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Q-1 - 13843457

Root cap in monocots is formed by

(A) dermatogen

(B) calyptragen

(C) vascular cambium

(D) wound cambium

CORRECT ANSWER: B

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Q-2 - 16023477

Druse is a crystal or deposit of

(A) Calcuim oxalate

(B) Calcium carbonate

(C) Starch

(D) Silica

CORRECT ANSWER: A

SOLUTION:

Calcium oxalate substances deposited on the cuticle surface. Druse and Raphides (e.g., Pistia) are crystals.

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Q-3 - 13843547

In old trees, central dark coloured, non-conducting part of

secondary xylem is referred to as

(A) heartwood

(B) sapwood

(C) softwood

(D) hardwood

CORRECT ANSWER: A

SOLUTION:

Heartwood (duramen) is the central wood of an old stem.

It is dark coloured part of secondary xylem. Living cells are absent here. The tracheary elements are plugged by tyloses and have deposition of tannins, resins, gum, etc.

heartwood is heavier. It is more durable due to its little susceptibility to the attack of pathogens and insects. the outer or peripheral portion of the trunk is soft and lighter

in colour. it performs the function of conduction of water and minerals and is known as sapwood or alburnum.

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Q-4 - 16023225

Tunica corpus theory was proposed by

- (A) Schmidt
- (B) Strasburger
- (C) Nageli
- (D) Hofmeister

CORRECT ANSWER: A

SOLUTION:

This theory was proposed by Schmidt (1924). This

theory recognizes only two zones in the apical meristems.

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Q-5 - 13843473

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 walls. (i)
B. Tracheids	(ii) Cells possess highly thickened walls. (ii)
C. Xylem fibres	(iii) Individual members are interconnected. (iii)
D. Xylem parenchyma	(iv) Elongated tube-like cells with thick walls. (iv)

(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)

CORRECT ANSWER: B

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Q-6 - 16023238

From evolutionary point of view, tracheids and sieve cells are more primitive than tracheae and sieve tubes respectively. The angiosperms have

(A) Tracheae and sieve tubes

(B) Tracheids, tracheae and sieve tubes

(C) Tracheids, sieve cells and sieve tubes

(D) Tracheids, tracheae and sieve cells

CORRECT ANSWER: B

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Q-7 - 16023396

Healing of wound in plants takes place by the activity of

- (A) Ground tissue
- (B) Callus deposition
- (C) Secondary meristem
- (D) Permanent tissue

CORRECT ANSWER: B

SOLUTION:

When wound is deep it is healed as follows healthy cells adjacent to the wound form a mass of parenchymatous

cells called callus. This callus covers the wound entirely.

Thus wound is healed.

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Q-8 - 16023330

Epiblema in roots is derived from

- (A) Protoderm
- (B) Procambium
- (C) Ground meristem
- (D) Calyptragen

CORRECT ANSWER: A

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Q-9 - 13843469

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

CORRECT ANSWER: B

SOLUTION:

Idoblasts are specialised non-green large-sized
parenchyma cells which possess inclusions or
ingredients like tannins, oils, crystals, etc.

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Interfascicular cambium develops from the cells of

- (A) Pericycle
 - (B) Medullary rays
 - (C) Xylem parenchyma
 - (D) Endodermis
-

CORRECT ANSWER: B

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

- (A) periderm

(B) epidermis

(C) cuticle

(D) sapwood

CORRECT ANSWER: A

SOLUTION:

Periderm Potato is a underground stem. The outer epidermal layer of the stem is known as periderm. So when we remove skin of potato. We are actually removing the periderm.

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Q-12 - 16023351

Root cap is absent in

(A) Lithophytes

(B) Hydrophytes

(C) Xerophytes

(D) Mesophytes

CORRECT ANSWER: B

SOLUTION:

Root cap is absent in adventitious epiphytic roots of orchids, aquatic plants, parasites.

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Q-13 - 13843459

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.

CORRECT ANSWER: B

SOLUTION:

A quiescent centr is found in the centre of the root apex. Cell divisions are very few in the quiescent centre as there is very little synthesis of new proteins. Cells of quiescent centre have small nuclei and light cytoplasm.

