

Unit#1: Structure of Living Organisms

Answer the following questions.

1. (a) The vegetative parts of a plant are stem, roots, and leaves. The reproductive parts of a plant are flowers.

(b) The stem is the part of a plant which grows above the ground. It is usually erect and upright but some stems grow horizontally along the ground. Some stems are long, thin, and weak or they are thick and fleshy. Some stems grow underground and store food. Stems bear leaves, buds, flowers, and fruits. They also transport water from the roots to the leaves and prepared food from leaves to all parts of the plant.

(c) The different kinds of roots are:

I: tap roots, **II:** fibrous roots, **III:** adventitious roots.

i: Tap roots: Some roots have one thick main root from which branch roots grow. Such roots, like carrots and radishes, are called tap roots.

ii: Fibrous roots: In some plants, like grass, many branched roots of the same size grow out at the same time. Such roots are called fibrous roots.

iii: Adventitious roots: Some roots, like the onion bulb, grow directly from the stem. These are called adventitious roots.

(d) The leaf manufactures food for the plant. Stomata in the leaves help in gaseous exchange. Some thick and fleshy leaves store food.

(e) **i: The male reproductive part of the flower:** The male reproductive part of the flower is called an androecium. It forms the third whorl. It is composed of stamens. Each stamen has a filament which is a thin stalk and an anther which is attached to the filament and contains four pollen sacs. The male sex cells are pollen grains which are produced inside the pollen sacs.

ii: The female reproductive part of the flower: The female reproductive part of the flower is called the gynoecium. It is composed of carpels. Each carpel is composed of an ovary, style, and stigma. Ovary which is the swollen basal part contains the female sex cells called ovules. The style is a thin stalk and the stigma which is the flat tip of the carpel, is sticky and receives the pollen grains during pollination.

2. Write two important functions of the following:

I: Root: A root fixes the plant firmly in the soil. It absorbs and mineral salts from the soil. It may store food.

II: Stem: The stem bears leaves, buds, flowers, and the fruit of a plant. It spaces out the leaves so that each leaf can get air and sunlight. It transports water from the roots to the leaves. The stem also transports prepared food from the leaves to all parts of the plant.

III: Leaf: A leaf manufactures food for the plant by photosynthesis. Stomata in the leaf help in gaseous exchange. Some thick and fleshy leaves store food.

IV: Flower: A flower helps to make fruits and seeds.

V: Sensory: Sensory organs help the animal to detect changes in its surroundings and to react to them accordingly.

VI: Skeleton: A skeleton helps to support and protect the internal organs of the body. It also helps to bring about movement.

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