Geography Index

Physical Geography

Q1) "The climate is extreme; rainfall is scanty and the people used to be nomadic herders." The above statement best describes which of the following regions? (2013)

(a) African Savannah

(b) Central Asian Steppe

(c) North American Prairie

(d) Siberian Tundra

Ans: b

Exp:

*The description in the statement matches the characteristics of the **Central Asian Steppe** region. Here's why:*

1. ***Extreme climate**: The Central Asian Steppe has harsh climates with extreme temperature variations between summer and winter.*
2. ***Scanty rainfall**: This region has a semi-arid to arid climate, with low rainfall.*
3. ***Nomadic herders**: Historically, the people in the Central Asian Steppe, such as Mongols, Kazakhs, and others, were nomadic herders, relying on livestock for sustenance and moving with the seasons.*

Why other options are incorrect:

- ***(a) African Savannah**: The African Savannah has a tropical climate with distinct wet and dry seasons, but it is not as extreme in temperature and does not typically have nomadic herding as its primary characteristic.*
- ***(c) North American Prairie**: The prairie region has a more temperate climate and has historically been home to both agricultural and pastoral lifestyles, not primarily nomadic herders.*
- ***(d) Siberian Tundra**: The Siberian Tundra has cold temperatures and low precipitation, but the lifestyle described doesn't match well with the tundra, where nomadic herding is not as prevalent as in the steppes.*

Q2) Which of the following is/are unique characteristics/characteristics of equatorial forests? (2013)

1. Presence of tall, closely set trees with crowns forming a continuous canopy

2. Coexistence of a large number of species

3. Presence of numerous varieties of epiphytes

Select the correct answer using the code given below:

(a) 1 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Ans: d

Exp:

***Equatorial forests**, also known as tropical rainforests, are characterized by the following unique features:*

1) ***Presence of tall, closely set trees with crowns forming a continuous canopy:***
   - ***Correct.** Equatorial forests have tall trees with dense foliage, and their crowns form a continuous, multi-layered canopy. This canopy prevents sunlight from reaching the forest floor, resulting in a unique ecosystem.*
2) ***Coexistence of a large number of species:***
   - ***Correct.** Equatorial forests are biodiversity hotspots, hosting a vast variety of plant, animal, and microorganism species. This high level of biodiversity is a hallmark of these forests.*
3) ***Presence of numerous varieties of epiphytes:***
   - ***Correct.** Epiphytes, such as orchids, mosses, and ferns, grow on the surface of other plants*

(especially trees) without harming them. They thrive in the humid and nutrient-rich environment of equatorial forests.

Q3) Consider the following: (2013)

1. Electromagnetic radiation
2. Geothermal energy
3. Gravitational force
4. Plate movements
5. Rotation of the earth
6. Revolution of the earth

Which of the above are responsible for bringing dynamic changes on the surface of the earth?

(a) 1, 2, 3 and 4 only

(b) 1, 3, 5 and 6 only

(c) 2, 4, 5 and 6 only

(d) 1, 2, 3, 4, 5 and 6

Ans: d

Exp:

*Each of the listed factors contributes to **dynamic changes on the Earth's surface** in various ways:*

1) ***Electromagnetic radiation:***
   - *Solar radiation is a driving force behind weather, climate, and erosion processes. It powers the water cycle, which significantly affects the Earth's surface.*
2) ***Geothermal energy:***
   - *Geothermal energy drives volcanic activity and influences tectonic processes, leading to the formation of landforms and changes in the Earth's crust.*
3) ***Gravitational force:***
   - *Gravitational force impacts tides (due to the Moon and Sun) and contributes to processes like erosion and sedimentation.*
4) ***Plate movements:***
   - *Plate tectonics cause earthquakes, mountain building, and continental drift, all of which are dynamic changes on the Earth's surface.*
5) ***Rotation of the Earth:***
   - *Earth's rotation influences wind patterns and ocean currents through the Coriolis effect, shaping landscapes over time.*
6) ***Revolution of the Earth:***
   - *Earth's revolution around the Sun creates seasonal changes, impacting weather, vegetation patterns, and erosion processes.*

Q4) Variations in the length of daytime and nighttime from season to season are due to (2013)

(a) the earth's rotation on its axis

(b) the earth's revolution round the sun in an elliptical manner

(c) latitudinal position of the place

(d) revolution of the earth on a tilted axis

Ans: d

Exp:

The variations in the length of daytime and nighttime across seasons are primarily due to the following reasons:

1) ***Tilt of Earth's Axis:***
   - *Earth's axis is tilted at an angle of approximately **23.5°** relative to its orbital plane around the Sun. This tilt causes different parts of the Earth to receive varying amounts of sunlight throughout the year.*
2) ***Earth's Revolution around the Sun:***
   - *As the Earth revolves around the Sun, the tilt of its axis causes the Sun's rays to strike different latitudes at varying angles. This leads to longer days in summer and shorter days in winter for each hemisphere.*
3) ***Effect on Daytime and Nighttime:***
   - *During summer in one hemisphere, the pole in that hemisphere is tilted toward the Sun, resulting in longer daylight hours.*
   - *During winter, the same pole is tilted away from the Sun, resulting in shorter daylight hours.*

Why other options are incorrect:

- ***(a) The Earth's rotation on its axis:*** *This causes day and night but does not explain seasonal variations in their length.*
- ***(b) Earth's revolution round the Sun in an elliptical manner:*** *While Earth's orbit is slightly elliptical, it has a minimal effect on day length.*
- ***(c) Latitudinal position of the place:*** *Latitude determines how pronounced the seasonal variations are, but the underlying cause is Earth's axial tilt.*

Q5) Which of the following statements regarding laterite soils of India are correct? (2013)

1. They are generally red in color.
2. They are rich in nitrogen and potash.
3. Tiley are well-developed in Rajasthan and UP.
4. Tapioca and cashew nuts grow well on these soils.

Select the correct answer using the codes given below.

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

Ans: c

Exp:

Laterite soils *are found in regions with high temperatures and heavy rainfall. Let's analyze each statement:*

1) ***They are generally red in color:***
- ***Correct.*** *Laterite soils are rich in iron oxide, giving them a characteristic red or reddish-brown color.*

2) ***They are rich in nitrogen and potash:***
- ***Incorrect.*** *Laterite soils are generally* ***poor in nitrogen, phosphorus, and potash****, which makes them less fertile for conventional crops without proper management.*

3) ***They are well-developed in Rajasthan and UP:***
- ***Incorrect.*** *Laterite soils are primarily found in* ***high rainfall areas*** *such as the Western Ghats, Eastern Ghats, parts of Maharashtra, Karnataka, Kerala, Tamil Nadu, and northeastern states. They are not well-developed in arid regions like Rajasthan or Uttar Pradesh.*

4) ***Tapioca and cashew nuts grow well on these soils:***
- ***Correct.*** *Laterite soils, when managed properly, are suitable for crops like* ***tapioca*** *and* ***cashew nuts****, which can tolerate the low fertility of the soil.*

Q6) Consider the following statements: (2013)

1. Natural gas occurs in the Gondwana beds.
2. Mica occurs in abundance in Kodarma.
3. Dharwars are famous for petroleum.

Which of the statements given above is/are correct?

(a) 1 and 2
(b) 2 only
(c) 2 and 3
(d) None

Ans: b

Exp:

1) ***Natural gas occurs in the Gondwana beds:***
- ***Incorrect.*** *The Gondwana beds are primarily known for their coal deposits, not natural gas. Natural gas in India is mostly associated with Tertiary sedimentary basins, such as those found in Assam, Gujarat, and offshore in the Mumbai High region.*

2) ***Mica occurs in abundance in Kodarma:***
- ***Correct.*** *Kodarma (in Jharkhand) is famously known as the "****Mica Capital of India****" due to its rich deposits of mica.*

3) ***Dharwars are famous for petroleum:***
- ***Incorrect.*** *The Dharwar rocks are known for their rich deposits of minerals like iron ore, manganese, and gold. Petroleum is not associated with Dharwar formations but is instead found in younger sedimentary rocks, such as those in Tertiary basins.*

Q.7) The seasonal reversal of winds is the typical characteristic of: (2014)

a) Equatorial climate

b) Mediterranean climate

c) Monsoon climate

d) All of the above climates

Ans: c

Exp:

*The **monsoon climate** is characterized by the seasonal reversal of winds. This occurs due to the shift in the direction of prevailing winds between the summer and winter seasons. During the summer, winds from the oceans bring heavy rainfall, while during the winter, dry winds from the land dominate, leading to dry conditions. This reversal of winds is the hallmark of the monsoon climate, particularly in regions like South and Southeast Asia.*

Why the other options are incorrect:

***(a) Equatorial climate:** The equatorial climate has relatively consistent winds and rainfall throughout the year, without a seasonal reversal.*

***(b) Mediterranean climate:** The Mediterranean climate has wet winters and dry summers, but it is not characterized by a seasonal reversal of winds.*

***(d) All of the above climates:** Since only the monsoon climate has the feature of seasonal wind reversal, this option is incorrect.*

Q.8) Which of the following phenomena might have influenced the evolution of organisms? (2014)

1. Continental drift
2. Glacial cycles

Select the correct answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Ans: c

Exp:

1) ***Continental drift:***
   - *The movement of continents over geological time has had a significant impact on the evolution of organisms. As continents drift, they create physical barriers (like oceans or mountains), leading to geographic isolation, which is a key driver of speciation. The separation of landmasses led to the divergence of species and the development of unique ecosystems, influencing evolutionary processes.*

2) ***Glacial cycles:***
   - *Glacial cycles (ice ages) have also influenced the evolution of organisms. During colder periods, organisms were forced to adapt to harsh conditions, and many species migrated or evolved to cope with changes in climate. Conversely, interglacial periods (warmer periods) allowed species to spread and diversify in new environments. These cycles played a critical role in shaping biodiversity.*

Q.9) If you travel through the Himalayas, you are likely to see which of the following plants are naturally growing there? (2014)

1. Oak
2. Rhododendron
3. Sandalwood

Select the correct answer using the code given below:

a) 1 and 2 only

b) 3 only

c) 1 and 3 only

d) 1, 2 and 3

Ans: a

Exp:

1) ***Oak**:*
   - ***Correct.** Oak trees are commonly found in the Himalayan region, particularly at higher elevations. They are part of the temperate forests in the region.*

2) ***Rhododendron**:*
   - ***Correct.** Rhododendron is a prominent plant in the Himalayas, often found in the subalpine and alpine regions. It is known for its beautiful flowers and is naturally abundant in the Himalayan flora.*

3) ***Sandalwood**:*
   - ***Incorrect.** Sandalwood is typically found in tropical and subtropical regions, particularly*

in areas like southern India and Southeast Asia, not in the Himalayan region.

Q.10) Which one of the following regions of India has a combination of mangrove forest, evergreen forest and deciduous forest? (2015)

a) North Coastal Andhra Pradesh

b) South-West Bengal

c) Southern Saurashtra

d) Andaman and Nicober Islands

Ans: d

Exp: The South Andaman forests have a profuse growth of epiphytic vegetation, mostly ferns and orchids. The Middle Andamans harbours mostly moist deciduous forests. North Andamans is characterised by the wet evergreen type, with plenty of woody climbers. This atypical forest coverage of Andaman & Nicobar is made-up of twelve types namely (1) Giant evergreen forest (2) Andamans tropical evergreen forest (3) Southern hilltop tropical evergreen forest (4) Cane brakes (5) Wet bamboo brakes (6) Andamans semi-evergreen forest (7) Andamans moist deciduous forest (8) Andamans secondary moist deciduous forest (9) Littoral forest (10) Mangrove forest (11) Brackish water mixed forest (12) Submontane hill valley swamp forest.

Q.11) Consider the following States: (2015)

1. Arunachal Pradesh
2. Himachal Pradesh
3. Mizoram

In which of the above States do 'Tropical Wet Evergreen Forests' occur?

a) 1 only

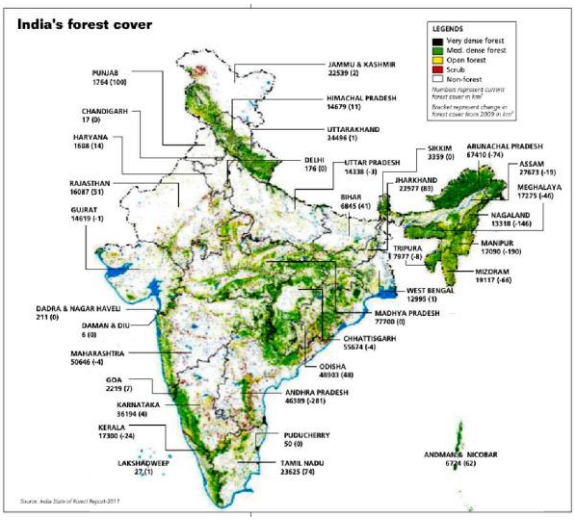
b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Ans: c

Exp: In India, evergreen forests are found on the eastern and western slopes of the Western Ghats in such states as Tamil Nadu, Karnataka, Kerala and Maharashtra. And also found in Assam, Arunachal Pradesh, Meghalaya, Nagaland, Tripura, West Bengal and Andaman and Nicobar Islands.



Q.12) In India, in which one of the following types of forests is teak a dominant tree species? (2015)

a) Tropical moist deciduous forest

b) Tropical rain forest

c) Tropical thorn scrub forest

d) Temperate forest with grasslands

Ans: a

Exp: The main species found in these forests are teak, sal, padauk, laurel, white chuglam, badam, dhup, chikrosi, kokko, haldu, rosewood, mahua, bijasal, lendi, semul, irul, dhaman, amla, kusum, tendu, paula, jamun, bamboo, etc.

Q.13) In which of the following regions of India are shale gas resources found? (2016)

1. Cambay Basin
2. Cauvery Basin
3. Krishna-Godavari Basin

Select the correct answer using the code given below.

a) 1 and 2 only

b) 3 only

c) 2 and 3 only

d) 1, 2 and 3

Ans: d

Exp: The correct answer is d) 1, 2, and 3, as shale gas resources are found in all three mentioned regions:

Cambay Basin, Cauvery Basin, and Krishna-Godavari Basin.

Shale gas is an unconventional natural gas found trapped within shale formations, requiring advanced extraction techniques such as hydraulic fracturing and horizontal drilling. India, recognizing its increasing energy demands and dependency on energy imports, has identified several basins with potential shale gas resources.

- *Cambay Basin: Located in western India, predominantly in Gujarat, the Cambay Basin is one of the most well-studied and productive basins for hydrocarbons, including shale gas. Its geological characteristics include thick sedimentary sequences, making it favorable for the presence of shale formations. Exploration efforts have shown significant potential for shale gas extraction in this region.*
- *Cauvery Basin: Situated in southern India, covering parts of Tamil Nadu and Puducherry, the Cauvery Basin is another region identified for shale gas potential. The basin's geological setting, with extensive marine sedimentary deposits, provides conditions conducive to the presence of organic-rich shale formations. Studies have highlighted its prospects for unconventional hydrocarbon resources, including shale gas.*
- *Krishna-Godavari Basin: Located along the eastern coast of India, in Andhra Pradesh and parts of Telangana, the Krishna-Godavari Basin is a prolific hydrocarbon-producing region. This basin has not only conventional oil and gas reserves but also significant potential for shale gas due to its extensive sedimentary deposits and organic-rich shales. It is considered a key area for India's future energy strategy.*

India's Ministry of Petroleum and Natural Gas, along with exploration agencies like ONGC, has undertaken efforts to assess and explore shale gas potential in these basins. The identification of shale gas resources in Cambay, Cauvery, and Krishna-Godavari Basins underlines the country's strategic emphasis on tapping unconventional energy sources to reduce its reliance on imports and enhance energy security.

