in administrative matters and honest. **So, Statement 4 is correct.**

The following are the disqualifications;

- Those who had been on any of the committees for the past three years
- Those who had been on the committee but had failed to submit the accounts together with all their respective relatives
- Those who had committed a cast or other great sins, as well as their relatives
- Those who had stolen the property of others

44. With reference to Indian society in the early medieval period, consider the following statements:
    1. The practice of untouchability intensified during this period.
    2. In this period, the rights of women in the form of stridhana expanded.
    3. Widow immolation or sati became rampant during this period.

    How many of the statements given above is/are correct?
    (a) Only one
    (b) Only two
    (c) **All three**
    (d) None

EXPLANATION:

The untouchables were called the fifth varna. Certain groups were placed at the bottom of the social hierarchy. As a result, they faced severe socio-cultural discrimination in the Varna-jati order. Around 200 CE the notion of untouchability took a definite shape in the early Dharmasutras, Arthashastra, and Manusmriti. Chandala, Magadha, and Paulkasa are first mentioned as early as the sixth century BCE. They were treated differently. Chandala became a synonym for untouchables. They were looked down upon by the Brahmanical, Buddhist, and Jaina orders.

Brahmanical law books like Visnusmriti and Katyayanasmriti use the word 'asprishya' for the first time. More groups were added to the list but Chandala and Shvapaka continued to be treated as untouchables. They were also distinguished from sudras. Chinese traveler Fa-hsien also attests to the complete social, occupational and physical segregation of Chandalas. Therefore, The practice of untouchability intensified in the early medieval period. **So, Statement 1 is correct.**

The earlier rights of women in the form of stridhana expanded in the early medieval period. The early medieval commentaries and digests amplify the scope of stridhana. Mitakshara interprets it as property belonging to the women. However, the definition is not uniform in all texts.

Some texts like Dayabhaga and Smriti Chandrika acknowledged the limited scope of stridhana. Initially, stridhana was largely limited to movable wealth. However, women did not have absolute ownership rights to dispose of the property through sale, mortgage or gift. Women were given only the right to possess. The family had superior rights over immovable property. **So, Statement 2 is correct.**

Sati became a pronounced practice in early medieval India. It was mainly confined to the upper strata of society, more particularly to the ruling and military elite. The practice was a product of a patriarchal society where women and their sexuality were considered a threat to society. Physical death through immolation was considered easier than prolonged or permanent widowhood. The practice was also valorized as an act of courage and an expression of fidelity. The Brahmanical texts had divergent opinions on the issue. Medhatithi disapproves of the practice. But Sati was practiced in numerous cases. Non-canonical texts and epigraphic data also attest to this practice. Rajatarangini also records several instances of sati in the royal families of Kashmir. **So, Statement 3 is correct.**

45. Consider the following pairs :

Sl. No.	***Name***		***Type of Land***
1.	Shalabogha	-	Land for the maintenance of a school
2.	Brahmadeya	-	Land gifted to Brahmanas
3.	Pallichchhandam	-	Land donated to Jaina institutions
4.	Tirunamattukkani	-	Land granted to non-Brahmana peasants

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

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

EXPLANATION:

The Cholas, as a ruling power, rose to eminence in the 9th Century A.D. when Vijayalaya seized Tanjavur from a feudatory chief of the Pallavas called Muttarayas. Henceforth, the Cholas were able to establish control over Pallava territories and subdued the Pandya power. The landed magnates were also incorporated into the state system, were provided prestigious titles, and were assigned administrative and military duties, which included collection and assessment of land revenue. Chola inscriptions mention several categories of land, such as,

- Shalabhoga is related to the revenue administration under the imperial Cholas is land for the maintenance of a school. **So, Pair (1) is correct.**
- Brahmadeya is the land gifted to Brahmanas. Each brahmadeya was looked after by an assembly or sabha of prominent Brahmana landholders **So, Pair (2) is correct.**
- Pallichchhandam land donated to Jaina institutions. **So, Pair (3) is correct.**
- Devadana and tirunamattukkani are land gifted to temples. **So, Pair (4) is not correct.**
- Vellanvagai is the land of non-Brahmana peasant proprietors.

46. Consider the following statements with reference to the Indian Council Act of 1861 :

1. It empowered the Viceroy to issue ordinances during an emergency.
2. The Governor General was given the power to create new provinces.
3. The Governments of Bombay and Madras were given the power of nominating the advocate general.

Which of the statements given above is/are correct?

(a) 1 only
(b) 1 and 3 only
(c) 2 and 3 only
(d) 1, 2 and 3

EXPLANATION:

The Indian Councils Act 1861 empowered the Viceroy to overrule the council on affairs if deemed necessary, as exemplified in 1879 during Lord Lytton's tenure. In emergencies when the Legislative Council was not in session, the Viceroy could issue ordinances. The life of such an ordinance was six months. **So, Statement 1 is correct.**

The Act provided for the creation of new provinces by the Governor-General for legislative purposes and to appoint Lieutenant Governors for them. He was also authorized to divide or alter the limits of any presidency, province or territory. Legislative councils were formed in other provinces in Bengal in 1862, North-West Frontier Province in 1886 and Punjab and Burma in 1897. **So, Statement 2 is correct.**

Indian Councils Act of 1861 provided that the Governments of Bombay and Madras be given the power of nominating the Advocate-General. No less than 4 and not more than 8 additional members were to hold office for two years. **So, Statement 3 is correct.**

47. With reference to the Portuguese arrival in India, consider the following statements :
    1. The cartaze system was invented by Alfonso de Albuquerque.
    2. There was an abolition of sati in the neighbouring regions of Goa during the period of Francisco De Almeida.
    3. The Vedor da Fazenda was responsible for revenues and dispatch of fleets during Portuguese administration.

    How many of the above statements are correct?

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

EXPLANATION:

Francisco De Almeida's vision was to make the Portuguese the master of the Indian Ocean. His policy was known as the Blue Water Policy (cartaze system). He believed that 'holding India is only possible if they are powerful at sea; otherwise, building a Fortress onshore will be of no use'. This is known as the Blue Water Policy. Thus, the Cartaze system was invented by Francisco De Almeida. **So, Statement 1 is not correct.**

Alfonso de Albuquerque acquired Goa from the Sultan of Bijapur in 1510 with ease; the principal port of the Sultan of Bijapur became “the first bit of Indian territory to be under the Europeans since the time of Alexander the Great”. An interesting feature of his rule was the abolition of sati. Thus, there was an abolition of Sati in the neighbouring regions of Goa during the period of Alfonso de Albuquerque. **So, Statement 2 is not correct.**

The head of the Portuguese administration was the viceroy who served for three years with his secretary and, in later years, a council. Next in importance came the Vedor da Fazenda, responsible for revenues and the cargoes and dispatch of fleets. The fortresses, from Africa to China, were under captains, assisted by ‘factors’, whose power was increased by the difficulties of communication and was too often used for personal ends. Thus, the Vedor da Fazenda was responsible for revenues and the cargoes and dispatch of fleets during Portuguese administration. **So, Statement 3 is correct.**

48. Operation “Kachchhap", recently conducted by the Directorate of Revenue Intelligence, is against the illegal trafficking and trading of:
    (a) Indian Pangolin
    (b) Turtles of Ganges
    (c) Sea Cucumber
    (d) Red sanders

EXPLANATION:

Operation Kachchhap is a program launched in September 1998 by the Wildlife Protection Society of India (WPSI) to reduce turtle mortality and protect the future of Olive Ridley turtles on the Orissa coast. The program is a collaboration between central and state authorities, local non-government organizations, local fishermen, and local media. The program's main activities include improving patrolling of non-fishing zones and protecting nesting sites.

Recently, the Directorate of Revenue Intelligence (DRI) apprehended 6 persons with 955 live baby Gangetic turtles of different species at Nagpur, Bhopal and Chennai. Intelligence was developed by the officers of DRI

about a syndicate involved in the illegal trafficking and trading of "Turtles of Ganges", some of which are specified as vulnerable/near threatened species under IUCN Red List and Schedule I and II of Wildlife (Protection) Act, 1972. Illegal trade and habitat degradation are major threats to these species. Thus, Operation "Kachchhap" is against the illegal trafficking and trading of the Gangetic turtles. **So, Option (b) is correct.**

49. Arrange the following events in chronological order with reference to Gandhi:
    1. Satyagraha against registration certificates in Africa
    2. Phoenix farm establishment
    3. Natal Indian Congress establishment
    4. Indian opinion paper's first copy

    Select the correct answer using the codes given below :

    (a) 1-2-3-4
    (b) 2-1-3-4
    (c) 3-4-2-1
    (d) 3-4-1-2

EXPLANATION:

The Natal Indian Congress (NIC) came into being in 1894 and was formed by Mahatma Gandhi to fight discrimination against Indian traders in Natal. The NIC was the first of the Indian Congresses, followed by the formation of the Transvaal Indian Congress (TIC) and the Cape Indian Congress; the three later went on to form the South African Indian Congress (SAIC) in 1919.

Gandhi's first newspaper, The Indian Opinion, was formed in 1903 as a mouthpiece of the Natal Indian Congress. Indian Opinion was launched with a view and in response to the growing demand and need in South Africa to voice effectively the feelings and sentiments of local Indians against racial intolerance of the apartheidist white regime.

Phoenix Settlement was founded by Mahatma Gandhi in 1904 on the north-western edge of Durban to experiment with satyagraha, sarvodaya and ahimsa (non-violence). It was here Gandhiji first used three principles to champion the cause of mine and sugarcane workers, liberation of women and fight against alcohol.

Satyagraha against Registration Certificates (1906): A new legislation in South Africa made it compulsory for Indians there to carry at all times certificates of registration with their fingerprints. The Indians, under Gandhi's leadership, decided not to submit to this discriminatory measure. Gandhi formed the Passive Resistance Association to conduct the campaign of defying the law and suffering all the penalties resulting from such defiance. Thus was born satyagraha, or devotion to truth, the technique of resisting adversaries without violence.

Thus, the chronological order of the given events is 3-4-2-1**. So, Option (c) is correct.**

50. Which of the following Governor General was associated with the Trial of Nandakumar, which was termed as the first judicial murder in India?
    (a) Warren Hasting
    (b) Richard Wellesley
    (c) William Amherst
    (d) Henry Hardinge

EXPLANATION:

The famous case of Raja Nand Kumar is often called as "First Judicial Murder of Colonial India". It is also called the 'Black Case'. This case was carried out between the Governor-General of Bengal, Lord Warren Hastings, and a Hindu Brahmin, Zamindar Raja Nand Kumar.
In 1773, when Hastings was reinstated as governor-general of Bengal, Nandakumar brought accusations against him of accepting or giving bribes that were entertained by Sir Philip Francis and the other members of the Supreme Council of Bengal. However, Hastings overruled the council's charges. Thereafter, in 1775, he brought charges of document forgery against Nandakumar. The Maharaja was tried under Elijah Impey, India's first Chief Justice and friend of Warren Hastings, and was found guilty and hanged in Kolkata on 5 August 1775. Warren Hastings abused his power and killed Raja Nanda Kumar using the Supreme Court as a tool. **So, Option (a) is correct.**

51. With reference to Best Tourism Villages, consider the following statements :
    1. It is an initiative of the UNESCO World Heritage and Sustainable Tourism Programme.
    2. Social sustainability is one of the criteria used for evaluating villages.
    Which of the above statements is/are correct ?
    (a) 1 only
    (b) **2 only**
    (c) Both 1 and 2
    (d) Neither 1 nor 2

EXPLANATION:

The Best Tourism Villages is an initiative by UN Tourism – the new name of the World Tourism Organization (UNWTO), introduced in 2021, seeks to transform tourism into a catalyst for rural prosperity and wellbeing. The initiative takes a dual-pronged approach: valuing and preserving rural villages, their landscapes, cultural diversity, and knowledge systems, and advancing innovative strategies aligned with the Sustainable Development Goals (SDGs). Hence it is not an initiative of the UNESCO World Heritage and Sustainable Tourism Programme. **So, Statement 1 is not correct.**

An external independent Advisory Board, comprising experts in various fields, evaluates applications based on nine areas: 1. Cultural and Natural Resources; 2. Promotion and Conservation of Cultural Resources; 3. Economic Sustainability; 4. Social Sustainability; 5. Environmental Sustainability; 6. Tourism Development and Value Chain Integration; 7. Governance and Prioritization of Tourism; 8. Infrastructure and Connectivity, and 9. Health, Safety and Security. **So, Statement 2 is correct.**

52. Which of the following newspapers is/are associated with the swadeshi movement in the Indian freedom struggle?
    1. Hitabadi
    2. Sanjibani
    3. Bengalee
    Select the correct answer using the code given below :
    (a) Only one
    (b) Only two
    (c) All three
    (d) None

EXPLANATION:

Government's decision to partition Bengal had been made public in December 1903. In the period 1903–05, the leadership was provided by men like Surendranath Banerjea, K.K. Mitra, and Prithwishchandra Ray. The methods adopted were petitions to the government, public meetings, memoranda, and propaganda through pamphlets and newspapers such as Hitabadi, Sanjibani, and Bengalee. Their objective was to exert sufficient pressure on the government through an educated public opinion in India and England to prevent the unjust partition of Bengal from being implemented.
The government announced the partition of Bengal in July 1905. Within days, protest meetings were held in small towns all over Bengal. It was in these meetings that the pledge to boycott foreign goods was first taken. On August 7, 1905, with the passage of the Boycott Resolution in a massive meeting held in the Calcutta Townhall, the formal proclamation of the Swadeshi Movement was made. **So, Option (c) is correct.**

53. Which of the following british activities was the main cause of the Rampa rebellion in the Godavari agency of the Madras Presidency?
    (a) Construction of a dam across the Godavari river
    (b) Extension of Ryotwari settlement into the tribal area
    (c) Large-scale religious conversion
    (d) Restriction of traditional agriculture practised by the enactment of the Madras Forest Act

EXPLANATION:

Manyam, or the Rampa rebellion, was a tribal revolt led by Alluri Sitarama Raju in the Rampa regions of present-day Godavari district in Andhra Pradesh. The uprising was against the exploitative British policies and oppressive forest laws.
The British introduced the Madras Forest Act of 1882, which restricted the free movement of the tribal communities and prohibiting them from engaging in Podu agricultural system (traditional agricultural practice). This act also banned the collection of minor forest produce, and tribal people were forced into labour by the colonial government. The tribals in the Rampa region were repeatedly harassed and extorted by corrupt police officials. The British-supported Zamindar was largely unpopular among the hill chiefs, the Muttadars, and his policies were a cause of friction between the tribals and police authorities that aimed at curtailing tribal rights.
Hence, the Construction of a dam across the Godavari River, the Extension of the Ryotwari settlement into the tribal Area and Large-scale religious conversion are not the causes of the Rampa rebellion.
So, Option (d) is correct.

