



## BIOLOGY

### BOOKS - DINESH PUBLICATION ENGLISH

#### ANATOMY OF PLANT PARTS

##### Multiple Choice Questions

1. when secondary growth occurs, girth of stem increases. Cambial ring increases in diameter due to

- A. periclinal division and radial elongation of cambial cells
- B. anticlinal division and radial elongations of cambial cells
- C. both periclinal and anticlinal divisions and radial elongation of cambial cells
- D. radial elongation of cambium cells along.

**Answer: b**



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**2. The interfascicular cambium is situated**

- A. between xylem and phloem
- B. between vascular bundles.
- C. outside the vascular bundles
- D. inner side of the vascular bundles.

**Answer: b**



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

- A. cortex

B. pith

C. pericycle

D. medullary rays.

**Answer: d**



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**4. Bulliform or motor cells occur in**

A. root

B. stem

C. isobilateral leaf

D. dorsiventral leaf.

**Answer: c**



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5. Bulliform cells from other cells in being

- A. large, thin-walled, contain containing water
- B. large, thick-walled, contain abundant chloroplasts
- C. small thick - walled, contain starch
- D. small, thin -walled, contain calcium oxalate

**Answer: a**



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6. the formation of annual rings in dicot stem mainly depends upon difference in

- A. formation of unequal quantities of xylem and phloem
- B. activity of vascular cambium due to seasonal variations
- C. activity of cork cambium due to seasonal variations
- D. formation of unequal quantities of sapwood and heart wood.



**Answer: b**



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7. each annual ring or growth ring consists of two strips of

- A. autumn wood and spring wood
- B. heart wood sap wood
- C. xylem and phloem
- D. cork and cortex

**Answer: a**



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8. in the veins of leaves. The phloem is situated towards

- A. upper epidermis

B. lower epidermis

C. all round the xylem

D. lateral to xylem

**Answer: b**



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**9.** in spring (rainy summer) the activity of vascular cambium is

A. more

B. less

C. normal

D. none of the above.

**Answer: a**



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10. Alternate name of heart wood is

- A. duramen
- B. alburnum
- C. primary xylem
- D. spring wood

**Answer: a**



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11. Heart wood

- A. outer part of secondary xylem
- B. inner part of secondary xylem
- C. outer part of secondary phloem
- D. inner part of secondary phloem

**Answer: b**



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**12.** The wood of commerce is

- (a) sap-wood (alburnum)
- (b) heart wood( duramen)
- (c) spring wood
- (d) autumn wood

A. sap-wood (alburnum)

B. heart wood( duramen)

C. spring wood

D. autumn wood

**Answer: b**



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13. The endarch condition is characteristic of

- (a) root
- (b) stem
- (c) leaves
- (d) petiole

A. root

B. stem

C. leaves

D. petiole

**Answer: b**



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14. A dicot root differs from a monocot root in which of the following

A. fewer number of radial vascular bundles with small pith

- B. large number of radial vascular bundles with large pith
- C. fewer number of radial vascular bundles with large pith
- D. large number of radial vascular bundles with small pith.

**Answer: a**



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**15. Multiseriate vascular rays are present opposite the protoxylem in old**

- A. dicot stems
- B. dicot roots
- C. monocot stems
- D. monocot roots

**Answer: b**



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16. Passage cells are present in

- A. cortex
- B. pericycle
- C. pith
- D. endodermis

**Answer: d**



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17. which one of the following has dead cells

- A. collenchyma
- B. chlorenchyma
- C. periderm
- D. endodermis

**Answer: c**



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**18.** the outer cellular complex present on the outside of those stems and roots which have undergone secondary growth is

- A. periderm
- B. epiblema
- C. phelloderm
- D. phellogen

**Answer: a**



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**19.** pericycle that gives rise to lateral roots is made of



A. meristematic

B. epiblema

C. phelloderm

D. phellogan

**Answer: b**



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**20.** pith and cortex of the stem are parts of

A. dermal tissue system

B. vascular tissue sytem

C. ground tissue sytem

D. epidermal tissue system

**Answer: c**



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21. One cannot calculate the age of a tree by its rings if that tree is located in which of the following forests ?

- A. temperate deciduous forests
- B. temperate evergreen forests
- C. tropical deciduous forests
- D. tropical evergreen forests.

**Answer: d**



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22. Central region -clogged secondary xylem is

- (a) central wood
- (b) heartwood
- (c) alburnum
- (d) hardwood

A. central wood

B. heartwood

C. alburnum

D. hardwood

**Answer: b**



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**23.** Name the type of vascular bundle where the xylem and phloem are arranged alternately.

A. concentric

B. collateral

C. radial

D. conjoint

**Answer: d**

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24. primary stem is

- A. main stem
- B. stem having distinct nodes
- C. stem having only primary tissues
- D. stem having branches.

**Answer: c**

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25. oldest part of phloem in a dicot stem is situated just

- A. outside vascular cambium
- B. inner to primary cortex
- C. inner to vascular cambium

D. between periderm and primary cortex.

**Answer: b**



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**26.** The innermost layer of cortex is called

A. pericycle

B. endodermis

C. hypodermis

D. none of the above

**Answer: b**



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**27.** ground tissue having differentiated concentric layers is found in

A. dicot leaf

B. monocot leaf

C. dicot stem

D. monocot stem

**Answer: c**



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**28.** Cortex lies between

(a) epidermis and endodermis

(b) endodermis and pith

(c) hypodermis and endodermis

(d) epidermis and stele

A. epidermis and endodermis

B. endodermis and pith

C. hypodermis and endodermis

D. epidermis and stele.

**Answer: d**



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**29.** Endodermis is not differentiated in

- (a) monocot root
- (b) dicot roots
- (c) monocot stems
- (d) dicot stem

A. monocot root

B. dicot roots

C. monocot stems

D. dicot stem.

**Answer: c**



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30. Fibrovascular bundles or vascular bundles covered but sclerenchymatous sheath are found in

- (a) monocot root
- (b) dicot roots
- (c) monocot stems
- (d) dicot stem

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

**Answer: b**



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31. A.T.S. of dicot stem shows



A. vascular bundles arranged in a ring

B. scattered vascular bundles.

C. closed vascular bundles

D. radial vascular bundles.

**Answer: a**



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**32.** number of cambial strips in a vascular bundle of cucurbita stem is

A. 1

B. 3

C. 2

D. 4

**Answer: c**



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33. secondary growth is the production of

- A. new tissues from intercalary meristem
- B. new conducting cells
- C. new tissues from lateral meristem
- D. new ground cells.

**Answer: c**



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34. When xylem and phloem are on same radius, the vascular bundles are said to be:-

- A. radial
- B. conjoint
- C. collateral

D. bicollateral.

**Answer: c**



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**35.** In stem cork cambium originates from some

A. outer cells of cortex

B. fascicular and interfascicular cambium

C. inner cell of cortex

D. endodermis

**Answer: a**



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**36.** complementary cells of lenticels are

- A. phellem
- B. phelloderm
- C. endodermis
- D. phellogen

**Answer: d**

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**37. complementary cells of lenticels are**

- A. compact and suberised
- B. loose and non-suberised
- C. compact and lignified
- D. loose and lignified

**Answer: b**

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**38.** Leaves of many grasses are capable of folding and unfolding because they

- A. parallel veins
- B. isobilateral nature
- C. thin lamina
- D. bulliform cells.

**Answer: d**



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**39.** Cucurbita stem is an exceptional dicot stem because it has

- A. bicollateral bundles
- B. bicollateral bundles and several layered thick pericycle
- C. bicollateral bundles and hollow centre

D. bicollateral bundles arranged in two alternate rings

**Answer: d**



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**40.** Major function of cortex is

- (a) conduction of water
- (b) storage of water
- (c) storage of food
- (d) strength

A. conduction of water

B. storage of water

C. storage of food

D. strength

**Answer: c**



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41. A dorsiventral leaf has

- A. palisade tissue on both sides
- B. spongy tissue on both sides
- C. palisade tissue on upper side and spongy tissue on lower side
- D. spongy tissue on upper side and palisade tissue on lower side

**Answer: c**



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42. in autumn, cambium is

- A. inactive
- B. less active
- C. more active

D. killed

**Answer: b**



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**43.** annual rings can be useful for indicating age of the tree

- A. dicot of equatorial region
- B. monocot of equatorial region
- C. dicot of temperate region
- D. monocot of temperate area.

**Answer: c**



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**44.** Autumn wood is distinguishable from spring wood in having



- A. narrow tracheary elements
- B. broader tracheary elements
- C. lighter colour
- D. cambium

**Answer: a**

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**45.** vascular strand having numerous scattered fibrovascular bundles is

- A. eustele
- B. atactostale
- C. polycyclic stele
- D. dictyostele

**Answer: b**

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46. A cavity present in vascular bundles of maize is formed by

- A. degeneration of xylem parenchyma
- B. replacement of phloem parenchyma
- C. disruption of protoxylem
- D. dissolution of cells between metaxylem vessels.

**Answer: c**



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47. spongy parenchyma is arranged in

- A. one layer
- B. loosely arranged
- C. compactly arranged

D. regularly arranged around large cavities.

**Answer: b**



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**48.** The other term for annual ring is

- (a) annual xylem
- (b) annual wood
- (c) growth strip
- (d) growth ring

A. annual xylem

B. annual wood

C. growth strip

D. growth ring

**Answer: d**



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**49.** Complementary cells are found in

- (a) lenticles
- (b) pholem
- (c) endodermis of monocot stems
- (d) exodermis

A. lenticles

B. pholem

C. endodermis of monocot stems

D. exodermis

**Answer: a**



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**50.** Exodermis occurs in

A. stem

B. monocot root

C. dicot root

D. leaf

**Answer: a**



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**51.** Casparian strips in endodermis is composed of

A. lens -like thickenings of endodermal cells

B. strip of thickening found on the outer side of endodermis

C. lingo-suberin band running in endodermal cell walls.

D. layer of cells between endodermis and cortex.

**Answer: c**



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52. endodermis acts as biological check post and prevents wall flow of materials because it has

- A. casparian strips
- B. barrel-shaped cells
- C. passage cells
- D. specialised thickenings

**Answer: a**



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53. endodermis occurs in

- A. stems only
- B. roots only
- C. dicots stems and all types of roots

D. both monocot and dicot stems as well as roots.

**Answer: c**



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**54.** Tissue found between xylem and phloem bundles of a root is

- (a) vascular parenchyma
- (b) parenchyma
- (c) conjunctive meristem
- (d) conjunctive parenchyma

A. vascular parenchyma

B. parenchyma

C. conjunctive meristem

D. conjunctive parenchyma

**Answer: d**



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55. in isobilateral leaves

- A. lower surface is brighter green
- B. upper surface is lighter green
- C. both the surface are equally green
- D. upper surface is dark green while the lower surface is lighter green

