

CURRENT AFFAIRS



MCQ PRACTICE

ENVIRONMENT & GEOGRAPHY



# Week 103

THE TUTORS ACADEMY

## QUESTION 1

With reference to the Permafrost, consider the following statements:

1. It is any ground that stays frozen — 0 degrees Celsius or lower — for at least two years.
2. They contain a vast amount of organic carbon.
3. It helps in stabilising rock slopes and moraines.
4. As the permafrost thaws, it makes climate change worse.

How many of the statements given above are correct?

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

## QUESTION 2

With reference to the Exclusive Economic Zone (EEZ), consider the following statements:

1. The EEZ of a country extends from the baseline of its coast to 12 nautical miles into the sea.
2. A nation has exclusive rights to non-living resources in the waters and does not have any rights over living resources within its EEZ.

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 3

With reference to the tundra biome, consider the following statements:

1. It is the coldest of the biomes and receives low amounts of precipitation.
2. The winters in these biomes are short and sunny.
3. The continent North America has no tundra biome.
4. These biomes store more carbon dioxide compared to a typical ecosystem.

Which of the statements given above is/are correct?

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

## QUESTION 4

With reference to the Volcanoes, consider the following statements:

1. They are present only on land and not in the oceans.
2. The Ring of Fire is essentially a string of hundreds of volcanoes and earthquake sites which runs along the Atlantic Ocean.
3. Recently, Mount Lewotobi Laki-Laki, a twin-peaked volcano in the Philippines, erupted.

How many of the statements given above are correct?

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

## QUESTION 5

With reference to the GDP emission intensity, consider the following statements:

1. It refers to the reduction in GHG emissions per unit of economic output.
2. India has committed to reduce its GDP emission intensity by 45% compared to 2005 levels by 2030.

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

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# Week 103

## Answers and Explanations

## QUESTION 1

With reference to the Permafrost, consider the following statements:

1. It is any ground that stays frozen — 0 degrees Celsius or lower — for at least two years.
2. They contain a vast amount of organic carbon.
3. It helps in stabilising rock slopes and moraines.
4. As the permafrost thaws, it makes climate change worse.

How many of the statements given above are correct?

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

## 1.Explanation

- ✓ Permafrost is defined as ground that has been frozen for at least two years at temperatures of 0 degrees Celsius or colder. Permafrost can cover a large portion of the terrain in high-altitude areas. Hence, statement 1 is correct.
- ✓ Permafrost includes an abundance of organic carbon and other nutrients. According to the UNESCO report, mountain soils with permafrost hold about 4.5% of global soil organic carbon. Hence, statement 2 is correct.
- ✓ As the permafrost thaws, organic carbon is released into the atmosphere, contributing to climate change. Hence, statement 4 is correct.
- ✓ Furthermore, permafrost in mountainous areas stabilises rock slopes, moraines (material left by a moving glacier), and debris-covered slopes. However, as permafrost melts, slopes become more susceptible to erosion, raising the danger of landslides and other hazards. Hence, statement 3 is correct.
- ✓ Therefore, option (d) is the correct answer.

## QUESTION 2

With reference to the Exclusive Economic Zone (EEZ), consider the following statements:

1. The EEZ of a country extends from the baseline of its coast to 12 nautical miles into the sea.
2. A nation has exclusive rights to non-living resources in the waters and does not have any rights over living resources within its EEZ.

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

## 2.Explanation

- ✓ India has finished wet testing of its Matsya-6000 submersible, which can dive up to 6 kilometres below the surface to search for subsurface minerals off the coast. The first deep-sea manned vehicle is scheduled to launch later this year, putting India among a narrow handful of nations capable of sending humans to such depths.
- ✓ The United Nations Convention on the Law of the Seas (UNCLOS) defines a country's Exclusive Economic Zone (EEZ) as extending from the baseline of its coast to 200 nautical miles (approximately 370 kilometres) into the sea. Hence, statement 1 is not correct.
- ✓ Within its EEZ, a nation has exclusive rights to both living and non-living resources in the oceans and on the seabed. Hence, statement 2 is not correct.
- ✓ Therefore, option (d) is the correct answer.

