

BIOLOGY

BOOKS - OBJECTIVE NCERT AT YOUR FINGERTIPS

ANATOMY OF FLOWERING PLANTS

Anatomy Of Flowering Plants

1. Maristematic tissues are composed of

A. mature cells

B. fully differentiated cells

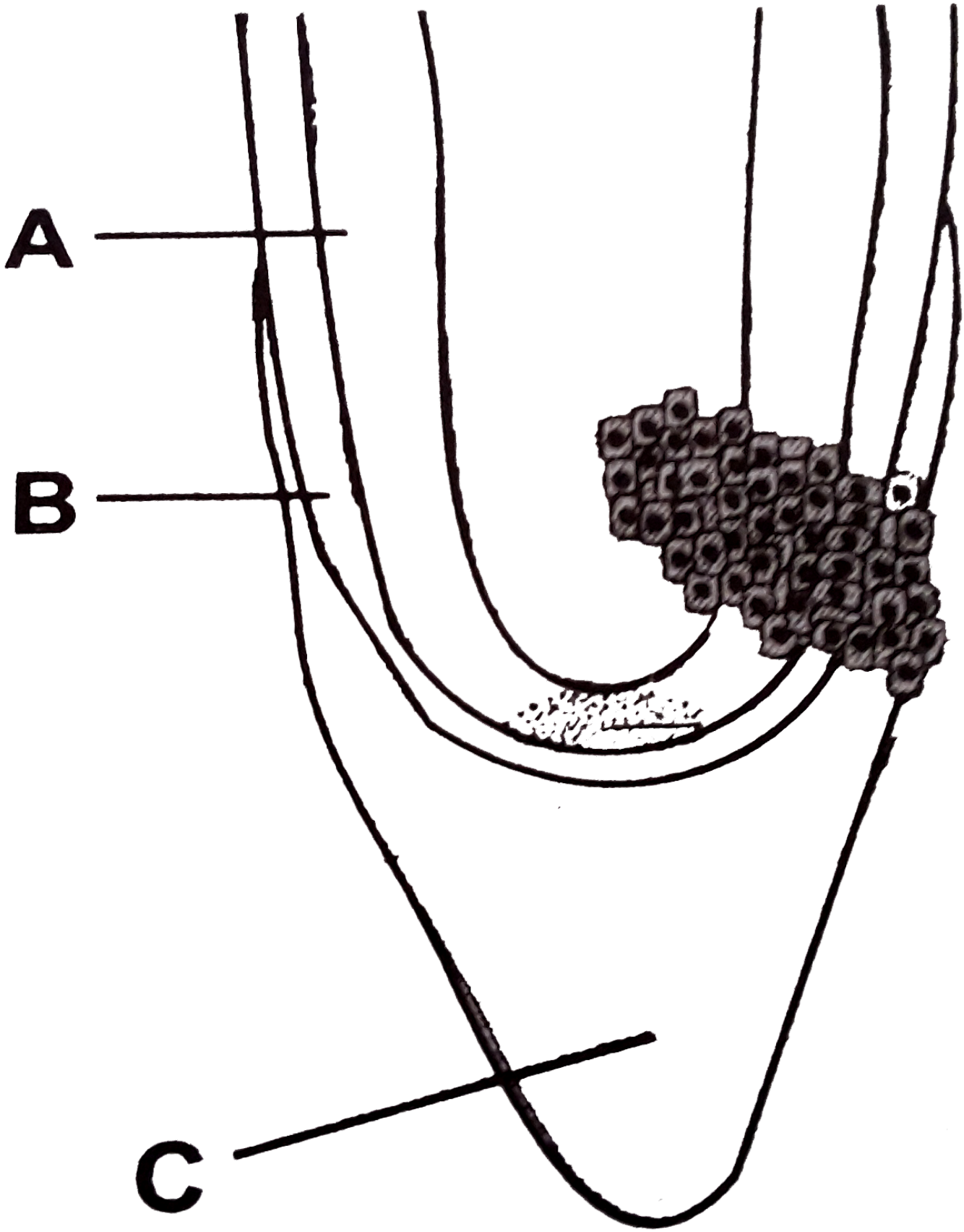
C. cells that cannot divide

D. immature cells with power to divide.

Answer: D

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2. Select the option that correctly identifies the labellings A, B and C in the given figure showing section of root apical meristem.



A. `{:(A,B,C),("Cortex","Protoderm","Root cap"):}`

B. `{:(A,B,C),("Protoderm","Cortex","Root cap"):}`

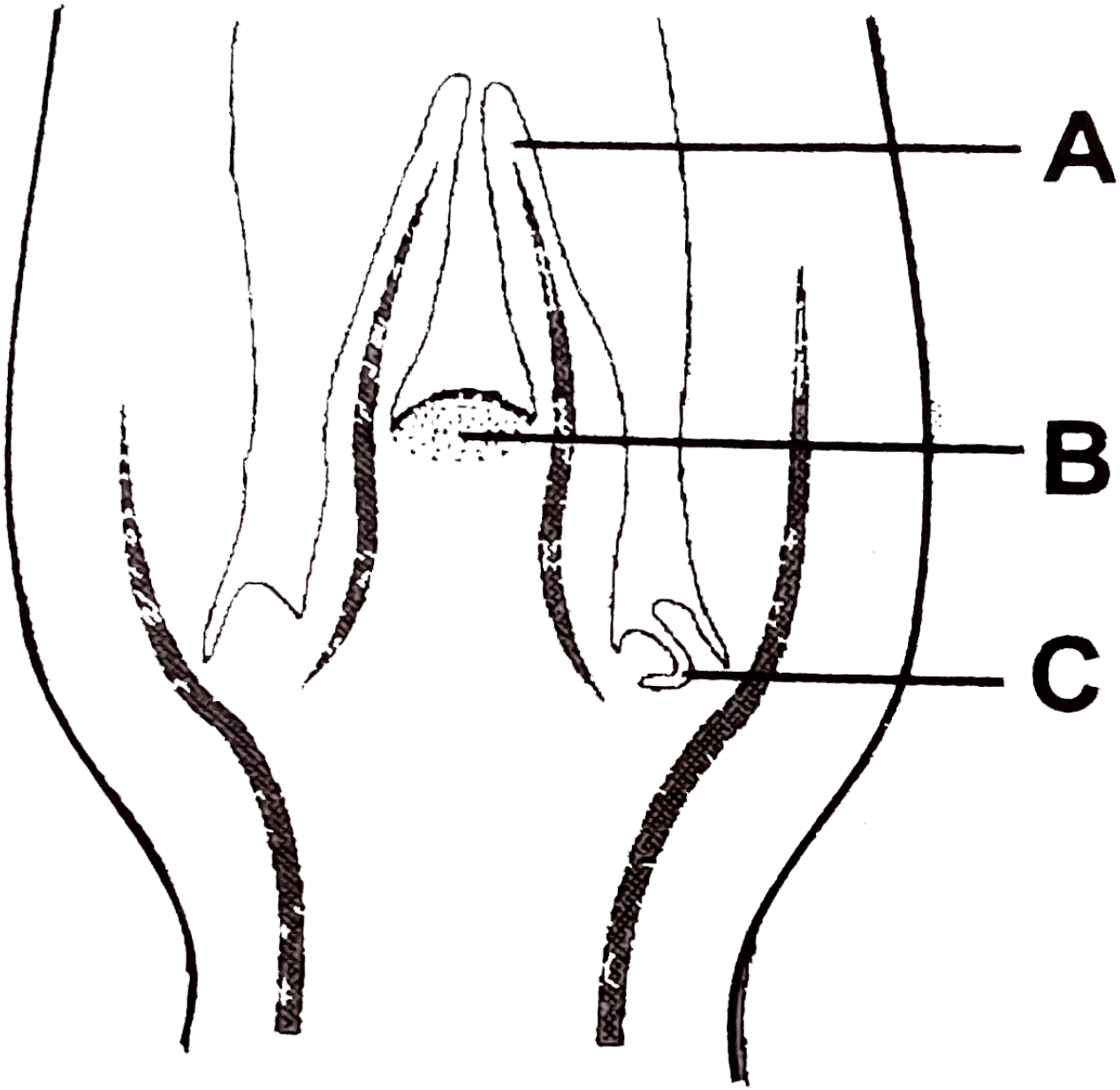
C. `{:(A,B,C),("Hypodermis","Epidermis","Cortex"):}`

D. `{:(A,B,C),("Tunica","Protoderm","Root cap"):}`

Answer: A

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3.



Identify the given figure and select the correct option for A, B and C

A. `{:(A,B,C),("Leaf primodrdium","Shoot apical meristem","Apical bud"):}`

B. `{:(A,B,C),("Leaf primodrdium","Shoot apical meristem","Axillary bud"):}`

C. `{:(A,B,C),("Root hair","Root apical meristem","Axillary bud"):}`

D. `{:(A,B,C),("Root hair","Root apical meristem","Apical bud"):}`

Answer: B

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4. Both apical meristem and intercalary meristem are _____Meristems.

A. primary

B. secondary

C. lateral

D. both b and c

Answer: A

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5. Read the followig statements regarding meristematic cells and select the correct ones.

(i). Cells possess the ability to grow and divide.

(ii). Cells have dense cytoplasm with prominent nucleus.

(iii). Well developed ER and mitochondria are present

A. (i) and (ii)

B. (ii) and (iii)

C. (i) and (iii)

D. (i), (ii) and (iii)

Answer: A

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6. The growth of roots and stems in length with the help of apical meristem is called

A. primary growth

B. lateral growth

C. secondary growth

D. intercalary growth.

Answer: A

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7. Vascular cambium and cork cambium are the examples of

A. apical meristem

B. lateral meristem

C. intercalary meristem

D. promeristem

Answer: B

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8. Root cap in monocots is formed by

A. dermatogen

B. calyptrogen

C. vascular cambium

D. wound cambium

Answer: B

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9. The cells of the quiescent centre are characterised by

A. having dense cytoplasm and prominent nuclei

B. having light cytoplasm and small nuclei

C. dividinig regularly to add to the corpus

D. dividing regularly to add to tunica.

Answer: B

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10. Increase in girth of the plant as a result of the activities of primary and secondary lateral meristems is called.

A. primary growth

B. lateral growth

C. secondary growth

D. intercalary growth.

Answer: C

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11. Which one of the following is not a characteristic for meristematic cells?

A. presence of intercellular spaces

B. thin cellulosic cell walls

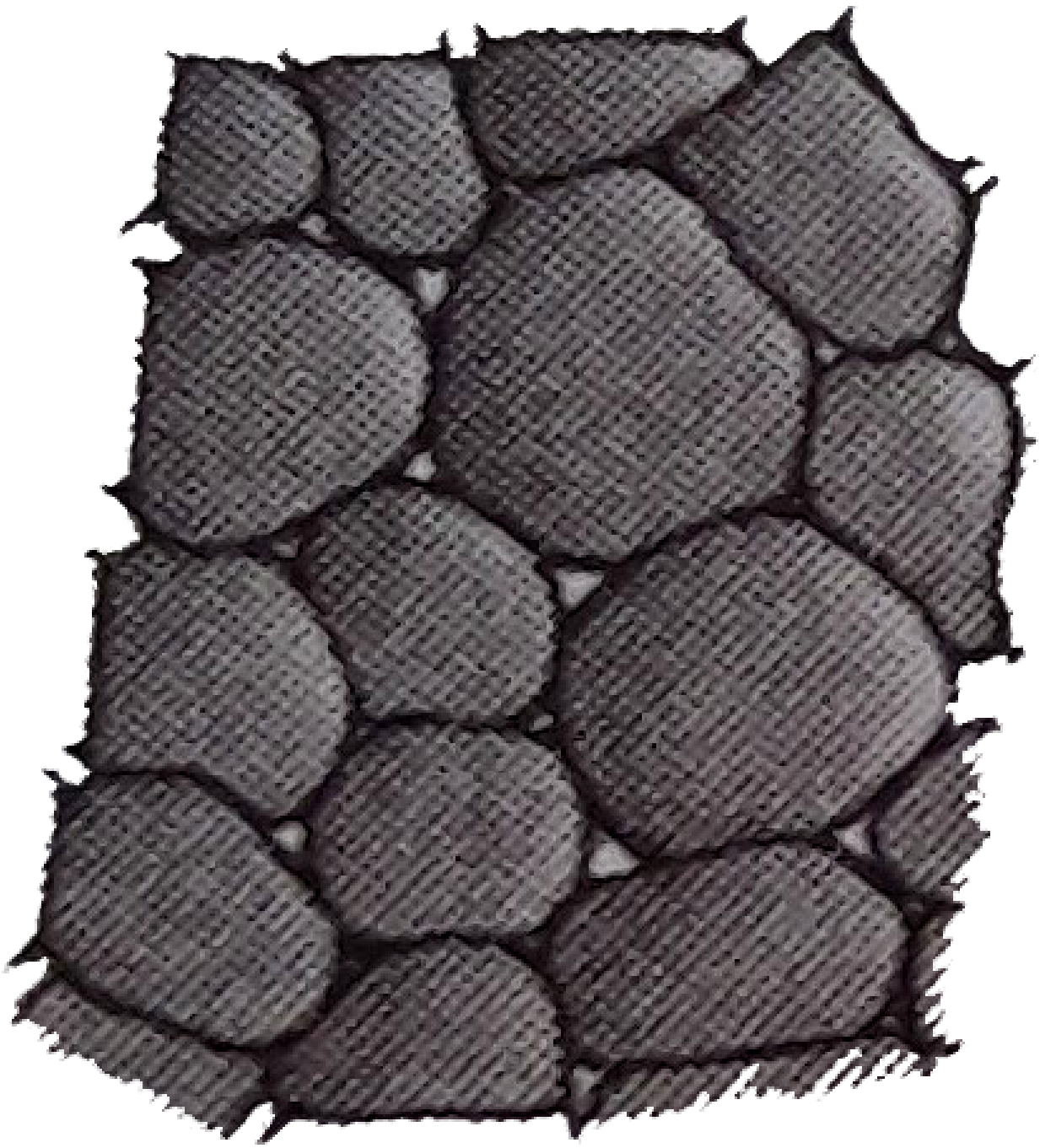
C. presence of prominent nucleus

D. presence of prominent nucleus

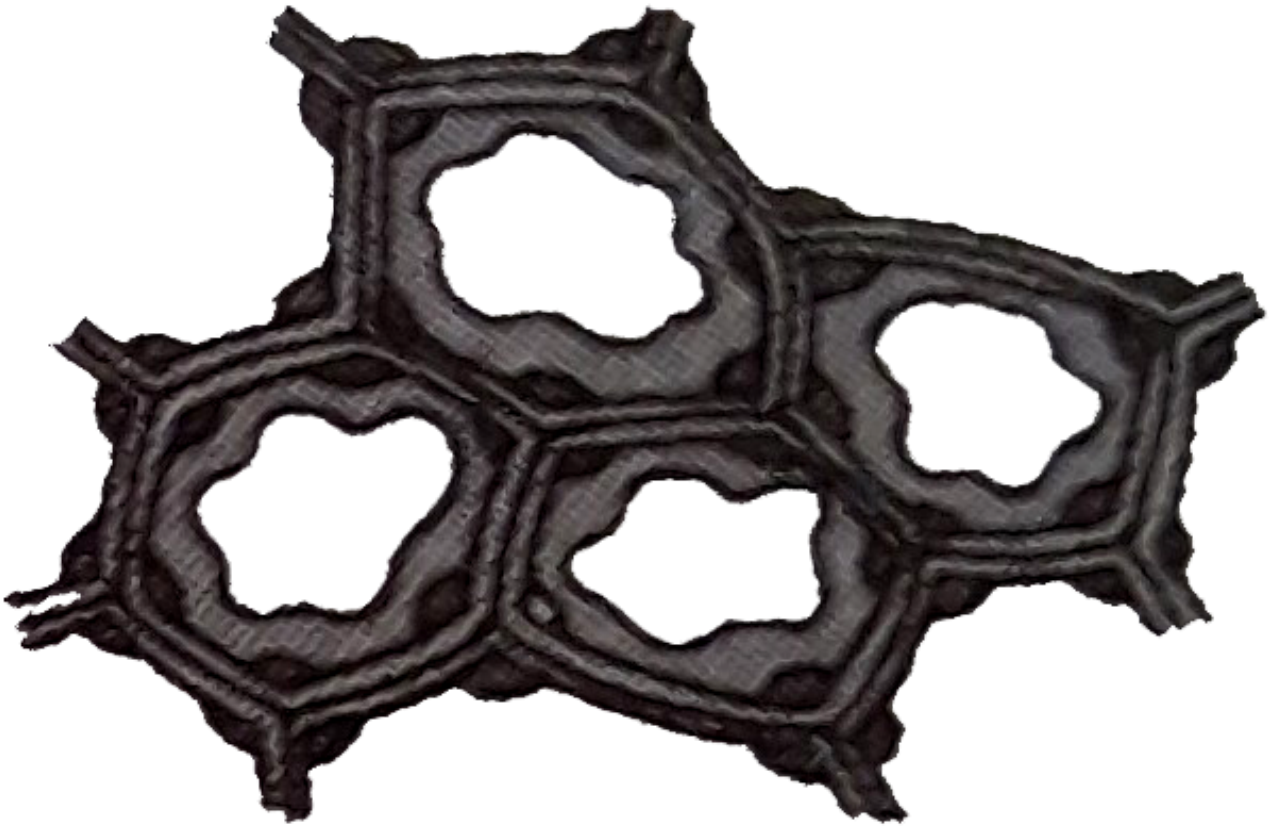
Answer: A

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12. _____is a living mechanical tissue.