**Answer: c**



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56. in dosiventral leaves

- A. upper surface is dark green as compared to lower surface
- B. both the surface are equally green
- C. lower surface is dark green



D. both the surfaces are dark green.

**Answer: a**



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57. medullary rays are extra prominent in

A. monocot stem

B. dicot stem

C. young dicot root

D. old dicot root

**Answer: d**



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58. vascular bundles of typical leaves are

- A. collateral and closed
- B. collateral and open
- C. conjoint and concentric
- D. radial

**Answer: a**



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**59.** In an old stem, the oldest secondary xylem is found just

- (a) inner to vascular cambium
- (b) outside primary xylem
- (c) outside vascular cambium
- (d) inner to phellogen

- A. inner to vascular cambium
- B. outside primary xylem
- C. outside vascular cambium

D. inner to phellogen.

**Answer: a**



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**60.** For bottle cork, the latter is cut in such a way that lenticels appear

- (a) vertically
- (b) obliquely
- (c) transversely
- (d) blocked

A. vertically

B. obliquely

C. transversely

D. blocked

**Answer: a**



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61. Scaly bark occurs in

- (a) eucalyptus
- (b) betula
- (c) psidium
- (d) tectona

A. eucalyptus

B. betula

C. psidium

D. tectona

**Answer: c**



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62. in submerged hydrophytes, the stems are extremely weak due to

A. absence of phloem

B. absence of xylem

C. presence of aerenchyma

D. poor development of xylem and mechanical tissue.

**Answer: d**



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**63.** Outer layer of bark is

(a) epidermis

(b) rhytidome

(c) phelloderm

(d) lenticel

A. epidermis

B. rhytidome

C. phelloderm

D. lenticel

**Answer: b**



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**64.** In monocot plants, the guard cells are

A. dumb-bell -shaped

B. reniform

C. spherical

D. isodiametric

**Answer: a**



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**65.** rolling grass is

- A. agropyron
- B. ammophila
- C. poa
- D. all the above.

**Answer: d**

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**66. epistomatic leaf is**

- A. nymphaea
- B. nelumbo
- C. victoria
- D. all the above.

**Answer: d**

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67. In dicot stem, the pericycle is

- (a) single layered
- (b) multilayered
- (c) two layered
- (d) Absent

A. single layered

B. multilayered

C. two layered

D. Absent

**Answer: b**



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68. In roots, pericycle is



A. single layered

B. two layered

C. three layered

D. multilayered

**Answer: a**



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**69.** in monocot stem, the pericycle is

A. indistinguishable

B. one layered

C. three layered

D. multilayered

**Answer: a**



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70. dicot root having more than six vascular bundles is

- A. pea
- B. sunflower
- C. ficus
- D. ranunculus

**Answer: c**



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71. both a dicot root and monocot root possess six vascular bundles.the two can be distinguished by

- A. presence of lysigenous cavity in monocot root
- B. occurrence of more metaxylem vessels in dicot root
- C. presence of exarch condition in monocot root

D. outline of vessels.

**Answer: d**



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**72.** ring bark occurs in

A. psidium

B. eucalyptus

C. acacia

D. all the above.

**Answer: b**



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**73.** in betula the bark is

- A. ring bark used writing
- B. scaly bark used for writing
- C. ring bark used as a masticatory
- D. ring bark used as a spice

**Answer: a**

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**74.** porous wood is characterised by

- A. absence of tracheids
- B. presence of vessels
- C. absence of vessels
- D. presence of sieve tube

**Answer: b**

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75. Gymnosperm wood is non-porous because it

- (a) lacks vessels
- (b) contains tracheae
- (c) has abundant fibres
- (d) contains no fibres.

A. lacks vessels

B. contains tracheae

C. has abundant fibres

D. contains no fibres.

**Answer: a**



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76. isobilateral leaves have stomata on

A. both upper and lower surfaces

B. upper surface only

C. lower surface only

D. none of the surfaces.

**Answer: a**



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77. stomatal crypts are found in the leaf of

A. sunflower

B. oleander

C. maize

D. nymphaea

**Answer: b**



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78. thin-walled large cells present in the leaf epidermis, and capable of contraction and expansion are

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

**Answer: d**



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79. an undifferentiated mesophyll is found in

- A. isobilateral leaves
- B. dorsiventral mesophytic leaves
- C. dorsiventral xerophytic leaves

D. vertical leaves.

**Answer: a**

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**80.** radial vascular bundles are those in which

- A. xylem is surrounded by phloem
- B. phloem is surrounded by xylem
- C. xylem and phloem occur on the same radius
- D. xylem and phloem are found pm different radii.

**Answer: d**

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**81.** sap-wood is



- A. outer functional part of secondary xylem
- B. inner nonfunctional part of secondary xylem
- C. outer as well inner part of secondary xylem
- D. none of the above.

**Answer: a**

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**82.** periderm includes

- A. cork cambium ( phellogen) cork (phellem) and secondary cortex ( phelloderm)
- B. cork cambium and cork
- C. cork
- D. cork and secondary phloem

**Answer: a**



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**83.** As secondary growth proceeds, in a dicot stem, the thickness of

- A. heart wood increases
- B. sap-wood increases
- C. both increase
- D. both decrease

**Answer: c**



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**84.** Bark of a tree consists of:

- A. all the tissues outside the vascular cambium
- B. all the tissues outside the cork cambium
- C. only the cork

D. the cork and secondary cortex.

**Answer: a**



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**85.** The best method to determine the age of tree is

A. measure its diameter

B. count the number of leaves

C. count the number of annual rings at the base of main stem

D. find out the number of branches.

**Answer: c**



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**86.** radial vascular bundles occur in

A. stem

B. monocot stem

C. dicot stem

D. root

**Answer: d**



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**87. Xylem fibre is**

A. heart wood

B. wood fibre

C. libriform fibre

D. bast fibre

**Answer: b**



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88. Youngest layer of secondary xylem in wood of dicot stem is located just

- A. outside the cambium
- B. inside the cambium
- C. outside the pith
- D. inside the cortex.

**Answer: b**



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89. xylem in dorsiventral leaves is directed towards

- A. upper epidermis
- B. lower epidermis
- C. surrounds phloem

D. surrounded by phloem

**Answer: a**



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**90.** Wood is the common name of

A. cambium

B. vascular bundles

C. phloem

D. secondary xylem

**Answer: d**



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**91.** Well developed pith is found in

A. monocot root and monocot stem

B. monocot stem and dicot root

C. monocot root and dicot stem

D. dicot root and dicot stem

**Answer: c**



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**92.** The vascular bundles in a dicot stem are

A. open, collateral, endarch

B. closed, collateral, endarch

C. open , collateral, exarch

D. closed, collateral, exarch.

**Answer: a**



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93. Cork cells are made impervious to water and gases by the presence of

- A. cutin
- B. suberin
- C. lignin
- D. hemicellulose

**Answer: b**



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94. The vascular bundles in a dicot root are

- A. radial exarch
- B. conjoint
- C. radial endarch



D. conjoint exarch

**Answer: a**



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**95.** Cork is formed in extrasteller region from

A. cork cambium ( phellogon)

B. vascular cambium

C. phloem

D. xylem

**Answer: a**



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**96.** The function of cork cambium (phellogen) is to produce

A. secondary xylem and secondary phloem

B. cork and secondary cortex

C. secondary cortex and phloem

D. cork

**Answer: b**



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**97. monocot root differs from dicot root in having**

A. open vascular bundles

B. scattered vascular bundles.

C. well developed pith

D. radially arranged vascular bundles.

**Answer: c**



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98. Casparian bands are found in

- A. epidermis
- B. endodermis
- C. pericycle
- D. phloem

**Answer: b**



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99. secondary growth occurs due to activity of

- A. cork cambium
- B. vascular cambium
- C. intercalary meristem

D. both A and B

**Answer: d**



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**100.** growth/annual rings are formed by the activity of

A. cambium

B. xylem

C. phloem

D. both xylem and phloem

**Answer: a**



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**101.** Four radial vascular bundles are found in

A. monocot stem

B. monocot root

C. dicot stem

D. dicot root

**Answer: d**



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**102.** Tyloses are found in .....

A. secondary xylem

B. secondary phloem

C. callus tissue

D. cork cells.

**Answer: a**



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**103.** Largest number of chloroplasts in the leaf is in

- A. spongy tissue
- B. palisade tissue
- C. guard cells
- D. bundle sheath

**Answer: b**



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**104.** Tyloses are

- A. tracheal plugs which plug the lumen of the vessels and tracheids
- B. compound sieve plates
- C. specialised secretory cells

D.

**Answer: a**



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**105.** Phloem parenchyma is absent in

- (a) Dicots and few monocots
- (b) Monocots
- (c) Monocots and dorsiventral leaf
- (d) Gymnosperms

A. dicot root

B. dicot leaf

C. monocot stem

D. dicot stem.

**Answer: c**



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**106.** In dicot stems, vascular cambium is formed from

- A. hypodermis
- B. epidermis
- C. pericycle
- D. cortex

**Answer:** c



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**107.** Hypodermis in a monocotyledonous stem is

- A. parenchymatous
- B. chlorenchymatous
- C. collenchymatous



D. sclerenchymatous.

**Answer: d**



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**108.** The balloon like outgrowth of parenchyma in the lumen of a vessel is known as

A. histogen

B. tyloses

C. phellogen

D. tunica

**Answer: b**



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109. Exchange of gases between air and internal tissue of older corky stem takes place through

- A. sieve plates
- B. pits
- C. stomata
- D. lenticels.

**Answer: d**



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110. Xylotomy is study of wood. Dendrochronology is the study of

- A. height of a tree
- B. diameter of a tree
- C. age of the tree by counting the number of annual rings in the main stem

D. none of these

**Answer: c**



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**111.** In a dorsiventral leaf protoxylem and meaxylem are located, respectively, on

- A. face towards the adaxial side
- B. face towards the abaxial surface
- C. are surrounded by metaxylem
- D. are scattered in the middle.

