

1. Which of the following events can lead to the mutations?

1. Exposure to certain chemicals
2. Infection by viruses
3. Exposure to ionizing radiation
4. Mistakes in Replication

Select the correct option using the codes given below:

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

2. Which of the following statements is/are **incorrect**?

1. Some organisms except animals are able to do both sexual and asexual reproduction.
2. As the sexual reproduction requires two gametes, it must involve two separate individuals unlike the asexual reproduction.
3. The offspring resulted from the asexual reproduction are physically and genetically identical.

Select the correct option using the codes given below:

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

3. Which of the following statements are correct?

1. In transcription only a segment of DNA and only one of the strands is copied into RNA.
2. The translation of messenger RNA (mRNA) into protein is occurred only in the Ribosomes.
3. The transcription and translation take place simultaneously in prokaryotes as well as in eukaryotes.

Select the correct option using the codes given below:

- (a) 1 and 3 only
- (b) 1 and 2 only

(c) 3 only

(d) 1, 2 and 3

4. Which of the following are the roles of Ribonucleic acid (RNA)?

1. Like proteins, it can also act as enzymes.
2. Like DNA, it carries the genetic information in certain organisms.
3. It can detect and respond to environmental or metabolic cues and affect gene expression accordingly.

Which of above statements is/are correct?

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

5. Which of the following statements is/are correct?

1. Convergent evolution takes place when species of common ancestry begin to develop homologous structures.
2. Analogous structures, performing similar functions, are a result of divergent evolution.
3. Divergent evolution is responsible for the evolution of the current diversity of life on earth.

Select the correct option using the codes given below:

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

6. Which of the following statements is **incorrect**?

- (a) The B-cells themselves do not secrete antibodies but help T cells to produce them.
- (b) Innate immunity provides different types of barriers to the entry of the foreign agents into our body.
- (c) Acquired immunity is characterised by memory.
- (d) Humoral immune response involves antibodies that are found in the blood.