

**1. For the measurement/ estimation of which of the following are satellite images/remote sensing data used?**

1. Chlorophyll content in the vegetation of a specific location
2. Greenhouse gas emissions from rice paddies of a specific location
3. Land surface temperatures of a specific location.

Select the correct answer using the code I given below.

- 1 only
- 2 and 3 only
- 3 only
- 1, 2 and 3

ANSWER: (D)

**2. With reference to communication technologies, what is/are the difference/ differences between LTE (Long-Term Evolution) and VoLTE (Voice over Long-Term Evolution)?**

1. LTE is commonly marketed as 3G and VoLTE is commonly marketed as advanced 3G.
2. LTE is data-only technology and VoLTE is voice-only technology.

Select the correct answer using the code given below.

- 1 only
- 2 only
- Both 1 and 2
- Neither 1 nor 2

ANSWER: (D)

**3. In the context of digital technologies or entertainment, consider the following statements :**

1. In Augmented Reality (AR), simulated environment is created and the physical world is completely shut out.
2. In Virtual Reality (VR), images generated from a computer are projected onto real-life objects or surroundings.
3. AR allows individuals to be present in the world and improves the experience using the camera of smart-phone or PC.
4. VR closes the world, and transposes an individual, providing complete immersion experience.

Which of the statement given above is/are correct?

- 1 and 2 only
- 3 and 4
- 1, 2 and 3
- 4 only

ANSWER: (b)

**4. With reference to the recent developments in science, which one of the following statements is not correct?**

- Functional chromosomes can be created by joining segments of DNA taken from cells of different species.
- Pieces of artificial functional DNA can be created in laboratories.
- A piece of DNA taken out from an animal cell can be made to replicate outside a living cell in a laboratory.
- Cells taken out from plants and animals can be made to undergo cell division in laboratory petri dishes.

ANSWER: (A)

**5. Consider the following statements:**

A digital signature is,

1. an electronic record that identifies the certifying authority issuing it
  2. used to serve as a proof of identity of an individual to access information or server on Internet
  3. an electronic method of signing an electronic document and ensuring that the original content is unchanged
- Which of the statements given above is/are correct?

- 1 only
- 2 and 3 only
- 3 only
- 1, 2 and 3

ANSWER: (D)

**6. In the context of wearable technology, which of the following tasks is/ are accomplished by wearable devices?**

1. Location identification of a person.
2. Sleep monitoring of a person
3. Assisting the hearing impaired person.

Select the correct answer using the code given below.

- 1 only
- 2 and 3 only
- 3 only
- 1, 2 and 3

ANSWER: (d)

**7. 'RNA interference (RNAi)' technology has gained popularity in the last few years why?**

1. It is used in developing gene silencing therapies.
2. It can be used in developing therapies for the treatment of cancer.
3. It can be used to develop hormone replacement therapies.
4. It can be used to produce crop plants that are resistant to viral pathogens.

Select the correct answer using the code given below.

- 1, 2 and 4
- 2 and 3
- 1 and 3
- 1 and 4 only

ANSWER: (a)

**8. Recently, scientist observed the merger of giant "blackholes" billions of light years away from the Earth. What is the significance of this observation?**

- Higgs boson particles were detected.
- "Gravitational waves" were detected.
- Possibility of inter-galactic space travel through "wormhole" was confirmed.
- It enables the scientist to understand "singularity".

ANSWER: (b)

9. Which of the following are the reasons for the occurrence of multi-drug resistance in microbial pathogens in India?

1. Genetic predisposition of some people
2. Taking incorrect doses of antibiotics to cure diseases.
3. Using antibiotics in livestock farming.
4. Multiple chronic diseases in some people.

Select the correct answer using the code given below:

- (a) 1 and 2
- (b) 2 and 3 only
- (c) 1, 3 and 4
- (d) 2, 3 and 4

10. What is case protein that is often mentioned in news?

- (a) A molecular scissors used in targeted gene editing.
- (b) A biosensors used in the accurate detection of pathogene in patients.
- (c) A gene that makes plant presistant.
- (d) A herbicidal substance synthesized in genetically modified crops.

ANSWER: (A)

11. Which one of the following statement is not correct?

- (a) Hepatitis B virus is transmitted much like HIV.
- (b) Hepatitis B, unlike Hepatitis C, does not have a vaccine
- (c) Globally, the number of people infected with HIV.
- (d) Some of those infected with Hepatitis B and C viruses do not show the symptoms for many years.

ANSWER: (B)

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