

2023

Time - 3 hours

Full Marks - 60

*Answer **all groups** as per instructions.
Figures in the right hand margin indicate marks.
Draw labelled diagrams wherever necessary.*

GROUP – A

1. Fill in the blanks. (all) [1 × 8]
- (a) Cystoliths are crystals of _____.
 - (b) Isolated sclereids are called _____.
 - (c) _____ trichomes have a short stalk and a large head.
 - (d) A circular thick structure in the middle of the pit membrane is _____.
 - (e) The cells of tunica layer is divided by _____ division.
 - (f) In exarch xylem, the development is _____ type.
 - (g) Early wood is otherwise known as _____ wood.
 - (h) Xerophytes having hairs are _____.

[2]

GROUP – B

2. Answer any eight of the following questions within two to three sentences each. [1½ × 8]

- (a) Define Kranz anatomy.
- (b) What is an aleurone grain ?
- (c) What is ground tissue ?
- (d) Define leptocentric vascular bundle.
- (e) Define rhytidome.
- (f) What is reaction wood ?
- (g) What do you mean by ephemeral annuals ?
- (h) Define anomalous secondary growth.
- (i) Define guttation.
- (j) What are the derivatives of plerome ?

GROUP – C

3. Write notes on any eight of the following within 75 words each. [2 × 8]

- (a) Pits
- (b) Adcrustation
- (c) Dendrochronology

- (d) Quiscent centre
- (e) Bicollateral vascular bundle
- (f) Sap wood and heart wood
- (g) Lenticels
- (h) Nectaries
- (i) Plasmodesmata
- (j) Lithocysts

GROUP – D

Answer *all* questions within 500 words each.

4. Discuss the application of plant anatomy in forensic sciences and pharmacognosy. [6]

OR

Discuss various complex permanent tissues in plants.

5. Describe the tunica-carpus theory of shoot apices in angiosperms. [6]

OR

Describe the anatomy of a dorsiventral leaf and how it differs from that of an isobilateral leaf.

[4]

6. Describe different types of woods found in plants. [6]

OR

Describe the structure and formation of periderm.

7. Describe the mechanical tissue system found in plants. [6]

OR

Describe the anatomical adaptation of hydrophytes.