The Living World

Assertion Reason Questions

Given below are two statements labelled as Assertion (A) and Reason (R). Select the most appropriate answer from the options given below:
(a) Both A and R are true and R is the correct explanation of A.
(b) Both A and R are true and R is not the correct explanation of A.
(c) A is true but R is false.
(d) A is false but R is true.

1. Assertion (A): Planaria reproduces by the process of fragmentation.
Reason (R): The body of Planaria is fragmented into different parts and each part can be grown into new Planaria.

Ans. (a) Both A and R are true and R is the correct explanation of A.
Explanation: Planaria body can be divided into different parts by physical division or any other way and parts are called fragments. Each fragment is capable of developing into new Planaria and the process is called fragmentation or true regeneration.

2. Assertion (A): Organisms into distinct are divided taxonomic categories.
Reason (R): Higher the taxonomic category, the more similarities are present within the organisms.

Ans. (c) A is true but R is false.
Explanation: All living organisms are divided into various taxonomic categories or taxon and the higher the taxonomic category, the fewer the similarities shared among organisms. Organisms are divided into distinct taxonomic categories to study the various living organisms and the relations between them.

3. There are millions of living organisms on earth. All these living organisms differ in shape, size, colour, habitat and many other characteristics. To understand their origin, diversity, distribution and inter relationship, the scientists have devised mechanisms to classify all of them.

Assertion (A): The term systematics refers to the diversity of different kinds of organisms and their relationship.
Reason (R): Systematics deals with the identification, naming and classification of the organisms into groups.

Ans. (a) Both A and R are true and R is the correct explanation of A.
Explanation: Systematics is the scientific study of the diversity of different kinds of organisms and their relationships to each other. It encompasses the identification, classification, and naming of organisms, as well as the study of their evolutionary relationships and patterns of distribution. Therefore, the statement that "Systematics deals with the identification, naming and classification of the organisms into groups" is a correct explanation of the assertion that "The term systematics refers to the diversity of different kinds of organisms and their relationship."