### QUESTION 3

With reference to the tundra biome, consider the following statements:

1. It is the coldest of the biomes and receives low amounts of precipitation.
2. The winters in these biomes are short and sunny.
3. The continent North America has no tundra biome.
4. These biomes store more carbon dioxide compared to a typical ecosystem.

Which of the statements given above is/are correct?

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

### 3.Explanation

- ✓ According to a new report by the National Oceanic and Atmospheric Administration (NOAA), Arctic tundra, a frozen treeless habitat that has stored carbon for thousands of years, is now a source of heat-trapping greenhouse gases (GHGs), which are the principal drivers of global warming.
- ✓ Arctic tundra emits more carbon than it stores would have worldwide ramifications since it would worsen climate change, which is already having a negative influence all over the world. In a typical ecosystem, plants use photosynthesis to absorb carbon dioxide (CO<sub>2</sub>) from the atmosphere. Hence, statement 4 is not correct.
- ✓ The tundra is the coldest of all biomes. The tundra also receives little precipitation, making it similar to a desert. Hence, statement 1 is correct.
- ✓ Tundra is situated immediately below the Arctic ice caps, ranging from North America to Europe and Siberia in Asia. The tundra biome encompasses much of Alaska and approximately half of Canada. Hence, statement 3 is not correct.

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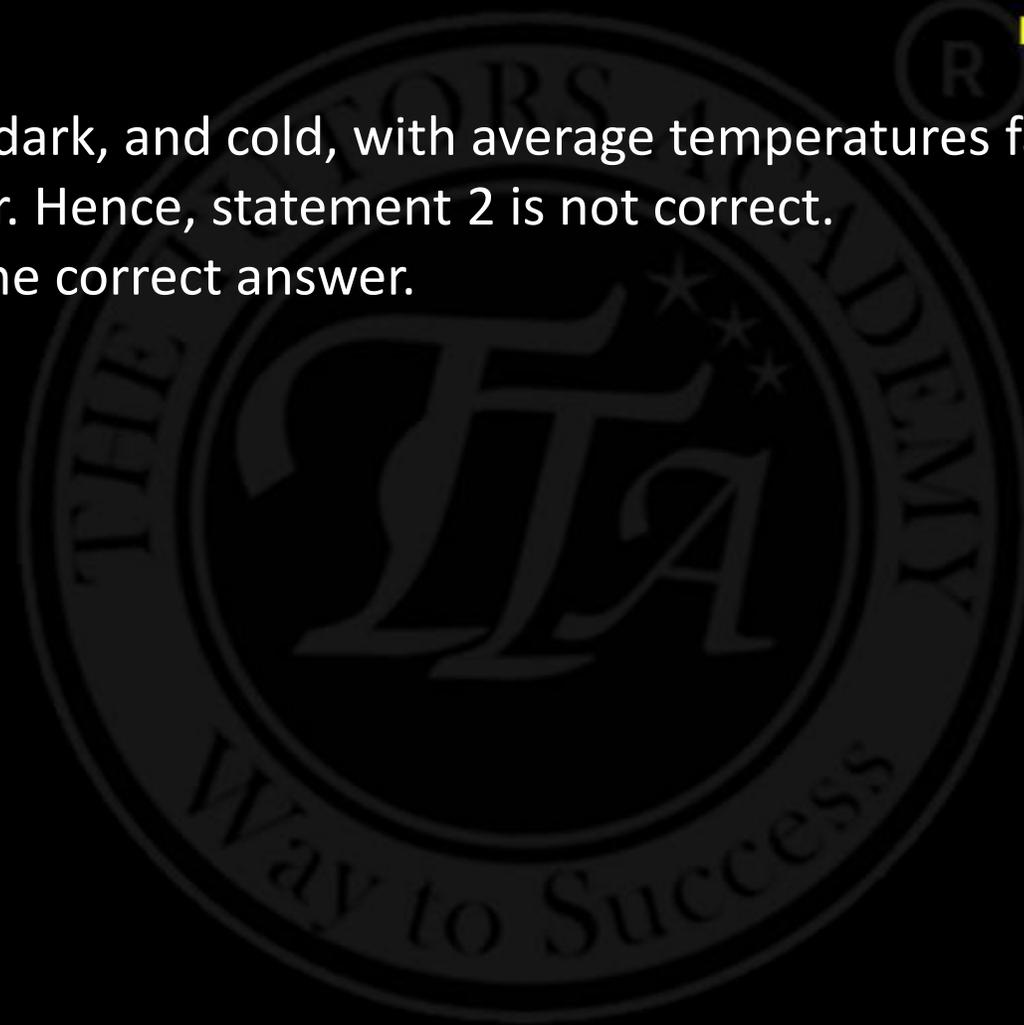
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- ✓ Tundra winters are long, dark, and cold, with average temperatures falling below  $0^{\circ}\text{C}$  for six to ten months of the year. Hence, statement 2 is not correct.
- ✓ Therefore, option (b) is the correct answer.



