

Exercises

Ex. A) Fill in the blanks :. (Ans.)

- (1) green
- (2) heterotrophic
- (3) insectivorous
- (4) carbon dioxide and water
- (5) rhizobium
- (6) iodine
- (7) lower
- (8) glucose

Ex. B) choose the correct option :

- (1) photosynthesis need

Ans. all the above

- (2) Heterotrophs are

Ans. Parasitic plants

- (3) The organisms involved in lichens are

Ans. both (ii)& (iii)

- (4) All fungi are

Ans. saprophytic

- (5) Cuscuta is a

Ans. Partial parasite

Ex. C) Match the following :

(A).

(B)

- | | |
|---|------------------|
| (1) Chlorophyll | leaves |
| (2) One of the by product of photosynthesis | Oxygen |
| (3) Insects | Pitcher plant |
| (4) stomata | guard cells |
| (5) Animals | heterotrophic |
| (6) Nostoc | blue green algae |

Ex. E) Name the following : (Ans.)

- (1) stomata
- (2) Algae
- (3) Leguminous
- (4) photosynthesis
- (5) saprophytes

Ex. F) Define the following :

- (1) Nutrition - process of intake of food and its utilisation in the body.
- (2) Nutrients - substances that are needed by an organism for their survival.
- (3) photosynthesis- The process of making food (glucose) in plants with simple molecular like water and carbon dioxide in the presence of sunlight is known as photosynthesis.
- (4) symbiosis - relationship of mutual help between two organisms wherein both organisms help each other to survive.
- (5) parasitic plants - some plants solely depend on the other plants for their nutrition. Such plants are known as parasitic plants.

Ex. G) write the correct word in the boxes.

- (1) light
- (2) carbon dioxide
- (3) glucose
- (4) starch
- (5) insects
- (6) nostoc
- (7) parasite

Ex. H) Distinguish between:

- (1) Autotrophs & Heterotrophs

Ans. Autotrophs : organisms that can make their own food.

Heterotrophs : organisms that cannot make their own food but depend on plants for their food.

- (2) Symbiosis & Parasitic nutrition

Ans. Symbiosis : relationship of mutual help between two organisms wherein both organisms help each other to survive.

Parasitic plants : mode of nutrition in which one organism depends on the host for survival.

- (3) Manure & Fertilizers

Ans. Manure : natural nutrients provided to plants which are obtained through composting of decaying matter.

Fertilizers : nutrients for plants made from chemicals in a factory.

Ex. I) Answer in short :

(1) What is the importance of sunlight in photosynthesis ?

Ans. During photosynthesis , plants trap light energy with their leaves.

(2) Name any two blue green algae.

Ans.1) Nostoc (2) Anabaena

(3) Name the scientist who proved that Oxygen is given out during photosynthesis.

Ans. Joseph Priestley performed a simple experiment to prove that plants give out Oxygen in the sunlight.

(4) How is glucose produced , and stored in plants?

Ans. The leaves of a plant make glucose during the process of photosynthesis. When plants are making glucose on a sunny day, they store some of it as starch.

(5) Name the simplest carbohydrates made during photosynthesis.

Glucose is the simplest carbohydrates made during photosynthesis.

(6) Why are green plants called autotrophs?

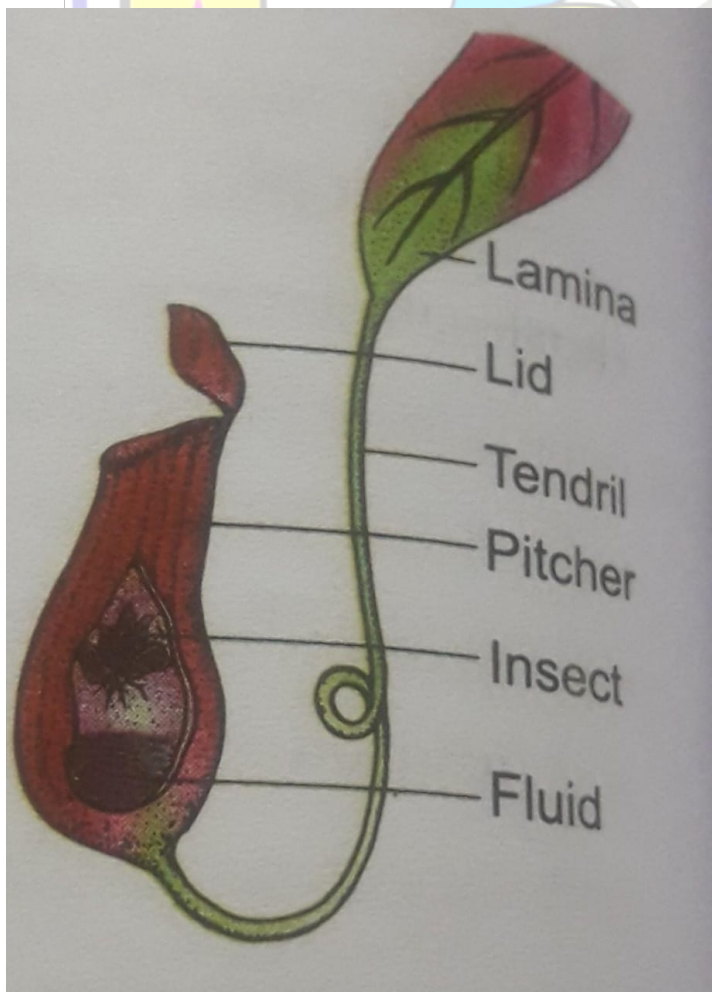
Plants are called autotrophs as it produce it's own food by using the water, light and carbon dioxide.