Thus, all three basins—Cambay, Cauvery, and Krishna-Godavari—are recognized for their shale gas resources, making the correct answer d) 1, 2, and 3.

Q.14) Which of the following is/are the advantages/advantages of practicing drip irrigation? (2016)

1. Reduction in weed
2. Reduction in soil salinity
3. Reduction in soil erosion

Select the correct answer using the code given below.

a) 1 and 2 only

b) 3 only

c) 1 and 3 only

d) None of the above is an advantage of practicing drip irrigation

Ans: c

Exp: Drip irrigation is a highly efficient method of irrigation where water is delivered directly to the root zone of plants through a network of pipes, emitters, and drippers. It has several advantages:

- *Reduction in weed: Since water is supplied only to the root zones, it minimizes the availability of water for weeds in the surrounding areas, leading to reduced weed growth.*
- *Reduction in soil salinity: This is not a direct benefit of drip irrigation. Salinity reduction would require leaching practices that flush salts from the root zone, not just localized water delivery. Therefore, this statement is incorrect.*
- *Reduction in soil erosion: Drip irrigation reduces surface runoff and water movement across the soil, which helps in minimizing soil erosion.*

Thus, only statements 1 and 3 are correct, making the answer c) 1 and 3 only.

Q.15) Recently, which of the following States has explored the possibility of constructing an artificial inland port to be connected to sea by a long navigational channel? (2016)

a) Andhra Pradesh

b) Chhattisgarh

c) Karnataka

d) Rajasthan

Ans: d

Exp: Rajasthan, despite being a landlocked state, has explored the concept of an artificial inland port. The plan involves constructing a navigational channel that connects the state to the sea, facilitating trade and reducing logistical costs. This ambitious project showcases Rajasthan's innovative approach to overcoming its geographical limitations and enhancing economic opportunities.

Q.16) With reference to river Teesta, consider the following statements: (2017)

1. The source of river Teesta is the same as that of Brahmaputra but it flows through Sikkim.
2. River Rangeet originates in Sikkim and it is a tributary of river Teesta.
3. River Teesta flows into Bay of Bengal on the border of India and Bangladesh.

Which of the statements given above is/are correct?

a) 1 and 3 only

b) 2 only

c) 2 and 3 only

d) 1, 2 and 3

Ans: b

Exp: Statement 1 and 3: Teesta River originates from the Pahunri glacier. Brahmaputra originates in Angsi glacier. Teesta is a tributary of Brahmaputra. So, 1 is wrong.

But, Teesta flows through West Bengal and Sikkim, before going to the Bay of Bengal through Bangladesh. Statement 3 is incorrect.

Statement 2: Rangeet is a tributary of the Teesta river, which is the largest river in Sikkim. It also originates in Sikkim.

Q.17) Consider the following statements: (2017)

1. In India, the Himalayas are spread over five States only.
2. Western Ghats are spread over five States only.
3. Pulicat Lake is spread over two States only.

Which of the statements given above is/are correct?

a) 1 and 2 only

b) 3 only

c) 2 and 3 only

d) 1 and 3 only

Ans: b

Exp: Statement 1: Himalayas are spread over almost all the Northern and north-eastern Indian states. Statement 1 is wrong.

Statement 2: Western Ghats traverse the States of Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra and Gujarat (6 states).

Statement 3: Pulicat Lake (second largest brackish water lake in India)straddles the border of Andhra Pradesh and Tamil Nadu states (2 states).

Q.18) Consider the following statements: (2018)

1. The Barren Island volcano is an active volcano located in the Indian Territory.
2. Barren Island lies about 140 km east of Great Nicobar.
3. The last time the Barren Island volcano erupted was in 1991 and it has remained inactive since then.

Which of the statements given above is/are correct?

a) 1 only

b) 2 and 3

c) 3 only

d) 1 and 3

Ans: a

Exp: According to scientists from Goa based National Institute of Oceanography (NIO), India's only live volcano at Barren Island in the Andaman and Nicobar has become active again

After lying dormant for 150 years, Barren Island volcano erupted in 1991 and since then it is showing

sporadic activity. Now it is erupting in small episodes of five to 10 minutes.

The Barren Islands are located around 140 km northeast of the Andamans capital city Port Blair.

Q.19) Consider the following statements: (2018)

1. Most of the world's coral reefs are in tropical waters.
2. More than one third of the world's coral reefs are located in the territories of Australia, Indonesia and Philippines.
3. Coral reefs host far more animal phyla than those hosted by tropical rainforests.

Which of the statements given above is/are correct?

a) 1 and 2 only

b) 3 only

c) 1 and 3 only

d) 1, 2 and 3

Ans: d

Exp: Coral reefs are found in circum-tropical shallow tropical waters along the shores of islands and continents. The reef substrate is mainly composed of calcium carbonate from living and dead corals. Many other invertebrates, vertebrates, and plants live in close association to the corals, with tight resource coupling and recycling, allowing coral reefs to have extremely high productivity and biodiversity, such that they are referred to as 'the Tropical Rainforests of the Oceans'.

Coral reefs are believed by many to have the highest biodiversity of any ecosystem on the planet - even more than a tropical rainforest.

Major Regions of Coral Reef Development →

Globally, three major regions of coral reef development are generally recognized, each with a somewhat distinctive biota. These are: The Indo-Pacific - Includes most of the Indian Ocean (excluding the Red Sea), and the western Pacific. The Wider Caribbean(tropical western Atlantic) Includes Florida, The Bahamas, Caribbean Sea proper, and coastal waters off northeastern S. America. The Red Sea. Thus Australia, Indonesia and Philippines cover one-third area.

Q.20) Consider the following statements: (2018)

1. The Earth's magnetic field has reversed every few hundred thousand years.
2. When the Earth was created more than 4000 million years ago, there was 54% oxygen and no carbon dioxide.
3. When living organisms originated, they modified the early atmosphere of the Earth.

Which of the statements given above is/are correct?

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Ans: c

Exp: The Earth's Magnetic field has reversed every few hundred thousand years. This has been proved through Sea-Floor spreading.

When Earth was created there was no oxygen in the atmosphere. Oxygen makes up about one-fifth the volume of Earth'-s atmosphere today and is a central element of life as we know it. But that wasn'-t always the case. Oxygen, although always present in compounds in Earth ' s interior, atmosphere, and oceans, did not begin to accumulate in the atmosphere as oxygen gas (O2) until well into the planet'-s history.

Carbon dioxide, water vapor, and methane played an important role in Earth'-s subsequent development. By 2.7 billion years ago, a new kind of life had established itself: photosynthetic microbes called cyanobacteria, which were capable of using the Sun'-s energy to convert carbon dioxide and water into food with oxygen gas as a waste product. They lived in shallow seas, protected from full exposure to the Sun'-s harmful radiation.

These organisms became so abundant that by 2.4 billion years ago the free oxygen they produced began to accumulate in the atmosphere.

Q.21) Consider the following statements: (2018)

1. In India, State Governments do not have the power to auction non--coal mines.
2. Andhra Pradesh and Jharkhand do not have gold mines.

3. Rajasthan has iron ore mines.

Which of the statements given above is/are correct?

a) 1 and 2

b) 2 only

c) 1 and 3

d) 3 only

Ans: d

Exp: State governments have the power to auction non-coal mines. Jharkhand and Andhra Pradesh have two of the three active gold mines. Bhilwara in Rajasthan has an iron ore mine.

Q.22) Consider the following: (2019)

1. Chhattisgarh
2. Madhya Pradesh
3. Maharashtra
4. Odisha

With reference to the States mentioned above, in terms of percentage of forest cover to the total area of State, which one of the following is the correct ascending order?

a) 2-3-1-4

b) 2-3-4-1

c) 3-2-4-1

d) 3-2-1-4

Ans: c

Exp: Following are the percentage of forest area of the four states, according to Indian state of forest report, 2017:

State	*Percentage of forest area*
Chattisgarh	*41.09%*
Madhya Pradesh	*25.11%*
Maharashtra	*16.47%*
Odisha	*32.98%*

Q.23) Consider the following minerals: (2020)

1. Bentonite
2. Chromite
3. Kyanite
4. Sillimanite

In India, which of the above is/are officially designated as major minerals?

a) 1 and 2 only

b) 4 only

c) 1 and 3 only

d) 2, 3 and 4 only

Ans: d

Exp: Bentonite is a minor mineral.

Q.24) Consider the following statements: (2020)

1. Jet streams occur in the Northern Hemisphere only.
2. Only some cyclones develop an eye.
3. The temperature inside the eye of a cyclone is nearly 10ºC less than that of the surroundings.

Which of the statements given above is/are correct?

a) 1 only

b) 2 and 3 only

c) 2 only

d) 1 and 3 only

Ans: c

Exp: Jet streams occur in the Northern Hemisphere only: This statement is incorrect. Jet streams are fast-flowing, narrow air currents that occur in both the Northern and Southern Hemispheres.

- *Only some cyclones develop an eye: This statement is correct. Only well-developed tropical cyclones have a distinct eye, which forms due to the intense central low-pressure system.*
- *The temperature inside the eye of a cyclone is nearly 10ºC less than that of the surroundings: This statement is incorrect. The eye of a cyclone is relatively warm compared to the surrounding areas due to descending air.*

Thus, only statement 2 is correct, making the answer c) 2 only.

Q.25) With reference to the water on the planet Earth, consider the following statements: (2021)

1. The amount of water in the rivers and lakes is more than the amount of groundwater.

2. The amount of water in polar ice caps and glaciers is more than the amount of groundwater.

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

Ans: b

Explanation:Ocean water: 97.2 percent, Glaciers and other ice: 2.15 percent Groundwater,: 0.61 percent, Fresh water lakes: 0.009 percent Inland seas: 0.008 percent, Soil Moisture: 0.005 percent, Atmosphere: 0.001 percent, Rivers: 0.0001 percent.

Q.26) The black cotton soil of India has been formed due to the weathering of: (2021)

a) brown forest soil

b) fissure volcanic rock

c) granite and schist

d) shale and limestone

Ans: b

Exp: Black cotton soils are derivatives of Deccan trap lava and are spread mostly across interior Gujarat, Maharashtra, Karnataka, and Madhya Pradesh on the Deccan lava plateau and the Malwa Plateau, where there is both moderate rainfall and underlying basaltic rock.

The Deccan trap, which is the source of the black soils, is a basaltic province formed during the hot spot volcanism when the Indian plate was above the Reunion island about 66 million years ago.

At that time, the less viscous Basaltic lava erupted through the fissures covering a vast area of about ten lakh sq km. Hence option b) is correct.

These soils are also known as the 'Regur Soil' or the 'Black Cotton Soil'.

Q.27) "Leaf litter decomposes faster than in any other biome and as a result the soil surface is often almost bare. Apart from trees, the vegetation is largely composed of plant forms that reach up into the canopy vicariously, by climbing the trees or growing as epiphytes, rooted on the upper branches of trees". This is the most likely description of: (2021)

a) Coniferous forest

b) Dry deciduous forest

c) Mangrove forest

d) Tropical rain forest

Ans: d

Exp:The tropical rainforest is a hot, moist biome where it rains all year long. It is known for its dense canopies of vegetation that form three different layers. The top layer or canopy contains giant trees that grow to heights of 75 m (about 250 ft) or more. This layer of vegetation prevents much of the sunlight from reaching the ground. Thick, woody vines are also found in the canopy. They climb trees in the canopy to reach for sunlight. The middle layer, or understory, is made up of vines, smaller trees, ferns, and palms. A large number of plants from this level are used as common houseplants. Because of the small amount of sunlight and rainfall these plants receive, they adapt easily to home environments. The bottom layer or floor of the rainforest is covered with wet leaves and leaf litter. This material decomposes rapidly in the wet, warm conditions (like a compost pile) sending nutrients back into the soil. Few plants are found on the floor of the forest due to the lack of sunlight.

Q.28) With reference to India, consider the following statements: (2022)

1. Monazite is a source of rare earths.

2. Monazite contains thorium.

3. Monazite occurs naturally in the entire Indian coastal sands in India.

4. In India, Government bodies only can process or export monazite.

Which of the statements given above are correct?

a) 1, 2 and 3 only

b) 1, 2 and 4 only

c) 3 and 4 only

d) 1, 2, 3 and 4

Ans: b

Exp: Monazite is a mineral mainly containing rare earths and thorium-a prescribed substance to be

handled by the Department of Atomic Energy (DAE). Accordingly, Indian Rare Earths Ltd. (IREL) wholly owned by the Govt. of India, under the administrative control of the Dept. of Atomic Energy (DAE) utilises monazite mainly for production of rare earth compounds, and thorium, as needed in the Department of Atomic Energy. In-situ monazite established by AMD so far are present in Odisha, Andhra Pradesh, Tamil Nadu, Kerala, West Bengal, and Jharkhand.

Q.29) Ilmenite and rutile, abundantly available in certain coastal tracts of India, are rich sources of which one of the following? (2023)

a) Aluminium

b) Copper

c) Iron

d) Titanium

Ans: d

Exp: Ilmenite and rutile are titanium-bearing minerals found in coastal sands, particularly along the coasts of Kerala, Tamil Nadu, and Odisha. Titanium extracted from these minerals is used in aerospace, defense, and paint industries due to its high strength and resistance to corrosion.

Q.30) Consider the following statements: (2023)

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

Which of the statements given above is/are correct?

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Ans: c

Exp: P waves: These are primary waves and the fastest seismic waves. They travel through solids, liquids, and gases, and are recorded earlier in a seismograph.

S waves: These are secondary waves, traveling slower than P waves and only through solids. Their motion is perpendicular to the direction of wave propagation.

Both statements are correct, making the answer c) Both 1 and 2.

Q.31) Consider the following statements: (2024)

Statement-I: Rainfall is one of the reasons for weathering of rocks.

Statement II: Rain water contains carbon dioxide in solution.

Statement-III: Rain water contains atmospheric oxygen.

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

a) Both Statement-II and Statement-III are correct and both of them explain Statement-I

b) Both Statement-II and Statement-III are correct, but only one of them explains Statement-I

c) Only one of the Statements II and III is correct and that explains Statement-I

d) Neither StatementII nor Statement-Ill is correct

Ans: a

Exp: Rainfall contributes to the weathering of rocks through processes like chemical weathering (dissolution of minerals due to carbon dioxide forming carbonic acid) and physical weathering. Rainwater contains dissolved carbon dioxide and oxygen, both of which facilitate these processes.

Q.32) Consider the following description: (2024)

1. Annual and daily range of temperatures is low.
2. Precipitation occurs throughout the year.
3. Precipitation varies between 50 cm – 250 cm.

What is this type of climate?

a) Equatorial climate

b) China type climate

c) Humid subtropical climate

d) Marine West coast climate

Ans: d

Exp: The Marine West Coast climate is characterized by moderate temperatures with low annual and daily

temperature ranges, consistent precipitation throughout the year, and precipitation levels within the specified range. It is typically found along the western coasts of continents in the mid-latitudes.

Q.33) With reference to "Coriolis force", which of the following statements is/are correct? (2024)

1. It increases with increase in wind velocity.
2. It is maximum at the poles and is absent at the equator.

Select the answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Ans: c

Exp: The Coriolis force is a result of Earth's rotation and affects the direction of moving objects. It increases with wind velocity and latitude. It is strongest at the poles and zero at the equator because the rotational velocity of Earth varies with latitude.