54. 'PB Knot technology' is mentioned in the news in the context of :
    (a) Production of bio-fertilizers
    (b) Clonal propagation of crop plants
    (c) Production of plant growth substances
    (d) **Disruption of mating chances of pests**

EXPLANATION:

Biofertilizer or biological fertilizer is a material that contains living or dormant microorganisms that colonize the rhizosphere or present inside the plants and directly or indirectly promotes the growth of plants by supplying nutrition. Biofertilizers are formulated with living or dormant (inactive metabolically) microbial cells. An efficient nitrogen-fixing strain is selected, and later, the inoculum is prepared to produce a bio-fertilizer of good quality. An inoculum is a biological material in which the strain is inoculated in the seed or soil. Thus, the Production of Bio-Fertilizers is not related to the PB Knot technology. **So, Option (a) is not correct.**

Clonal propagation refers to the process of reproducing plants asexually from a single parent plant to create one or more genetically identical copies, or clones, of that plant. This is achieved through various methods that involve the use of plant tissues such as stems, leaves, or roots. Thus, Clonal propagation is not related to the PB Knot technology. **So, Option (b) is not correct.**

Plant growth substances, also known as plant hormones or phytohormones, are organic molecules that plants produce to regulate their growth and development. Plant hormones include auxin, abscisic acid, ethylene, gibberellins, cytokinins, salicylic acid, strigolactones, brassinosteroids, and nitrous (nitric) oxide. Thus, plant growth substances are not related to the PB Knot technology. **So, Option (c) is not correct.**

The PB Knot technology is used for the disruption of mating chances of pink bollworm pests in cotton fields. Pink bollworm is considered a dreaded pest of transgenic cotton, the infestation of which ranges from 30-90% of the cropping area, at times impacting yield to the extent of 90%.

A PB Knot rope is essentially a 30 cm plastic vinyl rope which releases female sex pheromones of the insect in large doses. The rope is tagged at the rate of 160 knots per acre over the 50 acres. Generally, the female pink bollworm releases 3 mg of sex pheromone, whereas each PB Knot releases around 158-160 mg. The high dosage confuses the male moth in locating the actual female, and its futile search for the female partner eventually results in the death of the male adult, thus hampering the mating process.

Recently, this new technology has been adopted in demonstration fields in Gujarat and Maharashtra, which comes as a new ray of hope for cotton farmers. The PB Knot technology is originally developed in Japan. **So, Option (d) is correct.**

PBKnot

55. Consider the following pairs:

S.No	*Launch vehicle*		*Properties*
1.	PSLV	:	Houses the first indigenous cryogenic engine in India.
2.	GSLV Mk-II	:	3-staged launch vehicles using solid, liquid and cryogenic stages, respectively.
3.	LVM 3	:	Highest success rate among India satellite launch vehicles.
4.	SSLV	:	Carries multiple satellites only to Low Earth Orbit.

How many pairs given above are correctly matched?

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

EXPLANATION:

A cryogenic engine is used in GSLV to launch heavier satellites into higher orbits. Recently, the Indian Space Research Organization (ISRO) reported that it had successfully human-rated the CE-20 rocket engine. Human-rating refers to rating a system that is capable of safely transporting humans. This engine will be used in a key test flight later this year as part of the country's mission to launch an Indian astronaut into space on an Indian rocket.

The CE-20 is an indigenous cryogenic engine that ISRO had developed to use with the GSLV Mk III, which is now called the LVM-3 launch vehicle. It represents an improvement on the CE-7.5 cryogenic engine and is instrumental to ISRO successfully realizing its human spaceflight.

Therefore, LVM 3 houses the first indigenous cryogenic engine in India. **So, Pair (1) is not correct.**

LVM3 is the new heavy-lift launch vehicle of ISRO for achieving a 4000 kg spacecraft launching capability to GTO (Geosynchronous Transfer Orbit) cost-effectively. GSLV Mk III or LVM 3 is a three-stage heavy lift launch vehicle developed by ISRO. LVM 3 is configured with two solid strap-on motors, one liquid core stage and a high-thrust cryogenic upper stage.

The S200 solid motor is among the largest solid boosters in the world, with 204 tonnes of solid fuel. The liquid L110 stage uses a twin-liquid engine configuration with 115 tonnes of liquid propellant. In contrast, the C25 Cryogenic upper stage is configured with the fully indigenous high-thrust cryogenic engine (CE20) with a propellant loading of 28 tons.

Therefore, GSLV Mk III or LVM 3 has a three-stage launch vehicle using Solid, Liquid and Cryogenic stages, respectively. **So, Pair (2) is not correct.**

Among India's satellite launch vehicles, GSLV Mk III or LVM 3 has made seven launches. They are the CARE mission, the GSAT-19 Mission, the GSAT-29 Mission, the Chandrayaan-2 Mission, the One Web India-1 Mission, the One Web India-2 Mission and the Chandrayaan-3 Moon Mission.

The LVM3 has a remarkable track record with five consecutive successful missions. Notably, it launched the Chandrayaan-2 mission. In the sixth flight of LVM3, 36 OneWeb Gen-1 satellites are placed into a 450 km circular orbit with an inclination of 87.4 degrees, weighing about 5,805 kg. The LVM3 also successfully launched the Chandrayaan-3 Moon Mission, inserting it into the lunar orbit.

Therefore, LVM 3 has the highest success rate among the India satellite launch vehicles, whereas PSLV has a success rate of 96.7 per cent, which means that out of 60 vehicles, 57 missions have been successful. The three failures were the PSLV's first launch in Sep 1993, in 1997, the rocket failed to reach orbit and twenty years later, the PSLV C39 mission failed, which is the 41st ISRO Mission.

So, Pair (3) is correct.

Over the years, ISRO has successfully realized five generations of launch vehicles, such as SLV-3, ASLV, PSLV, GSLV and GSLV Mk III, to cater to national developmental needs. To cater to emerging global small satellite launch services, ISRO has taken up the development of the Small Satellite Launch Vehicle (SSLV), which is an all-solid three-stage vehicle with the capability to launch on demand.

The SSLV can carry satellites weighing up to 500 kg to a low earth orbit. The SSLV is the smallest vehicle at 110-ton mass at ISRO. SSLV is perfectly suited for launching multiple microsatellites at a time and supports multiple orbital drop-offs.

Therefore, SSLV carries multiple satellites only to Low Earth Orbit. **So, Pair (4) is correct.**

56. Consider the following statement about astronomical objects :
    1. Pluto and Ceres are classified as dwarf planets, while asteroids are classified as minor planets.
    2. A celestial object's path can change due to heat energy being radiated asymmetrically.
    3. Trojan asteroids sharing orbit with planets have the highest chance of collision with planets.

    Which of the given above statements are correct?

    (a) **1 and 2 only**
    (b) 2 and 3 only
    (c) 1 and 3 only
    (d) 1, 2 and 3

EXPLANATION:

Dwarf planets are round and orbit the Sun just like the eight major planets. But unlike planets, dwarf planets are not able to clear their orbit of debris. A dwarf planet is much smaller than a planet (smaller even than Earth's moon). So far, the International Astronomical Union (IAU) has only recognized five dwarf planets. In order of distance from the Sun, they are Ceres, Pluto, Haumea, Makemake, and Eris. But the IAU says there may be many more dwarf planets, perhaps more than a hundred yet to be discovered.
Asteroids are rocky, airless remnants left over from the early formation of our solar system about 4.6 billion years ago. They are classified as minor planets because of their small size and large numbers relative to the major planets. **So, Statement 1 is correct.**

The effect of sunlight on rotating asteroids is tiny in contrast to the gravitational forces acting on asteroids as they move through the solar system. But, over many years, the tiny pushing effect of sunlight adds up, which makes it difficult for asteroids to remain in their orbits. Rotating asteroids drift widely over time. This is known as the Yarkovsky effect, and thus, it can change the orbit of small asteroids.
For example, Asteroid Apophis was predicted to pass really close to Earth in 2068. The asteroid Apophis orbit has been disturbed by the heat it is taking from the Sun. Therefore, the celestial object's path changes due to heat energy being radiated asymmetrically. **So, Statement 2 is correct.**

Trojans are objects that exist in gravitationally stable regions in front of or behind another body. Trojan asteroids have been found around Jupiter, Neptune, and Mars, and a few groups of Trojan moons orbit Saturn. The Trojan Asteroids do not collide with the planet because they orbit the sun in relation to the parent planet, though they share the same orbit.
Therefore, a Trojan asteroid sharing an orbit with planets has no chance of collision with planets.
So, Statement 3 is not correct.

57. Which of the following statements is ***not*** correct?
    (a) Quantum computers work based on the principle of Superposition of particles.
    (b) Entanglement of particles is a violation of bell inequalities.
    (c) Photons, electrons, and ions are common particles that can be entangled.
    (d) Quantum computers cannot operate without superconductors.

EXPLANATION:

While conventional computers rely on transistors, which represent the binaries 0 or 1, quantum computers use qubits. Qubits follow the superposition principle and can represent both 0 and 1 at the same time. The power of quantum computers grows exponentially in proportion to the number of qubits linked together. **So, Option (a) is correct.**

Quantum computing also relies on the concept of entanglement. In entanglement, two or more qubits are correlated in such a way that the state of one qubit is affected by the state of the other, regardless of the fact that they are physically separated. Entanglement between two separate systems is a necessary resource to violate a Bell inequality in a test of local realism. When two particles, such as a pair of photons or electrons, become entangled, they remain connected even when separated by vast distances.
Last year, the Nobel Prize in Physics was awarded for experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science.
So, Options (b) and (c) are correct.

While superconductors are a common technology used in building quantum computers, there are a handful of different approaches to developing and manufacturing quantum computers. The five leading qubit-type approaches other than superconductors are Photonics, Neutral Atoms, Trapped Ions and Quantum Dots.
Superconductors offer a low-resistance environment for controlling the delicate quantum states of qubits. However, they require extremely cold temperatures, making them complex and expensive. Currently, researchers are actively exploring other technologies for building quantum computers that can operate at room temperature or near room temperature, overcoming the limitations of superconductors. **So, Option (d) is not correct.**

58. Nanotechnology is being seen as a promising technology for humankind. Which of the following can be its applications ?
    1. Detecting cancer, bacterial and viral infection.
    2. Controlling antimicrobial resistance
    3. Energy storage systems
    4. Preservatives for the food processing industry
    5. Desalination plants

    How many of the statements given above are correct ?
    (a) Only two
    (b) Only three
    (c) Only four
    (d) All five

EXPLANATION:

Nanotechnology refers to the branch of science and engineering devoted to designing, producing, and using structures, devices, and systems by manipulating atoms and molecules at the nanoscale, i.e. having one or more dimensions of the order of 100 nanometres (100 millionths of a millimetre) or less.
Nanomaterials could be used in the diagnosis, treatment, and prevention of infectious diseases (bacterial and viral infection). Metallic nanoparticles have been used to detect breast and colon cancer by conjugating cancer-specific antibodies with nanoparticles to detect cancer in blood or urine samples. **So, Statement 1 is correct.**

Antimicrobial resistance (AMR) occurs when microorganisms such as bacteria, viruses, parasites or fungi become resistant to antimicrobial treatments to which they were previously susceptible.
Nanotechnology and nanoparticles were developed in recent years to reduce and combat bacterial resistance and multidrug resistance (MDR). Nanomaterials are used in a variety of medical applications, ranging from medical equipment to therapeutic agents, drug delivery systems, and diagnostic imaging systems. **So, Statement 2 is correct.**

Nanomaterials and nanotechnology have been extensively studied for realizing high-efficiency and next-generation energy storage devices. The high surface-to-volume ratio and short diffusion pathways of nano-sized materials can achieve large power density as well as energy density. Their various synthesis and functionalization methods enable the mass production of energy storage devices. **So, Statement 3 is correct.**

Nanotechnology is utilized in the food sector to enhance food security by employing nanosensors to identify infections or contamination in food throughout manufacturing, processing, packaging, storage and transport. It is used extensively in food preservation, food additives, and food packaging as an antimicrobial compound.
Nanoparticles, such as silver and titanium dioxide, have been utilized to impart antimicrobial properties, thereby reducing the risk of contamination and extending the shelf life of perishable foods. Thus, Nanotechnology is used as a preservative for the food processing industry. **So, Statement 4 is correct.**

The heart of most desalination systems lies in their membranes, selectively allowing water molecules to pass while rejecting dissolved salts. Nanotechnology offers a treasure trove of tools to enhance these membranes, creating a revolution in desalination efficiency.
Carbon nanotubes (CNTs) have great potential for membrane desalination, given their high aspect ratio, large surface area, high mechanical strength and chemical robustness. In recent years, the CNT membrane field has progressed enormously with applications in water desalination. **So, Statement 5 is correct.**

59. Consider the following statements regarding Leprosy :
    1. Leprosy is a chronic infectious disease caused by the Mycobacterium leprae bacteria.
    2. It is curable with multi-drug therapy without any side effects.

    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:

Recently, The Central government has approved a new treatment regimen for leprosy, aiming to stop its transmission at the sub-national level by 2027. According to the World Health Organization (WHO), leprosy is a chronic infectious disease caused by the Mycobacterium leprae bacteria. Leprosy, or Hansen's disease, predominantly affects the skin and peripheral nerves. Left untreated, it may cause progressive and permanent disabilities. The bacteria are transmitted via droplets from the nose and mouth during close and frequent contact with untreated cases. Leprosy is known to occur at all ages, ranging from early childhood to old age. **So, Statement 1 is correct.**

Leprosy, which is reported in all six WHO regions, is curable with a combination of drugs known as multi-drug therapy (MDT). As per the WHO guidelines, the diagnosis, treatment and prevention of leprosy are recommended to follow the same 3-drug regimen with rifampicin, dapsone and clofazimine for all patients, with duration of treatment of 6 months for Paucibacillary (PB) leprosy and 12 months for Multibacillary (MB) leprosy.

The multi-drug therapy has some side effects. The side effects of one of the regimens called dapsone are allergic reactions, causing itchy skin rashes and exfoliative dermatitis. Patients known to be allergic to any of the sulpha drugs should not be given dapsone. **So, Statement 2 is not correct.**

60. What is the "Tactical Airborne Platform for Aerial Surveillance-Beyond Horizon (TAPAS-BH)" sometimes mentioned in the news?
    (a) An Israeli artillery weapon system
    (b) India's indigenous unmanned aerial vehicle
    (c) An American anti-missile system
    (d) India's indigenous light combat helicopter

EXPLANATION:

The Long-Range Artillery Weapon System (LORA) is a container-based surface-to-surface missile that Israel has now successfully tested. A standard shipping container houses 4 missiles, which are controlled by an operator working from a command and fire control section located in another container. This operator can control 4 container launchers at once, for a total of 16 of the missiles. The LORA can be stored in a container for up to 7 years without maintenance. It has a range of 400km, propelled by solid propellant. **So, Option (a) is not correct.**

India's first unmanned aerial vehicle (UAV), Tactical Airborne Platform for Aerial Surveillance Beyond Horizon (TAPAS BH), designed and developed indigenously, made its flying debut at Aero India 2023 in February 2023. It is essentially an intelligence, surveillance and reconnaissance (ISR) UAV that flew for six hours at the air show at an altitude of 4,572 m at a speed of 92.6 m/s.

Officially termed a medium-altitude, long-endurance (MALE) UAV, the twin-engine TAPAS BH is capable of automatic take-off and landing, with an operating altitude of 30000 ft, endurance of 24 hrs with Electro-optical (EO) & Synthetic Aperture Radar (SAR) payloads and a range of 250 km. It can carry a variety of payloads up to a maximum of 350 kg. Its developers claim it can go undetected at a range of 70 km and unidentified at 40 km.

