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- (b) Explain the organization of root apex with the help of any three suitable theories. Illustrate with well labelled diagrams. (7)

(1500)

[This question paper contains 8 printed pages.]

22 DEC 2022

Your Roll No.....

Sr. No. of Question Paper : 1372

22 DEC 2022

Unique Paper Code : 32161301

Name of the Paper : Anatomy of Angiosperms

Name of the Course : B.Sc. (Hons.) Botany

Semester : III

Duration : 3 Hours

Maximum Marks : 75

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. **Question no. 1** is compulsory, attempt **five** questions in all.
3. Draw well labelled diagrams wherever required and answer all parts of question

P.T.O.

1. (a) Define the following (Any five) (5×1=5)

(i) Casparian strips

(ii) Bulliform cells

(iii) Exodermis

(iv) Plasmodesmata

(v) Dendrochronology

(vi) Callose

(b) Match the following: (5×1=5)

(b) Included phloem is the outcome of anomalous secondary growth. Elaborate the statement citing suitable example with the help of well labelled diagram. (7)

6. (a) Classify stomata according to Metcalfe and Chalk along with well labelled diagrams and examples. (8)

(b) Explain briefly with the help of well labelled diagrams the process of secondary growth in dicot roots (7)

7. (a) Along with suitable examples, describe the anatomical adaptations shown in hydrophytes. (8)

4. Draw well labelled diagrams of (Any three): ( $5 \times 3 = 15$ )

- (i) T.S. Periderm showing lenticels
- (ii) T.S of Dicot stem
- (iii) V.S of *Nerium leaf*
- (iv) L.S. Xylem Vessels showing tyloses

5. (a) Early and late wood are formed as a result of seasonal activity of the cambium. Justify the statement with the help of well labelled diagrams.

(8)

- (1) Commercial cork (a) *Trochodendron*
- (2) Raphides (b) *Quercus suber*
- (3) Lateral root (c) *Helianthus stem*
- (4) Endarch xylem (d) *Pericycle*
- (5) Veselless angiosperm (e) *Calcium oxalate*

(c) Give suitable examples where following are present  
(Any five) ( $5 \times 1 = 5$ )

- (i) Brachysclereids
- (ii) Amphicribal vascular bundle

(iii) Angular collenchyma

(iv) Druses

(v) Lysigenous cavity

(vi) Anisocytic stomata

2. Write short notes on: (Any three) (5×3=15)

(i) Applications of Plant Anatomy in Forensic science

(ii) Kranz Anatomy

(iii) Reaction wood

(iv) Phloem as a dynamic tissue

3. Differentiate between: (Any five) (3×5=15)

(i) Heart wood and sap wood

(ii) Vessels and tracheids

(iii) Collenchyma and parenchyma

(iv) Articulated and non-articulated laticifers

(v) Cutinization and cuticularization

(vi) Paratracheal and apotracheal parenchyma