**1.** Bulliform cells are responsible for **(2024)**

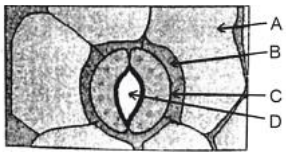
(a) Protecting the plant from salt stress

(b) Increased photosynthesis in monocots

(c) Providing large spaces for storage of sugars

(d) Inward curling of leaves in monocots.

**2.** In the figure, which component has thin outer walls and highly thicked inner walls? **(2024)**




(a) D (b) A

(c) B (d) C

**3.** Given below are two statements :

**Statement I :** Parenchyma is living but collenchyma is dead tissue.

**Statement II :** Gymnosperms lack xylem vessels but presence of xylem vessels is the characteristic of angiosperms.

In the light of the above statements, Choose the correct answer from the options given below: **(2024)**

(a) Both statements I and II statement II are false

(b) Statement I is true but statement II is false

(c) Statement I is false but statement II is true

(d) Both statement I and statement II are True

**4.** Given below are two statements:

**Statement I:** Endarch and exarch are the terms often used for describing the position of secondary xylem in the plant body.

**Statement II:** Exarch condition is the most common feature of the root system.

In the light of the above statements, choose the correct answer from the options given below: **(2023)**

(a) Statement I is incorrect but Statement II is true

(b) Both Statement I and Statement II are true

(c) Both Statement I and Statement II are false

(d) Statement I is correct but Statement II is false

**5.** Given below are two statements: One is labelled as Assertion A and the other is labelled as Reason R:

**Assertion (A):** Late wood has fewer xylary elements with narrow vessels.

**Reason (R):** Cambium is less active in winters.

In the light of the above statements, choose the correct answer from the options given below: **(NEET2023)**

(a) A is false but R is true

(b) Both A and R are true and R is the correct explanation of A

(c) Both A and R are true but R is NOT the correct explanation of A

(d) A is true but R is false

**6.** Identify the correct statements:

A. Lenticels are the lens-shaped openings permitting the exchange of gases.

B. Bark formed early in the season is called hard bark.

C. Bark is a technical term that refers to all tissues exterior to vascular cambium.
D. Bark refers to periderm and secondary phloem.
E. Phellogen is single-layered in thickness.

Choose the correct answer from the options given below: **(2023)**

(a) B and C only
(b) B, C and E only
(c) A and D only
(d) A, B and D only

**7.** The transverse section of a plant part showed polyarch, radial and exarch xylem, with endodermis and pericycle. The plant part is identified as: **(2023)**

(a) Monocot root (b) Dicot root
(c) Dicot stem (d) Monocot stem

**8.** Consider the following tissues in the stelar region of a stem showing secondary growth. **(2023)**

(a) Primary xylem
(b) Secondary xylem
(c) Primary phloem
(d) Secondary phloem

Arrange these in the correct sequence of their position from pith towards cortex.

(a) (A) (B), (D), (C)
(b) (B) (A), (C) (D)
(c) (A) (B), (C), (D)
(d) (B) (A), (D), (C)

**9.** Consider the following plant tissues:

(A) Axillary buds
(B) Fascicular vascular cambium
(C) Interfascicular cambium
(D) Cork cambium
(E) Intercalary meristem

Identify the lateral meristems among the above. **(2023)**

(a) (A), (C) and (D) only
(b) (B), (C) and (D) only
(c) (A) (B) (C) and (E) only
(d) (A), (B) (D) and (E) on

**10.** Interfascicular cambium is present between **(NEET 2022 Phase 2)**

(a) Secondary xylem and secondary phloem
(b) Primary xylem and primary phloem
(c) Pericycle and endodermis
(d) Two vascular bundles

**11.** Initiation of lateral roots and vascular cambium during secondary growth takes place in cells of **(2022)**

(a) Pericycle
(b) Epiblema
(c) Cortex
(d) Endodermis

**12.** "Girdling Experiment" was performed by Plant Physiologists to identify the plant tissue through which: **(2022)**

(a) A water is transported
(b) food is transported
(c) for both water and food transportation
(d) Dosmosis is observed

**13.** Read the following statements about the vascular bundles:

A. In roots, xylem and phloem in a vascular bundle are arranged in an alternate manner along the different radii.
B. Conjoint closed vascular bundles do not possess cambium
C. In open vascular bundles, cambium is present in between xylem and phloem
D. The vascular bundles of dicotyledonous stem possess endarch protoxylem
E. In monocotyledonous root, usually there are more than six xylem bundles present

Choose the correct answer from the options given below: **(2022)**

(a) (A), (B) and (D) only
(b) (B), (C), (D) and (E) only
(c) (A), (B), (C) and (D) only
(d) (A), (C), (D) and (E) only

**14.** In old trees the greater part of secondary xylem is dark brown and resistant to insect attack due to:

(A) secretion of secondary metabolities and their deposition in the lumen of vessels.

