(ii) T.S. of a tetrasporangiate anther showing pollen tetrad stage

(b) "Endosperm provides nutrition to embryo". Elaborate the statement with suitable examples. (5)

(c) Comment on Male Germ Unit and its structure with examples. (5)

[This question paper contains 8 printed pages.

Your Roll No.....

Sr. No. of Question Paper : 1004 **C**

Unique Paper Code : 32161501

Name of the Paper : Reproductive Biology of Angiosperms

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

Semester : V

Duration : 3 Hours Maximum Marks : 75

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** 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 name wherever necessary.

P.T.O.

1. (a) State whether the following statements are true or false. (1×5=5)

(i) Tapetum forms the outermost anther wall layers that surround the sporogenous tissue.

(ii) Monosporic embryo sac is 7 celled and 8 nucleate structure.

(iii) Cheiropterophily is the pollination by insects.

(iv) S.G Nawaschin discovered the double fertilization.

(v) G.B. Amici has been given the credit of revealing the role of pollen in fertilization.

(c) Elaborate on the importance of apomixis in crop improvement. (5)

6. (a) Describe the structure of mature Polygonum type of embryo sac with the help of labeled diagram. (5)

(b) Define self-incompatibility among plants and discuss the factors which are involved in establishing it, List any five methods which can overcome self-incompatibility among flowering plants and describe any one of them. (5)

(c) Discuss with diagrams any two methods of floral mechanisms that favor cross pollination. (5)

7. (a) Draw well-labelled diagram of the following: (2×2.5=5)

(i) L.S. of anatropous, bitegmic, crassinucellate ovule showing Oenothera type of embryo sac

(v) Simultaneous and successive wall formation

(vi) Endothelium and endothecium

4. Briefly explain the following:

(a) Give the biological significance of seed dispersal phenomena. (5)

(b) List the various causes of polyembryony and explain any two types. (5)

(c) List five types of embryogeny and explain the Onagrad type. (5)

5. Answer the following

(a) Write briefly on transformation of egg cell through pollen tube pathway method. (5)

(b) Role of tapetum in pollen development. (5)

(b) Fill in the blanks (1×5=5)

(i) Pollination that takes place with the help of beetles is called _____

(ii) The expulsion of seed brought about by the turgidity is called _____

(iii) The persistent nucellus is called_____

(iv) _____demonstrated the possibility of raising large numbers of haploids from pollen grains of *Datura innoxia*.

(v) The megasporangium together with integuments is called _____

P.T.O.

(c) Match the following: (0.50×10=5)

Column A	Column B
(a) *J. Heslop-Harrison*	(i) Ultrastructure of egg apparatus
(b) *Sasa paniculata*	(ii) Five Types of microspore tetrads
(c) *Aristolochia elegans*	(iii) Highest number of antipodals
(d) *Quinchamalium chilense*	(iv) Pollen wall proteins
(e) *Ophrys speculum*	(v) Endothelial thickenings
(f) α *-cellulose*	(vi) Pollen viability
(g) *2,3,5 triphenyl tetrazolium chloride*	(vii) Finger like projections in egg cell
(h) *Plumbago zeylanica*	(viii) Pseudocopulation
(i) *Fritillaria*	(ix) Synergid and antipodal haustoria both present
(j) *W.A. Jensen*	(x) Bambacioni effect

2. Write short note on any five of the following: (3×5=15)

(i) Importance of synergids

(ii) Parthenocarpy

(iii) Integumentary tapetum

(iv) Hellobial endosperm

(v) Nemec phenomenon

(vi) Pollen Wall

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

(i) Wet stigma and dry stigma

(ii) Composite and Ruminate endosperm

(iii) Egg cell and Synergids

(iv) 2-celled and 3-celled pollens

P.T.O.