MCQ PRACTICE

CURRENT AFFAIRS

ENVIRONMENT & GEOGRAPHY

Week 92

THE TUTORS ACADEMY

QUESTION 1

With reference to the polar vortex, consider the following statements:

1. It is a large area of high-pressure and hot air that swirls like a wheel around both of the Earth's polar regions.
2. The tropospheric polar vortex disappears during the summer and is the strongest during the autumn.

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

QUESTION 2

Consider the following statements:

1. Statement 1: Plates move because of the processes happening deep underneath the Earth's surface.
2. Statement 2: Rise in temperature and pressure results in convection currents of varying intensity circulating throughout the mantle.

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

(a) Both Statement 1 and Statement 2 are correct and Statement 2 is the correct explanation for Statement 1.

(b) Both Statement 1 and Statement 2 are correct and Statement 2 is not the correct explanation for Statement 1.

(c) Statement 1 is correct but Statement 2 is incorrect.

(d) Statement 1 is incorrect but Statement 2 is correct.

QUESTION 3

With reference to the ‘rat-hole’ mining, consider the following statements:

1. It is a method of extracting coal from narrow and horizontal seams.
2. It is prevalent in Odisha.
3. The coal is automatically extracted using machines.

How many of the statements given above are correct?

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

QUESTION 4

With reference to the water cycle, consider the following statements:

1. The water cycle is the constant movement of water in all its phases — solid, liquid and gas — on the ground, inside the ground and in the atmosphere.
2. Water on the ground or in bodies of water escapes into the atmosphere as water vapour through a process called convection.
3. It regulates weather patterns on the Earth.

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

QUESTION 5

With reference to the Brahmaputra River, consider the following statements:

1. In Tibet, it is known as Yarlung Tsangpo.
2. It enters India in Assam.
3. In Arunachal Pradesh, it is known as the Siang.
4. In India, it is joined by Dibang and Lohit tributaries.

How many of the statements given above are correct?

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

CURRENT AFFAIRS

MCQ PRACTICE

ENVIRONMENT & GEOGRAPHY

Week 92

Answers and Explanations

QUESTION 1

With reference to the polar vortex, consider the following statements:

1. It is a large area of high-pressure and hot air that swirls like a wheel around both of the Earth's polar regions.
2. The tropospheric polar vortex disappears during the summer and is the strongest during the autumn.

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

1.Explanation

- ✓ At least five people have died in the United States when a winter storm struck a significant portion of the country over the weekend, causing huge school closures, perilous traffic conditions, and power outages. The harsh weather was caused by the polar vortex expanding southward.
- ✓ The polar vortex is a vast area of low-pressure, cold air that rotates like a wheel around both of the Earth's polar regions. Polar vortices are classified into two types: tropospheric and stratospheric. Hence, statement 1 is not correct.
- ✓ The tropospheric polar vortex occurs in the lowest layer of the atmosphere, which stretches from the surface to around 10 to 15 km and is where most meteorological occurrences occur.
- ✓ The stratospheric polar vortex occurs at heights ranging from 15 to 50 kilometres. Unlike the tropospheric polar vortex, the stratospheric polar vortex fades over the summer and peaks in the autumn. Hence, statement 2 is not correct.
- ✓ Therefore, option (d) is the correct answer.

QUESTION 2

Consider the following statements:

1. Statement 1: Plates move because of the processes happening deep underneath the Earth's surface.
2. Statement 2: Rise in temperature and pressure results in convection currents of varying intensity circulating throughout the mantle.

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

(a) Both Statement 1 and Statement 2 are correct and Statement 2 is the correct explanation for Statement 1.

(b) Both Statement 1 and Statement 2 are correct and Statement 2 is not the correct explanation for Statement 1.

(c) Statement 1 is correct but Statement 2 is incorrect.

(d) Statement 1 is incorrect but Statement 2 is correct.

2.Explanation

- ✓ On Tuesday (January 7), an earthquake measuring around 7 on the Richter scale struck Tibet, killing around 100 people and causing damage to approximately 1,000 homes. Its epicentre was around 75 km northeast of Mount Everest and close to Nepal, however no significant damage was reported there.
- ✓ The Earth's whole outermost surface (the crust and upper mantle) is made up of 15 main and minor plates. Earthquakes are caused by movement along faults, which are fractures between tectonic plates.
- ✓ The USGS website notes, "The tectonic plates are always slowly moving, but they get stuck at their edges due to friction. When the stress on the edge overcomes the friction, there is an earthquake that releases energy in waves that travel through the earth's crust and cause the shaking that we feel."

