

Chapter – 12 | Ecosystem

QUIZ PART-01

1. Which statement best defines an ecosystem?
A. A group consisting only of plants and animals
B. A functional unit where organisms interact with one another and their physical environment
C. A geographical region containing only abiotic components
D. A community consisting only of producers (B)

Explanation: An ecosystem is a functional unit of nature in which living organisms interact among themselves and with the surrounding physical environment.

2. The identification and enumeration of plant and animal species in an ecosystem determines its:
A. Standing crop
B. Stratification
C. Productivity
D. Species composition (D)

Explanation: Species composition refers to the different plant and animal species identified and counted in an ecosystem.

3. In the vertical stratification of a forest ecosystem, shrubs generally occupy the:
A. Second stratum
B. Uppermost stratum
C. Ground layer
D. Underground stratum (A)

Explanation: Trees occupy the upper stratum, shrubs the second stratum, and grasses the bottom or ground layer.

4. The rate at which biomass is produced in an ecosystem is called:
A. Decomposition
B. Mineralisation
C. Productivity
D. Humification (C)

Explanation: Productivity is defined as the rate of production of biomass or organic matter.

5. Which term refers to the rate of total organic-matter production during photosynthesis?
A. Secondary productivity
B. Gross Primary Productivity
C. Net Primary Productivity
D. Standing crop (B)

Explanation: Gross Primary Productivity, or GPP, is the rate at which plants produce organic matter during photosynthesis.

6. Which equation correctly represents Net Primary Productivity?
A. $NPP = R - GPP$
B. $NPP = GPP + R$
C. $GPP = NPP - R$
D. $NPP = GPP - R$ (D)

Explanation: Net Primary Productivity is obtained after subtracting plant respiration losses from Gross Primary Productivity.

7. Secondary productivity is the rate of formation of new organic matter by:
A. Consumers
B. Producers
C. Decomposers only
D. Abiotic components (A)

Explanation: Secondary productivity refers to the formation of new organic matter or biomass by consumers.

8. The breakdown of detritus into smaller particles by detritivores is known as:
A. Catabolism
B. Mineralisation
C. Fragmentation
D. Leaching (C)

Explanation: During fragmentation, detritivores such as earthworms break detritus into smaller particles.

9. The formation and accumulation of a dark-coloured, amorphous substance in soil is called:
A. Leaching
B. Fragmentation
C. Mineralisation
D. Humification (D)

Explanation: Humification results in the formation of humus, which acts as a reservoir of nutrients in the soil.

10. Decomposition will occur relatively faster when detritus is rich in:
A. Chitin and lignin
B. Nitrogen and water-soluble sugars
C. Lignin and cellulose only
D. Water-insoluble substances (B)

Explanation: Nitrogen-rich detritus containing water-soluble substances such as sugars decomposes rapidly, while lignin- and chitin-rich matter decomposes slowly.