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3 (Sem-3/CBCS) BOT HC 1

2025

BOTANY

(Honours)

Paper : BOT-HC-3016

(Morphology and Anatomy of Angiosperm)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Answer the following as directed : $1 \times 7 = 7$
 - (a) Give definition of laticifers.
 - (b) Mention the botanical name of a plant where hypanthium is found.
 - (c) Name the characteristic inflorescence found in the family Lamiaceae.
 - (d) What is dendrochronology?
 - (e) Custard apple is an example of
 - (i) tetraerio of follicles

- (ii) etaerio of berries
- (iii) etaerio of drupes
- (iv) etaerio of achenes

(Choose the correct one)

(f) The main constituent of cork cell is

(i) lignin

(ii) cutin

(iii) suberin

(iv) cellulose *(Choose the correct one)*

(g) When the stamens are united by both filaments and anthers to form a compact body, the condition is termed as _____ . *(Fill in the blank)*

2. Explain the following : **(any four)**

2×4=8

- (a) Importance of plant anatomy in forensic investigation
- (b) Cyathium inflorescence
- (c) Difference between Tunica-carpus theory and Histogen theory
- (d) Heartwood and sapwood
- (e) Structure of circinotropous ovule
- (f) Characteristic features of primitive stamen

3. Answer *any three* of the following :

5×3=15

- (a) Describe the role of anatomy in classification of plants.
- (b) Give a brief account of the epidermal tissue system and epidermal outgrowths.
- (c) With the help of suitable diagram, write an explanatory note on different types of stomata found in dicot leaves.
- (d) Distinguish between protoxylem and metaxylem.
- (e) Discuss different types of adhesion of stamen with neat diagram. Explain the evolutionary trends in stamen.

3+2=5

- (f) Give an illustrated account of the morphological nature of the carpel.

4. Answer the following questions : 10×3=30

- (a) How would you differentiate between simple and complex tissues? Give an illustrated account of complex tissues with the help of suitable labelled diagrams.

2+8=10

Or

Give a comparative account of the anatomy of dorsiventral and isobilateral leaf. Explain the structure and adaptive anatomical features of xerophytic leaves citing neat and labelled diagram.

4+6=10

- (b) What is cambium? Give an illustrated account of origin, histological structure and function of cambium with the help of diagrammatic sketch.

1+(2+4+2+1)=10

Or

How are meristematic tissues classified on the basis of the position in the plant body? Give a detailed account of the Korper-Kappe theory of root meristem citing neat and labelled diagram.

6+4=10

- (c) What is phyllode theory? Give a detailed account of phyllode theory and explain the significance of the theory.

2+8=10

Or

Give a detailed account of the importance of morphology in classification of angiosperms.