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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 : $1 \times 7 = 7$

(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
- etaerio of follicles
 - etaerio of berries
 - etaerio of drupes
 - 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)** $2 \times 4 = 8$

- Characteristic features of primitive stamen
- Structure of circumscissile ovule
- Heartwood and sapwood
- Difference between Tunica-carpus theory and Histogen theory
- Cyathium inflorescence
- Importance of plant anatomy in forensic investigation

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

- Give an illustrated account of the morphological nature of the carpel. $5 \times 3 = 15$
- Discuss different types of adhesion of stamen with neat diagram. Explain the evolutionary trends in stamen. $3 + 2 = 5$
- Distinguish between protoxylem and metaxylem.
- With the help of suitable diagram, write an explanatory note on different types of stomata found in dicot leaves.
- Give a brief account of the epidermal tissue system and epidermal outgrowths.
- Describe the role of anatomy in classification of plants.

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

- 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.

$$4+6=10$$