The Fundamental Unit of Life

Assertion & Reason Type Questions

Directions : Each of the following questions consists of two statements, one is Assertion (A) and the other is Reason (R). Select the correct answer to these questions from the codes (a), (b), (c) and (d) as given below.

a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

b. Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

c. Assertion (A) is true but Reason (R) is false.

d. Assertion (A) is false but Reason (R) is true.

Q1. Assertion (A): Cell is called the structural and functional unit of life.

Reason (R): It performs functions like respiration, obtaining nutrition, clearing of waste material, or forming new proteins.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q2. Assertion (A): Plasma membrane allows the entry or exit of selected materials in and out from the cell.

Reason (R): Plasma membrane is a living membrane and is selectively permeable in nature.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q3. Assertion (A): A cell swells up when present in a hypotonic solution.

Reason (R): More water molecules enter the cell than they leave.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q4. Assertion (A): Chromosomes are visible under a microscope when the cell is about to divide.

Reason (R): In a cell which is not dividing, DNA is present as a part of chromatin material.

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q5. Assertion (A): The cells that have membrane bound organelles are called eukaryotic.

Reason (R): The cells that lack membrane bound organelles are called prokaryotic.

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q6. Assertion (A): The endoplasmic reticulum which lacks ribosomes is called Smooth Endoplasmic Reticulum (SER).

Reason (R): SER is mainly involved in protein synthesis.

Answer : (c) Reason (R) is false because SER helps in the manufacture of fat molecules or lipids.

Q7. Assertion (A): Digestive enzymes present in lysosome are very powerful and can breakdown all types of organic materials.

Reason (R): These enzymes are made by RER.

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q8. Assertion (A): Mitochondria is known as the powerhouse of the cell.

Reason (R): Mitochondria synthesises energy in the form of ATP during respiration which is vital for various life activities.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q9. Assertion (A): Leucoplasts contain various yellow or orange pigments.

Reason (R): Leucoplasts store fats, starch and proteins.

Answer : (d) Assertion (A) is false because leucoplasts are white or colourless cell organelle found in plant cells.

Q10. Assertion (A): Plant cells have very large vacuoles.

Reason (R): In plants cells, vacuoles are full of cell sap.

Answer : (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q11. Assertion (A): Amoeba acquires its food through endocytosis.

Reason (R): Amoeba captures the food within a sac-like structure called the food vacuole inside which digestion of food takes place.

Answer : (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).