

## NCERT Solutions for Class 7

### Science

#### Chapter 1 – Nutrition in Plants

##### Q1. Why do organisms need to take food?

**Ans:** Organism needs food to:-

- i. Survive
- ii. Growth
- iii. Gain Energy
- iv. Damage repair
- v. Maintain bodily functions
- vi. Other activities.

##### Q2. Distinguish between a parasite and saprophyte.

**Ans:** Differences between Parasite and saprophytes are as follows:

Parasite	Saprophyte
1. Parasites are living entities that rely on their host to survive.	1. Saprophytes are organisms that feed on decomposing or dead substances.
2. Humans, animals, and plants all have parasites.	2. Saprophyte are found solely in plants and animals.
3. They belong to the category of eukaryotic organisms.	3. Saprophytes can be eukaryotic or prokaryotic.
	4. Examples- Mushrooms, molds.

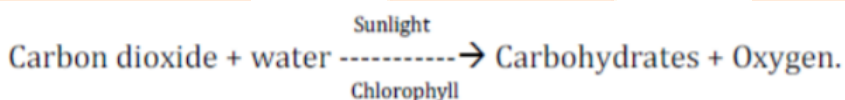
4. Examples- Tapeworm, barnacles.

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

**Ans:** When starch reacts with an iodine solution, it takes on a characteristic dark blue color. If a few drops of iodine solution are applied to a leaf and a dark blue colour develops, the existence of starch in the leaf is confirmed.

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

**Ans:** In green plants, the synthesis of food occurs by a process called photosynthesis. During this process, chlorophyll in the cells of the leaves uses carbon dioxide and water to synthesize carbohydrates in the presence of sunlight. The process can be represented by an equation:



During this process, oxygen is released, and the carbohydrates generated are stored as starch.

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

**Ans:**



**6. Fill in the blanks:**

**a. Green plants are called ----- since they synthesize their own food.**

**Ans:** Green plants are called autotrophs since they synthesize their own food.

**b. The food synthesized by the plants is stored as -----.**

**Ans:** The food synthesized by the plants is stored as starch.

**c. In photosynthesis solar energy is captured by the pigment called -----**

**Ans:** In photosynthesis solar energy is captured by the pigment called chlorophyll.

**d. During photosynthesis plants take in ----- and release -----**

**Ans:** During photosynthesis plants take in carbon dioxide and release oxygen.

**Q7. Name the following:**

**a. A parasitic plant with yellow, slender and tubular stem.**

**Ans:** Cuscuta- The Cuscuta plant is classified as a parasite since it lacks chlorophyll and feeds on the host. The host loses vital nutrients as a result of this process.

**b. A plant that has both autotrophic and heterotrophic mode of nutrition.**

**Ans:** Pitcher plant - The pitcher plant is an autotrophic plant that performs photosynthesis, but it also has a partly heterotrophic method of nutrition because it grows in nitrogen-deficient soil.

**c. The pores through which leaves exchange gases.**

**Ans:** Stomata- Gases such as carbon dioxide, water vapour, and oxygen can diffuse into and out of the plant's interior tissues through stomata.

**Q8. Tick the correct answer:**

**(a) Amarbel is an example of:**

- i. Autotroph**
- ii. Parasite**
- iii. Saprophyte**
- iv. Host**

**Ans:** (ii) Parasite-

Cuscuta or Dodder are other names for Amarbel. A parasite is an organism that grows on the body of another organism and feeds on its nutrition.

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

- i. Cuscuta**
- ii. China rose**
- iii. Pitcher plant**
- iv. Rose**

**Ans:** (iii) Pitcher plant

Pitcher plant is a type of plant with trapping and digesting leaves. Medicine is made from the leaf and root.

**Q9. Match the item in given column I with those in column II.**

**Column I**

- i. Chlorophyll**
- ii. Nitrogen**

**Column II**

- (a) Bacteria**
- (b) Heterotrophs**

- iii. **Amarbel** (c) **Pitcher plant**
- iv. **Animals** (d) **Leaf**
- v. **Insects** (e) **Parasite**

**Ans:** (i)-(d); (ii)-(a); (iii)-(e); (iv)-(b); (v)-(c)

**Q10. Mark “T” if the statement is true and “F” if it is false:**

- i. **Carbon dioxide is released during photosynthesis.** (T/F)

**Ans:** False- Oxygen is released during photosynthesis.

- ii. **Plants which synthesize their food themselves are called saprotrophs.** (T/F)

**Ans:** False- Plants which synthesize their food themselves are called autotrophs.

- iii. **The product of photosynthesis is not a protein.** (T/F)

**Ans:** True- The product of photosynthesis is not a protein.

- iv. **Solar energy is converted into chemical energy during photosynthesis.** (T/F)

**Ans:** True- Solar energy is converted into chemical energy during photosynthesis.

**Q11. Choose the correct option from the following:**

**Which part of the plant gets carbon dioxide from the air for photosynthesis?**

- a. Root hair
- b. Stomata
- c. Leaf veins
- d. Sepals

**Ans:** (b) Stomata gets carbon dioxide from the air for photosynthesis.

**Q12. Choose the correct option from the following:**

**Plants take carbon dioxide from the atmosphere mainly through their:**

- a. Roots
- b. Stem
- c. Flowers
- d. Leaves

**Ans:** (d) Plants take carbon dioxide from the atmosphere mainly through their leaves.