



# BIOLOGY

## BOOKS - ARIHANT NEET BIOLOGY (HINGLISH)

### ANATOMY OF FLOWERING PLANTS

#### Check Point 12 1

1. Who among the following is regarded as father of plant anatomy?

A. N Grew and M Malpighi

B. N Grew

C. B Schmidt

D. Nageli

**Answer: B**



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**2. Meristematic cells have**

A. thick cell wall and large intercellular spaces

B. thick cell wall and no intercellular spaces

C. thin cell wall and large intercellular spaces

D. thin cell wall and no intercellular spaces

**Answer: D**



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3. The meristems that develop during later stages of plant growth

- A. promeristems
- B. primary meristems
- C. secondary meristems
- D. Both (a) and (c )

**Answer: C**



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4. Wheat and grass stems elongate by the activity of

A. intercalary meristem

B. apical meristem

C. lateral meristem

D. secondary meristem

**Answer: A**



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5. Secondary tissues such as secondary xylem develops from

- A. lateral meristem
- B. promeristem
- C. apical meristem
- D. intercalary meristem

**Answer: A**



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6. Primary vascular tissue such as xylem, phloem and cambium develop from the meristem

A. procambium

B. protoderm

C. ground meristem

D. ribmeristem

**Answer: A**



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7. Apical cell theory is applicable to

- A. Algae, bryophytes and gymnosperms
- B. Angiosperms only
- C. Pteridophytes and angiosperms
- D. Algae, bryophytes and pteridophytes

**Answer: D**



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8. According to which theory given below, the root and shoot apices are composed of three histogen layers viz, a central plerome, Outer dermatogen and underlying periblem?

- A. Quiescent theory
- B. Histogen theory
- C. Apical cell theory
- D. Tunica corpus theory

**Answer: B**



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9. The cells of corpus undergo divisions in various planes and result in the formation of

A. ground meristem

B. procambium

C. Both (a) and (b)

D. only cortex

**Answer: C**



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10. According to Korper-Kappe theory Kappe zone is responsible for the formation of

- A. root elongation zone
- B. root cap
- C. root hairs
- D. root maturation zone

**Answer: B**



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## Check Point 12 2

1. Which of the following is not a characteristic of permanent tissue?

A. These are functionally specialised

B. They cannot undergo cell divisions

C. These all are dead cells

D. They are specialised to perform specific functions

**Answer: C**



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2. Which one of the following comprises only simple tissues?

- A. Parenchyma, collenchyma and sclerenchyma
- B. Parenchyma, xylem and collenchyma
- C. Parenchyma, xylem and sclerenchyma
- D. Parenchyma, xylem and phloem

**Answer: A**



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**3.** The permanent tissues possessing a single type of cells are known as

- A. complex permanent tissue
- B. simple permanent tissue
- C. simple meristematic tissue
- D. complex meristematic tissue

**Answer: B**



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4. The presence of intercellular spaces is the usual conspicuous feature of

- A. parenchyma
- B. sclerenchyma
- C. collenchyma cells
- D. Both (b) and (c)

**Answer: A**



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5. Parenchyma cells store tannin, oil, crystal, etc., known as

A. idioblast

B. aerenchyma

C. prosenchyma

D. chlorenchyma



**Answer: A**



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**6. Simple mechanical tissue devoid of lignin is**

A. chlorenchyma

B. parenchyma

C. collenchyma

D. sclerenchyma

**Answer: C**



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7. The living cells that provide mechanical and tensile strength are

A. collenchyma

B. sclerenchyma

C. sclereids

D. All of these

**Answer: A**



8. Lignin is a component of the secondary cell walls of

- A. collenchyma
- B. parenchyma
- C. sclerenchyma
- D. aerenchyma

**Answer: C**



9. Stone cell is a alternative name of

A. cortical fibres

B. sclereids

C. xylary fibres

D. phloem fibres

**Answer: B**



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10. Who coined the term 'Xylem'?

A. Nageli

B. N Grew

C. Schmidt

D. Hainsten

**Answer: A**



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11. Tracheid differs from vessels in having

A. thick wall

B. bordered pits

C. discontinuous intercalary wall

D. spiral thickening

**Answer: C**



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**12.** When protoxylem is encircled by metaxylem, the condition is called

A. exarch

B. endarch

C. mesarch

D. polyarch

**Answer: C**



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**13.** Which of the following helps in translocation of food in plants ?

A. Xylem

B. Phloem

C. Sclerenchyma

D. Collenchyma

**Answer: B**



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**14.** The difference in phloem of gymnosperms and angiosperms is due to



A. parenchyma

B. fibres

C. companion cell

D. None of these

**Answer: C**



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**15.** Which of the following represents a schizogenous cavity?

A. Resin cavity in Pinus

B. Oil gland in citrus

C. Water secreting glands in tomato

D. Nectar secreting glands in Jatropha

**Answer: A**



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**Check Point 12 3**

1. The tissue system derived from protoderm is

A. epidermal tissue system

B. ground tissue system

C. secretory tissue system

D. vascular tissue system

**Answer: A**



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2. An multilayered epidermis is not found in the leaves of

A. Helianthus

B. Nerium

C. Bignonia

D. Peperomia

**Answer: A**



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3. Cuticle is secreted by

A. epidermis

B. endodermis

C. Both (a) and (b)

D. hypodermis

**Answer: A**



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4. The alternate name of bulliform cells is

A. guard cells

B. sheath cells

C. myrosin cells

D. motor cells

**Answer: D**



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**5. Piliferous layer refers to**

A. epiblema

B. exodermis

C. epidermis

D. pericycle

**Answer: A**



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**6.** The guard cells of the stomata present in the monocots are

A. dumb-bell-shaped

B. elliptical

C. rounded

D. kidney-shaped

**Answer: D**



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**7. The root hairs are usually**

A. acellular

B. unicellular



C. bicellular

D. multicellular

**Answer: B**



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**8.** The extensions of plth cells that are involved in radial conduction of food and water are

A. amphivasular rays

B. radial vascular rays

C. medullary rays

D. trichomes

**Answer: C**



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9. When the vascular cambium is present between the xylem and phloem, the vascular bundle is called

A. closed

B. open

C. endarch

D. exarch

**Answer: B**



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**10.** Vascular bundle, in which xylem is sandwiched between two layers of phloem

A. collateral

B. bicollateral

C. radial

D. amphivasal

**Answer: B**



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**11.** A vascular bundle in which phloem surrounds the sylem or xylem surrounds the phloem completely is called

A. conjoint

B. concentric

C. collateral

D. radial

**Answer: B**



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**12. Amphivasal vascular bundles are found in**

A. Triticum and Zea

B. Dracaena and Yocca

C. Cucurbita and Helianthus

D. None of the above

**Answer: B**



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**13.** Which of the following is correct sequence of layers in typical monocot root (from outer surface to inside)

A. epiblema, endodermis, cortex, pericycle

B. pericycle, cortex, endodermis, epiblema

C. epiblema, cortex, endodermis, pericycle

D. epiblema, pericycle, cortex, endodermis

**Answer: C**



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**14.** Which of the following characteristic differentiates monocot root from a dicot root?

- A. Radial vascular bundles
- B. Well-developed large pith
- C. Scattered vascular bundles
- D. Xylem exarch

**Answer: B**



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**15.** Which of the following composes the hypodermis of a dicot stem?



A. Parenchyma

B. Collenchyma

C. Sclerenchyma

D. Aerenchyma

**Answer: B**



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**16. hypodermis in monocotyledonous stem is**

A. aerenchyma

B. collenchyma

C. parenchyma

D. sclerenchyma

**Answer: D**



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**17. Scattered vascular bundles are the feature of**

A. monocot stem

B. dicot stem

C. monocot leaf

D. dicot leaf

**Answer: A**



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**18.** Most of the dicot leaves are

A. unifacial

B. equifacial

C. Both (a) and (b)

D. bifacial

**Answer: D**



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**19.** Differentiation of mesophyll into palisade and spongy parenchyma is due to

A. unequal illumination

B. equal illumination

C. scarcity of water

D. heavy storage of food

**Answer: A**



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**20.** In an isobilateral (monocot) leaf, the stomata are

A. usually absent or less abundant in upper epidermis

B. usually absent or less abundant in lower epidermis

C. almost equally distributed in upper and lower epidermis

D. usually more on upper epidermis

**Answer: C**



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**Check Point 12 4**

1. Increase in girth of a plant organ is a result of activity of

A. intrafascicular cambium

B. interfascicular cambium

C. cork cambium

D. All of the above

**Answer: D**



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2. During secondary growth in dicot root, the layer that becomes outermost protective layer after the disintegration of endodermis, cortex and epiblema is

A. phellem

B. phellogen

C. phelloderm

D. cork cambium

**Answer: A**



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3. Fusiform initials and ray initials are the constituents of

