

Anatomy of Flowering Plants — CBSE Pattern Test 1

Class 11 Biology · 90 minutes · 40 marks · Sections A–D with answer key · Narayan Gurukul Academy

Test 1 — CBSE Pattern (90 minutes, 40 marks)

Class 11 Biology · Anatomy of 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)

1. Meristematic tissues are made of cells that are

- (A) actively dividing
- (B) dead
- (C) fully differentiated
- (D) always lignified

2. Apical meristem is responsible for

- (A) primary growth
- (B) secondary growth
- (C) wound healing
- (D) thickening

3. Parenchyma cells are

- (A) living and thin-walled
- (B) dead
- (C) thick-walled
- (D) lignified

4. Collenchyma provides

- (A) mechanical support to growing parts
- (B) storage
- (C) conduction
- (D) protection

5. Xylem conducts

- (A) water and minerals
- (B) food
- (C) proteins only
- (D) gases

6. The conducting elements of phloem are

- (A) sieve tubes
- (B) tracheids
- (C) vessels
- (D) xylem fibres

7. In a dicot root, the vascular bundles are

- (A) radial

- (B) conjoint
 - (C) bicollateral
 - (D) concentric
8. In a dicot stem, vascular bundles are arranged in
- (A) a ring
 - (B) scattered manner
 - (C) a single file
 - (D) radial rows
9. What is a meristem?
10. What is parenchyma?

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

11. Name the four elements of xylem.
12. What are radial vascular bundles?
13. What is a dorsiventral leaf?
14. What causes secondary growth?

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

15. Distinguish between apical and lateral meristems.
16. Distinguish between xylem and phloem.
17. Distinguish between dicot and monocot roots.
18. Distinguish between dicot and monocot stems.

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

19. (a) Describe the structure and functions of simple permanent tissues. (b) Describe the internal structure of a dicot root.
20. (a) Describe the internal structure of a dorsiventral leaf. (b) Describe the process of secondary growth in a dicot stem.

Answer Key (Marking Scheme)

- Q1 — (A) actively dividing. Q2 — (A) primary growth. Q3 — (A) living and thin-walled. Q4 — (A) mechanical support to growing parts. Q5 — (A) water and minerals. Q6 — (A) sieve tubes. Q7 — (A) radial. Q8 — (A) a ring.
- Q9 — A meristem is a region of actively dividing, undifferentiated cells.
- Q10 — Parenchyma is a living, thin-walled simple permanent tissue.
- Q11 — Tracheids, vessels, xylem parenchyma and xylem fibres.
- Q12 — Vascular bundles in which xylem and phloem lie on different radii.
- Q13 — A leaf with distinct upper and lower surfaces (palisade and spongy mesophyll).
- Q14 — The activity of vascular cambium and cork cambium (lateral meristems).
- Q15 — Apical meristem lies at root/shoot tips and causes primary growth; lateral meristem lies in mature regions and causes secondary growth.

Q16 — Xylem transports water/minerals upward and is mostly dead; phloem transports food both ways and is mostly living.

Q17 — Dicot root has 2–4 radial xylem bundles and a small pith; monocot root has many (polyarch) bundles and a large pith.

Q18 — Dicot stem has vascular bundles in a ring and a distinct pith; monocot stem has scattered bundles and no distinct pith.

Q19 — (a) Parenchyma (living, thin-walled, storage/photosynthesis), collenchyma (corner thickenings, living, flexibility), sclerenchyma (thick lignified, dead, support). (b) Epiblema, cortex, endodermis, pericycle, radial vascular bundles, small pith.

Q20 — (a) Epidermis (upper and lower), mesophyll (palisade + spongy) and vascular bundles. (b) Vascular cambium forms secondary xylem/phloem; cork cambium forms cork/phelloderm; together they increase girth.