(B) deposition of organic compounds like tannins and resins in the central layers of stem.

(C) deposition of suberin and aromatic substances in the outer layer of stem.

(D) deposition of tannins, gum, resin and aromatic substances in the peripheral layers of stem.

(E) presence of parenchyma cells, functionally active xylem elements and essential oils.

Choose the correct answer from the options given below: **(2022 Phase 1)**

(a) (A) and (B) only
(b) (C) and (D) only
(c) (D) and (E) only
(d) (B) and (D) only

**15.** What is the role of large bundle sheath cells found around the vascular bundles in C4 plants? **(2022)**

(a) To provide the site for photorespiratory pathway
(b) To increase the number of chloroplast for the operation of Calvin cycle
(c) To enable the plant to tolerate high temperature
(d) To protect the vascular tissue from high light intensity

**16.** The anatomy of springwood shows some peculiar features. Identify the correct set of statements about springwood. **(2022)**

(A) It is also called as the earlywood
(B) In spring season cambium produces xylem elements with narrow vessels
(C) It is lighter in colour
(D) The springwood along with autumn wood shows alternate concentric rings forming annual rings
(E) It has lower density

Choose the correct answer from the options given below:

(a) (A), (B), (D) and (E) only
(b) (A), (C), (D) and (E) only
(c) (A), (B) and (D) only
(d) (C), (D) and (E) only

**17.** Select the correct pair. **(2021)**

| | | |
|---|---|---|
| (a) | In dicot leaves, vascular bundles are surrounded by large thick-walled cells | Conjunctive tissue |
| (b) | Cells of medullary rays that form part of cambial rings | Interfascicular cambium |
| (c) | Loose parenchyma cells rupturing the epidermis and forming a lens-shaped opening in bark | Spongy parenchyma |
| (d) | Large colorless empty cells in the epidermis of grass leaves | Subsidiary cells |

**18.** Identify the incorrect statement. **(2020)**

(a) Sapwood is involved in conduction of water and minerals from root to leaf.
(b) Sapwood is the innermost secondary xylem and is lighter in colour.
(c) Due to deposition of tannins, resins, oils etc., heart wood is dark in colour.
(d) Heart wood does not conduct water but gives mechanical support.

**19.** The transverse section of a plant shows following anatomical features: **(2020)**

1. Large number of scattered vascular bundles surrounded by bundle sheath.
2. Large conspicuous parenchymatous ground tissue.
3. Vascular bundles conjoint and closed.
4. Phloem parenchyma absent.

Identify the category of plant and its part:

(a) Monocotyledonous root
(b) Dicotyledonous stem
(c) Dicotyledonous root
(d) Monocotyledonous stem

**20.** Large, empty colourless cells of the adaxial epidermis along the veins of grass leaves are **(2020 Covid Re-NEET)**
(a) Guard cells
(b) Bundle sheath cells
(c) Bulliform cells
(d) Lenticels

**21.** Which of the following statements about cork cambium is incorrect? **(2020 Covid Re-NEET)**
(a) It forms a part of periderm
(b) It is responsible for the formation of lenticels
(c) It is a couple of layers thick
(d) It forms secondary cortex on its Outerside

**22.** Grass leaves curl inwards during very dry weather. Select the most appropriate reason from the following **(2019)**
(a) Closure of stomata
(b) Flaccidity of bulliform cells
(c) Shrinkage of air spaces in spongy mesophyll
(d) Tyloses in vessels

**23.** Phloem in gymnosperms lacks **(2019)**
(a) Albuminous cells and sieve cells
(b) Sieve tubes only
(c) Companion cells only
(d) Both sieve tubes and companion cells

**24.** Which of the statements given below is not true about formation of annual rings in trees? **(2019)**
(a) Annual ring is a combination of spring wood and autumn wood produced in a year
(b) Differential activity of cambium causes light and dark bands of tissue-early and late wood respectively.
(c) Activity of cambium depends upon variation in climate.
(d) Annual rings are not prominent in trees of temperate region.

