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Set 4 – Anatomy of Flowering Plants

1. Assertion (A): Apical meristem is responsible for increase in the length of plants.

Reason (R): Apical meristem is found at root and shoot tips.

- A) Both A and R are true, and R is the correct explanation of A
 - B) Both A and R are true, but R is not the correct explanation
 - C) A is true, R is false
 - D) Both A and R are false
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2. Assertion (A): Lateral meristem causes increase in girth of plant organs.

Reason (R): It lies parallel to the long axis of plant body.

- A) Both A and R are true and R explains A
 - B) Both are true but R doesn't explain A
 - C) A is true but R is false
 - D) A is false but R is true
-

3. The cork cells are impervious to water because of deposition of —

- A) Suberin
 - B) Lignin
 - C) Cutin
 - D) Cellulose
-

4. Which of the following tissues is dead at maturity?

- A) Sclerenchyma
 - B) Parenchyma
 - C) Collenchyma
 - D) Companion cells
-

5. The outermost protective tissue of the root is —

- A) Epiblema
 - B) Pericycle
 - C) Endodermis
 - D) Cortex
-

6. Cork cambium and vascular cambium are examples of —

- A) Lateral meristem
- B) Apical meristem

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- C) Primary meristem
 - D) Permanent tissue
-

7. Assertion (A): Collenchyma provides mechanical strength.

Reason (R): It is lignified and dead.

- A) A true, R false
 - B) Both true
 - C) A false, R true
 - D) Both false
-

8. The plant tissue that allows bending of young stems and leaves without breaking is —

- A) Collenchyma
 - B) Parenchyma
 - C) Sclerenchyma
 - D) Xylem
-

9. The chief water-conducting element in gymnosperms is —

- A) Tracheids
 - B) Vessels
 - C) Phloem
 - D) Parenchyma
-

10. Companion cells are associated with —

- A) Sieve tubes
 - B) Tracheids
 - C) Fibres
 - D) Vessels
-

11. Assertion (A): Phloem transports food from leaves to other parts of the plant.

Reason (R): It conducts only inorganic solutes.

- A) A true, R false
 - B) Both true
 - C) Both false
 - D) A false, R true
-

12. The only living component of xylem is —

- A) Xylem parenchyma
- B) Tracheids

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- C) Vessels
 - D) Fibres
-

13. Assertion (A): Tracheids are primitive elements of xylem.

Reason (R): They are absent in gymnosperms.

- A) A true, R false
 - B) Both true
 - C) A false, R true
 - D) Both false
-

14. In dicot stem, vascular bundles are —

- A) Open and arranged in a ring
 - B) Closed and scattered
 - C) Radial
 - D) Concentric
-

15. In monocot stem, vascular bundles are —

- A) Closed and scattered
 - B) Open and collateral
 - C) Concentric
 - D) Radial
-

16. Assertion (A): Secondary growth is absent in monocots.

Reason (R): Cambium is absent between xylem and phloem.

- A) Both A and R are true, and R explains A
 - B) Both true but R doesn't explain A
 - C) A true, R false
 - D) Both false
-

17. Vascular bundles in roots are —

- A) Radial
 - B) Conjoint
 - C) Collateral
 - D) Bicollateral
-

18. Endodermis differs from pericycle in having —

- A) Casparian strips
- B) Thickened walls

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- C) Lignin
 - D) Starch
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- 19.** Assertion (A): Endodermis acts as a checkpoint for water flow.
Reason (R): Casparian strips are impermeable to water.
- A) Both A and R true and R explains A
 - B) Both true but unrelated
 - C) A true, R false
 - D) Both false
-

- 20.** The pericycle helps in —
- A) Formation of lateral roots
 - B) Photosynthesis
 - C) Absorption
 - D) Transpiration
-

- 21.** The pith is composed of —
- A) Parenchyma
 - B) Collenchyma
 - C) Sclerenchyma
 - D) Xylem
-

- 22.** In dicot stem, the vascular cambium is —
- A) Partly primary and partly secondary
 - B) Entirely primary
 - C) Entirely secondary
 - D) Absent
-

- 23.** Assertion (A): Cork cambium forms periderm.
Reason (R): It cuts secondary xylem and phloem.
- A) A true, R false
 - B) Both true
 - C) A false, R true
 - D) Both false
-

- 24.** The bark includes —
- A) All tissues external to vascular cambium
 - B) Only phloem

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- C) Only cork
 - D) Cortex
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25. Assertion (A): Lenticels are found in woody stems.

Reason (R): They help in gaseous exchange.

- A) Both true, R explains A
 - B) Both true but unrelated
 - C) A true, R false
 - D) Both false
-

26. The term “phellogen” refers to —

- A) Cork cambium
 - B) Cork
 - C) Secondary cortex
 - D) Primary cortex
-

27. Cork is also known as —

- A) Phellem
 - B) Phellogen
 - C) Phelloderm
 - D) Cambium
-

28. Assertion (A): Early wood is lighter in colour.

Reason (R): It is formed during spring when growth is rapid.

