

VII Biology - 4. Nutrition in Plants

Exercise Solutions

Subjective:

1. Refer page no. 30 and sub-heading - Nutrition
2. Refer page no. 30 and sub-heading - Autotrophic nutrition
3. Refer page no. 34 pointer (iii)

4.

Autotrophs	Heterotrophs
1. They produce their own food	They depend on other organisms for food
2. They are at the primary level in a food chain	They are at the secondary and tertiary levels in a food chain
3. Known as producers as they produce their own food	Extract nutrients from outside source and are called consumers
4. e.g. Green plants, Algae, <i>Cyanobacteria</i>	e.g. Animals, Fungi, etc.

5. The role of chlorophyll is vital in photosynthesis. Chlorophyll resides in the chloroplasts of plants, is the green pigment that is necessary in order for plants to convert CO_2 and H_2O , using sunlight (captures sunlight), into O_2 and Glucose ($\text{C}_6\text{H}_{12}\text{O}_6$).

6. Because mushrooms (fungi) do not have chlorophyll, they obtain their nutrition from dead and decaying organic matter.

7.

Saprophytes	Parasites
1. Grow on dead and decaying matter to obtain nutrients	Live on another organism (host) to obtain nutrients
2. Use extracellular digestion	Use intracellular digestion
3. Feed on decaying organic matter from dead organisms	Get their food from host while it is still alive
4. e.g. Fungi, Bacteria	e.g. <i>Plasmodium</i> , Lice, Mites etc.

8. Refer page no. 35, - Pointer (iv) under endosymbiosis

9. Refer page no. 31 and 32, - Under subheading- Nutrition in plants

10. Because fungus do not contain chlorophyll pigment, necessary to capture light during photosynthesis. So they cannot prepare their own food.

11. a) Refer page no. 35 - Pointer (iv)
b) and c) Refer page no. 33 Pointer (i)

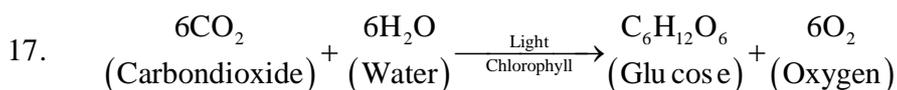
12. Refer page no. 32 -Under sub-heading Role of leaves in photosynthesis

13. Refer page no. 33 - Closing and opening of stomata

14. Refer page no. 33 Pointer (i)

15. Refer page no. 33 Pointer (i)

16. Refer page no. 35 Pointer (iv)



18. Refer page no. 31- 3rd pointer under sub-heading Nutrition in plants-Photosynthesis

19. **Repeated question**

20. Refer page no. 34 - Pointer (iii)

MCQS

1. (a)
The leaves contain minute pores called stomata which help in gaseous exchange.
2. (b)
Plants obtain nitrogen from the soil in the form of nitrate ions.
3. (a)
Lichen is a symbiotic association between an algae and a fungi.
4. (a)
Insectivorous plants grow in nitrogen deficient soil.
They derive nitrogen from their prey.
5. (a)
Plants prepare their own food through photosynthesis in the form of glucose but stores it in the form of starch.
6. (d)
Iron is a micronutrient.
7. (b)
Heterotrophs lack chlorophyll pigment which is necessary to capture light during photosynthesis. Hence, they cannot prepare their own food.

8. (c)
The plants take in CO_2 and give out O_2 during photosynthesis.
9. (b)
Refer page no. 33 - Closing and opening of stomata
10. (c)
Mistletoe is a parasitic plant.
11. (a)
Light is captured by thylakoid in chloroplast as thylakoids contain chlorophyll.
12. (c)
Haustoria are the specialized roots in parasitic plants which penetrate the host tissue to derive nutrition from it.
13. (d)
Symbiotic relationship → both organisms get benefitted
14. (d)
Plastids (chloroplasts) are the cell organelles that are present only in autotrophic organisms that help in the process of photosynthesis.
15. (a)
Saprophytes secrete digestive enzymes on the decaying matter to breakdown their complex organic compound into simpler ones.