The UAV, formerly known as the Rustom-2, is indigenously developed by Aeronautical Development Establishment, a DRDO lab, and will be manufactured by DPSUs Bharat Electronics Limited (BEL) and Hindustan Aeronautics Limited (HAL). **So, Option (b) is correct.**

The Terminal High Altitude Area Defense (THAAD) is a highly effective, combat-proven defence against short, medium and intermediate-range ballistic missile threats. THAAD is the only U.S. system designed to intercept targets outside and inside the atmosphere. **So, Option (c) is not correct.**

The indigenous Light Combat Helicopter (LCH) "Prachanda", designed and developed by Hindustan Aeronautics Limited (HAL) for the Indian Air Force (IAF), is capable of destroying enemy air defence, conducting counter-insurgency strikes and much more, was formally inducted into the Indian Air Force (IAF) at the Jodhpur air base in 2022.

The LCH is the only attack helicopter in the world which can land and take off at an altitude of 5,000 meters with a considerable load of weapons and fuel, meeting the specific requirements laid out by the Indian

Armed Forces. The LCH has been designed as a twin-engine, dedicated combat helicopter of 5.8-ton class, thus categorised as light. LCH has a maximum take-off weight of 5.8 tonnes, a maximum speed of 268 kilometres per hour, a range of 550 kilometres, endurance of over three hours and service ceiling — the maximum density altitude to which it can fly is 6.5 kilometres.
So, Option (d) is not correct.

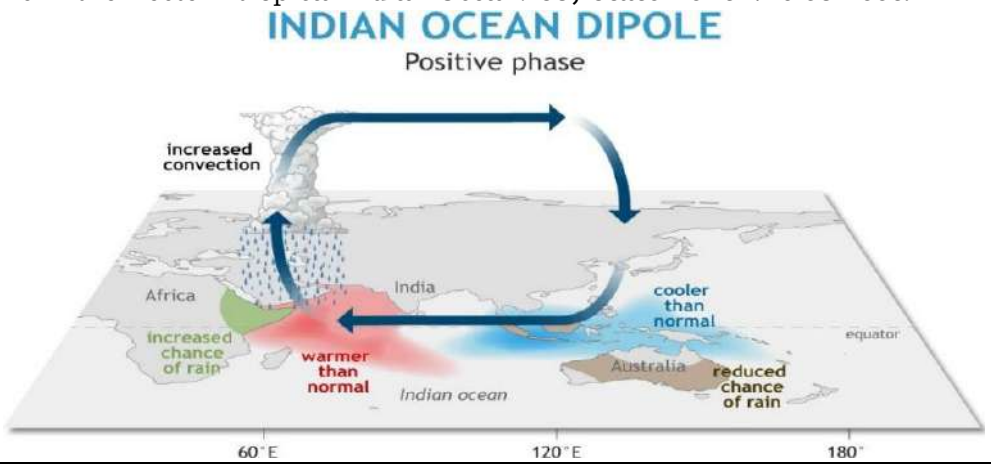
61. Consider the following statements with reference to the Indian Ocean Dipole (IOD):
    1. IOD primarily refers to the atmospheric changes over the equatorial Indian ocean.
    2. Positive IOD occurs when the sea surface temperatures are more than normal in the Arabian Sea and less than normal in the tropical eastern Indian Ocean.
    3. Negative IOD is usually associated with greater monsoon rainfall and more active easterly jet streams.

    Which of the above statements is/are correct?
    (a) 1 only
    (b) 1 and 2 only
    (c) 2 only
    (d) 3 only

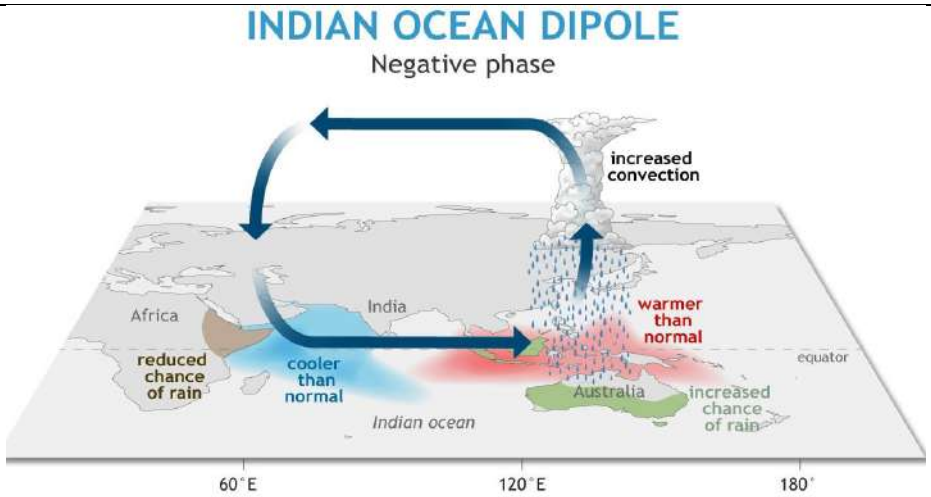
EXPLANATION:

Indian Ocean Dipole (IOD) is an atmosphere-ocean coupled phenomenon in the tropical Indian Ocean (like the El Nino is in the tropical Pacific), characterised by a difference in sea-surface temperatures.
IOD sometimes referred to as the Indian Nino, is a similar phenomenon, playing out in the relatively smaller area of the Indian Ocean between the Indonesian and Malaysian coastline in the east and the African coastline near Somalia in the west.
Compared to El Nino Southern Oscillations (ENSO) events, the impacts of IODs are much weaker. IOD events usually originate in April and May. However, there is an example of a strong IOD event developing late as well.
Therefore, IOD primarily refers to the atmospheric-ocean changes over the Tropical Indian Ocean.
So, Statement 1 is not correct.

A 'positive IOD' — or simply 'IOD' — is associated with cooler than normal sea-surface temperatures in the eastern Tropical Indian Ocean and warmer than normal sea-surface temperatures in the western tropical Indian Ocean (Arabian Sea region). The opposite phenomenon is called a 'negative IOD'. It is characterised by warmer than normal SSTs (Sea Surface Temperature) in the eastern equatorial Indian Ocean and cooler than normal SSTs in the western tropical Indian Ocean. **So, Statement 2 is correct.**



A positive Indian Ocean Dipole (IOD) helps increase rainfall along the African coastline and also more active (above normal rainfall) monsoon days over the Indian subcontinent. It suppresses rainfall over Indonesia, Southeast Asia and Australia. At the same time, negative IOD leads to less rainfall on the African coastline and more monsoon break days (no rainfall) in India while increasing rainfall over Indonesia, Southeast Asia and Australia. Negative IOD is not related to Easterly Jet Streams. **So, Statement 3 is not correct.**



62. Consider the following pairs**:**

	Mining Centres in India		***Minerals predominantly extracted***
1.	Turamdih mine	-	Uranium
2.	Malanjkhand mine	-	Copper
3.	Panchpatmali mine	-	Bauxite
4.	Barsingsar mine	-	Lignite

How many of the above pairs are correctly matched?

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

EXPLANATION:

Turamdih uranium mine is located in Jamshedpur, East Singhbhum District, Jharkhand, India. The mine started operation in 2003. Uranium Corporation of India Limited (UCIL), a public sector enterprise under the administrative control of the Department of Atomic Energy, operates the mine.

The major uranium deposits of the country occur in geological basins of the Singhbhum shear zone (Jharkhand), Cuddapah basin (Andhra Pradesh), Mahadek basin (Meghalaya), Delhi supergroup rocks (Rajasthan) and Bhima basin (Karnataka). Jharkhand accounts for 26%, the highest reserve in the country. Most of the uranium deposits are of small and lower grade compared to other leading producing countries in the world.

The UCIL now operates six underground mines at Bagjata, Jaduguda, Bhatin, Narwapahar, Turamdih, and Mohuldih and one open pit mine –Banduhurang in Singhbum shear zone in Jharkhand. All the operating units of UCIL are located in the Singhbhum East district of Jharkhand. Ore produced from these mines is processed in two mining plants located at Jaduguda and Turamdih. The uranium concentrate produced in these plants is purified at the Nuclear Fuel Complex in Hyderabad. They are purified, enriched and fabricated to serve as nuclear fuel rods. **So, Pair (1) is correct.**

The Malanjkhand Copper Mine is a surface and underground mine located in Jabalpur, Madhya Pradesh. It is owned by Hindustan Copper Limited (HCL). It is a Schedule-A, Mini Ratna category -1 Central Public Sector Enterprise (CPSE) under the administrative control of the Ministry of Mines, Government of India. The mine started its operation in 1982 and will operate until 2036. Malanjkhand Copper Project is developed as the largest open pit base metal mine in India which is one of the biggest copper ore supplying mine in the country.

The other copper mines are at the Khetri Copper Complex in Rajasthan, the Indian Copper Complex at Ghatsila, Jharkhand, the Taloja Copper Project in Maharashtra and Gujarat Copper Project. **So, Pair (2) is correct.**

The Panchpatmali mine is located in Panchpatmali hill of Koraput district in Odisha state. It is the largest bauxite mine in Asia, having a bauxite deposit of approx. 310 million tonnes. The mine is operated by Navratna Central Public Sector Enterprise (CPSE) National Aluminium Company Limited (NALCO) under the Ministry of Mines with its headquarters at Bhubaneswar, Odisha. The Company is one of the largest integrated Bauxite-Alumina-Aluminium- Power Complex in Asia. The Alumina Refinery provides alumina to the company's smelter at Angul and exports the balance of alumina to overseas markets through Visakhapatnam Port.

Bauxite is basically an aluminous rock that contains hydrated aluminium oxide as the main constituent and iron oxide, silica & titania as minor constituents present in varying proportions. By States, Odisha alone accounts for 51% of the country's resources of bauxite, followed by Andhra Pradesh (16%), Gujarat (9%), Jharkhand (6%), Maharashtra (5%) and Madhya Pradesh & Chhattisgarh (4% each). Bauxite is used as the main raw material for alumina making, which in turn is utilised for aluminium manufacturing. **So, Pair (3) is correct.**

Tamil Nadu-based NLC, under the ministry of coal, operates three opencast and another opencast lignite mine at Barsingsar in Rajasthan with an installed capacity of 2.1 million tonnes per annum (MTPA).

Lignite deposits in India are primarily located in the tertiary sediments in the Southern & Western parts of the peninsular shield, particularly in Tamil Nadu, Puducherry, Gujarat, Rajasthan and Jammu & Kashmir. Lignite is also available in minor quantities in Odisha, Kerala & West Bengal. **So, Pair (4) is correct.**

63. Consider the following sub-sectors in the estimation of Gross Value Added in India:
    1. Electricity, gas, water supply & other utility services
    2. Trade, hotels, transport, communication & services related to broadcasting
    3. Financial, real estate & professional services
    4. Public administration, defence & other services

    How many of the above are classified under the tertiary sector?
    (a) Only one
    (b) Only two
    (c) Only three
    (d) All four

EXPLANATION:

Gross value added (GVA) is defined as the value of output minus the value of intermediate consumption and is a measure of the contribution to GDP made by an individual producer, industry or sector. At its simplest, it gives the rupee value of goods and services produced in the economy after deducting the cost of inputs and raw materials used.

As part of the data on GVA, the National Statistical Office (NSO) provides both quarterly and annual estimates of output — measured by the gross value added — by economic activity. The sectoral classification provides data on eight broad categories that span the gamut of goods produced and services provided in the economy. These are: 1) Agriculture, Forestry and Fishing; 2) Mining and Quarrying; 3) Manufacturing; 4) Electricity, Gas, Water Supply and other Utility Services; 5) Construction; 6) Trade, Hotels, Transport, Communication and Services related to Broadcasting; 7) Financial, Real Estate and Professional Services; 8) Public Administration, Defence and other Services.

Among these,

- The primary sector comprises Agriculture, Forestry, Fishing and Mining & Quarrying.
- The secondary sector comprises Manufacturing, Electricity, Gas, Water Supply & Other Utility Services, and Construction**. So, Statement 1 is not correct.**
- Tertiary sector comprising Trade, Hotels, Transport, Communication and Services related to Broadcasting: Financial, Real Estate and Professional Services; Public Administration, Defence and other Services. **So, Statements 2, 3 and 4 are correct.**

64. Which of the following is ***not*** correct with respect to the Insolvency and Bankruptcy Board of India?
    (a) It is a key pillar of the ecosystem responsible for the implementation of the Insolvency and Bankruptcy Code (IBC).
    (b) It consolidates and amends the laws relating to reorganisation and insolvency resolution.
    (c) It writes and enforces rules for corporate insolvency resolution and corporate liquidation but not for individual insolvency resolution.
    (d) It has regulatory oversight over Insolvency Professionals, Insolvency Professional Entities and Information Utilities.

EXPLANATION:

The Insolvency and Bankruptcy Board of India was established on 1st October 2016 under the Insolvency and Bankruptcy Code, 2016.

- It is a key pillar of the ecosystem responsible for the implementation of the Code that consolidates and amends the laws relating to reorganization and insolvency resolution of corporate persons, partnership firms, and individuals in a time-bound manner for maximization of the value of assets of such persons, to promote entrepreneurship, availability of credit and balance the interests of all the stakeholders. **So, Option (a) and (b) is correct.**
- It is a unique regulator: that regulates a profession as well as processes. It has regulatory oversight over the Insolvency Professionals, Insolvency Professional Agencies, Insolvency Professional Entities, and Information Utilities. **So, Option (d) is correct.**
- It writes and enforces rules for processes, namely, corporate insolvency resolution, corporate liquidation, individual insolvency resolution, and individual bankruptcy under the Code. **So, Option (c) is not correct.**
- It has recently been tasked to promote the development of, and regulate, the working practices of, insolvency professionals, insolvency professional agencies and information utilities, and other institutions, in furtherance of the purposes of the Code.
- It has also been designated as the 'Authority' under the Companies (Registered Valuers and Valuation Rules), 2017 for regulation and development of the profession of valuers in the country.

65. With reference to the Trade and Economic Partnership Agreement (TEPA) between India and European Free Trade Association (EFTA), consider the following:
    1. Among EFTA countries, Switzerland is the largest trading partner of India, followed by Norway.
    2. EFTA aims to promote foreign portfolio investment in India in the next 15 years.
    3. TEPA provides an opportunity to integrate into EU markets.

