ANATOMY OF FLOWERING PLANTS

Que.1. Choose the correct answer. **[Marks :(1)]**

Lenticels in plants help in:

A.water transport

B. gaseous exchange

C. transport of food

D. mechanical support

Ans. B/gaseous exchange

Que.2. How does bulliform cells help grasses to overcome water stress? **[Marks :(2)]**

Ans. Bulliform cells absorb water and become turgid and the leaf surface exposed.

When they become flaccid due to water stress, leaves curl inwards and minimise water loss.

(1x 2)

Que.3. Write any two anatomical differences between dicot and monocot leaves?

[Marks :(2)]

Ans. Dicot leaf

stomata on upper epidermis/ mesophyll differentiated to spongy and palisade / guard cells are kidney shaped(any two)

Monocot leaf

stomata on both surfaces/ mesophyll not differentiated / guard cells are dumb-bell shaped. (any two)

Que.4. Name the two types of cells present in the mesophyll of dicot leaves.

Write any two differences between them

[Marks :(3)]

Ans. Spongy parenchyma and palisade parenchyma

Spongy parenchyma; oval or round in shape / loosely arranged

Palisade parenchyma : elongated cells arranged vertically and parallel to each other

Que.5. Choose the appropriate terms given below and arrange them correctly in the table provided.

Casparian strips,starch sheath,polyarch xylem, closed vascular bundles, bundle sheath,bundle cap, spongy parenchyma

[Marks :(3)]

Monocot stem	Dicot stem	Monocot root

Ans. Monocot stem : closed vascular bundles,bundle sheath

Dicot stem :starch sheath, bundle cap

Monocot root :polyarch xylem, casparian strips

Que.6. Periderm formation in dicot stem provides new protective cell layers.

Name the tissues which constitute periderm.

[Marks :(3)]

Ans. a) Phellogen/ cork cambium, phellem/cork ,phelloderm/ secondary

Cortex

Que.7. Heart wood and sap wood contains secondary xylem, but differ in function. Explain.

[Marks :(3)]

Ans. Heart wood - secondary xylem with deposition of organic compounds,hard durable,resistant to microorganisms,highly lignified walls/ do not conduct water. {Any three)

Sap wood –The peripheral region of secondary xylem, lighter in colour, involved in conduction of water

Que.8. Complex tissues are found in higher plant groups. Choose the components of complex tissues found in gymnosperms from the hints provided below.

[Marks :(2)]

Xylem tracheids

Xylem vessels

Sieve tubes

Albuminous cells

Sieve cells

Companion cells

Xylem Parenchyma

Ans. Xylem tracheids, albuminous cells, sieve cells, xylem parenchyma

Que.9. Differentiate exarch and endarch arrangement of primary xylem

[Marks :(2)]

Ans. Endarch xylem –protoxylem lies towards pith and metaxylem towards periphery.

Exarch xylem – metaxylem lies towards pith and protoxylem towards periphery.

Que.10. Epidermal hairs are found in root and stem.

(a}Name the epidermal hairs stem.

(b)Write any two functions of them.

[Marks :(2)]

Ans. a.Trichomes

b.Secretory, prevent water loss due to transpiration

Que.11. Name the permanent tissue in plants which consists of cells that are thickened at the corners.

[Marks :(1)]

Ans. Collenchyma

Que.12. Some functions of various tissues in plants are given below. Identify the tissues.

a) Conduction of water

b) Provides support to the growing parts of the plant.

c) Conduction of food.

d) Storage

[Marks :(1)]

Ans. a.Xylem, b.Collenchyma, c.Phloem ,

d.Parenchyma

Que.13. Apical meristem and intercalary meristem are known as primary meristems. Justify.

[Marks :(2)]

Ans. Both appear early in life of a plant and contribute to formation of primary plant

body.

Que.14. Given below are components of complex tissues in plants.

Tracheids,Companion cells,Sieve tubes,Vessels

Arrange them correctly in the table given below.

[Marks :(2)]

xylem	**phloem**

Ans. Xylem: Tracheids, vessels

Phloem : Companion cells, Sieve tubes

Que.15. Fill in the blanks:

[Marks :(1)]

In dicot roots,endodermal cells have a deposition of suberin in the form of .....

Ans. Casparian strips

Que.16. Fill in the blanks:

[Marks :(1)]

Multicellular epidermal elongations of stem are called---

Ans. Trichomes