Q.34) On June 21 every year, which of the following latitude(s) experience(s) a sunlight of more than 12 hours? (2024)

1. Equator
2. Tropic of Cancer
3. Tropic of Capricorn
4. Arctic Circle

Select the correct answer using the code given below:

a) 1 only

b) 2 only

c) 3 and 4

d) 2 and 4

Ans: d

Exp: On June 21 (Summer Solstice), the Northern Hemisphere experiences its longest day. The Tropic of Cancer and latitudes north of it, including the Arctic Circle, experience more than 12 hours of sunlight. The equator and Tropic of Capricorn do not experience such prolonged daylight during this time.

Climatology

Q1) During a thunderstorm, the thunder in the skies is produced by the (2013)

1. meeting of cumulonimbus clouds in the sky
2. lightning that separates the nimbus clouds
3. violent upward movement of air and water particles

Select the correct answer using the codes given below.

(a) 1 only

(b) 2 and 3

(c) 1 and 3

(d) None of the above produces the thunder

Ans: d

Exp:

*Thunder is produced by **the rapid expansion and contraction of air** caused by the **heat from a lightning strike**. Here's a breakdown:*

*1) **Meeting of cumulonimbus clouds in the sky:***

- ***Incorrect.** While cumulonimbus clouds are associated with thunderstorms, their meeting does not directly cause thunder. They are involved in the formation of the storm itself, but not in the production of thunder.*

*2) **Lightning that separates the nimbus clouds:***

- ***Incorrect.** Lightning is the result of a discharge of electricity between clouds or between the cloud and the ground. While lightning causes thunder, it doesn't separate the clouds in a way that directly produces the sound.*

*3) **Violent upward movement of air and water particles:***

- ***Incorrect.** The upward movement of air and water particles (convection) in the storm contributes to the formation of clouds and precipitation, but it is not directly responsible for producing thunder.*

How thunder is actually produced:

- *Thunder is caused by the **rapid expansion of air** due to the **extreme heat (around 30,000 Kelvin)** from a lightning strike. This causes the surrounding air to expand quickly, creating a shock wave, which we hear as thunder.*

*Thus, **none of the statements correctly explains the cause of thunder**, making **(d)** the correct*

Q2) The annual range of temperature in the interior of the continents is high as compared to coastal areas. What is / are the reason / reasons? (2013)

1. Thermal difference between land and water
2. Variation in altitude between continents and oceans
3. Presence of strong winds in the interior
4. Heavy rains in the interior as compared to coasts

Select the correct answer using the codes given below.

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

Ans: a

Exp:

1) ***Thermal difference between land and water:***
   - ***Correct.*** *Land heats up and cools down more quickly than water due to its lower specific heat capacity. This causes significant temperature variations in the interior of continents, leading to a high annual range of temperature. Coastal areas, influenced by the moderating effect of water, experience smaller temperature variations.*
2) ***Variation in altitude between continents and oceans:***
   - ***Incorrect.*** *While altitude affects temperature, it does not explain the higher annual range of temperature in continental interiors compared to coastal areas, as altitude varies within continents as well.*
3) ***Presence of strong winds in the interior:***
   - ***Incorrect.*** *Strong winds are not a consistent feature of continental interiors, and winds typically moderate temperatures by mixing air masses, which would reduce the temperature range.*
4) ***Heavy rains in the interior as compared to coasts:***
   - ***Incorrect.*** *Coastal areas generally receive more rainfall than continental interiors due to their proximity to oceans. Rainfall does not directly affect the annual range of temperature.*

Q.3) Consider the following statements: (2015)

1. The winds which blow between 30° N and 60° S latitudes through-out the year are known as westerlies.
2. The moist air masses that cause winter rains in North-Western region of India are part of Westerlies.

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

Ans: b

Exp: The winds that blow consistently between 30° N and 60° S latitudes are generally referred to as the westerlies. However, the statement in the question mentions "throughout the year," which is incorrect for the southern hemisphere portion. This is because the westerlies in the southern hemisphere do not extend uniformly to 60° S throughout the year, particularly due to seasonal variations and disruptions caused by pressure systems. Therefore, Statement 1 is incorrect.

The moist air masses responsible for winter rains in the northwestern region of India are brought by western disturbances. These disturbances are part of the westerlies, which transport moisture from the Mediterranean region. Hence, Statement 2 is correct.

The correct answer is b) 2 only.

Q.4) In the South Atlantic and South-Eastern Pacific regions in tropical latitudes, cyclones do not originate. What is the reason? (2015)

a) Sea surface temperatures are low
b) Inter-tropical Convergence Zone seldom occurs
c) Coriolis force is too weak
d) Absence of land in those regions

Ans: b

Exp: Tropical cyclones require high sea surface temperatures (typically above 27°C) to form, along with significant atmospheric instability. In the South Atlantic and South-Eastern Pacific, sea surface temperatures are generally lower than required for cyclone formation due to the presence of cold ocean currents like the Benguela and Humboldt currents. Additionally, while the Coriolis force and landmass absence are factors, they are not the primary reasons cyclones fail to originate here. The primary reason is that the Inter-Tropical Convergence Zone (ITCZ) seldom forms or is not conducive in these regions.

The correct answer is b) Inter-tropical Convergence Zone seldom occurs.

Q.5) Each day is more or less the same, the morning is clear and bright with a sea breeze; as the Sun climbs high in the sky, heat mounts up, dark clouds form, then rain comes with thunder and lightning. But the rain is soon over. Which of the following regions is described in the above passage? (2015)

a) Savannah

b) Equatorial

c) Monsoon

d) Mediterranean

Ans: b

Exp: The described climatic conditions—clear and bright mornings, rapid heating, formation of cumulonimbus clouds, and heavy afternoon rains with thunderstorms—are characteristic of equatorial regions. These areas experience a tropical rainforest climate with high temperatures and intense convective rainfall caused by the Sun's near-zenith position.

The correct answer is b) Equatorial.

Q.6) Why are dewdrops not formed on a cloudy night? (2019)

a) Clouds absorb the radiation released from the Earth's surface.

b) Clouds reflect back the Earth's radiation.

c) The Earth's surface would have low temperatures on cloudy nights.

d) Clouds deflect the blowing wind to ground level.

Ans: b

Exp: Dew: Dew is the water droplets formed by condensation of water vapor on a relatively cold surface of an object. It forms when the temperature of an object drops below the dew point temperature. When there is cloudy weather, terrestrial radiation is radiated back to the earth's surface after reflection from clouds. This leads to formation of hothouse (Greenhouse) conditions due to which temperature on earth's surface is relatively higher. Hence, the condition becomes unfavorable for the formation of dew.

Q.7) "The crop is subtropical in nature. A hard frost is injurious to it. It requires at least 210 frost-free days and 50 to 100 centimeters of rainfall for its growth. A light well- drained soil capable of retaining moisture is ideally suited for the cultivation of the crop." Which one of the following is the crop? (2019)

a) Cotton

b) Jute

c) Sugarcane

d) Tea

Ans: a

Exp: Cotton is a plant that needs a long frost-free period, a lot of heat and plenty of sunshine. It prefers warm and humid climates. It requires 50-100 centimeters of rainfall for its growth. A light well-drained soil capable of retaining moisture is ideally suited for the cultivation of the cotton.

Q.8) With reference to Ocean Mean Temperature (OMT), which of the following statements is/are correct? (2020)

1. OMT is measured up to a depth of 26ºC isotherm which is 129 meters in the south-western Indian Ocean during January-March.
2. OMT collected during January-March can be used in assessing whether the amount of rainfall in monsoon will be less or more than a certain long-term mean.

Select the correct answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Ans: b

Exp: Ocean Mean Temperature (OMT) refers to the average temperature of the ocean's upper layers, specifically up to the 26°C isotherm. While the depth of the 26°C isotherm in the southwestern Indian Ocean is around 129 meters during January–March, this measurement is not universally fixed for all regions. The OMT during January–March is a crucial indicator for assessing monsoon performance, as it impacts the monsoon trough's strength and variability.

Statement 1 is incorrect because the depth of the 26°C isotherm varies across regions and seasons. Statement 2 is correct as OMT data is used to predict monsoon rainfall.

The correct answer is b) 2 only.

Q.9) Consider the following statements: (2022)

1. High clouds primarily reflect solar radiation and cool the surface of the Earth.
2. Low clouds have a high absorption of infrared radiation emanating from the Earth's surface and thus cause a warming effect.

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

Ans: d

Exp: High clouds, such as cirrus clouds, tend to trap longwave radiation emitted from the Earth's surface, creating a warming effect rather than reflecting solar radiation. Hence, Statement 1 is incorrect. Low clouds, such as stratus clouds, reflect significant amounts of solar radiation and have a cooling effect on the Earth's surface. Therefore, Statement 2 is also incorrect.

The correct answer is d) Neither 1 nor 2.

Q.10) Consider the following statements: (2023)

Statement-I : The temperature contrast between continents and oceans is greater during summer than in winter.

Statement-II : The specific heat of water is more than that of land surface.

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

a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I

c) Statement-I is correct but Statement-II is incorrect

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

Ans: b

Exp: Statement I is correct because the temperature contrast between land and ocean is greater during summer due to differences in specific heat. Land heats up and cools down faster compared to water. Statement II is also correct, as the specific heat capacity of water is higher, allowing it to store and release more heat over time. Moreover, Statement II directly explains why the temperature contrast is greater during summer.

The correct answer is a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I.

Q.11) Consider the following statements: (2024)

Statement-I : The atmosphere is heated more by incoming solar radiation than by terrestrial radiation.

Statement-II : Carbon dioxide and other greenhouse gases in the atmosphere are good absorbers of long wave radiation.

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

a) Both Statement-I and Statement-II are correct and StatementII explains Statement-I

b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I c) Statement-I is correct, but Statement-II is incorrect

d) Statement-I is incorrect, but Statement-II is correct

Ans: d

Exp: Statement I is incorrect as the atmosphere is heated primarily by terrestrial radiation rather than

incoming solar radiation. Incoming solar radiation mostly passes through the atmosphere and heats the Earth's surface, which then emits longwave radiation that heats the atmosphere. Statement II is correct because carbon dioxide and other greenhouse gases absorb longwave radiation effectively, contributing to the greenhouse effect.

The correct answer is d) Statement-I is incorrect, but Statement-II is correct.

Q.12) Consider the following statements: (2024)

Statement-I Thickness of the troposphere at the equator is much greater as compared to poles.

Statement-II : At the equator, heat is transported to great heights by strong convectional currents.

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

a) Both Statement-I and Statement-II are correct and StatementII explains Statement-I

b) Both Statement-I and Statement-II are correct, but Statement-II does not explain Statement-I c) Statement-I is correct, but Statement-II is incorrect

d) Statement-I is incorrect, but Statement-II is correct

Ans: a

Exp: Statement I is correct because the troposphere is thicker at the equator (approximately 18 km) compared to the poles (around 8 km). This is due to the intense heating at the equator, which causes strong convection and vertical transport of heat. Statement II correctly explains the phenomenon by emphasizing the role of convection currents at the equator in transporting heat to greater heights.

The correct answer is a) Both Statement-I and Statement-II are correct and Statement-II explains Statement-I.

Q.13) Consider the following : (2024)

1. Pyroclastic debris
2. Ash and dust
3. Nitrogen compounds
4. Sulphur compounds

How many of the above are products of volcanic eruptions?

a) Only one

b) Only two

c) Only three

d) All four

Ans: d

Exp: All four listed components—pyroclastic debris, ash and dust, nitrogen compounds, and sulfur compounds—are products of volcanic eruptions. Volcanic activity releases gases (such as nitrogen and sulfur compounds) and solid ejecta (like ash, dust, and pyroclastic debris) during explosive eruptions.

The correct answer is d) All four.

Q.14) With reference to "water vapour", which of the following statements is/are correct? (2024)

1. It is a gas, the amount of which decreases with altitude.
2. Its percentage is maximum at the poles.

Select the answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Ans: a

Exp: Water vapor is a gas, and its concentration decreases with altitude due to lower temperatures and pressures at higher altitudes. However, its percentage is not maximum at the poles; instead, it is highest in tropical regions due to warmer temperatures and higher rates of evaporation.

The correct answer is a) 1 only.

Oceanography

Q15) The most important fishing grounds of the world are found in the regions where (2013)

(a) warm and cold atmospheric currents meet

(b) rivers drain out large amounts of fresh water into the sea

(c) warm and cold oceanic currents meet

(d) continental shelf is undulating

Ans: c

Exp:

*The most important fishing grounds of the world are located where **warm and cold oceanic currents meet** because:*

1) ***Nutrient Enrichment:***
   - *When warm and cold currents meet, the mixing of waters brings nutrients from the ocean depths to the surface. These nutrients promote the growth of plankton, which forms the base of the marine food chain.*
2) ***High Marine Biodiversity:***
   - *The abundance of plankton attracts fish and other marine organisms, creating rich fishing grounds.*
3) ***Famous Examples:***
   - *The meeting of the Gulf Stream (warm current) and the Labrador Current (cold current) off the coast of Newfoundland (Grand Banks) and the meeting of the Kuroshio (warm current) and Oyashio (cold current) currents near Japan are examples of highly productive fishing grounds.*

Why other options are incorrect:

- ***(a) Warm and cold atmospheric currents meet:** This affects weather patterns but has no direct impact on fishing grounds.*
- ***(b) Rivers drain out large amounts of freshwater into the sea:** This contributes nutrients locally (e.g., river deltas) but is not the primary factor for global fishing grounds.*
- ***(d) Continental shelf is undulating:** While continental shelves are important for fisheries due to shallow waters, the most productive areas are typically where oceanic currents meet.*

Q16) On the planet earth, most of the freshwater exists as ice caps and glaciers. Out of the remaining freshwater, the largest proportion (2013)

(a) is found in atmosphere as moisture and clouds

(b) is found in freshwater lakes and rivers

(c) exists as groundwater

(d) exists as soil moisture

Ans: c

Exp:

On Earth, the distribution of freshwater is as follows:

1) ***Ice caps and glaciers:***
   - *The majority (about **68-70%**) of freshwater is locked in ice caps and glaciers.*
2) ***Groundwater:***
   - *Out of the remaining freshwater, the largest proportion (about **30%**) exists as groundwater, which is stored in aquifers beneath the Earth's surface.*
3) ***Freshwater lakes and rivers:***
   - *Only a very small fraction (around **0.3%**) of freshwater is found in surface water bodies like lakes and rivers.*
4) ***Atmosphere as moisture and clouds:***
   - *Water in the atmosphere constitutes an even smaller fraction, approximately **0.04%** of the total freshwater.*
5) ***Soil moisture:***
   - *Soil moisture is also minimal compared to groundwater.*

Q.17) What explains the eastward flow of the equatorial counter-current? (2015)

a) The Earth’s rotation on its axis

b) Convergence of the two equatorial currents

c) Difference in salinity of water

d) Occurrence of the belt of calm near the equator

Ans: a

Exp: The equatorial counter-current is a unique oceanic phenomenon where water flows eastward near the equator between the two westward-flowing equatorial currents. The correct explanation for this lies in the Earth's rotation on its axis. The Earth's rotation, combined with the Coriolis effect, plays a vital role in determining the direction and behavior of ocean currents. The two westward-flowing equatorial currents—North and South Equatorial Currents—are driven by the trade winds. These currents push water toward the western edges of the ocean basins, causing a piling up of water there. This creates a pressure gradient as water levels in the western parts of the oceans are slightly higher than in the eastern parts. To balance this gradient, water flows back eastward

along the equator as the equatorial counter-current. This flow is further facilitated by the absence of strong trade winds near the equator, which allows the eastward movement of water to dominate in this region. The Earth's rotation ensures this eastward flow aligns along the equator, as the Coriolis effect is minimal at the equator but still influences broader circulation patterns.