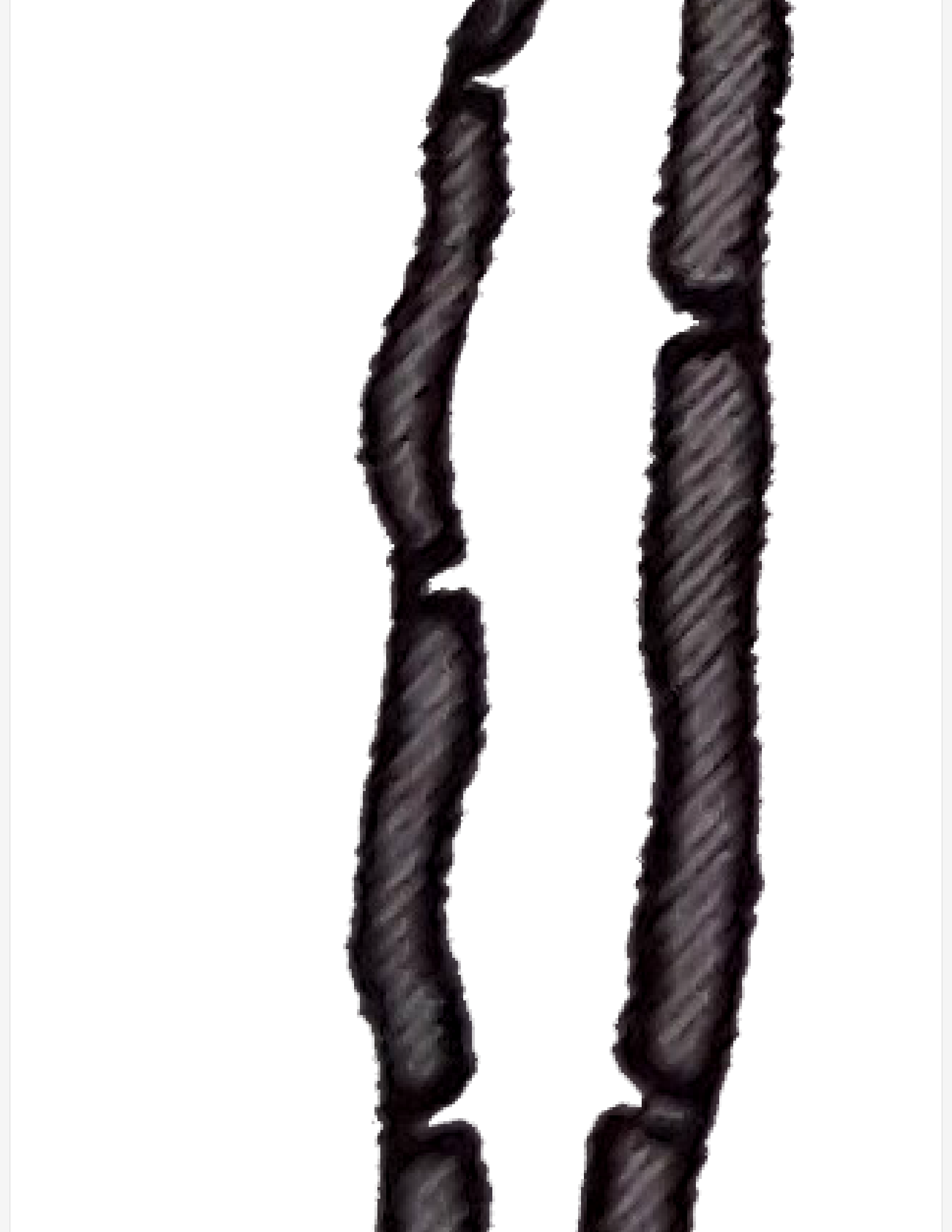


A.



B.







C.

D. both a and b

Answer: B

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13. In angular collenchyma, thickenings are present _____

A. on the tangential walls

B. on the walls bordering intercellular spaces

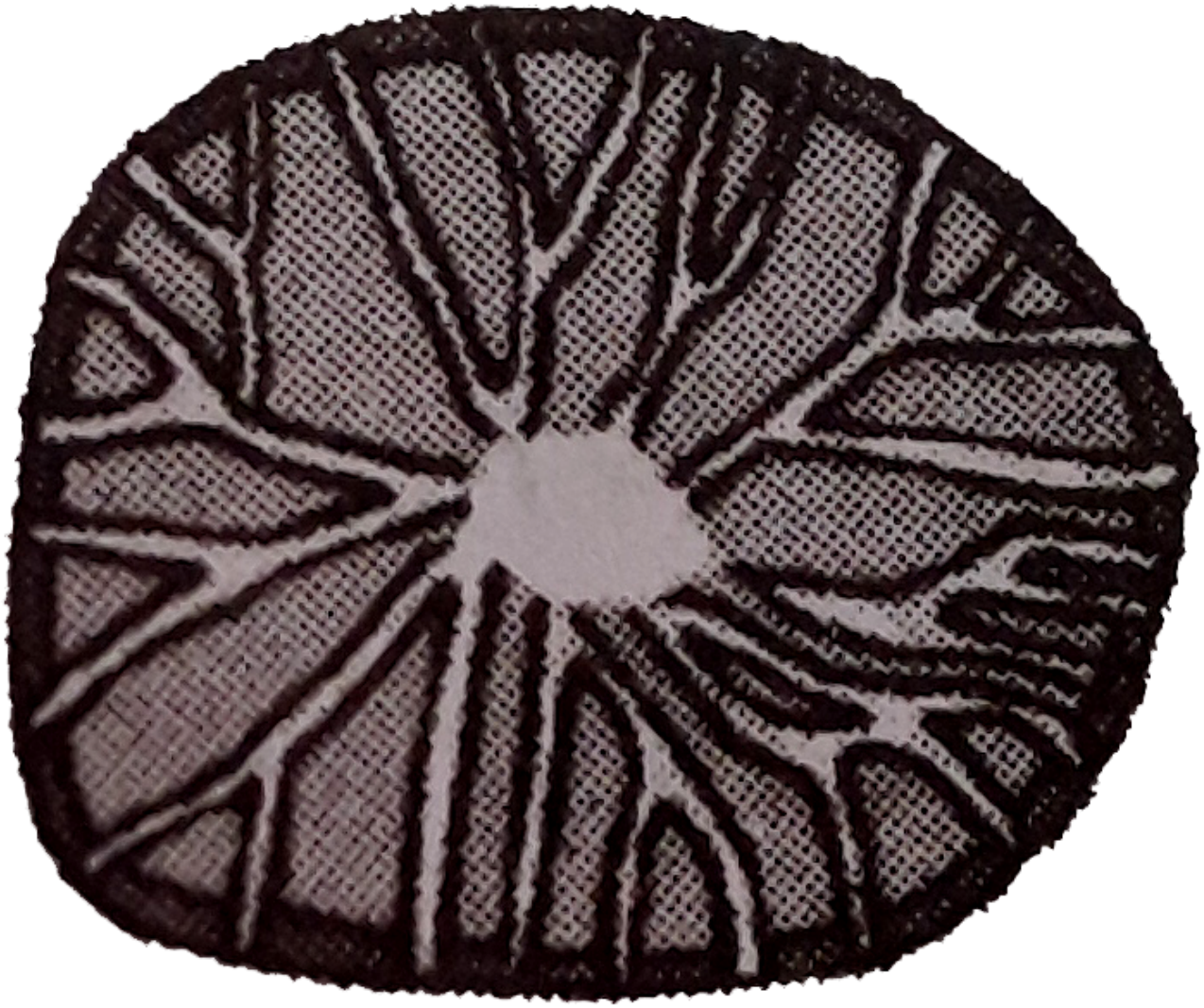
C. at the corners of cell

D. throughout the cell wall

Answer: C

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14.



The given figure present in

A. fruit walls of nuts

B. grit of guava and pear

C. seed coats of legumes

D. all of these

Answer: D

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15. Which of the following tissues has dead cells with thick and lignified cells walls, having a few or numerous pits?

A. Sclerenchyma

B. Collenchyma

C. Phloem

D. None of these

Answer: A

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16. Idioblasts are

A. sclerenchymatous fibres found in the leaf of Yucca

B. specialised parenchymatous cells which contains ergastic substances

C. Collenchymatous cells possessing angular thickenings

D. crystals of calcium oxalate found in hard fruits

Answer: B

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17. Bone shaped sclerenchymatous cells found in hypodermal layers of some seeds and fruits are called

A. osteosclereids

B. macrosclereids

C. brachysclereids

D. trichosclereids

Answer: A

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18.







The given figure shows which of the following cells?

A. companion cell

B. sieve tube element

C. Xylem vessel

D. Xylem tracheid

Answer: C

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19. All the xylem elements, when mature are dead except

A. tracheids

B. vessels

C. xylem parenchyma

D. xylem fibres

Answer: C

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20. Match column I with column II and select the correct option from the given codes.

`{:("Column I","Column II"),(A." Vessels",(i)." CElls are living, with thin cellulosic cells walls"),(B." Tracheids",(ii)." Cells possess highly thickened walls with obliterated central lumen"),(C." Xylem fibres",(iii)." Individual members are interconnected through perforations in their"),(D." Xylem parenchyma",(iv)." Elongated tube-like cells with thick, lignified walls and tapering ends"):}`

A. A-(iv),B-(iii),C-(ii),D-(i)

B. A-(iii),B-(iv),C-(ii),D-(i)

C. A-(ii),B-(iv),C-(iii),D-(i)

D. A-(iv),B-(ii),C-(iii),D-(i)

Answer: B

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21. Which of the following is a vessel-less angiosperm?

A. Tetracentron

B. Trochodendron

C. Wintera

D. all of these

Answer: D

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22. In endarch condition of xylem, protoxylem lies _____of metaxylem.

A. on inner side

B. on outer side

C. both on inner and outer side

D. neither inner nor outer

Answer: A

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23. In (i), protoxylem lies towards periphery and metaxylem lies towards centre. Such an arrangement of primary xylem is called as (ii)

A. `{:("Column I","Column II"),("stems","endarch"):}`

B. `{:("Column I","Column II"),("stems","exarch"):}`

C. `{:("Column I","Column II"),("roots","endarch"):}`

D. `{:("Column I","Column II"),("roots","exarch"):}`

Answer: D

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24. Which of the following conditions of xylem is present in both monocot and dicot stems?

A. endarch

B. polyarch

C. mesarch

D. exarch

Answer: A

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25. Read the following statements and select the correct ones.

(i). Phloem parenchyma is absent in most monocots.

(ii). Gymnosperms lack tracheids and vessel.

(iii). Gymnosperms lack companion cells.

A. (i) and (ii)

B. (ii) and (iii)

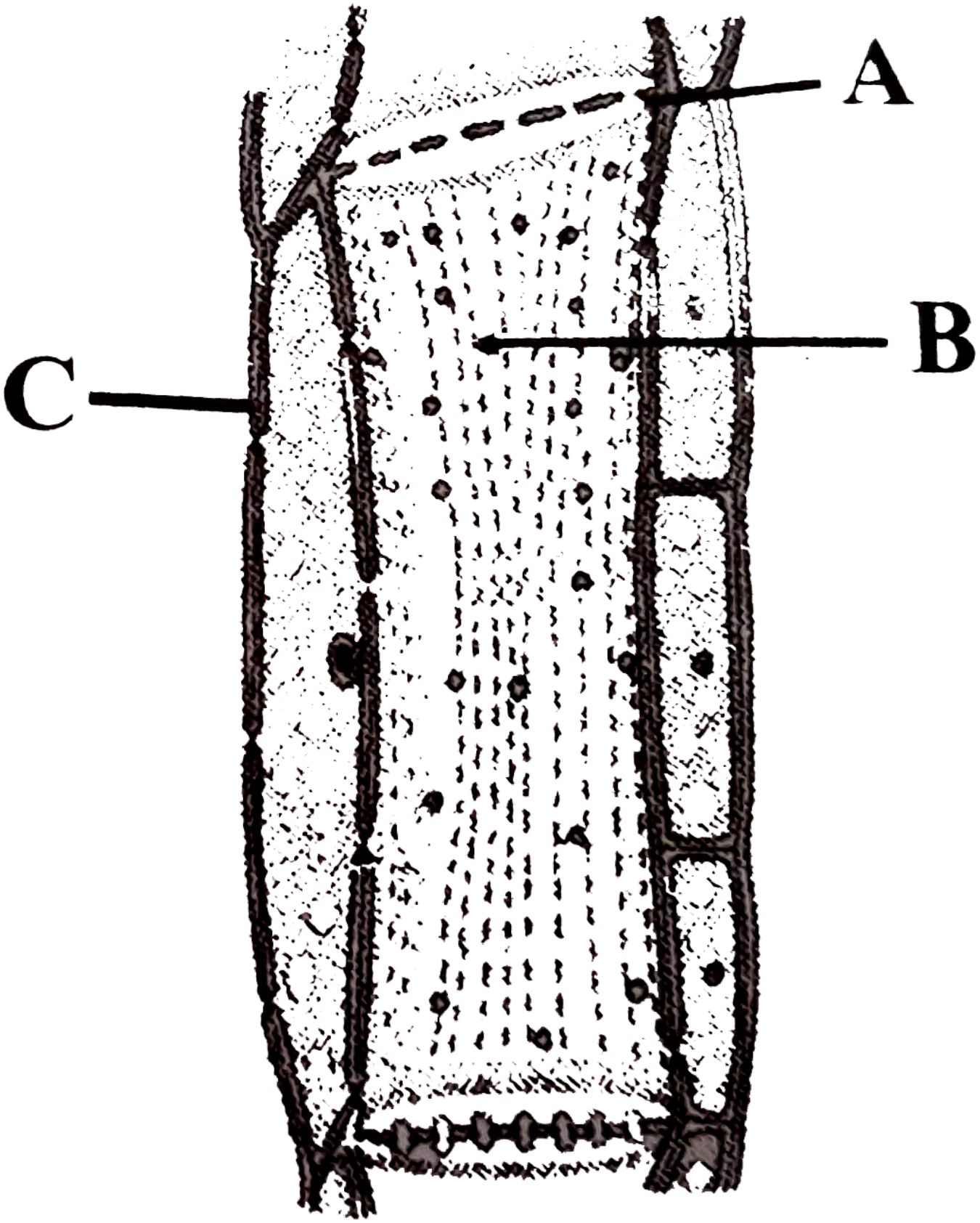
C. (i) and (iii)

D. (i), (ii) and (iii)

Answer: C

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26. Identify the given figure and select the correct option for the parts labelled as A, B and C



A. C represents the cells which are replaced by albuminous cells in non-flowering plants such as gymnosperms

B. A represents phloem parenchyma, which is absent in most monocots.

C. B represents the cells which become dead on maturity.

D. all of these

Answer: A

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27. Select the incorrect pair out of the following

A. `{:("Type of tissue","Function"),("Parenchyma","Storeage,photosynthesis"):}`

B. `{:("Type of tissue","Function"),("Sclerenchyma","Mechanical strength"):}`

C. `{:("Type of tissue","Function"),("Xylem","Ascent of sap"):}`

D. `{:("Type of tissue","Function"),("Phloem","Conduction of water and minerals"):}`

Answer: D

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

A. enucleate condition

B. thick secondary walls

C. pores on lateral walls

D. presence of P-protein

Answer: A

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29. Vascular tissues of angiosperms differ from those of gymnosperms in

A. presence of vessels in the xylem

B. presence of well developed sieve tubes in phloem

C. presence of companion cells in phloem

D. all of these

Answer: D

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30. Match the scientists in column I with the related terms coined by them in column II and select the correct option from the given codes.