(7) Why do you think leaves arrange in different patterns on the stem?

Ans. The leaves are arranged on the stem in different patterns to receive maximum sunlight.

Ex. D) Draw the following :

(1) pitcher plant



(2) The biggest fungi (Mushroom)

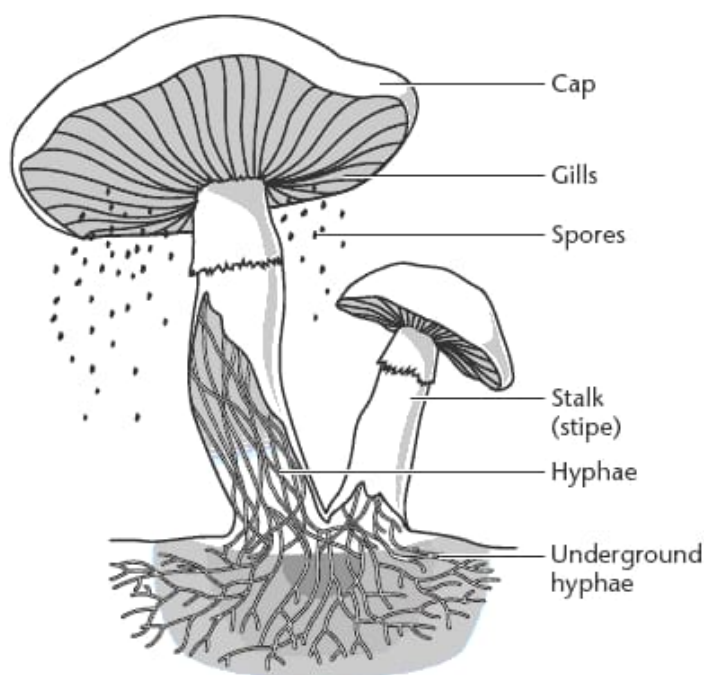


FIGURE 9.3. Parts of a Fungus

Ex. J) Long answer questions :

- (1) Describe an experiment to prove that sunlight is necessary for photosynthesis.

Ans. Aim : To prove that light is necessary for photosynthesis

Material : Potted plant , black paper , Iodine , alcohol

Procedure :

- (1) Take a potted plant and select a healthy leaf in it.
- (2) Cover it with a black paper in the middle.
- (3) Leave the set up in the sunlight for the whole day.
- (4) Now remove the paper and boil the leaf in alcohol.

this will remove all the chlorophyll from the leaf &
the leaf will become colourless.

- (5) Now put a few drops of iodine on the leaf and also
a few drops on the part which was covered with black
paper.

Observation : When we test the leaf with iodine , the covered
portion does not show the blue - black colour but
the rest of the leaf shows positive test for the starch.

Conclusion : Sunlight is necessary for photosynthesis.