A. xylem

B. phloem

C. phellem

D. cambium

**Answer: D**



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4. Ray initials are

A. smaller and isodiametric

B. bigger and isodiametric

C. large with pointed ends

D. large with flat ends

**Answer: A**



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5. Fusiform initials are

A. smaller and isodiametric

B. bigger and isodiametric

C. large with pointed ends

D. large with flat ends

**Answer: C**



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6. Amount of secondary xylem is more than secondary phloem because

A. cambium is more active on the outer side

B. cambium is more active on inner side

C. cambium has no role

D. cambium is active equally on both sides

but xylem is required

**Answer: B**



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7. Cambium is most active in

A. spring

B. winter

C. rainy season

D. snow areas

**Answer: A**



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8. The cambial ring divides to form new cells

A. periclinal

B. anticlinal

C. Both (a) and (b)

D. None of these

**Answer: A**



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9. Cells towards pith mature into

- A. secondary cortex
- B. secondary phloem
- C. secondary xylem
- D. cork

**Answer: C**



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**10.** Interfascicular cambium is found

A. between pith and vascular bundle

B. between two vascular bundles

C. in the vascular bundle

D. outside the bundle

**Answer: B**



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11. in a plant organ covered by periderm , the stomata are absent. Gaseous exchange occurs thorough

- A. aerenchyma
- B. lenticels
- C. trichomes
- D. pneumatophores

**Answer: B**



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12. The meristem responsible for extrastelar secondary growth in shoot stem is

- A. fasciular cambium
- B. intrafascicular cambium
- C. intercalary cambium
- D. phellogen

**Answer: D**



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**13. Monocot stems show secondary growth**

A. Dracaena

B. maize

C. grass

D. bamboo

**Answer: A**



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14. inner darker, harden portion of secondary xylem that cannot conduct water in older dicot stem is called

A. alburnum

B. bast

C. wood

D. duramen

**Answer: D**



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15. Softwood known is as

A. porous wood

B. heartwood

C. sapwood

D. non-porous wood

**Answer: D**



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# Chapter Exercises Taking It Together Assorted Questions Of The Chapter For Advanced Level Practice

1. Meristematic tissues are

- A. premature having ability of division
- B. mature do not have ability of division
- C. premature not having ability of division
- D. complex differentiation in xylem, phloem and cambium

**Answer: A**



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2. The tissue which perpetuates itself by active cell division is

- A. meristematic tissue
- B. ground tissue
- C. permanent tissue
- D. vascular tissue

**Answer: A**



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3. The cells of tunica undergo anticlinal divisions and give rise to

A. epidermis

B. cortex

C. endodermis

D. pericycle



**Answer: A**



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**4. Parenchymatous cells are found in**

A. pulp of fruit

B. seeds

C. endocarp

D. skin of fruit

**Answer: A**



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5. Which of the following makes the framework of all plant organs?

A. Chlorenchyma

B. Collenchyma

C. Parenchyma

D. sclerenchyma

**Answer: C**



6. Aerenchyma provides

- A. flexibility to plants
- B. mechanical strength of plants
- C. buoyancy to hydrophytic plants
- D. promoting nature of photosynthesis

**Answer: C**



7. The term collenchyma has been coined by

A. Schuepp (1917)

B. Hanstein (1868)

C. Schleiden (1839)

D. None of the above

**Answer: C**



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8. Collenchyma are absent in roots except in the aerial roots of some plants. One such example is

A. Ficus

B. Zea mays

C. Helianthus

D. Cucurbita

**Answer: A**



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9. Collenchyma are present in

A. woody climbers

B. herbaceous climbers

C. hydrophytes

D. monocot stems

**Answer: B**



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**10.** Fibres are likely to be absent in

A. secondary phloem

B. secondary xylem

C. primary phloem

D. leaves

**Answer: C**



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11. Tissue present only in dicot plants is

A. chlorenchyma

B. collenchyma

C. phloem

D. xylem

**Answer: B**



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12. Sieve tubes differ from the sieve cells because they

A. have sieve pores mainly at the end walls

B. are shorter

C. lack nuclei

D. are dead

**Answer: A**



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**13.** Tissue cells commonly found in fruit walls of nuts and pulp of some fruits like guava are called

A. fibres

B. sclereids

C. tracheids

D. vessels

**Answer: B**



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14. Trachea , tracheids , wood fibres and parenchyma tissues are found in

A. phellogen

B. phelloderm

C. phloem

D. xylem

**Answer: D**



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15. The only plant cells without nuclei among the following are

Or

The tissue which is living but does not possess nucleus in mature stage is

A. sieve tube

B. xylem vessels elements

C. root hairs

D. companion cells

**Answer: A**



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**16.** Centripetal xylem (exarch) arrangement occurs in

A. roots

B. stems

C. Both (a) and (b)

D. None of these

**Answer: A**



17. Centrifugal xylem arrangement is found in

A. roots

B. stems

C. Both (a) and (b)

D. None of these

**Answer: B**



**18.** A piece of wood having no vessels (trachea) must belong to

A. teak

B. mango

C. pine

D. palm

**Answer: C**



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19. Identify the group of glandular tissues

A. latex cells, xylem

B. hydathodes, stinging hairs

C. protophloem, oil glands

D. digestive gland, latex vessels

**Answer: B**



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20. Phloem parenchyma is absent in the phloem elements of

A. dicots

B. monocots

C. dicot stems only

D. monocot stems only

**Answer: B**



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21. The cells absent in phloem of gymnosperms are

- A. albuminous cells
- B. companion cells
- C. phloem parenchyma
- D. phloem fibres

**Answer: B**



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22. Identify the tissue system from among the following

A. Parenchyma

B. Xylem

C. Epidermae

D. Phloem

**Answer: C**



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23. Specialised epidermal cells that give rise to root hairs are called

A. epidermis

B. trichoblasts

C. idioblasts

D. quiescent cells

**Answer: B**



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24. Pith, which constitutes the central core of stem is also called

A. bast

B. epiblema

C. ground tissue

D. medulla

**Answer: D**



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25. Pith cavity occurs in the stem of

- A. Wheat
- B. Zea mays
- C. Dracaena
- D. Cucurbita

**Answer: A**



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26. Vascular bundle are completely absent in

A. angiosperms

B. gymnosperms

C. pteridophytes

D. bryophytes

**Answer: D**



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**27.** Phloem is found in two patches in each vascular bundles of

A. Cucurbita

B. Helianthus

C. Zea mays

D. Triticum

**Answer: A**



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**28.** Uniform ground tissue lacking any differentiation occurs in



A. dicot stem

B. monocot stem

C. dicot root

D. monocot root

**Answer: B**



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**29. Epiblema of roots is equivalent to**

A. pericycle

B. endodermis

C. epidermis

D. stele

**Answer: C**



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**30.** Which of the following lack stomata in their epidermis (epiblema)?

A. Dicot roots

B. Dicot stems

C. Monocot stems

D. Both (a) and (c )

**Answer: A**



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**31.** The guard cells of the stomata present in the epidermis of monocot stems are

A. rounded

B. dumb-bell-shaped

C. kidney-shaped

D. None of these

**Answer: B**



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**32.** Maximum number of vascular bundles are present in

A. monocot stem

B. monocot leaf

C. dicot stem

D. dicot root

**Answer: A**



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**33.** Plyarch vascular bundles generally occur in

A. dicot stem

B. monocot stem

C. dicot roots

D. monocot roots

**Answer: D**



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**34.** Interfascicular cambium and cork cambium are formed due to

A. cell division

B. cell differentiation

C. cell dedifferentiation

D. redifferentiation

**Answer: C**



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**35.** A well-developed medulla occurs in

A. monocot root

B. dicot root

C. monocot stem

D. dicot stem

**Answer: A**



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**36. Sclerenchymatous hypodermis is found in**

A. monocot roots

B. dicot roots

C. dicot stems

D. monocot stems



**Answer: D**



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**37.** Medullary vascular bundles commonly occur in the members of family

- A. Brassicaceae
- B. Malvaceae
- C. Amaranthaceae
- D. Cucurbitaceae

**Answer: C**



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**38.** Undifferentiated ground tissue characteristically occurs in

- A. Zea mays stem
- B. Cucurbita stem
- C. Helianthus stem
- D. Helianthus root

**Answer: A**



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**39.** Concentric arrangement of internal tissues is found in the stems of

A. Helianthus

B. Zea mays

C. Saccharum

D. Oryza.

**Answer: A**



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**40.** Vascular bundles in a dicot stems are ..... in outline.

