



UNIQUE STUDY POINT

Getting To Know Plants

Question 1: Correct the following statements and rewrite them in your notebook.

- (a) Stem absorbs water and minerals from the soil.
- (b) Leaves hold the plant upright.
- (c) Roots conduct water to the leaves.
- (d) The number of petals and stamens in a flower is always equal.
- (e) If the sepals of a flower are joined together, its petals are also joined together.
- (f) If the petals of a flower are joined together, then the pistil is joined to the petal.

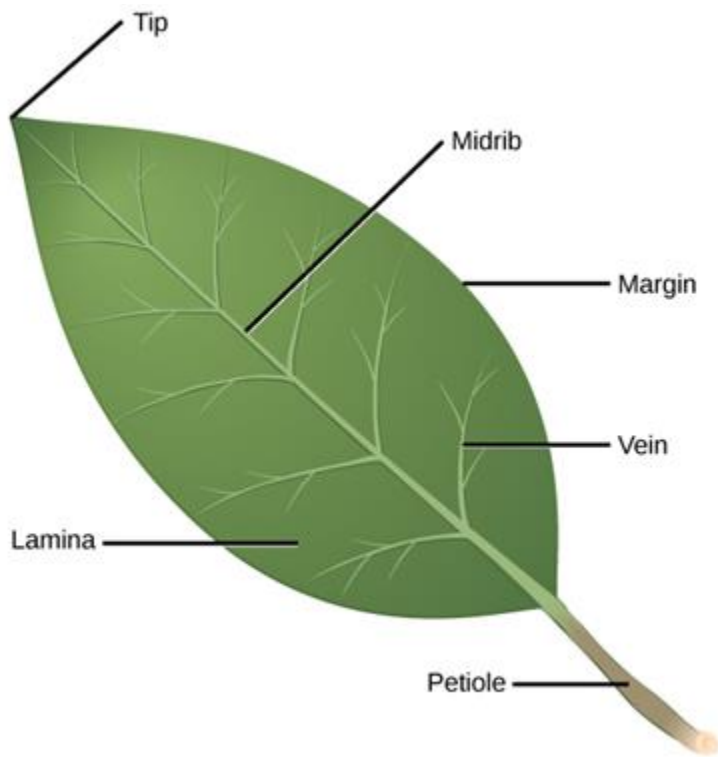
Answer: (a) Roots absorb water and minerals from the soil.

- (b) Stem holds the plant upright.
- (c) Stem conducts water to the leaves.
- (d) The number of petals and sepals in a flower may be equal or different in different plants.
- (e) If the sepals of a flower are joined together, then its petals may or may not be joined together.
- (f) If the petals of a flower are joined together, then the pistil is not necessarily joined to the petal.

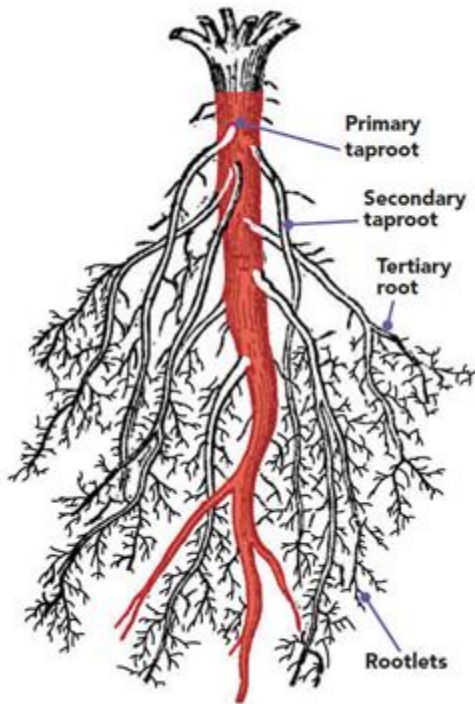
Question 2: Draw (a) a leaf, (b) a taproot and (c) a flower, you have studied for Table 7.3.

Answer:

- (a) a leaf



(b) a taproot



(c) a flower

Question 3: Can you find a plant in your house or in your neighborhood, which has a long but a weak stem? Write its name. In which category would you classify it?

Answer: Money Plant has a long but weak stem. It is a climber.

Question 4: What is the function of a stem in a plant?

