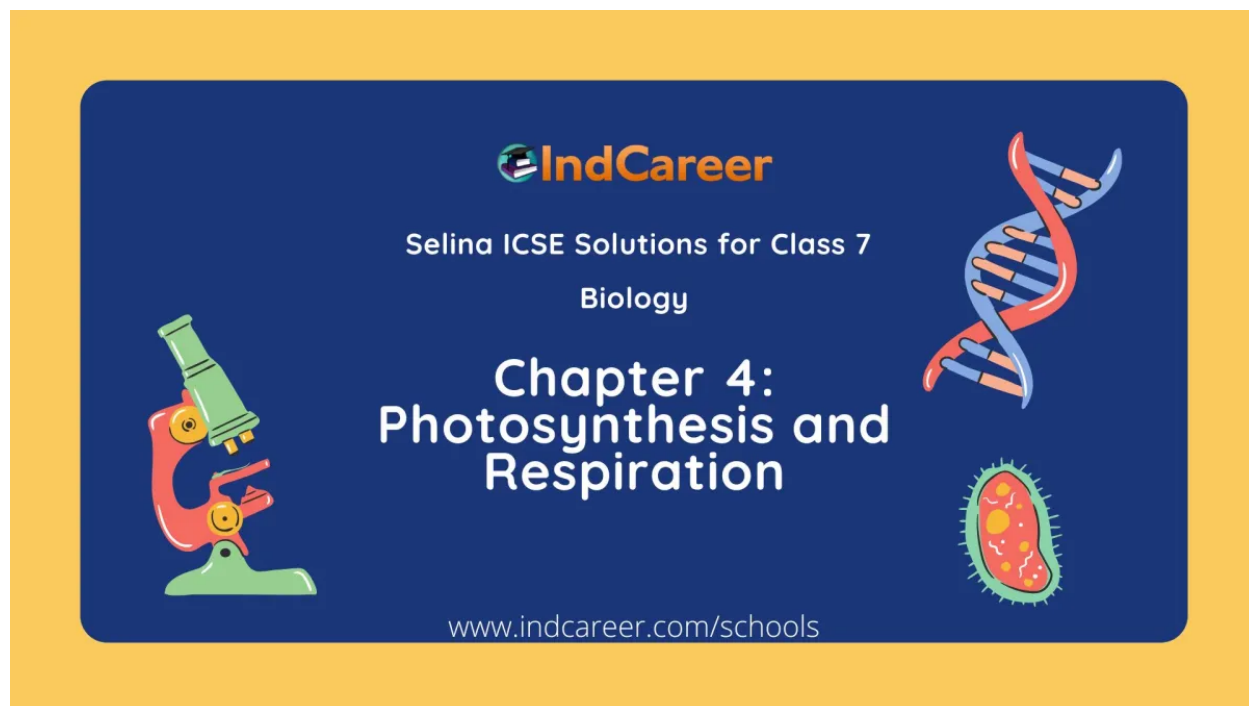


Selina Class 7 ICSE Solutions Biology (Unit 2) - Plant Life: Chapter 4- Photosynthesis and Respiration



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Selina Class 7 ICSE Solutions Biology (Unit 2)

- Plant Life: Chapter 4- Photosynthesis and Respiration

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Selina Class 7 ICSE Solutions Biology (Unit 2) - Plant Life: Chapter 4- Photosynthesis and Respiration

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Review Questions

Multiple Choice Questions

1. Put a tick (✓) against the most appropriate alternative in the following statements.

(i) Carbohydrates are stored by plants in the form of:

(a) Vitamins

(b) Proteins

(c) Fats

(d) Glucose

(ii) Stomata are present on the surface of:

(a) Leaves

(b) Roots

(c) Stem

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(d) Flower petals

(iii) Which one of the following is an end-product of photosynthesis ?

(a) Fructose

(b) Glucose

(c) Cellulose

(d) Lactose

Short Answer Questions

1. Why do leaves generally look green ?

Answer:

The green colour of a leaf is due to the presence of chlorophyll.

2. Which four of the following are needed for photosynthesis in a leaf:

(i) Carbon dioxide:

(ii) Oxygen:

(iii) Nitrates :

(iv) Water:

(v) Chlorophyll:

(vi) Soil:

(vii) Light:

Answer:

(i) Carbon dioxide: from air

(iv) Water: from soil

(v) Chlorophyll: contained in leaf

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(vii) Light: from sunlight

3. What is the source of energy for photosynthesis ?

Answer:

Light is the ultimate source of energy in photosynthesis because plants take in the sunlight CO_2 and H_2O and converts it into glucose.