- A) Both true, R explains A
 - B) Both true but unrelated
 - C) A true, R false
 - D) Both false
-

29. Assertion (A): Heartwood is darker and harder.

Reason (R): It contains tannins, resins, and oils.

- A) Both true, R explains A
 - B) Both true but unrelated
 - C) A true, R false
 - D) Both false
-

30. The growth rings are indistinct in tropical trees because —

- A) Seasonal variation is absent

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- B) Cambium is absent
 - C) Temperature variation is high
 - D) Growth is continuous
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- 31.** Tyloses are outgrowths of —
- A) Xylem parenchyma into vessels
 - B) Phloem fibres
 - C) Companion cells
 - D) Sieve plates
-

- 32.** Assertion (A): Tyloses help in blocking old vessels.
Reason (R): They arise from phloem parenchyma.
- A) A true, R false
 - B) Both true
 - C) A false, R true
 - D) Both false
-

- 33.** Monocot leaves show —
- A) Parallel venation
 - B) Reticulate venation
 - C) Cross venation
 - D) None
-

- 34.** Dicot leaves show —
- A) Reticulate venation
 - B) Parallel venation
 - C) Cross venation
 - D) None
-

- 35.** Assertion (A): Bundle sheath is present in monocot leaves.
Reason (R): It provides mechanical support to vascular bundles.
- A) Both true, R explains A
 - B) Both true but unrelated
 - C) A true, R false
 - D) Both false
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- 36.** Bulliform cells occur in —
- A) Monocot leaves

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- B) Dicot leaves
 - C) Dicot stems
 - D) Monocot roots
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37. The main function of bulliform cells is —

- A) Rolling and unrolling of leaves
 - B) Food conduction
 - C) Photosynthesis
 - D) Respiration
-

38. Mesophyll tissue in dicot leaf is —

- A) Differentiated into palisade and spongy layers
 - B) Undifferentiated
 - C) Collenchymatous
 - D) Sclerenchymatous
-

39. In monocot leaves, mesophyll is —

- A) Undifferentiated
 - B) Differentiated
 - C) Absent
 - D) Divided
-

40. Assertion (A): Collateral vascular bundles have xylem and phloem on same radius.

Reason (R): They are found in roots.

- A) A true, R false
 - B) Both true
 - C) A false, R true
 - D) Both false
-

41. Assertion (A): Radial vascular bundles are found in roots.

Reason (R): Xylem and phloem lie on different radii.

- A) Both true and R explains A
 - B) Both true but unrelated
 - C) A true, R false
 - D) Both false
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42. The tissue system that covers the outer surface of the plant body is —

- A) Epidermal tissue system

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- B) Ground tissue system
 - C) Vascular tissue system
 - D) Secretory tissue system
-

43. The ground tissue system in leaves is represented by —

- A) Mesophyll
 - B) Cortex
 - C) Pith
 - D) Pericycle
-

44. The function of phloem fibres is —

- A) Mechanical support
 - B) Food conduction
 - C) Water conduction
 - D) Photosynthesis
-

45. The primary xylem is formed from —

- A) Procambium
 - B) Cambium
 - C) Phellogen
 - D) Pericycle
-

46. The middle lamella is mainly composed of —

- A) Calcium pectate
 - B) Cellulose
 - C) Lignin
 - D) Suberin
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47. Assertion (A): Annual rings are absent in tropical regions.

Reason (R): Growth conditions remain uniform throughout the year.

- A) Both true and R explains A
 - B) Both true but unrelated
 - C) A true, R false
 - D) Both false
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48. Vascular cambium is absent in —

- A) Monocot stems
- B) Dicot stems

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- C) Gymnosperms
 - D) Dicot roots
-

49. The protective tissue that replaces the epidermis during secondary growth is —

- A) Periderm
 - B) Cork
 - C) Cuticle
 - D) Bark
-

50. Assertion (A): Secondary xylem forms wood.

Reason (R): It accumulates towards the centre during secondary growth.

- A) Both true, R explains A
 - B) Both true but unrelated
 - C) A true, R false
 - D) Both false
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✓ Answer Key – Set 4

1-A, 2-A, 3-A, 4-A, 5-A, 6-A, 7-A, 8-A, 9-A, 10-A,
11-A, 12-A, 13-A, 14-A, 15-A, 16-A, 17-A, 18-A, 19-A, 20-A,
21-A, 22-A, 23-A, 24-A, 25-A, 26-A, 27-A, 28-A, 29-A, 30-A,
31-A, 32-A, 33-A, 34-A, 35-A, 36-A, 37-A, 38-A, 39-A, 40-A,
41-A, 42-A, 43-A, 44-A, 45-A, 46-A, 47-A, 48-A, 49-A, 50-A.