`{:("Column I","Column II"),(A." N. Grew",(i)." Hadrome and leptome"),(B." Nageli",(ii)." Tissue"),(C." Haberlandt",(iii)." Quiscent centre"),(D." Clowes",(iv)." Xylem and phloem"):}`

A. A-(iii),B-(iv),C-(i),D-(ii)

B. A-(ii),B-(iv),C-(i),D-(iii)

C. A-(iv),B-(ii),C-(iii),D-(i)

D. A-(iv),B-(iii),C-(ii),D-(i)

Answer: B

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31. Three types of tissue system have been recognised in plants on the basis of their functions. Select the correct option regarding this.

A. Epidermal tissue system consists of epidermis and epidermal appendages, which provide protection to the internal tissues.

B. all tissues except epidermis and vascular bundles constitute the ghround tissue, which forms the major part of a plat's body

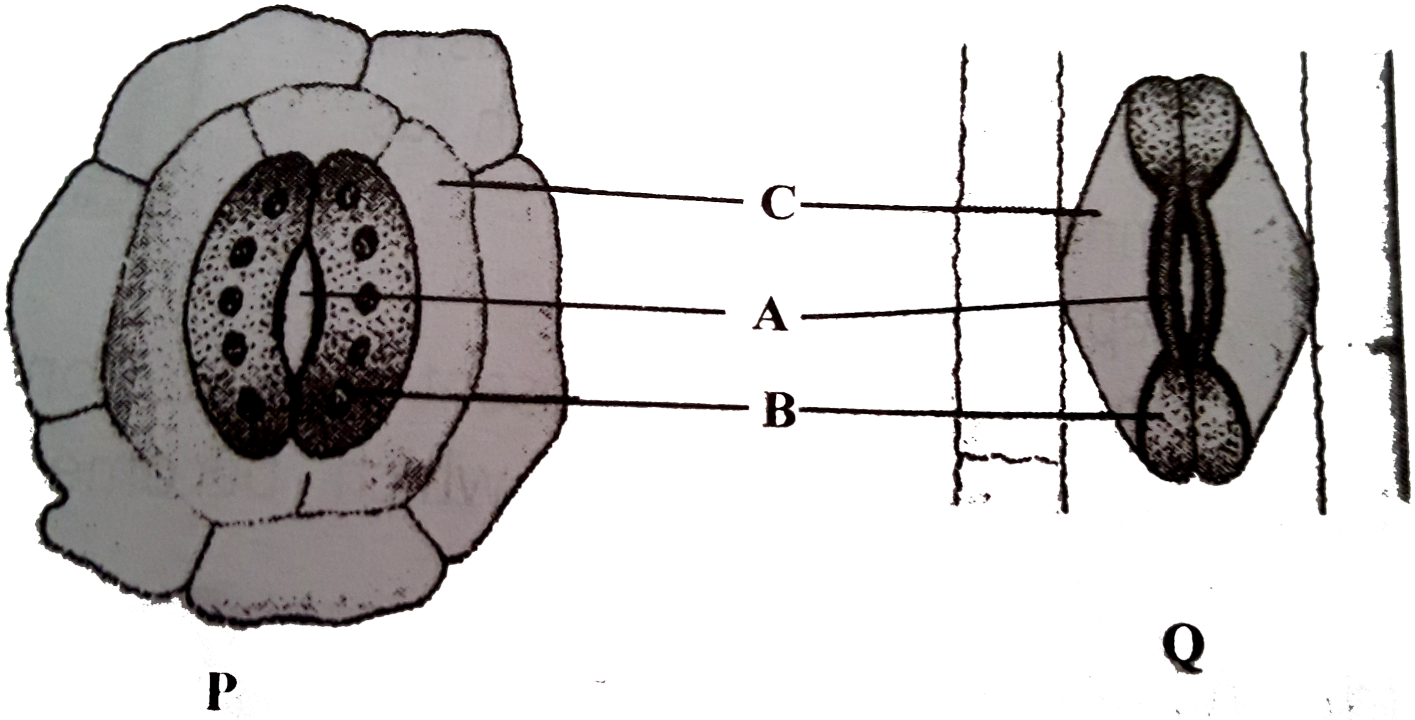
C. vascular tissue system consists of complex tissues i.e., xylem and phloem.

D. all of these

Answer: D

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32.



Given figures (P and Q) represent the stomatal apparatus of dicot and monocot leaves respectively. Select the option which correctly labels A, B and C

A. `{:(A,B,C),("stoma","subsidiary cells","guard cells"):}`

B. `{:(A,B,C),("stoma","subsidiary cells","Epidermal cells"):}`

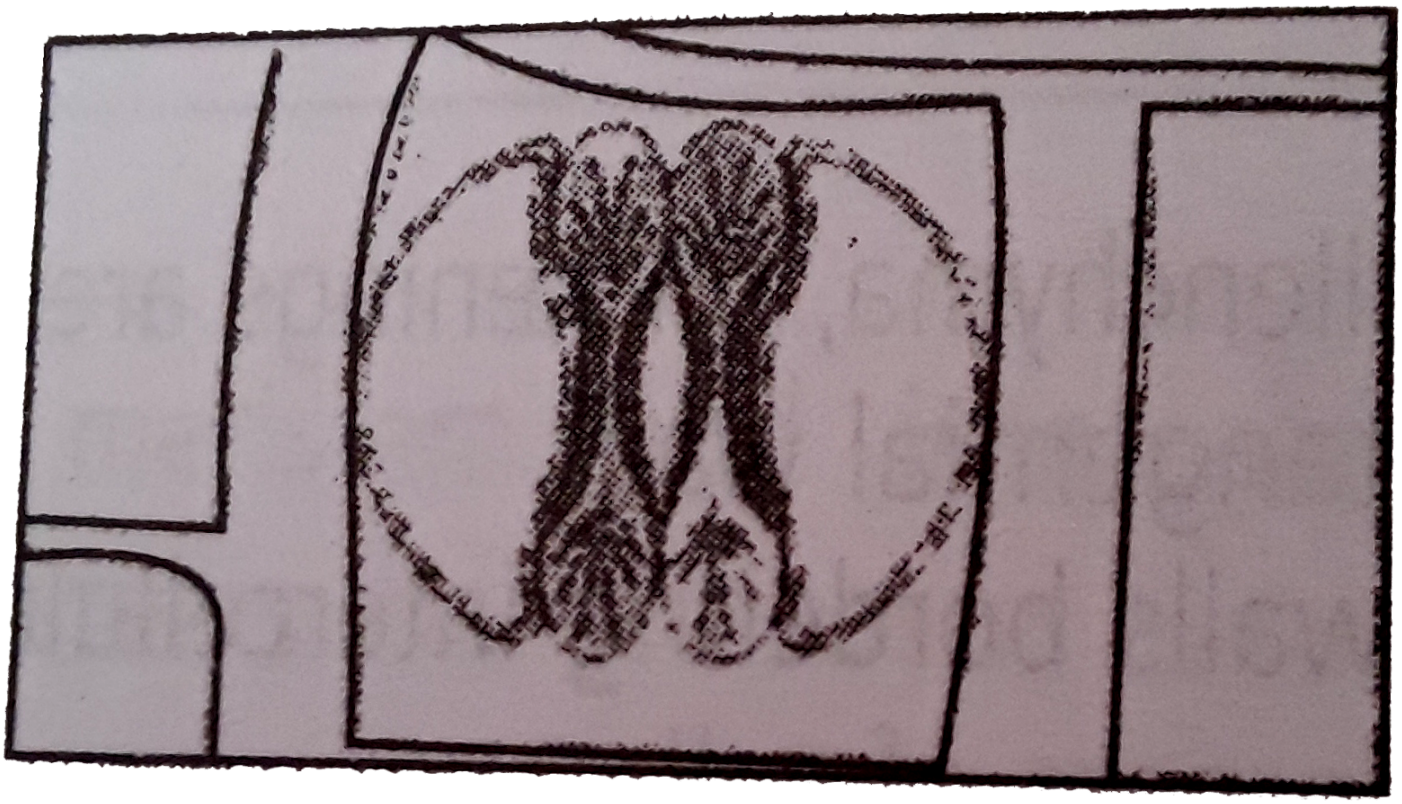
C. `{:(A,B,C),("Guard cells","stoma","Chloroplast"):}`

D. `{:(A,B,C),("stoma","Guard cells","Subsidiary cells"):}`

Answer: D

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33.



Identify the plants (from the list i-vi) which possess the given type of guars cells (as shown in the diagram) in their leaves.

(i). Grass

(ii). Tomato

(iii). Banana

(iv). Brinjal

A. (i),(ii) and (v)

B. (ii), (iii) and (iv)

C. (i),(iii) and (vi)

D. (iv),(v) and (vi)

Answer: C

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34. Epidermal tissue system is derived from

A. protoderm

B. procambium

C. periblem

D. plerome

Answer: A

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35. Select the mismatched pair

A. Root hair-Unicellular

B. Stem hair-multicellular

C. trichomes-cause water loss

D. guard cells-regulate opening and closing of stomata

Answer: C

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36. Which of the following exemplifies emergences?

A. Root hair

B. Stigmatic papillae

C. Prickles of rosa indica

D. oil glands on fruit skins

Answer: C

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37. Which of the following causes almost unbearable irritation of the skin?

A. lint of gossypium

B. staminal hair tradescantia

C. Prickles of rosa indica

D. stinging hair of urtica dioica

Answer: D

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38. Stomata which remain surrounded by a pair of subsidiary cells whose common wall is at right angles tio guard cells are called

A. anomocytic

B. aisocytic

C. paracytic

D. diacytic

Answer: D

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39. Which of the following tissue systems constitutes bulk of the plant body?

A. Epidermal tissue system

B. Ground tissue system

C. vascular tissue system consists of complex tissues i.e., xylem and phloem.

D. both a and c

Answer: B

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40. In_____vascular bundle, a strip of vascular combium is present in between the xylem and phloem.

A. open

B. closed

C. endarch

D. exarch

Answer: A

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41. Radial vascular bundles characteristically occurs in

A. monocot and dicot stems

B. monocot and dicot leaves

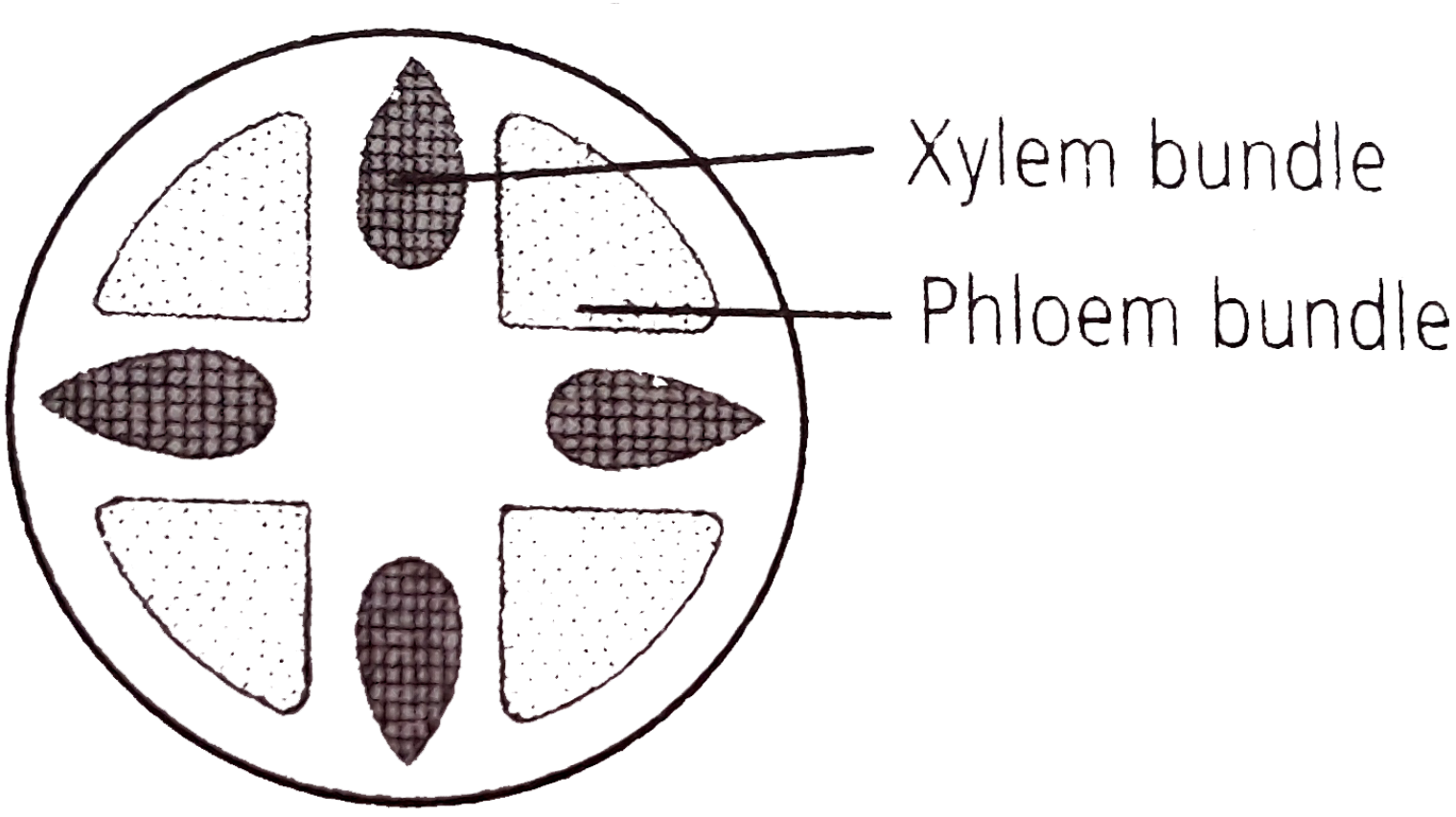
C. monocot and dicot roots

D. all of these

Answer: C

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42.