A. dumb-bell-shaped

B. oval or rounded

C. wedge-shaped

D. polygonal

**Answer: C**



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**41.** Vascular bundles are arranged in two rings in the dicot stems of

A. Helianthus

B. Ricinus

C. Cucurbita

D. Aristolochia

**Answer: C**



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**42.** Vascular bundle is enclosed within a well developed sclerechymatous sheath in

- A. monocot stem
- B. dicot stem
- C. monocot root
- D. dicot root

**Answer: A**



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**43.** A conjoint and open vascular bundle will be observed in the transverse section of

- A. monocot root
- B. monocot stem
- C. dicot root
- D. dicot stem

**Answer: D**



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**44.** Medullary rays present in vascular stem bundle of

- A. Sunflower stem
- B. Canna stem
- C. Asparayus stem
- D. Triticum stem



**Answer: A**



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**45.** An example of a fistular (i.e. with central cavity) monocot stem is

A. *Zea mays*

B. *Triticum*

C. *Asparagus*

D. *Dracaena*

**Answer: B**



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**46.** Sclerenchymatous sheath surrounding the vascular bundles in a monocot stem, is called

- A. vascular sheath
- B. circular sheath
- C. bundle sheath
- D. starch sheath

**Answer: C**



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**47.** In a dorsiventral leaf, stomata present on

- A. adaxial sides
- B. abaxial sides
- C. adaxial and abaxial sides
- D. absent

**Answer: B**



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**48.** Scattered vascular bundles are the feature of

A. monocot stem

B. dicot stem

C. monocot leaf

D. dicot leaf

**Answer: A**



**49.** Leaves of which of the following show multiple epidermis and stomata seated deep in pits?

A. Phoenix

B. Nerium

C. Cucurbita

D. Helianthus

**Answer: B**



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50. In an unifacial leaf, the stomata occur in

- A. lower epidermis
- B. upper epidermis
- C. Both (a) and (b)
- D. petiole

**Answer: C**



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51. Chlorophyllous bundle sheath cells occurs in

- A. monocot stem
- B. monocot leaves
- C. dicot leaves
- D. None of these

**Answer: B**



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52. Concentric vascular bundle

characteristically occurs in

A. Zea mays

B. Mangifera

C. Allium

D. Yucca

**Answer: D**



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53. Cork tissue arises from

A. periderm

B. phellogen

C. pelloderm

D. phellem

**Answer: B**



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54. The bark of which plant is used as spices?

A. Acacia

B. Cinchona

C. Quercus

D. Cinnamon

**Answer: D**



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55. Which one of the following cells types always divides by anticlinal cell division?

A. Fusiform initial cells

B. Root cap

C. Protoderm

D. Phellogen

**Answer: C**



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56. Hockey sticks are prepared from the wood of

- A. *Acacia arabica*
- B. *Terminalia arjuna*
- C. *Morus alba*
- D. *Dalbergia latifolia*

**Answer: C**



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57. Phellogen and phellem respectively denote

- A. cork and cork cambium
- B. cork cambium and cork
- C. secondary cortex and cork
- D. cork and secondary cortex

**Answer: B**



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**58.** In a woody dicotyledonous tree, which of the following parts will mainly consist of primary tissues

- A. Stem and root
- B. All parts
- C. Shoot tips and root tips
- D. Flowers, fruits and leaves

**Answer: C**



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**59.** In which of the following pairs of parts of a flowering plant epidermis is absent

- A. Root tip and shoot tip
- B. Shoot bud and floral bud
- C. Ovule and seed
- D. Petiole and pedicel

**Answer: A**



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**60.** A meristem, in which the cell division takes place in all planes resulting in an increase in volume is called

- A. rib meristem
- B. plate meristem
- C. mass meristem
- D. None of these

**Answer: C**



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**61.** The chief function of parenchymatous tissue is to

A. conduct water and minerals

B. synthesise food

C. store food material

D. provide mechanical support

**Answer: C**



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62. When we peel the skin of a potato tuber, we remove

A. periderm

B. epidermis

C. cuticle

D. sapwood

**Answer: A**



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63. The parenchyma cells that make the aquatic plants light and buoyant helping them afloat cells

A. prosenchyma

B. aerenchyma

C. assimilatory parenchyma

D. stellate parenchyma

**Answer: B**



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64. The specialised non-green, large sized parenchyma cells containing tannis, oils, crystals, etc., are called

- A. idioblast
- B. trichoblasts
- C. trophocytes
- D. prosenchyma

**Answer: A**



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**65.** A plant tissue, when stained, showed the presence of hemicellulose and pectin in cell wall of its cells, the tissue represents

A. collenchyma

B. sclerenchyma

C. xylem

D. meristem

**Answer: A**



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**66.** Collenchyma differs from sclerenchyma in

A. being dead

B. possessing protoplasm

C. the ability to not dedifferentiate

D. All of the above

**Answer: B**



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67. Identify from the following plant tissues, in which lignin does not occur in the cell wall?

- A. Collenchyma
- B. Sclerenchyma fibres
- C. Sclereid
- D. Xylem

**Answer: A**



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68. Oval, spherical or polygonal cells, thickening at corners due to desposition of cellulose, hemicellulose and pectin, often containing chloroplasts and having or not having intercellualr spaces are called

- A. parenchyma
- B. chlorenchyma
- C. sclerenchyma
- D. collenchyma

**Answer: D**







**69.** Cells of this tissue are living and show angular wall thickening. They also provide mechanical support. The tissue is

- A. xylem
- B. sclerenchyma
- C. collenchyma
- D. epidermis

**Answer: C**



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70. Choose the incorrect statement

- A. Cork develops by secondary growth in extrastelar region
- B. Pelloderm is also known as secondary cortex
- C. Bark inclues all the tissues lying outside the vascular cambium
- D. Lenticels are present on leaves

**Answer: D**



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**71.** Star-shaped (stellate) sclereids are present in the leaves of

A. Cucurbita

B. Pyrus

C. Cinnamomum

D. Nymphaea

**Answer: A**



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**72.** Root apical meristem (root apex) appears cup-shaped (roughly hemispherical) due to the presence of

- A. root cap
- B. root hairs
- C. quiescent centre
- D. None of these

**Answer: C**



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**73.** Parenchyma cell as found in

- A. petioles of Hydrilla in the pericycle of roots, palisade and spongy
- B. stems of Raphanus in Hydrilla
- C. Cucurbita stem, in pulp of guava

D. in stem of Cannabis, in the pericycle of roots

**Answer: A**



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**74.** The activity of sieve tubes is remotely controlled by the nucleus of

A. phloem parenchyma

B. companion cells

C. phloem fibres

D. Both phloem parenchyma and phloem fibres

**Answer: B**



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**75.** In sieve elements, the possible function of p-proteins is

A. autolytic enzymes

B. prevent leakage of phloem exudate

C. providing energy for active translocation

D. deposition of callose on sieve plates

**Answer: B**



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**76.** Which is correct about transport or conduction of substances



A. Organic food moves upwardly through xylem

B. Organic food moves only upwards through phloem

C. Inorganic food moves upwardly and downwardly through xylem

D. Organic food moves in multidirections through phloem

**Answer: D**



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77. A vesselless piece of stem possessing prominent sieve tubes would belong to

A. Pinus

B. Eucalyptus

C. Grass

D. Trochodendron

**Answer: D**



**Watch Video Solution**

78. A common structural feature of vessel elements and sieve tube elements is

A. thick secondary walls

B. pores on end walls

C. presence of P-protein

D. enucleate condition

**Answer: B**



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79. In which of the following, the cuticle layer covering the outer surface of the epidermal cells of leaf is again covered by a thick layer of grains constituting a glaucous bloom?