Q.18) Tides occur in the oceans and seas due to which among the following? (2015)

1. Gravitational force of the Sun
2. Gravitational force of the Moon
3. Centrifugal force of the Earth

Select the correct answer using the code given below:

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Ans: d

Exp: Tides are the periodic rise and fall of sea levels caused primarily by gravitational interactions between the Earth, the Moon, and the Sun, along with the centrifugal force resulting from the Earth's rotation. The gravitational force of the Moon has the most significant impact on tides because of its proximity to Earth. The Moon's gravitational pull attracts water toward itself, creating a bulge of water, or a high tide, on the side of Earth facing the Moon. Simultaneously, on the opposite side of the Earth, a high tide also occurs due to the centrifugal force generated by the Earth-Moon system's rotation around their common center of mass.

The gravitational force of the Sun also influences tides, although to a lesser extent than the Moon because of its greater distance from Earth. When the Sun, Earth, and Moon align during new and full moons, the combined gravitational pull results in higher high tides, known as spring tides. Conversely, when the Sun and Moon are at right angles relative to the Earth during the first and third quarters of the lunar cycle, the tidal effects counteract each other, leading to lower high tides, called neap tides.

Finally, the centrifugal force arising from the Earth's rotation and its orbit around the Earth-Moon barycenter contributes to the tidal effect by creating the second tidal bulge opposite the Moon. The combination of these three forces—gravitational pull of the Moon, gravitational pull of the Sun, and the Earth's centrifugal force—leads to the occurrence of tides across the oceans and seas. Hence, the correct answer is d) 1, 2, and 3.

Q.19) With reference to 'Indian Ocean Dipole (IOD)' sometimes mentioned in the news while forecasting Indian monsoon, which of the following statements is/are correct? (2017)

1. The IOD phenomenon is characterised by a difference in sea surface temperature between tropical Western Indian Ocean and tropical Eastern Pacific Ocean.
2. An IOD phenomenon can influence an El Nino's impact on the monsoon.

Select the correct answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Ans: b

Exp: Statement 1: The IOD, also known as the Indian Niño, is an irregular oscillation of sea-surface temperatures in which the western Indian Ocean becomes alternately warmer and then colder than the eastern part of the Indian ocean (not tropical eastern pacific ocean.

Statement 2: IOD has a much more significant effect on the rainfall patterns in south-east Australia than the El Niño-Southern Oscillation (ENSO) in the Pacific Ocean as shown in several recent studies.

Q.20) Consider the following statements: (2021)

1. In the tropical zone, the western sections of the oceans are warmer than the eastern sections owing to the influence of trade winds.
2. In the temperate zone, westerlies make the eastern sections of oceans warmer than the western sections.

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

Ans: c

Exp: Statement 1 is correct. Warmer water is transported westward in the ocean by the Northeast trade winds in the Northern hemisphere of the tropical zone (as the figure given below shows). So, in tropical zones, the western section of ocean is warmer than eastern sections due to trade winds.

Statement 2 is correct. Similarly, the Westerlies play an important role in carrying the warm, equatorial waters and winds to the western coasts of continents (that is the eastern section of the Oceans in the temperate zone). Thus, in temperate zones, westerlies make the eastern section of the ocean warmer than the western sections.

Q.21) Which of the following is/are correct inference/inferences from isothermal maps in the month of January? (2024)

1. The isotherms deviate to the north over the ocean and to the south over the continent.
2. The presence of cold ocean currents. Gulf Stream and North Atlantic Drift make the North Atlantic Ocean colder and the isotherms bend towards the north

Select the answer using the code given below:

a) 1 only

b) 2 only

c) Both 1 and 2

d) Neither 1 nor 2

Ans: a

Exp: Isothermal maps in January provide critical insights into temperature distribution across the globe. The statement that "the isotherms deviate to the north over the ocean and to the south over the continent" is correct. This deviation is primarily caused by the differential heating of land and water. Land masses cool more rapidly in winter, leading to lower temperatures over continents, while oceans retain heat longer and remain warmer. This results in isotherms bending toward the poles over the warmer oceans and toward the equator over the cooler continents, particularly evident in the Northern Hemisphere during January.

The second statement, "The presence of cold ocean currents, Gulf Stream, and North Atlantic Drift make the North Atlantic Ocean colder and the isotherms bend towards the north," is incorrect. The Gulf Stream and North Atlantic Drift are warm ocean currents that raise temperatures in the North Atlantic Ocean, particularly near Europe. As these warm currents influence the region, isotherms actually bend northward due to the heat they distribute. Cold currents, such as the Labrador Current, can lower temperatures locally, but the overall influence of warm currents dominates the North Atlantic.

Thus, only the first statement is correct, making the correct answer a) 1 only.

Indian Geography: Map Based

Q1) The Narmada river flows to the west, while most other large peninsular rivers flow to the east. Why? (2013)

1. It occupies a linear rift valley.

2. It flows between the Vindhyas and the Satpuras.

3. The land slopes to the west from Central India.

Select the correct answer using the codes given below.

(a) 1 only

(b) 2 and 3

(c) 1 and 3

(d) None

Ans: a

Exp:

1) ***It occupies a linear rift valley:***

- ***Correct.*** *The Narmada River flows through a rift valley formed due to tectonic activity. Rift valleys are linear depressions in the Earth's crust, and rivers flowing through such valleys often have constrained courses. In the case of the Narmada, the rift valley slopes towards the west, which determines the river's westward flow.*

2) ***It flows between the Vindhyas and the Satpuras:***

- ***Incorrect.*** *While the Narmada does flow between these mountain ranges, this is a geographical location and does not directly explain its westward flow.*

3) ***The land slopes to the west from Central India:***

- ***Incorrect.*** *The general slope of peninsular India is from west to east, which is why most rivers in the region, such as the Godavari, Krishna, and Kaveri, flow eastward. The westward flow of the Narmada is an exception due to the rift valley.*

Q.2) Consider the following pairs: (2014)

National Highway	Cities connected
1. NH4 :	Chennai and Hyderabad
2. NH6 :	Mumbai and Kolkata
3. NH15 :	Ahmedabad and Jodhpur

Which of the above pairs is/are correctly matched?

a) 1 and 2 only

b) 3 only

c) 1, 2 and 3

d) None

Ans: d

Exp:

1) ***NH4 - Chennai and Hyderabad:***

- ***Incorrect.*** *NH4 is **National Highway 4**, which connects **Mumbai** and **Chennai**, not Hyderabad.*

2) ***NH6 - Mumbai and Kolkata:***

- ***Incorrect.*** *NH6 is **National Highway 6**, which connects **Mumbai** and **Howrah** (near Kolkata), but it doesn't directly connect **Mumbai** and **Kolkata** in the exact manner suggested.*

3) ***NH15 - Ahmedabad and Jodhpur:***

- ***Incorrect.*** *NH15 is **National Highway 15**, and it connects **Amritsar** and **Nathdwara**, passing through cities like **Bikaner** and **Jodhpur**. It does not directly connect **Ahmedabad** and **Jodhpur**.*

Q.3) Which one of the following pairs of States of India indicates the easternmost and westernmost State? (2015)

a) Assam and Rajasthan

b) Arunachal Pradesh and Rajasthan

c) Assam and Gujarat

d) Arunachal Pradesh and Gujarat

Ans: d

Exp: India's easternmost point lies in Arunachal Pradesh near Kibithu, which borders China and Myanmar. This makes Arunachal Pradesh the easternmost state. The westernmost point of India is in Gujarat, near the village of Guhar Moti in Kutch, bordering Pakistan. Among the given pairs, "Arunachal Pradesh and Gujarat" correctly represent the easternmost and westernmost states of India, making option (d) the correct answer.

Q.4) Which one of the following pairs of islands is separated from each other by the 'Ten Degree Channel'? (2014)

a) Andman and Nicobar

b) Nicobar and Sumatra

c) Maldives and Lakshadweep

d) Sumatra and Java

Ans: a

Exp:

*The **Ten Degree Channel** is the body of water that separates the **Andaman Islands** from the **Nicobar Islands**. It lies at approximately 10° north latitude, which is why it is called the Ten Degree Channel.*

- *The **Andaman Islands** are located to the north of the channel, while the **Nicobar Islands** are located to the south of the channel.*
- *The Ten Degree Channel is a significant geographical feature in the Bay of Bengal.*

Why other options are incorrect:

- ***(b) Nicobar and Sumatra**: The Nicobar Islands are separated from Sumatra by the **Sunda Strait**, not the Ten Degree Channel.*
- ***(c) Maldives and Lakshadweep**: The Maldives and Lakshadweep are separated by the **Laccadive Sea**, not the Ten Degree Channel.*
- ***(d) Sumatra and Java**: Sumatra and Java are separated by the **Sunda Strait**, not the Ten Degree Channel.*

Q.5) Consider the following rivers: (2014)

1. Barak
2. Lohit
3. Subansiri

Which of the above flows/flows through Arunachal Pradesh?

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Ans: b

Exp:

*1) **Barak**:*

- ***Incorrect.** The Barak River flows mainly through **Manipur** and **Assam**, but it does not flow through Arunachal Pradesh.*

*2) **Lohit**:*

- ***Correct.** The Lohit River originates in **Tibet** and flows through **Arunachal Pradesh** before merging with the Brahmaputra River.*

*3) **Subansiri**:*

- ***Correct.** The Subansiri River also originates in **Tibet** and flows through **Arunachal Pradesh**, eventually joining the Brahmaputra River.*

Q.6) Consider the following pairs: (2014)

Hills	Region
1. Cardamom Hills :	Coromandel Coast
2. Kaimur Hills :	Konkan Coast
3. Mahadeo Hills :	Central India
4. Mikir Hills :	North-East India

Which of the above pairs are correctly matched?

a) 1 and 2

b) 2 and 3

c) 3 and 4

d) 2 and 4

Ans: c

Exp:

*1) **Cardamom Hills - Coromandel Coast:***

- ***Incorrect.** The **Cardamom Hills** are located in the **Western Ghats** in the state of **Kerala** and extend into **Tamil Nadu**, but they are not associated with the **Coromandel Coast** (which is along the eastern coast of India).*

*2) **Kaimur Hills - Konkan Coast:***

- ***Incorrect.** The **Kaimur Hills** are part of the **Vindhya Range** and are located in the **northern part of Madhya Pradesh**, Bihar, and Uttar Pradesh. They are not associated with the **Konkan Coast**, which lies along the western coast of India.*

*3) **Mahadeo Hills - Central India:***

- ***Correct.** The **Mahadeo Hills** are located in **Central India**, mainly in **Madhya Pradesh**, and are part of the **Satpura Range**.*

*4) **Mikir Hills - North-East India:***

- ***Correct.** The **Mikir Hills** are located in the **Assam** region of **North-East India**, primarily between the **Brahmaputra River** and the **Kaziranga National Park**.*

Q.7) Consider the following pairs: (2015)

Pace of Pilgrimage Location

1. Srisailam : Nallamala Hills
2. Omkareshwar : Satmala Hills
3. Pushkar : Mahadeo Hills

Which of the above is/are correctly matched?

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and.3

Ans: a

Exp:

- *Srisailam - Nallamala Hills: This is correctly matched. The Srisailam temple and pilgrimage site are located in the Nallamala Hills in Andhra Pradesh, known for their scenic beauty and biodiversity.*
- *Omkareshwar - Satmala Hills: This is incorrectly matched. Omkareshwar, a famous pilgrimage site, is located on the Mandhata Island in the Narmada River, Madhya Pradesh, and not in the Satmala Hills.*
- *Pushkar - Mahadeo Hills: This is also incorrectly matched. Pushkar, known for its holy lake and Brahma temple, is located in the Aravalli Hills in Rajasthan, not in the Mahadeo Hills. Hence, only pair 1 is correctly matched.*

Q.8) Consider the following rivers: (2015)

1. Vamsadhara
2. Indravati
3. Pranahita
4. Pennar

Which of the above are tributaries of Godavari?

a) 1, 2 and 3

b) 2, 3 and 4

c) 1, 2 and 4

d) 2 and 3 only

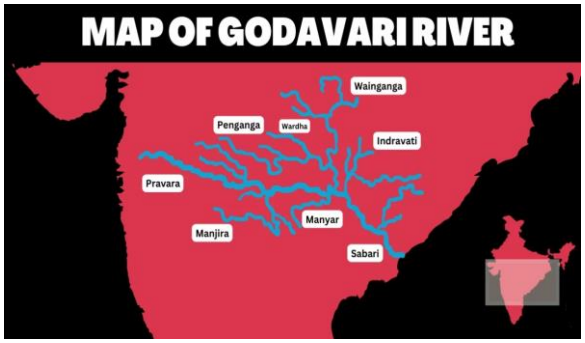
Ans: d

Exp: The Vamsadhara River originates in the Kalahandi district of Odisha and runs for a distance of about 254 kilometers, where it joins the Bay of Bengal at Kalingapatnam, Andhra Pradesh. It is not a tributary of Godavari.

Indravati River is a tributary of the Godavari River, in central India. It originates from the Eastern Ghats of Dandakaranya range in Kalahandi district and flows in a westerly direction; enters Jagdalpur in Chhattisgarh state. It further traverses in the westerly direction and thereafter in southern direction before finally meeting Godavari River at the border of Maharashtra, Chhattisgarh and Telangana.

Pranhita River flows on the edge of Gadchiroli district in Maharashtra and Adilabad district in Andhra Pradesh. The name Pranhita is derived from the nature of combined flow of the rivers Painganga and Wainganga. The Painganga River joins Vainganga near Aheri. The river then flows up to Sironcha. The river finally empties into the Godavari River, near Sironcha in Maharashtra.

The Pennar rises in the Chenna Kasava hill of the Nandidurg range, in Chikkaballapura district of Karnataka and flows towards east eventually draining into the Bay of Bengal. It is not a tributary of Godavari.



Q.9) Which of the following is/are tributary/tributaries of Brahmaputra? (2016)

1. Dibang
2. Kameng
3. Lohit

Select the correct answer using the code given below:

a) 1 only

b) 2 and 3 only

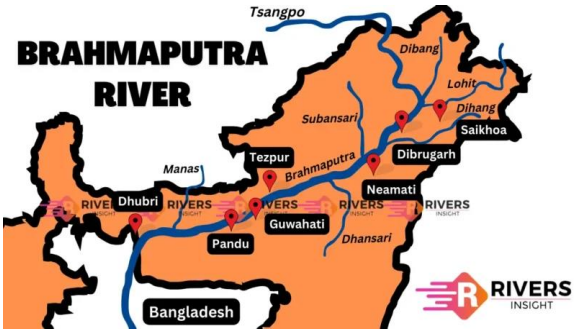
c) 1 and 3 only

d) 1, 2 and 3

Ans: d

Exp: Tributaries of Brahmaputra - Dibang River, Lohit River, Dhansiri River, Kolong River, Kameng

River, Manas River, Raidak River, Jaldhaka River, Teesta River, Subansiri River.