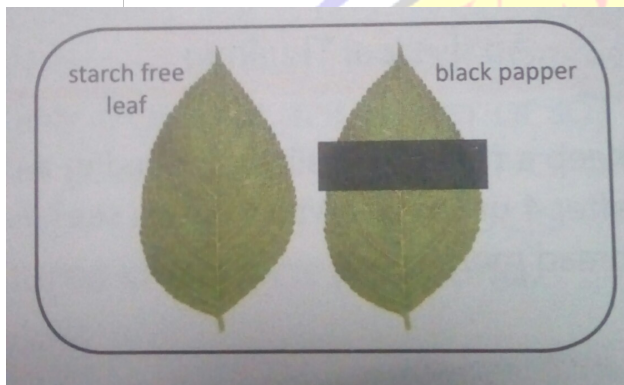
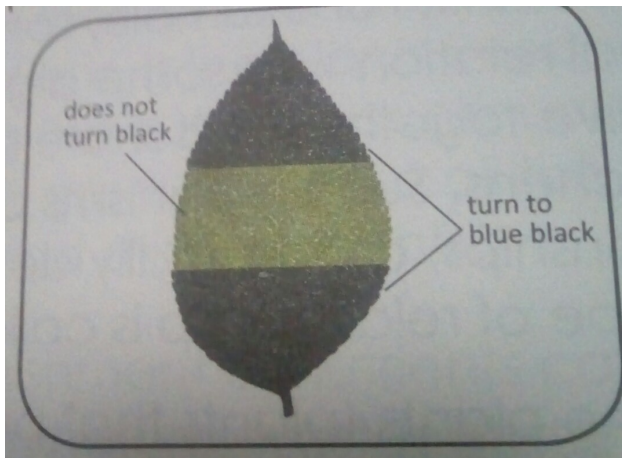


Fig. Sunlight is necessary for photosynthesis

(2) write shortnote on insectivorous plants.

Ans. Plants get some of their nutrition by trapping and digesting insects and something other small animals. These plants are called insectivorous plants.

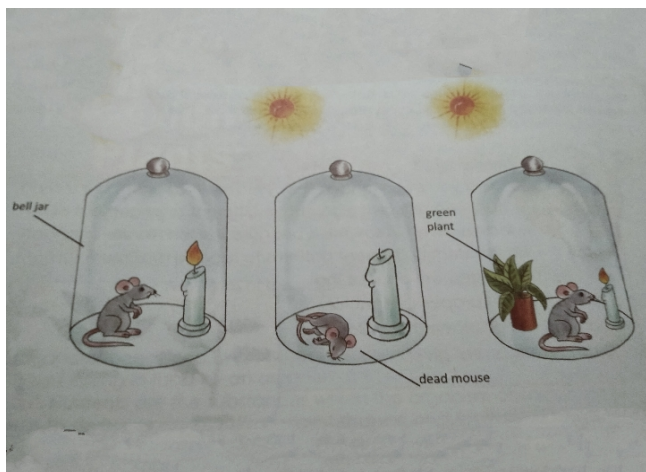
They use modified structures formed by their leaves to trap insects and small animals. Even though all of them are green and can photosynthesis, they rely partially on insects and small animals for their supply of nitrogen. The pitcher plant, sundew & Venus flytrap are some examples of insectivorous plants.

(3) How did Priestley prove that plants give out Oxygen during photosynthesis ?

Ans. In 1770, Joseph Priestley performed a simple experiment to prove that plants give out Oxygen in the sunlight.

In the first experiment, Priestley found that a burning candle would soon get extinguished in the closed space of the jar. Similarly the mouse also died due to suffocation.

When a potted plant was kept along with bell jar, neither candle extinguished nor the mouse died. The plant also did not die. This is because the plant releases oxygen during photosynthesis, which was sufficient for the mouse to survive and the candle burn. The carbon dioxide that was given out by the candle & the mouse was taken by the plant for its photosynthesis.



(4) How do we test the starch present in the leaf ?

Ans. Same as 1st Ans.

(5) Explain symbiosis with examples.

Ans. A relationship between two organisms that benefits both is called symbiosis. The relationship is called a symbiotic relationship and an organism that is involved in a symbiotic relationship is called a symbiont.

Lichens are examples of such an association between two organisms. A lichen is made of alga (an autotroph) and a fungus (a saprophyte) that live together. The alga makes the food while the fungus absorbs water and minerals.

(6) Write a short note on one partial parasite and on one complete parasite.

Ans. Some plants solely depend on other plants for their nutrition. Such plants are known as parasitic plants. Some parasitic plants depend on their host plants only partially (for water or so) and are known as partial parasites e.g. *Rafflesia*. But some plants totally depend on the host plants for their survival. *Cuscuta* (amarbel) has no leaves, no roots nor flowers and it sucks the food from the host plant through the hook-like structures known as haustoria.

(Here are the videos for this chapter)

(1) <https://youtu.be/Kv0e5usW1w8>

(2) <https://youtu.be/Kv0e5usW1w8>

(3) <https://youtu.be/G7P3QLnXzkY>