

Q: Consider the following statement regarding TransLunar Injection (TLI):

1. It enabling spacecraft to escape Earth's gravitational pull and travel to the Moon.
2. During a TLI, the spacecraft's propulsion system fires its engines to accelerate the spacecraft.
3. It is performed when the spacecraft is at a specific point in its orbit known as the 'apogee'.

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:

- TransLunar Injection (TLI) is a critical manoeuvre performed during space missions to send spacecraft from Earth's orbit to a trajectory that will take them to the Moon.
- It is a key step in lunar missions, enabling spacecraft to escape Earth's gravitational pull and travel to the Moon.
- The TLI is performed when the spacecraft is at a specific point in its orbit known as the 'perigee' or the closest point to Earth.
- During a TLI, the spacecraft's propulsion system fires its engines to accelerate the spacecraft.

Q: Consider the following statement regarding Great Barrier Reef:

1. It is second largest coral reef system in the world.
2. It lies in the Pacific Ocean off the northeastern coast Australia.
3. Corals are marine invertebrate animals that belong to the phylum Cnidaria.

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:

- Great Barrier Reef lies in the Pacific Ocean off the northeastern coast of Queensland, Australia, in the Coral Sea.
- It is the longest and largest coral reef system in the world.
- Corals are marine invertebrate animals that belong to the phylum Cnidaria.
- Corals exist as individual polyps, which are small, sac-like organisms with a mouth surrounded by tentacles.
- The polyps secrete a hard external skeleton made of calcium carbonate, which forms the basis of the coral structure.

Q: Consider the following statement regarding Sathyamangalam Tiger Reserve:

1. It is located at the junction of the Eastern and the Western Ghats in the Nilgiri Biosphere Reserve.
2. Its area is contiguous with the Mudumalai Tiger Reserve, Bandipur Tiger Reserve (Karnataka) and BR Tiger Reserve.

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:

- Sathyamangalam Tiger Reserve is located at the junction of the Eastern and the Western Ghats in the Nilgiri Biosphere Reserve, in the Erode District of Tamil Nadu.

- Its area is contiguous with the Mudumalai Tiger Reserve, Bandipur Tiger Reserve (Karnataka) and BR Tiger Reserve and Wildlife Sanctuary (Karnataka).

Q: Consider the following statement regarding Metaverse:

1. It refers to a virtual or digital universe where people can interact with each other and digital objects in a shared online space.
2. The term “metaverse” first appeared in author Neal Stephenson’s 1992 science-fiction novel Snowcrash.
3. The metaverse is essentially an interconnected network of virtual worlds.

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:

- Metaverse refers to a virtual or digital universe where people can interact with each other and digital objects in a shared online space.
- The term “metaverse” first appeared in author Neal Stephenson’s 1992 science-fiction novel Snowcrash, which describes a future where millions of people use virtual avatars to participate in a cyberspace realm.
- The metaverse is essentially an interconnected network of virtual worlds, augmented reality, and virtual reality environments accessible through the internet.
- In this digital realm, users can create avatars, socialize with others, engage in various activities, explore virtual landscapes, and even conduct business or trade virtual goods and services.
- Elements of the metaverse include virtual reality (VR) platforms, augmented reality (AR) experiences, online games, social media, virtual commerce, and virtual art galleries, among others.

Q: Consider the following:

1. Kesari and Maratha
2. Gita Rahasya
3. National Indian Association

Which among the above following is associated with Tilak?

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

Ans: a

Explanation:

- Tilak was a prolific writer and journalist. He used his newspaper, "Kesari" (meaning Lion) in Marathi and later "Maratha" in English to disseminate nationalist ideas.
- Some of his notable literary works include "The Arctic Home in the Vedas," where he presented his theory that the Vedas originated in the Arctic region, and "Shrimad Bhagavad Gita Rahasya," an interpretation of the Bhagavad Gita from a nationalist perspective.