NCERT SOLUTIONS

CHAPTER-1

NUTRITION IN PLANTS

Q1. Why do organisms take food?

A1.

All organisms require energy for their life processes. Plants prepare their food and acquire nutrients from abiotic components like soil, air, water and sunlight. On the other hand, animals need to get food from either plants or other animals to obtain nutrients, hence animals need to take food to acquire nutrients and energy.

Q2. Distinguish between a parasite and a saprophyte.

A2.

Saprophytes	Parasites
1.Acquire nutrients from dead and decaying matter.	1.Parasites live on or in a host and get its food at the expense of its host.

2. They feed on dead and decaying matter.	2. They usually feed on or in living organism called host.
Example: Fungi	Example: roundworm

Q3. How would you test the presence of starch in leaves?

A3.

Take two potted plants of the same kind. Keep one in the dark for 72 hours and the other in sunlight. Perform the iodine test with the leaves of both the plants as given below. Now leave the pot which was earlier kept in the dark, undisturbed for 3 – 4 days and perform the iodine test again on its leaves.

Iodine test:

Put iodine solution on the leaf

Observation:

Blue-black colour will be observed on the leaves of the plant kept in sunlight, which indicates the presence of starch.

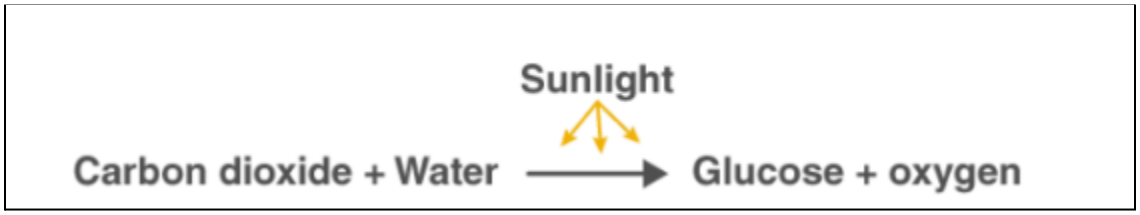
Blue-black colour will not be observed on the leaves of the plant kept in the darkroom. This indicates the absence of starch.

Q4. Give a brief description of the process of synthesis of food in green plants.

A4.

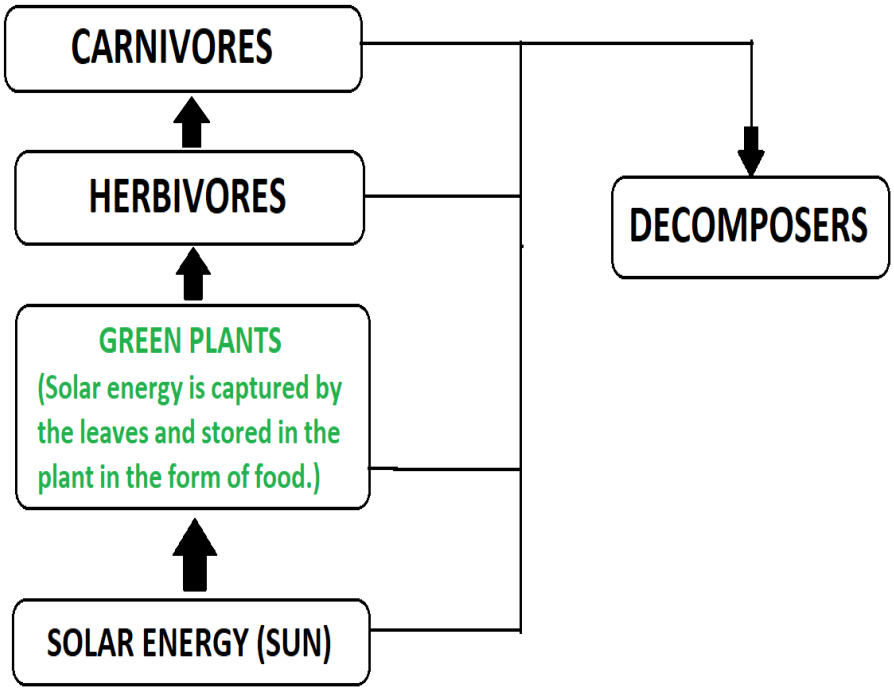
Green plants use a process called photosynthesis to prepare their food. The process is as follows-

- Water is taken from the roots of the plant, and it is transported to leaves of the plant.
- Carbon dioxide from air enters the leaves through pores called stomata.
- Water and Carbon Dioxide combine to form Carbohydrates(Glucose)and oxygen in the presence of sunlight.
- Photosynthesis is represented by the following equation.



Q5. Show with the help of a sketch that plants are the ultimate source of food.

A5. Following is the Food chain diagram to show that plant is the ultimate source of food:



Draw diagram from the book

Q6. Fill in the blanks:

A6.

(a) Green plants are called **autotrophs** since they synthesise their food.

(b) The food synthesised by plants is stored as **starch**.

(c) In photosynthesis, solar energy is absorbed by the pigment called **chlorophyll**.

(d) During photosynthesis, plants take in **Carbon dioxide** and release **Oxygen** gas.

Q7. Name the following:

A7.

i) A parasitic plant with yellow, slender and branched stem - CUSCUTA.

ii) A plant that is partially autotrophic - PITCHER PLANT.

iii) The pores through which leaves exchange gases. STOMATA.

Q8. Tick the correct answer:

A8.

(a) Cuscuta 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

Q9. Match the items given in Column I with those in Column II:

Column- I	Column-II
Chlorophyll	Rhizobium
Nitrogen	Heterotrophs
Cuscuta	Pitcher plant
Animals	Leaf
Insects	Parasite

A9.

Column- I	Column-II
Chlorophyll	Leaf
Nitrogen	Rhizobium
Cuscuta	Parasite
Animals	Heterotrophs
Insects	Pitcher plant

Q10. Mark ‘T’ if the statement is true and ‘F’ if it is false:

A10.

(i) Carbon dioxide is released during photosynthesis.FALSE

(ii) Plants which synthesise their food are called saprotrophs. FALSE

(iii) The product of photosynthesis is not a protein.TRUE

(iv) Solar energy is converted into chemical energy during photosynthesis.TRUE

Q11. Choose the correct option from the following:

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

(i) Root hair (ii) Stomata (iii) Leaf veins (iv) Petals

A11.

The answer is (ii) Stomata

Q12. Choose the correct option from the following:

Plants take carbon dioxide from the atmosphere mainly through their:

(i) roots (ii) stem (iii) flowers (iv) leaves

A12.

Answer is(iv) leaves

13. Why do farmers grow many fruits and vegetable crops inside large greenhouses? What are the advantages to the farmers?

A13. Fruits and vegetable crops are grown in large greenhouses because it protects crops from external climatic conditions and to provide suitable temperature for the growth of crops.

Advantages to farmers while growing fruits and vegetable crops inside greenhouses are

- It protects crops from diseases and adverse climatic conditions.
- It protects crops from wind and rodents.