

1. Which of the following statements best describes the term 'carbon budget'?
 - (a) **It is the cumulative amount of CO₂ emissions permitted over a period of time to keep within a certain temperature threshold.**
 - (b) It is the minimum amount of CO₂ required to sustain life on the plant earth.
 - (c) It is the total amount of CO₂ required for the photosynthesis by the plants in a day.
 - (d) It is the sum total of CO₂ consumed and absorbed through photosynthesis and carbon sequestration.

2. In the context of quantum computing, which of the following statements best describes the terms 'superposition' and 'entanglement'?
 - (a) Superposition means a qubit can only represent either 1 or 0, while entanglement refers to the simultaneous representation of both 1 and 0 by a qubit.
 - (b) **Superposition involves the simultaneous representation of both 1 and 0 by a qubit, while entanglement refers to the correlation between qubits, where the state of one qubit can depend on the state of another.**
 - (c) Superposition is the correlation between qubits, while entanglement is the ability of a qubit to represent both 1 and 0 at the same time.
 - (d) Superposition and entanglement are terms used interchangeably to describe the unique state of qubits in quantum computing, indicating their dual nature as both classical and quantum states.

3. Consider the following statements:
 1. Kalinga was under the rule of Magadha during Nanda rulers. Mahapadmananda of Nanda Dynasty ascended the throne of Magadha in 362 BC and integrated Kalinga to his extensive empire in around 350 BC
 2. Hatigumpha inscription discovered at Udayagiri in Bhubaneswar, mentions about the irrigation projects undertaken by the Nanda kings.

Which of the above statements are correct?

 - (a) 1 only
 - (b) 2 only
 - (c) **both 1 and 2**
 - (d) neither 1 nor 2

4. Which of the following statement correctly defines the Hubble Ultra Deep Field (HUDF)?
 - (a) **Image of a small area of space in the constellation Fornax**
 - (b) Area devoid of any cosmic bodies within the Milky Way
 - (c) Range of orbits around a star within which a planetary surface can support liquid water
 - (d) Area in space where gravity pulls so much that even light cannot get out

5. Consider the following statements regarding Trans fats:
 1. They are saturated fatty acids that come from either industrial or natural sources and are linked to cardiovascular diseases.
 2. Naturally found trans fats are not harmful to human beings.
 3. The World Health organization's REPLACE action package aims at eliminating industrially produced trans-fat from national food supplies.

How many of the statements given above are correct?

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

6. Consider the following statements regarding Xenobots, seen in the news recently:
 1. They are the world's first living robots that can now reproduce.
 2. They are built from the cells collected from African species of monkey.

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

7. With reference to National Commission for Protection of Child Rights, consider the following statements:
 1. Its mandate is to ensure that all law and policies are in consonance with the child rights perspective as enshrined in the Constitution of India and the UN Convention on the Rights of the Child.
 2. It has defined a child as a person in the age group of 0 to 18 years.
 3. The Commission has the authority to monitor the Right to Free and Compulsory

Education Act, 2009.

How many of the statements given above are correct?

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

8. Consider the following statements with reference to National Statistical Commission (NSC):

1. It was set up on the recommendation of the Rangarajan Commission.
2. It is chaired by the Chief Statistician of India.
3. It serves as a nodal and empowered body for all core statistical activities of the country.

Which of the statements given above are correct?

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

9. Consider the following statements regarding the Neutrino:

1. The neutrino is a tiny elementary particle which is part of the atom.
2. Neutrino has a very tiny mass and with electrical charge.

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**

10. Consider the following statements regarding the Gluten:

1. It is a general name for the proteins found in fruits and vegetables.
2. Gluten is used as an additive to improve texture and promote moisture retention in a variety of processed foods.

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