1. Food for the Living World

Let us assess

1. Question

Which of the pigments given below is the main pigment that performs photosynthesis?

A. Chlorophyll a

B. Chlorophyll b

C. Xanthophyll

D. Carotene

Answer

Chlorophyll a is the primary photosynthetic pigment and it is responsible for the emission of electrons during cyclic and noncyclic photophosphorylation. All the other pigments are accessory pigments.

2. Question

Complete the equation related to photosynthesis.

$$\ldots\ldots + \ldots\ldots \xrightarrow{\text{Sunlight}} \ldots\ldots + 6O_2$$

Answer

$$6CO_2 + 12H_2O \xrightarrow{\text{Sunlight}} C_6H_{12}O_6 + 6O_2$$

In the given equation we can see during photosynthesis 6 molecules of carbon dioxide reacts with 12 molecules of water in the presence of sunlight to form 1 molecule of glucose and 6 molecules of oxygen. This reaction occurs in the chlorophyll pigments present in the chloroplasts of the leaf.

3. Question

Complete the table.

Food item	Main nutrient
1. Pea	Protein
2. Oil	.....
3. Rice	.....

Answer

Food item	**Main nutrient**
1. Pea	Protein
2. Oil	Essential fatty acids
3. Rice	Carbohydrates

The oil contains mainly the essential fatty acids such as linoleic acid, omega 3 fatty acids which can not be produced by our body but are vital for the various physiological activities occurring in our body.

Rice mainly contains the nutrient carbohydrate.

Extended activities

1. Question

Collect the green alga named spirogyra. Observe it through the microscope with the help of your teacher and identify the shape of chloroplast.

Answer

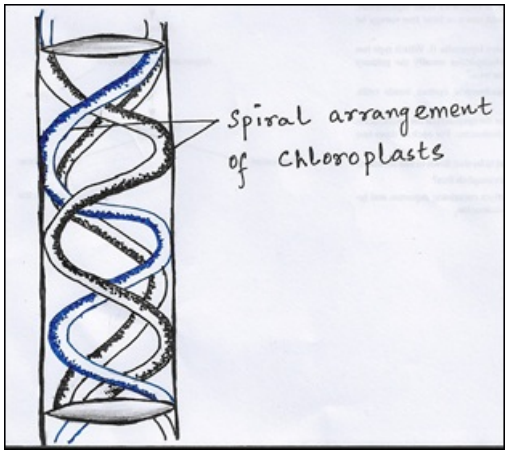

Fig: Spiral arrangement of chloroplast of Spirogyra as seen under microscope.

2. Question

Observe the illustration of photosynthesis. Prepare similarillustrations and exhibit them in the classroom.

Answer

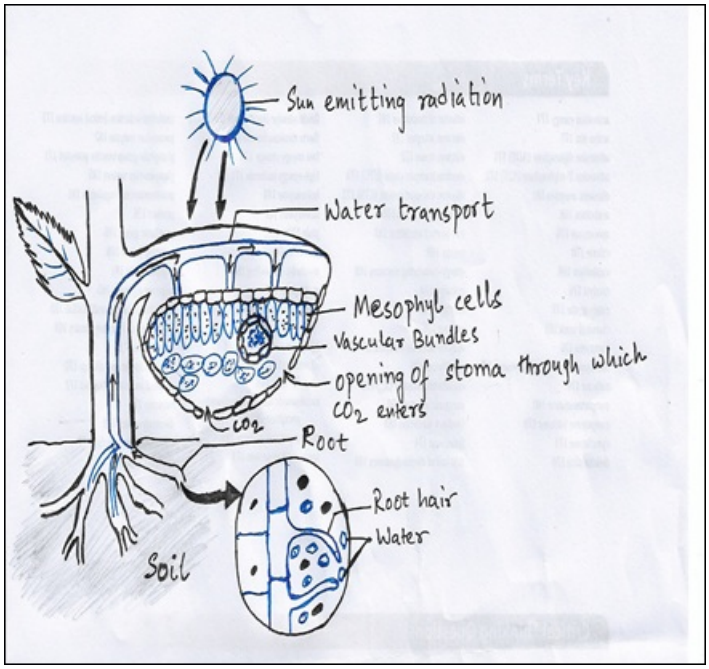

Fig : Illustration of Photosynthesis.