A. *Ficus benghalensis*

B. *Cucurbita maxima*

C. *Helianthus annuus*

D. *Salix glaucophylla*

**Answer: D**



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**80.** Thick-Walled cells of pericycle as found in *Linum* (flax) and *Cannabis* (hemp) are fibrous and are designated as

- A. vascular fibres
- B. paravascular fibres
- C. perivascular fibres
- D. protofloem fibres

**Answer: A**



**View Text Solution**

**81.** What is the fate of primary xylem in a dicot root showing extensive secondary growth?

A. It is retained in the centre of the axis

B. It gets crushed

C. May or may not get crushed

D. It gets surrounded by primary phloem

**Answer: A**



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**82.** In monocot roots which types of vascular bundles are found

- A. Collateral, conjoint and closed
- B. Radial with exarch xylem
- C. Bicollateral, conjoint and closed
- D. Radial with endarch xylem

**Answer: B**



**Watch Video Solution**

**83.** Velamen is primarily an absorptive tissue, but it may

A. check exchange of gases to and from the atmosphere

B. check loss of water from the cortex

C. accelerate the growth of cortex

D. become green and perform photosynthesis

**Answer: B**



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**84.** velamen found in epiphytic roots is meant for

- A. absorption of water from host
- B. absorption of water from air
- C. perennation
- D. protection

**Answer: B**



**Watch Video Solution**

**85.** Vascular cylinder in dicot stems occurs in the form of distinctly separated vascular bundles. But, in some dicot stems, e.g. *Linum*, *Lonicera*, it appears to be a continuous cylinder because

A. interfasciular region is not developed at all

B. the interfascicular region is there, but its cells are not differentiable from the cells of vascular bundles

C. interfascicular region is extremely narrow

D. continuous vascular cylinder

differentiates since, the early stage of

development

**Answer: D**



[View Text Solution](#)

**86.** Number of vascular bundles in a leaf-vein

of dicot

A. increases towards the margin

B. decreases towards the margin

C. is same towards the base and the margin

D. All of the above

**Answer: B**



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**87.** The vascular bundle present in the midrib of a dicot leaf is

- A. the largest of all
- B. smallest of all
- C. equal in size to others
- D. radial

**Answer: A**



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**88.** Bundle sheath extensions are collenchymatous on the vascular bundles of

- A. dorsiventral (dicot) leaves
- B. isobilateral (monocot) leaves
- C. concentric leaves
- D. dicot stem

**Answer: A**



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**89.** The oldest layer of secondary phloem in a stem lies

A. outward to vascular cambium

B. inward to vascular cambium

C. inward to primary phloem

D. outward to primary phloem

**Answer: C**



**Watch Video Solution**

90. A cut trunk shows 26 concentric rings of spring wood and autumn wood in alternate rows. The age of trunk would be

A. 13 years

B. 26 years

C. 52 years

D. 104 years

**Answer: A**



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91. Increment borer is an instrument used to count

A. the number of xylem vessels of early wood

B. the number of annual rings

C. the number of cambium rings

D. the number of tyloses in each vessel

**Answer: B**



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92. Common features between lenticels and hydathodes are

A. allow exchange of gases

B. always remain closed

C. there is no regulation of their opening and closing

D. they occur on the same organ of the plugged

**Answer: C**



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93. The tracheids and vessels of this wood get plugged by the ingrowth of the adjacent parenchyma cells

A. alburnum

B. duramen

C. autumnwood

D. springwood

**Answer: B**



Watch Video Solution

**94.** In the following, how the sapwood is converted into heartwood?

- A. By degeneration of protoplast of living cells
- B. Tylosis formation
- C. By deposition of resins, oil, gums
- D. All of the above

**Answer: D**



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**95.** Stem of grasses and related plants elongates by the activity of

A. lateral meristem

B. apical stem

C. both apical and intercalary meristem

D. intercalary meristem

**Answer: C**



**Watch Video Solution**

**96.** Healing of wounds is done in plants by the activity of

- A. apical meristem
- B. lateral meristem
- C. primordial meristem
- D. intercalary meristem

**Answer: B**



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**97.** Which of the following statements is incorrect?

A. In exarch xylem, metaxylem is towards centre

B. Metaxylem has vessels with narrow diameter

C. In exarch protoxylem, xylem is towards periphery

D. Xylem is mainly involved in water conduction

**Answer: B**



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**98.** Choose the correct statement regarding dicot stem



- A. dumb-bell-shaped stomata, medullary rays absent, little increase in diameter
- B. Secondary growth takes place, ground tissue differentiated, conjoint and open vascular bundle
- C. guard cell dumb-bell-shaped, no secondary growth, ground tissue undifferentiated
- D. medullary rays absent, xylem vessels are polygonal

**Answer: B**



**Watch Video Solution**

**99.** Which one of the following statements pertaining to plant structure is correct

A. Cork lacks stomata, but lenticels carry out transpiration

B. Xylem helps in transfer of food from cortex to phloem

C. Sieve tube elements possess cytoplasm

but no nuclei

D. The shoot apical meristem has a

quiescent centre

**Answer: C**



**Watch Video Solution**

**100.** Pick the incorrect statement

A. Gymnosperms lack vessels in their xylem

B. Cell wall of collenchyma is made of pectin

C. The first formed primary xylem elements are called protoxylem

D. Gymnosperms have companion cells

**Answer: D**



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**101.** The components of vascular bundle develop from ..... of the primary meristem.

- A. cambial strands
- B. precambial strands
- C. procambial strands
- D. paracambial strands

**Answer: C**



**Watch Video Solution**

**102.** A leptocentric or amphivasal vascular bundle has

- A. phloem flanked by xylem on interior and exterior sides only
- B. xylem flanked by phloem on interior and exterior sides only
- C. xylem surrounded by phloem
- D. phloem surrounded completely by xylem

**Answer: D**



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**103.** Hardbast occurs in the stemk of Helianthus, Ricinus and few other plants. This structure represents

A. thin-walled patch of pericycle cells lying above the phloem

B. thick-walled patch of pericycle cells lying above the phloem

C. thick-walled patch of pericycle cells lying above the medullary rays

D. unusually thickened cells of phloem

**Answer: B**



**View Text Solution**

**104.** In a dicotyledonous stem, the sequence of tissues from the outside to the inside is

A. phellem-pericycle-endodermis-phloem

B. phellem-phloem-endodermis-pericycle

C. phellem-endodermis -pericycle-phloem



D. pericycle-phellem-endodermis-phloem

**Answer: C**



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**105.** Identify the correct statement

A. Because of marked climatic variations, plants growing near the seashore do not produce annual rings

B. The age of the plant can be determined  
by its height

C. Healing of damaged tissue is because of  
the activity of sclerenchyma cells

D. Grafting is difficult in monocot plants as  
they have scattered vascular bundles

**Answer: D**



**Watch Video Solution**

**106.** What is correct about monocot stem

A. Hypodermis is sclerenchymatous,  
vascular bundles are closed, phloem  
parenchyma is absent

B. Hypodermis is sclerenchymatous,  
vascular bundles are open, phloem  
parenchyma is absent

C. Hypodermis is collenchymatous, vascular  
bundles are closed, phloem parenchyma

is present

D. Hypodermis is sclerenchymatous,  
vascular bundles are closed, phloem  
parenchyma is present

**Answer: A**



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**107.** From the given set of statements characterising the internal structure of dicot leaf, identify the incorrect one.

A. Type of leaf-Dorsiventral

B. Mesophyll-Made up of palisade  
parenchyma and spongy parenchyma

C. Bundle sheath-Made up parenchyma  
cells

D. Bulliform cells-Present on upper  
epidermis

**Answer: D**



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**108.** Which one of the following sets represents the xerophytic characters of a monocot (isobilateral) leaf?

A. Thick cuticle, sclerenchymatous patches,  
bulliform cells

B. Thin cuticle, sclerenchymatous patches,  
bulliform cells

C. Thick cuticle, parenchymatous patches,  
bulliform cells

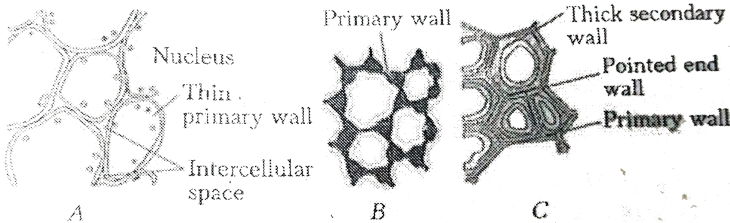
D. Thick cuticle, sclerenchymatous patches,  
myocin cells

**Answer: A**



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**109.** Identify the permanent tissues shown in the following figures .



A. A-Collenchyma, B-Parenchyma, C-  
Sclerenchyma

B. A-Sclerenchyma, B-Collenchyma, C-  
Parenchyma

C. A-Collenchyma, B-Sclerenchyma, C-  
Parenchyma

D. A-Parenchyma, B-Collenchyma, C-  
Sclerenchyma

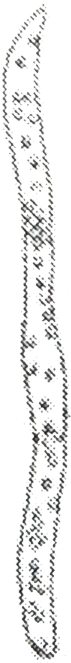
**Answer: D**



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**110.** Identify the various types of xylem shown in the following figures.