Q.10) Consider the following pairs: (2016)

Famous place Region

1. Bodhgaya : Baghelkhand
2. Khajuraho : Bundelkhand
3. Shirdi : Vidarbha
4. Nasik (Nashik) : Malwa
5. Tirupati : Rayalaseema

Which of the pairs given above are correctly matched?

a) 1, 2 and 4

b) 2, 3, 4 and 5

c) 2 and 5 only

d) 1, 3, 4 and 5

Ans: c

Exp: Malwa region includes districts of western Madhya Pradesh and parts of south-eastern Rajasthan. Baghelkhand covers the northeastern regions ofMadhya Pradesh and a small area of western Uttar Pradesh. Vidarbha is the eastern region of the Indian state of Maharashtra, comprising Nagpur Division and Amravati Division.

Q.11) At one of the places in India, if you stand on the seashore and watch the sea, you will find that the sea water recedes from the shore line a few kilometres and comes back to the shore, twice a day, and you can actually walk on the sea floor when the water recedes. This unique phenomenon is seen at: (2017)

a) Bhavnagar

b) Bheemunipatnam

c) Chandipur

d) Nagapattinam

Ans: c

Exp: Chandipur, located in Odisha, is famous for its unique tidal phenomenon, where the sea retreats up to 5 kilometers during low tide and then returns during high tide. This allows visitors to walk on the exposed seabed during low tide, offering a surreal experience. This distinctive occurrence is due to the shallow gradient of the coast at Chandipur.

Q.12) Which of the following is geographically closest to Great Nicobar? (2017)

a) Sumatra

b) Borneo

c) Java

d) Sri Lanka

Ans: a

Exp: Distance from Great Nicobar to Sri Lanka is 1,437 km. The distance from Great Nicobar to Sumatra is 1,192 km.

Q.13) If you travel by road from Kohima to Kottayam, what is the minimum number of States within India through which you can travel, including the origin and the destination? (2017)

a) 6

b) 7

c) 8

d) 9

Ans: b

Exp: To travel from Kohima (Nagaland) to Kottayam (Kerala), the route typically passes through the following states: Nagaland, Assam, West Bengal, Odisha, Andhra Pradesh, Tamil Nadu, and Kerala. Including both the origin (Nagaland) and destination (Kerala), the journey covers a minimum of 7 states.

Q.14) Among the following cities, which one lies on a longitude closest to that of Delhi? (2018)

a) Bengaluru

b) Hyderabad

c) Nagpur

d) Pune

Ans: a

Exp: Delhi's approximate longitude is 77.1°E. Among the given options:

- *Bengaluru: 77.6°E*
- *Hyderabad: 78.5°E*
- *Nagpur: 79.1°E*
- *Pune: 73.8°E*

Bengaluru is closest to Delhi in terms of longitude.

Q.15) Consider the following pairs: (2019)

Glacier		River
1. Bandarpunch	:	Yamuna
2. Bara Shigri	:	Chenab
3. Milam Mandakini	:	
4. Siachen	:	Nubra
5. Zemu	:	Manas

Which of the pairs given above are correctly matched?

a) 1, 2 and 4

b) 1, 3 and 4

c) 2 and 5

d) 3 and 5

Ans: a

Exp:

Origin Glacier	*Rivers*
Bandarpunch	*Yamuna*
Bara Shigri	*Chenab*
Milam	*Gori Ganga*
Siachen	*Nubra*
Zemu	*Teesta*

Q.16) Consider the following pairs: (2019)

Famous place		River
1. Pandharpur		Chandrabhaga
2. Tiruchirappalli	:	Cauvery
3. Hampi	:	Malaprabha

Which of the pairs given above are correctly matched?

a) 1 and 2 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Ans: a

Exp: Pandharpur is a well known pilgrimage town on the banks of Chandrabhaga River in Solapur district, Maharashtra, India. Tiruchirapalli is located along the Kaveri River in Tamil Nadu, India. Hampi, also referred to as the Group of Monuments at Hampi, is a UNESCO World Heritage Site situated on the banks of the Tungabhadra River in the eastern part of central Karnataka near the state border with Andhra Pradesh. Thus only 1 and 2 are correct.

Q.17) Siachen Glacier is situated to the: (2020)

a) East of Aksai Chin

b) East of Leh

c) North of Gilgit

d) North of Nubra Valley

Ans: d

Exp:The Siachen Glacier is part of Ladakh, which has now been converted into a Union Territory. It is located in the eastern Karakoram range in the Himalayan mountains. It lies to the south of the great drainage divide that separates the Eurasian Plate from the Indian subcontinent in the glaciated portion of the Karakoram.

Q.18) . With reference to the history of India, consider the following pairs: (2020)

Famous Place Present State

1. Bhilsa — Madhya Pradesh
2. Dwarasamudra — Maharashtra
3. Girinagar — Gujarat
4. Sthanesvara — Uttar Pradesh

Which of the pairs given above are correctly matched?

a) 1 and 3 only

b) 1 and 4 only

c) 2 and 3 only

d) 2 and 4 only

Ans: a

Exp: Bhilsa - Madhya Pradesh: Correct. Bhilsa, now known as Vidisha, is in Madhya Pradesh and is an important historical site near Sanchi.

1. *Dwarasamudra - Maharashtra: Incorrect. Dwarasamudra, now known as Halebidu, is in Karnataka, not Maharashtra.*
2. *Girinagar - Gujarat: Correct. Girinagar, or Girnar, is a historical site in Gujarat, known for its ancient Jain and Hindu temples.*
3. *Sthanesvara - Uttar Pradesh: Incorrect. Sthanesvara, now known as Thanesar, is in Haryana, not Uttar Pradesh. Thus, only pairs 1 and 3 are correct.*

Q.19) With reference to the Indus river system, of the following four rivers, three of them pour into one of them which joins the Indus directly. Among the following, which one is such a river that joins the Indus directly? (2021)

a) Chenab

b) Jhelum

c) Ravi

d) Sutlej

Ans: d

Exp:Starting at the pinnacle of the world with glaciers, the Indus River supplies the flora and fauna of temperate forests, plateaus, and dry rural areas. In conjunction with the rivers Chenab, Jhelum, Sutlej, Ravi, Beas, and two tributaries from Afghanistan and Khyber Pakhtunkhwa, the Indus creates the Sapta Sindhu (Seven Rivers) delta of Pakistan.

Chenab river moves into the lands of Punjab in the vicinity of Akhnur and is subsequently connected with the Jhelum. It creates the border between the Rechna and the Jech Doabs. The Chenab also meets the Ravi and the Sutlej in Pakistan.

The Ravi River runs as a portion of the boundary between India and Pakistan for a particular distance prior to moving into Pakistan and meeting the Chenab River.

The river moves into Pakistan in the vicinity of Sulemanki and is subsequently met by the Chenab.

Q.20) Consider the following rivers: (2021)

1. Brahmani
2. Nagavali
3. Subarnarekha
4. Vamsadhara

Which of the above rise from the Eastern Ghats?

a) 1 and 2

b) 2 and 4

c) 3 and 4

d) 1 and 3

Ans: b

Exp:Rivers originating on the Eastern Ghats include Baitarani River, Budhabalanga River, Rushikulya River, Vamsadhara River, Palar River, Nagavali River, and Champavathi River, etc.

The Baitarani River originates from Guptaganga hills in Keonjhar District of Orissa, about 2 km from Gonasika village, at an elevation of 900 m at latitude 21° 31' N and longitude 85° 33' E.

The Subernarekha River rises near Nagri village in the Ranchi District of Jharkhand at an elevation of 600 m. It flows for a length of 395 km before outfalling into the Bay of Bengal.

Q.21) Gandikota canyon of South India was created by which one of the following rivers? (2022)

a) Cauvery

b) Manjira

c) Pennar

d) Tungabhadra

Ans: c

Exp: Gandikota is a small village in the Kadapa district of Andhra Pradesh. The village is majorly known for housing the spectacular gorge which is famously adjudged as the Grand Canyon of India. The stunning gorge has been created by the waters of the famous river Pennar that streams from the Erramala hills. Penna (also known as Pinakini, Pennar, Penner, Penneru (Telugu), Pennai (Tamil)) is a river of southern India. India has always been a popular tourist destination for its historic forts, stunning palaces and dense jungles. Now, a lesser-known gorge in the southern state of Andhra Pradesh is drawing visitors. The gorge is a stunning maze of jagged rocks

layered in shades of red. The PennaRiver meanders through the canyon floor as it cuts through the Erramala hills. The area is known as the Grand Canyon of India because of its resemblance to the famous US landmark. It's also home to two ancient temples and a 12th Century fort that sits atop the hills surrounding the gorge.

Q.22) Which one of the following statements is correct? (2021)

a) Ajanta Caves lie in the gorge of Waghora river.

b) Sanchi Stupa lies in the gorge of Chambal river.

c) Pandu-lena Cave Shrines lie in the gorge of Narmada river.

d) Amaravati Stupa lies in the gorge of Godavari river

Ans: a

Exp: The Ajanta Caves, a UNESCO World Heritage Site, are situated along the Waghora River in Maharashtra. These rock-cut caves are renowned for their Buddhist sculptures and paintings. The other statements are incorrect as they misplace the geographical locations of the monuments.

Q.23) Consider the following pairs Peak Mountains: (2022)

1. NamchaBarwa - Garhwal Himalaya
2. Nanda Devi – Kumaon Himalaya
3. Nokrek – Sikkim Himalaya

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

a) 1 and 2

b) 2 only

c) 1 and 3

d) 3 only

Ans: b

Exp: NamchaBarwa is in an isolated part of southeastern Tibet rarely visited by outsiders. It stands inside the Great Bend of the YarlungTsangpo River as the river enters its notable gorge across the Himalaya, emerging as the Siang and becoming the Brahmaputra. On other hand the Garhwal Himalayas are mountain ranges located in the Indian state of Uttarakhand ,Kumaun Himalayas, west-central section of the Himalayas in northern India, extending 200 miles (320 km) from the Sutlej River east to the Kali River. The range, comprising part of the Siwalik Range in the south and part of the Great Himalayas in the north, lies largely within the state of Uttarakhand, northwest of Nepal. It rises to 25,646 feet (7,817 metres) at Nanda Devi, the range's highest peak. The Nokrek Biosphere Reserve is located in the northeast of India on the Tura Range, which forms part of the Meghalaya Plateau (average altitude: 600 metres).

Q.24) Consider the following pairs: (2022)

Wetland / Lake	Location
1. Hokera Wetland -	Punjab
2. Renuka Wetland -	Himachal Pradesh
3. Rudrasagar Lake -	Tripura
4. Sasthamkotta Lake -	Tamil Nadu

How many pairs given above are correctly matched?

a) Only one pair

b) Only two pairs

c) Only three pairs

d) All four pairs

Ans: b

Exp: Hokera Wetland- Jammu and Kashmir; Renuka Wetland- Himachal Pradesh; Rudrasagar Lake- Tripura ; Sasthamkotta Lake- Kerala

Q.25) Consider the following pairs: (2022)

Reservoirs	States
1. Ghataprabha –	Telangana
2. Gandhi Sagar –	Madhya Pradesh
3. Indira Sagar –	Andhra Pradesh
4. Maithon –	Chhattisgarh

How many pairs given above are not correctly matched?

a) Only one pair

b) Only two pairs

c) Only three pairs

d) All four pairs

Ans: a

Exp: Only one pair is correct. Ghataprabha- Karnataka Gandhi Sagar- Madhya Pradesh Indira Sagar – Madhya Pradesh Maithon- Jharkhand

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Q.26) Consider the following statements: (2023)

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

How many of the statements given above are correct?

a) Only one

b) Only two

c) All three

d) None

Ans: b

Exp: Jhelum River passes through Wular Lake: Correct. Wular Lake, one of the largest freshwater lakes in Asia, is fed by the Jhelum River in Jammu and Kashmir.

- *Krishna River directly feeds Kolleru Lake: Incorrect. Kolleru Lake, located in Andhra Pradesh, is primarily fed by the Budameru and Tammileru rivers, not the Krishna River.*
- *Meandering of the Gandak River formed Kanwar Lake: Correct. Kanwar Lake in Bihar is formed by the meandering of the Gandak River.*

Thus, only two statements are correct.

Q.27) Consider the following statements: (2023)

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

How many of the statements given above are correct?

a) Only one

b) Only two

c) All three

d) None

Ans: d

Exp: Amarkantak Hills are at the confluence of Vindhya and the Sahyadri Ranges: Incorrect. Amarkantak Hills are at the confluence of the Vindhya and Satpura ranges, not the Sahyadri.

- *Biligirirangan Hills constitute the easternmost part of Satpura Range: Incorrect. The Biligirirangan Hills are located in Karnataka and are part of the Eastern Ghats, not the Satpura Range.*
- *Seshachalam Hills constitute the southernmost part of Western Ghats: Incorrect. The Seshachalam Hills are located in Andhra Pradesh and are part of the Eastern Ghats, not the Western Ghats.*

None of the statements are correct.

Q.28) With reference to the Himalayan rivers joining the Ganga downstream of Prayagraj from West to East, which one of the following sequences is correct? (2024)

a) Ghaghara - Gomati - Gandak - Kosi

b) Gomati - Ghaghara - Gandak - Kosi

c) Ghaghara - Gomati - Kosi – Gandak

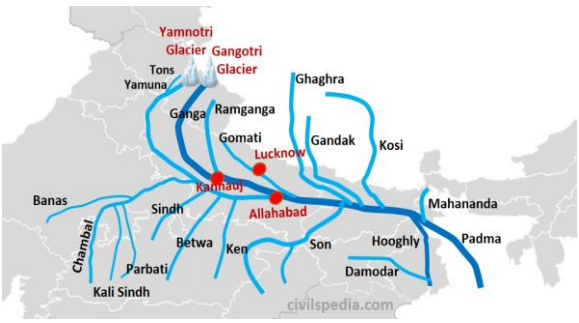
d) Gomati - Ghaghara - Kosi - Gandak

Ans: b

Exp: Downstream of Prayagraj, the correct sequence of Himalayan rivers joining the Ganga from west to east is:

- *Gomati: Joins the Ganga near Ghazipur (Uttar Pradesh).*
- *Ghaghara: Joins the Ganga near Chhapra (Bihar).*
- *Gandak: Joins the Ganga near Hajipur (Bihar).*
- *Kosi: Joins the Ganga near Kursela (Bihar).*

Thus, option (b) is correct.



Q.29) Consider the following information: (2024)

	Waterfall:	Region:	River
1.	Dhuandhar :	Malwa :	Narmada
2.	Hundru :	Chota Nagpur :	Subarnarekha
3.	Gersoppa :	Western Ghats :	Netravati

In how many of the above rows is the given information correctly matched?

a) Only one

b) Only two

c) All three

d) None

Ans: a

Exp: Dhuandhar - Malwa - Narmada: Incorrect. While the Dhuandhar Falls are on the Narmada River, they are located in the Jabalpur region (Madhya Pradesh) and not in Malwa.

1. *Hundru - Chota Nagpur - Subarnarekha: Correct. Hundru Falls are on the Subarnarekha River in the Chota Nagpur Plateau, Jharkhand.*
2. *Gersoppa - Western Ghats - Netravati: Incorrect. Gersoppa (Jog) Falls are on the Sharavathi River in the Western Ghats, not the Netravati River.*

Thus, only one pair is correctly matched.

