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3 (Sem-3/CBCS) BOT HC 1

2021

(Held in 2022)

BOTANY

(Honours)

Paper : BOT-HC-3016

(Morphology and Anatomy of Angiosperms)

Full Marks : 60

Time : Three hours

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

1. Answer the following as directed : 1×7=7

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

(b) The main constituent of cork cell is

(i) lignin

(ii) cutin

(iii) suberin

(iv) cellulose (Choose the correct one)

Contd.

- (c) Custard apple is an example of
- (i) etaerio of follicles
 - (ii) etaerio of berries
 - (iii) etaerio of drupes
 - (iv) etaerio of achenes
- (Choose the correct one)*

- (d) What is dendrochronology ?
- (e) Name the characteristic inflorescence found in the family Lamiaceae.
- (f) Mention the botanical name of a plant where hypanthium is found.
- (g) Give definition of laticifers.

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

2×4=8

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

3. Answer *any three* of the following : $5 \times 3 = 15$

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

(b) Discuss different types of adhesion of stamen with neat diagram. Explain the evolutionary trends in stamen.

$3 + 2 = 5$

(c) Distinguish between protoxylem and metaxylem.

(d) With the help of suitable diagram, write an explanatory note on different types of stomata found in dicot leaves.

(e) Give a brief account of the epidermal tissue system and epidermal outgrowths.

(f) Describe the role of anatomy in classification of plants.

4. Answer the following questions : $10 \times 3 = 30$

(a) 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. 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) 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