*A*



*B*



*C*



*D*

A. A-Xylem tracheids, B-Xylem vessels, C-Xylem parenchyma, D-Xylem tracheids

B. A-Xylem vessels, B-Xylem parenchyma, C-Xylem tracheids, D-Wood fibres

C. A- Xylem parenchyma, B-Xylem tracheids, C-Xylem vesels, D-Wood fibres

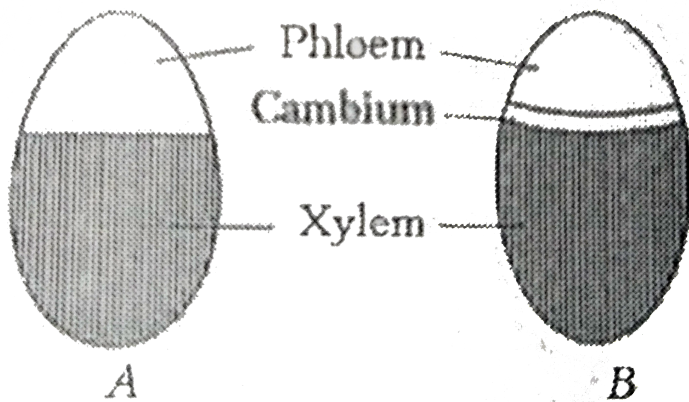
D. A-Xylem vessels, B-Wood fibres, C-Xylem tracheids, D-Xylem parenchyma

**Answer: A**



**Watch Video Solution**

111. Identify the vascular bundles given in the following figures .



A. A-Closed vascular bundle, B-Open vascular bundle

B. A-Radial vascular bundle, B-Open

vascular bundle

C. A-Amphivasal vascular bundle , B-

Amphicribal vascular bundle

D. A-Amphicribal vascular bundle, B-

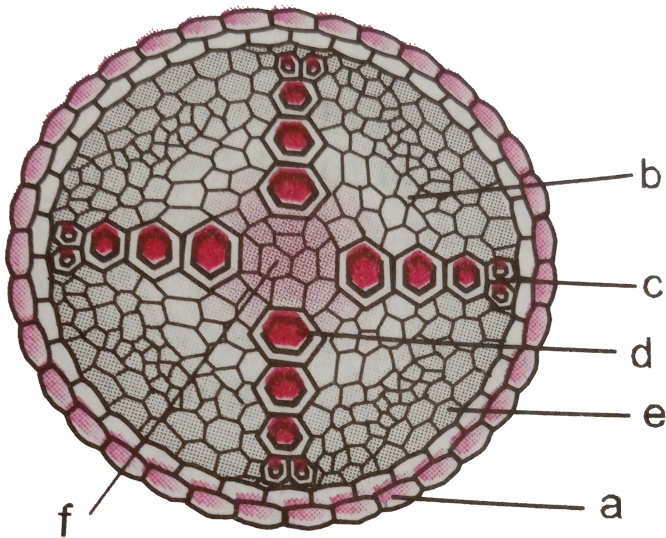
Amphivasal vascular bundle

**Answer: A**



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112. in the diagram of T.S stele of dicot root, the different parts have been indicated by alphabets. choose the correct combination.



- A. A-Pericycle, B-Conjunctive tissue, C-  
Metaxylem, D-Protoxylem, E-Phloem, F-  
Pith

B. A-Endodermis, B-Conjunctive tissue, C-Protoxylem. D-Metaxylem, E-Phloem, F-Pith

C. A-Endodermis, B-Conjunctive tissue, C-Metaxylem, D-Protoxylem, E-Phloem, F-Pith

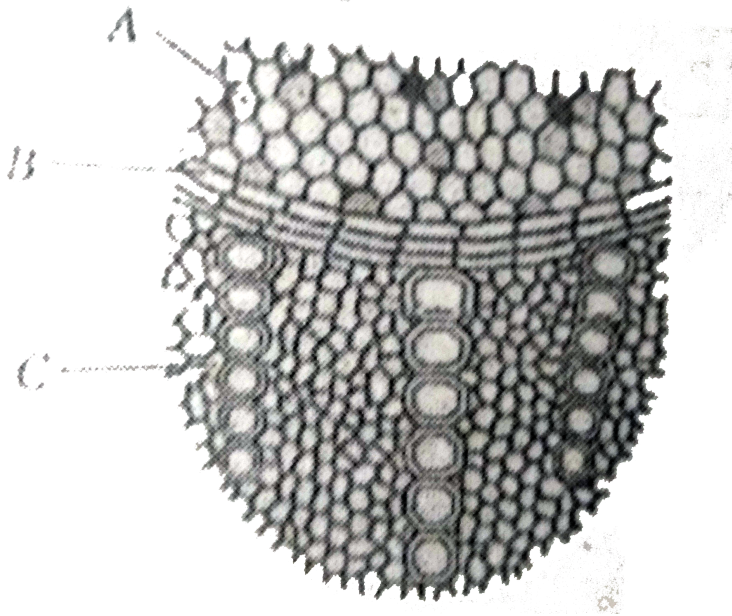
D. A-Endodermis, B-Pith, C-Protoxylem, D-Metaxylem, E-Phloem, F-Conjunctive tissue

**Answer: B**



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113. Find out the correct sequence of labelling.



A. A-Parenchyma, B-Cambium, C-Phloem

B. A-Phloem, B-Cambium, C-Parenchyma

C. A-Phloem, B-Cambium, C-Xylem

D. A-Parenchyma, B-Cambium, C-Xylem

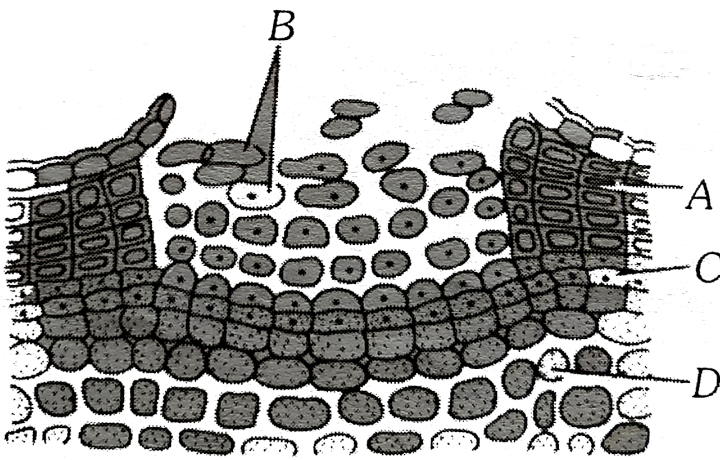
**Answer: C**



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**114.** In the diagram of lenticel identify the parts as A, B, C, D





A. A-Lenticel, B-Complementary cell,

C-Phellogen, D-Epidermis

B. A-Phellem, B-Complementary cells,

C-Phelloderm, D-Periderm

C. A-Complementary cell, B-Lenticel,

C-Phelloderm, D-Periderm

D. A-Complementary cells, B-Lenticel,

C-Periderm, D-Phelloderm

**Answer: A**



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**115.** The number of stomata and epidermal cells in  $1 \text{ mm}^2$  leaf area of lower epidermis of the leaves X, Y and Z plants are given below. Arrange the plants in decreasing order of their stomatal index.

The correct answer is

Cell	Numbers of Stomata	Numbers of epidermal cells
X	30	150
Y	60	240
Z	90	400

A. X, Y and Z

B. Y, Z and X

C. Z, Y and X

D. Y, X and Z

**Answer: B**



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**116.** How many shoot apical meristems are likely to be present in a twig of a plant possessing, 4 branches and 26 leaves

A. 26

B. 1

C. 5

D. 30

**Answer: C**



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**117.** A transverse section of stem is stained first with safranin and then with fast green following the usual schedule of double staining for the preparation of a permanent slide. What would be the colour of the stained xylem and phloem

- A. Red and green
- B. Green and red
- C. Orange and yellow
- D. Purple and orange

**Answer: A**



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**118.** Collenchyma cells are absent in the stems and leaves of many monocotyledonous plants.

It is so because

A. they do not need any mechanical support

B. dedifferentiate into secondary meristem in the early stage

C. their wall thickening get dissolved,

hence not easy to be identified

D. sclerenchyma appears at an early stage

of development

**Answer: D**



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**119.** How many plants have concentric, amphicribal vascular bundles?

Yucca, Dracaena, Hydrilla, Maize, Selaginella,  
Mango, Pteris, Sunflower

A. 2

B. 4

C. 3

D. 6

**Answer: C**



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**120.** Complete the analogy

Dicot stem: collenchymatous: monocot stem?

A. sclerenchymatous

B. collenchymatous

C. parenchymatous

D. None of these

**Answer: A**



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1. Tissues can be conveniently grouped under following categories.

I. Meristematic tissues

II. Permanent tissues

III. Secretory tissues

IV. Temporary tissue

A. I, II and III

B. I and II

C. Only II

D. Only IV

**Answer: B**



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2. Which of the following statement(s) is/are correct?

I. Ground meristem is the outermost meristematic layer of young growing region.

II. Except intrafascicular cambium cells,

primary meristem cells give rise to tissues of primary growth.

III. Primary meristems add growth in thickness.

IV. In mass meristem, cell division, takes place in all planes resulting in the formation of massive plant body or organ.

