

**2023**

**Time - 3 hours**

**Full Marks - 60**

*Answer all groups as per instructions.  
Figures in the right hand margin indicate marks.  
Draw labelled diagrams wherever necessary.*

**GROUP - A**

1. Answer all questions and fill in the blanks as required. [1 × 8]
- (a) Which two layers of anther wall contain large cells ?
  - (b) Pollen grain is also known as \_\_\_\_\_.
  - (c) Generative nucleus divides forming \_\_\_\_\_.
  - (d) Which scientist distinguished between bisporic and tetrasporic embryo sac ?
  - (e) \_\_\_\_\_ is the transfer of pollen grains from the anther to the stigma of anther flower of the same plant.
  - (f) Genetic self incompatibility tends to increase \_\_\_\_\_.
  - (g) Endosperm is meant for \_\_\_\_\_.
  - (h) Formation of individuals without fusion is called \_\_\_\_\_.

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**GROUP – B**

2. Answer any eight of the following questions within two to three sentences each. [1½ × 8

- (a) What is callose ?
- (b) Define massulae.
- (c) What is the role of pseudomonads ?
- (d) What is aril ?
- (e) Define abturator.
- (f) Define fertilization.
- (g) What is bud pollination ?
- (h) Define seed.
- (i) What is polyembryony ?
- (j) Write two causes of apomixis.

**GROUP – C**

3. Write notes on any eight of the following within 75 words each. [2 × 8

- (a) Structure of anther wall
- (b) MGU

- (c) Caruncle and hypostase
- (d) Types of ovule
- (e) Pollen viability
- (f) Path of pollen tube in pistil
- (g) Intraovarian pollination
- (h) Embryo development
- (i) Modification of stigma surface
- (j) Applications of apomixis

**GROUP – D**

*Answer all questions within 500 words each.*

4. Describe the microsporogenesis and its significance. [6]

OR

Describe a brief account of palynology and scope.

5. Describe the development of female gametophyte. [6]

OR

Describe the special structures found in ovules.

6. Discuss the types and significance of pollination. [6]

[ 4 ]

OR

Describe the various methods to overcome self incompatibility.

7. Describe the pattern of development of dicot and monocot embryo. [6]

OR

Discuss the classification, causes and applications of polyembryony.