Answer: Functions of stem in a plant:

- It holds the branches, leaves, flowers and fruits.
- The stem transports water and minerals from roots to the upper parts.
- It also transports the prepared food from leaves to other parts.

Question 5: Which of the following leaves have reticulate venation? Wheat, tulsi, maize, grass, coriander (dhania), China rose.

Answer: Tulsi, Coriander (Dhania) and China rose.

Question 6: If a plant has fibrous root, what type of venation do its leaves likely to have?

Answer: Parallel venation.

Question 7: If a plant has leaves with reticulate venation, what kind of roots will it have?

Answer: Taproot.

Question 8: Is it possible for you to recognize the leaves without seeing them? How?

Answer: Yes, we can find out whether a plant has tap root or fibrous roots by looking at the impression of its leaves on a sheet of paper. If the leaf has parallel venation, then it is likely to have fibrous root but if the leaf has reticulate venation then the plant will have tap root.

Question 9: Write the names of the parts of a flower.

Answer: The parts of a flower are sepals, petals, stamens and pistil.

Question 10: Which of the following plants have you seen? Of those that you have seen, which one have flowers

Grass, maize, wheat, chilli, tomato, tulsi, pipal, shisham, banyan, mango, jamun, guava, pomegranate, papaya, banana, lemon, sugarcane, potato, groundnut,

Answer: The given examples are flowering plants. But, in some plants such as *tulsi*, *pipal*, sugarcane, etc. the flowers are not visible. They are so small that they cannot be seen with naked eyes.

Question 11: Name the part of the plant which produces its food. Name this process.

Answer: Leaves produce food through a process called as Photosynthesis.

Question 12: In which part of a flower, you are likely to find the ovary?

Answer: Ovary is located in the lowermost and swollen part of the pistil of flower.

Question 13: Name two flowers, each with joined and separated sepals.

Answer: Plants with joined sepals: Datura and Tomato flower.

Plants with separated sepals: Lotus and Rose.

Short Type Questions and Answers

Question 1. What are herbs?

Answer: The small plants with soft/tender, green, short stem are called herbs. Herbs hardly attain height more than 1.5 metres. Their stems are not woody and can be bent. A herb may or may not have branches, e.g., tomato, mint, paddy, etc.

Question 2. Write the differences between a shrub and a tree, based on the properties of the stem.

Answer:

Shrub	Tree
More branches arise from the base of stem.	The branches arise from the stem.
The stem is hard and thin	The stem is hard, thick and woody.

Question 3. From the members of the various groups given below, find the odd one out.

1. Coriander (dhania), mint (pudina), jamun, grass.
2. Rose, mehndi, guava, morepankh.

Answer:

1. Jamun (Jamun is a tree while others are herbs).
2. Guava (Guava is a tree while others are shrubs).

Question 4. What are climbers and creepers? Give some examples.

Answer: In some plants like grape vines, money plant, bean stalk, gourd plants, etc., the stem is so weak that it cannot hold it straight. They either stand up with some support or they just spread on the ground. In the first condition, the plants are called climbers and in second condition, they are called creepers or runners.

Question 5. Pitcher plant has green leaves which can prepare food by photosynthesis then why does it eat insects?

Answer: Pitcher plant eats insects to get nitrogenous compounds which it neither synthesizes nor can absorb from the soil.

Question 6. What are weeds?

Answer: The unwanted plants that grow in the field with the main crops or in their surroundings are called weeds.

Question 7. What is a stem?

Answer: The part of the plant which generally grows above the ground level and bears leaves, flowers and fruits is called a stem.

Question 8. Do you agree that stem is like a two way street?

Answer: Yes. Stem carries the water absorbed by the roots to the leaves and also the food prepared by the leaves to the roots

Question 9. What are the modification of stem?

Answer: Stem is modified to perform certain special functions:

- Storage of food
- Storage of water
- Provide support
- To make food
- Multiplication or reproduction.

Question 10. What are nodes and internodes?

Answer: Nodes: The point where the leaf arises on the stem. They are attached to the stem by a stalk.

Internodes: The portion of the stem between the two nodes.

Question 11. Define petiole and lamina.

Answer: The part of leaf which is attached to the stem is called petiole and the broad green part of the leaf is called lamina.

Question 12. What are veins?

Answer: There are some lines on the leaf called veins.