**Answer: a**



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**112.** Grafting is not possible in monocot plants because

- A. lack cambium
- B. have scattered vascular bundles
- C. have parallel venation
- D. are herbaceous

**Answer: a**



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**113.** Conjoint, collateral, endarch and closed vascular bundles are found in

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

**Answer: d**



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**114.** The vascular bundles in a dicot stem are

- A. concentric and open
- B. concentric and closed
- C. conjoint, collateral and closed
- D. conjoint, collateral and open

**Answer: d**



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**115.** Knots in stems are formed due to

- A. insect injury

B. growth of secondary tissue over wounds of fallen branches.

C. bacterial tumours

D. none of these

**Answer: b**



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**116. Lenticels**

A. scars on old stems

B. special stomata

C. aerating pores in bark

D. special stomata on hydrophytic plants.

**Answer: c**



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**117.** Velamen found in epiphytic roots is meant for

- (a) absorption of water from host
- (b) absorption of water from air
- (c) perennation
- (d) protection

A. absorption of water from host

B. absorption of water from air

C. perennation

D. protection

**Answer: b**



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**118.** In roots, lateral branches grow from

A. epiblema

B. pericycle

C. cortex

D. endodermis

**Answer: b**



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**119.** Centripetal xylem is the characteristic of

A. leaf

B. root

C. dicot stem

D. monocot stem

**Answer: b**



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120. origin of vegetative branch is

- A. schizogenous
- B. endogenous
- C. exogenous
- D. internal form intercalary meristem

**Answer: c**



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121. Sunken stoma occur in

- A. mesophytes
- B. xerophytes
- C. hygrophytes
- D. hydrophytes.

**Answer: b**



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**122.** Mesophyll is differentiated into palisade and spong tissue in

- A. extremely xerophytic leaves
- B. hydrophytic leaves
- C. monocot leaves
- D. dicot leaves.

**Answer: d**



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**123.** Bulliform or motor cells occur in

- A. upper epidermis of dicot leaves

- B. upper epidermis of monocot leaves
- C. lower epidermis of monocot leaves
- D. lower epidermis of dicot leaves.

**Answer: b**

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**124. Adventitious roots are**

- A. epidermis
- B. pericycle or interfascicular parenchyma
- C. cortex
- D. endodermis

**Answer: b**

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125. The innermost layer of cortex is called

- A. endodermis
- B. epidermis
- C. exodermis
- D. hypodermis

**Answer: a**



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126. Pericycle of root produces

- A. mechanical support
- B. lateral roots
- C. vascular bundles
- D. adventitious buds

**Answer: d**



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**127.** Vascular cambium of stem is

- A. bast fibres
- B. sieve tubes
- C. wood fibres
- D. companion cells

**Answer: c**



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**128.** For union between stock and scion in grafting which one is the first to occur ?

- A. formation of callus
- B. production of plasmodesmata
- C. differentiation of new vascular tissues
- D. regeneration of cortex and edidermis

**Answer: a**

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**129.** Vascular cambium produces

- A. primary xylem and primary phloem
- B. secondary xylem and secondary phloem
- C. primary xylem and secondary phloem
- D. secondary xylem and primary primary phloem

**Answer: b**

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**130.** Polyarch and exarch condition is found in

- (a) monocot stem
- (b) monocot root
- (c) dicot stem
- (d) dicot root

A. monocot stem

B. monocot root

C. dicot stem

D. dicot root

**Answer: c**



**Watch Video Solution**

**131.** radial vascular bundles occur in

A. stem

B. monocot root

C. dicot root

D. both monocot and dicot roots

**Answer: d**



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**132.** Exarch xylem is found in

A. leaf

B. petiole

C. stem

D. root

**Answer: d**



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**133.** Meristematic tissue in vascular bundle is

- A. fascicular/intrafascicular cambium
- B. interfascicular cambium
- C. phellogen
- D. procambium

**Answer: a**



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**134.** Fusiform initials produced

- A. vascular rays
- B. primary phloem
- C. tracheary elements

D. ray parenchyma.

**Answer: c**



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**135.** outer lighter coloured/alburnum region of wood is

A. autumn wood

B. spring wood

C. heart wood

D. sapwood

**Answer: d**



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136. Cork is impervious to water due to the presence of \_\_\_\_\_ in its cell wall.

- A. cuticle
- B. lignin
- C. suberin
- D. chitin

**Answer: c**



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137. A T.S shown conjoint, collateral, endarch and closed bundles scattered in a ground tissue. It is

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

D. monocot root

**Answer: b**



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**138.** Fibrovascular bundles or vascular bundles covered but sclerenchymatous sheath are found in

- (a) monocot root
- (b) dicot roots
- (c) monocot stems
- (d) dicot stem

A. monocot stem

B. dicot stem and leaf

C. monocot root

D. dicot root

**Answer: a**



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139. What is true about a monocot leaf ?

- A. reticulate venation
- B. absence of bulliform cells from epidermis
- C. mesophyll not differentiated into palisade and spongy tissues
- D. well differentiated mesophyll

**Answer: c**



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140. which is not true of dicot root

- A. vascular bundles 15-20
- B. radial vascular bundles
- C. secondary growth

D. pith little or absent

**Answer: a**



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**141.** which is not characteristic of xerophytic leaf

- A. thick cuticle
- B. well developed conducting tissue
- C. well developed mechanical tissue
- D. spongy parenchyma.

**Answer: d**



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**142.** Fascicular cambium found in dicot stem is a

- A. apical meristem
- B. primary meristem
- C. secondary meristem
- D. intercalary meristem

**Answer: b**

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**143.** Commercial cork is obtained from

- A. berberis/barberry
- B. salix/willow
- C. Quercus/Oak
- D. betula/birch

**Answer: c**

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**144.** in monocots

- A. leaves have reticulate venation
- B. stems have annual rings
- C. seeds have two storage organs
- D. stems have scattered conducting strands.

**Answer: d**



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**145.** Velamen take s part in

- A. respiration
- B. absorption of moisture
- C. transpiration



D. protection

**Answer: b**



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**146.** Trees at sea do not have annual rings because

- A. there is little climatic variations
- B. they belong to monocots
- C. there is enough moisture
- D. soil is sandy.

**Answer: a**



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**147.** lenticels do not occur on

A. fruit

B. Root

C. stem

D. leaf

**Answer: d**



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**148.** in dicot stem, xylem is

A. polyarch

B. monoarch

C. endarch

D. exarch

**Answer: c**



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**149.** Two exarch vascular bundles occur in

A. monocot root

B. dicot root

C. monocot stem

D. dicot stem.

**Answer: b**



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**150.** Kranz anatomy occurs in

A. flower

B. root

C. leaf

D. stem

**Answer: c**



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**151.** Abnormal secondary growth is observed in

A. dracaena

B. ginger

C. wheat

D. sunflower

**Answer: a**



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**152.** Crock cambium is also called

A. phelloderm

B. phellem

C. periderm

D. phellogen

**Answer: d**



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**153.** Which cells decay faster, if exposed freely to the air ?

A. sapwood

B. softwood

C. wood with lot of fibress

D. heartwood

**Answer: a**



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**154.** A narrow layer of thin walled cells which separate the wood from phloem in dicot stem is called

- A. cork cambium
- B. vascular cambium
- C. endodermis
- D. pericycle.

**Answer: b**



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**155.** Periderm is produced by

- A. vascular cambium
- B. fascicular cambium
- C. phellogen

D. intrafascicular cambium

**Answer: c**



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**156.** Which one is not correct about heartwood

- A. it is formed of living cells
- B. it contains resin, tannins and other organic contents
- C. it is of dark color
- D. it lies in the centre of trunk

**Answer: a**



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**157.** Lenticels and hydathodes are small pores with following common attributes

- 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 plant.

**Answer: c**



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**158.** From which part of Cinchona plant, a drug is obtained

- (a) bark
- (b) pericarp
- (c) leaf
- (d) endosperm



A. bark

B. pericarp

C. leaf

D. endosperm

**Answer: a**



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**159.** Endodermis of dicot stem is also called

A. bundle sheath

B. starch sheath

C. mesophyll

D. water channel

**Answer: b**



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**160.** Which one yields drug for malaria?

- (a) penicillium
- (b) algae
- (c) bacteria
- (d) cinchona bark

A. penicillium

B. algae

C. barteria

D. cinchona bark

**Answer: d**



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**161.** Endodermis is a part of

A. medulla

B. stele

C. cortex

D. exodermis

**Answer: c**



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**162.** vessels of heart wood are blocked by

A. hydathodes

B. tyloses

C. stomata

D. latex

**Answer: b**



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**163.** The casparian rings are found in

- A. monocot stems
- B. dicot stems
- C. monocot roots
- D. dicot roots

**Answer: b**



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**164.** secondary xylem is

- A. endarch
- B. exarch
- C. mesarch

D. none of the above.

**Answer: d**



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**165.** Which of the following does not have stomata ?

A. submerged hydrophytes

B. hygrophytes

C. mesophytes

D. xerophytes.

**Answer: a**



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**166.** When phloem is present on both sides of the xylem, the vascular bundle is said to be

- A. collateral
- B. radial
- C. bicollateral
- D. concentric

**Answer: c**



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**167.** Vascular bundles in the stem of Cucurbita or Lagenaria are

- A. collateral
- B. bicollateral
- C. radial
- D. concentric

**Answer: b**



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**168.** Multiple epidermis is found in the leaves of .....

A. cotton

B. cucurbita

C. palm

D. nerium

**Answer: d**



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**169.** if all the lenticels of stem are blocked , the first to die will be

A. leaves

B. shoot tips

C. roots

D. none of the above.

**Answer: c**



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**170.** protoxylem lacunae occur in

A. grass stem vascular bundles

B. cladodes

C. underground stems

D. climbers.

**Answer: a**



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171. vascular cambium from xylem on inner side and phloem on outer side due to

- A. effect of gravity
- B. shearing force of wind
- C. intrafascicular nature
- D. differential action of hormones.

**Answer: d**



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172. Hard woods have

- A. more of parenchyma
- B. vessels in abundance
- C. tracheids mainly
- D. non - porous nature.

**Answer: b**



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**173.** which one of the following is the most durable wood ?

- A. shorea robusta
- B. cedrus deodara
- C. dalbergia sisso
- D. tectona grandis

**Answer: d**



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**174.** Which one is responsible for radial conduction of water and food in woody stems?

- (a) vessels

(b) vascular rays

(c) endodermis

(d) xylem fibres

A. vessels

B. vascular rays

C. endodermis

D. xylem fibres.

**Answer: b**



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**175. [A]:** Bhojpatra is derived from bark of *Betula*.

**[R]:** *Eucalyptus* belongs to family *Myrtaceae*.

A. *dalbergia*

B. *cinchona*

C. *piper*

D. betula

**Answer: d**



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**176.** undifferentiated ground tissue is present in stem of

A. sunflower

B. pisum

C. maize

D. cucurbita

**Answer: c**



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177. Secondary growth does not occur in monocot stems because

- (a) Scattered
- (b) Open
- (c) Close
- (d) Radial

A. radial

B. scattered

C. enclosed by sclerenchyma

D. closed

**Answer: d**



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178. The functional xylem of dicot tree is

A. sap wood

B. autumn wood

C. heart wood

D. non of the above

**Answer: a**



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**179.** The condition where protoxylem lies towards the pith and metaxylem towards periphery is called as (i) while the condition where protoxylem lies towards periphery and metaxylem towards pith is known as (ii)

A. radial

B. endarch

C. exarch

D. closed

**Answer: c**



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**180.** Which of the following meristems is responsible for extrastelar secondary growth in dicotyledonous stem?

