This question paper contains 4+2 printed pages]

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

S. No. of Question Paper : **37**

Unique Paper Code : **32161501** **I**

Name of the Paper : **Reproductive Biology of Angiosperms**

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

Semester : **V**

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

Question No. **1** which is compulsory.

All the parts of a question must be attempted together.

Draw well-labelled diagrams and

write botanical names wherever necessary.

1. (A) Fill in the blanks : 10×0.5=5

(*i*) Egg cell with filiform apparatus is seen in .....

P.T.O.

(*ii*) ..... scientist gave Fluorochromatic reaction as pollen viability test.

(*iii*) 'An Introduction to Embryology of Angiosperms' was authored by ..... .

(*iv*) Persistent middle layers are seen in ..... .

(*v*) Composite endosperm is a family character of ..... .

(*vi*) Circinotropous ovule is seen in ..... .

(*vii*) Rejection reaction occurs in style of ..... type of self-incompatibilty.

(*viii*) Seed dispersal by wind is known as ..... .

(*ix*) ..... type of embryo sac does not have antipodals.

(*x*) A hydrophilic substance that forms the pollen coat material is ..... .

(B) Define any *five* : 5×1=5

(*i*) Stomium

(*ii*) Pollinium

(*iii*) Geitonogamy

(*iv*) Herkogamy

(*v*) Self-incompatibility

(*vi*) Suspensor.

(C) Find the odd one out (with reason) from each group of terms : 5×1=5

(*i*) Egg cell, polar nucleus, synergid, antipodal

(*ii*) Pollenkitt, pectocellulose, tryphine, orbicules

(*iii*) Operculum, aril, endothelium, caruncle

(*iv*) Syngamy, porogamy, chalazogamy, mesogamy

(*v*) Calcium, boron, callose, lignin.

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

(*i*) Endothelium

(*ii*) Reduced ovules

(*iii*) Pseudomonad

(*iv*) Pollen embryo sacs

(*v*) Amoeboid tapetum

(*vi*) Intraovarian pollination.

P.T.O.

3. (A) Callose plays an important role in microsporogenesis. Discuss. 5

(B) Discuss the significance of seed dispersal. Add a note on zoochory. 5

(C) Explain Polygonum type of embryo sac development with iIllustrations. 5

4. Discuss :

(A) The role of mentor pollen in overcoming self-incompatibility. 5

(B) The role of synergids in fertilization. 5

(C) Tapetum is involved in proper development of pollen grains. 5

5. (A) Give the detailed organization of germ unit in the pollen tube. 5

(B) Define polyembryony and write a note on Nucellar Polyembryony. 5

(C) Discuss the embryo development in *Paeonia.* 5

6. (A) Define apomixis and comment on gametophytic apomixis. 5

(B) Write an explanatory note on : 5

FGU *or* Pollen storage.

(C) Differentiate between any *two* of the following : 2×2.5=5

(*i*) Turn pipe mechanism and Fly trap mechanism

(*ii*) Gametic transformation and pollen tube pathway transformation

(*iii*) Vegetative cell and Generative cell.

7. (A) Draw neat well labelled diagrams of any *two* of the following : 2×2.5=5

(*i*) L.S. bitegmic, Crassinucellate, Anatropous ovule with Oenothera type of embryo sac

(*ii*) T.S. Tetrasporangiate anther showing locules with spore mother cells

(*iii*) Structure of pollen tube tip.

P.T.O.

(B) Associate the following structures with family/genus (any *five*) : 5×1=5

(*i*) Mamelon

(*ii*) Polysiphonous pollen grains

(*iii*) Aril

(*iv*) Massulae

(*v*) Nucellar beak

(*vi*) Pseudoembryo sac.

(C) Briefly describe different types of endosperms with examples. 5