Identify the type of vascular bundle as shown in the figure and select the incorrect statements regarding it.

A. figure represents radial vascular bundles in which xylem and phloem occur in the form of separate bundles.

B. Xylem bundles and phloem bundles occur on different radii.

C. These are the characteristic of monocot and dicot leaves.

D. None of these

Answer: C

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43. Select the mismatched pair out of the following

A. Radial vascular bundle-Xylem and phloem on different radii

B. Bicollateral vascular bundle-Phloem present on both dides of xylem

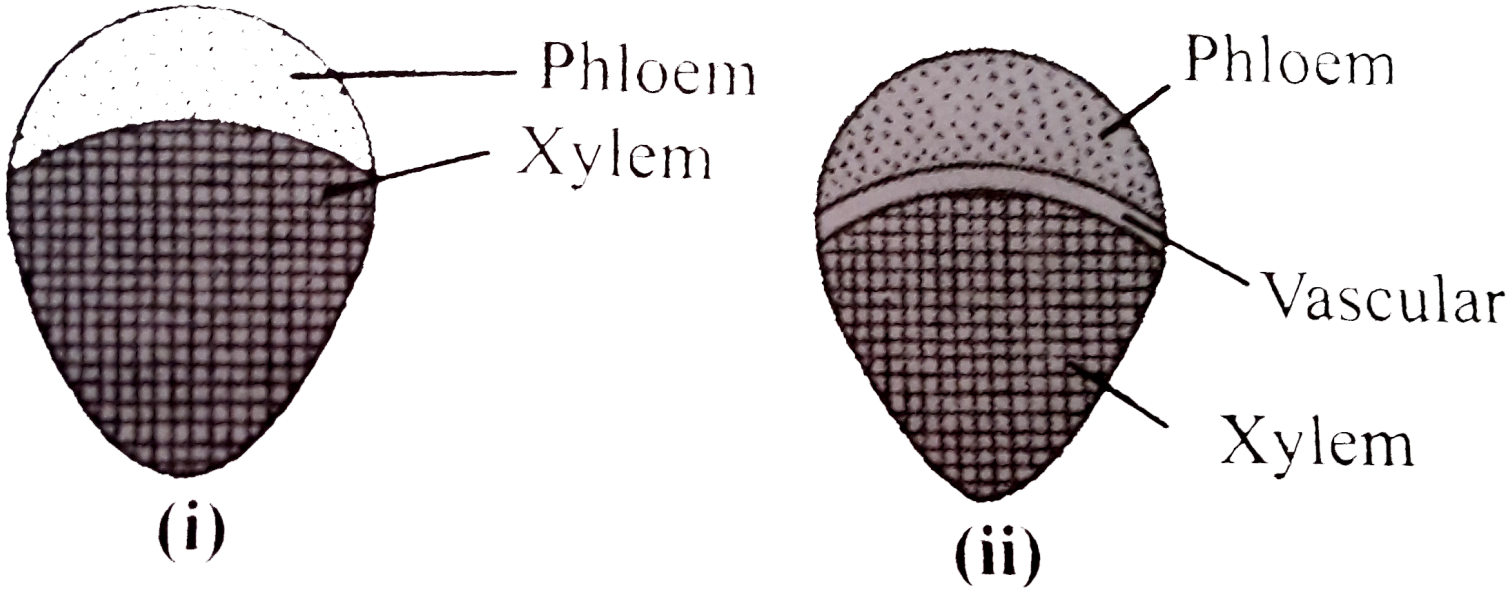
C. Amphivasal vascular bundle- Phloem surrounds xylem

D. Conjoint vascular bundle-Xylem and phloem on same radii

Answer: C

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44.



Identify the types of vascular bundle in the figures (i) and (ii) and select the correct option

A. `{:("Column I","Column II"),("Conjoint collateral","Conjoint bicollateral"):}`

B. `{:("Column I","Column II"),("Conjoint bicollateral","Conjoint collateral"):}`

C. `{:("Column I","Column II"),("Conjoint collateral closed","Conjoint bicollateral open"):}`

D. `{:("Column I","Column II"),("Conjoint collateral open","Conjoint bicollateral closed"):}`

Answer: C

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45. Casparian strips are the bands of thicknings present on _____walls of endodermis.

A. radial

B. rangential

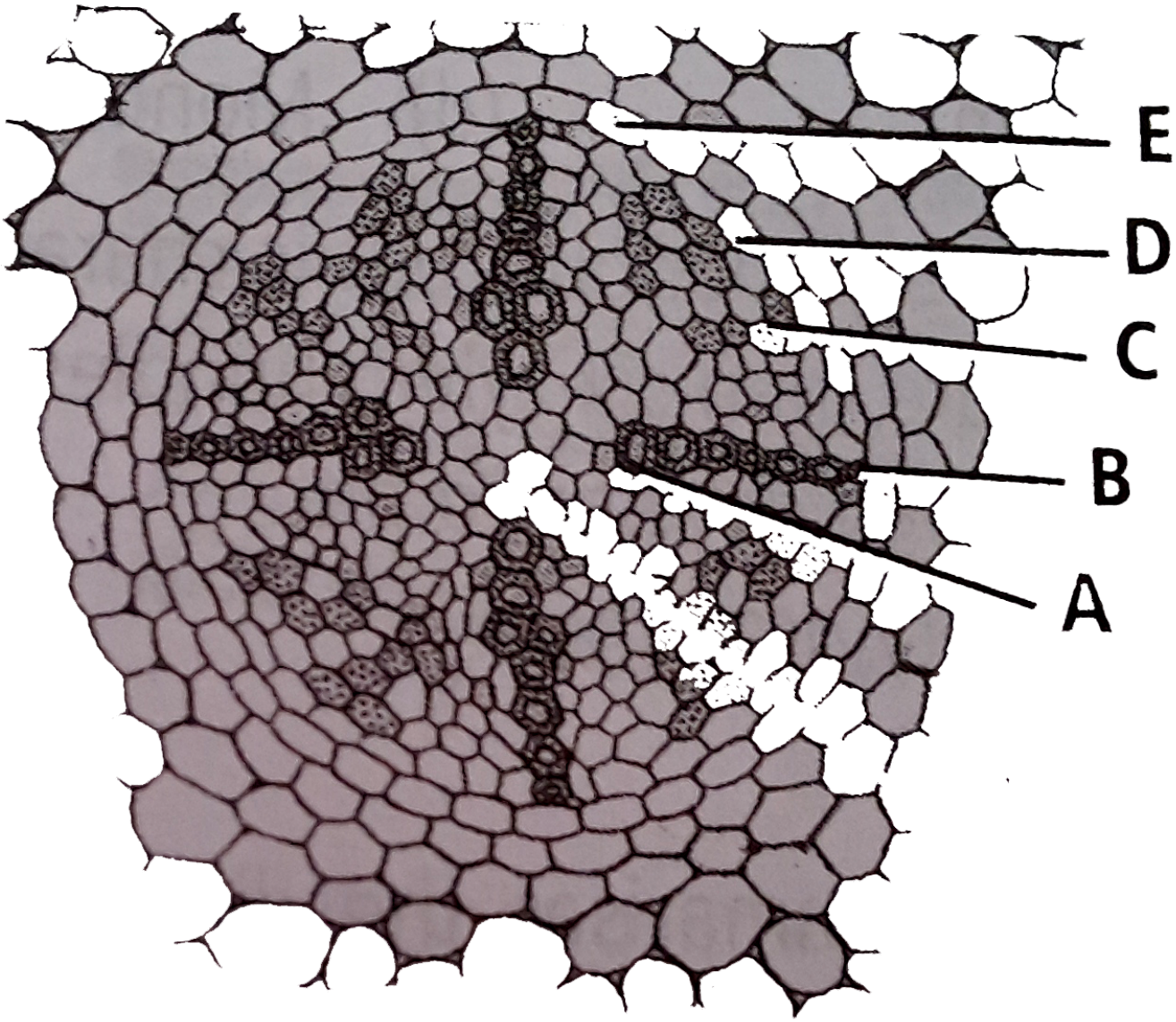
C. central

D. both a and b

Answer: D

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46.



A diagram of T.S. of dicot root is given, select the option which correctly labels A, B,C,D and E

A. `{:(A,B,C,D,E),("Protoxylem","Metaxylem","Phloen","Pericycle","Endodermis"):}`

B. `{:(A,B,C,D,E),("Metaxylem","Protoxylem","Phloen","Pericycle","Endodermis"):}`

C. `{:(A,B,C,D,E),("Protoxylem","Metaxylem","Phloen","Endodermis","Pericycle"):}`

D. `{:(A,B,C,D,E),("Metaxylem","Protoxylem","Phloen","Endodermis","Pericycle"):}`

Answer: B

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47. Stele includes

A. Pericycle

B. Vascular bundles

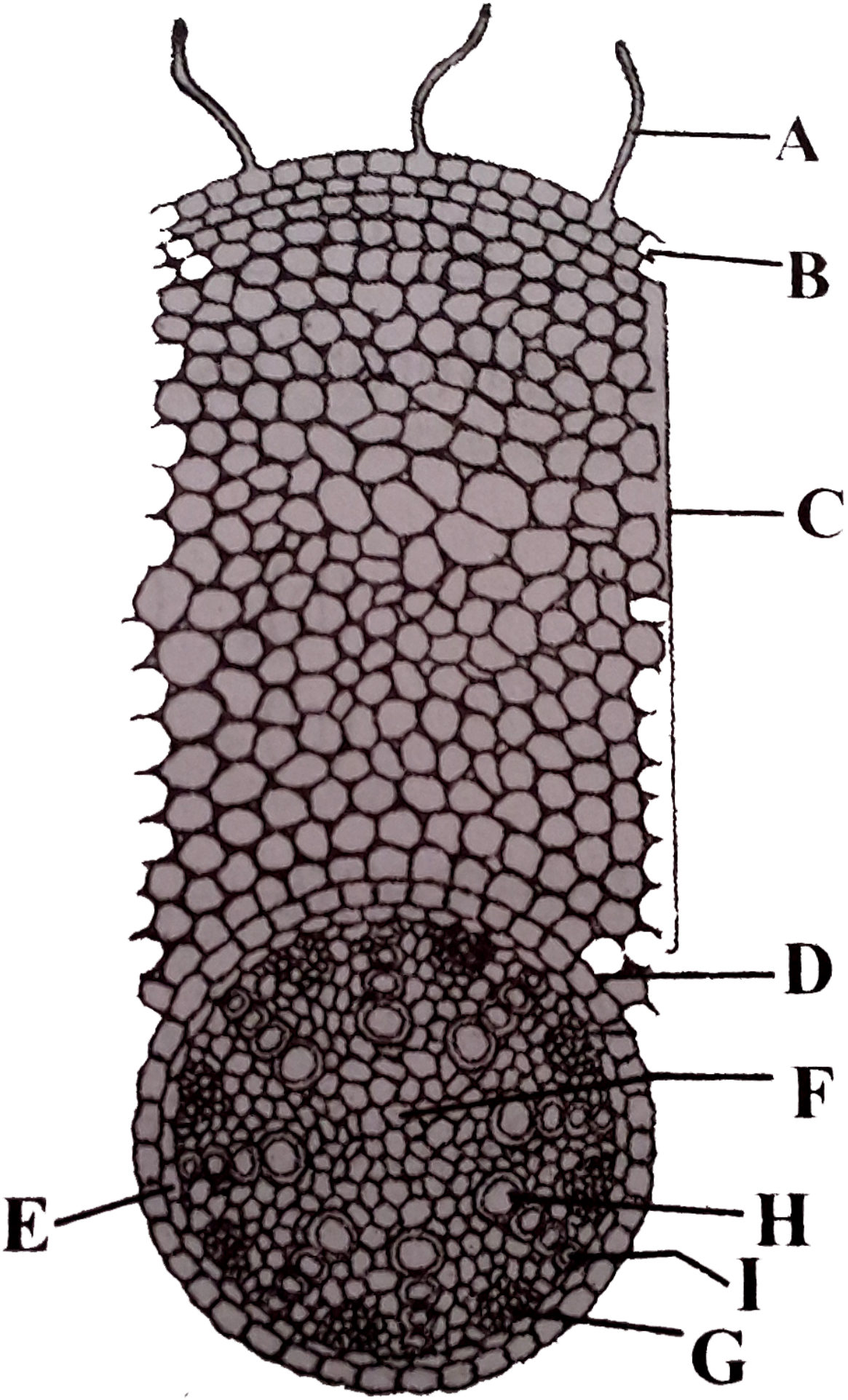
C. Pith

D. all of these

Answer: D

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48.



Transverse section of a part of a typical monocotyledonous root has been shown in the given figure. Identify the different parts (from A to I) and select the correct option.

A. A-Root hair, B-Epiblema, C-Cortex, D-Endodermis E-Pericycle, F-Pith, G-Phloem, H-Metaxylem, I-Protoxylem

B. A-Root hair, B-Epiblema, C-Cortex. D-pericycle, E-Endodermis, F-Pth, G-Phloem, H-Metaxylem, I-Protoxylem

C. A-Root hair, B-Epiblema, C-Cortex, D-Endodermis, E-Pericycle, F-Pith, G-Phloem, H-Protoxylem, I-Metaxylem

D. A-Root hair, B-Cortex, C-Epiblema, D-Pericycle, E-Endodermis, F-Passage cell, G-Protoxylem, H-Phloem, I-Metaxylem

Answer: A

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49. Plyarch vascular bundles generally occur in

A. monocot stem

B. dicot stem

C. dicot root

D. monocot root.

Answer: D

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50. Which plants part possesses polyarch condition of vasuclar bundles with a well developed pith?

A. Dicot root

B. monocot root

C. dicot stem

D. monocot stem

Answer: B

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51. A typical monocotyledonous root is characterised by

A. usually more than six xylem bundles

B. Large and well develped pith

C. no secondary growth

D. all of these

Answer: D

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52.

	Characters	Monocot root	Dicot root
(i)	Vascular bundle	Polyarch *i.e.*, more than 6 vascular bundles	Diarch to hexarch *i.e.*, 2 - 6 vascular bundles
(ii)	Cambium	Absent	Present, so secondary growth occurs
(iii)	Pith	Poorly developed	Well developed large pith
(iv)	Activity of pericycle	Gives rise to secondary roots and cork cambium	Gives rise to lateral roots only

Following table summarises the differences between a monocot root and a dicot root. Identify the incorrect differences and select the correct option

A. (i) and (iii)

B. (i) and (iv)

C. (iii) and (iv)

D. (ii) and (iii)

Answer: C

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53. Read the following statements

(i). Multicellular epidermal hair

(ii). Collenchhymatous hypodermis

(iii). Pith present

(iv). Vascular bundles present in a ring i.e., eustele above given features describe which of the following plant parts?

A. Monocot stem

B. Monocot root

C. Dicot stem

D. Dicot root

Answer: C

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54. Read the following statements and select the correct option.

Statement-1: Anatomically, all the tissues present on the inner side of endodermis such as pericycle, vascular bunbles and pitch constitute the stele.

Statement-2: Eustele is the stele in which vasuclar bundles are arragned in the form of a ring as present in dicot stems.

A. Both statement 1 and 2 are correct

B. Statement 1 is correct but stetement 2 is incorrect

C. Statement 1 is incorrect but statement 2 is correct.

D. Both statement 1 and 2 are incorrect

Answer: A

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55. Read the following statement with 1-2 blanks in each one of them:

(i). In monocot root, a large number of vascular bundles are arranged in the form of a _____around the central _____.

Due to the presence of _____,the endodermal substances between cortex and pricycle, in primary dicot root.

(iii). The epidermis of stem of sunflower bears several unbranched _____hair.

(iv). The central portion of a dicot stem is usually occupied by_____comprising of thin-walled parenchymatous cells.