    How many of the above statements is/are correct?
    (a) Only one
    (b) Only two
    (c) All three
    (d) None

EXPLANATION:

India-European Free Trade Association signed a Trade and Economic Partnership Agreement (TEPA) on 10th March 2024. European Free Trade Association (EFTA) is an inter-governmental organization set up in 1960 for the promotion of free trade and economic integration for the benefit of its four Member States. It is an important regional group comprising Switzerland, Iceland, Norway & Liechtenstein, with several growing opportunities for enhancing international trade in goods and services. EFTA is one important economic block out of the three (the other two - EU & UK) in Europe. Among EFTA countries, Switzerland is the largest trading partner of India followed by Norway. **So, Statement 1 is correct.**

The highlights of the Trade and Economic Partnership Agreement (TEPA) are:

- EFTA has committed to promoting investments to increase the stock of foreign direct investments by USD 100 billion in India in the next 15 years, and to facilitate the generation of 1 million direct employment in India, through such investments. The investments do not cover foreign portfolio investment. **So, Statement 2 is not correct.**

- TEPA provides an opportunity to integrate into EU markets. Over 40% of Switzerland's global services exports are to the EU. Indian companies can look to Switzerland as a base for extending their market reach to the EU. **So, Statement 3 is correct.**

66. Arrange the following gulf from west to east:
    1. Gulf of Bothnia
    2. Gulf of St. Lawrence
    3. Gulf of Aden
    4. Gulf of Mexico

    Select the correct answer using the codes given below:

    (a) 4-1-2-3
    (b) 1-4-3-2
    (c) 2-4-3-2
    (d) 4-2-1-3

EXPLANATION:

- The Gulf of Mexico is a partially landlocked body of water on the southeastern periphery of the North American continent. It is connected to the Atlantic Ocean by the Straits of Florida, running between the peninsula of Florida and the island of Cuba, and to the Caribbean Sea by the Yucatan Channel. To the northwest, north, and northeast, it is bounded by the southern coast of the United States, while to the west, south, and southeast, it is bounded by the east coast of Mexico.
- The Gulf of Saint Lawrence is a body of water covering about 60,000 square miles (155,000 square km) at the mouth of the St. Lawrence River. It fringes the shores of half the provinces of Canada and is a gateway to the interior of the entire North American continent.
- The Gulf of Bothnia is the northernmost part of the Baltic Sea, located in Northern Europe. It is bordered by Sweden on the west and Finland on the east. The Aland Islands of Finland, which are bordered by the Sea of Aland and the Archipelago Sea, are situated at the southern end of the Gulf of Bothnia.
- The Gulf of Aden is located between the Arabian Peninsula (north) and the Horn of Africa (south). It is bounded to the south by Somalia and the Socotra Islands, north by Yemen, east by the Arabian Sea, and west by Djibouti. It is a deepwater basin that forms a natural sea link between the Red Sea and the Arabian Sea.

The order of the Gulfs from West to East is the Gulf of Mexico, the Gulf of Saint Lawrence, the Gulf of Bothnia and the Gulf of Aden. **So, Option (d) is correct.**

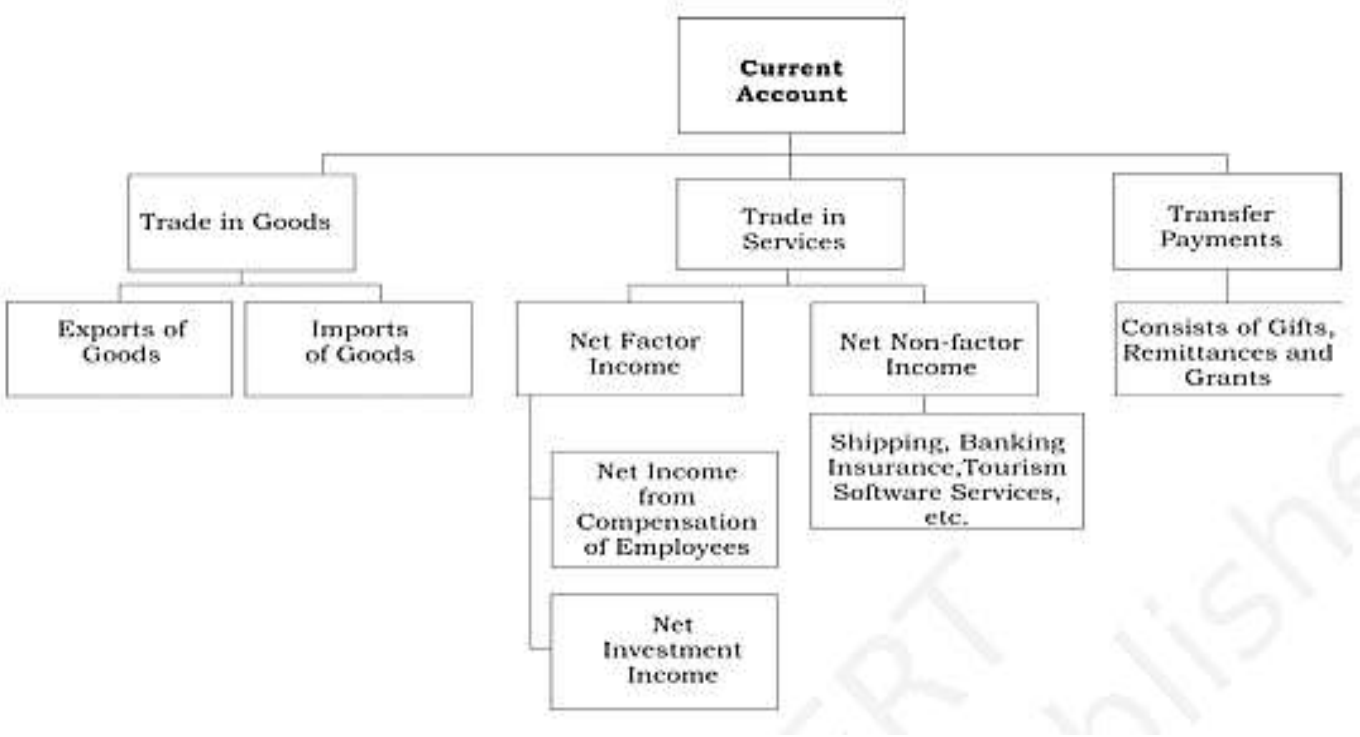
67. Consider the following statements:
    1. NRI deposits
    2. NRI remittances
    3. Income earned by resident Indians from abroad
    4. Outward remittance by foreigners with Indian residentship
    5. Profit earned by an Indian firm from foreign investment

    How many of the above are part of the current account of the Balance of Payments?

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

EXPLANATION:

The Balance of Payments (BoP) records the transactions in goods, services and assets between residents of a country with the rest of the world for a specified time, typically a year. The current account and the capital account are the two main accounts in the BoP.



The current Account is the record of trade in goods and services and transfer payments. Trade in goods includes exports and imports of goods. Trade in services includes factor income and non-factor income transactions.

Net factor income includes Income earned by resident Indians from abroad, income sent by foreign residents from India, and outward remittance by foreigners with Indian residentship. **So, Statements 3 and 4 are correct.**

Net factor incomes include net investment income, which is Profit, dividend, and interest earned by an Indian firm investors from foreign investment.

Transfer payments are the receipts which the residents of a country get for 'free', without having to provide any goods or services in return. They consist of gifts, remittances and grants. They could be given by the government or by private citizens living abroad (NRI remittance). **So, Statement 2 is correct.**

Under the capital account, both equity and debt flows are covered. Debt flows comprise commercial borrowings, external assistance, short-term trade credits and Non-Resident Indian (NRI) deposits, while the

equity flows comprise Foreign Direct Investment (FDI) and portfolio investment. Thus, NRI deposits are part of the capital account. **So, Statement 1 is not correct.**

Profit earned by an Indian firm from foreign investment would generally be part of the current account, as it represents income earned by residents from their investments abroad. **So, Statement 5 is correct.**

68. The platform "NITI for states," which has been in the news recently, is best related to

(a) A digital initiative aimed at helping the states to improve their financial capabilities and address their deficits.

(b) A digital public infrastructure that helps states and union territories (UTs) to achieve their national development goals.

(c) An initiative aimed at increasing the agricultural productivity of the states.

(d) A digital public infrastructure designed to empower states and union territories in developing their manufacturing sector.

EXPLANATION:

The 'NITI For States' launched by Niti Ayog is a cross-sectoral knowledge platform designed to become a Digital Public Infrastructure (DPI) for Policy and Good Governance. The 'NITI For States platform will facilitate the digital transformation of governance by equipping government officials with robust, contextually relevant, and actionable knowledge and insights, thereby enhancing the quality of their decision-making. It will also support cutting-edge level functionaries like district collectors and block-level functionaries by giving them access to innovative best practices across various States and UTs for achieving developmental goals. The platform is integrated with Niti Aayog's National Data Analytics Platform as the main data source.

Thus, NITI for states related to a digital public infrastructure helps states and union territories (UTs) achieve their national development goals. **So, Option (b) is correct.**

69. Consider the following:

1. Promoting women entrepreneurs
2. Strengthening legal safeguards for women
3. Strengthening women's self-help groups
4. Encouraging farmer producer organization
5. Bridging the gender skills gap

How many of the above enhance the role of women through economic and social empowerment?

(a) Only two

(b) Only three

(c) Only four

(d) All five

EXPLANATION:

The economic and social empowerment of women is one of the most fundamental components of achieving gender equality and women's empowerment more broadly. The latest estimate by the World Bank shows that if all gender employment gaps were closed, GDP per capita would be almost 20% higher. Some of the important factors that the role of women through economic and social empowerment are,

- Promoting women entrepreneurs- This initiative aims to empower women economically by encouraging them to start and manage their businesses. India's initiatives for promoting women entrepreneurs are Panjikaran Se Pragati, WEP- Unnati-Udyamita se Pragati. **So, Statement 1 is correct.**
- Strengthening legal safeguards for women- Legal safeguards protect women's rights and ensure their safety. By strengthening these laws, we empower women to assert their rights and seek justice. Legislations for Safeguarding Women in India like Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act,2013, etc. **So, Statement 2 is correct.**
- Strengthening women's self-help groups- Self-help groups (SHGs) empower women by promoting collective savings, skill development, and entrepreneurship. SHGs provide a platform for women to support each other and improve their socio-economic status. Examples of famous self-help groups (SHGs) in India are Mahila Arthik Vikas Mahamandal (MAVIM), SEWA (Self-Employed Women's Association), etc. **So, Statement 3 is correct.**
- Encouraging farmer producer organizations- Farmer producer organizations (FPOs) play a crucial role in rural development. When women are part of FPOs, they gain access to resources, markets, and training, leading to economic empowerment. Government schemes like the Mahila Kisan Sashaktikaran Pariyojana and the Central Sector Scheme for FPOs play a crucial role by providing financial support, training, and infrastructure to encourage women's participation in agriculture. **So, Statement 4 is correct.**

Bridging the gender skills gap- Addressing the skills gap ensures that women have equal opportunities for education, vocational training, and employment. By bridging this gap, we empower women to participate fully in economic activities. **So, Statement 5 is correct.**

70. Consider the following:
    1. Weddell Sea
    2. Barents Sea
    3. Scotia Sea
    4. Kara Sea
    5. Ionian Sea

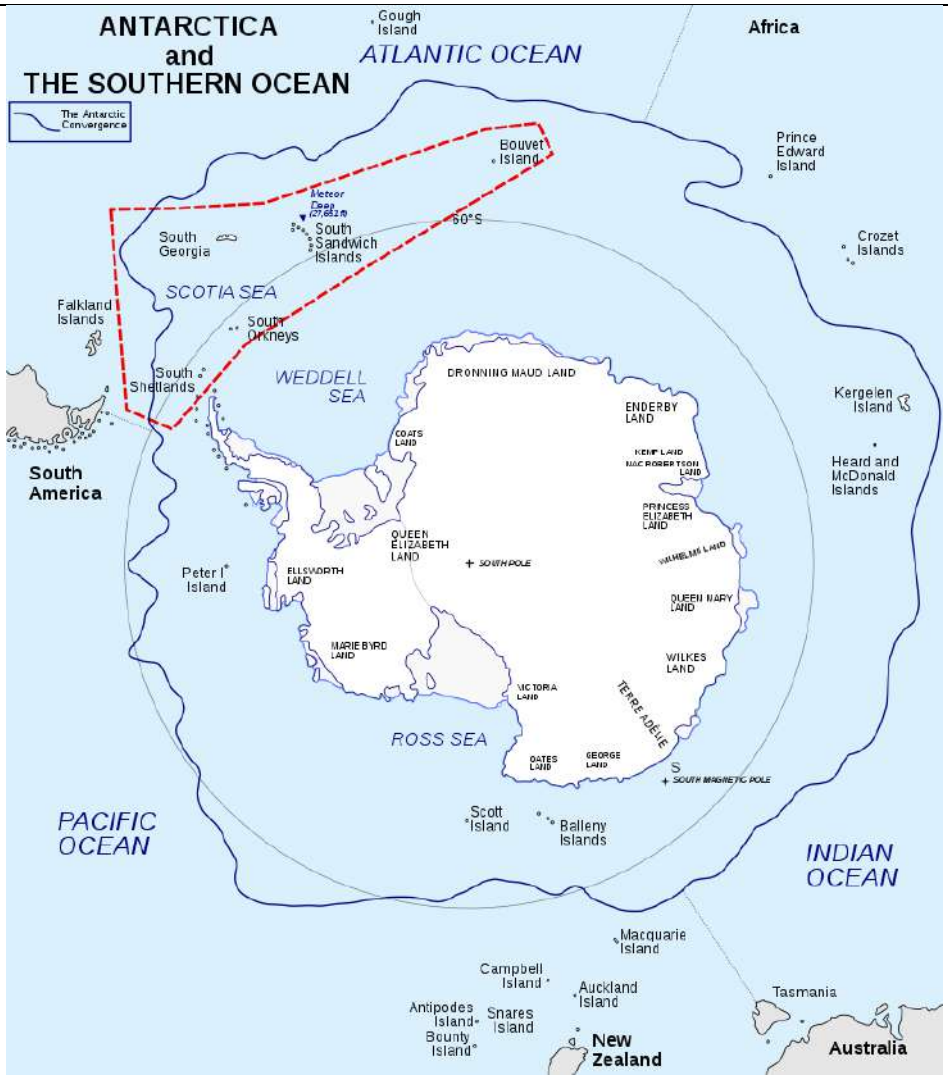
    How many of the above are the marginal seas of the Southern Ocean?

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

EXPLANATION:

The Southern Ocean, also known as the Antarctic Ocean, comprises the southernmost oceanic waters of the Earth. It is the fourth-largest ocean on the planet. On a geological basis, the Southern Ocean is the youngest ocean of all and was formed about 30 million years back when the continents of South America and Antarctica separated, and the Drake Passage opened up. The Southern Ocean is generally very deep, with the depth ranging from 13,000 to 16,000 ft in most parts. This ocean is very rich in natural resources and marine life. Blue whales, fur seals, colossal squids, penguins, orcas, etc., inhabit the waters of this ocean. An abundance of supply of phytoplankton in the waters here encourages a rich and varied marine life.

