

CASE STUDY QUESTION 50

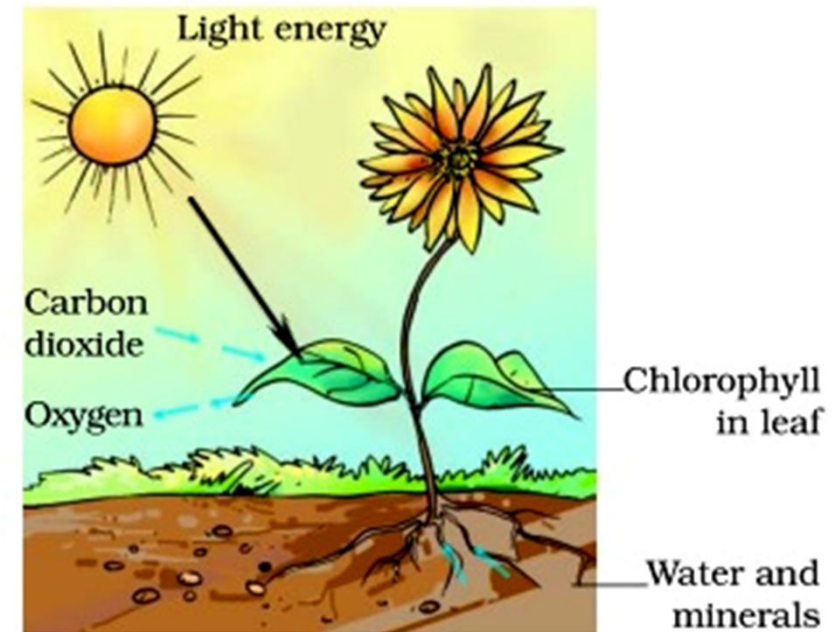
Read the following and answer any four questions from (i) to (v)

Auto means self and trophos means nourishment. Plants are called autotrophs because they make their food themselves. The making of food for themselves is called the Autotrophic nutrition.

Green plants prepare their own food. They make food in the presence of sunlight.

The process by which green plants prepare food is called photosynthesis. During this process; the solar energy is converted into chemical energy and carbohydrates are formed. Green leaves are the main sites of photosynthesis. The green portion of the plant contains a pigment chloroplast; which contains chlorophyll.

The process of photosynthesis is represented in the adjoining figure:



- (i) In the process of photosynthesis,
- (a) the light energy is converted to chemical energy.
 - (b) the light and heat energy are converted to mechanical energy.
 - (c) the heat energy is converted to mechanical energy.
 - (d) the heat and light energy are converted to chemical energy.

Ans: (d) the heat and light energy are converted to chemical energy.

- (ii) Which of the following can be concluded from the image above?
- (a) Carbon dioxide is obtained from air and water is absorbed from the soil as the raw materials to make glucose.
 - (b) Both carbon dioxide and water are obtained from the soil as raw materials to form glucose.
 - (c) Both oxygen and carbon dioxide are obtained from air to form starch which is further converted into glucose.
 - (d) Water and oxygen are the raw materials to form glucose.

Ans: (a) Carbon dioxide is obtained from air and water is absorbed from the soil as the raw materials to make glucose.

(iii) Glucose is end product of the photosynthesis. It has :

- (a) 6 carbon atoms
- (b) 5 carbon atoms
- (c) 3 carbon atoms
- (d) 7 carbon atoms

Ans: (a) 6 carbon atoms

(iv) The first event during this process is :

- (a) splitting of water molecules into hydrogen and oxygen
- (b) absorption of light energy by chlorophyll
- (c) reduction of carbon dioxide
- (d) releasing of oxygen

Ans: (b) absorption of light energy by chlorophyll

(v) Stomata have a great role in photosynthesis as :

(a) the entry of carbon dioxide occurs through them.

(b) both gaseous exchange and transpiration are done through them.

(c) glucose and oxygen are released through them.

(d) the excess water is lost through them.

Ans: (b) both gaseous exchange and transpiration are done through them.