

Q: Consider the following statement regarding Zero Shadow Zone:

1. It is point on Earth between the Tropic of Cancer and the Tropic of Capricorn.
2. It happens because Earth's rotation axis is tilted at an angle of roughly 23.5° to the axis of revolution around the Sun.
3. There are three Zero Shadow Days a year.

Choose the correct option from the codes given below:

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

Ans: a

Explanation:

- For every point on Earth between the Tropic of Cancer and the Tropic of Capricorn, there are **two Zero Shadow Days a year**.
- For Bengaluru, the next one is on August 18. The Zero Shadow Day **is restricted to locations between the tropics, and so places north of Ranchi in India are out of it**.
- Uttarayan (movement of the Sun from south to north from winter solstice to summer solstice) and Dakshinayan (back from north to south) happen because Earth's rotation axis is tilted at an angle of roughly 23.5° to the axis of revolution around the Sun.

Q: Consider the following statement Genome Sequencing:

1. It does not carry complete genetic information.
2. The human genome is the entire set of deoxyribonucleic acid (DNA).
3. DNA residing in the nucleus of every cell of the human body.

Choose the correct option from the codes given below:

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

Ans: b

Explanation:

- The human genome is the entire set of deoxyribonucleic acid (DNA) residing in the nucleus of every cell of the human body. It carries the complete genetic information responsible for the development and functioning of an organism.
- The DNA consists of a double-stranded molecule built up by four bases. While the sequence of base pairs is identical in all humans, there are differences in the genome of every human being that makes them unique.
- The process of deciphering the order of base pairs, to decode the genetic fingerprint of a human is called genome sequencing.

Q: World Development Report is released by which of the following organization?

- a) World Economic Forum
- b) International Monetary Fund
- c) World Bank
- d) World Health Organization

Ans: c

Explanation:

- The World Development Report 2023 was recently released by World Bank
- World Development Report 2023 is an annual report released by World Bank.
- It proposes an integrated framework to maximize the development impacts of cross-border movements on both destination and origin countries and on migrants and refugees themselves.
- The framework rests on a Match and Motive matrix.

Q: Consider the following statement regarding SATVIR:

1. SATVIRs are goats brought from the higher ranges of the Indo-Tibet border.
2. SATVIR started as Lance Naik in the 7 Kumaon in 1965.
3. Army uses these shove-footed goats to maneuver through the rough terrain.

Choose the correct option from the codes given below:

- a) 1 and 2
- b) 2 and 3

- c) 1 and 3
- d) 1, 2 and 3

Ans: d

Explanation:

- SATVIRs are goats brought from the higher ranges of the Indo-Tibet border of the Kumaon hills at a young age.
- The regiment's present Havildar SATVIR is the sixth goat in the lineage.
- SATVIRs retire at the age of around ten years and are accorded a military funeral upon their death and buried with a three-gun salute.
- The Kumaon region is characterised by steep mountains and deep valleys. These mountains take shove-footed goats to maneuver through the rough terrain. SATVIR is one such goat.

Q: Consider the following statement regarding "Blue Hole":

1. It offers a glimpse of how life evolved through the millennia in the marine world.
2. The blue hole was found in the central portion of Chetumal Bay.
3. The deepest blue hole found on the planet is in the Mediterranean Sea.

Choose the correct option from the codes given below:

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

Ans: a

Explanation:

- The blue hole first discovered in 2021 could offer a glimpse of how life evolved through the millennia in the marine world.
- Researchers have in the past found bacteria at such depths in blue hole in the Caribbean, where no other lifeform was found, indicating the evolution of life at those depths.
- The blue hole was found in the central portion of Chetumal Bay, where submerged coastal karstic sinkholes locally named 'pozas' have been reported. Researchers conducted scuba dives into the blue hole in September 2021 to conduct chemical water sample extraction.
- The deepest blue hole found on the planet is in the South China Sea and is 987 feet deep.