## QUESTION 4

With reference to the Volcanoes, consider the following statements:

1. They are present only on land and not in the oceans.
2. The Ring of Fire is essentially a string of hundreds of volcanoes and earthquake sites which runs along the Atlantic Ocean.
3. Recently, Mount Lewotobi Laki-Laki, a twin-peaked volcano in the Philippines, erupted.

How many of the statements given above are correct?

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

## 4.Explanation

- ✓ Mount Lewotobi Laki-Laki, a twin-peaked volcano on Indonesia's Flores Island, erupted, which prompted authorities to raise its alert status to the highest level. Hence, statement 3 is not correct.
- ✓ According to the US Geological Survey, volcanoes are "openings, or vents where lava, tephra (small rocks), and steam erupt onto the Earth's surface".
- ✓ Volcanoes can be found both on land and in the ocean. They develop when material that is much hotter than its surroundings erupts onto the Earth's surface. The substance could be liquid rock (referred to as "magma" beneath and "lava" when it reaches the surface), ash, and/or gases. Hence, statement 1 is not correct.
- ✓ There are four major types of volcanoes: cinder cones, composite or stratovolcanoes, shield volcanoes, and lava domes.

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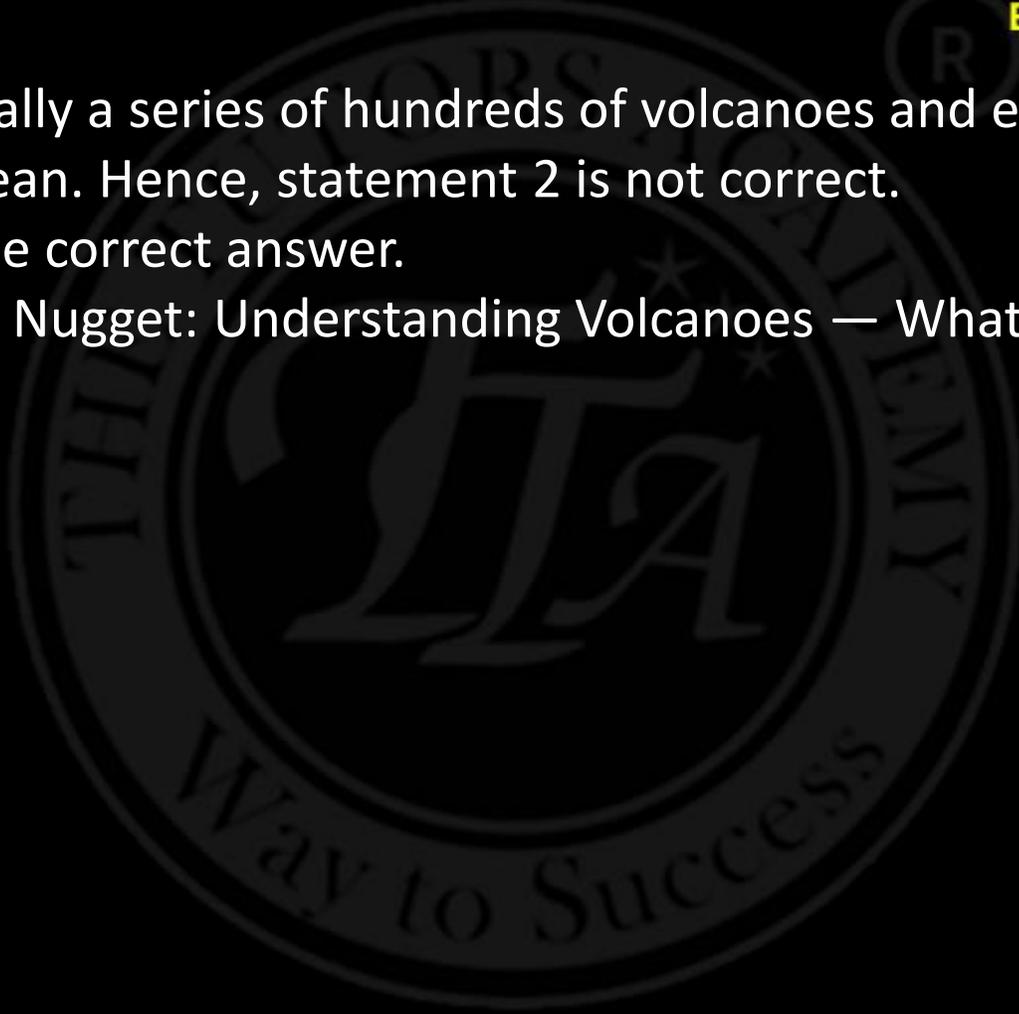
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- ✓ The Ring of Fire is essentially a series of hundreds of volcanoes and earthquake sites that span along the Pacific Ocean. Hence, statement 2 is not correct.
- ✓ Therefore, option (d) is the correct answer.
- ✓ To read more: Knowledge Nugget: Understanding Volcanoes — What you must know for UPSC exam?



## QUESTION 5

With reference to the GDP emission intensity, consider the following statements:

1. It refers to the reduction in GHG emissions per unit of economic output.
2. India has committed to reduce its GDP emission intensity by 45% compared to 2005 levels by 2030.

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

## 5.Explanation

- ✓ As part of its global climate commitments, India just published its most recent report, which details its greenhouse gas (GHG) inventory and efforts to reduce emissions.
- ✓ The research stated that the emissions intensity of its GDP, which represents the energy efficiency of its economic operations, decreased by 36% between 2005 and 2020. The study also examined the sources of emissions and the status of the climate action goals.
- ✓ Under the United Nations Framework Convention on Climate Change (UNFCCC), developing nations are required to produce a full report on their efforts to combat climate change.
- ✓ India's BUR-4 has updated the third national communication. It was submitted to the UNFCCC on December 30. The report includes the national GHG inventory for 2020 and concludes that India is on pace to accomplish its climate objectives.



- ✓ India has committed to reducing its GDP emission intensity by 45% relative to 2005 levels by 2030, as part of the nationally determined contributions (NDCs) reported under the Paris Agreement in 2015 and later amended in 2022. BUR-4 claims that between 2005 and 2020, India's emissions intensity of GDP decreased by 36%. Hence, statement 2 is correct.
- ✓ GDP emission intensity measures the reduction in GHG emissions per unit of economic output. Switching from fossil fuels to renewables and fossil fuels to electricity are two instances of reducing emissions while increasing economic output. Hence, statement 1 is correct.
- ✓ Therefore, option (c) is the correct answer.