Select the option that correctly fills the blanks in any two of them

A. (i) ring, pith, (ii) hypodermis

B. (ii) casparian strips, (iii) unicellular

C. (i) ring, convex, (iv) vasuclar bundles

D. (iii) multicellular, (iv) pitch

Answer: D

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

A. monocot stem

B. dicot stem

C. monocot root

D. dicot dicot

Answer: A

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57. Hypodermis is _____in sunflower stem and _____in maize stem

A. parenchymatous, collenchymatous

B. collenchymatous, sclerenchymatous

C. sclerenchymatous, collenchymatous

D. sclerenchymatous, parenchymatous

Answer: B

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58. 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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59. Select the incorrect statement regarding the anatomy of a typical monocotyledonous stem

A. Phloem parenchyma is absent.

B. Vascular bundles are scattered, conjoint, collateral and closed each vascular bundle is surrounded by a bundle sheath.

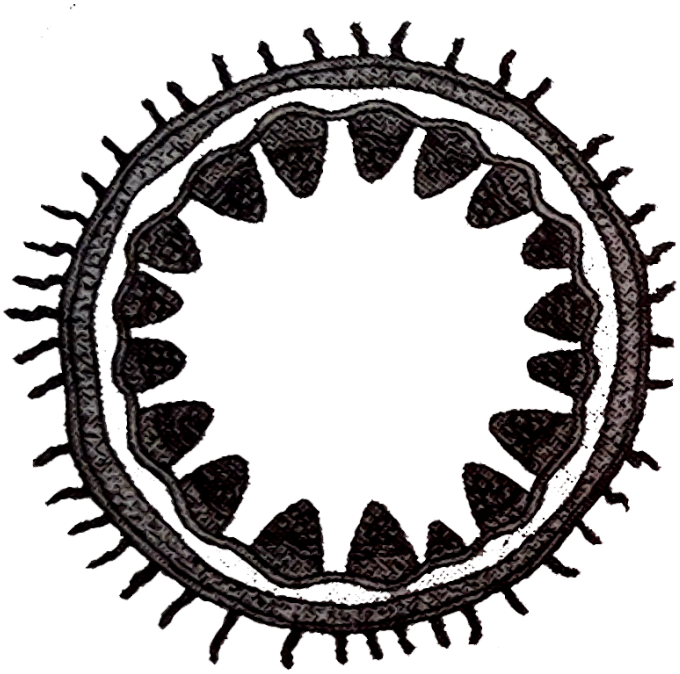
C. Ground tissue is differentiated into cortex, endodermic, pericycle and pith

D.

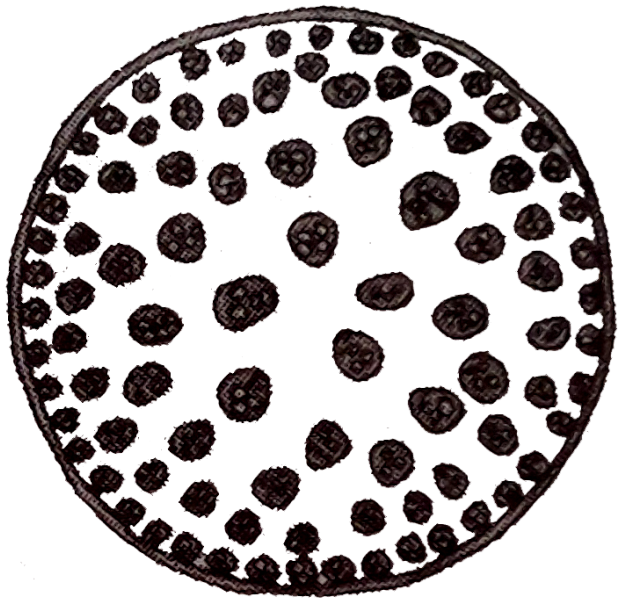
Answer: D

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60.



X



Y

Figures X and Y represent the transverse section of _____and _____respectively

A. `{:(X,Y),("dicot dicot","dicot stem"):}`

B. `{:(X,Y),("monocot root","monocot stem"):}`

C. `{:(X,Y),("dicot stem","monocot stem"):}`

D. `{:(X,Y),("monocot stem","monocot stem"):}`

Answer: C

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61. Select the mismatched pair

A. collateral and open vascular bundles- sunflower stem

B. Bicollateral vascular bundles-Maize stem

C. Concentric vascular bundles -ferns

D. Radial vascualr bundles -maize root

Answer: B

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62. Bicollateral vascular bundles are found in

A. Helianthus

B. Zea mays

C. Cucurbita

D. Dracaena

Answer: C

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63. Y-shaped arrangment of xylem vessel is found in

A. monocot stem

B. dicot stem

C. monocot root

D. dicot root.

Answer: A

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64. Lysigenous cavity in monocot stem vascular bundles develops by the dissolution of

A. protoxylem

B. maetaxylem

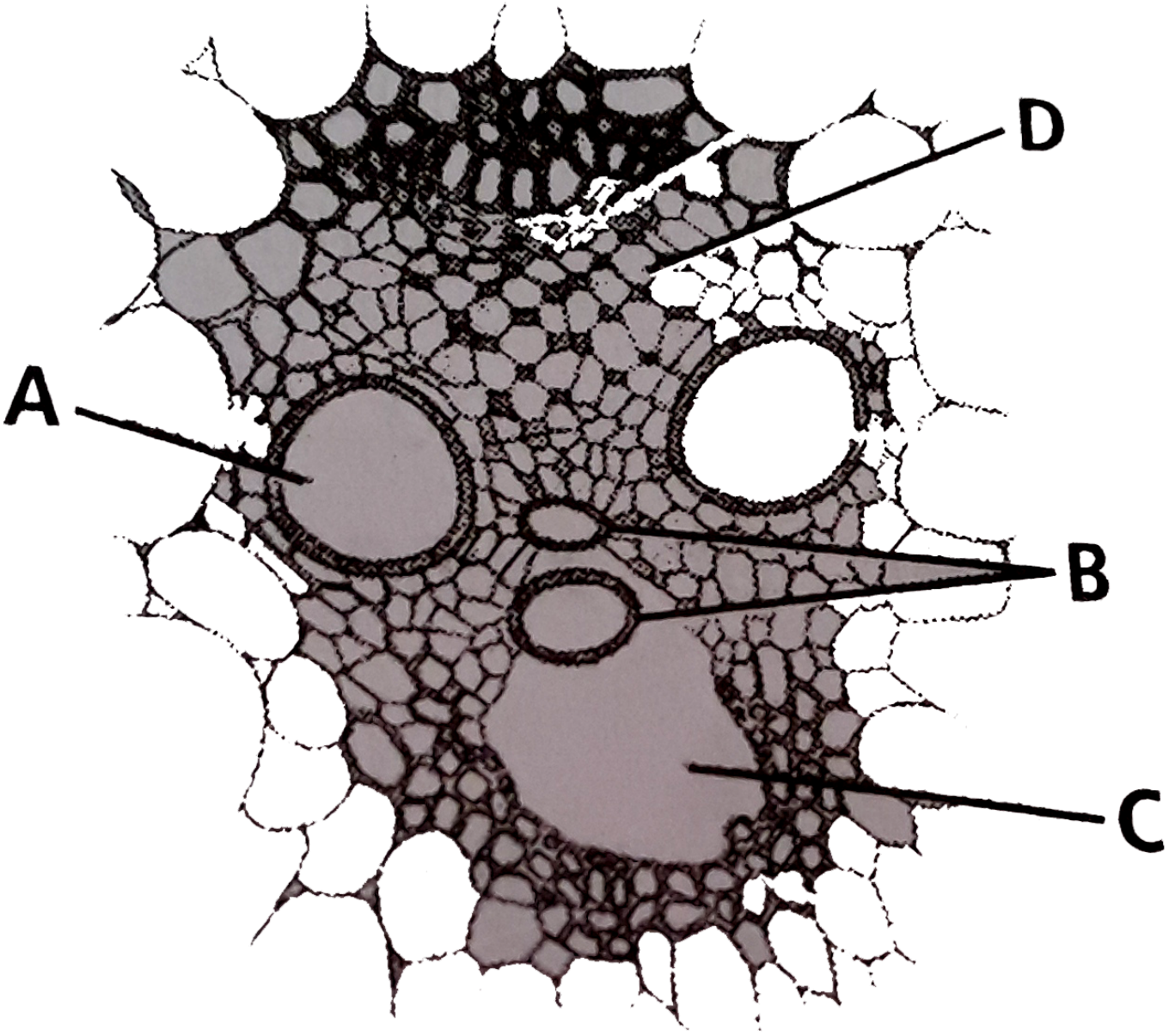
C. phloem

D. ground tissue

Answer: A

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65.



Refer to the given figure which represents a section of vascular bundles as seen in T.S. of a monocot stem and select the option that correctly labels A, B, C and D

A. `{:(A,B,C,D),("Protoxylem vessel","Metaxylem vessel","Protoxylem cavity","Phloem"):}`

B. `{:(A,B,C,D),("Protoxylem vessel","Metaxylem vessel","Metaxylem cavity","Phloem"):}`

C. `{:(A,B,C,D),("Metaxylem vessel","Protoxylem vessel","Protoxylem cavity","Phloem"):}`

D. `{:(A,B,C,D),("Metaxylem vessel","Protxylem vessel","Protoxylem cavity","Sclerenchyma"):}`

Answer: C

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66. In a dorsiventral leaf, location of palisade tissue and phloem is respectively on the _____surfaces.

A. adaxial and abaxial

B. adaxial and adaxial

C. abaxial and adaxial

D. abaxial and abaxial

Answer: A

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67. Stomata are distributed more on the lower surface than on the upper surface in

A. equifacial leaf

B. bifacial leaf

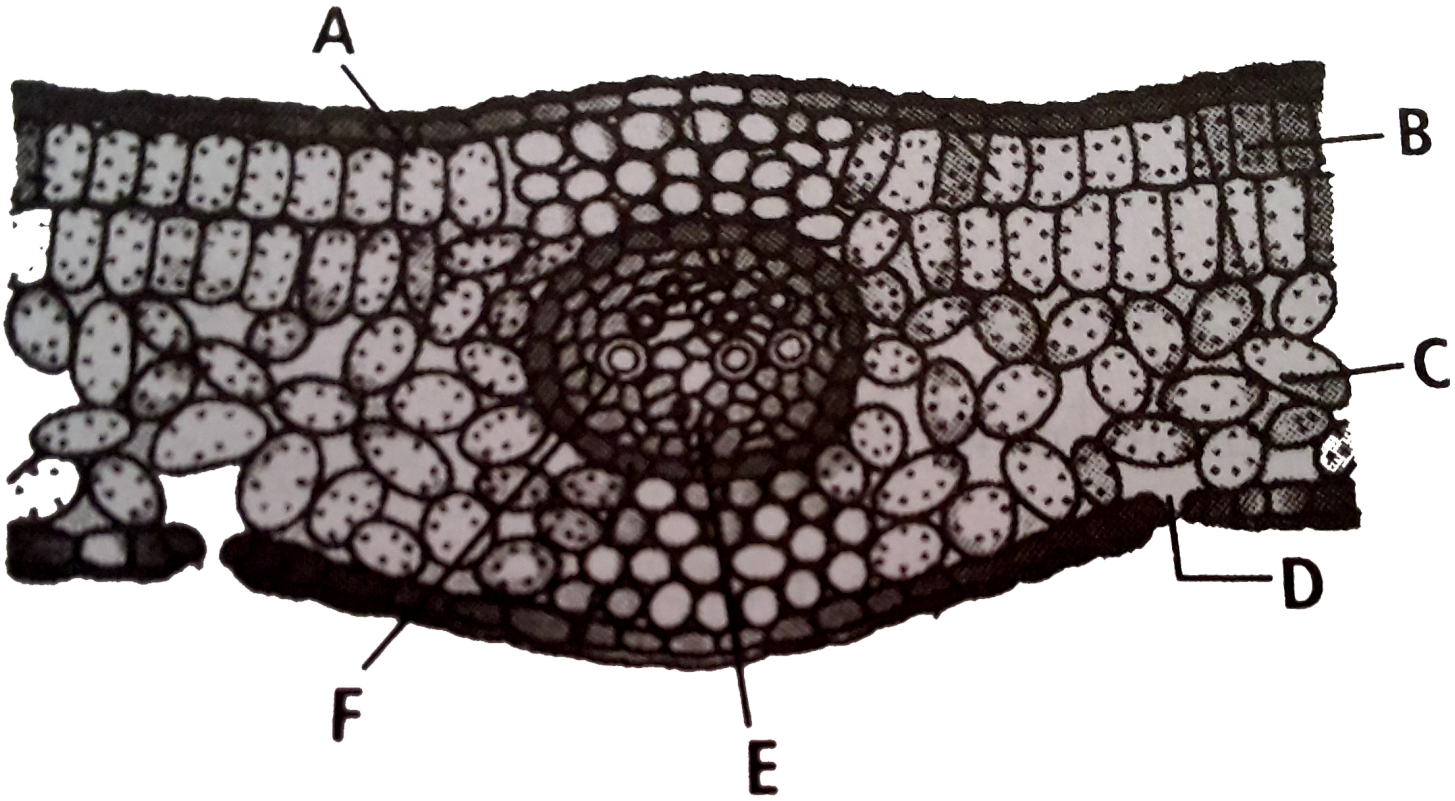
C. unifacial leaf

D. both a and b

Answer: B

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68.



The given figure shows T.S of helianthus leaf with various parts labelled as A, B, C, D, E, F and G. identify the parts and select the correct option

A. A-Epidermic, B-Spongy parenchyma, C-Palisade parenchyma, D-stomata, E-Phloem, F-Xylem

B. A-Epidermis, B-Palisade parenchyma, C-Spongy parenchyma, D-Stomata, E-Xylem, F-Phloem

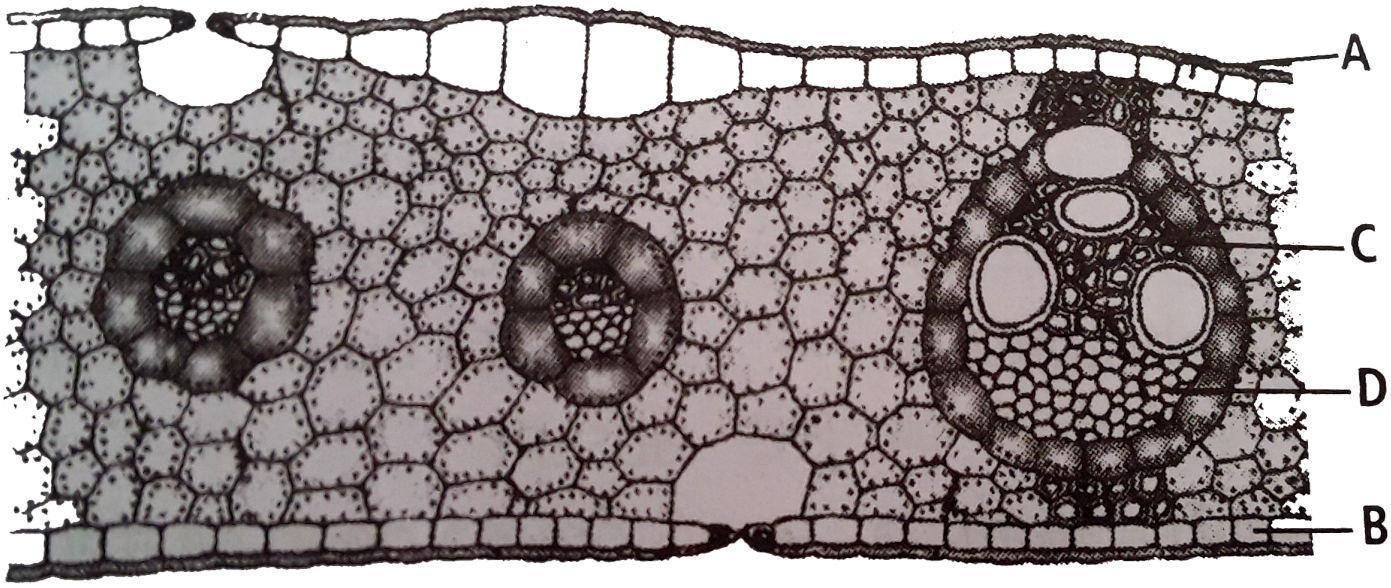
C. A-Epidermis, B-Palisade parenchyma, C-spongy parenchyma, D-Stomata, E-Endodermis, F-Xylem

D. A-Epidermis, B-Palisade parenchyma, C-Spongy paranchyma, D-stomata, E-Phloem, F-Xylem

Answer: D

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69.



