Ecosystem

Assertion & Reason Type 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 and Reason are true and Reason is the correct explanation of Assertion.

b. Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.

c. Assertion is true but Reason is false.

d. Assertion is false but reason is true.

Q 1. Assertion (A): The pyramid of number of a pond ecosystem is upright.
Reason (R): Phytoplanktons are maximum and secondary consumers are least in number.

Answer : (a) Both Assertion and Reason are true and Reason is the correct explanation of Assertion. The pyramid of pond ecosystem is upright, because base of this pyramid is occupied by the maximum number of phytoplanktons (autotrophs) and number of individuals gradually decreases towards primary and secondary consumer respectively.

Q 2. Assertion (A): The rate of decomposition of detritus is reduced in the regions of high altitude.
Reason (R): It happens due to immobilisation of nutrients.

Answer : (c) Assertion is true but Reason is false. At high altitude, the temperature becomes very low (<10°C). It greatly reduces the activity of microbes, principal decomposers. Nutrients immobilisation means tiding up of nutrients material with the biomass of microbes. This immobilisation prevents the nutrients from being washed out from the ecosystem.

Q 3. Assertion (A): The rate of energy storage at consumer levels is referred to as secondary productivities.
Reason (R): Net primary productivity is the total gross productivity and the energy used up in the metabolic process.

Answer : (c) Assertion is true but Reason is false.

Q 4. Assertion (A): The biotic community and non-living environment of an area function together to form an ecosystem.
Reason (R): The change in abiotic components causes a change in biotic components also.

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

Q 5. Assertion (A): Green plants are producers.
Reason (R): Microconsumers break down the dead protoplasm into simpler ones. They are first in the sequence of food chain.

Answer : (c) Assertion is true but reason is false. Green plants are producers, not consumers. Microconsumers are microorganisms which feed on dead and decaying organism.

Q 6. Assertion (A): Decomposition process is slower if detritus is rich in lignin and cutin.
Reason (R): Decomposition is largely an oxygen requiring process.

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

Q 7. Assertion (A): A food chain is a group of organisms in which there is a transfer of food energy through a series of repeated eating and being eaten.
Reason (R): Interlocking pattern of several food chains is known as food web.

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

Q 8. Assertion (A): Each food level in an ecosystem is called trophic level.
Reason (R): When one organism benefits the other in a chain, it is called commensalism.

Answer : (c) Assertion is true but Reason is false.

Q 9. Assertion (A): There is a gradual decrease in the energy content in the successive trophic levels from producers to consumers.
Reason (R): Pyramid of energy does not show energy accummulation pattern at different trophic levels.

Answer : (c) Assertion is true but Reason is false.

Q 10. Assertion (A): Ecological pyramid of biomass is generally inverted in sea/ocean.
Reason (R): Biomass of fishes far exceeds that of phytoplanktons.

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

Q 11. Assertion (A): Pyramid biomass is always upright for single tree ecosystem.
Reason (R): Total biomass of a tree in a specific area is more than that of herbivores.

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