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Q-14 - 16023242

At maturity the sieve plates become impregnated with

(A) Cellulose

(B) Pectin

(C) Suberin

(D) Callose

CORRECT ANSWER: D

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Q-15 - 16023557

Conjoint, collateral and closed vascular bundle is found in

(A) Monocot stem

(B) Monocot root

(C) Dicot stem

(D) Dicot root

CORRECT ANSWER: A

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The histogen layer present at the apex of the root tip is called

(A) Dermatogen procambium

(B) Procambium

(C) Calyptrogen

(D) Plerome

CORRECT ANSWER: A

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Kranz anatomy is found in

(A) Monocots

(B) Dicots

(C) Both (a) and (b)

(D) None of these

CORRECT ANSWER: C

SOLUTION:

Kranz type anatomy occurs in both monocot leaves (e.g., Sugarcane, Maize and Sorghum etc.) and some dicot leaves (e.g., *Amaranthus-edulis*, *Atriplex rosea* etc.)

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Q-18 - 13843482

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

CORRECT ANSWER: D

SOLUTION:

Phloem is a complex permanent tissue that transports organic food inside the plants. Xylem is a complex permantnt tissue that performs the funstion of ascent of sap i.e., transport of inorganic nutrients (water and minerals) within the plant.

Q-19 - 16023363

P- protein is found in

(A) Collenchyma

(B) Parenchyma

(C) Xylem

(D) Sieve tube

CORRECT ANSWER: D

SOLUTION:

A sieve tube is analogous to RBC , both being living but enucleated at maturity. A network of fibres of

P_1 and P_2 protein is present in the central part of

lumen of sieve tube which controls movement of materials and with callose, the sealing of pores after injury.

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Q-20 - 16023259

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

- (A) Histogen
- (B) Tyloses
- (C) Phellogen
- (D) Tunica

CORRECT ANSWER: B

SOLUTION:

Tyloses are balloon like structures develop from xylem parenchyma.

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Q-21 - 16023591

Annual rings are distinct in plants growing in

- (A) Tropical regions
- (B) Arctic region
- (C) Grasslands
- (D) Temperate region

CORRECT ANSWER: D

SOLUTION:

Annual rings are formed due to variation in climatic

conditions of any region. Spring season and autumn season occur in temperate region, thus clear annual rings are formed.

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Q-22 - 13843521

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 vascular bundles -maize root

CORRECT ANSWER: B

SOLUTION:

Bicollateral vascular bundles have phloem both on the outer and inner side of xylem. All the three lie on the same radius usually a strip of vascular cambium is present on both outer and inner sides of xylem.

Bicollateral vascular bundles occur in cucurbitaceae (e.g., pumpkin or cucurbita pepo, Ridge gourd or Luffa cylindrica) and some members of families solanaceae, Convolvulaceae, etc.

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Q-23 - 16023313

Bordered pits are found in

(A) Phloem

(B) Protoxylem

(C) Metaxylem

(D) Pith

CORRECT ANSWER: C

SOLUTION:

Metaxylem consist of two larger and rounded vessels situated on the sides with the pitted tracheids in between them.

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Q-24 - 26855926

vascular bundles are closed when they

(A) Ground tissue

(B) conjunctive tissue

(C) Cambium

(D) Pith

CORRECT ANSWER: C

SOLUTION:

Closed vascular bundles lack cambium.

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Q-25 - 26855928

The plant tissues commonly found in fruit walls of nuts and pulp of some fruits like guava are termed as

Or

pear fruits are gritty due to the presence of

Or

Tissue composed of non-parenchymatous cells and have isodiametric or irregular shape is called

(A) Tracheids are unicellular with wide lumen

(B) Fibres

(C) Vessels

(D) Sclerids

CORRECT ANSWER: D

SOLUTION:

Pear fruits are gritty due to occurrence of sclereids.

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Q-26 - 13843535

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 situated below

CORRECT ANSWER: C

SOLUTION:

In amphistomatic condition, both the surface of leaf contains stomata.

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Q-27 - 16023311

The histogens are classified on the basis

(A) Cells they contain

(B) Cells they give rise to future tissue

(C) Meristematic activity

(D) Cell division

CORRECT ANSWER: B

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Q-28 - 13843554

Which of the following options correctly shows the sequence of different tissues to the periderm starting from periphery?