Identify A, B, C and D in the given transeverse section of leaf of Zea mays.

A. `{:(A,B,C,D),("Abaxial epidermis","Adaxial epidermis","Xylem","Phloem"):}`

B. `{:(A,B,C,D),("Adaxial epidermis","Abaxial epidermis","Xylem","Phloem"):}`

C. `{:(A,B,C,D),("Abaxial epidermis","Adaxial epidermis","Xylem","Phloem"):}`

D. `{:(A,B,C,D),("Adaxial epidermis","Abaxial epidermis","Phloem","Xylem"):}`

Answer: B

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70. In a dorsiventral leaf, what is true regarding the position of xylem?

A. Xylmen is towards adaxial epidermis

B. Xylem is towards abaxial epidermis

C. Xylem surrounds phloem.

D. Xylem is surrounded by phloem

Answer: A

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71. Bundle sheath extensions in a dicot leaf and in a monocot leaf are _____and_____respectively.

A. parenchymatous, collenchymatous

B. parenchymatous, sclerenchymatous

C. sclerechymatous, parenchymatous

D. collenchymatous, sclerenchymatous

Answer: B

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72. Select the correct pair out of the following

A. Hypostomatic leaf-dicots

B. epistomatic leaf-monocots

C. amphistomatic leaf-free-floating hydrophytes

D. presence of sunken stomata in leaf-submerged hydrophytes

Answer: A

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73. Study the following statements regarding the anatomy of isobilateral leaf.

(i) Stomata are equally distributed on both the surfaces certain adaxial epidermal cells are modified into bulliform cells in grasses.

(iii). The vasuclar bundles are radial

(iv). Phloem is adaxially placed.

Which of the above statements are correct?

A. (i) and (ii)

B. (ii) and (iii)

C. (ii) and (iv)

D. all are correct

Answer: A

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74. Which of the following is an incorrect pair?

A. Hypostomatic -stomata present more on lower epidermis than on upper

B. Epistomatic -stomata present more on upper epidermis than on lower epidermis

C. Amphistomatic-Stomata non-functional or absent

D. Sunken stomata-Stomata steated below

Answer: C

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75. In dicot stems, cambium present between primary xylem and primary phoem is

A. fascicular cambium

B. intrafascicular cambium

C. interfascicular cambium

D. both a and b

Answer: D

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76. In a mature dicot stem which has undergone seconday growth, youngest layer of secondary xylem is situated

A. in between pith and primary xylem

B. just outside the vascular cambium

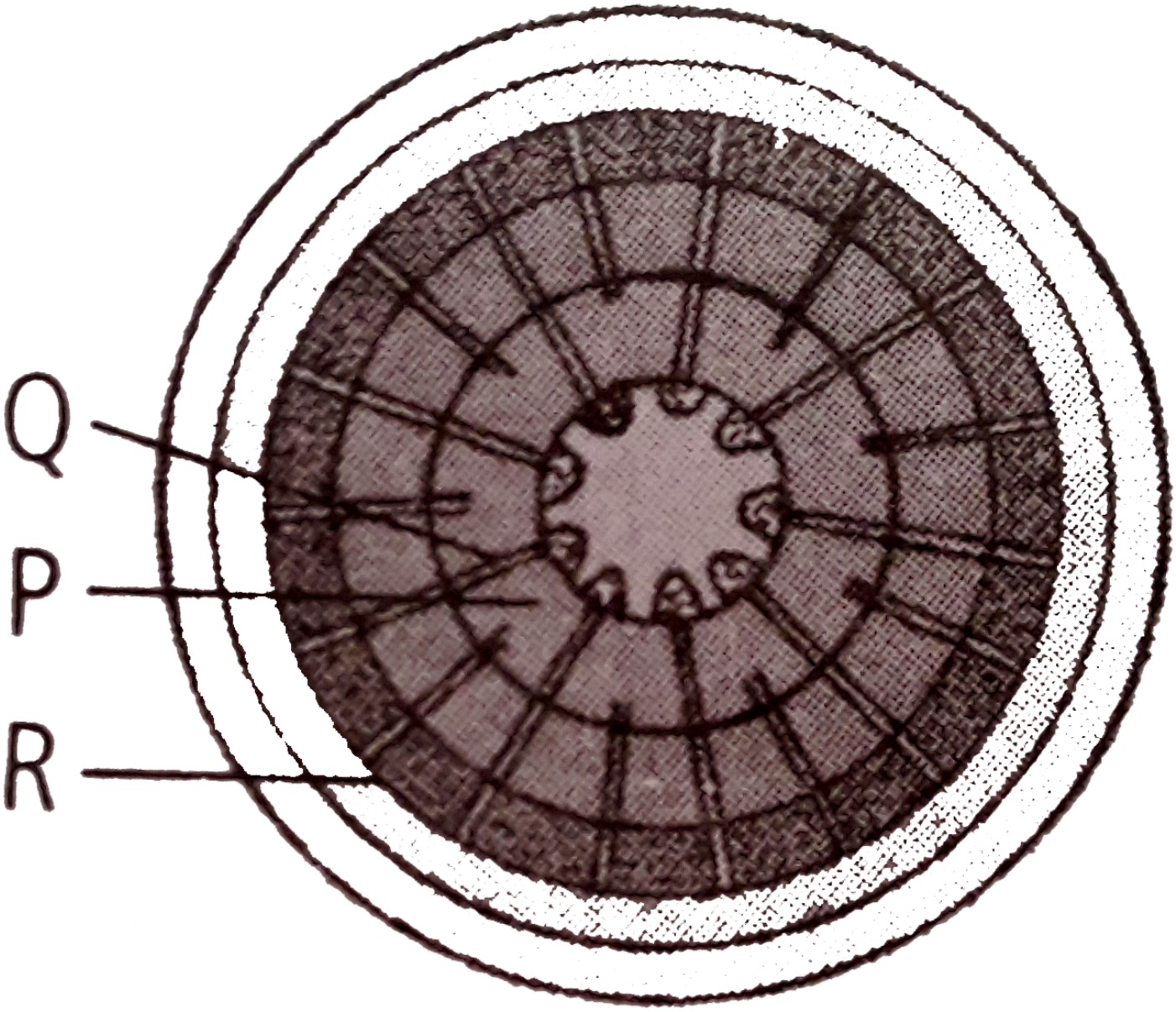
C. just inner to the vascular cambium

D. just inner to the phellogen.

Answer: C

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77.



During the secondary growth in a dicotyledonous stem, the fusiform initials of vascular cambium give rise to which of the given labelled part?

A. P

B. R

C. Q

D. both a and b

Answer: D

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78. Which of the following statements is correct about a woody dicot stem which shows extensive secondary growth?

A. Primary xylem persists in the centre of the axis.

B. Priamry and the older secondary phloem get crushed.

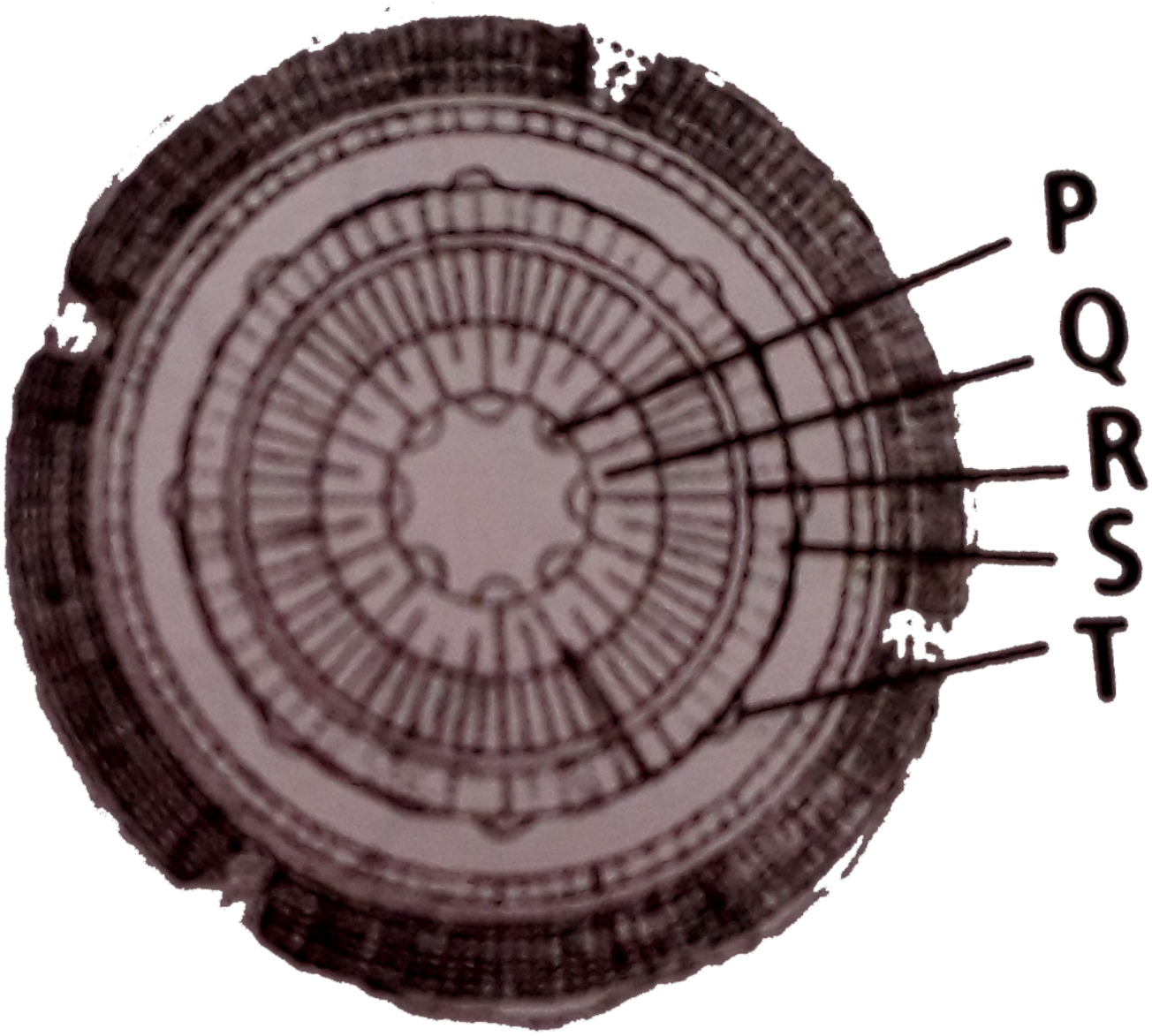
C. Secodnary xylem forms the bulk of the stem

D. all of these

Answer: D

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79.



Identify P,QltRltS and T in the given T.S. of dicot stem showing secondary growth and select the correct options

A. `{:(P,Q,R,S,T),("primary phloem","Primary xylem","vascular cambium","secondary xylem","secondary phloem"):}`

B. `{:(P,Q,R,S,T),("secondary xylem","Primary xylem","secondary phloem","primary phloem","vascular cambium"):}`

C. `{:(P,Q,R,S,T),("primary xylem","secondary xylem","vascular cambium","secondary phloem","primary phloem"):}`

D. `{:(P,Q,R,S,T),("primary xylem","Secondary xylem","vascular cambium","Primary phloem","secondary phloem"):}`

Answer: C

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80. As comprared to spring wood, automn wood has

A. more number of xylary elements with wider vessels

B. more number of xylary elements with narrow vessels

C. fewer cylary elements with wider vessels

D. fewer xylary elements with narrow vessel.

Answer: D

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81. In temperate regions, cambium is less active during winter season and forms fewer xylary elemetns that have narrow vessels, this wood is called as

A. spring wood

B. automn wood

C. heartwood

D. sapwood.

Answer: B

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82. In temperate regions, during spring season, combium is very active and produces a large number of cylary elements having vessel with wider cavities.wood formed in this way is called as

A. spring wood

B. autumn wood

C. early wood

D. both a and c

Answer: D

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83. Read the following statementsand selectthe correct option

Statement-1: Annual rings are distinct in plants growing in temperate regions

Statement-2: In temperate regions, the climatic conditions are not uniform through the year.

A. Both statement 1 and 2 are correct

B. statement 1 is correct but statement 2is incorrect

C. Statement 1 is incorrect but statement 2 is correct.

D. boths statement 1 and 2 are incorrect.

Answer: A

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84. In old trees, central dark coloured, non-conducting part of secondary xylem is referred to as

A. heartwood

B. sapwood

C. softwood

D. hardwood

Answer: A

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85. 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 tracheray elements which are filled with tannins, resins etc.

A. (ii) and (iv)

B. (i), (ii) and (iii)

C. (ii), (iii) and (iv)

D. (i) and (iv)

Answer: D

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86. Study carefully the following statements and select the incorrect one(s).

(i). Lateralroots develop from pericycle.

(ii) . Endodermis is the innermost layer of cortex

(iii). Sapwood is the central, dark coloured, non-conducting part of secondary xylem.

A. (i) and (ii)

B. (ii) and (iii)

C. (i) only

D. (iii) only

Answer: D

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87. Match column I with column II and select the correct option from the given codes

`{:("Column I","Column II"),(A." Hardwood",(i)." Duramen"),(B." Soft wood",(ii)." Alburnum"),(C." Heartwood",(iii)." Non-porous wood"),(D." sapwood",(iv)." Porous wood"):}`

A. A-(iv),B-(iii),C-(ii),D-(i)

B. A-(iv),B-(iii),C-(i),D-(ii)

C. A-(iii),B-(iv),C-(i),D-(ii)

D. A-(iii),B-(iv),C-(ii),D-(i)

Answer: B

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88. The terms 'wood' and 'bast' respectively refer to

A. xylemandcork

B. phloemand xylem

C. xylem and phloem

D. phloemand cork

Answer: C

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89. Which of the following options carrectly shows the sequence of difference tissues fo the periderm starting from periphry?

A. Phellogen `to` Phellem `to` Phelloderm

B. Phellem `to`phelloderm `to` pheogen

C. Phellem`to`phellogen`to`phelloderm

D. Phelloderm `to` phellogen `to` phellem

Answer: C

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90. Phellogen cuts off derivatives on the inner side to form _____and on the outer side to form_____

A. cork, secondary, cortex

B. secondary cortex, cork

C. cork cambium, cork

D. cork cambium, secondary cortex

Answer: B

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91. Cork is impervious to water due to the presence of _____in its cell wall.

A. silica

B. `CaCO_(3)`

C. suberin

D. cuticle

Answer: C

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92. Bark does not include

A. secondary cylem

B. secondary phloem

C. perderm

D. both a and b

Answer: A

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93. The collective term used for phelloderm (secondary cortex), cork cambium (phellogen) and cork (phellem) is

A. pericycle

B. periderm

C. protoderm

D. ring,scaly

Answer: B

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94. Bark dormed early in the season is called as _____bark and bark formed towards the end of the season is called as_____bark.