- A. interfascicular cambium
- B. phellogen
- C. intrafascicular cambium
- D. intercalary meristem

**Answer: b**



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**181.** Annual rings are distinct with early wood and late wood in the plants growing in

- A. arctic regions

B. tropical regions

C. Regions with seasonal changes

D. any region

**Answer: c**



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**182.** Tyloses thickenings are seen in

A. ray parenchyma

B. collenchyma

C. phloem cells

D. ray parenchyma and xylem cells.

**Answer: d**



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**183.** Secondary growth is absent in

- A. hydrophytes
- B. mesophytes
- C. halophytes
- D. xerophytes.

**Answer: a**



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**184.** The cell wall is impermeable to water and deposition of suberin occurs in

- A. bark
- B. cork
- C. bast
- D. xylem

**Answer: b**



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**185. Monocot stem has**

- A. bicollateral closed vascular bundles
- B. bicollateral open vascular bundles.
- C. collateral open vascular bundles.
- D. collateral closed vascular bundles.

**Answer: d**



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**186. Where are casparian strips in a root. Which chemical do they contain?**

A. cutin

B. pectin

C. suberin

D. wax

**Answer: c**



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**187.** A dorsiventral leaf has

A. more on upper palisade containing surface and less on spongy parenchyma containing lower surface

B. fewer on upper surface and more on lower surface

C. equally on both

D. none of the two surfaces.

**Answer: d**



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**188.** In which of the following monocots secondary growth is present ?

- A. cononut
- B. sugarcane
- C. maize
- D. yucca

**Answer: d**



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**189.** In dicot root

- A. ex ternal to primary cortex
- B. inner to endodermis and outer to pericycle
- C. outer to endoermis and inner to primary cortex

D. inner to endodermis and external to primary phloem

**Answer: b**



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**190.** Bundle sheath is absent around vascular bundles of

- (a) dicot stem
- (b) monocot stem
- (c) dicot leaf
- (d) monocot leaf

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

**Answer: a**



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**191.** A component of xylem is

- A. sieve tube
- B. medullary ray
- C. Sclereids
- D. Tracheid

**Answer: d**



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**192.** Extra stelar secondary growth occurs due to the activity of

- A. phloem
- B. medullary ray
- C. cambium

D. xylem

**Answer: c**



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**193.** Mesophyll is differentiated into palisade and spong tissue in

- A. some monocot leaves
- B. all dorsiventral leaves
- C. all monocot leaves
- D. all isobilateral leaves.

**Answer: b**



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**194.** In free floating plant, the stamata are

A. lower surface

B. upper surface

C. both surface

D. absent

**Answer: b**



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**195.** Casparian strips in endodermis is composed of

A. longitudinal and radial walls of epidermal cells

B. longitudinal wall of xylem

C. all walls of endodermis

D. radial walls of endodermis.

**Answer: c**



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**196.** 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
- B. green
- C. orange
- D. purple.

**Answer: b**



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**197.** Paddage cells occur in

- A. epidermis

B. cortex

C. endodermis

D. pericycle.

**Answer: c**



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**198.** vascular bundles occur in a ring in

A. monocot stem

B. leaf

C. roots

D. dicot stem.

**Answer: d**



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199. predominant material present in cork cell walls is

- A. lignin
- B. chitin
- C. suberin
- D. pectin

**Answer: c**



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200. The vascular bundles in a dicot root are

- A. radial
- B. concentric
- C. collateral
- D. bicollateral

**Answer: a**



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

- A. dendrochronology
- B. dendrology
- C. countrochronology
- D. demeology

**Answer: a**



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**202.** Waxy coating on epidermis of young stem is

- (a) suberin
- (b) periderm

(c) phellem

(d) cuticle

A. suberin

B. periderm

C. pellem

D. cuticle

**Answer: d**



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**203.** Porous wood contains mainly

A. fibres

B. sieve tubes

C. tracheids

D. vessels.

**Answer: d**



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**204.** Duramen is

- A. sapwood
- B. heartwood
- C. bark
- D. periderm

**Answer: b**



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**205.** In a monocot root

- A. conjoint, collateral, open, polyarch vascular bundles.

B. suberised , exodermis,casparian,casparian strip, passage

cells,cambium

C. suberised exodermis,polyarch xylem,pith

D. exoderims. Endarch, tetrarch closed vascular bundles.

**Answer: c**

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**206.** Which one of the following have sunken stomata ?

A. mango

B. guava

C. hydrilla

D. nerium

**Answer: d**

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**207.** Tyloses occur in

- (a) autumn wood
- (b) spring wood
- (c) heart wood
- (d) sap wood

A. autumn wood

B. spring wood

C. heart wood

D. sap wood

**Answer: c**



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**208.** in cucurbits, hypodermis is formed of



A. sclerenchyma

B. collenchyma

C. parenchyma

D. aerenchyma

**Answer: b**



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**209.** in dicot root, the outermost layer of tubular living cells is

A. rhizoedermis

B. epidermis

C. hypodermis

D. exodermis

**Answer: a**



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**210.** in monocot stem, each vascular bundle possesses a lacuna which is formed by disintegration of

- A. protophloem
- B. protoxylem
- C. metaphloem
- D. metaxylem

**Answer: b**



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**211.** Stomats in water lily and podostemon occur, respectively,

- A. lower leaf surface and absent
- B. upper leaf surface and absent
- C. both leaf surface and upper part

D. absent in both.

**Answer: b**



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**212.** what is true

- A. hygrophytes have isobilateral astomatic leaves
- B. hygrophytes have aerenchyma
- C. most of hygrophytes have hydathodes
- D. xerophytes have more lenticels but thin cuticle.

**Answer: c**



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**213.** secondary xylem is

A. bast

B. bark

C. cork

D. wood

**Answer: d**



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**214.** what is correct about monocot stem

A. hypodermis is sclerenchymatous, vascular bundles are closed,

phloem parenchyma is absent

B. hypdermis is sclerenchymatous, vascular bundles are open,phloem

parenchyma is absent

C. hypdermis is collenchymatous vascular bundles are closed, phloem

parenchyma is present

D. hypodermis is sclerenchymatous, vascular bundles are closed, pholem parenchyma is present.

**Answer: a**



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**215. what is true of heartwood**

- A. it does not help in water transport
- B. it is resistant to bacterial infections
- C. it is made up of dead cells
- D. all of the above.

**Answer: d**



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**216.** Root hairs are

- (a) always unicellular
- (b) sometimes unicellular
- (c) sometimes multicellular
- (d) always multicellular

A. always unicellular

B. sometimes unicellular

C. sometimes multicellular

D. always multicellular.

**Answer: a**



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**217.** In a dorsiventral leaf protoxylem and metaxylem are located, respectively, on

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

**Answer: b**

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**218.** Vascular bundles are scattered in :

- A. pteridophytes
- B. gymnosperms
- C. monocots
- D. dicots

**Answer: c**

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**219.** in dorsiventral leaf, stomata

- A. occur on both the layers of epidermis
- B. occur on lower epidermis
- C. occur in pits on the upper epidermis
- D. do not occur on the epidermis.

**Answer: b**



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**220.** each annual ring or growth ring consists of two strips of

- A. springwood and early wood
- B. only spring wood
- C. only autumn wood



D. spring wood and autumn wood.

**Answer: d**



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**221.** Paddage cells occur in

A. monocot root

B. dicot root

C. monocot stem

D. aerial root

**Answer: a**



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**222.** The lightest wood is

A. *cereus giganteus*

B. *ochroma lagopus*

C. *hardwickia binata*

D. *cycas*

**Answer: b**



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**223.** If four radial vascular bundles are present, then the structure will be

(a) Monocot stem

(b) Monocot root

(c) Dicot stem

(d) Dicot root

A. monocot root

B. dicot root

C. monocot stem

D. dicot stem.

**Answer: b**



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**224.** Main function of lenticel is

A. transpiration

B. guttation

C. Bleeding

D. gasous exchange

**Answer: d**



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**225.** Cambium is most active in

- A. summer
- B. winter
- C. all seasons
- D. snow areas.

**Answer: a**

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**226.** Diffuse porpus woods are characterstics of plans growing in

- A. alpine regions
- B. cold winter regions
- C. temperate regions
- D. tropical regions.

**Answer: d**

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227. In a dicotyledonous stem, the sequences 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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228. Velamen and spongy tissue are found in

- A. epiphytes
- B. xerophytes
- C. heliophytes

D. sciophytes

**Answer: a**



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**229.** What is correct sequence

- (a) xylem-cambium-medulla
- (b) cortex-endodermis-pericycle-xylem
- (c) cambium-xylem-cortex
- (d) None of the above

A. xylem-cambium-medulla

B. cortex-endodermis-pericycle-xylem

C. cambium-xylem-cortex

D.

**Answer: b**



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**230.** atactostele consists of vascular bundles

- A. arranged in a ring
- B. three in number
- C. scattered in ground tissue
- D. broken vascular bundles.

**Answer: c**



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**231.** piliferous layer of root is actually

- A. pericycle
- B. endodermis
- C. conjuncative parenchyma

D. epidermis

**Answer: d**



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**232.** lysigenous cavity occurs in

A. stem of helianthus

B. root of Helianthus

C. root of zea mays

D. stem of zea mays

**Answer: d**



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**233.** Cambium produces

- (a) secondary permanent tissue
- (b) secondary meristematic tissue
- (c) secondary apical meristem
- (d) all the above

- A. secondary permanent tissue
- B. secondary meristematic tissue
- C. secondary apical meristem
- D. all the above.