(A) Phellogen → Phellem → Phelloderm

(B) Phellem → phelloderm → pheogen

(C) Phellem → phellogen → phelloderm

(D) Phelloderm → phellogen → phellem

CORRECT ANSWER: C

SOLUTION:

In order to provide increase in girth and prevent reupturing of the outer ground tissues due to the formation of secondary vascular tissues, dicot stems produce a cork cambium or phellogen in the outer cortical cells. The cells of this phellogen divide periclinally to produce phellem or cork on the outer side and secondary cortex or phelloderm on the inner side. phellem, phellogen and phelloderm collectively constitute periderm.

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Q-29 - 16023284

The casparian strips of root endoderm contain a mixture of

(A) Cellulose and cutin

(B) Cellulose and lignin

(C) Lignin and suberin

(D) Cellulose and suberin

CORRECT ANSWER: C

SOLUTION:

In endodermis (strach sheath) the inner and radial or transverse wall of endodermal cells have casparian strips of suberin.

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Q-30 - 13843499

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 sides of xylem

(C) Amphivasal vascular bundle- Phloem surrounds xylem

(D) Conjoint vascular bundle-Xylem and phloem on same radii

CORRECT ANSWER: C

SOLUTION:

In amphivasal or leptocentric vascular bundles, xylem surrounds phloem e.g., *Dracaena*, *Yucca*

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Laticiferous vessels instead of laticiferous cells are found in

- (A) Ficus
 - (B) Calotropis
 - (C) Paoppy
 - (D) Nerium
-

CORRECT ANSWER: C

SOLUTION:

Latex vessels found in Poppy (Papaver).

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Fusiform initials form

(A) Vascular rays

(B) Tracheary elements

(C) Ray parenchyma

(D) Phloem parenchyma

CORRECT ANSWER: B

SOLUTION:

Tracheary elements such as tracheids, vessels, fibers ,
sieve tubes formed by fusiform initials.

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Q-33 - 36805926

Pollen grains can be stored for several years in liquid nitrogen

having a temperature of

(A) $-196^{\circ}C$

(B) $-80^{\circ}C$

(C) $-120^{\circ}C$

(D) $-160^{\circ}C$

CORRECT ANSWER: A

SOLUTION:

Pollen grains can be stored for several years in liquid nitrogen having a temperature of $-196^{\circ}C$

Pollen grains can be later used in plant breeding programmes .

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Rod shaped elongated sclereids found in the seed coats of pulses are known as

- (A) Astrosclereids
 - (B) Macrosclereids
 - (C) Trichosclereids
 - (D) Branchysclereids
-

CORRECT ANSWER: B

SOLUTION:

Macrosclereids or rod cells are rod shaped elongated sclereids usually found in the leaves, cortex of stem and outer seed coats.

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

- (A) Pinus
 - (B) Eucalyptus
 - (C) Grass
 - (D) Trochodendron
-

CORRECT ANSWER: D

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Q-36 - 13843516

Hypodermis is _____ in sunflower stem and _____ in maize stem

- (A) parenchymatous, collenchymatous
- (B) collenchymatous, sclerenchymatous

(C) sclerenchymatous, collenchymatous

(D) sclerenchymatous, parenchymatous

CORRECT ANSWER: B

SOLUTION:

In sunflower, hypodermis is made up of collenchyma, which may be green. In maize, hypodermis is formed of non-green sclerenchyma tissue.

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Q-37 - 16023333

Tunica differs from corpus in

(A) Position

(B) Rate of growth

(C) Plane of division

(D) Region of activity

CORRECT ANSWER: C

SOLUTION:

Plane of division in tunica is anticlinal and in corpus it is periclinal.

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Q-38 - 13843552

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

(A) xylem and cork

(B) phloem and xylem

(C) xylem and phloem

(D) phloem and cork

CORRECT ANSWER: C

SOLUTION:

Xylem is also known as wood. It consists of four types of cells, viz. tracheids vessels (both tracheary elements), xylem or wood parenchyma and xylem or wood fibres.

Phloem is also called bast. It consists of four types of cells, viz, sieve tubes, companion cells, phloem parenchyma and fibres.

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Q-39 - 16023228

Tracheids differ from other tracheary elements in

(A) Lacking nucleus

(B) Being lignified

(C) Having casparian strips

(D) Being imperforate

CORRECT ANSWER: D

SOLUTION:

Vessel is a long cylindrical tube like structure made of many cells, called vessel members, each with lignified walls and a large central cavity. Vessel members are interconnected through perforation in their common walls .

