This question paper contains **4** printed pages]

Roll No. | | | | | | | | | | |

S. No. of Question Paper : **2040**

Unique Paper Code : **32161301** **GC-3**

Name of the Paper : **Core Course V : Anatomy of Angiosperms**

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

Semester : **III**

Duration : **3 Hours** Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Question No. **1** is compulsory and attempt *five* questions in all.

Draw well labelled diagrams wherever required and

attempt all parts of the question together.

1. (*a*) Define any *five* of the following : 5×2=10

(*i*) Quiescent centre

(*ii*) Apotracheal Parenchyma

(*iii*) Calyptrogen

(*iv*) Tyloses

(*v*) Plasmodesmata

(*vi*) Trichoblast

(*vii*) Abscission zone.

P.T.O.

(*b*) Fill in the blank (any *five*) : 5×1=5

(*i*) Stone cell is the common name for ..... sclereid.

(*ii*) ..... in grasses help in rolling of leaves.

(*iii*) Raphides are chemically composed of ..... .

(*iv*) ..... cell divisions are characteristic of tunica layers.

(*v*) Meristem that develops from the permanent tissues that have already undergone differentiation is known as ..... .

(*vi*) The epidermal cells bordering the guard cells are called ..... .

(*vii*) In the endodermal cells certain thickening of suberin present in the form of bands are called ..... .

2. Write short notes on the following (any *three*) : 3×5=15

(*i*) Kranz Anatomy

(*ii*) Applications of plant anatomy in plant systematics

(*iii*) Wall ingrowths and transfer cells

(*iv*) Dendrochronology

(*v*) Reaction wood.

3. Answer the following : 3×5=15

(*i*) Explain the structure and function of phellogen. What is Rhytidome ?

(*ii*) Describe the structure and function of tracheary elements.

(*iii*) Discuss in detail the seasonal activity of cambium.

4. Differentiate between (any *five*) : 5×3=15

(*i*) Articulated and non-articulated laticifers

(*ii*) Adcrustation and Incrustation

(*iii*) Schizogenous and lysigenous cavities

(*iv*) Ring porous and diffuse porous wood

(*v*) Compression and Tension wood

(*vi*) Cork cambium and Vascular cambium

(*vii*) Collenchyma and Sclerenchyma.

5. Draw well labelled diagrams of (any *three*) : 5×3=15

(*i*) T.S of stem of *Helianthus*

(*ii*) V.S. of leaf through Hydathode

(*iii*) V.S. of a monocotyledonous leaf

(*iv*) T.S. of a dicotyledonous root.

6. Attempt any *two* of the following : 2×7.5=15

(*i*) Trace the sequence of changes that are involved in the cytodifferentiation of sieve elements.

(*ii*) Describe the secondary growth in a dicotyledonous stem.

(*iii*) Give a detailed account of the structure and function of trichomes in angiosperms with suitable examples.

7. Answer any *two* of the following : 2×7.5=15

(*i*) Describe the various theories of root apex organization.

(*ii*) Give a detailed account of the anatomical adaptations in leaf and stem of aquatic plants with suitable examples.

(*iii*) What is a pit ? Discuss the structure and function of various types of pits.