PUBLIC SCHOOL DARBHANGA
SESSION (2020-21)
CLASS-7
SCIENCE NURTITION
IN PLANTS

1. Why do organisms need to take food?
2. Distinguish between a parasite and a saprotroph.
3. How would you test the presence of starch in leaves?
4. Give a brief description of the process of synthesis of food in green plants.
5. Show with the help of a sketch that the plants are the ultimate source of food.
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 _.
7. Name the following:

(i) A parasitic plant with yellow, slender and tubular stem.

(ii) A plant that has both autotrophic and heterotrophic mode of nutrition. (iii) The pores through which leaves exchange gases.

8. Tick the correct answer:
   (a) *Amarbel* is an example of:
      (i) Autotroph
      (ii) parasite (iii) saprotroph
      (iv) (iv) host

(b) The plant which traps and feeds on insects is:

(i) *Cuscuta*

(ii) china rose

(iii) pitcher plant

(iv) rose

9. 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

ANSWERS

1. Why do organisms take food?

Solution:

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.

2. Distinguish between a parasite and a saprophyte.

Solution:

Saprophytes	**Parasites**
Acquire nutrients from dead and decaying matter	Parasites live on or in a host and get its food at the expense of its host
Example: Fungi	Example: roundworm

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

Solution:

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 plant kept in the darkroom. This indicates the absence of starch.

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

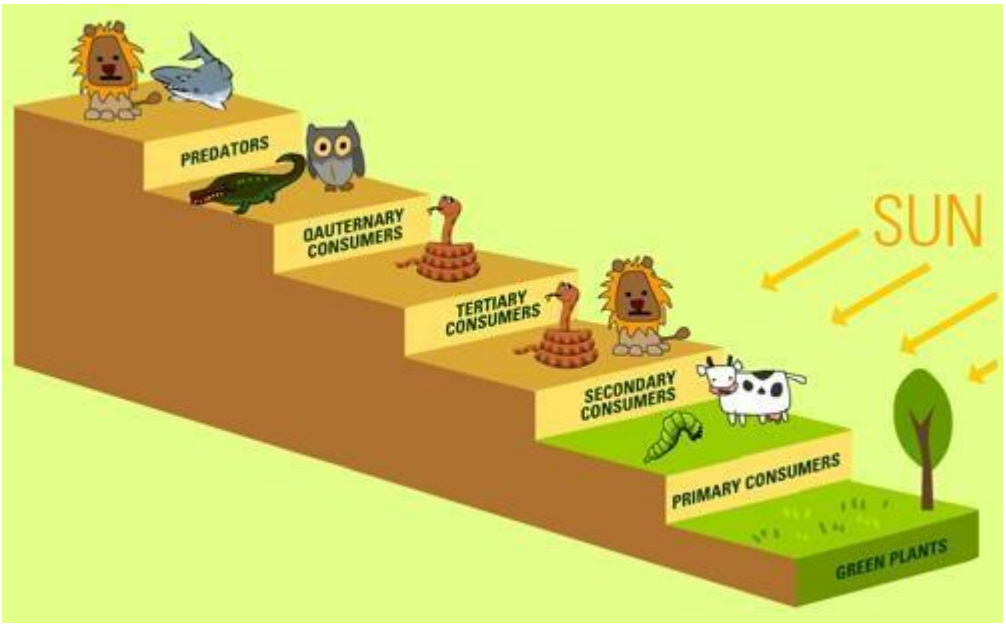
Green plants use a process called as photosynthesis to prepare their food. The process is as follows

- Water is taken from the roots of the plant, and it is transported to leaves of the plant.

- Carbon dioxide from air enter the leaves through pores called stomata. This diffuses the cell containing chlorophyll.
- Water molecule is broken down into Hydrogen and Oxygen with the help of sunlight.
- Hydrogen combines with Oxygen and Hydrogen to form carbohydrates.
- Photosynthesis is represented by the following equation.

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

Solution:



6. Fill in the blanks:

(a) Green plants are called _____ since they synthesise their own food.

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

(c) In photosynthesis solar energy is absorbed by the pigment called _____.

(d) During photosynthesis plants take in _____ and release _____ gas.

Solution:

(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.

7. Name the following:

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

ii) A plant that is partially autotrophic. iii) The pores through which leaves exchange gases.

Solution:

i) Cuscuta ii)

Pitcher plant

iii) Stomata

8. Tick the correct answer:

(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

Solution:

1. (ii) Parasite
2. (iii) pitcher plant

9. 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**

Solution:

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