**25.** Secondary xylem and phloem in dicot stem are produced by **(2018)**
(a) Apical meristem
(b) Vascular cambium
(c) Phellogen
(d) Axillary meristems

**26.** Casparian strips occur in **(2018)**
(a) Epidermis (b) Pericycle
(c) Cortex (d) Endodermis

**27.** Plants having little or no secondary growth are **(2018)**
(a) Grasses
(b) Deciduous angiosperms
(c) Conifers
(d) Cycads

**28.** Stomata in grass leaf are: **(2018)**
(a) Dumb-bell shaped
(b) Kidney shaped
(c) Rectangular
(d) Barrel shaped

**29.** Which of the following is made up of dead cells? **(2017)**
(a) Xylem parenchyma
(b) Collenchyma
(c) Phellem
(d) Phloem

**30.** The vascular cambium normally gives rise to: **(2017)**
(a) Phelloderm
(b) Primary phloem
(c) Secondary xylem
(d) Periderm

**31.** Identify the wrong statement in context of heartwood: **(2017)**
(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 wall

**32.** Which of the following statements is true for phloem in plants? **(2017)**
(a) Phloem fibres are made up of collenchymatous cells
(b) Sieve tube elements are multicellular with wide lumen and rich cytoplasm
(c) Companion cells help in maintaining the pressure gradient in sieve tubes
(d) Phloem parenchyma is a abundantly present in monocots

**33.** The chief function of vessels in the plant body is to: **(2017)**
(a) Eliminate excess of water
(b) Transport food materials manufactured in the leaves to other parts of the plant
(c) Store food material in the form of starch or fat
(d) Conduct water and mineral salts

**34.** The balloon-shaped structures called tyloses: **(2016 - II)**
(a) Are extensions of xylem parenchyma cells into vessels
(b) Are linked to the ascent of sap through xylem vessels
(c) Originate in the lumen of vessels
(d) Characterise the sapwood

**35.** Cortex is the region found between: **(2016 - II)**
(a) Endodermis and pith
(b) Endodermis and vascular bundle
(c) Epidermis and stele
(d) Pericycle and endodermis

**36.** Specialised epidermal cells surrounding the guard cells are called **(2016 - I)**
(a) Complementary cells
(b) Subsidiary cells
(c) Bulliform cells
(d) Lenticels

**37.** Vascular bundles in monocotyledons are considered closed because: **(2015)**
(a) There are no vessels with perforations
(b) Xylem is surrounded all around by phloem
(c) A bundle sheath surrounds each bundle
(d) Cambium is absent

**38.** A major characteristic of the monocot root is the presence of: **(2015)**
(a) Vasculature without cambium
(b) Cambium sandwiched between phloem and xylem along the radius
(c) Open vascular bundles
(d) Scattered vascular bundles

**39.** 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: **(2015 Re)**
(A) Secondary cortex
(B) Wood
(C) Secondary phloem
(D) Phellem
The correct order is:
(a) (A), (B), (D), (C)
(b) (D), (A), (C), (B)
(c) (D), (C), (A), (B)
(d) (C), (D), (B), (A)

**40.** You are given a fairly old piece of dicot stem and a dicot root. Which of the following anatomical structures will you use to distinguish between the two? **(2014)**
(a) Cortical cells
(b) Secondary xylem
(c) Secondary phloem
(d) Protoxylem

**41.** Tracheids differ from other tracheary elements in: **(2014)**
(a) Being lignified
(b) Having casparian strips
(c) Being imperforate
(d) Lacking nucleus

**42.** Lenticels are involved in: **(2013)**
(a) Photosynthesis
(b) Transpiration
(c) Gaseous exchange
(d) Food transport

**43.** Interfascicular cambium develops from the cells of: **(2013)**
(a) Pericycle
(b) Medullary rays
(c) Xylem parenchyma
(d) Endodermis

**44.** Age of a tree can be estimated by: **(2013)**
(a) Diameter of its heartwood
(b) Its height and girth
(c) Biomass
(d) Number of annual rings