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

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

S. No. of Question Paper : **1432**

Unique Paper Code : **2161302** **F-7**

Name of the Paper : **Morphology and Anatomy of Angiosperms**

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

Semester : III

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

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

Attempt *five* questions in all, including Q. No. **1** which is compulsory.

All questions carry equal marks.

Attempt *all* parts of a question together.

Draw well-labelled diagrams wherever necessary.

1. (*a*) Fill in the blanks : 5×1=5

(*i*) The most important incrusting substance is ..... .

(*ii*) The three constituents of periderm are ....., ... and ..... .

(*iii*) A type of stele in which vascular bundles are arranged in a ring ..... .

(*iv*) ..... is an unbranched β - 3, 3-glucan.

(*v*) ..... sclereids are found in the thalamus of *Pyrus*.

P.T.O.

(*b*) Give *one* word answer : 5×1=5

(*i*) Vascular bundles with phloem on either side of the xylem.

(*ii*) Vascular bundles in the pith region.

(*iii*) A connection between vascular tissue of the host and that of *Cuscuta*.

(*iv*) A plastid devoid of pigment.

(*v*) The apoplasmic transport in roots is blocked by a structure present in endodermis.

(*c*) Match the following : 5×1=5

(*a*) Bulliform cells	(*i*) Periderm
(*b*) Quiescent centre	(*ii*) *Zea mays*
(*c*) Pericycle	(*iii*) Root
(*d*) Astrosclereids	(*iv*) *Nymphaea*
(*e*) Phellogen	(*v*) Lateral roots.

2. Write short notes on any *five* of the following : 5×3=15

(*a*) Role of plant anatomy in forensics

(*b*) Graminacious stomata

(*c*) Hydathodes

(*d*) Kranz anatomy

(*e*) Plasmodesmata

(*f*) Lenticels.

3. (*a*) Discuss the various theories of root apex organization in Angiosperms. 6

(*b*) What is unusual cambial activity ? Describe with reference to the old stem of any *one* of the genus : *Bignonia Aristolochia*. 6

(*c*) What are tyloses ? Mention their functions. 3

4. Differentiate between any *five* of the following : 5×3=15

(*a*) Articulated and non-articulated laticifers.

(*b*) Leaf structure of C_3 and C_4 plants.

(*c*) Ring porous and diffuse porous wood.

(*d*) Companion cells and sieve tubes.

(*e*) Cork cambium and vascular cambium.

(*f*) Dorsiventral and isobilateral leaf.

5. (*a*) What do you understand by the seasonal activity of cambium ? 5

(*b*) Trace the development of a lateral root. 5

(*c*) Describe the structure and function of primary thickening meristem. 5

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

(*a*) T.S. of lenticel

(*b*) V.S. of *Nerium* leaf

(*c*) T.S. of *Casuarina* stem

(*d*) T.S. of Lithocyst.

7. (*a*) Describe the cytodifferentiation of sieve tube member from a meristematic cell with suitable diagrams. 6

(*b*) Describe anatomical adaptations of hydrophytes with suitable examples. 6

(*c*) Sieve elements and companion cells have close functional relationship. Explain. 3