

BankimSardar College

B.Sc. Honours SemesterII Examination

2020

Botany Honours

Paper: PLANT ANATOMY (CC3)

Class Attendance: 10 Marks

Time: 2 Hours

Full Marks: 90

Answer of each group should be in separate answer sheet

Group: A

(All questions are compulsory)

1. Answer all questions.

[1 X 10 = 10]

- a.** The thread-like cytoplasmic strands joining one cell to the other are called
 - i. Pneumatophores
 - ii. Cytodesmata
 - iii. Plasmodesmata
 - iv. Plasmophores
- b.** Triarch vascular bundles may be found in
 - i. Monocot stem
 - ii. Monocot root
 - iii. Dicot stem
 - iv. Dicot root
- c.** Lignin is a component of the secondary cell walls of
 - i. Collenchyma
 - ii. Parenchyma
 - iii. Sclerenchyma
 - iv. Aerenchyma
- d.** Which of the following makes the framework of all plant organs
 - i. Collenchyma
 - ii. Parenchyma
 - iii. Sclerenchyma
 - iv. Chlorenchyma
- e.** Endodermis is mainly helpful in
 - i. Providing protection
 - ii. Preventing loss of water from stele

- iii. Maintain rigidity
- iv. None of the above
- f. What is the condition called, if the protoxylem is encircled by the metaxylem
 - i. Exarch
 - ii. Endarch
 - iii. Polyarch
 - iv. Mesarch
- g. Tissue responsible for the length of the plant
 - i. Apical meristem
 - ii. Lateral meristem
 - iii. Intercalary meristem
 - iv. Epidermis meristem
- h. Quiescent centre is found in
 - i. Root tip
 - ii. Shoot tip
 - iii. Dicot stem
 - iv. Stem and leaf both
- i. Tunica corpus theory of shoot apex organization was given by
 - i. Clowes
 - ii. Schmidt
 - iii. Nageli
 - iv. Both Clowes and Schmidt
- j. In Korper-Kappe theory, a cell first divides transversely and thereafter one of its daughter cell divides longitudinally. This is known as
 - i. B-division
 - ii. C-division
 - iii. Y-division
 - iv. T-division

Group B
(Attempt all questions)

[10 X 3 = 30]

- 2. a. Draw a label diagram of cystolith (*Ficus* leaf). Discuss its features. [2+3]
- b. Draw a level diagram of oil glands. Discuss its features [2+3]
- 3. a. Draw a label diagram of anomalous secondary structure in stem of *Bignonia* and discuss its characteristics. [2+3]

b. Draw a label diagram of anomalous secondary structure in root of *Tinospora* and discuss its characteristics. [2+3]

4. a. Draw a label diagram of T.S. through *Nymphaea* petiole and discuss its features. [2+3]

b. Draw a label diagram of leaf of *Nerium* showing sunken stomata and discuss its features. [2+3]

Group C

5. Attempt all questions

[10 X 2 = 20]

- a. State the function of plasmodesmata.
- b. What is the difference between tracheids and tracheae?
- c. What are lenticels?
- d. What is the difference between dicot and monocot stem?
- e. What is the difference between heart and sap wood?
- f. Define Plastrochrone.
- g. What is anomalous secondary growth?
- h. What is phellogen?
- i. What is siphonostele?
- j. What is leaf trace and leaf gap?

6. Attempt any 6 questions

[6 X 5 = 30]

- a. Discuss Tunica-Corpus Theory.
- b. Discuss different stomatal types (Metcalf and Chalk).
- c. Briefly discuss the thickening of cell wall.
- d. Discuss the anomalous secondary growth of *Tinospora* root.
- e. Discuss the anomalous secondary growth of *Dracaena* stem.
- f. Discuss the adaptive anatomical features of hydrophytes.
- g. Discuss the structure of plasmodesmata with suitable diagram.
- h. Discuss the different type of protostele with example.