World Geography: Map Based

Q.1) Turkey is located between (2014)

a) Black Sea and Caspian Sea

b) Black Sea and Mediterranean Sea

c) Gulf of Suez and Mediterranean Sea

d) Gulf of Aqaba and Dead Sea

Ans: b

*Exp: Turkey is strategically located between the **Black Sea** to the north and the **Mediterranean Sea** to the south. It serves as a bridge between Europe and Asia, with the **Bosporus Strait** linking the Black Sea to the Sea of Marmara and the **Dardanelles Strait** connecting the Sea of Marmara to the Aegean Sea, which is part of the Mediterranean.*

Why the other options are incorrect:

***(a) Black Sea and Caspian Sea:** Turkey is not located between the Black Sea and the Caspian Sea; these are two separate bodies of water, and the Caspian Sea is much further east, bordering countries like Kazakhstan and Russia.*

***(c) Gulf of Suez and Mediterranean Sea:** The Gulf of Suez is located near Egypt, not in Turkey.*

***(d) Gulf of Aqaba and Dead Sea:** The Gulf of Aqaba and Dead Sea are located in the Middle East, but they are not near Turkey.*

Q.2) What is the correct sequence of occurrences of the following cities in South-East Asia as one proceeds from south to north? (2014)

1. Bangkok
2. Hanoi
3. Jakarta
4. Singapore

Select the correct answer using the code given below:

a) 4-2-1-3

b) 3-2-4-1

c) 3-4-1-2

d) 4-3-2-1

Ans: c

Exp: To determine the correct sequence of cities from south to north, let's consider their geographical locations:

1. ***Jakarta (3)**: Jakarta is the capital of **Indonesia**, located on the island of Java, in the southern part of Southeast Asia.*
2. ***Singapore (4)**: Singapore is a small city-state just north of Indonesia, and it lies south of Malaysia.*
3. ***Bangkok (1)**: Bangkok is the capital of **Thailand** and is located to the north of Singapore, in Southeast Asia.*
4. ***Hanoi (2)**: Hanoi is the capital of **Vietnam**, situated further to the north of Thailand.*

Correct sequence from south to north:

- *Jakarta (Indonesia) → Singapore → Bangkok (Thailand) → Hanoi (Vietnam).*

Q.3) Consider the following pairs: (2014)

No. Region often in news	Country
1. Chechnya :	Russian Federation
2. Darfur :	Mali
3. Swat Valley :	Iraq

Which of the above pairs is/are correctly matched?

a) 1 only

b) 2 and 3 only

c) 1 and 3 only

d) 1, 2 and 3

Ans: a

Exp:

1) ***Chechnya - Russian Federation:***
   - ***Correct.*** *Chechnya is a region in the Russian Federation, located in the North Caucasus. It has been in the news due to conflicts and separatist movements.*
2) ***Darfur - Mali:***
   - ***Incorrect.*** *Darfur is a region in* ***Sudan****, not Mali. Darfur gained international attention due to the Darfur conflict and the humanitarian crisis there.*
3) ***Swat Valley - Iraq:***
   - ***Incorrect.*** *Swat Valley is located in* ***Pakistan****, not Iraq. The valley has been in the news due to conflicts, particularly involving the Taliban and military operations.*

Q.4) The area known as 'Golan Heights' sometimes appears in the news in the context of the events related to: (2015)

a) Central Asia

b) Middle East

c) South-East Asia

d) Central Africa

Ans: b

Exp: The Golan Heights is a strategically significant region in the Middle East, often in the news due to its geopolitical importance. It is a plateau bordering Israel, Syria, Lebanon, and Jordan. This area was captured by Israel from Syria during the 1967 Six-Day War and later annexed in 1981, a move that has not been internationally recognized. The region is of critical importance due to its military advantage and its role as a water source, providing access to the Sea of Galilee. Disputes over sovereignty continue to cause tensions between Israel and Syria, with the area frequently being referenced in international diplomatic discussions.

Q.5) Which one of the following countries of South-West Asia does not open out to the Mediterranean Sea? (2015)

a) Syria

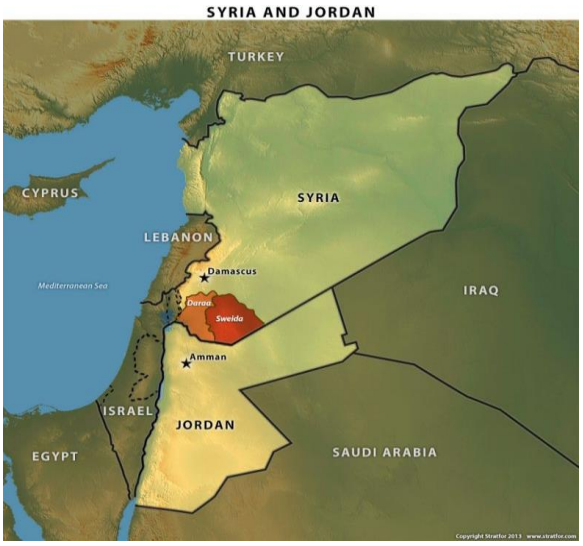
b) Jordan

c) Lebanon

d) Israel

Ans: b

Exp: Jordan is a landlocked country in Southwest Asia that does not have a coastline on the Mediterranean Sea. While countries like Syria, Lebanon, and Israel have Mediterranean coastlines, Jordan's access to the sea is limited to the Gulf of Aqaba, a narrow waterway leading to the Red Sea. This geographical fact is significant in the context of trade and economic limitations compared to its Mediterranean neighbors.



Q.6) Mediterranean Sea is a border of which of the following countries? (2017)

1. Jordan
2. iraq
3. Lebanon
4. Syria

Select the correct answer using the code given below:

a) 1, 2 and 3 only

b) 2 and 3 only

c) 3 and 4 only

d) 1, 3 and 4 only

Ans: c

Exp:

Q.7) Which of the following has/have shrunk immensely/dried up in the recent past due to human activities? (2018)

1. Aral Sea
2. Black Sea
3. Lake Baikal

Select the correct answer using the code given below:

a) 1 only

b) 2 and 3

c) 2 only

d) 1 and 3

Ans: d

Exp: Aral Sea has shrunk by about 75% of its original size mainly because of water diversion for agricultural usages in surrounding areas.

Lake Baikal's dramatic drying already is causing tensions between the two regions that rely on it. In the Buryat Republic, upstream of the lake, wells are running empty and the area's fishing industry is struggling with decreasing fish populations.

Q.8) Consider the following pairs: (2018)

Sl. No.	Towns sometimes mentioned in news	Country
1.	Aleppo :	Syria
2.	Kirkuk :	Yemen
3.	Mosul :	Palestine
4.	Mazar-i-sharif :	Afghanistan

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

a) 1 and 2

b) 1 and 4

c) 2 and 3

d) 3 and 4

Ans: b

Exp: Aleppo, a city in Syria, has been a focal point of the Syrian Civil War, witnessing significant destruction and displacement. Mazar-i-Sharif, located in northern Afghanistan, is a cultural and economic hub, often mentioned due to its strategic importance in Afghanistan's history. The pairs "Kirkuk: Yemen" and "Mosul: Palestine" are incorrect as Kirkuk is a major city in Iraq known for its oil reserves, and Mosul is also in Iraq, famous for its historical significance and involvement in conflicts with ISIS.

Q.9) Consider the following pairs: (2018)

S.No	Region sometimes mentioned in News	Country
1.	Catalonia	Spain
2.	Crimea	Hungary
3.	Mindanao	Philippines
4.	Oromia	Nigeria

Which of the pairs given above are correctly matched?

a) 1, 2 and 3

b) 3 and 4 only

c) 1 and 3 only

d) 2 and 4 only

Ans: c

Exp: Catalonia, a region in northeastern Spain, has been in the news due to its push for independence. Mindanao is an island in the Philippines that has experienced insurgency issues and peace negotiations. Crimea is incorrectly paired with Hungary; it is located in Ukraine and was annexed by Russia in 2014, causing international disputes. Oromia is incorrectly matched with Nigeria; it is a region in Ethiopia associated with political and ethnic unrest.

Q.10) Consider the following pairs: (2019)

Sea		Bordering country
1. Adriatic Sea	:	Albania
2. Black Sea	:	Croatia
3. Caspian Sea	:	Kazakhstan
4. Mediterranean Sea	:	Morocco
5. Red Sea	:	Syria

Which of the pairs given above are correctly matched?

a) 1, 2 and 4 only

b) 1, 3 and 4 only

c) 2 and 5 only

d) 1, 2, 3, 4 and 5

Ans: b

Exp: Countries bordering Adriatic sea: The Adriatic Sea is a part of the Mediterranean Sea positioned between the eastern coastline of Italy, and countries of the Balkan Peninsula, from Slovenia, south through Croatia. Montenegro, and to Albania. The southern boundary of the sea ends in the Strait of Otranto between Albania and Italy's Salento Peninsula. Immediately south of that strait the Ionian Sea begins.

Countries bordering Black sea: The Black Sea lies between southeastern Europe and Asia Minor. Excluding its northern arm, the Sea of Azov, the Black Sea occupies about 168,500 square miles (436,400 square kilometers). It is connected to the Aegean Sea through the Bosporus, the Sea of Marmara, and the Dardanelles, and has been of critical importance to regional commerce throughout the ages. This major inland sea is bordered by six countries — Romania and Bulgaria to the west; Ukraine, Russia, and Georgia to the north and east; and Turkey to the south. Additionally, it is impacted by another 10 nations through the five major rivers that empty into the Black Sea, the largest of which is the Danube River.

Countries bordering Capspian sea: The five countries Azerbaijan, Kazakhstan, Russia, Turkmenistan and Iran share their boundary with the Caspian Sea

Countries bordering Mediterranean sea: The countries surrounding the Mediterranean in clockwise order are Spain, France, Monaco, Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania, Greece, Turkey, Syria, Lebanon, Israel, Egypt, Libya, Tunisia, Algeria, and Morocco; Malta and Cyprus are island countries in the sea.

Countries bordering Red sea: There are six countries (Saudi Arabia, Yemen, Egypt, Sudan, Eritrea, and Djibouti) bordering the Red Sea.

Q.11) Consider the following pairs: (2020)

	River	Flows into
1.	Mekong	Andaman Sea
2.	Thames	Irish Sea
3.	Volga	Caspian Sea
4.	Zambezi	Indian Ocean

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

a) 1 and 2 only

b) 3 only

c) 3 and 4 only

d) 1, 2 and 4 only

Ans: c

Exp: River Flows into

1.	*Mekong*	*South China Sea*
2.	*Thames*	*North Sea*
3.	*Volga*	*Caspian Sea*
4.	*Zambezi*	*Indian Ocean*

Q.12) Which one of the following lakes of West Africa has become dry and turned into a desert ? (2022)

a) Lake Victoria

b) Lake Faguibine

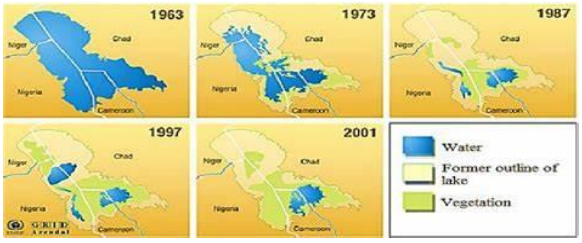
c) Lake Oguta

d) Lake Volta

Ans: b

Exp: One example of increasing aridity in Mali appears in Lake Faguibine. These false-color Landsat satellite images of the lake show how it changed over the decades.

Lying at the end of a series of basins watered by the Niger River when it floods, Lake Faguibine has experienced widely fluctuating water levels since the turn of the twentieth century but, at its fullest, has ranked among the largest lakes in West Africa. In 1974, this lake covered roughly 590 square kilometers (230 square miles). Starting in the late 1980s, a drop in precipitation steadily dried the lake. By the late 1990s, the traditional livelihoods of fishing, agriculture, and livestock herding became impractical. Even though normal rainfall resumed after the year 2000, the lake remained nearly dry.



Q.13) The term "Levant" often heard in the news roughly corresponds to which of the following regions? (2022)

a) Region along the eastern Mediterranean shores

b) Region along North African shores stretching from Egypt to Morocco

c) Region along Persian Gulf and Horn of Africa

d) The entire coastal areas of Mediterranean Sea

Ans: a

Exp: Levant, the region along the eastern Mediterranean shores, roughly corresponding to modern-day Israel, Jordan, Lebanon, Syria, and certain adjacent areas.

Q.14) Consider the following statements: (2022)

1. Bidibidi is a large refugee settlement in north-western Kenya.
2. Some people who fled from the South Sudan civil war live in Bidibidi.
3. Some people who fled from the civil war in Somalia live in the Dadaab refugee complex in Kenya.

Which of the statements given above is/are correct?

a) 1 and 2

b) 2 only

c) 2 and 3

d) 3 only

Ans: c

Exp: Bidibidi is located in northwestern Uganda, not Kenya, making the first statement incorrect. The second statement is correct as Bidibidi hosts refugees who fled the South Sudan civil war. The third statement is also correct because the Dadaab refugee complex in Kenya is home to Somali refugees escaping prolonged conflict in Somalia.

Q.15) Which one of the following statements best reflects the issue with Senkaku Islands, sometimes mentioned in the news? (2022)

a) It is generally believed that they are artificial islands made by a country around the South China Sea.

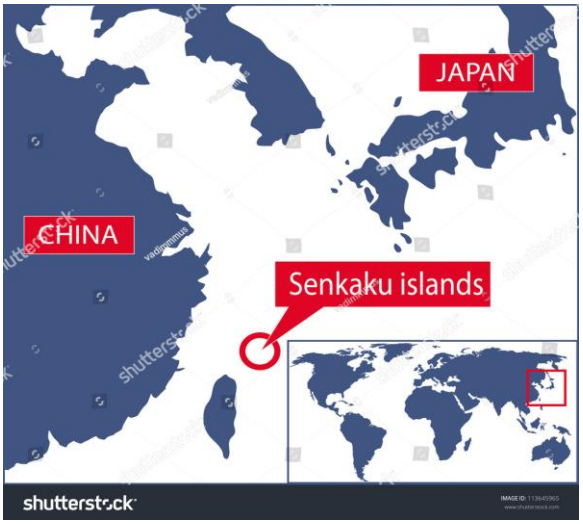
b) China and Japan engage in maritime disputes over these islands in the East China Sea.

c) A permanent American military base has been set up there to help Taiwan to increase its defense capabilities.

d) Though the International Court of Justice declared them as no man's land, some South-East Asian countries claim them.

Ans: b

Exp: The Senkaku Islands, located in the East China Sea, are the subject of territorial disputes between China and Japan. These uninhabited islands are controlled by Japan but claimed by China (referred to as Diaoyu) and Taiwan. The issue arises from their strategic location and the potential for natural resource reserves, making them a flashpoint in East Asia.



Q.16) Consider the following pairs: Country Important reason for being in the news recently (2022)

1. Chad — Setting up a permanent military base by China
2. Guinea — Suspension of Constitution and Government by military
3. Lebanon — Severe and prolonged economic depression
4. Tunisia — Suspension of Parliament by President

How many pairs given above are correctly matched?

a) Only one pair

b) Only two pairs

c) Only three pairs

d) All four pairs

Ans: c

Exp: The pairs for Guinea, Lebanon, and Tunisia are correct. Guinea experienced a coup in 2021, leading to the suspension of its Constitution. Lebanon has been undergoing a severe economic crisis with hyperinflation and unemployment. Tunisia witnessed the suspension of its Parliament by the President in 2021. However, Chad is incorrectly matched, as there has been no permanent Chinese military base established there.