A. hard, soft

B. soft, hard

C. scaley,ring

D. ring, scaly

Answer: B

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95. Match column I with column II and select the correct option from the given codes. `{:("Column I","Column II"),(A." Stele",(i)." Innermost layer of cortex"),(B." Endodermis",(ii)." Suberin"),(C." Casparianstrips",(iii)." all the tissues outer to vascular combium"),(D." Bark",(iv)." All thetissues innerto endodermis"):}`

A. A-(iv),B-(i),C-(ii),D-(iii)

B. A-(iii),B-(ii),C-(i),D-(iv)

C. A-(i),B-(ii),C-(iii),D-(iv)

D. A-(iv),B-(ii),C-(i),D-(iii).

Answer: A

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96. During secondary growth in a dicot root, cork cambium is formed by the activity of

A. cortex

B. hypodermis

C. pericycle

D. epidermis.

Answer: C

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97. Bark of which of the following plants yields a drug for the treatment of malaria?

A. Cinchona officinalis

B. Acacia arabia

C. Quercus suber

D. Cinnamomum

Answer: A

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98. Match column I with column II and select the correct option from the given codes.

`{:("Column I","Column II"),(A." Bhojpatra",(ii)." Bark of Cinchona"),(B." Quinine",(ii)." Cork of Quercus suber"),(C." Insulators (sound proofing)",(ii)." Bark of betula"),(D." Dalchini",(iv)." Bark of Cinnamomum"):}`

A. A-(iii),B-(i),C-(ii),D-(iv)

B. A-(iv),B-(i),C-(ii),D-(iii)

C. A-(iv),B-(ii),C-(iii),D-(i)

D. A-(iii),B-(i),C-(iv),D-(ii)

Answer: A

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99. Which of the following statement is incorrect ?

A. In a dicot stem, the pericycle is usually multilayered.

B. Wood is the common name used for secondary xylem.

C. Peripheral cytoplasm,alarge vacuole and a prominent nucleus, all are absent in a mature sieve tube element.

D. Lenticels are the aerating pores presentin bark of plants and are associated with gaseous exchange.

Answer: C

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100. Match column I withcolun II and select the correct option from the given codes.

`{:("Column I","Column II"),(A." Bulliform cells",(i)." Regulate opening and closing of stomata"),(B." Guard cells",(ii)." Aerating pores in the bark of plant"),(C." Lenticels",(iii)." Rolling in and out leaves"),(D." Subsidiary cells",(iv)." Accessory cells"):}`

A. A-(iii),B-(i),C-(ii),D-(iv)

B. A-(i),B-(ii),C-(iii),D-(iv)

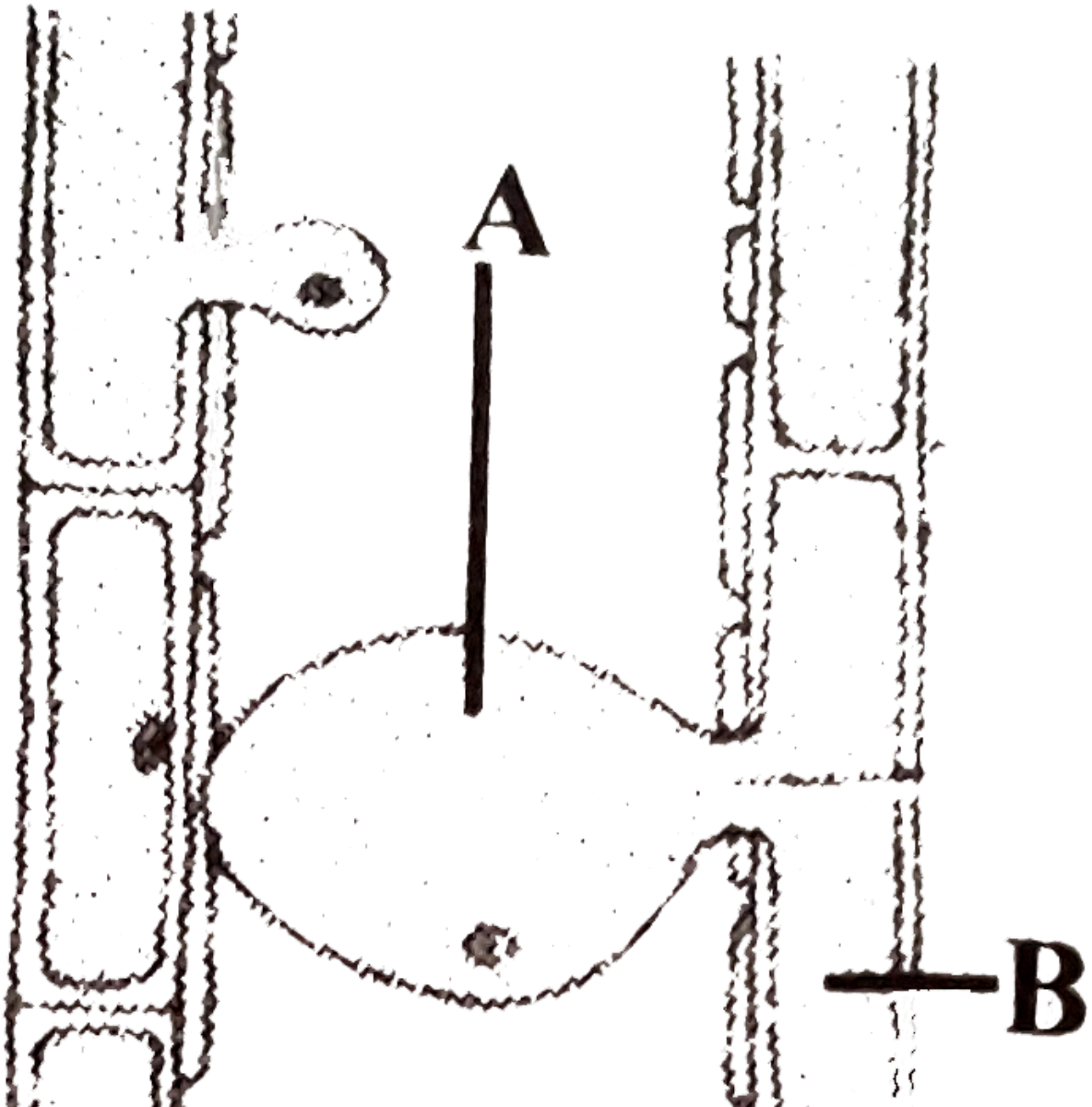
C. A-(iv),B-(iii),C-(i),D-(ii)

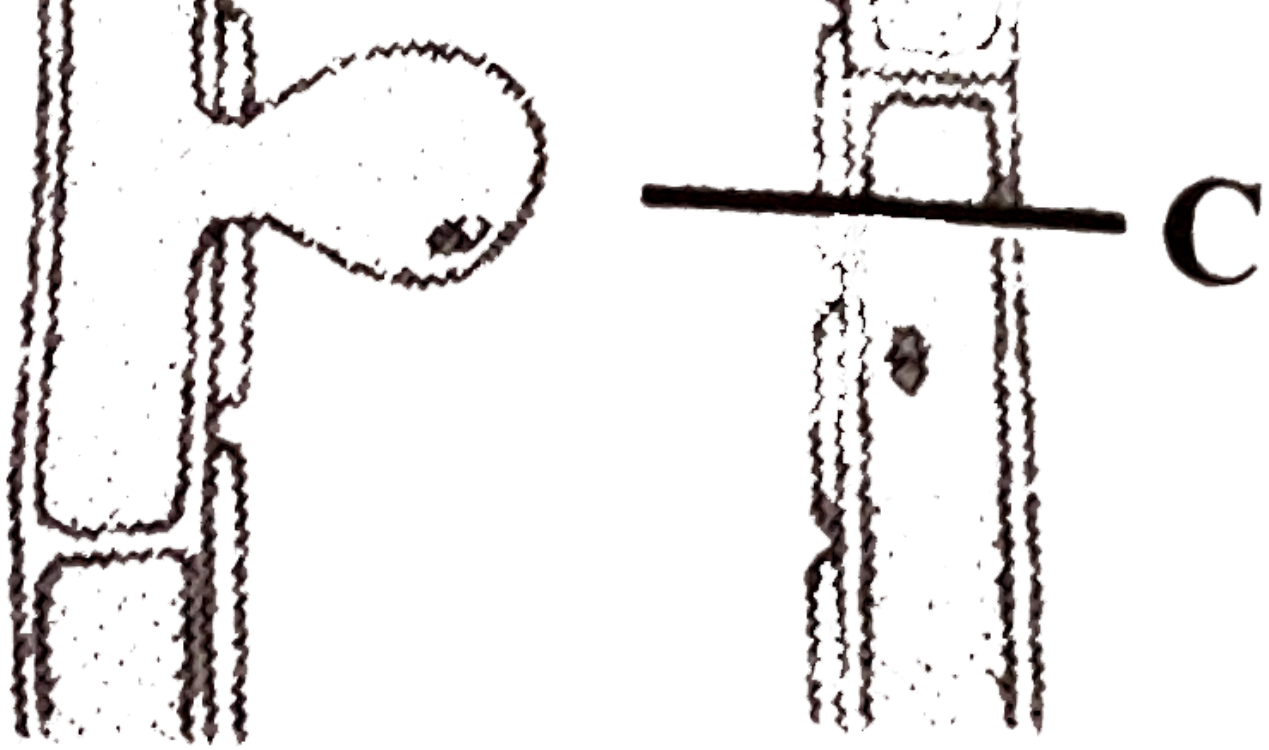
D. A-(ii),B-(iv),C-(iii),D-(i)

Answer: A

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101.





Identify the given figure and select the correct labels for A,B and C

A. `{:(A,B,C),("Callose","Xylem parenchyma","Xylem vessel"):}`

B. `{:(A,B,C),("Callose","Phloem parenchyma","Phloem vessel"):}`

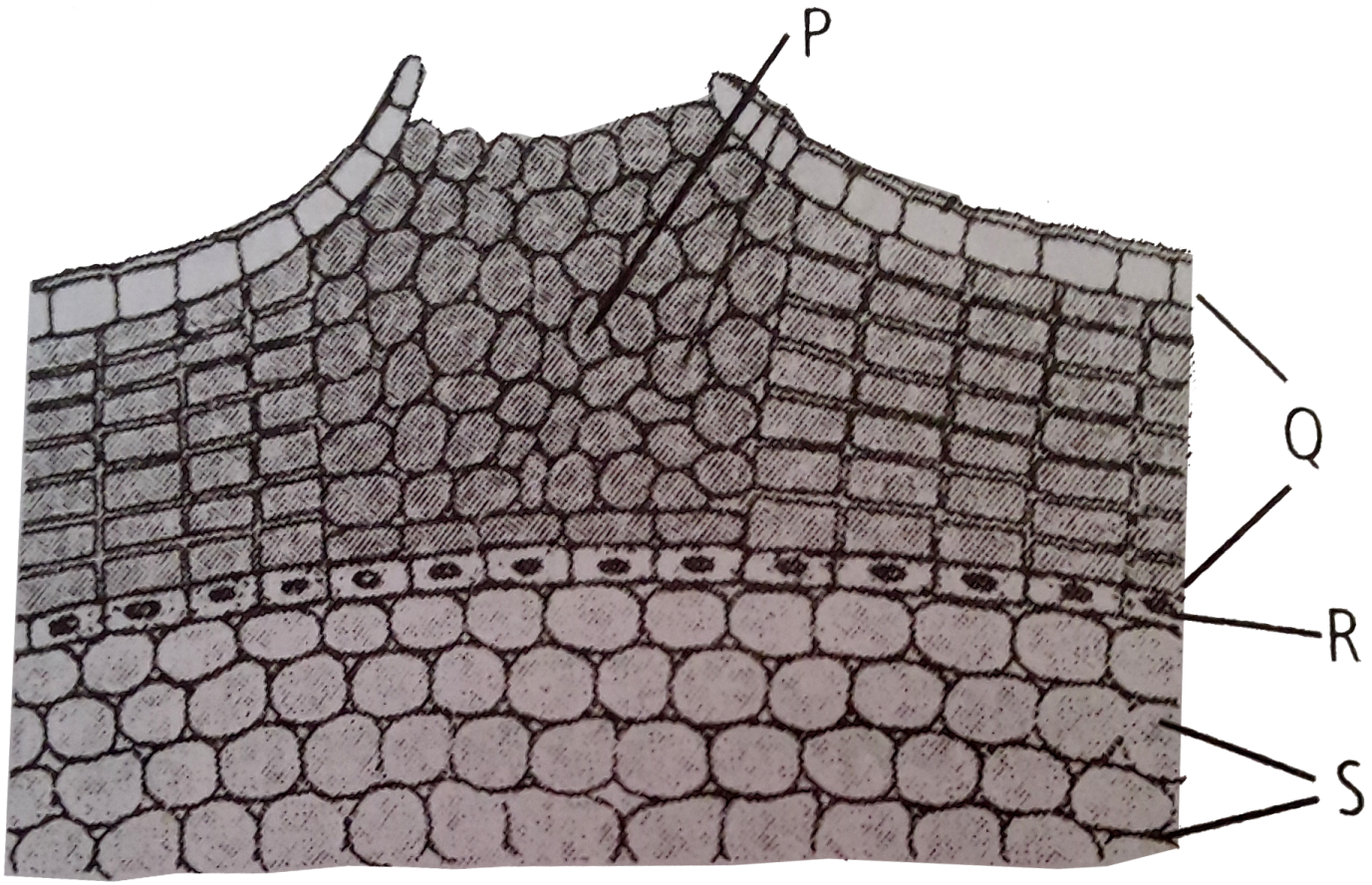
C. `{:(A,B,C),("Tylosis","Xylem parenchyma","Xylem vessel"):}`

D. `{:(A,B,C),("Tylosis","Phleom parenchyma","Phloem vessel"):}`

Answer: C

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102.



In the given transverse section of stem showing periderm, identify the parts labelled P, Q, R, S and select the correct option.

A. `{:(P,Q,R,S),("Complementray cells","Cork","Phellogen","Phelloderm"):}`

B. `{:(P,Q,R,S),("Lenticels","Cork","Phelloderm","Phellogen"):}`

C. `{:(P,Q,R,S),("Lenticels","Phelloderm","Phellogen","Cork"):}`

D. `{:(P,Q,R,S),("Complementray cells","Phelloderm","Phellogen","Cork"):}`

Answer: A

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103. Secondary growth usually does not occur in

A. stems and roots of dicots

B. stemsandroots of gymnosperms

C. stemsandroots of monocots

D. both b and c

Answer: C

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104. Which of the following statements are incorrect?

(i). Secondary growth usually occurs in monocotyledons.

(ii). Bark refers to all tissues interior to vascular cambium.

(iii). Lenticels permit the exchange of gases between the outer atmosphere and the internal tissue of the stem.

(iv). Annual rings give an estimate of the age of the tree.