**Answer: a**



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**234.** Motor cells take part in

- (a) guttation
- (b) transpiration

(c) inrolling

(d) all the above

A. guttation

B. transpiration

C. inrolling

D. all the above.

**Answer: c**



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**235.** Vascular bundles occur in a leaf

(a) entire lamina

(b) palisade parenchyma

(c) spongy parenchyma

(d) veins and veinlets

A. entire lamina

B. palisade parenchyma

C. spongy parenchyma

D. veins and veinlets.

**Answer: d**



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**236.** Gymnosperms are also called soft wood spermatophytes because they lack

A. lacks cambium

B. lacks vessels

C. does not yield timber

D. none of the above.

**Answer: b**



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**237.** match the species with type of wood

(a) *tectona grandis* (E) softwood

(b) *cedrus deodara* (f) hardwood (C) *shorea robusta*

(d) *Dallbergia sisso*

A. a-e,b-f,c-f,d-e

B. a-e,b-e,c-f,d-f

C. a-f,b-e,c-f,d-f

D. a-f,b-e,c-e,d-f

**Answer: c**



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**238.** What is the characteristics of a vascular bundle of nonocot stem

A. conjoint, collateral and open

B. conjoint, collateral and closed

C. conjoint, bicollateral and open

D. conjoint, concentric and closed.

**Answer: b**



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**239.** Vascular bundles are scattered in :

A. monocot stem

B. monocot root

C. dicot stem

D. dicot root

**Answer: a**



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**240.** Vascular bundle is closed when

- A. have cambium
- B. lack cambium
- C. lack pericycle
- D. lack endodermis

**Answer: b**



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**241.** 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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**242.** In a plant organ which is covered by periderm and in which the stomata are absent, some gaseous exchange still takes place through

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

**Answer: b**



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**243.** A bicollateral vascular bundle has the following arrangement of tissues

(a) outer phloem-outer cambium-middle xylem-inner cambium-inner phloem

(b) outer xylem-outer cambium-middle phloem-inner cambium-inner xylem

(c) outer phloem-outer xylem - middle cambium

(d) outer cambium-outer phloem-middle xylem-inner phloem-inner cambium

A. outer phloem-outer cambium-middle xylem-inner cambium-inner phloem

B. outer xylem-outer cambium-middle phloem-inner cambium-inner xylem

C. outer phloem-outer xylem - middle cambium

D. outer cambium-outer phloem-middle xylem-inner phloem-inner cambium

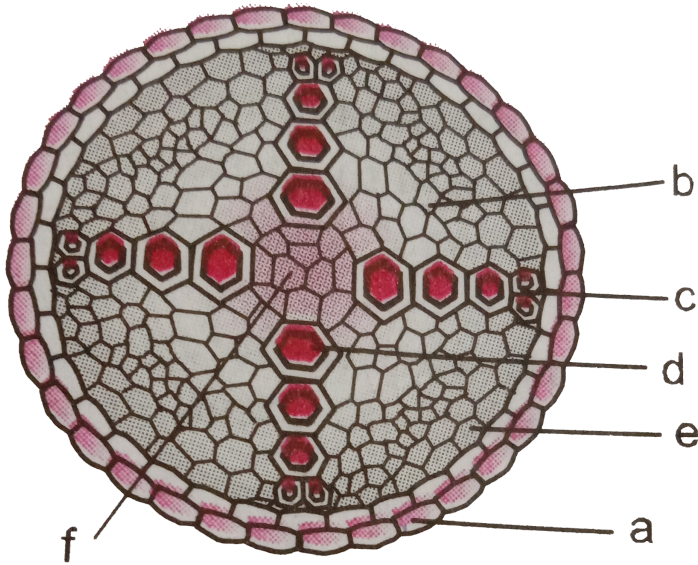
**Answer: a**



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



- A. (1) a-pericycle, b-conjunctive tissue, c-metaxylem, d- protoxylem, e-phloem, f-pith
- B. (2) a-endodermis, b-conjunctive tissue, c- protoxylem, d- metaxylem, e-phloem, f-pith
- C. (3) a-endodermis, b-conjunctive tissue, c- metaxylem , d- protoxylem, e-phloem , f-pith

D. (4) a-endodermis,b-pith,c-protoxylem,d-metaxylem , e-phloem, f-conjunctive tissue.

**Answer: b**



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**245.** A tree grows at a rate of 0.5 m/yr . What will be the height of a board fixed at 1.5 m above the base, five years ago

A. 4 m

B. 3.5 m

C. 1.5 m

D. 4.5 m

**Answer: c**



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**246.** Vascular cambium of stem is

- A. primary meristem
- B. partly primary and partly secondary
- C. secondary meristem
- D. intercalary meristem

**Answer: b**



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**247.** Annual growth rings are formed due to activity

- A. extrastelar cambium
- B. intrastelar cambium
- C. interstelar cambium
- D. both B and C

**Answer: b**



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**248.** branch of botany dealing with internal organisation of plants is

A. physiology

B. anatomy

C. ecology

D. cytology

**Answer: d**



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**249.** laticiferous glands occur in plants part

A. cortex

B. vascular bundle

C. epidermis

D. endodermis

**Answer: a**



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**250.** Inner, darker and harder portion of secondary xylem that cannot conduct water, in an older dicot stem, is called

A. alburnum

B. bast

C. duramen

D. wood

**Answer: c**



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

- A. epidermis of leaf
- B. epidermis of stem
- C. epidermis of dicot root
- D. epidermis of both dicot and monocot roots.

**Answer: d**



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**252.** Fascicular, interfascicular and extrastellar cambium together constitute:

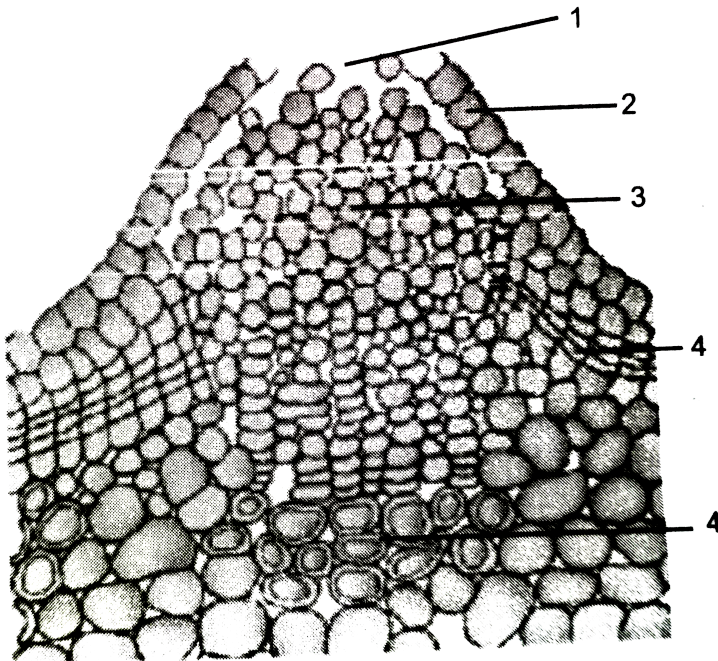
- A. ground meristem
- B. lateral meristem
- C. intercalary meristem

D. primary meristem

Answer: b

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253. Choose the correct combination of labelling of the lenticel.



A. a-pore,b-complementary cells, c-cork, d-cork complementary cells.

B. a-pora,b-secondary cortex, c-cork, d-cork cambium, e-complementary

C. a-pore, b-cork, c-complementary cells, d-cork cambium, e- secondary cortex

D. a- pore, b- cork, c-cork cambium, d-secondary cortex, e-complementary cells.

**Answer: a**

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**254.** 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

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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**255.** Assertion: All the endothermal cells of a root do not contain casparian thickenings on their radial walls and transverse walls.

Reason: Passage cells are found in endodermis.

A. both A and R are true. R os correct explanation of A

B. both A and R are ture. R is not correct explanation of A

C. A is true but R is false

D. A is false but R is true.

**Answer: a**



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**256.** 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 The correct order is :

A. 2,3,1,4

B. 4,1,3,2

C. 1,2,4,3

D. 3,4,2,1

**Answer: b**



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257. Palisade parenchyma is present on both sides in

- A. nerium
- B. eucalyptus
- C. wheat
- D. both A and B

**Answer: d**



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258. Tyloses are balloon like ingrowths in vessel developed from the adjoining

- A. parenchyma through pits in vessel wall
- B. endodermis of stem
- C. pericycle of root.
- D. endodermis of root.

**Answer: a**



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**259.** The casparian rings are found in

- A. pericycle of stem
- B. endodermis of stem
- C. pericycle of root.
- D. endodermis of root.

**Answer: d**



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**260.** Large, nearly empty, colorless cells present on the upper surface of grass a leaf are

- A. accessory cells
- B. bulliform cells
- C. palisade parenchyma
- D. spongy parenchyma.

**Answer: b**



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**261.** Which of the following/is are not true?

- a. Cork cambium is otherwise called phellogen.
- b. Cork is otherwise called phellem.
- c. Secondary cortex is otherwise called periderm.
- d. Cork cambium, cork and secondary cortex are collectively called phelloderm.

A. b and d only

B. b and c only

C. c and d only

D. a and d only

**Answer: c**



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**262.** The collateral open vascular bundles and eustele are found in

A. dicot root

B. dicot stem

C. monocot stem

D. monocot root.

**Answer: b**



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**263.** radial vascular bundles occur in

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

**Answer: c**



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**264.** Vascular cambium produces

- A. secondary xylem and secondary phloem
- B. secondary xylem only
- C. secondary phloem only
- D. primary xylem and primary phloem

**Answer: a**



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**265.** Phellogen is also known as ?

- A. vascular cambium
- B. periderm
- C. cork cambium
- D. apical meristem

**Answer: c**



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**266.** Assertion : In woody stems, the amount of heartwood continues year after year.

Reason: The cambial activity continues uninterrupted.



A. both are true with reason being correct explanation

B. both true but reason is not correct explanation.

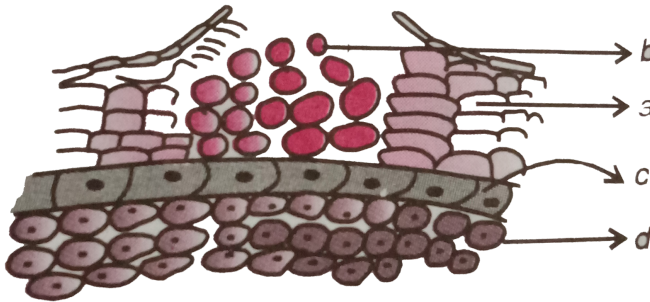
C. assertion true but reason is wrong

D. both are wrong

Answer: a

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267. In the diagram of lenticel, identify the parts a, b, c, and d



(1) a - complementary cells, b-phellogen, c- phelloderm , d-periderm

(3) a- complementary cells , b- phellem, c-periderm , d- phelloderm

(3) a-phellem , b-periderm, c-phellogen, d-phelloderm

(4) a-phellem, b-complementary cells, c-phellogen , d-phelloderm

A. a - complementary cells, b-phellogen, c- phelloderm , d-periderm

B. a- complementary cells , b- phellem, c-periderm , d- phelloderm

C. a-phellem , b-periderm, c-phellogen, d-phelloderm

D. a-phellem, b-complementary cells, c-phellogen , d-phelloderm

**Answer: d**



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**268.** cambium ring consists of

A. interfascicular cambium

B. intrafascicular cambium

C. both A and B

D. phelloderm

**Answer: c**



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**269.** Endodermis takes part in

- (a) Providing protection
- (b) Preventing water loss from stele
- (c) maintaining rigidity
- (d) All the above

A. providing protection

B. preventing water loss from stele

C. maintaining rigidity

D. all the above.

**Answer: b**



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**270.** In autumn and winter, cambium produce

- A. sap wood
- B. heart wood
- C. Early wood
- D. late wood.