A. Only I

B. II and IV

C. I, II and IV

D. All of these

**Answer: B**



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### 3. According to tunica-carpus theory

I. the cells of tunica give rise to epidermis.

II. The cells of carpus result in procambium and ground meristem.

III. The cells of tunica govern the whole process of primary growth.

IV. The cells of carpus give rise to pterome, i.e. the innermost part.

A. I and II

B. II and III

C. I and IV

D. Only I

**Answer: A**



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**4. Vegetative shoot apical meristem**

I. produces buds, leaves and stem tissues.

II. Mostly protected by sepals.

III. Protected by young leaves.

IV. Produces sepals, petals, stamens and carpels.

A. Only I

B. I and III

C. Only II

D. Only IV

**Answer: B**



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5. Which of the following statement(s) is/are correct?

I. Radial vascular bundles are commonly found in stems.

II. Conjoint vascular bundles are found in roots.

III. Radial vascular bundles are commonly found in roots.

IV. Conjoint vascular bundles are found in stems and leaves.

A. II and III



B. I, II and III

C. Only III

D. I and II

**Answer: D**



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**6.** In collateral vascular bundle,

I. single patch of phloem and xylem present.

II. Two patches of phloem and one of xylem present.

III. Phloem present outward and xylem present inward.

IV. Phloem present outward as well as inward to the xylem.

A. I , III and IV

B. II and IV

C. Only IV

D. I, II, III and IV

**Answer: A**



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7. Which of the following statements are correct?

I. In amphicribal vascular bundle, xylem lying in centre is surrounded by a ring of phloem.

II. In amphivasal vascular bundle, phloem lying in centre is surrounded by xylem.

III. In amphivasal vascular bundle, xylem lying in centre is surrounded by phloem.

IV. In amphicribal vascular bundle, phloem lying in centre is surrounded by ring of xylem.

A. I and III

B. I and II

C. I, II and III

D. None of these

**Answer: B**



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**8.** Consider the following statement

(A) In a dicot root, the vascular bundles are collateral and endarch

(B) The inner most layer of cortex in a dicot

root is endodermis

(C) In a dicot root, the phloem masses are separated from the xylem by parenchymatous cells that are known as the conjunctive tissue

Of these statement given above

A. I is true, but II and III are false

B. II is true, but I and III are false

C. I is false, but II and III are true

D. III is false, but I and II are true

**Answer: C**



9. Identify the correct pair of statements.

I. Pericycle is parenchymatous in dicot root but sclerenchymatous in mature monocot root.

II. Pericycle of both dicot and monocot roots produces lateral roots during secondary growth.

III. All cells in endodermis of dicot root are passage cells.

IV. Xylem is produced in centripetal manner in roots of fruit bearing plants.

A. II and III

B. III and IV

C. I and II

D. I and IV

**Answer: D**



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**10.** Identify the correct statement(s) from the following.

I. The bottle cork is prepared from cork of

*Quercus suber*.

II. *Cedrus deodara* is the most durable wood.

III. Wood without vessels is called heteroxylous and wood with vessels is called homoxylous.

IV. Heartwood is absent in *Populus* and *Salix*.

A. Only I

B. II and III

C. III, IV and I

D. I, II and IV

**Answer: D**





Chapter Exercises Medical Entrances Special  
Format Questions Match The Columns

1. Match the following Columns.

Column I	Column II
A. Trichomes	1. Gaseous exchange
B. Tracheids	2. Mechanical strength
C. Bast fibres	3. Epidermal outgrowth
D. Guard cells	4. Water conduction

A.  $A \ B \ C \ D$   
 $3 \ 1 \ 4 \ 2$

B.  $A \ B \ C \ D$   
 $3 \ 4 \ 2 \ 1$

C.  $A$   $B$   $C$   $D$   
1 4 2 3

D.  $A$   $B$   $C$   $D$   
1 3 4 2

**Answer: B**



**Watch Video Solution**

**2. Match the following Columns.**

Column I	Column II
A. Collateral and open	1. <i>Cucurbita</i> stem
B. Radial	2. Fern
C. Bicollateral	3. Maize root
D. Concentric	4. Sunflower
	5. Maize stem

A.  $A$   $B$   $C$   $D$   
5 4 3 1

B.  $A$   $B$   $C$   $D$   
4 3 1 2

C.  $A$   $B$   $C$   $D$   
4 1 3 2

D.  $A$   $B$   $C$   $D$   
4 3 2 1

**Answer: B**



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### 3. Match the following Columns.

Column I	Column II
A. Tyloses	1. Coenocytic
B. Periderm	2. Adaxial epidermis
C. Motor cells	3. Complementary cells
D. Laticifers	4. Heartwood
	5. Conjunctive tissue

A. *A B C D*  
3 2 1 5

B. *A B C D*  
2 5 1 3

C. *A B C D*  
4 3 2 1

D. *A B C D*  
4 1 3 5

**Answer: C**



#### 4. Match the following Columns.

Column I	Column II
A. Bulliform cells	1. Stomata
B. Guard cells	2. Aerating pore
C. Lenticel	3. Accessory cells
D. Subsidiary cell	4. Isobilateral leaf

A.  $A \quad B \quad C \quad D$   
 $4 \quad 1 \quad 2 \quad 3$

B.  $A \quad B \quad C \quad D$   
 $1 \quad 4 \quad 2 \quad 3$

C.  $A \quad B \quad C \quad D$   
 $4 \quad 2 \quad 3 \quad 1$

D.  $A \quad B \quad C \quad D$   
 $1 \quad 2 \quad 3 \quad 4$

**Answer: A**



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**5. Match the following Columns.**

Column I	Column II
A. Meristem	1. Photosynthesis, storage
B. Parenchyma	2. Mechanical support
C. Collenchyma	3. Actively dividing cells
D. Sclerenchyma	4. Stomata
E. Epidermal tissue	5. Sclereids

A. *A B C D E*  
1 3 5 2 4

B. *A B C D E*  
3 1 2 5 4

C. *A B C D E*  
2 4 5 1 3

D. *A B C D E*  
5 4 3 2 1

**Answer: B**



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**6. Match the following Columns.**

Column I	Column II
A. Cuticle	1. Guard cells
B. Bulliform cells	2. Single layer
C. Stomata	3. Waxy layer
D. Epidermis	4. Empty colourless cell

A.  $A$   $B$   $C$   $D$   
3 4 1 2

B.  $A$   $B$   $C$   $D$   
1 2 3 4

C.  $A$   $B$   $C$   $D$   
3 2 4 1

D.  $A$   $B$   $C$   $D$   
3 2 1 4

**Answer: A**



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**Chapter Exercises Medical Entrances Special  
Format Questions Assertion And Reason**



1. Assertion : All tissues lying inside vascular cambium are called as bark.

Reason : Bark is made up of phellogen, phellem and phelloderm lying inside secondary phloem.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct

explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: D**



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2. Assertion : Cambium is a lateral meristem and cause growth in width.

Reason : Cambium is made up of fusiform and ray initials in stem.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: B**



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**3. Assertion :** Thick cuticle is mostly present in disease resistant plants.

**Reason :** Disease causing agents cannot grow on cuticle and cannot invade the cuticle.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct

explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: A**



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**4.** Assertion Permanent tissue is composed of mature cells.

Reason Meristematic tissue is a group of actively dividing cells.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: B**



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5. Assertion : Intercalary meristem increase length of plant like apical meristems.

Reason : Intercalary meristem originates from the apical meristems.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct

explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: A**



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**6. Assertion** The lenticel is meant for gaseous exchange .

**Reason** Lenticel checks excessive evaporation of water.



A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: B**



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7. Assertion In angiosperms, the conduction of water is more efficient because their xylem has vessels.

Reason Conduction of water by vessel elements is an active process in which energy is supplied by xylem parenchyma rich in mitochondria.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: A**



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**8.** assertion (A). All the endodermal cells of the root do not contain casparian thickenings on their radial walls and transverse walls.

Reason <sup>®</sup>.passage cells are found in endodermis.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct

explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: A**



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**Chapter Exercises Medical Entrances Gallery**

1. the balloon-shaped structures called tyloses

A. originate in the lumen of vessels

B. characterise the sapwood

C. are extensions of xylem parenchyma cells into vessels

D. are linked to the ascent of sap through xylem vessels

**Answer: C**



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2. Cortex is the region found between

A. epidermis and stele

B. pericycle and endodermis

C. endodermis and pith

D. endodermis and vascular bundle

**Answer: A**



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3. Specialised epidermal cells surrounding the guard cells are called

- A. subsidiary cells
- B. bulliform cells
- C. lenticels
- D. complementary cells

**Answer: A**



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4. Girth of stem increases due to

- A. apical meristems
- B. intercalary meristems
- C. lateral meristems
- D. parenchyma cells

**Answer: C**



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5. transport proteins of endodermal cells are control point where a plant adjusts the quantity and types of solutes that reach the xylem. Root endodermis is able to actively transport ions in one direction only because of the layer of .

