[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1093 **I**

Unique Paper Code : 2162013502

Name of the Paper : Reproductive Biology of Angiosperms

Name of the Course : **Botany**

Semester : V

Duration : 2 Hours Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **four questions** in all, including Question Number 1 which is compulsory.
3. All parts of a question must be answered together.
4. All questions carry equal marks.
5. Draw well-labelled diagrams and write the botanical names wherever necessary.

P.T.O.

1. (a) Give significant contributions of the following (**Any two**): (2×2.5=5)

(i) Jensen

(ii) S.G. Nawaschin

(iii) P. Maheshwari

(b) Name the species/ plant in which the following occurs: (1×5=5)

(a) Largest seed

(b) Pseudo embryo sac

(c) Smallest angiosperm flower

(d) Cleistogamous flowers

(e) Tristyly

(c) Fill in the blanks: (1×5=5)

(i) Pseudomonads are characteristic of family _____.

(ii) In Litchi, the edible part is _____.

(iii) Ruminate endosperm is found in _____.

(iv) _____is responsible for crowding effect in pollen germination.

(v) Reproductive barriers can be overcome by intra-ovarian pollination in members of the family _____.

2. Differentiate between the following (**Any three**): 5×3=15

(i) Homomorphic and Heteromorphic Incompatibility

(ii) Amoeboid and Secretory tapetum

(iii) Monosporic and Tetrasporic embryo sac development

(iv) Endothecium and endothelium

(v) Ornithophily and Anemophily

3. Attempt **any two** of the following: (7.5×2=15)

(a) Elaborate upon the significance of reproductive biology in the conservation of plants.

(b) How is a seed designated as a storage organ? Explain with relevant examples.

P.T.O.

(c) Short-distance transport occurs in various embryological tissues. Comment.

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

(i) Female Germ Unit

(ii) NPC system

(iii) Polyembryony

(iv) Endosperm haustoria

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

(i) T.S. of a mature anther

(ii) Bitegmic, anatropous ovule with *Fritillaria* type embryo sac

(iii) Steps involved in the entry of pollen tube in the embryo sac

(iv) Ultrastructure of Egg Cell

6. (a) Trace the development of a typical dicot embryo and elaborate on embryo patterning. (8)

(b) What is a Male Germ Unit, and why is it important in double fertilization? (7)