Q.17) Consider the following pairs: (2022)

	Country	Region often mentioned in the news
1.	Anatolia —	Turkey
2.	Amhara —	Ethiopia
3.	Cabo Delgado —	Spain
4.	Catalonia —	Italy

How many pairs given above are correctly matched?

a) Only one pair

b) Only two pairs

c) Only three pairs

d) All four pairs

Ans: b

Exp: Anatolia is correctly matched with Turkey, as it forms the majority of Turkey's landmass. Amhara, a region in Ethiopia, is also correctly matched. Cabo Delgado is incorrectly paired with Spain; it is a province in Mozambique known for its conflict involving insurgents. Catalonia is incorrectly matched with Italy, as it is an autonomous region in Spain.

Q.18) Consider the following countries: (2022)

1. Azerbaijan
2. Kyrgyzstan
3. Tajikistan
4. Turkmenistan
5. Uzbekistan

Which of the above have borders with Afghanistan?

a) 1, 2 and 5 only

b) 1, 2, 3 and 4 only

c) 3, 4 and 5 only

d) 1, 2, 3, 4 and 5

Ans: c

Exp: Among these countries, Tajikistan, Turkmenistan, and Uzbekistan share borders with Afghanistan. Azerbaijan and Kyrgyzstan do not have borders with Afghanistan, making the correct answer "3, 4, and 5 only."

Q.19) About three-fourths of world's cobalt, a metal required for the manufacture of batteries for electric motor vehicles, is produced by (2023)

a) Argentina

b) Botswana

c) the Democratic Republic of the Congo

d) Kazakhstan

Ans: c

Exp: The Democratic Republic of the Congo (DRC) is the largest producer of cobalt globally, accounting for approximately 70–75% of the world's supply. This metal is critical for the manufacture of lithium-ion batteries used in electric vehicles, making the DRC central to the global energy transition.

Q.20) Which one of the following is a part of the Congo Basin? (2023)

a) Cameroon

b) Nigeria

c) South Sudan

d) Uganda

Ans: a

Exp: Cameroon is part of the Congo Basin, which is home to the world's second-largest tropical rainforest. The Congo Basin spans several countries, including Cameroon, the DRC, and Gabon, and is significant for biodiversity and climate regulation.

Q.21) Consider the following pairs: (2023)

Area of conflict mentioned in News Country where it is located

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

How many of the above pairs are correctly matched?

a) Only one

b) Only two

c) All three

d) None

Ans: d

Exp: All the pairs are incorrectly matched. Donbas is in Ukraine, Kachin is in Myanmar, and Tigray is in Ethiopia, making none of the pairs correct.

Q.22) In the recent years Chad, Guinea, Mali and Sudan caught international attention for which one of the following reasons is common to all of them? (2023)

a) Discovery of rich deposits of rare earth elements

b) Establishment of Chinese military bases

c) Southward expansion of Sahara Desert

d) Successful coups

Ans: d

Exp: Chad, Guinea, Mali, and Sudan have all experienced coups in recent years. These events have

disrupted governance, raised international concerns, and drawn attention to instability in these regions.

Q.23) Consider the following countries: (2023)

1. Bulgaria
2. Czech Republic
3. Hungary
4. Latvia
5. Lithuania
6. Romania

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

a) Only two

b) Only three

c) Only four

d) Only five

Ans: a

Exp: Among the listed countries, Romania and Hungary share a border with Ukraine. Bulgaria, Czech Republic, Latvia, and Lithuania do not.

Q.24) The longest border between any two countries in the world is between: (2024)

a) Canada and the United States of America

b) Chile and Argentina

c) China and India

d) Kazakhstan and Russian Federation

Ans: a

Exp: The Canada–USA border is the world's longest international boundary, stretching over 8,800 kilometers.

Q.25) Consider the following statements: (2024)

1. The Red Sea receives very little precipitation in any form.
2. No water enters the Red Sea from rivers.

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

Ans: a

Exp: The Red Sea receives very little precipitation and is one of the most arid regions in the world. However, the second statement is incorrect because some ephemeral rivers, known as wadis, do occasionally bring water into the Red Sea.

Q.26) Consider the following countries: (2024)

1. Finland
2. Germany
3. Norway
4. Russia

How many of the above countries have a border with the North Sea?

a) Only one

b) Only two

c) Only three

d) All four

Ans: b

Exp: Among the listed countries, Germany and Norway border the North Sea. Finland and Russia do not.

Q.27) Consider the following information: (2024)

Region	Name of the mountain range	Type of mountain
1. Central Asia	Vosges	Fold mountain
2. Europe	Alps	Block mountain
3. North America	Appalachians	Fold mountain
4. South America	Andes	Fold mountain

In how many of the above rows is the information correctly matched?

a) Only one

b) Only two

c) Only three

d) All four

Ans: b

Exp: Correct matches are:

- *Appalachians (North America) – Fold Mountains*
- *Andes (South America) – Fold Mountains*
- *Vosges (Europe) is a block mountain, and the Alps (Europe) are fold mountains, making these rows incorrect.*

Miscellaneous

Q1) Which one among the following industries is the maximum consumer of water in India? (2013)

(a) Engineering

(b) Paper and pulp

(c) Textiles

(d) Thermal power

Ans: d

Exp:

*The **thermal power industry** is the largest consumer of water in India, primarily for cooling purposes in thermal power plants. These plants use a significant amount of water to condense steam after it has passed through turbines, which is a vital part of their energy generation process. The water is also used for the boiler feedwater system, to remove heat from the system, and in various other processes.*

*While industries like **textiles**, **paper and pulp**, and **engineering** also consume large quantities of water, their consumption is much lower compared to that of thermal power plants.*

Q2) Consider the following crops (2013)

1. Cotton
2. Groundnut
3. Rice
4. Wheat

Which of these are Kharif crops?

(a) 1 and 4

(b) 2 and 3 only

(c) 1, 2 and 3

(d) 2, 3 and 4

Ans: c

Exp:

***Kharif crops** are grown during the **monsoon season**, typically from June to September in India. These crops require high rainfall and warm temperatures. Let's analyze each crop:*

1) ***Cotton**:*
   - ***Kharif crop**. Cotton is sown in the monsoon season and grows well in hot and humid conditions.*
2) ***Groundnut**:*
   - ***Kharif crop**. Groundnut (peanut) is typically sown at the beginning of the monsoon and harvested at the end of the rainy season.*
3) ***Rice**:*
   - ***Kharif crop**. Rice is one of the primary Kharif crops and is grown in the monsoon season with the requirement of abundant water.*
4) ***Wheat**:*
   - ***Rabi crop**. Wheat is sown in the winter season (usually October-November) and harvested in the spring (around March-April), making it a Rabi crop, not a Kharif crop.*

Q3) Which of the following is / are the characteristics/ characteristics of Indian coal? (2013)

1. High ash content
2. Low sulphur content
3. Low ash fusion temperature

Select the correct answer using the codes given below.

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

Ans: d

Exp:

Indian coal is characterized by the following features:

1) ***High ash content:***
   - ***Correct.** Indian coal, particularly non-coking coal, has a high ash content (ranging between 20–45%). This is due to the Gondwana origin of most Indian coal, which contains significant mineral impurities.*
2) ***Low sulphur content:***
   - ***Correct.** Indian coal has relatively low sulphur content (generally less than 1%), which is an advantage in reducing sulphur dioxide emissions during combustion.*
3) ***Low ash fusion temperature:***
   - ***Correct.** Indian coal has a low ash fusion temperature, which makes it prone to slagging (formation of clinkers in furnaces), particularly when used in thermal power plants.*

Q.4) With reference to the usefulness of the by-products of the sugar industry, which of the following statements is / are correct? (2013)

1. Bagasse can be used as biomass fuel for the generation of energy.
2. Molasses can be used as one of the feedstocks for the production of synthetic chemical fertilizers.
3. Molasses can be used for the production of ethanol.

Select the correct answer using the codes given below.

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

Ans: c

Exp:

1) ***Bagasse can be used as biomass fuel for the generation of energy:***
   - ***Correct.** Bagasse, the fibrous residue left after extracting juice from sugarcane, is an excellent biomass fuel. It is commonly used in sugar mills to generate electricity and steam for their operations.*
2) ***Molasses can be used as one of the feedstocks for the production of synthetic chemical fertilizers:***
   - ***Incorrect.** Molasses is not directly used as a feedstock for synthetic chemical fertilizers. It is primarily used in the production of ethanol,*

animal feed, and certain chemicals, but it has no significant role in fertilizer production.

3) ***Molasses can be used for the production of ethanol:***

- ***Correct.*** *Molasses, a by-product of sugar production, is rich in sugars and is widely used for producing ethanol through fermentation.*

Q.5) With reference to two non-conventional energy sources called 'coalbed methane' and 'shale gas', consider the following statements: (2014)

1. Coalbed methane is the pure methane gas extracted from coal seams, while shale gas is a mixture of propane and butane only that can be extracted from fine-grained sedimentary rocks.

2. In India, abundant coalbed methane sources exist, but so far no shale gas sources have been found.

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

Ans: d

Exp:

1) ***Coalbed methane is the pure methane gas extracted from coal seams, while shale gas is a mixture of propane and butane only that can be extracted from fine-grained sedimentary rocks:***

- ***Incorrect.*** *Coalbed methane (CBM) is indeed methane gas found in coal seams, but* ***shale gas*** *is primarily* ***methane*** *as well, not a mixture of propane and butane. Shale gas is found in fine-grained sedimentary rocks called shale, but it consists mainly of methane, not propane and butane.*

2) ***In India, abundant coalbed methane sources exist, but so far no shale gas sources have been found:***

- ***Incorrect.*** *India does have abundant coalbed methane resources, particularly in regions like the Damodar Valley. However, shale gas reserves have been found in India, particularly in the states of* ***Gujarat, Andhra Pradesh, and Rajasthan****, though they are still being explored for commercial viability.*

Q.6) Consider the following pairs: (2014)

Region	Well-known for the production of
1. Kinnaur :	Areca nut
2. Mewat :	Mango
3. Coromandel :	Soya bean

Which of the above pairs is/are correctly matched?

a) 1 and 2 only

b) 3 only

c) 1 and 3 only

d) 1,2 and 3

Ans: d

1) ***Kinnaur - Areca nut:***

- ***Correct.*** *Kinnaur, a region in Himachal Pradesh, is well-known for the cultivation of* ***Areca nut*** *(also called betel nut), which is a significant crop in the region.*

2) ***Mewat - Mango:***

- ***Correct.*** *Mewat, a region located in Haryana and Rajasthan, is known for* ***mango cultivation****, especially the famous* ***Chaunsa*** *variety of mangoes.*

3) ***Coromandel - Soya bean:***

- ***Correct.*** *The* ***Coromandel region****, which refers to the southeastern coast of India (mainly in Tamil Nadu and Andhra Pradesh), is known for the cultivation of* ***soya bean*** *among other crops.*

Q.7) In the context of food and nutritional security of India, enhancing the 'Seed Replacement Rates' of various crops helps in achieving the food production targets of the future. But what is/are the constraints/constraints in its wider/greater implementation? (2014)

1. There is no National Seeds Policy in place.

2. There is no participation of private sector seed companies in the supply of quality seeds of vegetables and planting materials of horticultural crops.

3. There is a demand-supply gap regarding quality seeds in the case of low value and high volume crops.

Select the correct answer using the code given below:

a) 1 and 2

b) 3 only

c) 2 and 3

d) None

Ans: b

Exp:

1) ***There is no National Seeds Policy in place:***
   - ***Incorrect.*** *India does have a* ***National Seeds Policy*** *in place to regulate and promote the development, production, and distribution of quality seeds. The policy aims to ensure the availability of quality seeds and planting materials for farmers.*
2) ***There is no participation of private sector seed companies in the supply of quality seeds of vegetables and planting materials of horticultural crops:***
   - ***Incorrect.*** *The private sector has a significant role in the seed industry, especially in the supply of quality seeds for vegetables and horticultural crops. Many private companies are involved in the research, development, and distribution of such seeds.*
3) ***There is a demand-supply gap regarding quality seeds in the case of low value and high volume crops:***
   - ***Correct.*** *There is often a gap between the demand and supply of quality seeds for certain crops, particularly* ***low-value, high-volume crops*** *like cereals and pulses. This gap affects food security and productivity, as farmers may not have access to the required quality seeds for these crops.*

Q.8) Consider the following statements: (2014)

1. Maize can be used for the production of starch.

2. Oil extracted from maize can be a feedstock for biodiesel.

3. Alcoholic beverages can be produced by using maize.

Which of the statements given above is/are correct?

a) 1 only

b) 1 and 2 only

c) 2 and 3 only

d) 1, 2 and 3

Ans: d

Exp:

1) ***Maize can be used for the production of starch:***
   - ***Correct.*** *Maize (corn) is a major source of* ***starch****, which is used in various industries, including food, pharmaceuticals, and textiles.*
2) ***Oil extracted from maize can be a feedstock for biodiesel:***
   - ***Correct. Maize oil*** *can be used as a feedstock for the production of* ***biodiesel****, which is a renewable energy source.*
3) ***Alcoholic beverages can be produced by using maize:***
   - ***Correct.*** *Maize is used in the production of* ***alcoholic beverages*** *such as* ***whiskey*** *(specifically bourbon) and can also be fermented to produce* ***ethanol*** *for fuel or other industrial uses.*

Q.9) With reference to the 'Changpa' community of India, consider the following statements: (2014)

1. They live mainly in the State of Uttarakhand.

2. They rear the Pashmina goats that yield fine wool.

3. They are kept in the category of Scheduled Tribes.

Which of the statements given above is/are correct?

a) 1 only

b) 2 and 3 only

c) 3 only

d) 1, 2 and 3

Ans: b

Exp:

1) ***They live mainly in the State of Uttarakhand:***

- ***Incorrect.*** *The* ***Changpa*** *community primarily resides in the* ***Ladakh region*** *of Jammu and Kashmir, particularly in high-altitude areas like Changthang. They do not primarily live in Uttarakhand.*

2) ***They rear the Pashmina goats that yield fine wool:***
   - ***Correct.*** *The Changpa community is known for* ***rearing Pashmina goats****, which are famous for producing* ***Pashmina wool****, a fine wool used in high-quality textiles.*

3) ***They are kept in the category of Scheduled Tribes:***
   - ***Correct.*** *The Changpa community is recognized as a* ***Scheduled Tribe (ST)*** *in India, primarily in the region of Ladakh.*

Q.10) In India, the problem of soil erosion is associated with which of the following? (2014)

1. Terrace cultivation
2. Deforestation
3. Tropical climate

Select the correct answer using the code given below:

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

Ans: b

Exp:

1) ***Terrace cultivation:***
   - ***Incorrect.*** *Terrace cultivation is a method used to prevent soil erosion in hilly and mountainous regions. By creating steps on slopes, this practice helps reduce the speed of water flow, thereby reducing soil erosion.*

2) ***Deforestation:***
   - ***Correct.*** *Deforestation leads to the removal of tree cover, which results in reduced root strength to hold the soil together. This makes the soil more prone to erosion by wind and water. Deforestation is a significant factor contributing to soil erosion in India.*

3) ***Tropical climate:***
   - ***Incorrect.*** *While tropical climates (with heavy rainfall) can contribute to soil erosion, it is not a primary cause. Erosion is more directly caused by human activities like deforestation and improper land management, rather than the climate itself.*

Q.11) In a particular region in India, the local people train the roots of living trees into robust bridges across the streams. As the time passes, these bridges become stronger. These unique 'living root bridges' are found in: (2015)

a) Meghalaya
b) Himachal Pradesh
c) Jharkhand
d) Tamil Nadu

Ans: a

Exp: The living root bridges of Cherrapunji, Laitkynsew, and Nongriat, in the present-day Meghalaya state of northeast India. It is a form of tree shaping, which creates these suspension bridges, they are handmade from the aerial roots of living banyan fig trees, such as Ficus elastica. The pliable tree roots are trained to grow through betel tree trunks which are placed across the gap, until the figs' roots take root on the other side. Sticks, stones, and other inclusions are placed with the growing bridge. This process can take up to 15 years to complete.