Question 13. What is midrib?

Answer: There is a thick vein in the middle of the leaf called midrib.

Question 14. Why are leaves generally green?

Answer: The green colour of leaves is because of the presence of chlorophyll.

Question 15. What are the modifications seen in a pitcher plant?

Answer: In a pitcher plant, the lamina is modified into a pitcher and apex into its lid.

Question 16. What are lateral roots?

Answer: The smaller roots that grow on the main taproot are called lateral roots.

Question 17. How do you identify the root system of a plant without pulling it out of soil?

Answer: By looking at the venation of the leaves, we can identify the root system of a plants. Plants with leaves having parallel venation have fibrous root and leaves having reticulate venation have taproot.

Question 18. What is a fruit? How does it differ from a seed?

Answer: After fertilization, the ovary of the flower gets stimulated by the action of seed and forms the fruits, like mango, orange, etc. Embryo surrounded by a hard wall is called the seed.

Question 19. Write the functions of sepals and petals.

Answer: Functions of sepals: Sepals protect the inner parts of flower when it is a bud.
Function of petals: Petals attract the insects which are the agencies of pollination by colour and fragrance.

Question 20. In what sequence does a plant bear?

Seed, Flower, Fruit.

Answer: A plant bears first flowers, then seeds and in the last fruits.

Question 21. Write the names of reproductive parts of a flower.

Answer: The reproductive parts of a flower are:

- Stamens
- Pistil.

Question 22. What do you mean by a complete and an incomplete flower?

Answer: The flower with all whorls, i.e., sepals, petals, stamen and carpel in it is a complete flower. If any one of these is absent in a flower, it is called an incomplete flower.

Long Type Questions and Answers

Question 1. Do all flowers have four separate whorls? Does any flower have more than four whorls? If so, write its name.

Answer: No. Some flowers have some additional whorls than others. Sometimes some of these whorls may even be absent. For example:

- In Gudhal, an additional whorl of epicalyx is found.
- In unisexual flowers, either stamen or pistil is absent.

Question 2. Do all flowers have the same parts and are they arranged in the same way?

Answer: The flowers of different species of plants are different. The number of petals and sepals are different in different flowers. Some of the flowers have stamens and some flowers have only pistil, others have both. Sepals may be connected with petals in some cases; but in other cases, these may be separated. Thus, the properties of flowers are different.

Question 3. Why roots are modified?

Answer: Certain plants have modified roots to perform specific functions:

- Storage roots, e.g., carrot, radish
- Supporting roots, e.g., banyan, rubber
- Climbing roots, e.g., money plant

- Parasitic roots, e.g., dodder
- Breathing roots, e.g., mangroves.

Question 4. Explain the difference between taproots and fibrous roots.

Answer:

Taproots	Fibrous Roots
There is only one main and long root from which small roots grow.	There is no main root. Many roots are grown together from the base of the stem in the form of bundle.
These roots go deep into the soil to more depth.	These roots do not go very deep.
These roots cannot be separated from soil easily.	These roots are easily separated from the soil.
Found in the plants like weeds having reticulate venation in leaves.	Found in the plants like grasses having parallel venation in leaves.

Question 5. What are the main functions of roots?

Answer: Main functions of roots are:

- Roots absorb water and minerals from soil for the other parts of the plants.
- Roots hold the plant firmly to the soil.
- Some roots transform to store food, e.g., radish.
- Roots of leguminous plants contain symbiotic bacteria which add the fertility of soil by fixing atmospheric nitrogen into nitrates.

Question 6. What do you mean by

1. leaf venation
2. reticulate venation, and
3. parallel venation?

Answer:

1. Leaf venation: The design made by veins in a leaf is called leaf venation.
2. Reticulate venation: If the design is net-like on both sides of midrib, the venation is called reticulate venation.
3. Parallel venation: In the leaves of grass, the veins are parallel to one another. This is called parallel venation.

Question 7. Explain the main functions of leaf.

Answer: There are following two main functions of leaf:

- Transpiration: The extra water comes out of the leaves through stomata in the form of vapour. This process is called transpiration.
- Photosynthesis: The process by which leaves prepare their food from water and carbon dioxide in the presence of sunlight and a green-coloured substance i.e., chlorophyll is called photosynthesis.

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