The Weddell Sea is a deep embayment in Antarctica's coastline. It is the Southern Ocean's largest marginal sea. The Antarctic Peninsula defines the boundary of the sea to the west, while East Antarctica's Coats Land forms the boundary of the Weddell Sea to the east. The sea is generally heavily iced and hence acts as a barrier to ships heading towards the Antarctic coast. The Weddell Sea is rich in marine fauna, with petrels, seals, and penguins thriving in the waters of this sea. **So, Statement 1 is correct.**



The Barents Sea is a marginal sea of the Arctic Ocean (Not the Southern Ocean of the Antarctic). A marginal sea is a part of the ocean that is partially enclosed by land in the form of peninsulas, archipelagos, or islands. It is located along the northern coasts of Norway and Russia. **So, Statement 2 is not correct.**

The Scotia Sea is located at the boundary between the South Atlantic and the Southern Ocean. The Drake Passage lies to the west of this sea, while the Scotia Arc defines the limits of the Scotia Sea in the other three directions. The Scotia Sea is a marginal of the Southern Ocean in Antarctica. **So, Statement 3 is correct.**

The Kara Sea is a marginal sea of the Arctic Ocean (Not the Southern Ocean of Antarctica) that is located to the north of Siberia, Russia. The sea has been named after the Kara River. The sea is relatively shallow, with an estimated average depth of about 110 m. The Kara Sea is regarded as one of the world's coldest seas and remains covered with ice from September to May. Different rivers, including the Kara, Ob, Pyasina, and Yenisei rivers, drain into the Kara Sea. This extensive freshwater outflow from the rivers is responsible for the varied salinity of the Kara Sea. **So, Statement 4 is not correct.**

Located in Southern Europe, the Ionian Sea is an elongated embayment of the Mediterranean Sea (Not the Southern Ocean of Antarctica). The Ionian Sea is situated to the south of the Adriatic Sea. The sea is bounded by the island of Sicily, the Salento Peninsula, and Calabria of southern Italy in the west. It is also bordered by southern Albania in the northeast and by the western coast of Greece in the east. The Calypso Deep, the deepest point in the Mediterranean Sea, is located in the Ionian Sea. The Ionian Sea is also widely known for being one of the world's most seismically active regions. **So, Statement 5 is not correct.**

71. Consider the following pairs:

	Dams		***Rivers***
1.	Baghlihar Dam	-	Chenab
2.	Krishna Raja Sagar	-	Krishna
3.	Gandhi Sagar Dam	-	Chambal
4.	Govind Ballabh Pant Sagar	-	Rihand

How many of the pairs given above are correct ?

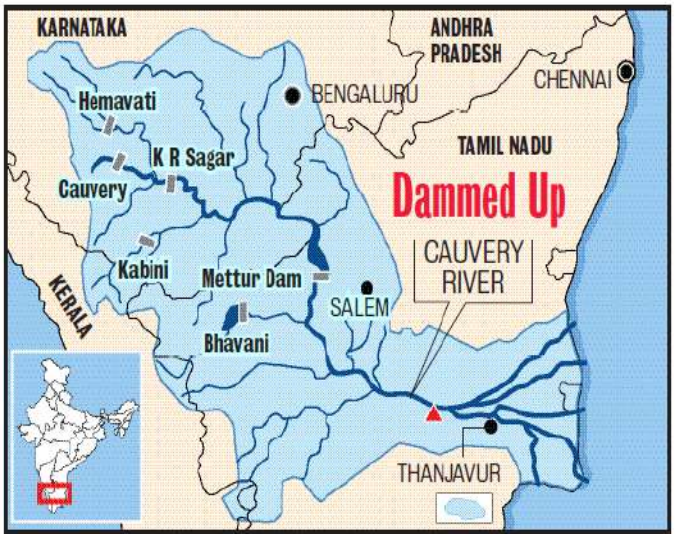
(a) Only one
(b) Only two
(c) Only three
(d) All four

EXPLANATION:

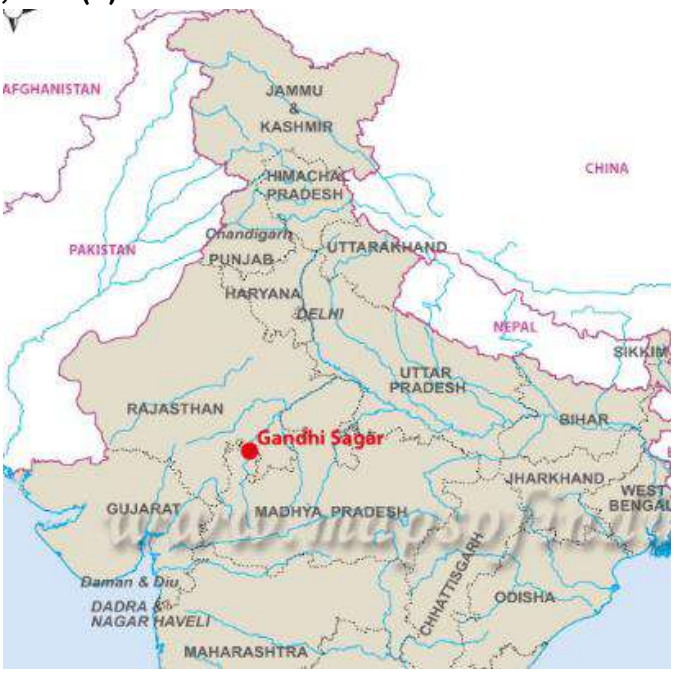
Baglihar Dam, also known as Baglihar Hydroelectric Power Project, is a run-of-the-river power project on the Chenab River in the Ramban district of Jammu and Kashmir, India. It consists of a gravity concrete dam 143 m high and 363 m long, which has a total volume of 1.9 million m^3, creating a reservoir with a capacity of 475 million m^3. **So, Pair (1) is correct.**

Krishna Raja Sagara Dam is often called as KRS Dam. Named after Krishnaraja Wodeyar IV of Mysore, this dam is built over the River Kaveri (Not River Krishna), near the conjunction of three rivers, namely, Kaveri, Hemavathi & Lakshmana Thirtha in Mysore, Karnataka. A major source of drinking water for Mysore and Bangalore city, the KRS dam is also one of the main sources of irrigation water for Mandya and Mysore. Along with this, its major purpose is to ensure power supply to the Shivanasamudra hydroelectric power station. With a length of 3 km, this dam also boasts of being the first irrigation dam in India. The Brindavan Gardens, located at the bottom of the dam site, has made this place world famous.

So, Pair (2) is not correct.



Gandhisagar Dam is situated in the Mandsaur district of Madhya Pradesh across the Chambal River. Late Prime Minister Pandit Jawaharlal Nehru laid the foundation stone for the construction of Gandhi Sagar Dam in March 1954. The work was started in 1957, while power generation and distribution commenced in November 1960. The dam has a height of 64 meters and a length of 950 meters. The dam has a capacity of 7.3 billion cubic meters. **So, Pair (3) is correct.**



Govind Ballabh Pant Sagar Dam, also known as Rihand Dam, is located in the Sonbhadra district of Uttar Pradesh State, India. It is the largest multipurpose project in the state of Uttar Pradesh. This is the largest artificial reservoir in India and also the largest dam in India by volume. It is on the river Rihand, a main tributary of Son (Tributary of Ganga River). The dam is named after Bharat Ratna Pandit Govind Ballabh Pant, a freedom fighter who was also one of the modern architectures. **So, Pair (4) is correct.**

72. Consider the following statements :
    1. India is the largest consumer and second largest producer of sugar in the world.
    2. India is the third largest country in the world in terms of ethanol production.

    Which of the above statements is/are correct?
    (a) 1 only
    (b) 2 only
    (c) Both 1 and 2
    (d) Neither 1 nor 2

EXPLANATION:

India has been the largest consumer and second-largest producer of sugar in the world. With about 15% share in global sugar consumption and about 20% production of sugar, Indian sugar trends affect the global markets profusely. This leading position makes India the most suitable nation to lead the International Sugar Organisation (ISO), which is the apex international body on sugar and related products having about 90 countries as members. **So, Statement 1 is correct.**

India is the 3rd largest country in the world in ethanol production after the USA and Brazil. India has shown commitment towards green energy and its capability to twist the challenges of surplus sugar in the domestic market to the solution of fossil fuels imports and a tool to meet COP 26 targets for India.
Remarkably, the ethanol blending percentage in India has increased from 5% in 2019-20 to 12% in 2022-23, while the production has increased from 173 crore litres to more than 500 crore litres during the same period. **So, Statement 2 is correct.**

73. Consider the following statements with respect to the international space governance :
    1. The existing global space governing agreements do not explicitly prohibit owning and using the resources of the celestial bodies once they are extracted.
    2. The United States is the only country to promulgate domestic laws that permit companies to claim exclusive ownership of over-extracted resources of celestial bodies.
    3. The United Nations Outer Space Treaty encourages its member countries to claim their territorial rights to ensure more scientific exploration.

    How many of the above statements is/are correct?
    (a) **Only one**
    (b) Only two
    (c) All three
    (d) None

EXPLANATION:

Celestial bodies, including the moon and asteroids, are potentially rich sources of natural resources to counter the fast depletion of those on Earth. Recent probes have concluded that the moon contains substantial amounts of water in its craters at the lunar poles.
The non-appropriation clauses in international treaties prevent nations from laying a claim over celestial bodies; however, they do not explicitly prohibit owning and using resources once they are extracted. **So, Statement 1 is correct.**

Countries like the U.S., Luxembourg, United Arab Emirates, and Japan have promulgated domestic laws that permit companies to claim exclusive ownership of over-extracted resources. In 2015, the U.S. government introduced the U.S. Commercial Space Launch Competitiveness Act 2015, the first national law recognising the property rights of private entities over space resources, allowing U.S. citizens to claim such rights.
Thus, the United States is not the only country to promulgate domestic laws that permit companies to claim exclusive ownership of over-extracted resources of celestial bodies.
So, Statement 2 is not correct.

On October 10, 1967, the international community ratified the Outer Space Treaty (OST), a groundbreaking treaty that laid down a comprehensive framework governing the conduct of nations in space. The Outer Space Treaty provides the basic framework for international space law, including the following principles:

- The exploration and use of outer space shall be carried out for the benefit and in the interests of all countries and shall be the province of all mankind.
- Outer space shall be free for exploration and use by all States.
- The Moon and other celestial bodies shall be used exclusively for peaceful purposes.
- However, Outer space is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.

Thus, the United Nations Outer Space Treaty does not encourage its member countries to claim their territorial rights in order to ensure more scientific explorations. **So, Statement 3 is not correct.**

74. Consider the following events related to BRICS 2023 summit :
    1. First BRICS Digital Health Summit
    2. First BRICS Water Ministers Meeting
    3. Adoption of BRICS's first Counter-Terrorism Action Plan
    4. First-time Launch of BRICS Alliance for Green Tourism
    5. Signing of Agreement on BRICS Remote Sensing Satellite Constellation

    How many of the above events were outcomes of the 2023 BRICS South African summit?
    (a) Only two
    (b) Only three
    (c) Only four
    (d) None

EXPLANATION:

The 13th BRICS Summit was held under India's Chairship on 09 September 2021. It will be the third time that India will be hosting the BRICS Summit after 2012 and 2016. India's BRICS Chairship in 2021 coincided with the 15th anniversary of BRICS, making it an opportune moment to review its work for greater efficiency and relevance.

Many 'firsts' were achieved during India's BRICS Chairship this year, which include:

- BRICS Digital Health Summit;
- 1st BRICS Water Ministers Meeting;
- Adoption of BRICS Counter-Terrorism Action Plan
- Launch of BRICS Alliance for Green Tourism;
- Operationalization of the BRICS Agricultural Research Platform and
- The signing of the Agreement on BRICS Remote Sensing Satellite Constellation.

Therefore, none of the given events were outcomes of the 2023 BRICS South African summit. **So, Option (d) is correct.**

South Africa assumed the Chairship of BRICS on 01 January 2023 under the theme 'BRICS and Africa: Partnership for Mutually Accelerated Growth, Sustainable Development, and Inclusive Multilateralism'. The theme emphasizes the continued value of BRICS as a partnership of leading emerging markets and developing countries providing leadership and momentum towards global growth and sustainable development.

Important outcomes from the BRICS Summit 2023 are,

- First is the decision on the BRICS expansion. This summit has unanimously decided to invite six countries to become full members, including Argentina, Egypt, Ethiopia, Iran, Saudi Arabia, and the United Arab Emirates.
- Leaders of the BRICS members at the summit declared their intention to reduce dependency on the US dollar and to increase the pace of de-dollarisation in global commerce.
- Leaders at the summit also strongly expressed that inclusive multilateralism and global governance could be achieved by the promotion of efficient representation, effective democracy, and reform of international organizations.
- The BRICS summit members agreed to extend their support for an African Continental Free Trade Agreement (AfCFTA).
- The summit saw a stronger focus on investing in agriculture and the green economy.

75. Consider the following statements regarding the WTO Information Technology Agreement (ITA) :
    1. ITA has increased the competitiveness of IT hardware manufacturing in India over the years.
    2. Under the ITA, India enjoys reduced customs duties for the IT products produced by Indian producers.
    3. Under the new ITA rules, new-generation semiconductors and GPS navigation equipment are exempted from the IT category products.

    How many of the above statements is/are correct?
    (a) Only one
    (b) Only two
    (c) All three
    (d) None

EXPLANATION:

India is a signatory to the Information Technology Agreement (ITA), a plurilateral agreement of WTO. As of date, there are altogether 75 member signatories, including 27 EU member countries, accounting for about 97 per cent of the world trade in Information Technology (IT) products. India joined the ITA on 25th March 1997.

The central objective of joining the ITA appears to have been enhancing the competitiveness of IT services by making hardware imports cheaper, a laudable objective.

The WTO's IT Agreement has not significantly improved India's IT services but has disproportionately impacted the hardware sector, thereby reducing the competitiveness of IT hardware manufacturing in India over the years. **So, Statement 1 is not correct.**

The basic customs duties on laptops, PCs and similar products in India are zero. India cannot increase customs duty as it has committed to zero duty on computers and many IT-related products by signing an Information Technology Agreement (ITA) in 1997.

The ITA requires each participant to eliminate and bind customs duties at zero for all products specified in the Agreement. Thus, under ITA, India enjoys reduced customs duties for the IT products produced by Indian producers. **So, Statement 2 is correct.**

The ITA covers a large number of high-technology products, including computers, telecommunication equipment, semiconductors, semiconductor manufacturing and testing equipment, software, scientific instruments, as well as most of the parts and accessories of these products.

The new accord covers new generation semiconductors, semiconductor manufacturing equipment, optical lenses, GPS navigation equipment, and medical equipment such as magnetic resonance imaging products and ultra-sonic scanning apparatus. **So, Statement 3 is not correct.**

76. Article 99 of the United Nations Charter, which was recently in the news, is related to

(a) The United Nations Security Council may request the International Court of Justice to give an advisory opinion on any legal question.

(b) Any member of the United Nations may bring any dispute to the attention of the United Nations Security Council.

(c) The United Nations General Assembly shall meet in special sessions convened by the Secretary-General at the request of a majority of the United Nations members.

(d) The Secretary-General may bring to the Security Council's attention any matter that threatens the maintenance of international peace and security.

EXPLANATION:

The UN Charter is the founding document of the United Nations. Based on the powers conferred through it, the UN can take action on a wide variety of issues. The Charter is considered an international treaty, meaning UN Member States are "bound by it".

According to Article 96 of the United Nations Charter, the General Assembly or the Security Council may request the International Court of Justice to give an advisory opinion on any legal question. Other organs of the United Nations and specialized agencies, which the General Assembly may so authorize, may also request advisory opinions of the Court on legal questions arising within the scope of their activities. **So, Option (a) is not correct.**

According to Article 35 of the United Nations Charter, any Member of the United Nations may bring any dispute or any situation of the nature referred to in Article 34 to the attention of the Security Council or of the General Assembly.

