

Total number of printed pages-7

**63/1 (SEM-5) CC11/BOTHC5116**

**2023**

**BOTANY**

Paper : BOTHC5116

**(Reproductive Biology of Angiosperm)**

Full Marks : 60

Pass Marks : 24

Time : Three hours

**The figures in the margin indicate full marks for the questions.**

1. Choose the correct answer : **(any five)**  
1×5=5
- (a) The embryo is originated from
- (i) Pre-existing cell of pollen tube
  - (ii) Fertilized egg
  - (iii) Endosperm
  - (iv) Pre-existing cell in the embryo sac

Contd.

(b) The coconut water from tender coconut represents

- (i) Fleshy mesocarp
- (ii) Free nuclear proembryo
- (iii) Free nuclear endosperm
- (iv) Endocarp

(c) Who is the father of Indian angiosperm embryology ?

- (i) B. M. Johri
- (ii) Dr. Birbal Sahni
- (iii) Tikam Singh Rana
- (iv) Panchanan Maheshwari

(d) Gene responsible for flowering is

- (i) 'ABC' gene
- (ii) Oncogene
- (iii) Z-DNA
- (iv) Polygene

(e) 'Pollen viability' means

- (i) Ability of germination
- (ii) Capacity of pollination
- (iii) Ability of pollen to perform its function
- (iv) Long lived pollen

(f) '*Zea mays*' is pollinated by

- (i) Water
- (ii) Wind
- (iii) Bird
- (iv) Animals

(g) Which phase of the life cycle is dominant in the individuals of angiosperms ?

- (i) Gametophyte
- (ii) Development phase
- (iii) Growth phase
- (iv) Sporophyte

(h) Sporogenesis refers to the production of

(i) Microspore

(ii) Megaspore

(iii) Both microspore and megaspore

(iv) Spore

(i) What would be the number of chromosomes of the endosperm of a plant with 16 chromosomes in its root tip cells?

(i) 21

(ii) 42

(iii) 32

(iv) 24

(j) Obturator is an outgrowth of

(i) Integument

(ii) Placenta

(iii) Endosperm

(iv) Funicle

2. Answer **any five** of the following questions :

2×5=10

(a) What is monoecious plant? Cite *one* example.

(b) State *two* functions of endosperm.

(c) Write the functions of suspensor.

(d) Write *two* advantages of cross-pollination.

(e) How are angiospermic seeds formed?

(f) Mention the significance of antipodal cells.

(g) What do you mean by 'melissopalynology'?

3. Answer **any five** of the following questions :

5×5=25

(a) Write a note on development of endosperm.

- (b) Distinguish between anemophilous and hydrophilous flowers.
- (c) Explain the mechanism of self-incompatibility.
- (d) Discuss the structure of monosporic type of embryo sac with neat diagram.
- (e) Write a short note on contribution of P. Maheshwari on plant embryology.
- (f) Describe the structure and functions of pollen wall.
- (g) Write a short note on in vitro pollination.
- (h) Distinguish between Pseudomonads and polyads.
- (i) Differentiate between polyembryony and apomixis.

4. Answer **any two** of the following questions :

10×2=20

- (a) "Flower is a modified determinate shoot." Justify the statement.

- (b) Discuss the merits and demerits of NPS system of classification of pollen grains.
- (c) What is self-pollination? Write a note on advantages and disadvantages of self-pollination. 2+8=10
- (d) Write a detailed note on the development of embryo in Paeonia.