

Directions for Questions:

- (a) Both A and R are true, and R is the correct explanation of A.
- (b) Both A and R are true, but R is not the correct explanation of A.
- (c) A is true, but R is false.
- (d) A is false, but R is true.

Questions & Answers

Question 1

- Assertion (A): Rhizobium bacteria are found in the root nodules of leguminous plants.
- Reason (R): Rhizobium helps in fixing atmospheric nitrogen into the soil.
- Answer: (a) Both A and R are true, and R is the correct explanation of A.

Question 2

- Assertion (A): Yeast is used in the baking industry to make bread and cakes.
- Reason (R): Yeast reproduces rapidly and produces oxygen gas during respiration.
- Answer: (c) A is true, but R is false. (*Explanation: Yeast produces carbon dioxide gas, not oxygen, which makes the dough rise.*)

Question 3

- Assertion (A): Milk is boiled before it is stored or consumed.
- Reason (R): Boiling kills many microorganisms present in the milk.
- Answer: (a) Both A and R are true, and R is the correct explanation of A.

Question 4

- Assertion (A): Malaria is caused by a protozoan called Plasmodium.
- Reason (R): Female Anopheles mosquito acts as the carrier of the malaria parasite.
- Answer: (b) Both A and R are true, but R is not the correct explanation of A. (*Explanation: Both statements are factually correct, but the reason does not explain why Plasmodium causes the disease.*)

Question 5

- Assertion (A): Viruses are considered to be on the borderline of living and non-living.
- Reason (R): Viruses can reproduce only inside the cells of a host organism.
- Answer: (a) Both A and R are true, and R is the correct explanation of A.

Question 6

- Assertion (A): Salt and edible oils are common chemicals generally used to check the growth of microorganisms.
- Reason (R): These substances are called preservatives.
- Answer: (b) Both A and R are true, but R is not the correct explanation of A. (*Explanation: While they are called preservatives, the name itself isn't the mechanism explaining how they stop microbial growth.*)

Question 7

- Assertion (A): Antibiotics are effective against viral infections like the common cold and flu.
- Reason (R): Antibiotics block the biochemical pathways important for bacteria.
- Answer: (d) A is false, but R is true. (*Explanation: Antibiotics do not work against viruses; they only work against bacterial infections.*)

Question 8

- Assertion (A): Microorganisms help in cleaning up the environment.
- Reason (R): Decomposers break down dead organic matter into simple, harmless substances.
- Answer: (a) Both A and R are true, and R is the correct explanation of A.

Question 9

- Assertion (A): Vaccines prevent the spread of several dangerous diseases.
- Reason (R): Vaccines introduce dead or weakened microbes into the body to produce antibodies.
- Answer: (a) Both A and R are true, and R is the correct explanation of A.

Question 10

- Assertion (A): Citrus canker is a plant disease caused by a virus.
- Reason (R): It spreads through the air.
- Answer: (d) A is false, but R is true. *(Explanation: Citrus canker is caused by bacteria, not a virus, though it does spread through the air.)*