KHAIRA COLLEGE KHAIRA,BALASORE

BOTANY QUESTION BANK

THIRD SEMESTER

CC-5: PLANT ANATOMY

Q. ANSWERS TE FOLLOWING QUESTIONS: (20*1=20)

1. The waxy substance associated with the wall of the cork cell is

a. Lignin
b. Hemicellulose
c. Cutin
d. Suberin

2. A tissue that does not contain lignin

a. Sclerenchyma
b. Parenchyma
c. Collenchyma
d. Chlorenchyma

3. Lateral roots originate in

a. Cortex
b. Endodermal cells
c. Pericycle
d. Cork cambium

4. Which gives rise to the cork tissue?

a. Periblem
b. Phellogen
c. Phelloderm
d. Periderm

5. Which are the external protective tissues of the plant?

a. Cortex and epidermis
b. Cork and cortex
c. Pericycle and cortex
d. Epidermis and cork

6. Following is the characteristic of collenchyma

a. Elongated cells with thickened corners
b. Isodiametric cells with thickened walls
c. Elongated cells with deposits of cellulose and pectin
d. Isodiametric cells with deposits of cellulose and pectin

7. Casparian strips are found in

a. Epidermis
b. Endodermis
c. Exodermis
d. Pericycle

8. The apical meristem of the root is found in

a. Taproots
b. Radicals
c. Adventitious roots
d. All the roots

9. Bordered pits are found in

a. Vessel wall
b. Sieve cells
c. Sieve tube
d. Companion cells

10. Where in epiphytes are velamen cells located?

a. Below the endodermis
b. Below the epidermis
c. Just outside the cortex
d. Just outside the exodermis

11. Intercalary meristem results in

a. Primary growth
b. Secondary growth
c. Apical growth
d. None

12. The age of the tree can be determined by

a. Measuring its diameter
b. Counting the number of annual rings
c. Counting the number of leaves
d. Finding out the number of branches

13. Which meristem helps in increasing the girth of the plant?

a. Primary meristem
b. Apical meristem
c. Intercalary meristem
d. Lateral meristem

14. Fibres associated with phloem

a. Wood fibres
b. Bast fibres
c. Hard fibres
d. Surface fibres

15. In angiosperms, xylem is made up of

a. Tracheids and fibres
b. Tracheids and vessels
c. Vessels and fibres
d. All of the above

16. Which of the following has a perforated cell wall?

a. Vessel
b. Fibre
c. Tracheid
d. Sclereid

17. How many radial vascular bundles are found in dicot roots?

a. Four
b. Six
c. Two
d. One

18. Bicollateral bundles are found in the stem of

a. Pumpkin
b. Sunflower
c. Dracaena
d. Gram

19. Vascular bundles in dicot stem are

a. Closed, conjoint, endarch
b. Open, conjoint, endarch
c. Closed, conjoint, exarch
d. Open, conjoint, exarch

20. Wound healing in plants is initiated by

a. Apical meristem
b. Lateral meristem
c. Secondary meristem
d. Intercalary meristem

Answer Key

1- d	**2- c**	**3- c**	**4- b**	**5- d**	**6- a**	**7- b**	**8- d**	**9- a**	**10- d**

11- a	**12- b**	**13- d**	**14- b**	**15- d**	**16- a**	**17- a**	**18- a**	**19- b**	**20- c**

1. Answer the following questions: (1 or 2 marks)-

a) Give an example of secondary meristem.

b) What is a dictyostele?

c) What is an 'anisocytic' stomata?

d) What are 'aspirated pits'?

e) What is 'bark'?

f) What is plastochron?

g) Describe the role played by the enzyme pectinase

h) What are 'crassulae'? Where are they found?

i) What is 'Quiescent centre'?

j) Differentiate between bordered and half bordered pits.

k) What is a bicollateral vascular bundle? Where is it found?

l) Define a Leaf trace and a Leaf Gap?

m) What is phellogen?

n) What are 'vestured pits'?

o) What is an 'anomocytic' stomata?

p) What are 'trabeculae'? Where are they found?

q) What are sunken stomata? Where are they present?

r) What are lenticels?

s) What are 'endarch' and 'exarch' xylem ? Where are they present?

t) What is an amphiphloic siphonostele?

2. Discuss in brief the following: (5 marks)-

a) Draw and describe the different types of stele which you have studied

b) State the Korper-Kappa theory of root apical organisation with illustrations.

c) Outline with illustrations the various stages in which ‘intrastelar’ secondary growth takes place in the plants.

d) Describe the various thickenings found in the cell wall and mention their distribution.

e) Describe the anatomical adaptations of hydrophytes.

f) Discuss the role played by plant anatomy in the branch of plant systematics.

g) Write a note on the different stomatal types according to Metcalfe and Chalk.

h) Describe the anatomical adaptations seen in xerophytes.

i) Differentiate between ‘spring wood’ and ‘autumn wood’.

j) Discuss the various theories proposed to address the ‘growth of the cell wall’

3. Answer the following questions: (10 marks)

a) Write a note on the structure of ‘Plasmodesmata’. State it’s important functions. Differentiate between Apoplast and Symplast.

b) Write a note on the ‘Extrastelar’ secondary growth. With suitable diagram comment on the anomalous secondary growth in the Tinospora sp root.

c) Describe in brief the chemical constituents of the cell wall. Write a detailed note on the ultrastructure of the cell wall

d) Describe the anomalous secondary growth in Tecoma sp , Bignonia sp, Boerhavia sp, Dracaena sp and with diagrams.

e) What are mechanical tissues? Give examples. Discuss the principle of distribution of mechanical tissues in leaves and stem.

f) Illustrate with diagrams the Tunica – Corpus theory of shoot apex organization. Outline the scope of plant anatomy in forensic sciences.