

## Anatomy Of Flowering Plants

### Very Short Answer Type Questions

1. Product of photosynthesis is transported from the leaves to various parts of the plants and stored in some cell before being utilised. What are the cells/ tissues that store them?
2. Protoxylem is the first formed xylem. If the protoxylem lies next to phloem what kind of arrangement of xylem would you call it?
3. What is the function of phloem parenchyma?
4. What is present on the surface of the leaves which helps the plant prevent loss of water but is absent in roots?
5. What is the epidermal cell modification in plants which prevents water loss?
6. What part of the plant would show the following:
  - a. Radial vascular bundle
  - b. Polyarch xylem
  - c. Well developed pith
7. What are the cells that make the leaves curl in plants during water stress?
8. What constitutes the cambial ring?
9. Give one basic functional difference between phellogen and phellogen.
10. Arrange the following in the sequence you would find them in a plant starting from the periphery – phellem, phellogen, phellogen.
11. If one debarks a tree, what parts of the plant is being removed?
12. The cross-section of a plant material showed the following features when viewed under the microscope.
  - a. The vascular bundles were radially arranged.
  - b. Four xylem strands with exarch condition of protoxylem. To which organ should it be assigned?
13. What do hard wood and soft wood stand for?

## Short Answer Type Questions

1. While eating peach or pear it is usually seen that some stone like structures get entangled in the teeth, what are these stone like structures called?
2. What is the commercial source of cork? How is it formed in the plant?
3. Below is a list of plant fibres. From which part of the plant these are obtained
  - a. Coir
  - b. Hemp
  - c. Cotton
  - d. Jute
4. What are the characteristic differences found in the vascular tissue of gymnosperms and angiosperms?
5. Epidermal cells are often modified to perform specialized functions in plants. Name some of them and function they perform.
6. The lawn grass (*Cyandon dactylon*) needs to be mowed frequently to prevent its overgrowth. Which tissue is responsible for its rapid growth?
7. Plants require water for their survival. But when watered excessively, plants die. Discuss.
8. A transverse section of the trunk of a tree shows concentric rings which are known as growth rings. How are these rings formed? What is the significance of these rings?
9. Trunks of some of the aged tree species appear to be composed of several fused trunks. Is it a physiological or anatomical abnormality? Explain in detail.
10. What is the difference between lenticels and stomata?
11. Write the precise function of
  - a. Sieve tube
  - b. Interfascicular cambium
  - c. Collenchyma
  - d. Aerenchyma

12. The stomatal pore is guarded by two kidney shaped guard cells. Name the epidermal cells surrounding the guard cells. How does a guard cell differ from an epidermal cell? Use a diagram to illustrate your answer.
13. Point out the differences in the anatomy of, leaf of peepal (*Ficus religiosa*) and maize (*Zea mays*). Draw the diagrams and label the differences.
14. Palm is a monocotyledonous plant, yet it increases in girth. Why and how?

## Long Answer Type Questions

1. The arrangement of ovules within the ovary is known as placentation. What does the term placenta refer to? Draw various types of placentations in the flower as seen in T.S. and V.S.
2. Deciduous plants shed their leaves during hot summer or in autumn. This process of shedding of leaves is called abscission. Apart from physiological changes what anatomical mechanism is involved in the abscission of leaves.
3. Is *Pinus* an evergreen tree? Comment.
4. Assume that a pencil box held in your hand, represents a plant cell. In how many possible planes can it be cut? Indicate these cuts with the help of line drawings.
5. Each of the following terms has some anatomical significance. What do these terms mean? Explain with the help of line diagrams.
  - a. Plasma Desmosomes/ Plasmodesmata
  - b. Middle lamella
  - c. Secondary wall
6. Distinguish between the following:
  - a. Exarch and endarch condition of protoxylem
  - b. Stele and vascular bundle
  - c. Protoxylem and metaxylem
  - d. Interfascicular cambium and interfascicular cambium
  - e. Open and closed vascular bundles
  - f. Stem hair and root hair