**Answer: d**



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**271.** The cell of grass leaves which help in minimizing cuticular transpiration are

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

**Answer: a**

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**272.** Cork cambium is a

- A. primary meristem
- B. apical meristem
- C. secondary meristem
- D. intercalary meristem

**Answer: c**

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**273.** Secondary growth is best observed in

- A. teak and pine
- B. deodar and fern
- C. wheat and maiden hair fern

D. sugarcane and sunflower.

**Answer: a**



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**274.** Passage cells are walled cells found in

- A. phloem elements to serve as entry points.
- B. testa of seeds for emergence of embryonal axis.
- C. central area of style for passage of pollen tube
- D. endodermis of roots to facilitate rapid transport of water from cortex to pericycle.

**Answer: d**



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**275.** Find out the correct and incorrect statements.

a. In dicot root, the vascular bundles are collateral and endarch

b. Innermost layer of cortex in a dicot root is endodermis

c. In dicot root, phloem and xylem bundles are separated by conjunctive tissue

A. a true, b, c false

B. b true, a, c false

C. a false, b and c true

D. b false, a, c true

**Answer: c**



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**276.** The closing layers of lenticels show deposition of

A. cuticle

B. lignin

C. pectin

D. suberin

**Answer: d**



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**277. What differentiates a dicot leaf from monocot leaf ?**

A. stomata only on upper side

B. differentiation of palisade and spongy parenchyma

C. parallel venation

D. stomata on upper and lower sides.

**Answer: b**



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278. Cellular layers from the outside to inside in old dicot stem are

- A. epidermis, phellem, phellogen, phelloderm
- B. epidermis, hypodermis, cortex, endodermis
- C. epidermis, phellogen, phellem, endodermis
- D. epidermis, hypodermis, phellogen, phelloderm, phellem

**Answer: a**



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279. Older resin-clogged central secondary xylem and younger outer secondary xylem are, respectively, known as

- A. alburnum and duramen
- B. duramen and alburnum
- C. autumn wood and springwood
- D. springwood and autumn wood.

**Answer: b**



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**280.** Which character is not associated with plant where shall studies inbreeding depression while Miller and Letham extracted a hormone from its seeds ?

A. atactostele in stem

B. bundle sheath in leaf

C. chromosome number 30 in endosperm

D. medulla absent in root.

**Answer: d**



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**281.** Condition found in the roots of a plant having assimilatory, submerged roots and spongy petioles

- A. tetrarch
- B. triarch
- C. monarch
- D. diarch

**Answer: c**



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**282.** Cuticle is absent in

- A. mesophytes
- B. young roots
- C. monarch
- D. diarch

**Answer: d**



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

- A. heart wood
- B. sapwood
- C. Early wood
- D. late wood.

**Answer: c**



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**284.** Which of the following statements are correct about heartwood?

- (i). It does not help in water conduction
- (ii). It is also called alburnum

(iii). It is light in colour and is very soft

(iv). It has tracheary elements which are filled with tannins, resins etc.

A. b,c,d

B. a,b,c

C. b,d

D. a,d

**Answer: d**



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**285.** Pith parenchyma generally lacks

A. vacuole

B. chloroplasts

C. mitochondria

D. nucleus.

**Answer: b**



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**286.** Tetrarch bundles occur in the

- A. leaf of *cicer arietinum*
- B. leaf of *pisum sativum*
- C. root of *cicer arietinum*
- D. root of *zea mays*.

**Answer: c**



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**287.** Which is not the part of periderm?

- A. phellogen

B. cork

C. secondary cortex

D. wood

**Answer: d**



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**288.** Lenticels are patches of

A. loose cells in leaves

B. loose cells on bark for aeration

C. subsidiary cells of stomata

D. cells for respiration of epiphytes.

**Answer: b**



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**289.** Conjoint and closed vascular bundles with no phloem parenchyma are observed in

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

**Answer: a**



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**290.** Match the following and choose the correct combination

- |                      |     |                 |
|----------------------|-----|-----------------|
| <i>A.</i> Endodermis | (1) | Companion cells |
| <i>B.</i> Stomata    | (2) | Lenticels       |
| <i>C.</i> Sieve tube | (3) | Palisade cells  |
| <i>D.</i> Periderm   | (4) | Passage cells   |
| <i>E.</i> Mesophyll  | (5) | Accessory cells |

A. a-4,b-5,c-2,d-1,e-3



B. a-5,b-3,c-1,d-2,e-4

C. a-4,b-5,c-1,d-2,e-3

D. a-4,b-2,c-5,d-3,e-1

**Answer: d**



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

A. open and scattered

B. closed and scattered

C. closed and radial

D. open and in a ring.

**Answer: b**



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292. Palisade parenchyma is absent in leaves of:

- A. gram
- B. soyabean
- C. sorghum
- D. mustard

**Answer: c**



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

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

**Answer: a**



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

- (a) Fusiform cells
- (b) Trichoblasts
- (c) collocytes
- (d) Tyloses

The correct sequence is

- A. b,c,a,d
- B. a,d,c,d
- C. d,a,b,c
- D. c,b ,a,d

**Answer: a**





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**295.** Vascular bundle of monocot is

- (a) Scattered
- (b) Closed
- (c) Endarch
- (d) All the above

A. scattered

B. closed

C. conjoint

D. All of the above

**Answer: d**



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**296.** The structure absent in monocot is

- A. sieve tube
- B. closed
- C. endarch
- D. all the above.

**Answer: c**

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**297.** which of the following is not correct

- A. early wood is characterised by a large number of xylary elements
- B. late wood is characterised by a large number of xylary elements
- C. early wood is characterised by vessels with broader cavities
- D. late wood is characterised by vessels with narrower cavities.

**Answer: b**

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**298.** Medullary rays are made up of

- A. fibres
- B. tracheids
- C. sclerenchyma cells
- D. parenchymatous cells.

**Answer: d**



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**299.** Heart wood differs from sapwood in

- A. absence of vessels and parenchyma
- B. heaving dead and non-conducting elements
- C. being susceptible to pests and pathogens

D. presence of rays and fibres.

**Answer: b**



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**300.** The term " bark " means

A. phellem, phelloderm and vascular cambium

B. phellem, phellogen, phelloderm primary and secondary phloem

C. phellem, phellogen, phelloderm primary and secondary xylem

D. cork cambium and cork.

**Answer: b**



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**301.** vascular bundles are arranged in a ring in the stem of

A. wheat

B. mazie

C. rice

D. gram

**Answer: d**



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**302.** an old trunk of shisham ( *Dalbergia sisso*) tree would have the maximum amount of

A. primary phloem

B. primary xylem

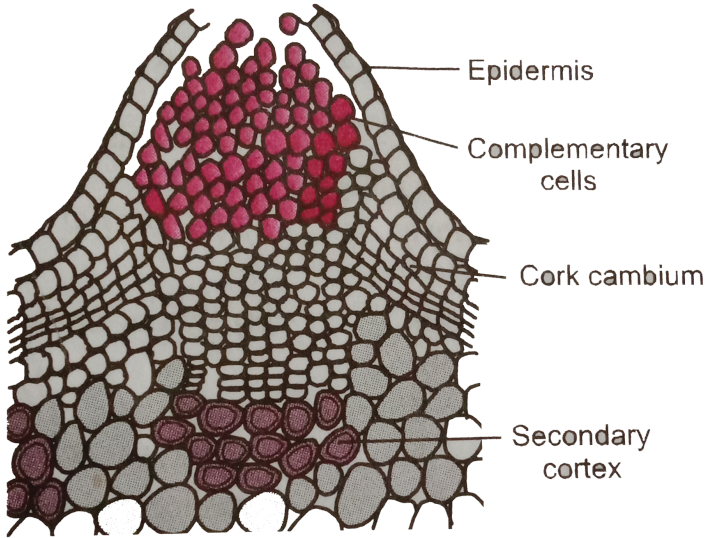
C. secondary xylem

D. secodary cortex.

**Answer: c**



303. the given figure shown. Itbr



- A. structure of lenticel
- B. hydathode showing gaseous exchange
- C. an alga forming spores
- D. A fungus producing spores.

Answer: a

**304.** Water containing cavities in vascular bundles are found in

A. sunflower

B. maize

C. cycas

D. pinus.

**Answer: b**



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**305.** gymnosperms are soft-wooded as they lack

A. cambium

B. phloem fibres

C. thick - walled tracheids.

D. xylem fibres.

**Answer: d**



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**306.** complementary cells occur in

A. pericycle

B. pith

C. lenticels

D. endodermis

**Answer: c**



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**307.** As compared to a dicot, root, a monocot root has

A. more abundant secondary xylem

B. many xylem bundles

C. Inconspicuous annual rings

D. Relatively thicker periderm

**Answer: b**



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

A. Phloem

B. Vessels and tracheids

C. Vessels

D. Ray parenchyma cells.

**Answer: d**



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**309.** An element of xylem tissues that stores tannin is

- A. tracheids
- B. vessels
- C. xylem parenchyma
- D. xylem fibres.

**Answer: c**



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**310.** jute fibres are

- A. sieve fibres
- B. xylem fibres
- C. phloem fibres

D. mesocarp fibres of coconut.

**Answer: c**



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**311.** A common character of monocot and dicot root is

- A. Exarch protoxylem
- B. Endarch xylem
- C. number of xylem strands
- D. occurrence of secondary growth.

**Answer: a**



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**312.** In a cut trunk of a tree the section was showing 26 concentric rings of spring wood and autumn wood in alternative layers. The age of the tree is estimated to be

- A. 13 years
- B. 26 years
- C. 52 years
- D. 104 years

**Answer: a**



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**313.** Find out the wrong statement about angiosperm roots.

- (a) apex is protected by root cap
- (b) vascular bundles are collateral
- (c) xylem is centripetal in young state
- (d) cuticle is absent in young state

- A. apex is protected by root cap
- B. vascular bundles are collateral
- C. xylem is centripetal in young state
- D. cuticle is absent in young state.

**Answer: b**

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**314.** Secondary cortex is also known as

- A. phellogen
- B. phellem
- C. phelloderm
- D. bark.