- ✓ Plates move because of the processes happening deep underneath the Earth's surface. For one, temperature and pressure rise as one goes deeper, resulting in convection currents of varying intensity circulating throughout the mantle. Hence, statements 1 and 2 are correct.
- ✓ Both Statement 1 and Statement 2 are correct and Statement 2 is the correct explanation for Statement 1.
- ✓ Therefore, option (a) is the correct answer.

QUESTION 3

With reference to the ‘rat-hole’ mining, consider the following statements:

1. It is a method of extracting coal from narrow and horizontal seams.
2. It is prevalent in Odisha.
3. The coal is automatically extracted using machines.

How many of the statements given above are correct?

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

3.Explanation

- ✓ Several workers were stuck in a coal “rat-hole” mine for more than 12 hours when it was filled with water on Monday (January 6) morning in Assam’s Dima Hasao district.
- ✓ Rat-hole mining, a method of extracting coal from narrow, horizontal seams, is common in Meghalaya. The term “rat hole” refers to narrow pits dug into the ground, usually only large enough for one person to descend and extract coal. Hence, statement 1 is correct and statement 2 is not correct.
- ✓ After digging the pits, miners use ropes or bamboo ladders to descend to the coal seams. The coal is then physically removed with rudimentary instruments like pickaxes, shovels, and baskets. Hence, statement 3 is not correct.
- ✓ Rat hole mining offers severe safety and environmental risks. Mines are often unregulated, with no safety measures such as sufficient ventilation, structural support, or worker protective equipment. Furthermore, the mining process can result in land degradation, deforestation, and water contamination.
- ✓ Therefore, option (a) is the correct answer.

QUESTION 4

With reference to the water cycle, consider the following statements:

1. The water cycle is the constant movement of water in all its phases — solid, liquid and gas — on the ground, inside the ground and in the atmosphere.
2. Water on the ground or in bodies of water escapes into the atmosphere as water vapour through a process called convection.
3. It regulates weather patterns on the Earth.

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

4.Explanation

- ✓ Climate change is “wreaking havoc” on the Earth’s water cycle, changing how water travels between the ground, oceans, and atmosphere, according to a new analysis. This has resulted in catastrophic precipitation, ferocious floods, and droughts, affecting billions of people worldwide by 2024.
- ✓ The ‘2024 Global Water Monitor Report’ was created by an international team of researchers from universities in Australia, Saudi Arabia, China, Germany, and other countries. The researchers conducted their analysis using data from ground stations and satellites to get water variables such as soil moisture and rainfall.
- ✓ What is the water cycle?
- ✓ The water cycle is the continuous movement of water in all of its phases—solid, liquid, and gas—on the ground, within the ground, and in the atmosphere. The majority of water moves

- ✓ around the world as a result of solar radiation and temperature fluctuations. Hence, statement 1 is correct.
- ✓ For example, water on the ground or in bodies of water escapes into the atmosphere as
- ✓ water vapour through a process known as evaporation. Plants absorb water from the soil and release it as water vapour through a process called transpiration. Hence, statement 2 is not correct.
- ✓ Water vapour condenses into clouds and then falls as rain or snow. Precipitation enters ice caps, oceans, lakes, rivers, and glaciers, where it can be absorbed by plants or seep deeper into the ground. Following this, the water cycle restarts.
- ✓ The water cycle is critical because it not only ensures the supply of water for all living organisms but also regulates weather patterns on the planet. For example, the rate and distribution of water cycling through the planets influence the frequency, intensity, and distribution of precipitation. Hence, statement 3 is correct.
- ✓ Therefore, option (c) is the correct answer.

QUESTION 5

With reference to the Brahmaputra River, consider the following statements:

1. In Tibet, it is known as Yarlung Tsangpo.
2. It enters India in Assam.
3. In Arunachal Pradesh, it is known as the Siang.
4. In India, it is joined by Dibang and Lohit tributaries.

How many of the statements given above are correct?

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

5.Explanation

- ✓ On December 25, China approved the world's largest hydropower project for the Yarlung Tsangpo (or Zangbo) river in Tibet. When completed, the 60,000 MW project will have the capacity to generate three times as much energy as the world's largest hydro project, the Three Gorges Dam on the Yangtze in central China.
- ✓ From Tibet, the Yarlung Tsangpo enters Arunachal Pradesh, where it is known as the Siang. Hence, statement 2 is not correct.
- ✓ In Assam, it is joined by tributaries such as Dibang and Lohit, and is called the Brahmaputra.
- ✓ The river then enters Bangladesh, and makes its way to the Bay of Bengal.
- ✓ Therefore, option (c) is the correct answer.