

Class 07 NUTRITION IN PLANTS (Eureka plus 7th science) JST Samastipur.

Tick (✓) the correct options.

1. An organism that obtains nutrients from decaying organic matter is called

a parasite. a producer. a saprophyte. an autotroph.

2. Most plants and unicellular algae are

autotrophic. parasitic. saprophytic. heterotrophic.

3. A total parasitic plant has no

roots. stem. flowers. chlorophyll.

4. The excess food in a plant is stored as

protein. starch. water. oxygen.

5. Light energy is converted into chemical energy during the process of

transportation. respiration. transpiration. photosynthesis.

6. Rhizobium bacteria that live in roots of certain plants

make food. store food. fix nitrogen. absorb air.

Solution: 1. a saprophyte 2. Autotrophic 3. chlorophyll 4. starch 5. photosynthesis 6. fix nitrogen

Tick (✓) the true statements and cross (X) the false ones.

1. Xylem tubes carry food to various plant parts.

2. An insectivorous plant does not make food.

3. Chlorophyll helps in trapping energy from sunlight.

4. A total parasitic plant has some chlorophyll.

5. A partial parasitic plant cannot photosynthesise.

6. Air enters a leaf through xylem tubes.

1. X

2. X

3. ✓

4. X

5. X

6. X

Answer the following questions in one sentence.

1. What is nutrition?

The process by which an organism obtains substances that provide energy, help in growth and maintain the body is called nutrition.

2. Are birds autotrophs?

No. Birds are heterotrophs.

3. What is a heterotroph?

Living organisms that feed on other living organisms are known as heterotrophs.

4. Give an example of a saprophyte.

Fungi are saprophytes.

5. What do chloroplasts contain?

Chloroplasts contain the green pigment called chlorophyll.

6. Do leaves that do not appear green have chlorophyll?

Yes. The leaves of plants such as crotons appear red because the green chlorophyll in such plants is masked by a red pigment.

7. Name the gas that is produced during photosynthesis.

Oxygen is produced during the process of photosynthesis.

8. Where do Rhizobium bacteria live?

Rhizobium bacteria live in the roots of plants such as beans, peas and grams.

9. Give an example of a partial parasitic plant.

Mistletoe is a 'Partial parasitic plant.

10. What do phloem tubes transport in the plant?

Food made by the leaves is transported to all parts of the plants through phloem tubes.

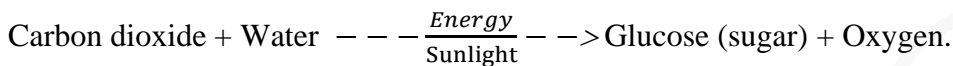
Answer the following questions in two to three sentences.

I. Distinguish between autotrophs and heterotrophs.

Autotrophs: Autotrophs are the organisms that make their own food by using simple substances from their surroundings. Examples: most plants, unicellular algae and some bacteria.

Heterotrophs: All organisms that obtain nutrition by feeding on other living organisms are called heterotrophic organisms. Examples: animals

2. Write the word equation for photosynthesis.



3. Differentiate between total and partial parasitic plants.

Total parasitic plants : Plants that do not have chlorophyll and obtain food and water from other plants are called total parasitic plants. For example, Cuscuta plant.

Partial parasitic plants: They grow on trees such as mango and teak. They have chlorophyll and makes some of their food, but depend on the host plant for water and certain nutrients. For example, Mistletoe plant.

4. Define rotation of crops.

Growing a crop such as beans, after growing a crop such as wheat, to increase the fertility of the soil is called rotation of crops.

5. What are parasitic plants? Explain with an example.

Some plants depend on other plants for food and water. Such plants are called parasitic plants.

For example, Cuscuta.

6. What is a lichen?

Lichens are formed by the association of an alga and a fungus, and sometimes a photosynthesis bacterium. The organisms help each other to live.

Answer the following questions in detail.

1. How do leaves help a plant make its food?

Leaves help a plant to make its food by a process called photosynthesis. During photosynthesis, light energy is converted into chemical energy. In this process, water and carbon dioxide combine to form sugar and oxygen.

2. How does a saprophyte obtain nutrition?

The saprophyte (fungus) grows on organic matter. It secretes digestive juices which break down organic matter into simple substances and convert it into a solution. The saprophyte absorbs the solution and obtains nutrition.

3. How do bean plants enrich the soil?

The roots of bean plants contain certain bacteria called Rhizobium. These bacteria convert nitrogen gas from air into water-soluble nitrogenous substances, which are used by the plants to make proteins.

4. How are parasitic plants different from saprophytes?

Parasitic plants depend on other living plants for food and water. A parasitic plant damages the host plant. Saprophytes are organisms that obtain nutrition from dead organic matter.

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

- ✓ Boil some water in a container and place a leaf in it for about 3 minutes.
- ✓ Remove the leaf from the boiling water and place it in a test tube and pour enough alcohol (ethanol or rectified spirit) to cover the leaf.
- ✓ Place the test tube in boiling water and let the alcohol boil.
- ✓ Stop boiling the alcohol when the leaf has turned completely colourless.
- ✓ Wash the leaf with tap water. Lay the leaf on a clean dish and pour some dilute iodine solution on it.
- ✓ A bluish colour will develop on the leaf. Iodine reacts with starch to give a bluish colour. This proves that starch is present in the leaves.

6. Write a note on chlorophyll.

Chlorophyll is the green pigment present in the chloroplasts of leaves. They trap energy from sunlight and use it to make food for the plant. Some plants have leaves that do not appear green. These leaves also have chlorophyll. The chlorophyll in such leaves is masked by pigments of different colors.