According to Article 34 of the UN Charter, the Security Council may investigate any dispute or any situation which might lead to international friction or give rise to a dispute in order to determine whether the continuance of the dispute or situation is likely to endanger the maintenance of international peace and security. **Option (b) is not correct.**

According to Article 20 of the United Nations Charter, the General Assembly shall meet in regular annual sessions and such special sessions as occasion may require. The Secretary-General shall convene special

sessions at the request of the Security Council or a majority of the Members of the United Nations. **So, Option (c) is not correct.**

Recently, the United Nations Secretary-General Antonio Guterres has invoked Article 99 of the UN Charter, urging the UN Security Council to act on the war in Gaza. According to Article 99 of the United Nations Charter, the Secretary-General may bring to the attention of the Security Council any matter which, in his opinion, may threaten the maintenance of international peace and security.
The provision has been rarely invoked. Past examples include the upheaval in the Republic of the Congo in 1960 following the end of Belgium's colonial rule and a complaint by Tunisia in 1961 against France's naval and air forces launching an attack. **So, Option (d) is correct.**

77. It is the largest freshwater lake in Odisha and is an oxbow lake formed by the River Mahanadi. This ramsar site is a safe habitat for bird and fish species and sustains the freshwater demands of the surrounding areas. Which of the following has been described above?
    (a) Ansupa lake
    (b) Yashwant Sagar
    (c) Hygam Wetland
    (d) Shallbugh Wetland

EXPLANATION:

Ansupa Lake is the largest freshwater lake in Odisha, situated in the Banki sub-division of Cuttack district. It has gained its fame from time immemorial for its scenic beauty, biodiversity, and natural resources. The lake has been designated as a protected Ramsar site since 2021.
The wetland is an oxbow lake formed by the River Mahanadi and is spread over an area of 231 ha. The wetland is home to at least 194 species of birds, 61 species of fish, and 26 species of mammals, in addition to 244 species of macrophytes.
The wetland provides a safe habitat for at least three threatened bird species: Rynchops albicollis (EN), Sterna acuticauda (EN) and Sterna aurantia (VU), and three threatened fish species- Clarias magur (Clariidae) (EN), Cyprinus carpio (Cyprinidae) (VU), and Wallago attu (VU).
Ansupa lake sustains the freshwater demands of the surrounding areas and also supports the livelihood of the local communities through fisheries and agriculture. The wetland has immense recreational and tourism potential, as it is a major wintering ground for migratory birds and is also known for its scenic beauty. **So, Option (a) is correct.**

78. With reference to Tundra Climate, consider the following statements:
    1. It can support only mosses, lichens and other lowest forms of vegetation.
    2. It is characterized by a short growing season and waterlogged soil.
    3. The Arctic tundra is usually drier than that of the Alpine tundra due to lower precipitation levels.

    Which of the above statements is/are correct?
    (a) 1 only
    (b) 1 and 2 only
    (c) 2 only
    (d) 2 and 3 only

EXPLANATION:

Tundra is a major zone of treeless level or rolling ground found in cold regions, mostly north of the Arctic Circle (Arctic tundra) or above the timberline on high mountains (alpine tundra). Tundra is known for large stretches of bare ground and rock and patchy mantles of low vegetation. And such an environment can support only the lowest form of vegetation like small shrubs, mosses, lichens and sedges, herbs.
So, Statement 1 is correct.

The tundra climate is named after the types of vegetation, such as low-growing mosses, lichens, and flowering plants. This is a region of permafrost where the subsoil is permanently frozen. The short growing season and water logging support only low-growing plants. During summer, the tundra regions have very long durations of day light. **So, Statement 2 is correct.**

There are two types of tundra such as Arctic tundra and Alpine tundra. Arctic tundra is found near the Arctic Circle, while Alpine tundra forms on mountain tops where the proper conditions exist. Alpine tundra receives more rain than Arctic tundra, but the water runs rapidly off the mountain slope, leaving any dry soil to blow away in the wind.
Alpine tundra is generally drier than Arctic tundra, even though it receives more precipitation, especially as snow. This is because the alpine tundra is located at high altitudes, where the air is thinner, and temperatures are lower than in the Arctic tundra. The altitude also contributes to the dryness of the climate, as the air becomes drier as it rises.**So, Statement 3 is not correct.**

79. Consider the following:
    1. Ability to secure their prey up on trees
    2. Can run at speeds of up to 75 miles per hour
    3. Ability to stalk and pounce on large prey
    4. Better hunting of prey at night
    5. Coalition formation among two to four individuals to take down larger prey

    How many of the above are advantages enjoyed by leopards over cheetahs?
    (a) Only two
    (b) Only three
    (c) Only four
    (d) All five

EXPLANATION:

Cheetahs are the fastest land animals and have a need for speed, which means that they are light, agile, and streamlined in their shape.
Leopards have rounder tails and larger front feet, which support their heavy front quarters and capture prey. Despite lacking speed, they excel in climbing and hauling heavier prey up trees, securing their catch for themselves. As leopards give less of a chase and rely on the element of surprise, they require cover from vegetation like trees and shrubs and, of course, benefit from trees which they can carry their carcasses into. Leopards utilise trees more than cheetahs in other ways, too, sleeping and lounging on them, while cheetahs, contrastingly, are not confident climbers.
So, Statement 1 is correct.

LEOPARD

Cheetahs are the fastest land animals on earth, running at speeds of up to 75 miles per hour. Leopards achieve speeds just less than half that of cheetahs, can only reach 37 miles per hour (60 km/h) over short distances, cheetahs can accelerate from 0 to 60 miles per hour in three seconds and can increase their speed by 10 kilometers per hour in a single stride.
So, Statement 2 is not correct.

CHEETAH

Leopards and cheetahs use the 'stalk and pounce' method or 'ambush hunting' to kill their prey, jumping on them and taking them down. Leopards can tackle larger prey than cheetahs and can even pounce from a climbed tree. Cheetahs, like leopards, get close to their prey before giving chase, eventually tripping or knocking them off balance. Both animals kill their prey with a bite to the neck, although cheetahs may take several minutes. **So, Statement 3 is correct.**

Leopards usually hunt at night, and cheetahs usually hunt during the day, although both can be seen hunting during the day or night, depending on the circumstances. To help them hunt at night, leopards have a high number of light-sensitive cells in their eyes, better allowing them to detect shape and movement in the dark than cheetahs. They also have larger eyes and pupils, which allow them to take in more of the light that is present. **So, Statement 4 is correct.**

Leopards and female cheetahs are generally solitary, while male cheetahs often form coalitions of two to four related individuals, which helps them take down larger prey. Leopards are solitary creatures that only spend time with others when they are mating or raising young. **So, Statement 5 is not correct.**

80. Recently, the Global Renewables and Energy Efficiency Pledge at COP28 was initiated by :
    (a) United Nations Development Programme
    (b) European Union
    (c) International Renewable Energy Agency
    (d) International Energy Agency

EXPLANATION:

The Global Renewables and Energy Efficiency Pledge at COP28 was initiated by the European Union (EU). This initiative sets global targets to triple the installed capacity of renewable energy to at least 11 terawatts (TW) and to double the rate of global energy efficiency improvements from roughly 2% to an annual figure of 4% by 2030. Delivering these targets will support the transition to a decarbonised energy system and help to phase out unabated fossil fuels.

The Global Pledge has been developed in close cooperation with the European Commission and the COP28 Presidency, with the support of the International Energy Agency (IEA) and the International Renewable Energy Agency (IRENA).

The pledge was spearheaded by the EU, the US and the UAE and supported by Brazil, Nigeria, Australia, Japan, Canada, Chile and Barbados. India and China have stayed away as the initiative calls for phasing down of coal and "ending the continued investment in unabated new coal-fired power plants". **So, Option (b) is correct.**

81. With reference to the Biological carbon pump found in the marine environment, consider the following statements:
    1. The Biological carbon pump is responsible for the formation of oil deposits and reserves of methane hydrates.
    2. The ocean contains 50 times more carbon than the atmosphere and absorbs about 30% of human carbon emissions.
    3. Dissolved carbon concentration at the surface of the ocean is higher than at depth.

How many of the statements given above are correct?

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

EXPLANTION:

The Biological Carbon Pump (BCP) is a crucial process that converts carbon dioxide and nutrients into organic carbon, which sinks into the deep ocean and decomposes, playing a vital role in storing and absorbing carbon dioxide from the atmosphere.
Over geological time-scales, The biological carbon pump has created oil deposits, biochemical sedimentary rocks like limestone, and deep-sea methane reserves, which now fuel our economy and contribute to the formation of biochemical sedimentary rocks, are a result of methanogenic microbial activity over millions of years. **So, Statement 1 is correct.**

The ocean contains around 50 times more carbon than the atmosphere. It absorbs about 30% of the carbon dioxide (CO2) released into the atmosphere by human activities. This includes burning fossil fuels and deforestation. The ocean contains about 40,000 billion tonnes of carbon mainly in the form of inorganic carbon dissolved in seawater. Each year, the ocean naturally exchanges almost a hundred billion tonnes of carbon with the atmosphere as CO2. **So, Statement 2 is correct.**

Carbon, primarily bicarbonate ions (HCO3-), is unevenly distributed in the ocean, as dissolved carbon concentrations are higher at depth than at the surface. Phytoplankton in the sunlit layer uses light energy for photosynthesis, consuming nutrients and dissolved inorganic carbon to produce organic matter.
Phytoplankton produces organic carbon primarily in the surface ocean, which is easily released through respiration and returns to the atmosphere. Only organic carbon entering the deep ocean below the thermocline contributes to the biological carbon pump. **So, Statement 3 is not correct.**

82. Consider the following statements:

Statement-I:

The chaitya-vihara cave appeared owing to the demands of the Hinayana faith.

Statement-II:

The chaitya-vihara caves were a combination of residential and worship areas with a large number of icons of Buddha-Bodhisattvas and decorative architectural components.

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 Mahayana, or later phase of Buddhism, was characterized by the introduction of icon worship and was confined to much fewer sites compared to the earlier period. While a few Hinayana centres, such as Kanheri, Nasik and Ajanta, continued to be significant, a few new sites, such as Ellora and Aurangabad (Aurangabad dt.), appeared. A new cave type, chaitya-vihara, appeared owing to the demands of the Mahayana faith (not related to the Hinayana faith).
So, Statement I is not correct.

A chaitya-vihara cave contained a pillared verandah, a square hall with cells along three sides and a shrine with an icon of Buddha in the back wall of the hall. Chaitya is a place of worship, while Vihara is the dwelling place of the monks. Thus, it was the combination of residential and worship areas in a single cave.
The caves were very ornamental monuments with a large number of icons of Buddha-Bodhisattvas and decorative architectural components. The famous caves at Ajanta, datable to 5th-6th century A.D., are the

most elaborate structures filled with beautiful paintings. In contrast, the caves at Ellora are large monuments, some of them being double and triple-storeyed.
So, Statement II is correct.

83. In the context of Buddhism, 'Prajna Paramita' refers to which of the following?
(a) Six spiritual qualities that help the practitioner see the truth face-to-face.
(b) Fourteen questions on which Buddha kept silent and did not express his views.
(c) Four noble truths that summarize Buddha's teachings
(d) Twelve elements that explain how the origins of rebirth lay in ignorance

EXPLANATION:

Prajna Paramita refers to the culmination of six spiritual qualities that help the practitioner for seeing the truth face to face (vipasyana). They are dana (charity), sila (withdrawing from all evil deeds), ksanti (forbearance), virya (enthusiasm), dhyana (concentration) and prajna (transcendental insight). The state of Bodhisattva, the realization of tathata, tathagata or tathagata-garbha, Dharma-kaya, bodhicitta, realization of sunyata, Nirvana - all these refer to one or other aspect of prajna paramita in Madhyamaka which is also the Absolute. **So, Option (a) is correct.**

'Avyakrtas' (inexpressible) are the questions about which Buddha kept silent. They are traditionally enumerated as 14 questions. They are,
- Whether the world is a) eternal, b) or non-eternal, c) or both eternal and non-eternal, and d) or neither eternal nor non-eternal.
- Whether the world is a) finite, b) or infinite, c) or both, d) or neither,
- Whether the Tathagata a) exists after death, b) or does not, c) or both d) or neither
- Whether the soul is identical with the body or different from it.

So, Option (b) is not correct.

Everyone who accepts Buddha agrees on one thing that his basic teaching is four noble truths. The Four noble truths (chatvari arya satyani) are,
- 'sarvam dukkam'(everything is suffering),
- 'dukka samudaya'(cause of suffering),
- 'dukka nirodha'(cessation of suffering),
- 'dukka nirodha marga' (path for cessation of suffering).

This is actually ethical-religious teaching. This is exposed in the first discourse, the 'Dhammacakkapavattana-sutta'. **So, Option (c) is not correct.**

Buddhism explains suffering through a chain of twelve causes and effects, commonly known as the Doctrine of Dependent Origination (pratityasamutpada). Pratitya-samutpada is a middle path between sasvatvada (the principle of eternity) and uchedvada (the principle of annihilation). According to sasvatvada, some things are eternal, uncaused, and independent.
The twelve links of pratitya-samutpada are Ignorance (avidya), Impression (samskara), Initial Consciousness in the embryo (vijnana), Mind-body embryonic organism (nama rupa), The six fields viz., the five senses and the mind together with their objects (sadayatana), Contact between the senses and the objects (sparsa), Sense experience (vedana), Strong Desire (trishna), Clinging to existence (upadana), Will to be born (bhava), Rebirth (jati) and Pain, old age and death (jara-marana).
So, Option (d) is not correct.

84. With reference to the Sangam literature, consider the following statements:
1. It provides information about various legends associated with the Vedic religion.
2. It reflects a belief in sacred or magical forces that were supposed to inhabit various objects.
3. It makes references to kings employing women as bodyguards.

