

Board – CBSE

Class – 7<sup>th</sup>

Topic – Nutrition in Plants

1. Why do organisms need to take food?

**Ans.** All living organisms require food to survive. It gives them the energy to perform various activities. All activities such as playing, running, walking, studying, etc. require energy. The various components present in our food such as carbohydrates, proteins, fats, vitamins, and minerals provide energy to our body. These are also important for the growth and development of the body.

2. Distinguish between a parasite and a saprotroph?

**Ans.**

Parasite	Saprotroph
The organism that grows on the body of another organism and derives nutrients from it is known as a parasite.	The organism that obtains nutrients from the dead or decaying organic matter is called saprotroph.
Examples of parasites are Cucuta and orchids.	Examples of saprotrophs are fungi and some bacteria.

3. How would you test the presence of starch in leaves?

**Ans.** Experiment to test the presence of starch in leaves.

Take two healthy green potted plants of the same type. Keep one potted plant in a dark room for one or two days in order to remove all the starch from the leaves. Keep the other plant in sunlight. Now, take one leaf from each potted plant and put a few drops of iodine solution on them. Then note down the observation.

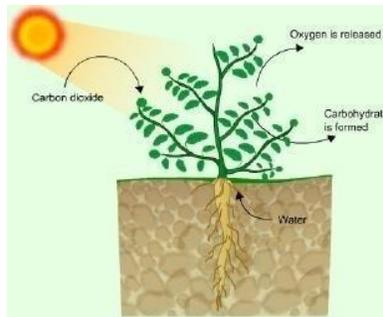


**Plants kept in light and dark conditions**

No blue-black colour will be observed on the leaves of the plant kept in the darkroom. This indicates the absence of starch. Blue-black colour will be observed on the leaves of the plant kept in sunlight. This indicates the presence of starch.

4. Give a brief description of the process of synthesis of food in green plants.

**Ans.** Photosynthesis is defined as the process in which the chlorophyll-containing plant cells synthesize food in the form of carbohydrates, using carbon dioxide and water in the presence of solar energy.



## Photosynthesis

Sources of raw materials required for photosynthesis.

(a) Water is taken in from the roots of the plant and is transported to the leaves.

(b) Carbon dioxide from the air enters the leaves through the tiny pores called stomata and diffuses to the cells containing chlorophyll.

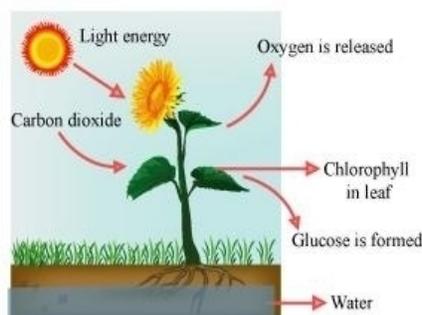
(c) Solar energy is used to break water into hydrogen and oxygen. This hydrogen is combined with carbon dioxide to form food for the plants, which is ultimately used by the animals as well.

Thus, photosynthesis can be represented by the following equation.

Carbon dioxide + Water  $\xrightarrow{\text{Sunlight}}$  Chlorophyll Carbohydrates + Oxygen

5. Show with the help of a sketch that the plants are the ultimate source of food?

**Ans.**



## Photosynthesis

6. Fill in the blanks.

- (a) Green plants are called \_\_\_\_\_ since they synthesise their own food.
- (b) The food synthesised by the plants is stored as \_\_\_\_\_.
- (c) In photosynthesis solar energy is captured by the pigment called \_\_\_\_\_.
- (d) During photosynthesis plants take in \_\_\_\_\_ and release \_\_\_\_\_.

- Ans.** (a) Green plants are called autotrophs since they synthesize their own food.  
(b) The food synthesized by the plants is stored as starch.  
(c) In photosynthesis solar energy is captured by the pigment called chlorophyll.  
(d) During photosynthesis plants take in carbon dioxide and release oxygen.

7. Name the following.

- (i) A parasitic plant with a yellow, slender, and tubular stem.
- (ii) A plant that has both autotrophic and heterotrophic modes of nutrition.
- (iii) The pores through which leave exchange gases.

- Ans.** (i) Cuscuta (ii) Pitcher plant (iii) Stomata

8. Tick the correct Answer.

(A) Amarbel is an example of

- (i) Autotroph (ii) Parasite (iii) Saprotroph (iv) Host

(B) The plant which traps and feeds on insects is

- (i) Cuscuta (ii) China Rose (iii) Pitcher Plant (iv) Rose

(C) Which part of the plant takes in carbon dioxide from the air for photosynthesis?

- (i) Root hair (ii) Stomata (iii) Leaf veins (iv) Sepals

(D) Plants take carbon dioxide from the atmosphere mainly through their.

- (i) Roots (ii) Stem (iii) Flowers (iv) Leaves

- Ans.** (A) (ii) Parasite, (B) (iii) Pitcher Plant, (C) (ii) Stomata, (D) (iv) Leaves

9. Mark 'T' if the statement is true and 'F' if it is false.

- (i) Carbon dioxide is released during photosynthesis. (T/F)
- (ii) (Plants which synthesize their food themselves are called saprotrophs. (T/F)

- (iii) The product of photosynthesis is not a protein. (T/F)
- (iv) Solar energy is converted into chemical energy during photosynthesis. (T/F)

- Ans.**
- (i) Carbon dioxide is released during photosynthesis. (F)
  - (ii) Plants which synthesize their food themselves are called saprotrophs. (F)
  - (iii) The product of photosynthesis is not a protein. (T)
  - (iv) Solar energy is converted into chemical energy during photosynthesis. (T)

**10.** Match the items given in Column I with those in Column II.

Column I	Column II
Chlorophyll	Bacteria
Nitrogen	Heterotrophs
Amarbel	Pitcher plant
Animals	Leaf
Insects	Parasite

**Ans.**

Column I	Column II
Chlorophyll	Leaf
Nitrogen	Bacteria
Amarbel	Parasite
Animals	Heterotrophs
Insects	Pitcher plant

