

Q: Consider the following statement:

1. UN General Assembly had accepted India's proposal for International Year of Millets (IYM) 2023.
2. 'Millets' were among the first crops to be domesticated in India.
3. Millets are primarily a rabi crop.

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:

- Spearheaded by the Prime Minister, the Government of India sponsored the proposal for International Year of Millets (IYM) 2023 which was accepted by the United Nations General Assembly (UNGA).
- 'Millets' were among the first crops to be domesticated in India with several evidence of its consumption during the Indus valley civilization.
- Being grown in more than 130 countries at present, Millets are considered traditional food for more than half a billion people across Asia and Africa.
- In India, millets are primarily a kharif crop, requiring less water and agricultural inputs than other similar staples.

Q: Consider the following statement regarding photorespiration:

1. It is a process in which it gives out carbon and energy after the food is prepared.
2. It incorporates carbon into other molecules or metabolites.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: b

Explanation:

- The basics of photosynthesis are famously straightforward: Plants take water and carbon dioxide from their surroundings and, with power from the sun's light, turn those ingredients into sugar and oxygen.
- But sometimes this process starts off on the wrong foot. The enzyme responsible for collecting carbon dioxide can instead grab onto oxygen molecules.
- This produces a byproduct that, left unchecked, would essentially choke out the plant. However, plants have evolved a process called photorespiration that clears out the harmful byproduct and lets the enzyme take another swing at photosynthesis.
- Photorespiration is not nearly as famous as photosynthesis, and it sometimes gets a bad rap because it takes up carbon and energy that could be used for making food. Inefficient though it may be, photorespiration is better than the alternative.
- To do its job, photorespiration incorporates carbon into other molecules or metabolites, some of which are amino acids, the precursors to proteins.

Q: Consider the following statement regarding Coral Preservation:

1. It is a technique that involves preserving coral tissue or gametes.
2. It aims is to maintain the genetic diversity of coral species.

Choose the correct option from the codes given below:

- a) 1 Only
- b) 2 Only
- c) 1 and 2
- d) None of the above

Ans: c

Explanation:

- Coral cryopreservation is a technique that involves preserving coral tissue or gametes (eggs and sperm) at very low temperatures, often using liquid nitrogen.
- The goal of coral cryopreservation is to maintain the genetic diversity of coral species and to provide a means of propagating coral populations in the future.

Q: Consider the following:

1. Coastal protection
2. Carbon sequestration
3. Medicine

Which among the following is the significance of coral-reef?

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

Ans: d

Explanation:

- **Coastal protection:** Coral reefs provide a natural barrier that can help to protect coastlines from the impacts of storms and waves. This can help to reduce the risk of flooding and erosion, which can have serious consequences for human communities and infrastructure.
- **Fisheries:** Coral reefs support important fisheries that provide food and income for millions of people around the world. Protecting coral reefs can help to ensure the long-term sustainability of these fisheries.
- **Tourism:** Coral reefs are a major attraction for tourists, and they support important industries such as diving and snorkelling. Protecting coral reefs can help to ensure the long-term viability of these industries and the jobs and income they provide.
- **Carbon sequestration:** Coral reefs absorb and store carbon dioxide from the atmosphere, which can help to mitigate the greenhouse effect and slow the rate of global warming.
- **Medicine:** Coral reefs are a source of new drugs and other medical treatments that are being developed to address a variety of health issues. Protecting coral reefs can help to ensure that we have access to these important resources in the future.

Q: Consider the following statement regarding Deepfakes:

1. It is basically hyper-realistic digital falsification.
2. It can be used to damage reputation, fabricate evidence, defraud the public, and undermine trust in democratic institutions.
3. It is used to manipulate the image only.

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:

- Deepfakes are digital media - video, audio, and images edited and manipulated using Artificial Intelligence. It is basically hyper-realistic digital falsification. Deepfakes are created to inflict harm on individuals and institutions.
- Access to commodity cloud computing, public research AI algorithms, and abundant data and availability of vast media have created a perfect storm to democratise the creation and manipulation of media. This synthetic media content is referred to as deepfakes.
- Artificial Intelligence (AI)-Generated Synthetic media or deepfakes have clear benefits in certain areas, such as accessibility, education, film production, criminal forensics, and artistic expression. However, as access to synthetic media technology increases, so does the risk of exploitation.
- Deepfakes can be used to damage reputation, fabricate evidence, defraud the public, and undermine trust in democratic institutions. All this can be achieved with fewer resources, with scale and speed, and even micro-targeted to galvanise support.