How many of the statements given above are correct?
(a) Only one
(b) Only two
(c) All three
(d) None

EXPLANATION:

The Sangam literature provides information about various legends associated with the Vedic religion. For example,

- A Purananuru song (56) describes the Vedic deities such as Yama, Balarama, Krishna and Subramanya and equates them with the courageous qualities of the Pandya king Ilavantikai Thunjiya nanmaran.
- Another song (Purananuru 58) points out that the Chola and Pandya kings are similar to the forms of fair-skinned Balarama and dark-skinned Krishna.
- The dark-skinned Lord Vishnu as Trivikrama measuring the three worlds, finds mention in Perumpaanatruppadai (29-30). Therefore, each Sangam literature speaks about various legends associated with the Vedic religion. **So, Statement 1 is correct.**

Sangam literature reflects a belief in sacred or magical forces called ananku that were supposed to inhabit various objects. The job of carrying out rites and rituals to control the ananku was that of groups such as the Pariyans, Tutiyans, Panans, and Valens. They were associated with ritualistic singing, dancing, and trances with lighting the cremation fire and worshipping memorial stones. Ananku was also believed to cling to women. If a woman was chaste, her ananku would be under control and had auspicious potential. **So, Statement 2 is correct.**

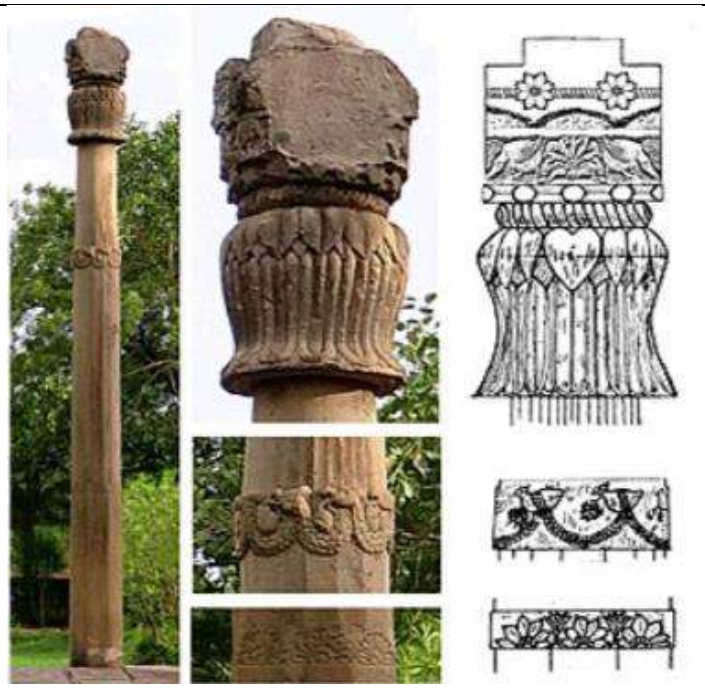
Sangam literature states that the Cholas, a massive naval power, had a warrior culture that included women in a multitude of roles. The Chola king's entourage included the *padimagalir*, women bodyguards who protected and attended to the king. They accompanied him while he was camping in wartime, guarding him against potential ambushes. These women were celebrated for their valour as warriors ready to lay down their lives for the king. They were supported by additional women guards in the palaces and the living quarters. These women were trained for fighting from a young age, and well-armed to protect the royalty. Also, Women were represented in a variety of work roles besides serving as bodyguards. There are mentions of women in powerful functions in the kingdom, working as advisors and ambassadors mentioned the poem Perum kathai speaks of 'clever women' acting as peacemakers between kingdoms. **So, Statement 3 is correct.**

85. The Besnagar Pillar inscription of the Greek ambassador Heliodorus is associated with which of the following faiths?
    (a) Saivism
    (b) Bhagavatism
    (c) Hinayana
    (d) Mahayana

EXPLANATION:

The Besnagar Pillar inscription or Heliodorus inscription describes the Greek ambassador Heliodorus (who served in the court of King Bhagabhadra) as a Bhagavata who dedicated a Garuda banner to Lord Vasudeva. This earliest epigraphic evidence for the existence of the Bhagavata cult is found in Madhya Pradesh. The discovery of the Garuda pillar inscription of Besnagar is a landmark in the history of Bhagavatism. The Heliodorus Pillar has inscriptions written in Brahmi script, which is composed in classical Sanskrit. The inscriptions also reveal an essential aspect of ancient Indian society: religious tolerance and coexistence. The inscriptions discuss freedom of worship and acceptance of different faiths and beliefs.

The inscription records the erection of a Garuda standard in honour of Vasudeva, the god of gods, by a Greek ambassador, Heliodorus, who describes himself as a Bhagavata and a resident of Taksasila. The ambassador came from the Greek king Antialcidis to Kautsiputra Bhagabhadra, identified with the fifth Sunga king, and the record is dated in the fourteenth year of his reign, approximating to c. 113 B.C. **So, Option (b) is correct.**



86. Consider the following statements regarding Gene Editing mechanisms :
    1. DNA ligase acts as molecular scissors.
    2. Exonucleases remove nucleotides from the ends of the DNA, whereas Endonucleases make cuts at specific positions within the DNA.
    3. Restriction enzymes act like a molecular glue that catalyzes the formation of a phosphodiester bond.

    How many of the statements given above are correct?
    (a) **Only one**
    (b) Only two
    (c) All three
    (d) None

EXPLANATION:

The cutting of DNA at specific locations became possible with the discovery of the so-called 'molecular scissors' or restriction enzymes. Restriction enzymes cleave DNA at or near specific recognition sequences known as restriction sites. These enzymes make one incision on each of the two strands of DNA and are also called restriction endonucleases. In order to cut the DNA with restriction enzymes, it needs to be in pure form, free from other macro-molecules. Therefore, restriction enzymes act as molecular scissors. **So, Statement 1 is not correct.**

Restriction enzymes belong to a larger class of enzymes called nucleases. There are two kinds: exonucleases and endonucleases. Exonucleases remove nucleotides from the ends of the DNA, whereas endonucleases make cuts at specific positions within the DNA. **So, Statement 2 is correct.**

DNA ligases are enzymes required for the repair, replication and recombination of DNA. DNA ligases catalyze the formation of phosphodiester bonds at single-strand breaks in double-stranded DNA. DNA ligases are present ubiquitously in all living organisms. Despite their occurrence in all organisms, DNA ligases show a wide diversity of amino acid sequences, molecular sizes and properties. Therefore, DNA ligases act like a molecular glue that catalyzes the formation of a phosphodiester bond.
So, Statement 3 is not correct.

87. Consider the following statements :
    1. Slag is used in low-lying areas as filler material.
    2. Slag products are used in hydraulic engineering.
    3. Slag is used for manufacturing of bricks

How many of the above are the applications of the slag ?

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

EXPLANATION:

Steel slag, a by-product of steelmaking, is produced during the separation of the molten steel from impurities in steelmaking furnaces. The slag occurs as a molten liquid melts and is a complex solution of silicates and oxides that solidify upon cooling. About 18% of slag by weight is wasted while manufacturing steel by the industries. Steel slag has the basic properties of aggregates.

Slag is also utilized for other purposes, like

- Slag products are used in hydraulic engineering to stabilize the natural course of the river bed.
- Basalt and granite are all natural stones that have useful characteristics. But to use them, they have to be quarried. In many fields, the application of natural stone can be replaced with slag products.
- Slag is mostly used for the manufacturing of blast furnace slag cement.
- Slag can be used for manufacturing bricks that can be replaced by scarce natural resources.
- Slag can be used in low-lying areas as filler material.

So, Option (c) is correct.

88. Consider the following statements based on the standard model of elementary particles:

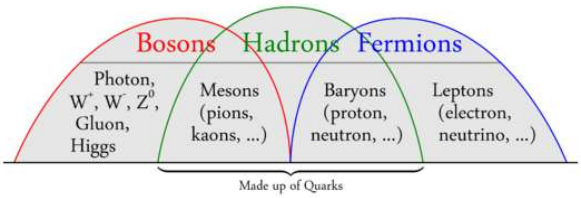
1. Neutrons are Hadrons, while Protons are Leptons.
2. Higgs bosons give mass to all elementary particles.
3. Neutrinos are fermions, and they propagate across the universe in three flavours.

How many of the statements given above are correct?

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

EXPLANATION:

Hadrons are subatomic particles that consist of even smaller particles built from quarks and thus reach through the agency of the strong force. Specifically, hadrons are made of two or more quarks held together by the strong interaction force, one of the fundamental forces in the universe. The hadrons embrace mesons, baryons (e.g., protons, neutrons, and sigma particles). Protons contain two up quarks and one down quark, while neutrons contain one up quark and two down quarks.



A lepton is a particle not affected by strong nuclear forces but is only subjected to weak forces. As such, electrons and neutrinos are leptons. A lepton number of 1 is assigned to both the electron and the neutrino and −1 to the antineutrino and the positron. Therefore, Both Neutrons and protons are hadrons. **So, Statement 1 is not correct.**

In our current description of Nature, every particle is a wave in nature. The most familiar example of this is light :- light is simultaneously a wave in the electromagnetic field and a stream of particles called photons. The Higgs field was proposed in 1964 as a new kind of field that fills the entire Universe and gives mass to all elementary particles. The Higgs boson is a wave in that field. Its discovery confirms the existence of the Higgs field. Particles get their mass by interacting with the Higgs field; they do not have a mass of their own. The stronger a particle interacts with the Higgs field, the heavier the particle ends up being. Photons, for example, do not interact with this field and therefore have no mass. Yet other elementary particles, including

electrons, quarks and bosons, do interact and hence have a variety of masses. Therefore, the Higgs boson gives mass to all elementary particles. **So, Statement 2 is correct.**

Neutrinos are a type of fundamental particle known as a fermion. All other fermions, such as leptons and quarks, gain their mass through their interactions with the Higgs boson. Neutrinos don't decay, but they do change the flavour. This is known as neutrino oscillation, and it's due to an odd quantum property of the particles. Each of the three neutrino flavours is actually a mixture or a superposition of three quantum states with different masses. Therefore, Neutrinos are fermions and they propagate across the universe in three flavors. **So, Statement 3 is correct.**

89. With reference to Advanced Nuclear Energy for Enriched Life, consider the following statements:
    1. It is a first-of-its-kind nuclear fuel that combines highly enriched uranium and thorium.
    2. It can be used in the existing Pressurized Heavy-Water Reactors.
    3. It produces more energy by staying in the reactor for a longer period of time.
    4. It produces less radioactive waste than traditional fuel.

    How many of the statements given above are correct ?
    (a) Only one
    (b) Only two
    (c) Only three
    (d) All four

EXPLANATION:

Recently, The Chicago-based company has developed (and patented) a fuel, which is a mix of Thorium and Uranium of a certain level of enrichment (not highly enriched), called HALEU (High Assay Low Enriched Uranium). Advanced Nuclear Energy for Enriched Life (ANEEL) is the first-of-its-kind nuclear fuel. It combines HALEU and thorium in proprietary unique compositions that can drive a global clean energy future. ANEEL provides an easier and quicker alternative for the deployment of thorium leveraging imported HALEU. **So, Statement 1 is not correct.**

ANEEL can be used in the existing Pressurized Heavy-Water Reactors (PHWRs), an indigenous reactor system that is the workhorse of India's nuclear fleet. India has 18 PHWR reactors with a total capacity of 4,460 MW and is building ten more of 700 MW each.
The ANEEL fuel has a very high fuel burn-up rate as compared to natural uranium fuel used in currently operating PHWRs. Higher burn-up means the fuel stays in the reactor longer and gets more energy out of the same amount of fuel.
This higher burn-up significantly impacts the waste volumes and economics of reactor operations compared with the currently used natural uranium. A higher burn-up of ANEEL fuel reduces the waste by over 80% and results in much less plutonium (Pu) because more of the Pu is burned to make energy while making the spent fuel proliferation resistant. Therefore, by utilizing this fuel, reactor operators can enjoy a dramatic reduction in nuclear waste volume and operating costs, and it produces less radioactive waste than traditional fuel. **So, Statements 2, 3 and 4 are correct.**

90. Consider the following statements :
    1. Viruses with RNA as genetic material lack a proofreading mechanism during replication.
    2. RNA viruses have caused pandemics in the human population, while DNA viruses have caused endemic disease outbreaks only.

    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:

DNA viruses have mutation rates similar to those of eukaryotic cells because, like eukaryotic DNA polymerases, their replication enzymes have proofreading functions. DNA polymerases with proofreading

capabilities can detect misincorporated nucleotides by contacting the minor groove of base pairs beyond the insertion site.
The RNA viruses, however, lack a proofreading function in their replication enzymes. Even the simplest RNA viruses, which have about 7,400 nucleotides per genome, will generate mutants frequently, perhaps as often as once per genome copy. **So, Statement 1 is correct.**

RNA viruses have caused pandemics in the human population and are remarkable for their ability to adapt, which makes them capable of exceedingly successful transmission and defence evasion. Human diseases causing RNA viruses include Orthomyxoviruses, Hepatitis C Virus (HCV), Ebola disease, SARS, influenza, polio, measles and retrovirus, including adult Human T-cell lymphotropic virus type 1 (HTLV-1) and human immunodeficiency virus (HIV)

- Influenza viruses are members of the family Orthomyxoviridae. This family represents enveloped viruses the genome of which consists of segmented negative-sense single-strand RNA segments, caused the great influenza pandemic of 1917–1919, usually referred to as the 1918 flu or, misleadingly, Spanish flu.

Viruses with DNA as their genetic material are called DNA viruses. Adenoviruses, Herpesviruses, poxviruses and Parvoviruses are examples of DNA viruses.

- Varicella (chickenpox) is an acute infectious disease caused by varicella-zoster virus (VZV), which is a DNA virus. It is an endemic disease throughout the world.
- Smallpox is an acute contagious disease caused by the variola virus (DNA Virus), a member of the orthopoxvirus family. It caused a pandemic from 1870 to 1874.
- Thus, DNA viruses have caused both endemic and pandemic disease outbreaks (not endemic disease outbreaks only). **So, Statement 2 is not correct.**

91. Who among the following has discretionary powers under the Fifth Schedule of the Indian Constitution to set up a Tribes Advisory Council in a state which has Scheduled Tribes but not Scheduled Areas?
    (a) The Governor of the concerned state
    (b) The President of India
    (c) The Inter-State Council
    (d) Parliament of India

EXPLANATION:

- Article 244, in Part X of the Constitution, envisages a special system of administration for certain areas designated as 'scheduled areas' and 'tribal areas'.
- The Fifth Schedule of the Constitution deals with the administration and control of scheduled areas and scheduled tribes in any state except the four states of Assam, Meghalaya, Tripura, and Mizoram. The Sixth Schedule of the Constitution, on the other hand, deals with the administration of the tribal areas in the four northeastern states of Assam, Meghalaya, Tripura, and Mizoram.
- Each state having scheduled areas has to establish a tribes advisory council to advise on the welfare and advancement of the scheduled tribes. It is consist of 20 members, three-fourths of whom are to be the representatives of the scheduled tribes in the state legislative assembly.
- A similar tribes advisory council can also be established in a state having scheduled tribes but not scheduled areas therein if the President so directs. **So, Option (b) is correct.**

92. Which one of the following is a characteristic of the Presidential form of government?
    (a) The President is not a part of the legislature.
    (b) It does not separate legislative and executive functions.
    (c) The President follows the principle of collective responsibility.
    (d) The President can dissolve the lower House of the legislature.

EXPLANATION:

In a Presidential system, the head of government is elected and works alongside the legislature, while the president heads the executive branch, which is separate from the legislature. The President who heads the executive is not a part of the legislature unlike in a Parliamentary system. The President has various powers,

including vetoing legislation, pardoning crimes, and commanding the military.
So, Option (a) is correct.

In the Parliamentary system, the legislature and the executive are together and inseparable. The cabinet acts as the leader of the legislature as well as the executive. In the presidential form of government is based on the principle of separation of power among the three branches of government. The executive branch is not responsible to the legislature and cannot dissolve it.
So, Option (b) is not correct.

The principle of collective responsibility is the bedrock principle of parliamentary government. As it is in the cabinet and the main strength lies in it. The principle of collective responsibility means that the council of ministers is accountable for the general conduct of affairs of the government.
So, Option (c) is not correct.

The President can dissolve the Lower House of the legislature on the recommendation of the Prime Minister. The Prime Minister can advise the President to dissolve the Lok Sabha before the expiry of its term and hold fresh elections. This means that the executive enjoys the right to get the legislature dissolved in a parliamentary system.
So, Option (d) is not correct.

