

Sexual Reproduction in Flowering Plants — CBSE Pattern Test 2

Class 12 Biology · 90 minutes · 40 marks · Sections A–D with answer key · Narayan Gurukul Academy

Test 2 — CBSE Pattern (90 minutes, 40 marks)

Class 12 Biology · Sexual Reproduction in Flowering Plants · Narayan Gurukul Academy (ClassApna)

General Instructions: (1) This paper has four sections — Section A (1×10), Section B (2×4), Section C (3×4) and Section D (5×2) — total 40 marks. Time allowed: 90 minutes.
(2) All questions are compulsory. No overall choice is given; internal choice, where allowed, is clearly marked.
(3) For MCQ questions choose the single correct option; for VSA answers write a single line.
(4) Take $g = 10 \text{ m/s}^2$. All symbols carry their usual meaning. Use of a calculator is not permitted.

Section A — MCQ & VSA ($10 \times 1 = 10$ marks)

- The innermost layer of the microsporangium is
 - tapetum
 - epidermis
 - endothecium
 - middle layer
- The mature pollen grain is the
 - male gametophyte
 - female gametophyte
 - sporophyte
 - gamete
- The number of cells in a mature embryo sac is
 - 7
 - 4
 - 8
 - 6
- Water pollination is called
 - hydrophily
 - anemophily
 - entomophily
 - ornithophily
- The zygote is
 - diploid
 - triploid
 - haploid
 - tetraploid
- The seed coat develops from the
 - integuments
 - nucellus
 - pericarp
 - endosperm
- More than one embryo in a seed is
 - polyembryony

- (B) apomixis
 - (C) parthenocarpy
 - (D) apospory
8. Fusion of male and female gametes is called
- (A) syngamy
 - (B) triple fusion
 - (C) pollination
 - (D) germination
9. What is apomixis?
10. What is parthenocarpy?

Section B — Short Answer I ($4 \times 2 = 8$ marks)

11. How many nuclei are in a mature embryo sac?
12. Name one abiotic pollinating agent.
13. What is the ploidy of the endosperm?
14. Name one non-albuminous seed.

Section C — Short Answer II ($4 \times 3 = 12$ marks)

15. Mention two strategies evolved to prevent self-pollination.
16. Distinguish between albuminous and non-albuminous seeds with examples.
17. State two advantages of cross-pollination.
18. State two advantages of apomixis in agriculture.

Section D — Long Answers ($2 \times 5 = 10$ marks)

19. (a) Describe the structure of an ovule. (b) Explain megasporogenesis.
20. (a) Describe the post-fertilisation changes in the ovule and ovary. (b) What is apomixis? Discuss its importance in plant breeding.

Answer Key (Marking Scheme)

- Q1 — (A) tapetum. Q2 — (A) male gametophyte. Q3 — (A) 7. Q4 — (A) hydrophily. Q5 — (A) diploid. Q6 — (A) integuments. Q7 — (A) polyembryony. Q8 — (A) syngamy.
- Q9 — Apomixis is the production of seeds without fertilisation.
- Q10 — Parthenocarpy is the development of fruit without fertilisation.
- Q11 — Eight nuclei (in seven cells).
- Q12 — Wind (or water).
- Q13 — Triploid ($3n$).
- Q14 — Pea (or groundnut).
- Q15 — Dichogamy and self-incompatibility (or herkogamy).
- Q16 — Albuminous seeds retain endosperm (wheat); non-albuminous seeds use it up (pea).
- Q17 — Genetic variation and better adaptability (hybrid vigour).
- Q18 — Uniform progeny and preservation of hybrid vigour.

Q19 — (a) Funicle, hilum, integuments, micropyle, chalaza, nucellus, embryo sac. (b) Megaspore mother cell → meiosis → 4 megaspores → functional megaspore → embryo sac.

Q20 — (a) Ovule → seed, integuments → seed coat, ovary → fruit, zygote → embryo. (b) Apomixis — seeds without fertilisation; preserves hybrid characters, so hybrid seed can be maintained.