4. Which gas is taken in and which one is given out by the leaf in bright sunlight ?

(i) Taken in :

(ii) Given out:

Answer:

(i) Carbon dioxide

(ii) Oxygen

5. Suppose we compare the leaf with a factory, match the items in Column A with those in Column B.

ColumnA Column B

LEAF	FACTORY
(i) Cells in the leaf	(a) Raw materials
(ii) Chloroplast	(b) Power
(iii) Sunlight	(c) Machinery
(iv) Oxygen and water	(d) End product
(v) Carbon dioxide and water	(e) By product
(vi) Glucose	(f) Work room

Answer:

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6. State whether the following statements are True or False:

(i) Green plants prepare their food by using two raw materials, oxygen and water.

False. Green plants prepare their food by using raw materials, CO₂, chlorophyll and water.

(ii) The chlorophyll enables the plants to use light energy.

True

(iii) The free oxygen in the atmospheric air is the result of photosynthesis.

True

(iv) Photosynthesis occurs only in chlorophyll-containing parts of the plant.

True

7. Differentiate between aerobic and anaerobic respiration. Write the overall chemical equations of the two kinds of respiration in plants.

(i) Aerobic:

(ii) Anaerobic:

Answer:

Aerobic respiration

1. It occurs in the presence of oxygen.
2. Here there is complete breakdown of glucose releasing carbon-di-oxide, energy. water and energy.
3. More energy is released (38 ATP).

Anaerobic respiration

1. It occurs in the absence of oxygen.
2. There is partial breakdown of glucose into ethyl alcohol, carbon-di-oxide and
3. Lesser energy is released (2 ATP).

(i) Aerobic respiration:

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(ii) Anaerobic respiration:

Question 8.

Explain how photosynthesis is different from respiration.

Answer:

Photosynthesis

1. Anabolic process
2. Food is produced here.
3. Oxygen is by-product.
4. Chlorophyll and sunlight are required.
5. Occur only during daytime.
6. Occurs in green plants only.

Respiration

1. Catabolic process
2. Food is broken down form here to release energy
3. Carbon-di-oxide is the by-product.
4. Chlorophyll and sunlight are notrequired.
5. Occurs all the time
6. Occurs in all living beings including plants.

Photosynthesis :

Respiration:



Question 9.

Do the plants respire all day and night or only during the night ?

Answer:

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The plants respire only during the night. Plants take in oxygen and give out carbon dioxide. Hence, there is some truth in the belief that one should not sleep under the trees at night.

Question 10.

What happens to the energy liberated during respiration?

Answer:

The energy liberated during respiration is utilised for carrying out various life processes.

Some of the energy liberated during the breakdown of 03 the glucose molecule, is in the form of heat, but a large part of it is converted into chemical energy called Adenosine Triphosphate (ATP). Any activity inside the cell is carried out by the energy released by these ATP molecules.

Long Answer Questions

Question 1.

In order to carry out photosynthesis, what are the substances that a plant must take in ? Also mention their sources.

Answer:

For preparing food, the plants require the following :

1. Water (from soil)
2. Carbon dioxide (from air)
3. Chlorophyll (contained in the leaf)
4. Energy (from sunlight)

The process of preparing or synthesising food using water from the soil and carbon dioxide from the air, together chlorophyll and sunlight is called photosynthesis. This entire process is a series of complex chemical reactions Photosynthesis is represented as follows:

Question 2.

What is the role of chlorophyll in photosynthesis ?

Answer:

This pigment is of utmost importance as it absorbs the sunlight which provides energy for the process of photosynthesis occurs inside the chloroplast of the leaf.

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Question 3.

Do plants need oxygen ? If so, what is its source ?

Answer:

Yes plants need oxygen, all the free oxygen in the atmospheric air is the result of photosynthesis. No animal can survive without oxygen as it is needed for respiration. Even the plants use the same oxygen in dark for their own respiration.



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Class 7 Biology

Unit 1

- Chapter 1- Plant And Animal Tissues
- Chapter 2- Classification of Plants
- Chapter 3- Classification of Animals

Unit 2

- Chapter 4- Photosynthesis and Respiration

Unit 3

- Chapter 5- Excretion in Humans
- Chapter 6- Nervous System
- Chapter 7- Allergy

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