93. **Assertion (A):**
Reports of Ethics and Privileges Committees are binding upon the Parliament, while those of Special Inquiry Committees are not.

Reason (R):
The Ethics Committee and Privilege Committee of Parliament are Standing Committees, while the Special Inquiry Committees are ad hoc.

Which one of the following is correct in respect of the above statements?
(a) Both A and R are true, and R is a correct explanation of A.
(b) Both A and R are true but R is not a correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

EXPLANATION:

Parliamentary committees are committees that are appointed or elected by the House or nominated by the Speaker. They work under the direction of the Speaker and present their report to the House. While all parliamentary committees play a crucial role in the functioning of Parliament, they do not have the final say on legislation or policies. The recommendations of parliamentary committees like Ethics Committee and Privileges Committees are advisory in nature and not legally binding on the Government or Parliament. However, committee reports and recommendations are usually given significant weight in the decision-making process.
So, Assertion (A) is false.

Broadly, Parliamentary Committees are of two kinds: Standing Committees and Ad Hoc Committees. The Standing Committees are permanent (constituted every year or periodically) and work on a continuous basis, such as the Committee on Petitions, Committee of Privileges, and Ethics Committee. While the Ad Hoc Committees are temporary and cease to exist on completion of the task assigned to them, such as Ad Hoc Committees can be divided into two categories, that is, Inquiry Committees and Advisory Committees.
So, Reason (R) is true. Hence, Option (d) is correct.

94. With reference to the Finance Commission, consider the following statements:
1. Article 280 of the Indian Constitution provides for a Finance Commission as a quasi-judicial body.
2. It is constituted by the parliament of India every fifth year.
3. The members of the finance commission are not eligible for reappointment.

How many of the statements given above is/are correct?
(a) Only one
(b) Only two

(c) All three
(d) None

EXPLANATION:

Artic1e 280 of the Constitution of India provides for a Finance Commission as a quasi-judicial body. It is constituted by the President of India (not by the parliament of India) every fifth year or at such earlier time as he/she considers necessary.

The Finance Commission is required to make recommendations to the President of India on the following matters:

- The distribution of the net proceeds of taxes to be shared between the Centre and the states and the allocation between the states of the respective shares of such proceeds.
- The principles that should govern the grants-in-aid to the states by the Centre (i.e., out of the Consolidated Fund of India).
- The measures needed to augment the consolidated fund of a state to supplement the resources of the panchayats and the municipalities in the state are based on the recommendations made by the state finance commission.
- Any other matter referred to it by the President in the interests of sound finance.

So, Statement 1 is correct and Statement 2 is not correct.

The Finance Commission consists of a chairman and four other members to be appointed by the President. They hold office for such period as specified by the President in his/her order. They are eligible for reappointment.

The Constitution authorizes the Parliament to determine the qualifications of members of the commission and how they should be selected. Accordingly, the Parliament has specified the qualifications of the chairman and members of the commission. The chairperson should be a person having experience in public affairs, and the four other members should be selected from amongst the following:

- A judge of the high court or one qualified to be appointed as one.
- A person who has specialized knowledge of finance and accounts of the government.
- A person who has wide experience in financial matters and administration.
- A person who has special knowledge of economics.

So, Statement 3 is not correct.

95. Consider the following:
1. Written constitution
2. Supremacy of the constitution
3. Single Citizenship
4. Bicameralism
5. Integrated Judiciary

How many of the above features of the Indian Constitution are ***not*** unitary in nature?

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

EXPLANATION:

- By definition, a unitary government is one in which the powers are vested in the national government, and the regional governments, if at all exist, derive their authority from the national government.
- A federal government, on the other hand, is one in which powers are divided between the national government and the regional governments by the Constitution itself and both operate in their respective jurisdictions independently.
- The written constitution is a federal feature of the Constitution of India. The Constitution is not only a written document but also the lengthiest Constitution in the world. At present, it consists of a Preamble, about 470 Articles (divided into 25 Parts) and 12 Schedules. It specifies the structure, organization, powers, and functions of both the Central and state governments and prescribes the limits within which

they must operate. Thus, it avoids the misunderstandings and disagreements between the two. **So, Statement 1 is correct.**

Supremacy of the Constitution is a federal feature. The Constitution is the supreme (or the highest) law of the land. The laws enacted by the Centre and the states must conform to its provisions. Otherwise, they can be declared invalid by the Supreme Court or the high courts through their power of judicial review. Thus, the organs of the government (legislative, executive, and judicial) at both levels must operate within the jurisdiction prescribed by the Constitution.
Thus, the Supremacy of the Constitution is not a unitary feature. **So, Statement 2 is correct.**

Single Citizenship is a unitary feature of the Indian Constitution. The Constitution of India, like that of Canada, adopted the system of single citizenship. There is only Indian Citizenship and no separate state citizenship. All citizens, irrespective of the state in which they are born or reside, enjoy the same rights all over the country. The other federal states like the US and Australia have dual citizenship, that is, national citizenship as well as state citizenship. **So, Statement 3 is not correct.**

Bicameralism is a federal feature of the Constitution of India. The Constitution provides for a bicameral legislature consisting of an Upper House (Rajya Sabha) and a Lower House (Lok Sabha). The Rajya Sabha represents the states of the Indian Federation, while the Lok Sabha represents the people of India as a whole. The Rajya Sabha (even though a less powerful chamber) is required to maintain the federal equilibrium by protecting the interests of the states against the undue interference of the Centre.
Thus, Bicameralism is not a unitary feature. **So, Statement 4 is correct.**

Integrated Judiciary is a unitary feature of the Constitution of India. The Indian Constitution has established an integrated judicial system with the Supreme Court at the top and the state high courts below it. This single system of courts enforces both the Central laws as well as the state laws. In the US, on the other hand, there is a double system of courts whereby the federal laws are enforced by the federal judiciary and the state laws by the state judiciary. **So, Statement 5 is not correct.**

96. With reference to the Citizenship Act 1955, consider the following statements:
    1. Indian citizenship can be acquired only through birth, descent, registration and naturalization.
    2. The Government of India can deprive the Indian citizenship of any individual who has been imprisoned in another country for more than two years.

    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 Citizenship Act (1955) provides for the acquisition and loss of citizenship after the commencement of the Constitution. Originally, the Citizenship Act (1955) also provided for the Commonwealth Citizenship. However, this provision was repealed by the Citizenship (Amendment) Act, 2003.
- The Citizenship Act of 1955 prescribes five ways of acquiring citizenship, viz, birth, descent, registration, naturalization, and incorporation of territory.
- Under the method of incorporation of territory, if any foreign territory becomes a part of India, the Government of India specifies the persons who, among the people of the territory, shall be the citizens of India. Such persons become citizens of India from the notified date. For example, when Pondicherry became a part of India, the Government of India issued the Citizenship (Pondicherry) Order (1962) under the Citizenship Act (1955). **So, Statement 1 is not correct.**

The Government of India cannot deprive the Indian citizenship of any individual who has been imprisoned in another country for more than two years. However, the citizen can be deprived of his citizenship by the government when he/she has, within five years after registration or naturalization, been imprisoned in any country for two years. **So, Statement 2 is not correct.**

97. Which of the following statements about the environmental aspect of the Indian Constitution is ***not*** correct?
   (a) The 42nd Constitutional Amendment Act of 1976 added environmental provisions to the Constitution for the first time.
   (b) Fundamental rights, Directive Principles of State Policy and Fundamental duties have a bearing on the environment.
   (c) The right to life under Article 21 also includes the right against the adverse impact of climate change.
   (d) None of the above.

EXPLANATION:

Part IV of the Indian Constitution lays down Directive Principles of State Policy. It lays down the socio-economic goals of the nation. Though Directive Principles are non-justiciable, they have been declared to be fundamental in the governance of the country (Article 37). Before the 42nd Amendment, there was no specific provision in Part IV dealing exclusively with the environment. However, after the 42nd Amendment, 1976, it introduced Article 48A, part of the Directive Principles of State, which says, "The State shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country." So, it became necessary on the part of the State to protect the environment and to promote a clean environment. **So, Option (a) is correct.**

- The right to a clean environment is a part of the right to life and personal liberty under Article 21 of the PART III - Fundamental Rights. The Supreme Court has held that the right to a healthy environment is necessary for the enjoyment of other fundamental rights, such as the right to life and the right to health.
- The 42nd Amendment, 1976, which Added Article 48-A of the constitution in PART IV- Directive Principles of State policy, focuses on the protection and improvement of the environment and safeguarding of forests and wildlife. It directs the State to take charge of environmental and wildlife protection.
- The Constitution of India provides PART IV-A under Article 51A (g) a fundamental duty of citizens to protect and improve the natural environment including forests, lakes, rivers and wildlife.

Thus, the Indian Constitution emphasizes environmental protection through various provisions, including Fundamental Rights, Directive Principles of State Policy, and Fundamental Duties. **So, Option (b) is correct.**

The Supreme Court, in a recent judgment, mentions that people had a fundamental right to be free from the adverse impacts of climate change and that this right flowed naturally from the right to life under Article 21 and the right to equality under Article 14, which is guaranteed in the Indian Constitution. Thus, Articles 14 and 21 of Part III of fundamental rights have been used for environmental protection. **So, Option (c) is correct.**

98. The Constitutional idea of 'readjustment after each census' for the Lok Sabha and State Legislative Assembly Constituencies strives to uphold which of the following principles of democracy?
   (a) One-person one-vote
   (b) One-vote one-value
   (c) One-nation one-election
   (d) One-state one-electoral roll

EXPLANATION:

'Democracy' means rule or government by the people. The constitutional idea of readjusting the number of seats in the Lok Sabha and State Legislative Assemblies after each census, or "delimitation process," upholds the principles of democracy that include:

- Equal representation: Equal segments of a population should have equal representation.
- Fair division: Geographical areas should be fairly divided so that no political party has an undue advantage over the others.
- One vote, one value: The broad principle of "one citizen-one vote-one value" should be followed.

Under Article 82 of the Indian Constitution, Parliament is to enact a Delimitation Act after every Census. Once the Act is in force, the Union government sets up the Delimitation Commission. The number of seats in the Lok Sabha based on the 1951, 1961 and 1971 Census was fixed at 494, 522 and 543, when the population was 36.1, 43.9 and 54.8 crore respectively. This broadly translated to an average population of 7.3, 8.4 and 10.1 lakh per seat respectively. **So, Option (b) is correct.**

Directions:

The following two (2) questions are based on the table given below. You are to match List-I, List-II and List-III and select the correct answer using the codes given below:

List-I (Centres of the Revolt of 1857)	***List-II (Leaders)***	***List-III (Action)***
A. Faizabad	I. Khan Bahadur Khan	1. His capture and hanging signalls the end of the revolt
B. Bareilly	II. Tantiya Tope	2. Fought in the famous Battle of Chinhat in which the British forces were defeated
C. Jagdishpur	III. Maulavi Ahmadullah Shah	3. Organized and resisted the British due to dissatisfaction about the pension granted to him
D. Kanpur	IV. Kunwar Singh	4. As a zamindar deprived of his estate, he unhesitatingly joined the sepoys against the British

99.

	List-I	List-II	List-III
(a)	A	I	3
(b)	B	I	4
(c)	**A**	**III**	**2**
(d)	B	II	1

100.

	List-I	List-II	List-III
(a)	C	III	4
(b)	D	IV	3
(c)	C	IV	2
(d)	**D**	**II**	**1**

EXPLANATION:

Maulvi Ahmadullah Shah of Faizabad was one of the many maulvis who played an important part in the revolt of 1857. He was a native of Madras and had moved to Faizabad in the north. In 1856, he was seen moving from village to village preaching jehad (religious war) against the British and urging people to rebel. He was popularly called Danka Shah – the maulvi with the drum (danka). British officials panicked as thousands began following the maulvi and many Muslims began seeing him as an inspired prophet. When he reached Lucknow in 1856, he was stopped by the police from preaching in the city. Subsequently, in 1857, he was jailed in Faizabad. When released, he was elected by the mutinous 22nd Native Infantry as their leader. He fought in the famous Battle of Chinhat in which the British forces under Henry Lawrence were defeated. He emerged as one of the revolt's acknowledged leaders once it broke out in Awadh in May 1857. **So, the correct sequence is A – III – 2.**

For Question No. 99, Option (c) is correct answer.

Khan Bahadur Khan Rohilla was born in the year 1823. As a mark of protest during the Indian revolt against British colonial rule in 1857, Khan Bahadur formed his own government in Bareilly. Bareilly was captured by the British during the Revolt of 1857. Khan Bahadur revolted against British when he was 70 years old. Various steps were taken by him to ensure harmony among the Hindus and Muslims. For

the liberation of the Motherland, he fought against the colonial regime. On 31 May 1857, Khan Bahadur Khan Rohilla declared independence at Bareilly, the capital of Rohilkhand. Cow slaughter was banned by him during the celebration of Hindu festivals. Due to the efforts made by Khan Bahadur, the Britishers could not split the Hindus and Muslims to fulfill their imperialist motives.
He organized an army of 40,000 soldiers and offered stiff resistance to the British because of the pension system granted by the British. **So, the correct sequence is B – I – 3.**

Kunwar Singh (1777 – 26 April 1858) was a notable leader during the Indian Rebellion of 1857. He belonged to a royal Ujjainiya (Panwar) Rajput house of Jagdispur, currently a part of Bhojpur district, Bihar, India.
An old man in his seventies, he nursed a grudge against the British who had deprived him of his estates. He unhesitatingly joined the sepoys when they reached Arrah from Dinapore (Danapur). At the age of 80, he led a select band of armed soldiers against the troops under the command of the British East India Company. He was the chief organiser of the fight against the British in Bihar. He is popularly known as Veer Kunwar Singh. In his last battle, fought on 23 April 1858, near Jagdispur, the troops under the control of the East India Company were completely routed. **So, the correct sequence is C – IV – 4.**

The siege in Kanpur was a significant episode in the history of India's first war of independence in 1857. At Kanpur, the natural choice was Nana Saheb, the adopted son of the last peshwa, Baji Rao II. Nana Saheb expelled the English from Kanpur, proclaimed himself the peshwa, acknowledged Bahadur Shah as the Emperor of India and declared himself to be his governor.
Tatya Tope was born Ramachandra Panduranga into a Deshastha Brahmin family in Maharashtra's Nashik. He was bound to Nana Saheb Peshwa II by ties of loyalty and gratitude.
In a dramatic turn of events, the rebellious sepoys returned to Kanpur on 6 June under the leadership of Nana Sahib. Nana's astute civilian Brahman commander Tantia Tope (Ramchandra Pandurang) also joined the rebellious *sepoys,* and together, they put Kanpur under a long siege.
When Jhansi was captured by British troops in June 1858, Lakshmibai fled to Kalpi, joined forces with Tantia Tope, and captured Gwalior fort by defeating the army of the Raja of Gwalior. The Rani, however, was killed in battle, and Tantia Tope went into hiding before he was finally caught and hanged in 1859. This signaled the end of the Revolt. **So, the correct sequence is D – II – 1.**
For Question No. 100, Option (d) is correct answer.