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Q-40 - 16023239

In pteridophyta and gymnosperms which cells are present in place

of companion cell

(A) Sclereids

(B) Albuminous cells

(C) Idioblasts

(D) None of these

CORRECT ANSWER: B

SOLUTION:

Albuminous cells : These cells are storage cells which are found in pteridophytes and gymnosperms stem, they store minerals as well as starch.

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

(A) osteosclereids

(B) macrosclereids

(C) brachysclereids

(D) trichosclereids

CORRECT ANSWER: A

SOLUTION:

Osteosclereids are a type of sclereids which are bone-shaped or columnar with swollen ends, present in subepidermal covering of some legume seeds.

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Pith is a central part of the ground tissue generally made up of

- (A) Parenchyma
- (B) Collenchyma
- (C) Chlorenchyma
- (D) Sclerenchyma

CORRECT ANSWER: A

SOLUTION:

Pith is generally having thin walled parenchymatous cells, which help in storage.

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Q-43 - 16023270

Cystoliths sometimes deposited in plant cells are crystals of

(aggreagation of)

(A) Calcium oxalate

(B) Calcium carbonate

(C) Magnesium carbonate

(D) Glucosides

CORRECT ANSWER: B

SOLUTION:

Cystolith : In the epidermal cells of *Ficus bengalensis* leaves, the crystals of $CaCO_3$ accumulate in a grape manner , called as cystolith.

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Knots in stems are formed due to

- (A) Tumors formed due to bacterial infection of wounds
 - (B) Outgrowth of secondary tissue over wounds
 - (C) Injury caused by insects
 - (D) None of the above
-

CORRECT ANSWER: B

SOLUTION:

Knots : When wounds around cells undergo rapid cell division, then wound is covered by cells but the wound is not completely healed, so in adult stem knots are established.

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

- | | | |
|-----|-------------------|----------------------|
| (A) | Column I
stems | Column II
endarch |
| (B) | Column I
stems | Column II
exarch |
| (C) | Column I
roots | Column II
endarch |
| (D) | Column I
roots | Column II
exarch |

CORRECT ANSWER: D

SOLUTION:

In exarch condition of xylem, protoxylem or the first formed xylem is present towards the periphery while metaxylem or later formed xylem is present towards the centre of the root such an arrangement can be seen in

roots.

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Q-46 - 16023318

Sieve tubes have

- (A) Apical and oblique septa
- (B) Perforated and longitudinal septa
- (C) Perforated and oblique septa
- (D) Simple oblique wall

CORRECT ANSWER: C

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Q-47 - 16023474

Multiple epidermis on dorsal and ventral side of the leaf is

(A) *Zea mays*

(B) *Ficus benghalensis*

(C) *Mangifera indica*

(D) *Nerium oleander*

CORRECT ANSWER: D

SOLUTION:

Because *Nerium oleander* is xerophytic plant and multiple epidermis is formed to check the loss of water from leaves.

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Q-48 - 26855894

in an annual ring , the light coloured part is

(A) Heart wood

(B) Sapwood and gives mechanical support to the stem

(C) Early wood

(D) Late wood

CORRECT ANSWER: C

SOLUTION:

In an annual ring, the light coloured part is early wood.

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Q-49 - 16023308

Collenchymatous tissue is found in

(A) Climbing plants

(B) Aquatic plants

(C) Woody climbers

(D) Herbaceous climbers

CORRECT ANSWER: A

SOLUTION:

Because such plants need much flexibility.

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Q-50 - 16023696

Grafting is not possible in monocots because they

(A) Have scattered vascular bundles

(B) Have parallel venation

(C) Are herbaceous

(D) Lack cambium

CORRECT ANSWER: D

SOLUTION:

A new variety is produced by joining parts of two different plants (with the help of cambium) is called grafting. In monocots cambium is absent hence the parts of two different plants are unable to join each other.

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Q-51 - 13843524

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

(A) protoxylem

(B) metaxylem

(C) phloem

(D) ground tissue

CORRECT ANSWER: A

SOLUTION:

There is a water containing lysigenous cavity in monocot stem, at the end of protoxylem vessels. It is formed by the dissolution of inner protoxylem vessel and parenchyma.