**Answer: c**

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**315.** A dicot plant in which scattered vascular bundles are present in stem is

A. Helianthus

B. Peperomia

C. Yucca

D. Dolichos.

**Answer: b**



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**316.** Identify the correct pair of statement

(i) pericycle parenchymatous in dicot root but sclerenchymatous in mature monocot root

(ii) pericycle of both dicot and monocot root produces lateral roots during secondary growth

(iii) All cells of dicot root endodermis 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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**317. match the lists**

*I*

(a) Tyloses

(b) periderm

(c) motor cells

(d) Laticifers

*II*

(i) Coenocytic

(ii) Adaxial epidermis

(iii) Complementary cells

(iv) Heartwood

(v) conjunctive tissue

- A.           a       b       c       d  
(A) (iii) (ii) (i) (v)
- B.           a       b       c       d  
(B) (ii) (v) (i) (iii)
- C.           a       b       c       d  
(C) (iv) (iii) (ii) (i)
- D.           a       b       c       d  
(D) (iv) (i) (iii) (v)

**Answer: c**

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**318.** select the correct pair

- A. spring wood - light colour, high density
- B. Spring wood - dark colour, low density
- C. autumn wood -light colour, high density
- D. autumn wood - dark colour, high density.

**Answer: d**

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319. companion cells are absent in the phloem of

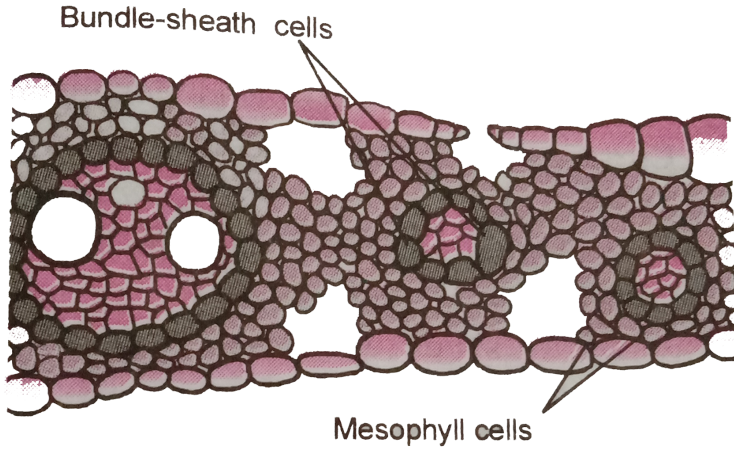
- A. dicots
- B. gymnosperms
- C. monocots
- D. all the above.

**Answer: b**



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320. the diagram is anatomy of Itbr

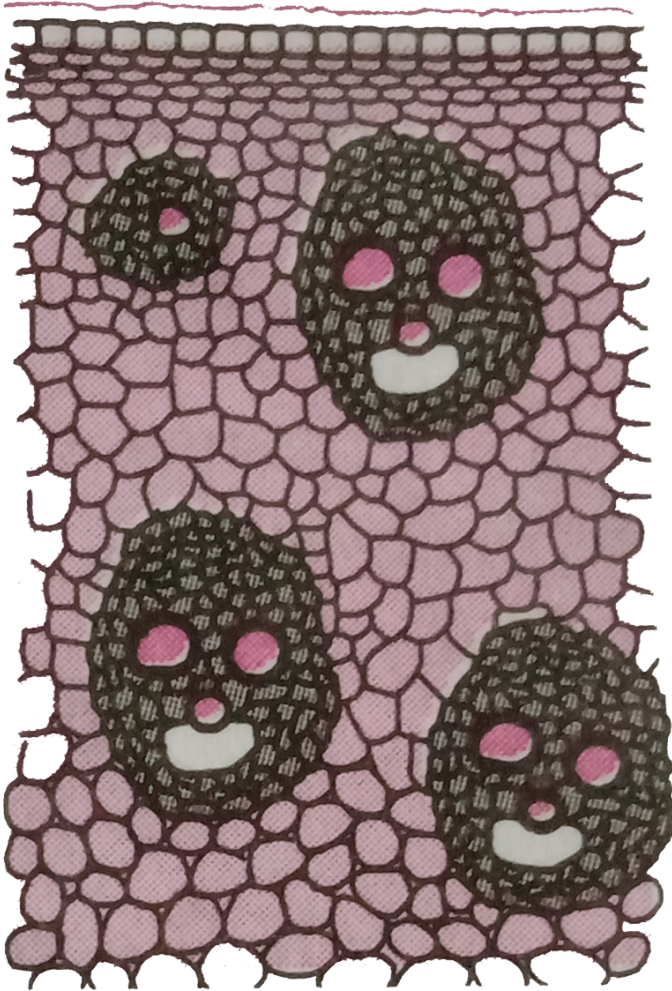


- A. T.S leaf of CAM plant
- B. T.S. dicot leaf
- C. T.S. maize leaf
- D. none of the above.

**Answer: c**

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321. the given diagram is anatomy of ltr



A. dicot root

B. dicot stem

C. monocot stem

D. monocot root.

**Answer: c**



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

A. pericycle

B. medullary ray

C. xylem parenchyma

D. endodermis

**Answer: b**



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**323.** Lenticels are involved in

- A. photosynthesis
- B. transpiration
- C. gaseous exchange
- D. food transport.

**Answer: c**

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**324.** Amount of secondary xylem is more on the outer 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

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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**325.** Cork cambium in dicot stem originates from

A. dedifferentiated parenchyma cells of cortex

B. dedifferentiated collenchyma cells of cortex

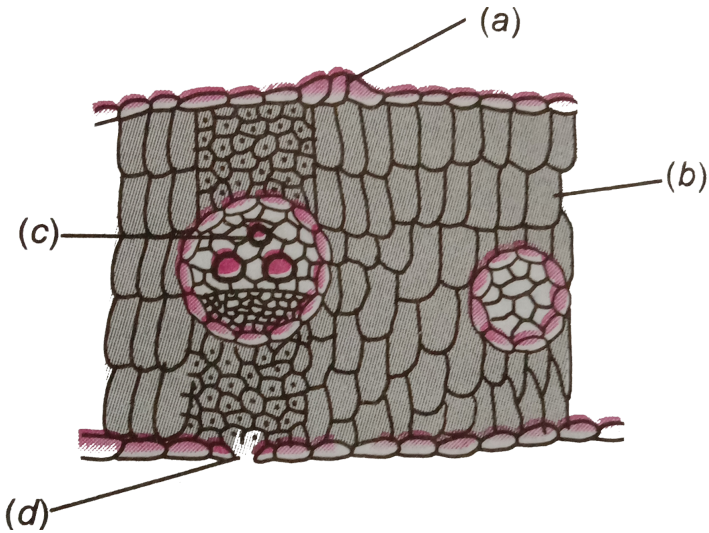
C. parenchyma cells of medullary rays

D. parenchyma cells of pericycle.

**Answer: b**

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326. In the diagram of T.S monocot leaf, identify labellings a,b,c,d with their function



- (1) a-motor action, b-photosynthesis, c-conduction , d- transpiration  
 (2) a-motor action,b-conduction,c-photosynthesis, d- transpiration  
 (3) a- transpiration,b-photosynthesis, c - conduction, d-transpiration  
 (4) a-transpiration,b-conduction, c-photosynthesis, d- motor aciton

A. a-motor action, b-photosynthesis, c-conduction , d- transpiration.

B. a-motor action,b-conduction,c-photosynthesis, d- transpiration

C. a- transpiration,b-photosynthesis, c - conduction, d-transpiration

D. a-transpiration,b-conduction, c-photosynthesis, d- motor aciton.

**Answer: a**



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**327.** Match the columns and choose the correct option

(, *I*, , *II*), ((*a*), Bulliform cells, (1), intitaion), ((*b*), peicycle, (2), Root), ((*e*)Bundle sheath cells, (5), stem )

A. a-3,b-5,c-4,d-1,c-2

B. a-2,b-5,c-1,d-3,e-4

C. a-3,b-1,c-5,d-2,e-4

D. a-5,b-4,c-2, d-1, c-3

**Answer: d**



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**328.** The term bark refers to

(a) periderm and secondary phloem only

(b) periderm , secondary phloem and vascular cambium only

(c) secondary xylem and cambium only

(d) periderm only

A. primary and secondary phloem only

B. periderm , secondary phloem and vascular cambium only

C. secondary xylem and cambium only

D. periderm only.

**Answer: d**



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**329.** which of the following characters is not found in the transverse section of monocot stem

A. sclerenchyma bundle sheath

B. lysigenous cavity

C. sclerenchymatous hypodermis

D. starch sheath.

**Answer: d**



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**330.** identify the correct pair of statement

I.functions of sieve tubes is controlled by nucles of companion cells.

II. Albuminous cells are present in angiosperms

III. In dicot root, the vascular cambium is competely of primary plant body.

A. I and III

B. II and IV

C. I and II

D. II and III

**Answer: a**



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**331.** Identify the tissue not formed during secondary growth in plants.

A. phellogen

B. wood

C. phellem

D. pericycle.

**Answer: d**



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**332.** which of the following characters are not applicable to the anatomy of dicot stem.

(a) colenchymatous hypodermis

(b) polyarch xylem

(c) presence of casparian strips on endodermis

(d) open vascular bundle

(e) presence of medullary rays

A. a d and e only

B. b and c only

C. b and e only

D. a, b and c only

**Answer: b**



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**333.** 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 only

B. II and III

C. I and IV only

D. III

**Answer: d**



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

- A. springwood and autumn- wood
- B. heartwood and late wood
- C. springwood and early wood
- D. autumn wood and springwood.

**Answer: a**



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



A. epidermis

B. endodermis

C. cortex

D. pericycle.

**Answer: b**



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

A. secondary phloem

B. protoxylem

C. cortical cells

D. secondary xylem

**Answer: b**



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**337.** select the characters which are not applicable to the anatomy of dicot roots. (a) conjunctive tissue present (b) presnce of protein compounds in casparian strips © polyarch xylem bundles (d) presence of pericycle.

A. a and b

B. b and d

C. c and d

D. b and c

**Answer: e**



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**338.** Vessels are not found in :

- A. pine
- B. eucalyptus
- C. teak
- D. sheesham

**Answer: a**



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**339.** Medullary rays are made up of

- A. phloem parenchyma
- B. xylem paraenchyma
- C. sieve tubes
- D. sclerenchyma

**Answer: b**



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**340.** 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 The correct order is :

A. c,d,b,a

B. a,b,d,c

C. d,a,c,b,

D. d,c,a,b

**Answer: c**



**341.** secondary growth occurs due to activity of

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

**Answer: c**

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**342.** 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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**343.** Assertion . No secondary growth takes place in monocots. Reason.  
Secondary growth is not related to cambium.

