

Class 12 Biology Practice Quiz

Chapter: Sexual Reproduction in Flowering Plants

Difficulty: Medium–Hard | Total Questions: 20

Part A – Multiple Choice Questions (8)

- 1. The tapetum is considered an important layer of the anther because it:**
 - A. Produces pollen tubes
 - B. Nourishes developing pollen grains
 - C. Forms the ovule wall
 - D. Produces nectar
- 2. During microsporogenesis, each microspore mother cell undergoes:**
 - A. Mitosis to form four pollen grains
 - B. Meiosis to form four haploid microspores
 - C. Mitosis followed by meiosis
 - D. Fertilisation
- 3. Which statement correctly describes a mature angiosperm embryo sac?**
 - A. 7-celled, 8-nucleate
 - B. 8-celled, 8-nucleate
 - C. 7-celled, 7-nucleate
 - D. 8-celled, 7-nucleate
- 4. Which type of pollination is most likely to promote genetic variation?**
 - A. Autogamy
 - B. Geitonogamy
 - C. Xenogamy
 - D. Cleistogamy
- 5. Double fertilisation results in the formation of:**
 - A. Zygote and ovule
 - B. Embryo and seed coat
 - C. Zygote and primary endosperm nucleus
 - D. Fruit and seed coat
- 6. Which floral adaptation is characteristic of wind-pollinated flowers?**
 - A. Bright petals and fragrance
 - B. Sticky pollen grains
 - C. Exposed stamens with abundant, light pollen
 - D. Nectar-rich flowers
- 7. Why is emasculation performed in artificial hybridisation?**
 - A. To promote self-pollination
 - B. To prevent contamination by unwanted pollen

- C. To increase nectar production
- D. To stimulate pollen germination

8. Persistent nucellus remaining in some mature seeds is called:

- A. Endosperm
- B. Perisperm
- C. Integument
- D. Chalaza

Part B – True or False (6)

9. All flowering plants are pollinated by insects.
10. The egg apparatus consists of one egg cell and two synergids.
11. Geitonogamy is genetically equivalent to cross-pollination between different plants.
12. Endosperm development generally begins before embryo development.
13. Cleistogamous flowers ensure seed formation even without pollinating agents.
14. Pollen grains can remain viable for the same duration in all flowering plant species.

Part C – Short Answer Questions (6)

15. Explain why the embryo sac is described as 7-celled but 8-nucleate.
16. Differentiate between microsporogenesis and megasporogenesis based on: site of occurrence, cell undergoing meiosis, and product formed.
17. Why is xenogamy considered the most advantageous type of pollination from an evolutionary perspective?
18. Describe the sequence of events involved in double fertilisation.
19. Explain any three adaptations of insect-pollinated flowers that increase the chances of successful pollination.
20. During artificial hybridisation, why are bagging and emasculation both necessary? Explain the role of each.

Answer Key

Q. No.	Answer
1	B
2	B
3	A
4	C
5	C
6	C
7	B
8	B
9	False
10	True
11	False (genetically similar to self-pollination — pollen comes from the same plant)
12	True
13	True
14	False

Suggested Answers – Short Answer Questions

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

The mature embryo sac contains 7 cells: one egg cell, two synergids, and three antipodal cells. The central cell contains two polar nuclei, making the total 8 nuclei.

16. Microsporogenesis vs. Megasporogenesis

- **Microsporogenesis:** Occurs in the anther; microspore mother cells undergo meiosis to produce haploid microspores.
- **Megasporogenesis:** Occurs in the ovule; the megaspore mother cell undergoes meiosis to produce four megaspores, of which usually one remains functional.

17. Why xenogamy is evolutionarily advantageous

Xenogamy transfers pollen between different plants of the same species, introducing genetic recombination and increasing variation, adaptability, and evolutionary fitness.

18. Sequence of events in double fertilisation

- Pollen tube enters the embryo sac.
- One male gamete fuses with the egg cell (syngamy) to form the zygote.
- The second male gamete fuses with the two polar nuclei (triple fusion) to form the primary endosperm nucleus.
- Together, these two events constitute double fertilisation.

19. Three adaptations of insect-pollinated flowers (any three)

- Brightly coloured petals.
- Fragrance.
- Nectar reward.
- Sticky pollen grains.
- Sticky stigma.
- Large conspicuous flowers or inflorescences.

20. Why bagging and emasculation are both necessary

- **Emasculation:** Removal of anthers before pollen release, to prevent self-pollination.
- **Bagging:** Covering the flower after emasculation, to prevent contamination by unwanted pollen until the desired pollen is applied.