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Q-52 - 16023300

The calyrogen of the root apex forms

(A) Rhizoids

(B) Root nodule

(C) Root hairs

(D) Root cap

CORRECT ANSWER: D

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Q-53 - 16023226

History theory was proposed by

(A) Bailey

(B) Haberlandt

(C) Hanstein

(D) Schmidt

CORRECT ANSWER: C

SOLUTION:

This concept was given by Hanstein (1870). According

to this, there are 3 groups of initials in the shoot apex.

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Q-54 - 16023406

Quiescent centre is found in

- (A) Stem tip
- (B) Root tip
- (C) Leaf tip
- (D) None of these

CORRECT ANSWER: B

SOLUTION:

At the apex of roots some cells are not dividing, this region is called quiescent centre.

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Q-55 - 13844355

66,55,44

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Q-56 - 16023368

The following diagrams show the types of secondary thickenings in the xylem vessels. Identify the types labelled from A to F. Choose the correct option from those given



(A) A=spiral, B=annular, C=reticulate, D=scleriform,
E=pitted with border, F=pitted simple

(B) A=annular, B=spiral, C=scleriform, C=reticulate,
E=pitted with border, F=pitted simple

(C) A=annular, B=spiral, C=scleriform, D=reticulate,
E=pitted simple, F=pitted with border

(D) A=spiral, B=annular, C=scleriform, D=reticulate,

E=pitted with border, F=pitted simple

CORRECT ANSWER: B

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Q-57 - 13843484

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

CORRECT ANSWER: D

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Root cap in dicots is formed from

- (A) Protoderm
 - (B) Ground meristem
 - (C) Calyptragen
 - (D) Procambium
-

CORRECT ANSWER: A

SOLUTION:

Protoderm is the outermost layer of the apical meristem which develops into the epidermis or epidermal tissue system.

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

- (A) spring wood
- (B) autumn wood
- (C) heartwood
- (D) sapwood.

CORRECT ANSWER: B

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Raphides are needle-like crystals of calcium oxalate which are

especially found in

- (A) Pistia
 - (B) Rose
 - (C) Asparagus
 - (D) Dahlia
-

CORRECT ANSWER: A

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Q-61 - 13843479

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

- (A) endarch
- (B) polyarch

(C) mesarch

(D) exarch

CORRECT ANSWER: A

SOLUTION:

Based on position of protoxylem in relation to metaxylem, the xylem may be exarch/centripetal, endarch/centrifugal, mesarch and centerarch. In endarch condition, protoxylem lies on the inner side of metaxylem e.g., dicot and monocot stems.

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Q-62 - 16023299

Term 'Leptome' is a synonym of

(A) Companion cells Sieve elements

(B) Sieved elements

(C) Phloem fibres

(D) Phloem fibres

CORRECT ANSWER: B

SOLUTION:

Haberlandt (1914) gave the term Leptome for soft walled conducting part of phloem (sieve-element).

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Q-63 - 16023574

"Sap wood" is otherwise called

(A) Duramen

(B) Alburnum

(C) Pith

(D) Medullary rays

CORRECT ANSWER: B

SOLUTION:

Alburnum is an outer light coloured zone called the sap wood which are physiologically active.

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Q-64 - 13843523

Y-shaped arrangement of xylem vessel is found in

(A) monocot stem

(B) dicot stem

(C) monocot root

(D) dicot root.

CORRECT ANSWER: A

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Q-65 - 16023535

Palisade parenchyma is absent in leaves of

(A) Sorghum

(B) Mustard

(C) Soybean

(D) Gram

CORRECT ANSWER: A

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Q-66 - 16023321

Which of the following tissues consist of living cells

(A) Vessels

(B) Tracheids

(C) Companion cell

(D) Sclerenchyma

CORRECT ANSWER: C

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Q-67 - 16023444

A stele with a central core of xylem surrounded by phloem is called

or Actinostele is a modification of

Or

Pith is absent in

(A) Protostele

(B) Siphonostele

(C) Solenostele

(D) Dictyostele

CORRECT ANSWER: A

SOLUTION:

Protostele term was given by jeffrey. It is the simplest and most primitive type of stele in which central core of xylem surrounded by phloem.

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Q-68 - 26855912

Anatomically jute fibres are

(A) Xylem fibres

(B) Cortical fibres

(C) Pith fibres

(D) secondary bast or phloem fibres

CORRECT ANSWER: D

SOLUTION:

Anatomically jute fibres are secondary bast/ phloem fibres.