A. (i) and (ii) only

B. (i) and (iii) only

C. (i) and (iv) only

D. (ii) and (iv) only

Answer: A

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105. Plants showing anomalous secondary growth include

A. Agave

B. Dracaena

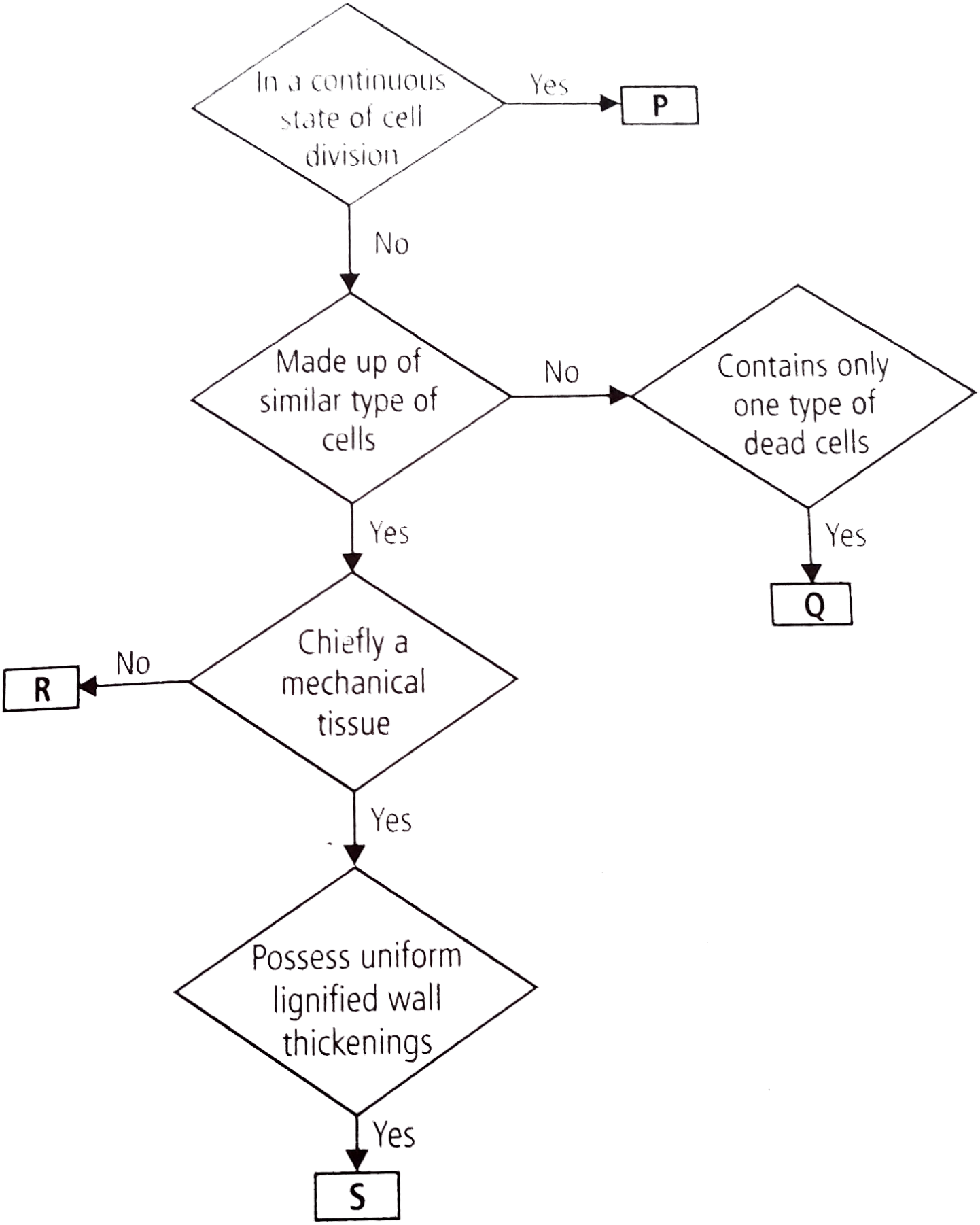
C. Yucca

D. all of these

Answer: D

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106.



Study the flow chart given below:

Which of the following statements is incorrect regarding this?

A. P can be root apical meristemwhich is generally sub-terminal in position.

B. Q can bephloem which is also called bast.

C. R can be parenchyma which comprises of thin walled isodiametric cells.

D. S can becollenchyma which is a living mechanical

Answer: D

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107. A flower represents a complex array of functionally specialised structures that differ substantially from vegatative plant body in form and cell types. Select the statement that is not true with regard to floral meristems.

A. Floral meristems are larger in size than the vegetative meristems.

B. Increase in size of the floral meristem is due to larger size of the cells which in turn result from rapid cell expansion only.

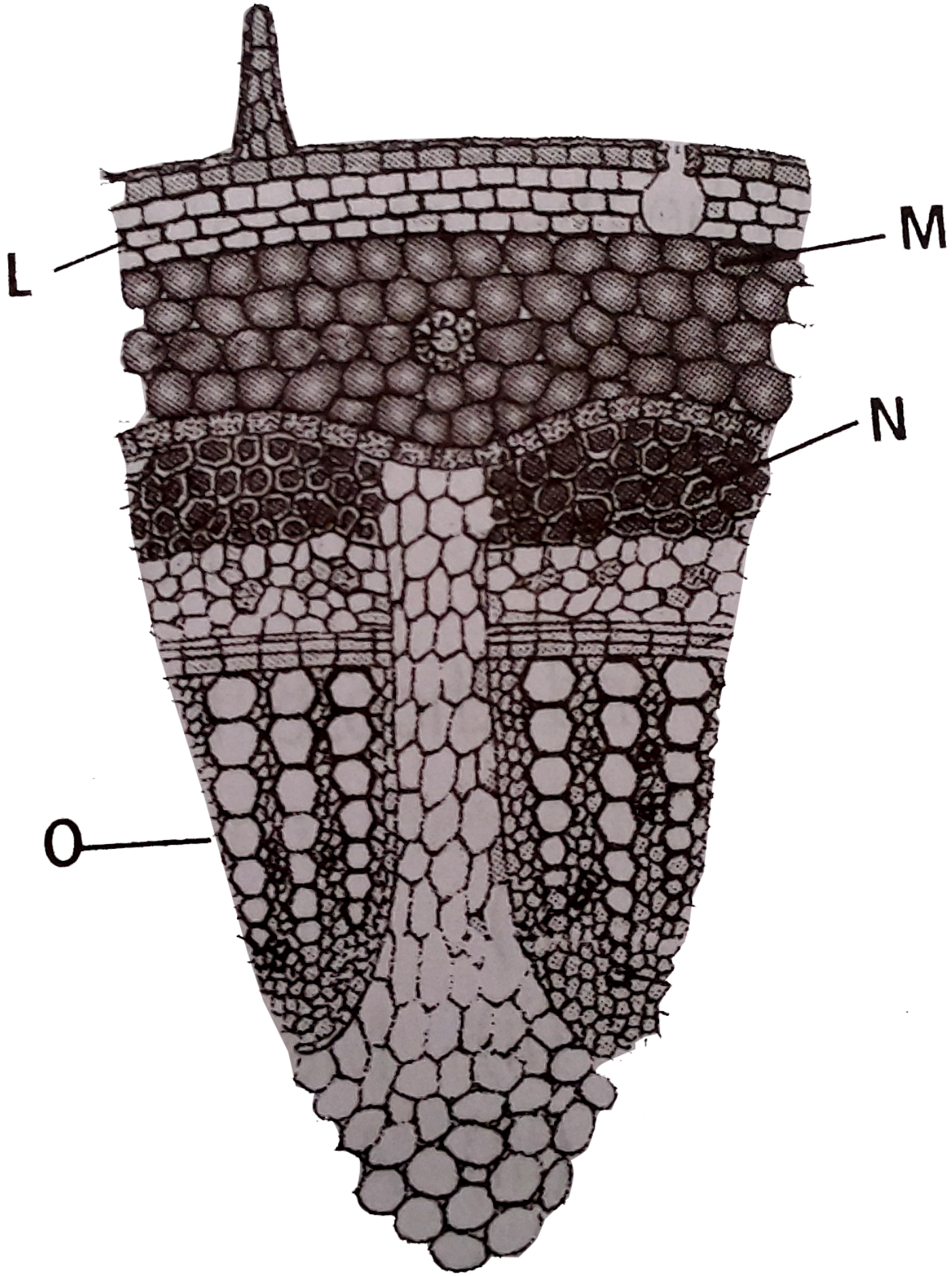
C. Increase in size of the floral meristem is largely are result of increased rate of cell division in central cells.

D. A floral morphogeesis is controlled by a network of genes in plants.

Answer: B

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108.



ConsiDer the following statements regarding the given figure and select the correct one.

A. L' is the collenchymatous hypodermis that provides mechanical strength and flexibility to young dicot stems

B. M' is theinnermostlayer of cortex which usually possessescarparian strips

C. N' is the parenchymatous pericycle that synthesises food.

D. O' is xylem which is exarch with respect to the positions of protoxylem and metaxylem.

Answer: A

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109. In (i) porous wood, vesel are very broad in the (ii) wood and are quite narrow in the (iii) wood. This king of wood is present in (iv) and it translocates (v) amount of water when required by the plant.

Select the correct fill ups for the above paragraph.

A. (i)-diffuse,(ii)-autumn, (iii)-spring,(iv)- Dalberigia sissoo,(v)-more

B. (i)-diffuse, (ii)-sprinig, (iii)-autumn, (iv)-Syzygium cumini, (v)-less

C. (i)-ring, (ii)-spring,(iii)-autumn, (iv)- Dalbergia sissoo, (v)-more

D. (i)-ring, (ii)- autumn, (iii)- spring, (iv) Syzygium cumini, (v)-less

Answer: C

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110. Given are a few peculiar parts/structres found in plants. Cucurbita stem, potato tuber, walnut shell, jute fibres. Idetify the tissue responsible for the distinguishing eture in each part respectivley and select the

correct option.

A. Collenchymatous hypodermis, parenchyma, sclerenchyma, phloem

B. Collenchymatous hypodermis, parenchyma, sclerenchyma, phloem

C. Parenchymatous hypodermis,parenchyma, scelerenchyma, xylem

D. collenchymatous hypodermis, Parenchyma, sclerenchyma, Xylem

Answer: A

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111. A transverse section of stem is stained first with safranin and then with fast green following the ususal schedule of double staining for the preparation of a permanent slide. What would be colour of the stained xylemand phloem?

A. Red and green

B. green and red

C. orange and yellow

D. purple and orange.

Answer: A

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112. Match the following and choose the correct option from below.

A. Meristem -(i) Photosynthesis, storage

B. Parenchyma- (ii). Mechanical support

B. Collenchyma-(iii) actively dividing cells

D. Sclerenchyma-(iv) stomata

E. Epidermal tissue -(v) sclereids option.

A. A-(i),B-(iii),C-(v),D-(ii),E-(iv)

B. A-(iii),B-(i),C-(ii),D-(v),E-(iv)

C. A-(ii),B-(iv),C-(v),D-(i),E-(iii)

D. A-(v),B-(iv),C-(iii),D-(ii),E-(i)

Answer: B

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113. Match the following and choose the correct option from below.

A.Cuticle -(i). Guard cells

B. Bulliform cells -(ii). Single layer

C. Stomata -(iii). Waxy layer

D. Epidermis-(iv). Empty colourless cell

Options

A. A-(iii),B-(iv),C-(i),D-(ii)

B. A-(i),B-(ii),C-(iii),D-(iv)

C. A-(iii),B-(ii),C-(iv),D-(i)

D. A-(iii),B-(ii),C-(i),D-(iv)

Answer: A

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114. Identiy the simple tissue from the following

A. Parenchyma

B. Xylem

C. Epidermis

D. Phloem

Answer: A

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115. Cells of this tissue are living and show angular wall thickenings. They also provide mechanical support.

The tissue is

A. xylem

B. sclerenchyma

C. collenchyma

D. epidermis.

Answer: C

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116. Epiblema of roots is equivalent to

A. pericycle

B. endodermis

C. epidermis

D. stele.

Answer: C

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

A. moncot root

B. monocot stem

C. dicot root

D. dicot stem

Answer: D

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118. Interfascicular cambium and cork cambium are formed due to

A. cell division

B. cell differentiation

C. cell dedifferentiation

D. redifferentiation

Answer: C

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119. Phellogenand phellem respectively denote

A. cork and cork cambium

B. cork cambium and cork

C. secondary cortex and cork

D. cork and secondary cortex

Answer: B

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120. In which of the following pairs of parts of a flowering plants is epidermis absent?

A. Root tip and shoot up

B. shot bud and floral bud

C. ovule and seed

D. petiole and pedicel

Answer: A

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

A. 26

B. 1

C. 5

D. 30

Answer: C

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122. A piece of wood having no vessels (trachea) must be belonging to

A. teak

B. mango

C. pine

D. palm.

Answer: C

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

A. Collenchymatous hypodermis, parenchyma, sclerenchyma, phloem

B. sclerenchyma

C. xylem

D. meristem.

Answer: A

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124. In conifers fibres are likely to be absent in

A. secondary phloem

B. secondary xylem

C. prmary phloem

D. leaves

Answer: B

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125. When wepeel the skin of a potato tuber, we remove

A. periderm

B. epidermis

C. cuticle

D. sapwood.

Answer: A

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126. A vesselless piceof stem possessing prominent sieve tubes would belong to

A. Pinus

B. Eucalyptus

C. Grass

D. Trochodendron.

Answer: D

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

A. Fusiform initial cells

B. Root cap

C. Protoderm

D. Phellogen

Answer: C

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

A. it is retained in the centre of the axis

B. it gets crushed

C. ay or may not get crushed

D. it gets surrounded by primary phloem

Answer: A

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129. Assertion: Both apical meristem and intercalary meristem areprimary meristems.

Reason: Both of these meristems appear early in life of a plant and help in the formation of the primary plant body.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: A

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130. Assertion: Fascicular vascular cambium, interfascicular cumbium and cork-cambium are examples of lateral miristems.

Reson: These are responsible for producing the secondary tissues.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: B

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131. Assertion: A simple tissue is made of only one type of cells.

Reason: Various simple tissues in plants areparenchyma, collenchyma and sclerenchyma.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: B

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132. Assertion: Sclereids are found in fuit walls of nuts, pulp of fruits like guave, pear and sapota andseed coats of legumes.

Reason: Sclereids are spherical, oval or cylinderical, highly thickeneddeadcells with narrow lumen.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: B

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133. Assertion: Xylem vessel is a long cylinderical tube like-structure made up of many cells each with ingnified walls.

Reason: Presence of vessels is characteristic feature of gymnosperms

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: C

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134. Assertion: Pheloemfibres or bast fibres are made up of collenchymatous cells.

Reason: Phloem fibresare generally found in primary pholem.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: D

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135. Assertion: Each stoma is composed of two bean shaped cells known as guard cells.

Reason: Guard cells regulate the opening and closing of stomata.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: B

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136. Assertion: The trichomes in the shoot system are usually multicelluler.

Reason: The trichomes help in preventing water loss due to evaporation.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: B

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137. Assertion: In dicot stem, endodermis is also called as starch sheath.

Reason: The cells of the endodermis are rich in stacrh gaiins.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: A

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138. Vascular bundles are conjoint, collateral and closed in dicot stem

Reason: vascular bundles are conjoint,collateral and open in monocot stem.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: D

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139. Assertion: in dicot leaf, epidermic covers both the upper surface (adaxial epidermis) and lower surface (abaxial epidermis)

Reason: The adaxial epidermis bears more stomata than the abaxial epidermis.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: C

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140. Assertion: Secondary grouwth usualy occurs in dicotyledonous stems.

Reason: The vascular cambium present between xylem and phloem possesses the ability to form secondary xylemand secondary phloem respectively.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: A

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141. Assertion: Cork or phellem is impervious to water.

Reason: Cork has suberin deposition in the cell wall.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: A

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142. Assertion: The greater part of secondary xylem is lighter in colour and consists of dead elements with highly lighnified walls andiscalled heartwood.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: D

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143. Assertion: The wood is actually secondary xylem.

Reason: Secondary growth occurs in most of the monocot roots and stems.

A. If both assertion and reason are true and reason is the correct explanantion of assertion

B. if both assertion and reason are true but reason is not the correct explanation of assertion.

C. if assertion is true but reason is false.

D. if both assertion and reason are false.

Answer: C

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