Total number of printed pages–4

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-corpus theory and Histogen theory

(e) Cyathium inflorescence

(f) Importance of plant anatomy in forensic investigation

3. Answer ***any three*** of the following : 5×3=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 : 10×3=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
