

BIOLOGY • CLASS 12

12

CHAPTER

Ecosystem

NCERT SOLUTIONS



EXERCISE SOLUTIONS: QUESTION 1 (a-c)

1. Fill in the blanks.

(a) Plants are called _____ because they fix carbon dioxide.

Answer: Producers (autotrophs).

They make organic food from carbon dioxide using light energy.

(b) In an ecosystem dominated by trees, the pyramid of numbers is of the _____ type.

Answer: Inverted — the expected answer.

A few trees may support many herbivorous insects. A complete tree-based food chain can also give a spindle-shaped pyramid.

(c) In aquatic ecosystems, the limiting factor for productivity is _____.

Answer: Light — the expected answer.

Light decreases with depth. Nutrient availability can also limit aquatic productivity.

EXERCISE SOLUTIONS: QUESTIONS 1 (d-e) & 2

1. Fill in the blanks. (continued)

(d) Common detritivores in our ecosystem are _____.

Answer: Earthworms.

They break detritus into smaller particles.

(e) The major reservoir of carbon on Earth is _____.

Answer: Oceans — the expected answer.

Oceans are a major active carbon reservoir. Most carbon in the whole Earth system is stored in rocks and sediments.

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

(a) Producers

(b) Primary consumers

(c) Secondary consumers

(d) Decomposers

Answer: (d) Decomposers — the expected answer.

They act on dead organic matter from all trophic levels.

EXERCISE SOLUTIONS: QUESTIONS 3-5

3. The second trophic level in a lake is:

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

Answer: (b) Zooplankton.

They feed on phytoplankton, the producers.

4. Secondary producers are:

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

Answer: (a) Herbivores — the expected answer.

More broadly, secondary production means new biomass formed by consumers, including carnivores.

5. What percentage of incident solar radiation is photosynthetically active radiation (PAR)?

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

Answer: (b) About 50%.

The chapter describes the fraction as less than half of incident solar radiation.

EXERCISE SOLUTIONS: QUESTION 6 (a-b)

6. Distinguish between the following.

(a) Grazing food chain and detritus food chain

Answer:

Grazing food chain	Detritus food chain
Starts with living green plants.	Starts with dead organic matter.
Herbivores feed on producers, followed by carnivores.	Decomposers and detritivores use detritus; predators may feed on detritivores.
Main energy pathway in many aquatic ecosystems.	Major pathway of energy flow in many terrestrial ecosystems.

(b) Production and decomposition

Answer:

Production	Decomposition
Formation of new organic matter or biomass.	Breakdown of dead organic matter into simpler substances.
Adds biomass to living organisms.	Returns inorganic nutrients to the environment.

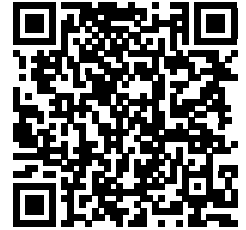


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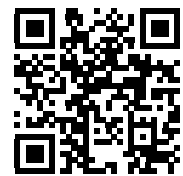


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