

# 10

## Life Processes in Plants

### FILL IN THE BLANKS

1. The green pigment present in leaves is called \_\_\_\_\_.
2. Plants store food mainly in the form of \_\_\_\_\_.
3. The gas required for photosynthesis is \_\_\_\_\_.
4. Oxygen is released as a \_\_\_\_\_ of photosynthesis.
5. Tiny pores present on the leaf surface are called \_\_\_\_\_.
6. The process by which plants make food is called \_\_\_\_\_.
7. \_\_\_\_\_ tissue transports water and minerals in plants.
8. Food prepared in leaves is transported by \_\_\_\_\_.
9. Plants release energy during the process of \_\_\_\_\_.
10. Glucose is converted into \_\_\_\_\_ for storage in plants.

### MULTIPLE CHOICE QUESTIONS

1. Which of the following is essential for photosynthesis?  
(a) Nitrogen      (b) Oxygen      (c) Carbon dioxide      (d) Hydrogen
2. Which part of the plant is the main site of photosynthesis?  
(a) Leaf      (b) Stem      (c) Root      (d) Flower
3. Which tissue carries food in plants?  
(a) Xylem      (b) Cortex      (c) Phloem      (d) Cambium
4. Which substance turns blue-black with iodine?  
(a) Protein      (b) Starch      (c) Fat      (d) Sugar
5. Plants respire  
(a) Only during day      (b) Only during night  
(c) Only during photosynthesis      (d) Both day and night
6. Which gas is released during respiration in plants?  
(a) Hydrogen      (b) Nitrogen      (c) Oxygen      (d) Carbon dioxide
7. Which part absorbs water from soil?  
(a) Leaves      (b) Roots      (c) Stem      (d) Flowers
8. Which structure helps in gas exchange?  
(a) Veins      (b) Stomata      (c) Phloem      (d) Root hairs
9. Photosynthesis requires energy from  
(a) Wind      (b) Water      (c) Soil      (d) Sunlight
10. Which is NOT a product of photosynthesis?  
(a) Glucose      (b) Oxygen      (c) Energy      (d) Carbon dioxide

**SHORT ANSWER QUESTIONS**

Q1. Why is chlorophyll important for plants?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q2. What are stomata? State their function.

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q3. Why are leaves broad and flat?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q4. What is the role of xylem?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q5. Why do plants need energy?

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**LONG ANSWER QUESTIONS**

Q1. Explain the process of photosynthesis with a word equation.

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q2. Describe an experiment to show that sunlight is necessary for photosynthesis.

Ans: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Q3. Describe respiration in plants with equation.

Ans: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Q4. Explain why photosynthesis and respiration are essential for life.

Ans: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Q5. Draw and lable the diagram showing photosynthesis process.

### ASSERTION & REASON

Q1. Assertion: Leaves are green.

Reason: Leaves contain chlorophyll.

Q2. Assertion: Plants need sunlight.

Reason: Sunlight provides energy for photosynthesis.

Q3. Assertion: Xylem carries food.

Reason: Xylem carries water.

Q4. Assertion: Oxygen is released during photosynthesis.

Reason: Oxygen is a by-product.

Q5. Assertion: Plants respire all the time.

Reason: Energy is required continuously.



One Point Learning

**Answers****Fill in the Blanks**

1. Chlorophyll
2. Starch
3. Carbon dioxide
4. By-product
5. Stomata
6. Photosynthesis
7. Xylem
8. Phloem
9. Respiration
10. Starch

**Multiple Choice Questions (MCQs)**

1. (c) Carbon dioxide
2. (a) Leaf
3. (c) Phloem
4. (b) Starch
5. (d) Both day and night
6. (c) Oxygen
7. (b) Roots
8. (b) Stomata
9. (d) Sunlight
10. (d) Carbon dioxide

**SHORT ANSWER QUESTIONS**

Q1. Ans: Chlorophyll is a green pigment that absorbs sunlight. The absorbed light energy is used to convert carbon dioxide and water into food during photosynthesis.

Q2. Ans: Stomata are tiny pores present on the surface of leaves. They help in the exchange of gases such as oxygen and carbon dioxide during photosynthesis and respiration.

Q3. Ans: Leaves are broad and flat to provide a large surface area for absorbing maximum sunlight, which increases the rate of photosynthesis.

Q4. Ans: Xylem transports water and dissolved minerals from the roots to the stem and leaves of the plant.

Q5. Ans: Plants need energy for growth, repair, reproduction, and other life processes. This energy is obtained through respiration.

**LONG ANSWER QUESTIONS**

Q1. Ans:

Photosynthesis is the process by which green plants prepare food using carbon dioxide and water in the presence of sunlight and chlorophyll. The food formed is glucose, which is stored as starch. Oxygen is released as a by-product.

Word Equation:

Carbon dioxide + Water → Glucose + Oxygen  
(Sunlight and chlorophyll required)

Q2. Ans:

Two similar plants are taken. One is kept in sunlight and the other in darkness. After some time, iodine test is performed on their leaves. The leaf from the plant kept in sunlight turns blue-black, showing presence of starch, while the leaf from the plant kept in dark does not. This proves sunlight is necessary for photosynthesis.

Q3. Ans:

Respiration is the process in which glucose is broken down using oxygen to release energy. Carbon dioxide and water are produced. Respiration is very important life processes for all living organisms.

Equation:

Glucose + Oxygen  $\rightarrow$  Carbon dioxide + Water + Energy

Q4. Ans:

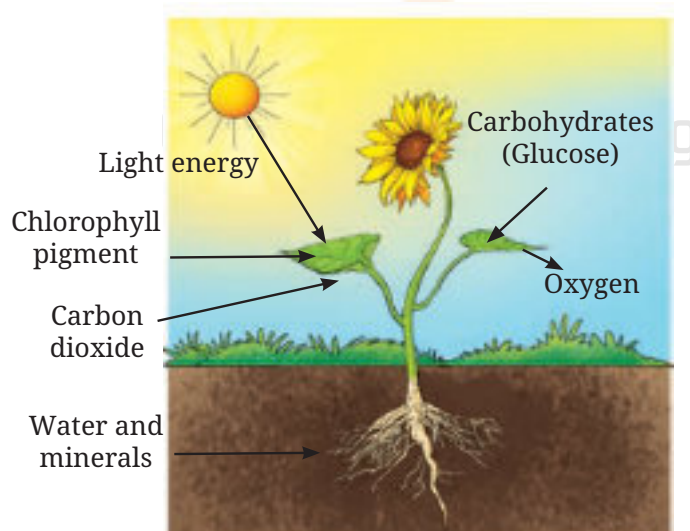
Photosynthesis and respiration are two essential life processes that help living organisms survive.

Photosynthesis is the process by which green plants prepare food using carbon dioxide and water in the presence of sunlight and chlorophyll. It provides food for plants and is the ultimate source of food and energy for all living organisms. Photosynthesis also releases oxygen, which is necessary for respiration.

Respiration is the process by which food is broken down in the presence of oxygen to release energy. This energy is required for growth, movement, repair, and other life activities in all living organisms.

Thus, photosynthesis supplies food and oxygen, while respiration releases energy from food. Together, they maintain the balance of gases in nature and make life on Earth possible.

Q5. Ans



#### ASSERTION & REASON

Q1. Ans: Both A and R are true and R explains A.

Q2. Ans: Both true, R correct.

Q3. Ans: A false, R true.

Q4. Ans: Both true, R correct.

Q5. Ans: Both true, R correct.