A. actin

B. lignin

C. suberin

D. cellulose

**Answer: C**



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**6. medullary rays are tissues made up of**

A. phloem parenchyma

B. xylem parenchyma

C. sieve tubes

D. sclerenchyma

**Answer: B**



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7. No vessels are found in the wood of

A. pine

B. Eucalyptus

C. teak

D. sheesham

**Answer: A**



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**8.** Read the different components from (A) to (D) in the list given below and tell the correct order of the components with reference to their arrangement from outer side to inner side in a woody dicot stem

(A) Secondary cortex , (B) Wood

(C) Secondary phloem , (D) Phellem

A. III, IV, II and I

B. I, II, IV and III

C. IV, I, III and II

D. IV, III, I and II

**Answer: C**



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9. Select the characters which are not applicable to the anatomy of dicot roots.

I. Conjunctive tissue present.

II. Presence of protein compounds in casparian strips.

III. Polyarch xylem bundles.

IV. Presence of pericycle.

A. I and II

B. II and IV

C. III and IV

D. II and III

**Answer: D**



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10. you are given a fairly old piece of dicot stem and a dicot root. Which of the following anatomical structures will you use to distinguish between the two.

- A. Secondary xylem
- B. Secondary phloem
- C. Protoxylem
- D. Cortical cells

**Answer: C**



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11. when one wood is lighter in colour with lower density, the other wood is darker with higher density. They are

- A. spring wood and autumn wood
- B. heart wood and late wood
- C. spring wood and early wood
- D. sapwood and spring wood

**Answer: A**





**12.** which of these characters does/do not apply to vascular bundle of monocot stem.

I. conjoint II. Endarch protoxylem III. Open IV.

Phloem parenchyma is absent.

A. I and II

B. II and III

C. III and IV

D. Only III

**Answer: D**



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**13.** which of the following part of dicot root is made up of cells with suberin deposition in tangential as well as radial walls.

A. Epidermis

B. Endodermis

C. Cortex

D. Pericycle

**Answer: B**



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**14.** Which of the following characters are not applicable to the anatomy of dicot stem and choose the correct options given below?

I. Collenchymatous hypodermis.

II. Polyarch xylem.

III. The presence of casparian strips on the endodermis.

IV. Open vascular bundle.

V. The presence of medullary rays.

Select the correct answer using the codes given below

A. I, IV and V

B. II and III

C. II and V

D. I, II and III

**Answer: B**



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15. Choose the incorrect statement.

- A. Gymnosperms lack vessels in their xylem
- B. The cell wall of collenchyma is made up of cellulose, hemicellulose and pectin
- C. The cell wall of parenchyma is made up of pectin
- D. Gymnosperms have albuminous cells and sieve cell in their phloem

**Answer: D**



16. In dicotyledonous stem, which of the following is the sequence of tissues from inside to outside?

A. Pith, phloem, cambium, protoxylem, metaxylem, Pericycle, prenchyma, collenchyma, endodermis and epidermis

B. Pith, cambium, phloem, protoxylem, metaxylem, pericycle, endodermis,

parenchyma, colenchyma and epidermis

C. Pith, phloem, protoxylem, metaxylem,

cambium, pericycle, endodermis,

parenchyma, collenchyma and epidermis

D. Pith, protoxylem, metaxylem, cambium,

phloem, pericycle, endodermis,

parenchyma, collenchyma and epidermis

**Answer: D**



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17. Which one of the following characters is not found in transverse section of monocot stem?

A. Sclerenchyma bundle sheath

B. Lysigenous cavity

C. Sclerenchymatous hypodermis

D. Starch sheath

**Answer: D**



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**18.** Identify the correct pair of statements.

I. Functions of sieve tubes are controlled by the nucleus of companion cells.

II. Albuminous cells are present in angiosperms.

III. In dicot root, the vascular cambium is completely secondary in origin.

IV. Cylindrical meristems contribute to the formation of primary plant body.

A. I and III

B. III and IV

C. I and II

D. II and III

**Answer: A**



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**19.** Interfascicular cambium develops from the cells of

A. xylem parenchyma

B. endodermis

C. pericycle

D. medullary rays

**Answer: D**



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**20.** Lenticels are involved in

A. gaseous exchange

B. food transport

C. photosynthesis

D. transpiration

**Answer: A**



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**21. Interfascicular cambium is a**

A. primary meristematic tissue

B. primordial meristem

C. type of protoderm

D. secondary meristematic tissue

**Answer: D**



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**22.** Hydrophytes are characterised by

- A. presence of sclerenchyma
- B. presence of aerenchyma
- C. absence of aerenchyma
- D. presence of root nodules

**Answer: B**



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23. Which one of the following pairs is an example for lateral meristem

- A. Phellogen and phelloderm
- B. Phellogen and fascicular cambium
- C. Procambium and phelloderm
- D. Interfascicular cambium and phellem

**Answer: B**



24. Which one of the following is dead, but work efficiently?

- A. Sieve tube
- B. Companion cells
- C. Vessels
- D. Both (b) and (c )

**Answer: C**



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25. Duramen is present in

- A. inner region of secondary wood
- B. part of sapwood
- C. outer region of secondary wood
- D. region of pericycle

**Answer: A**



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26. Which of the following is true ?

A. Vessels are unicellular and with narrow lumen

B. Vessels are multicellular and with wide lumen

C. Tracheids are unicellular and with wide lumen

D. Tracheids are multicellular and with narrow lumen

**Answer: B**



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**27.** Two cross sections of stem and root appear simple, when viewed by naked eye. Not under microscope they can be differentiated by

- A. exarch condition of root and stem
- B. endarch condition of stem and root
- C. endarch condition of root and exarch condition of stem

D. endarch condition of stem and exarch  
condition of root

**Answer: D**



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**28.** For a critical study of secondary growth in plants, which one of the following pairs is suitable

A. Sugarcane and sunflower

B. Teak and pine

C. Deodar and fern

D. Wheat and maiden hair fern

**Answer: B**



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**29.** Which of the following tissue provides mechanical support of the growing parts of the plant such as young stem and petiole of a leaf

A. Parenchyma

B. Collenchyma

C. Sclerenchyma

D. Aerenchyma

**Answer: C**



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**30.** The function of a vessel is

A. conduction of food

B. conduction of water and minerals

C. conduction of hormones

D. All of the above

**Answer: B**



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**31.** Radial conduction of water takes place by

A. vessels

B. vessels and tracheids

C. phloem

D. ray parenchymatous cells

**Answer: D**



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**32.** Which of the following plants shows multiple epidermis?

A. Croton

B. Allium



C. Nerium

D. Cucurbita

**Answer: C**



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**33.** Casparian strips are present in the \_\_\_\_\_ of the root

A. epiblema

B. cortex

C. pericycle

D. endodermis

**Answer: D**



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**34. Ground tissue includes**

A. all tissues except epidermis and vascular bundles

B. epidermis and cortex

C. all tissues internal to endodermis

D. all tissues external to endodermis

**Answer: A**



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**35.** Lateral roots arise from primordia developed by division of

A. pericycle cells lying opposite to protoxylem points

B. pericycle cell lying between two protoxylem points

C. endodermal cell lying between two protoxylem points

D. endodermal cells lying opposite to protoxylem points

**Answer: B**



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**36.** A monocot showing secondary growth is

A. Liliium

B. Cocos

C. Yucca

D. Asparagus

**Answer: C**



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**37.** Determination of age by counting growth rings falls under

A. dendrochronology

B. ageing

C. chronology

D. countrology

**Answer: A**



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**38.** In grasses, certain adaxial epidermal cells along the veins modify themselves into large empty, colourless cells called

- A. bulliform cells
- B. companion cells
- C. guard cells
- D. subsidiary cells

**Answer: A**



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**39.** Read the following statements A and B

(A) Many organs of aquatic plants float in water

(B) Large air gaps are present in the collenchyma tissues of lotus leaf

Select the correct answer.