Q.12) Recently, our scientists have discovered a new and distinct species of banana plant which attains a height of about 11 metres and has orange-coloured fruit pulp. In which part of India has it been discovered? (2016)

a) Anadaman Islands

b) Anamalai Forests

c) Maikala Hills

d) Tropical rain forest of northeast

Ans: a

Exp: The species have been found in Andaman and nicobar. The new species is about 11 metres high, whereas as the usual banana species is about three to four metres high. The fruit lux of the new species is about one metres, which is thrice the size of regular species.

Q.13) Which one of the following is an artificial lake? (2018)

a) Kodaikanal (Tamil Nadu)

b) Kolleru (Andhra Pradesh)

c) Nainital (Utrarakhand)

d) Renuka (Himachal Pradesh)

Ans: a

Exp: Kodaikanal Lake, also known as Kodai Lake is a manmade lake located in the Kodaikanal city in Dindigul district in Tamil Nadu, India. Sir Vere Henry Levinge, the then Collector of Madurai, was instrumental in creating the lake in 1863, amidst the Kodaikanal town which was developed by the British and early missionaries from USA. The lake is said to be Kodaikanal's most popular geographic landmark and tourist attraction.

Q.14) The term "sixth mass extinction/sixth extinction" is often mentioned in the news in the context of the discussion of: (2018)

a) Widespread monoculture practices in agriculture and large-scale commercial farming with indiscriminate use of chemicals in many parts of the world that may result in the loss of good native ecosystems.

b) Fears of a possible collision of a meteorite with the Earth in the near future in the manner it happened 65 million years ago that caused the mass extinction of many species including those of dinosaurs.

c) Large scale cultivation of genetically modified crops in many parts of the world and promoting their cultivation in other parts of the world which may cause the disappearance of good native crop plants and the loss of food biodiversity.

d) Mankind's over exploitation/misuse of natural resources, fragmentation/loss of natural habitats, destruction of ecosystems, pollution and global climate change.

Ans: d

Exp: Earth is currently in the midst of what is being considered the 6th great mass extinction, or the Holocene extinction, or sometimes the Anthropocene extinction.

An increasing number of species is disappearing from the face of the earth due to human activities. This man-made mass extinction represents a very severe depletion of biodiversity, particularly because it is occurring within a short period of time.

Q.15) Recently, there was a growing awareness in our country about the importance of Himalayan nettle (Girardinia diversifolia) because it is found to be a sustainable source of: (2019)

a) anti-malarial drug

b) biodiesel

c) pulp for paper industry

d) textile fibre

Ans: d

Exp: Girardinia diversifolia (Himalayan nettle), a fibre-yielding plant, is found to be a sustainable source of Textile fibre. It has become an important livelihood option for people living in the remote mountainous villages of the Hindu Kush Himalaya. There is a community in Khar, a hamlet in Darchula district in far-western Nepal, which produces fabrics from Himalayan nettle.

Q.16) On 21st June, the Sun: (2019)

a) Does not set below the horizon at the Arctic Circle

b) Does not set below the horizon at Antarctic Circle

c) Shines vertically overhead at noon on the Equator

d) Shines vertically overhead at the Tropic of Capricorn

Ans: a

Exp: The Sun is directly overhead at "high-noon" on the equator twice per year, at the two equinoxes. On the Arctic Circle, the Sun does not set at all on the Summer Solstice which occurs on 21st June. On that one day, the Sun traces a complete circle just above the horizon as the Earth rotates.

Q.17) Consider the following statements: (2019)

1. 36% of India's districts are classified as "overexploited" or "critical" by the Central Ground Water Authority (CGWA).
2. CGWA was formed under the Environment (Protection) Act.
3. India has the largest area under groundwater irrigation in the world.

Which of the statements given above is/are correct?

a) 1 only

b) 2 and 3 only

c) 2 only

d) 1 and 3 only

Ans: b

Exp: Statement 2 is correct - Central Ground Water Authority (CGWA) has been constituted under Section 3 (3) of the Environment (Protection) Act, 1986 to regulate and control development and management of ground water resources in the country.

Statement 3 is correct - India has the world's largest groundwater well equipped irrigation system.

Q.18) What is common to the places known as Aliyar, Isapur and Kangsabati? (2019)

a) Recently discovered uranium deposits

b) Tropical rain forests

c) Underground cave systems

d) Water reservoirs

Ans: d

Exp: Aliyar, Isapur, and Kangsabati are known for being water reservoirs. These locations have significant reservoirs that contribute to irrigation, water storage, and hydroelectric power generation. They are not associated with uranium deposits, tropical rainforests, or underground cave systems. The correct answer is d) Water reservoirs.

Q.19) With reference to the cultivation of Kharif crops in India in the last five years, consider the following statements: (2019)

1. The area under rice cultivation is the highest.
2. The area under cultivation of jowar is more than that of oilseeds.
3. The area of cotton cultivation is more than that of sugarcane.
4. Area under sugarcane cultivation has steadily decreased.

Which of the statements given above are correct?

a) 1 and 3 only

b) 2, 3 and 4 only

c) 2 and 4 only

d) 1, 2, 3 and 4

Ans: a

Exp: Rice cultivation consistently occupies the largest area among Kharif crops, given its primary role in India's food security.

1. *The area under jowar cultivation has significantly decreased over the years due to shifts in*

agricultural practices, making this statement incorrect when compared with oilseeds.

2. *Cotton cultivation does cover more area than sugarcane due to its importance as a cash crop and its extensive geographic adaptability.*
3. *Sugarcane cultivation has not shown a steady decrease, as its area under cultivation has remained relatively stable or even increased in some years due to demand for sugar and ethanol.*

Thus, only statements 1 and 3 are correct. The answer is a) 1 and 3 only.

Q.20) With reference to the current trends in the cultivation of sugarcane in India, consider the following statements: (2020)

1. A substantial saving in seed material is made when 'bud chip settlings' are raised in a nurse, and transplanted in the main field.
2. When direct planting of setts is done, the germination percentage is better with single-budded setts as compared to sets with many buds.
3. If bad weather conditions prevail when setts are directly planted, single-budded setts have better survival as compared to large setts.
4. Sugarcane can be cultivated using settlings prepared from tissue culture.

Which of the statements given above is/are correct?

a) 1 and 2 only

b) 3 only

c) 1 and 4 only

d) 2, 3 and 4 only

Ans: c

Exp: Using "bud chip setts" involves planting smaller sections of the cane, leading to reduced seed material wastage and cost savings. This is an efficient modern technique.

1. *Direct planting of setts with multiple buds typically leads to higher germination rates, contrary to what is suggested.*
2. *Single-budded setts do not survive better than large setts under adverse weather conditions.*
3. *Tissue culture technology allows for the preparation of healthy and uniform sugarcane setts, which are increasingly used in commercial cultivation.*

Thus, only statements 1 and 4 are correct. The answer is c) 1 and 4 only.

Q.21) Which one of the following is a reason why astronomical distances are measured in light-years? (2021)

a) Distances among stellar bodies do not change.

b) Gravity of stellar bodies does not change.

c) Light always travels in a straight line.

d) The speed of light is always the same.

Ans: d

Exp: Astronomical distances are measured in light-years as the speed of light is constant. A light-year is how astronomers measure distance in space. It's defined by how far a beam of light travels in one year – a distance of six trillion miles.

Q.22) Among the following, which one is the least water-efficient crop? (2021)

a) Sugarcane

b) Sunflower

c) Pearl millet

d) Red gram

Ans: a

Exp: Out of all the crops sugarcane requires the maximum amount of water.

Q.23) 'With reference to 'palm oil', consider the following statements: (2021)

1. The palm oil tree is native to Southeast Asia.
2. Palm oil is a raw material for some industries producing lipstick and perfumes.
3. The palm oil can be used to produce biodiesel.

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

Ans: b

Exp: Palm oil is derived from the fruit of the oil palm tree, which is native to Africa and not Southeast Asia. However, it is now extensively cultivated in Southeast Asia, particularly in countries like Indonesia and Malaysia. Palm oil is used in industries like cosmetics (lipstick, perfumes) and can also be converted into biodiesel. Hence, only statements 2 and 3 are correct. The answer is b) 2 and 3 only.

Q.24) With reference to India, Didwana, Kuchaman, Sargol and Khatu are the names of (2021)

a) glaciers

b) mangrove areas

c) Ramsar sites

d) saline lakes

Ans: d

Exp: Didwana, Kuchaman, Sargol, and Khatu are saline lakes located in Rajasthan, India. They are not glaciers, mangrove areas, or Ramsar sites. The correct answer is d) saline lakes.

Q.25) Consider the following States: (2022)

1. Andhra Pradesh
2. Kerala
3. Himachal Pradesh
4. Tripura

How many of the above are generally known as tea-producing States?

a) Only one State

b) Only two States

c) Only three States

d) All four States

Ans: d

Exp: Option d) is correct: Assam, West Bengal, Tamil Nadu, and Kerala are the major tea producing states in India. Other states that produce tea include Himachal Pradesh, Uttarakhand, Meghalaya, Andhra Pradesh and Tripura.

Q.26) With reference to the United Nations Convention on the Law of Sea, consider the following statements: (2022)

1. A coastal state has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baseline determined in accordance with the convention.
2. Ships of all states, whether coastal or land-locked, enjoy the right of innocent passage through the territorial sea.
3. The Exclusive Economic Zone shall not extend beyond 200 nautical miles from the baseline from which the breadth of the territorial sea is measured.

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

Ans: d

Exp: Under the United Nations Convention on the Law of the Sea (UNCLOS):

1. *Coastal states can establish a territorial sea up to 12 nautical miles from baselines.*
2. *Ships of all states, including landlocked ones, enjoy the right of innocent passage through these territorial waters.*
3. *Exclusive Economic Zones (EEZs) extend up to 200 nautical miles from baselines.*

All three statements are correct. The answer is d) 1, 2, and 3.

Q.27) Among the following crops, which one is the most important anthropogenic source of both methane and nitrous oxide? (2022)

a) Cotton

b) Rice

c) Sugarcane

d) Wheat

Ans: b

Exp: Rice cultivation is the largest anthropogenic source of both methane (from anaerobic decomposition in flooded fields) and nitrous oxide (from nitrogen fertilizers). Other crops like cotton, sugarcane, and wheat do not produce such significant levels of these greenhouse gases. The correct answer is b) Rice.

Q.28) In the northern hemisphere, the longest day of the year normally occurs in the: (2022)

a) First half of the month of June

b) Second half of the month of June

c) First half of the month of July

d) Second half of the month of July

Ans: b

Exp: The longest day in the northern hemisphere occurs around the summer solstice, which typically falls between June 20 and June 22. This occurs in the second half of June. The correct answer is b) Second half of the month of June.

Q.29) Consider the following statements: (2023)

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

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

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

a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-1

c) Statement-I is correct but Statement-II is incorrect

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

Ans: c

Exp: Statement I is correct: Despite having uranium deposits, India's electricity generation relies heavily on coal due to the abundance of coal reserves and limited uranium enrichment facilities.

Statement II is incorrect: For nuclear power, uranium does not need to be enriched to 60%. A lower enrichment (typically 3-5% for nuclear reactors) is sufficient.

The correct answer is c) Statement-I is correct but Statement-II is incorrect.

Q.30) Consider the following pairs: (2023)

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

How many of the above pairs are correctly matched?

a) Only one pair

b) Only two pairs

c) All three pairs

d) None of the pairs

Ans: b

Exp:

- *Kamarajar Port (Ennore Port) was the first in India to be registered as a company.*
- *Mundra Port is indeed the largest privately-owned port in India.*
- *Visakhapatnam Port is not the largest container port; that distinction belongs to Jawaharlal Nehru Port (JNPT).*

Thus, only two pairs are correctly matched. The answer is b) Only two pairs.

Q.31) Consider the following trees: (2023)

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

How many of the above are deciduous trees?

a) Only one

b) Only two

c) All three

d) None

Ans: b

Exp: Jackfruit and Mahua are deciduous trees as they shed their leaves seasonally.

Teak is also a deciduous tree.

Thus, two of the listed trees are deciduous. The answer is b) Only two.

Q.32) With reference to the Earth's atmosphere, which one of the following statements is correct? (2023)

a) The total amount of insolation received at the equator is roughly about 10 times that received at the poles.

b) Infrared rays constitute roughly two-thirds of insolation.

c) Infrared waves are largely absorbed by water vapour that is concentrated in the lower atmosphere.

d) Infrared waves are a part of the visible spectrum of electromagnetic waves of solar radiation.

Ans: c

Exp: Infrared waves form a significant part of the Earth's radiative heat budget and are absorbed by water vapor in the lower atmosphere. They are not part of the visible spectrum and do not constitute two-thirds of insolation. The correct answer is c) Infrared waves are largely absorbed by water vapour that is concentrated in the lower atmosphere.

Q.33) Consider the following statements: (2023)

Statement-I : The soil in tropical rain forests is rich in nutrients.

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

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

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

Ans: d

Exp:

- *Statement I is incorrect: The soil in tropical rainforests is generally poor in nutrients because heavy rainfall leaches nutrients away.*
- *Statement II is correct: High temperature and moisture accelerate organic decomposition, but the nutrients are quickly taken up by vegetation.*

The correct answer is d) Statement-I is incorrect but Statement-II is correct.

Q.34) Consider the following statements: (2023)

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

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

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

a) Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I

b) Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I

c) Statement-I is correct but Statement-II is incorrect

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

Ans: c

Exp: Statement I is correct: India is the largest extractor of groundwater, accounting for more than a quarter of the global total.

Statement II is incorrect: While India's groundwater withdrawal supports drinking water and sanitation needs, it also extensively supports irrigation and agriculture.

The correct answer is c) Statement-I is correct but Statement-II is incorrect.

Q.35) Consider the following countries: (2024)

1. Italy
2. Japan
3. Nigeria
4. South Korea
5. South Africa

Which of the above countries are frequently mentioned in the media for their low birth rates, aging population or declining population?

a) 1, 2 and 4

b) 1, 3 and 5

c) 2 and 4 only

d) 3 and 5 only

Ans: a

Exp: Italy, Japan, and South Korea are often discussed for their aging and declining populations, while Nigeria and South Africa face different demographic challenges such as high birth rates. The correct answer is a) 1, 2, and 4.

Q.36) Which of the following countries are well known as the two largest cocoa producers in the world? (2024)

a) Algeria and Morocco

b) Botswana and Namibia

c) Cote d'Ivoire and Ghana

d) Madagascar and Mozambique

Ans: c

Exp: Côte d'Ivoire and Ghana are the two largest cocoa producers in the world, accounting for more than 60% of global production. The correct answer is c) Côte d'Ivoire and Ghana.