

Class 12 Biology Practice Quiz

Chapter: Sexual Reproduction in Flowering Plants

Difficulty: Medium–Hard | Total Questions: 20

Part A – Multiple Choice Questions (8)

1. Which layer of the anther nourishes the developing microspores and later degenerates?

- A. Epidermis
- B. Endothecium
- C. Tapetum
- D. Middle layers

2. During microsporogenesis, one pollen mother cell ultimately produces:

- A. Two diploid pollen grains
- B. Four haploid microspores
- C. Four diploid pollen grains
- D. Two haploid microspores

3. Which statement about a mature pollen grain is correct?

- A. It contains only one vegetative cell.
- B. It always has three cells when shed.
- C. It consists of one vegetative cell and one generative cell in most angiosperms.
- D. It contains two synergids.

4. Which type of pollination is genetically equivalent to self-pollination but functionally resembles cross-pollination?

- A. Autogamy
- B. Geitonogamy
- C. Xenogamy
- D. Cleistogamy

5. In a mature embryo sac, the two polar nuclei are located in the:

- A. Egg cell
- B. Synergids
- C. Central cell
- D. Antipodals

6. Triple fusion results in the formation of:

- A. Zygote
- B. Embryo
- C. Primary Endosperm Nucleus (PEN)
- D. Endosperm

7. During artificial hybridization, bagging is performed mainly to:

- A. Remove immature anthers
- B. Increase pollen viability
- C. Prevent contamination by unwanted pollen
- D. Promote self-pollination

8. Which of the following is an example of a false fruit according to the notes?

- A. Mango
- B. Guava
- C. Apple
- D. Groundnut

Part B – True or False (6)

9. Sporopollenin is absent at the germ pores of the pollen grain.
10. Only one megaspore usually remains functional after meiosis during megasporogenesis.
11. Cleistogamous flowers always require insects for pollination.
12. Double fertilization is a characteristic feature of angiosperms.
13. Endosperm development generally starts before embryo development.
14. Apomixis produces seeds without fertilization.

Part C – Short Answer Questions (6)

15. Differentiate between microsporogenesis and microgametogenesis based on: starting cell, process involved, and final product.
16. Explain why xenogamy is considered evolutionarily more advantageous than autogamy.
17. Describe the sequence of events involved in double fertilization, mentioning the role of each male gamete.
18. Mention any three adaptations of wind-pollinated flowers and explain how each adaptation helps in pollination.
19. Explain the purpose of emasculation and bagging during artificial hybridization. Why are both steps essential?
20. The mature embryo sac is called 7-celled but 8-nucleate. Explain this statement with the arrangement of its cells.

Answer Key

Multiple Choice

Question	Answer
1	C
2	B
3	C
4	B
5	C
6	C
7	C
8	C

True / False

Question	Answer
9	True
10	True
11	False
12	True
13	True
14	True

Suggested Answers – Short Answer Questions

15. Microsporogenesis vs. Microgametogenesis

- Microsporogenesis: Pollen mother cell (PMC) undergoes meiosis to produce four haploid microspores.
- Microgametogenesis: Microspore undergoes mitosis to form a mature male gametophyte — a vegetative cell and generative cell, which later forms two male gametes.

16. Why xenogamy is more advantageous than autogamy

Xenogamy involves pollen transfer between different plants of the same species, increasing genetic variation, reducing inbreeding, improving adaptability, and enhancing evolutionary success.

17. Sequence of events in double fertilization

- Pollen tube enters the embryo sac through the micropyle.
- One male gamete fuses with the egg cell to form the zygote (syngamy).
- The second male gamete fuses with the two polar nuclei to form the Primary Endosperm Nucleus (triple fusion).
- Together, these events constitute double fertilization.

18. Three adaptations of wind-pollinated flowers (any three)

- Light, dry, non-sticky pollen grains for easy wind dispersal.
- Long exposed stamens for effective pollen release.
- Large feathery stigma to trap airborne pollen.
- Flowers are small, inconspicuous, and nectarless since pollinators are not required.

19. Purpose of emasculation and bagging

- Emasculation: Removal of immature anthers to prevent self-pollination.
- Bagging: Covering the flower after emasculation to prevent contamination from unwanted pollen.
- Both steps ensure that only the desired pollen is used for controlled hybridization.

20. Why the embryo sac is 7-celled but 8-nucleate

The mature embryo sac has 7 cells:

- 1 egg cell
- 2 synergids
- 3 antipodal cells
- 1 central cell

The central cell contains two polar nuclei, making the total 8 nuclei. Therefore, it is described as 7-celled and 8-nucleate.