A. Statement I is correct and II is incorrect

B. Statement II is correct and I is incorrect

C. Statement I and II are correct

D. Statement I and II are incorrect



**Answer: A**



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**40.** Vascular bundles in monocotyledons are considered closed because

A. xylem is surrounded all around by phloem

B. there are no vessels with perforations

C. a bundle sheath surrounds each bundle

D. there is no secondary growth

**Answer: D**



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**41.** In an annual ring, the light coloured part is known as

A. early wood

B. late wood

C. heartwood

D. sapwood

**Answer: A**



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**42.** Jute is mainly composed of

A. xylem

B. secondary bast fibre

C. phloem

D. cortex

**Answer: B**



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**43.** The composition of stele is

- A. vascular bundle
- B. pith and vascular bundle
- C. cortex and endodermis
- D. pith and cortex

**Answer: B**



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**44.** The beneficial use of epidermal layer is

A. bast fibre

B. mesocarp

C. cotton fibre

D. jute

**Answer: C**



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**45.** Vascular bundle having phloem at the centre encircled by xylem is known as

- A. bicollateral
- B. conjoint collateral
- C. amphivasal
- D. amphicribal

**Answer: C**



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**46.** The chief water conducting elements of xylem in gymnosperms are

A. vessels

B. fibres

C. transfusion tissue

D. tracheids

**Answer: D**



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47. Which one of the following is not a lateral meristem

- A. Intrafascicular cambium
- B. Interfascicular cambium
- C. Phellogen
- D. Intercalary meristem

**Answer: D**



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**48.** heart wood differs from sapwood in

A. presence of rays and fibres

B. absence of vessels and parenchyma

C. having dead and non-conducting  
elements

D. being susceptible to pests and  
pathogens

**Answer: C**



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**49.** Which one of the following statements is true ?

A. The collenchyma occurs in layers below the epidermis in monocotyledonous plants

B. Sclerenchyma cells are usually dead and without protoplasts

C. Xylem parenchyma cells are living and thin-walled and their cell walls are made

up of lignin

D. The companion cells are specialised sclerenchymatous cells

**Answer: B**



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**50.** Which of the following is not a part of epidermal tissue system

A. Companion cells

B. Trichomes

C. Root hairs

D. Guard cells

**Answer: A**



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**51.** In woody trees, the exchange of gases between the outer atmosphere and the internal tissue of the stem takes place through

A. aerenchyma

B. stomata

C. pneumatophores

D. lenticels

**Answer: D**



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**52.** Cork cambium gives rise to

A. phellogen and secondary cortex

B. phellogen, phelloderm and secondary cortex

C. cork and phellogen

D. cork and secondary cortex

**Answer: D**



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**53.** At maturity the sieve plates become impregnated with

A. cellulose

B. pectin

C. suberin

D. callose

**Answer: D**



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## 54. Match the following Columns .

Column I	Column II
A. Endodermis	1. Companion cells
B. Stomata	2. Lenticels
C. Sieve tube	3. Palisade cells
D. Periderm	4. Passage cells
E. Mesophyll	5. Accessory cells

A. *A B C D E*  
4 5 2 1 3

B. *A B C D E*  
5 3 1 2 4

C. *A B C D E*  
4 5 1 2 3

D. *A B C D E*  
2 5 3 4 1

**Answer: C**





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55. Alburnum is otherwise known as

A. periderm

B. sapwood

C. heartwood

D. bark

**Answer: B**



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**56.** Arrange the following in the order of their location from periphery to centre in the entire dicotyledonous plant body

(i) Fusiform cells

(ii) Trichoblasts

(iii) collonytes tyloses

(iii) colloocytes

(iv) Tyloses

The correct sequence is

A. IV, I, II, III

B. II, III, I, IV

C. III, II, I, IV

D. I, IV, III, II

**Answer: B**



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**57.** Vascular tissue in higher plants develops from which of the following ?

A. Procambium

B. Protoderm

C. Phellogen

D. Cortex

**Answer: A**



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**58.** Consider the following statement and choose the correct option

(i) The thread like cytoplasmic strands, running from one cell to other is known as plasmodesmata

(ii) Xylem and phloem constitute the vascular bundle of the stem

(iii) The first form xylem elements are described as metaxylem

(iv) Radial vascular bundles are mainly found in the leaves

A. I is true, but II, III and IV are wrong

B. II is true , but I, III and IV are wrong

C. III is true , but I, II and IV are wrong

D. I and II are true, but III and IV are wrong

**Answer: D**



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59. Casparian strip is a characteristic feature of

A. pericycle

B. periblem

C. endodermis

D. hypodermis

**Answer: C**



60. Desert grasses often roll their leaves due to presence of

- A. oily surface
- B. bulliform cells
- C. spines
- D. None of these

**Answer: B**



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61. In dicot stem, vascular bundles are

A. numerous scattered

B. arranged in a ring

C. without cambium

D. surrounded by bundle sheath

**Answer: B**



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62. Which of the following tissues consist of living cells

A. Vessels

B. Tracheids

C. Companion cell

D. Sclerenchyma

**Answer: C**



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**63.** What is /are true about heart wood

A. It does not help in water conduction

B. It is also called alurnum

C. It is dark in colour but very soft

D. It has tracheary element which are filled with tannin, resin, etc.

A. II, III and IV

B. I and IV

C. II and IV

D. I, II and III

**Answer: B**



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**64.** Tunica corpus theory was proposed by

A. Hofmeister

B. Nageli

C. Strasburger

D. Schmidt

**Answer: D**



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65. plant growth in length is increased by

- A. apical meristem
- B. lateral meristem
- C. dermatogen
- D. periblem

**Answer: A**



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**66.** In an annual ring, the light coloured part is known as

- A. early wood
- B. lateral meristem
- C. dermatogen
- D. periblem

**Answer: A**



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67. The annular and spirally thickened conducting elements generally develop in the protoxylem when the root or stem is

- A. maturing
- B. elongating
- C. widening
- D. deifferentiating

**Answer: C**



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**68.** Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by

- A. absence of secondary xylem
- B. absence of secondary phloem
- C. presence of cortex
- D. position of protoxylem

**Answer: D**



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**69.** In barley stem vascular bundles are

A. open and scattered

B. closed and scattered

C. open and in a ring

D. closed and radial

**Answer: B**



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70. Palisade parenchyma is absent in leaves of

A. Sorghum

B. mustard

C. soyabean

D. gram

**Answer: A**



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71. The sugarcane plant has

A. reticulate venation

B. capsular fruits

C. pentamerous flowers

D. dumb-bell-shaped guard cells

**Answer: D**



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72. Vascular tissues in flowering plants develop from

A. phellogen

B. plerome

C. periblem

D. dermatogen

**Answer: B**



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73. The length of different internodes in a culm of sugarcane is variable because

A. shoot apical meristem

B. position of axillary buds

C. size of leaf lamina at the node below  
each internode

D. intercalary meristem

**Answer: D**



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74. Tyloses thickenings are seen in

A. collenchyma

B. phloem cells

C. ray parenchyma only

D. ray parenchyma and xylem cells

**Answer: D**



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75. Which of the following statements is /are true

Uneven thickening of cell wall is characteristic of sclerenchyma

(B) Periblem forms the cortex of the stem and the root

(C) Tracheids are the chief wate transporting elements in gymnosperms

(D) Companion cell is devoid of nucleous at maturity

(E) The Commercial cork is obtained from *Quercus suber*

A. I and IV

B. II and V

C. III and IV

D. II, III and IV

**Answer: D**



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**76.** The waxy material deposited in the casparian strip of the endodermis is

A. pectin

B. suberin

C. cellulose

D. lignin

**Answer: B**



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**77. Passage cells are thin walled cells found in**



A. endodermis of roots facilitating rapid transport of water from cortex to pericycle

B. phloem elements that serve as entry points for substances for transport to other plant parts

C. testa of seeds to enable emergence of growing embryonic axis during seeds germination

D. central region of style through which  
the pollen tube grows towards the ovary

**Answer: A**



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**78.** Aerenchyma is present in which of the  
following plants?

I. Neptunia

II. Potamogeton

III. Bryophyllum

IV. Vallisneria

A. I, II and III are correct

B. I and II are correct

C. II and IV are correct

D. I and III are correct

**Answer: C**



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79. Polyarch conditions is found in

A. monocot root

B. dicot root

C. monocot stem

D. dicot stem

**Answer: A**



**View Text Solution**

**80.** Collenchyma is

- A. living and contains protoplasm
- B. dead and hollow
- C. dead and filled with reserve food
- D. living and contains no reserve food

**Answer: A**



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**81.** Endodermis mainly helps in

A. preventing loss of water from stele

B. provides protection

C. maintains rigidity

D. All of the above

**Answer: A**



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**82.** Length of petiole increases by the activity of

- A. apical meristem
- B. lateral meristem
- C. intercalary meristem
- D. All of the above

**Answer: C**



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**83.** Assertion : Apical and intercalary meristems contribute to the growth in length, while the lateral meristems bring increase in girth in maize.

Reason : Apical and intercalary meristems always increase the height of plants.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct



explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. If Assertion is false, but Reason is true.

**Answer: D**



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**84.** Assertion : In collateral vascular bundles phloem is situated toward inner side.

Reason : In monocot stem, cambium is present

.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false

**Answer: D**



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**85. Assertion:** The quiescent centre acts as a reservoir of relatively resistant cells, which constitute a permanent source of active initials.

**Reason:** The cells of the inactive region of quiescent centre become active, when the previous active initials get damaged.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of the Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false

**Answer: A**



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