A. both are true with reason being correct explanation.

B. both true but reason is not correct explanation.

C. assertion true but reason is wrong.

D. both are wrong

**Answer: c**



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**344.** in plants lateral roots arise from

- A. epidermis
- B. hypodermis
- C. endodermis
- D. pericycle.

**Answer: d**



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**345.** which tissue gives rise to secondary growth

- A. apical meristem
- B. adventitious root
- C. axillary bud
- D. vascular cambium.

**Answer: d**



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**346.** Other names of secondary cortex, cork cambium and cork are

- A. phellem, phellogen and phelloderm
- B. phellogen, phellem and phelloderm
- C. pelloclerm, phellem and phellogen
- D. phelloderm, phellogen and phellem.

**Answer: a**



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**347.** pick up the correct statement

- A. spring wood is otherwise called late wood



B. autumn wood is otherwise called early wood

C. in old trees, the heart wood is involved in conduction of water

D. cambial cells present between primary xylem and primary phloem constitute the intrafascicular cambium.

**Answer: e**



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**348.** pick up the wrong differences between dicot and monocot root

Character	Dicot Root	Monocot Root
Activity of pericycle	–Lateral root production	–secondary growth and
Vascular bundle	–Diarch to tetrarch	–Polyarch
Cambium	–Lateral, development	–absent
Pith	–Well developed	–Poorly developed

A. b,d

B. a,c

C. a,d

D. a,b

**Answer: c**



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**349.** In grasses, the type of cells which help in transpiration and rolling of leaves respectively are

- A. dumb-bell shaped cells and empty colourless cells.
- B. lenticels and mesophyll cells
- C. normal epidermal cell and guard cells
- D. bulliform cells and bean- shaped cells.

**Answer: a**



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**350.** secondary growth in dicot plants is mediated by

- A. cork cambium
- B. vascular cambium
- C. wound cambium
- D. both A and B

**Answer: d**

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**351.** Cortex is the region found between

- A. endodermis and vascular bundles.
- B. epidermis and stele.
- C. preicycle and endodermis
- D. endodermis and pith.

**Answer: b**

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**352.** The ballone-shaped structures called tyloses

- A. are linked to ascent of sap through xylem vessels.
- B. originate in the lumen of vessels.
- C. chararctoise the sapwood
- D. are extensions of xylem parenchyma cells into vessels.

**Answer: d**



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**353.** as the secondary growth takes place (proceeds) in a tree, thickness of

- A. sapwood increses
- B. heartwood increses
- C. both sapwood and heartwood increase

D. both sapwood and heartwood remain the same.

**Answer: b**



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**354.** Identify the wrong statement in context of heartwood.

- A. Organic compounds are deposited in it
- B. it is highly durable
- C. It conducts water and minerals efficiently
- D. it comprises dead elements with highly lignified walls.

**Answer: c**



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**355.** Which of the following is made up of dead cells?

A. xylem parenchyma

B. collenchyma

C. phellem

D. phloem

**Answer: c**



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**356.** The vascular cambium normally gives rise to

A. phelloderm

B. primary phloem

C. secondary xylem

D. periderm.

**Answer: c**



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## Check Your Grasp

1. Closing cells are found in

- A. stomata
- B. sieve
- C. lenticels
- D. wounded areas.

**Answer: c**



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2. Amount of secondary xylem as compared to secondary phloem formed every year is

- A. Equal

B. 8-10 times

C. half

D. 4-5 times.

**Answer: b**



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**3. heartwood is absent even in very old trunk of**

A. Quercus and pinus

B. salix and morus

C. mangifera and Dalbergia

D. populus and salix.

**Answer: d**



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4. wood of Dalbergia consists of

- A. 90-95% vessels
- B. 90-95% tracheids
- C. 50-60% vessels and 4- 50% tracheids
- D. vessels, tracheids and parenchyma in equal proportions.

**Answer: a**



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5. heteroxylous wood occurs in

- A. angiosperms
- B. gymnosperms
- C. Pteridophytes
- D. winteraceae, Tetracentraceae Trochodendraceae.

**Answer: a**



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**6. Protective layer found at the site of abscission is**

- A. parenchymatous
- B. collenchymatous
- C. sclerenchymatous
- D. suberised

**Answer: d**



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**7. hockey handle is prepared from the wood of**

- A. salix

B. morus

C. picea

D. phytelephas.

**Answer: a**



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**8. Unsunken stomata found in crypts belong to**

A. Banyan

B. mango

C. nerium

D. sunflower

**Answer: c**



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9. epistomatic leaf is

- A. sunflower
- B. maize
- C. nymphaea
- D. calotropis

**Answer: c**



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10. isobilateral leaf is characterised by

- A. similarly green two surfaces
- B. amphistomatic nature
- C. undifferentiated mesophyll
- D. all the above.

**Answer: d**



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## Brain Teasera li

1. plant cells involved in secretion and absorption of solutes are

- A. Glandular cells
- B. Transfer cells
- C. Active cells
- D. Junction cells.

**Answer: b**



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2. Thick irregular but permeable walls occur in

A. sulereides

B. fibres

C. transfer cells

D. tracheides

**Answer: c**



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**3. Transfer cells occur in**

A. xylem parenchyma

B. phloem parenchyma

C. epithelium

D. all the above

**Answer: d**



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4. Structure similar to transfer cells occurs in

- A. antipodal cells
- B. central cell of embryo sac
- C. filiform apparatus of oosphere and synergids.
- D. all the above.

**Answer: c**



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5. A flowering plant without companion cells in its phloem is

- A. Austrobaileya
- B. magnolia
- C. Eucalyptus

D. Ricinus.

**Answer: a**



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**6. Stereome is**

A. vascular tissue

B. phloem

C. collenchyma

D. mechanical tissue.

**Answer: d**



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**7. stereome comprises**



- A. sclerenchyma
- B. collenchyma
- C. non- living cells of vascular tissue
- D. all the above.

**Answer: d**

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**8. which is true.**

- A. all sclereides are living
- B. fibre are generally dead but living protoplasts occurs in a few.
- C. fibres are always dead cells.
- D. sclereides are generally living but dead sclereides occur in some.

**Answer: b**

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9. A plant in which fibres remain living for upto 20 years is

- A. *tramarix aphylla*
- B. *casarina equisetifalia*
- C. *capparis decidua*
- D. *mangifera indica.*

**Answer: a**



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10. Which is possible

- A. septate fibres
- B. septate sclereides
- C. compound sieve plates

D. all the above

**Answer: a**



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**11.** Grapevine (*Vitis*) possesses

- (a) septate fibres
- (b) very short tracheids
- (c) Elongated sclereides
- (d) all the above

A. septate fibres

B. very short tracheids

C. Elongated sclereides

D. all the above.

**Answer: c**



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12. Septate sclereides occur in pereskia in

- (a) pith and cortex
- (b) xylem
- (c) phloem
- (d) pericycle

A. pith and cortex

B. xylem

C. phloem

D. pericycle.

**Answer: b**



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13. An angiosperm having monarch xylem is

A. casuarina

B. Trapa

C. strychnos

D. Urtica

**Answer: b**



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**14.** In Trapa, monarch xylem occurs in

A. stem

B. Root

C. petiole

D. lamina

**Answer: d**



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15. phellogen arises from

- A. an outer layer of cortex
- B. Epidermis
- C. phloem
- D. all the above.

**Answer: a**



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16. In Quercus, phellogen develops from

- A. punica
- B. vitis
- C. berberis

D. all the above.

**Answer: d**



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17. in Quercus, phellogen develops from

A. Epidermis

B. Hypodermis

C. outer cortex

D. pericycle

**Answer: a**



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18. the cells forming phellogen are.

- A. collenchymatous
- B. parenchymatous
- C. parenchymatous or collenchymatous
- D. Recently divided cortical cells.

**Answer: c**

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**19. what is present just outside the vascular cambium**

- A. oldest secondary xylem
- B. youngest secondary phloem
- C. primary phloem
- D. youngest secondary xylem

**Answer: d**

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20. Youngest heart wood is present

- A. in the centre
- B. just outside the sapwood
- C. just inner to sapwood
- D. just outside the primary xylem

**Answer: c**



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21. Oldest phloem occurs on the outside of phloem/inner to pericycle. It is actually

- A. nearest the vascular cambium
- B. nearest the oldest secondary xylem
- C. on the inner side of phloem

D. on the outer side of phloem

**Answer: d**



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**22. oldest phloem is**

A. primary phloem

B. secondary phloem

C. crushed phloem

D. intermediate phloem.

**Answer: a**



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**23. oldest xylem is**

A. on the outside of xylem

B. in the centre

C. in the heartwood

D. in the sapwood.

**Answer: b**

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**24.** tylosis is intrusion of a

A. sieve tube

B. Resin duct

C. vessels

D. all the above.

**Answer: c**

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25. tylosoid is intrusion of a

- A. structure into parenchyma
- B. parenchyma into strutre other than tracheary element.
- C. parenchyma into tracheary element
- D. annular ingrowth into a cell.

**Answer: b**



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26. the scientist who developed the science of dendrochronology is

- A. Eames
- B. Esau
- C. Fahn

D. Douglas.

**Answer: d**



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**27.** included cork is cork generally formed in

A. cortex

B. pericycle or interfascicular parenchyma

C. Xylem

D. pith

**Answer: c**



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**28.** included or intraxylary cork develops from

- A. vascular cambium
- B. wood parenchyma
- C. medullary rays
- D. parenchymatous pericycle.

**Answer: b**

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**29.** In summer, a mild wind is often found on the shore of a clam river.

This is caused due to

- A. development from wood parenchyma
- B. differentiation form vascular ray
- C. intrusion of phloem through vascular ray
- D. formation form separated cambial strip.

**Answer: d**

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30. spongy parenchyma is arranged in

- A. urtica
- B. Entada
- C. chenopodium
- D. Artemesia

**Answer: a**

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31. vascular cambium from xylem on inner side and phloem on outer side  
due to

- A. ficus
- B. Entada

C. Orobanche

D. Quercus.

**Answer: b**



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**32.** wood with specific gravity of less than 0.2 is

A. bombax

B. populus

C. ochroma

D. Olea.

**Answer: c**



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33. wood with specific gravity of less than 0.05 occurs in

- A. ochroma
- B. olea laurifolia
- C. xylia dolabriformis
- D. Aeschynomene hispida.

**Answer: d**



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34. stomata without subsidiary cells are

- A. anonomocytic
- B. anisocytic
- C. actinocytic
- D. cyclocytic

**Answer: a**



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**35. diacytic stomata possess subsidiary cells.**

- A. parallel to guard cells.
- B. in rings around guard cells
- C. At right angles to guards cells
- D. unequal

**Answer: c**



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