

Q: Consider the following statement regarding Bacteriophages:

1. These are viruses that infect and replicate in bacterial cells.
2. They are recognised as the most abundant biological agent on earth.
3. They also infect the eukaryotic organisms.

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:

- Bacteriophages, also known as phages, are viruses that infect and replicate in bacterial cells.
- They also infect the single-celled prokaryotic organisms known as archaea.
- They were discovered independently by Frederick W. Twort in Great Britain (1915) and Félix d'Hérelle in France (1917).
- They are ubiquitous in the environment and are recognised as the most abundant biological agent on earth.
- They are extremely diverse in size, morphology, and genomic organisation.
- Like all viruses, phages are simple organisms that consist of a core of genetic material (nucleic acid) surrounded by a protein capsid. The nucleic acid may be either DNA or RNA and may be double-stranded or single-stranded.

Q: Consider the following statement regarding Foot and Mouth Disease (FMD):

1. It is a bacterial disease.
2. It is a transboundary animal disease (TAD) that deeply affects the production of livestock.
3. It is primarily spread through direct contact between infected animals.

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:

- Foot and Mouth Disease (FMD) is a highly contagious viral disease that affects cloven-hoofed animals, including cattle, sheep, goats, and pigs.
- It is a transboundary animal disease (TAD) that deeply affects the production of livestock and disrupts regional and international trade in animals and animal products.
- It is a disease of animals, not humans and is a different disease than hand, foot, and mouth disease, which is common in young children.
- It is caused by the foot-and-mouth disease virus, which is a member of the Picornaviridae family.
- It is primarily spread through direct contact between infected animals, as well as through contaminated feed, equipment, vehicles, clothing, and the movement of infected animals.

Q: Consider the following statement regarding Polycystic Ovary Syndrome (PCOS):

1. Women with PCOS may not ovulate.
2. It can be prevented through lifestyle changes, medications, and fertility treatments.

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:

- Polycystic Ovary Syndrome is a very common hormone problem for women of childbearing age.
- Women with PCOS may not ovulate, have high levels of androgens, and have many small cysts on the ovaries.
- It can cause missed or irregular menstrual periods, excess hair growth, acne, infertility, and weight gain.
- Genetic predisposition, often marked by a family history of diabetes or obesity, exposed to environments that encourage neither a healthy diet nor regular exercise and are stress-laden.
- It can be prevented through lifestyle changes, medications, and fertility treatments.

Q: Consider the following statement regarding Shore Temple:

1. It was probably built during the reign of Narasimhavarman II.
2. It is dedicated to Lord Shiva and Lord Vishnu.
3. It is one of the oldest rock-cut stone temples in South India.

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:

- Shore Temple is a historic temple complex located in Mamallapuram (Mahabalipuram), Tamil Nadu.
- It is dedicated to Lord Shiva and Lord Vishnu.
- It was probably built during the reign of Narasimhavarman II, also known as Rajasimha (Pallava ruler), who reigned from 700 to 728 CE.
- Shore Temple is one of a number of Hindu monuments at Mahabalipuram, on the Coromandel Coast of Tamil Nadu.
- It is one of the oldest structural excellence (rock-cut) stone temples in South India.
- The Mamallapuram monuments and temples, including the Shore Temple complex, were collectively designated a UNESCO World Heritage site in 1984.

Q: Consider the following statement regarding Tasmanian tiger:

1. It is a large carnivorous marsupial now believed to be extinct.
2. It was widespread over continental Australia, extending north to New Guinea and south to Tasmania.
3. The Tasmanian tiger resembled a wild dog.

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 Tasmanian tiger resembled a wolf, aside from the tiger-like stripes on its back.
- The last known Tasmanian tiger succumbed in a Tasmanian zoo in 1936.
- It is a large carnivorous marsupial now believed to be extinct.
- It was the only member of the family Thylacinidae to survive into modern times.
- It was widespread over continental Australia, extending north to New Guinea and south to Tasmania.
- It was an apex predator that hunted kangaroos and other prey.