Worksheet 7 Subject: - Science Class: - VII Teacher: - Mrs. Harpreet Kaur

Name: _____ Class & Sec: _____ Roll No. _____ Date: 20.04.2020

1 Nutrition in Plants

Nutrition

All life processes require energy. In food, energy is stored in the form of chemical energy. To release this energy, the food is converted to smaller, soluble and simpler molecules. Nutrition is the process of obtaining and utilising food.

Autotrophic nutrition

Green plants can prepare their own food by photosynthesis, using carbon dioxide and water in the presence of sunlight. They are **autotrophs**.

The energy required is obtained from the sun. It is trapped by the green chlorophyll present in organelles called chloroplasts in plant cells.

The soil contains certain bacteria called **rhizobium** that can convert atmospheric nitrogen into water-soluble compounds that are released into the soil. Plants absorb these compounds along with water to get nitrogen. Farmers also add nitrogen-rich fertilizers to the soil to make it more fertile.

Heterotrophic nutrition

All non-green plants and animals depend directly or indirectly on green plants for their food. They are **heterotrophs**.

Some non-green plants live in or on other living organisms and derive their food from them. Such plants are called **parasites**. Plants from which a parasite gets its food is called a **host**. The mango and the mahua trees act as hosts for the parasitic plants like the mistletoe and the dodder plant.

Some plants like the Venus flytrap and the pitcher plant grow in soil that is not very rich in nutrients. So they consume insects and use the nutrition obtained from insects to supplement the food prepared by them by photosynthesis. These plants are known as **insectivorous plants**.

FACTOPAEDIA

Epiphytes are plants which grow above the ground surface, using other plants or objects for support. They are not parasitic and are often found on trunks and branches of trees. Orchids are epiphytes. The orchid plant traps rainfall with its aerial roots. Orchids are also one of the many prized flowers of the rainforest.

Some non-green plants live on dead and decaying plants and animals, and derive their food from them. They are known as **saprotrophs**. Fungi, bacteria and mushrooms have saprotrophic mode of nutrition.

SECTION 1 // Building Up Vocabulary

A. Give one word for the following.

1. The non-green plants that live in or on other living organisms and derive their food from them _____
2. Process of taking in food by an organism and its utilization by the body _____
3. Leaves which are partly green and partly non-green _____
4. The components of food that are necessary for the body _____
5. The green pigment found in the leaves of the plants that traps energy from sunlight _____
6. Bacteria that convert atmospheric nitrogen into compounds that plants can use _____

B. Fill in the blanks.

1. Green plants show _____ nutrition whereas non-green plants and animals show _____ nutrition.
2. Carbon dioxide from the air is taken in through tiny pores on the surface of the leaves called _____
3. The water is absorbed from the soil by the _____ present in the roots.
4. _____ is a mutually beneficial relationship.
5. Fungi, bacteria and mushrooms are _____

SECTION 2 // Reinforcing Concepts

C. Write true or false.

1. The sun is the ultimate source of energy for the entire living world. _____
2. All plants are autotrophs. _____
3. All animals are autotrophs. _____

4. Since carnivores eat other animals, they do not depend on plants for their food. _____

5. Some plants are carnivores. _____

6. No plant depends on animals for its food. _____

7. Carbohydrates, proteins, fats, vitamins and minerals are called nutrients. _____

8. In most plants, glucose is converted into starch and stored in leaves, stems, roots, etc. _____

9. Photosynthesis helps to maintain the balance between oxygen and ~~nitrogen~~ carbon dioxide in the atmosphere. _____

10. The pitcher plant gets all its nutrition from insects. _____

D. Match the columns.

1. Croton	☐	a. bacteria
2. Rhizobium	☐	b. parasitic plant
3. Dodder	☐	c. insectivorous plant
4. Pitcher plant	☐	d. variegated leaves

E. Choose the most appropriate answer.

1. During the day, plants give out
   - a. only oxygen.
   - b. only carbon dioxide.
   - c. both oxygen and carbon dioxide, but more oxygen than carbon dioxide.
   - d. both oxygen and carbon dioxide, but more carbon dioxide than oxygen. ☐

2. Animals and non-green plants are known as
   - a. heterotrophs.
   - b. autotrophs.
   - c. saprotrophs.
   - d. partial parasites. ☐

3. Green leaves and young stems of plants contain a green pigment called
   - a. chlorophyll.
   - b. stomata.
   - c. chloroplasts.
   - d. guard cells. ☐

4. The food synthesized by the green leaves is transported to the other parts of the plant by the
   - a. roots.
   - b. stem.
   - c. leaves.
   - d. flowers. ☐

5. The plant from which a parasite gets its food is called the
   a. heterotroph.
   b. autotroph.
   c. partial parasite.
   d. host.

F. Answer in one or two words only.

1. In what form is food normally stored in plants—glucose or starch? _____
2. Name any two insectivorous plants. _____
3. What is the method of getting nutrients from dead and decaying matter in the form of a solution known as? _____
4. Name two plants which act as hosts for parasitic plants like the mistletoe and the dodder plant. _____
5. Do saprophytes get their food from living organisms or from dead organisms? _____

SECTION 3 // Strengthening Expression

G. Answer in one sentence only.

1. What do you understand by the term 'nutrition'?

_____

_____

2. What are nutrients?

_____

_____

3. What is photosynthesis?

_____

_____

4. What is autotrophic nutrition?

_____

_____