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Q-69 - 16023465

Bulliform or motor cells are present in

(A) Dicot stem

(B) Upper epidermis of dicot leaves

(C) Lower epidermis of monocot leaves

(D) Upper epidermis of monocot leaves

CORRECT ANSWER: D

SOLUTION:

In the upper epidermis, there are some large cells found in groups, which are known as motor cells or bulliform cells.

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Q-70 - 13843496

In _____ vascular bundle, a strip of vascular cambium is present in between the xylem and phloem.

(A) open

(B) closed

(C) endarch

(D) exarch

CORRECT ANSWER: A

SOLUTION:

In gymnosperms and dicot stems a strip of vascular cambium occurs between phloem and xylem of each vascular bundle. It is called intrafascicular (or fascicular) cambium. This strip of vascular cambium later produces secondary tissues. Such vascular bundles are described as open.

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Porous wood contains mainly

(A) Fibres

(B) Vessels

(C) Tracheids

(D) Solid secretions

CORRECT ANSWER: B

SOLUTION:

Porous wood (In angiosperms) contains mainly vessels.

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Q-72 - 16023752

Pericycle in roots is responsible for

(A) Formation of lateral roots

(B) Providing mechanical support

(C) Formation of vascular bundle from cortex

(D) Formation of vascular bundle from endodermis

CORRECT ANSWER: A

SOLUTION:

In dicotyledonous root, a well developed pericycle lies below endodermis which gives rise to lateral roots, part of vascular cambium and whole cork cambium. Pericycle functions as the site of lateral root initiation.

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Q-73 - 16023720

Assertion : Xerophytic leaves may contain stomatal crypts or

sunken stomata.

Reason : Spongy parenchyma is more in xerophytic leaves.

(A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion

(B) If both the assertion and reason are true but the reason is not a correct explanation of the assertion

(C) If the assertion is true but the reason is false

(D) If both the assertion and reason are false

CORRECT ANSWER: C

SOLUTION:

In xerophytic leaves, spongy parenchyma is reduced.

Palisade parenchyma may occur on both upper and

lower sides with spongy parenchyma sandwiched

between the two , e.g., Nerium. In Nerium or Oleander,

the lower surface bears deep depressions called crypts (stomatal crypts). The crypts possess a number of cutinised hair and stomata. In other xerophytic plants, stomata occur individually and are sunken below the surface due to their being overtopped by accessory or subsidiary cells.

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Q-74 - 13843494

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

(A) anomocytic

(B) anisocytic

(C) paracytic

(D) diacytic

CORRECT ANSWER: D

SOLUTION:

Diacytic (caryophyllaceous) type of stomata are surround by 2 subsidiary cells. Diacytic subsidiary cells are arranged at right angles to the stomata cells e.g., saponaria

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Q-75 - 16023638

The waxy substance associated with cell walls of cork cells is or cork cells are imprevious to water becauce of the presence or what is deposited on cork cells

(A) Cutin

(B) Suberin

(C) Lignin

(D) Hemicellulose

CORRECT ANSWER: B

SOLUTION:

After actual falling of leaf, the scar is exposed to air, which develops a primary protective layer by deposition of lignin and suberin on their wall.

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Q-76 - 13843555

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

CORRECT ANSWER: B

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Q-77 - 16023726

Assertion : Bulliform cells are useful in the unrolling of leaf .

Reason : Bulliform leaves store water.

(A) If both the assertion and the reason are true and the reason is a correct explanation of the assertion

(B) If both the assertion and reason are true but the reason is not a correct explanation of the assertion

(C) If the assertion is true but the reason is false

(D) If both the assertion and reason are false

CORRECT ANSWER: B

SOLUTION:

In isobilateral leaves, the upper epidermis contains specialized cells, i.e., bulliform or motor cells. They are highly vacuolate and can store water, if available.

However, in case of water deficiency the bulliform cells lose water and become flaccid. As a result the leaf gets rolled up to reduce the exposed surface. The bulliform cells are also useful in the unrolling of leaf during its development.

