



1. Fill in the blanks.

- (a) Plants are called as----- because they fix carbon dioxide.
- (b) In an ecosystem dominated by trees, the pyramid (of numbers) is----- type.
- (c) In aquatic ecosystems, the limiting factor for the productivity is----- .
- (d) Common detritivores in our ecosystem are----- .
- (e) The major reservoir of carbon on earth is----- .

Ans:

- (a) Autotrophs
- (b) Spindle
- (c) Sunlight
- (d) Earthworm, bacteria & fungi of decay and vulture
- (e) Oceans

2. Which one of the following has the largest population in a food chain?

- (a) Producers
- (b) Primary consumers
- (c) Secondary consumers .
- (d) Decomposers

Ans: (d)

3. The second trophic level in a lake is-

- (a) Phytoplankton
- (b) Zooplankton
- (c) Benthos
- (d) Fishes

Ans: (b)

4. Secondary producers are

- (a) Herbivores
- (b) Producers
- (c) Carnivores
- (d) None of the above

Ans: (d)

5. What is the percentage of photo synthetically act., radiation (PAR), in the incident solar radiation ?

- (a) 100%
- (b) 50 %
- (c) 1-5%
- (d) 2-10%

Ans: (b)

6. Distinguish between

- (a) Grazing food chain and detritus food chain
- (b) Production and decomposition
- (c) Upright and inverted pyramid
- (d) Food chain and food web
- (e) Litter and detritus
- (f) Primary and secondary productivity

Ans:

- (a) Grazing Food Chain (GFC) begins with primary producers or plants and ends in carnivores (tertiary or top carnivores) whereas Detritus Food Chain (DFC) begins with detritus or dead organic

matter and it ends in carnivores. In GFC, energy for the food chain comes from sun whereas in DFC, energy for the food chain comes from organic remains or detritus.

(b) Production is the phenomenon in which the energy is produced by the process of synthesis of organic compound from inorganic substances (such as  $\text{CO}_2$ ,  $\text{H}_2\text{O}$  & minerals) utilizing generally the sunlight. It traps energy.

Decomposition refers to the breakdown of complex organic matter into simpler ones. It releases energy.

(c) In upright pyramid (e.g., grassland & cropland ecosystem), biomass or number of organisms or amount of energy decreases on moving to upper trophic levels while in an inverted pyramid (eg. tree ecosystem) these quantities tend to increase on going to successive trophic levels.

(d) A food chain is a sequence of different types of organisms by which the flow of energy occurs from one trophic level to another whereas food web is the network of various food chains inter-connected to each other. Food webs increase adaptability and competitiveness of the organisms.

(e) Litter is the dead organic material fallen on the surface of the soil like leaves, remains of animals and excreta. Detritus is the dead organic matter found below the soil surface which is eaten up by the detritivores or broken down by decomposers.

(f) Primary productivity is the rate of synthesis of biomass or energy fixation by the plants. It is comparatively quite high. Secondary productivity is the rate of synthesis of biomass by consumers (herbivores and carnivores). It is small and decreases with rise of trophic level.

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