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Q-78 - 16023623

Lenticel develops through the activity of

(A) Vascular cambium

(B) Dermatogen

(C) Phellogen

(D) Intercalary meristem

CORRECT ANSWER: C

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Q-79 - 13843526

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

CORRECT ANSWER: A

SOLUTION:

Dorsiventral (bifacial) leaves are commonly horizontal in orientation with distinct upper (adaxial) and lower (abaxial) surface. Mesophyll is distinguishable into palisade and spongy tissues with palisade usually restricted to the upper (adaxial) side. Vascular bundles are conjoint and collateral i.e., they possess both xylem and phloem which lie on the same radius. Xylem lies towards the upper (Adaxial) side of leaf while phloem lies towards the lower (abaxial) side of leaf. Most of the dicotyledonous leaves are dorsiventral.

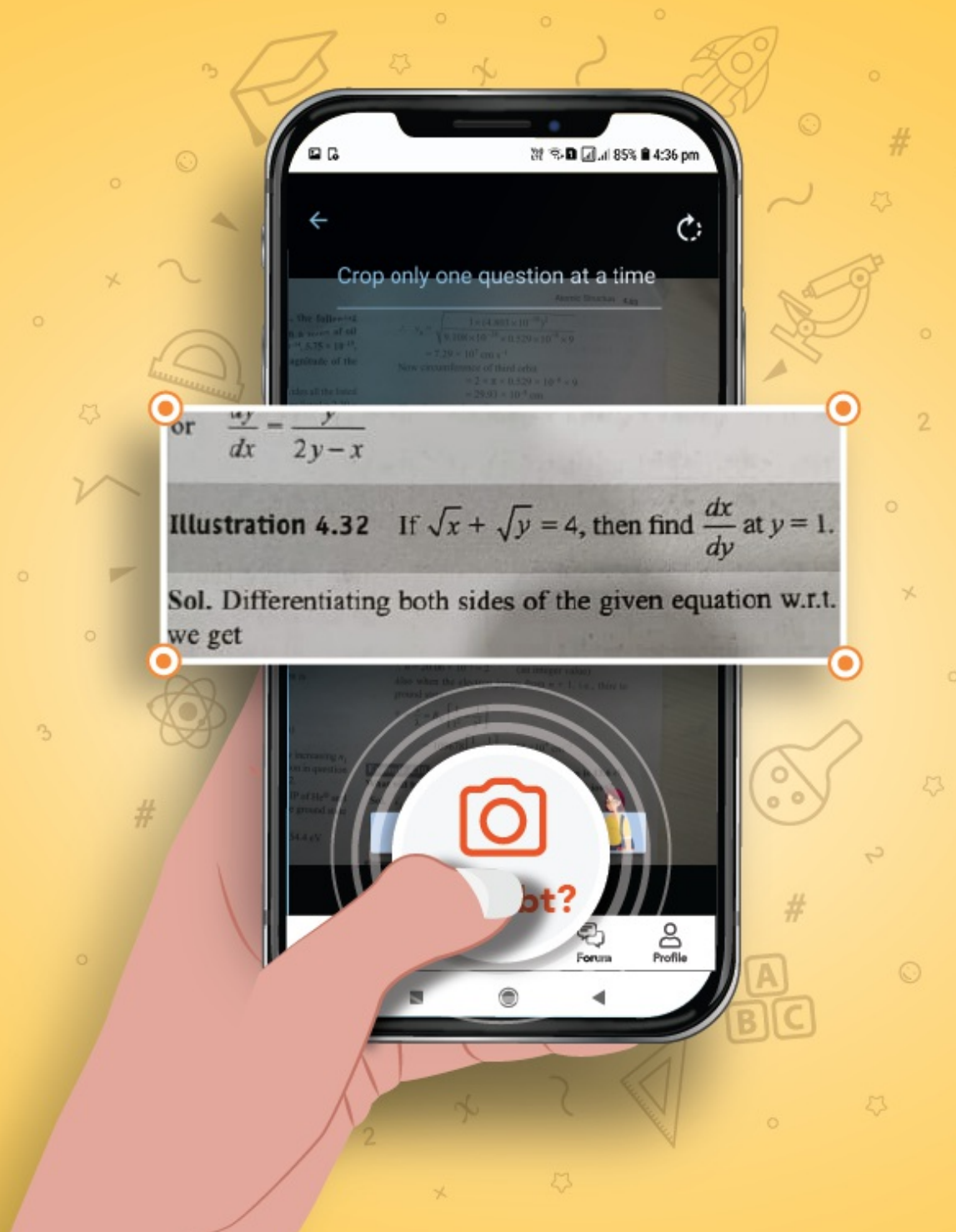
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