DPP
DAILY PRACTICE PROBLEMS

Class : XIth
Date :

Solutions

Subject : BIOLOGY
DPP No. : 9

Topic :- Anatomy Of Flowering Plants

1 **(d)**

Sclerenchyma is composed of dead cells. The cell wall is heavily thickened due to deposition of lignin.

According to histogen theory, periblem is the middle dermatogen, which gives rise to cortex of root and stem.

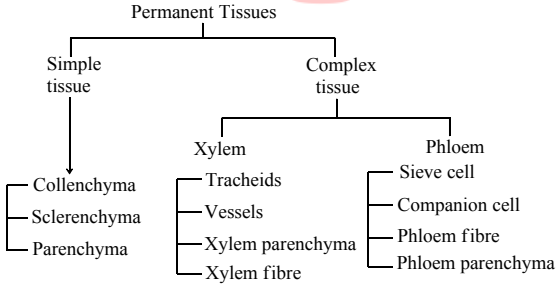
Tracheids are most primitive type of conducting elements in xylem. The xylem of gymnosperms consists of tracheids only. Companion cells are thin-walled elongated cells in phloem. They are living, contain dense protoplasm and large elongated nucleus.

Cork is produced by a number of plants. However, it is commercially obtained from the cork oak tree (*Quercus suber*).

2 **(d)**

I, II and III.

The cell of the permanent tissues do not generally divide further. Permanent tissues having all cells similar in structure and function are called simple tissues. Permanent tissues having different types of cells together are called complex tissues



3 **(a)**

Nerium belongs to family-Apocynaceae (dogbane family). *Nerium* contains latex cells that do not form a network. Thus, called **non-articulate** laticiferous. Family-Urticaceae, Asclepiadaceae, Moraceae, Euphorbiaceae and Apocynaceae bear such type of latex cells.

4 **(a)**

Epidermal cells are elongated compactly arranged and form continuous layer called epidermis. Stomata are present in epidermis of leaves and regulate process of transpiration and gaseous exchange. The epidermal hairs, *i.e.*, root hairs, unicellular

elongations and trichomes, multicellular elongation of epidermis on root and shoot helps in absorbing water and preventing water loss, respectively

5 **(a)**

Bulliform cells or **motor cells** specialized large, empty, vacuolated colourless, thin-walled cells present in the upper epidermis of isobilateral leaf of monocots. They function in rolling up of leaves during water stress or xerophytic conditions.

6 **(a)**

Velamen tissue is found in the aerial roots of certain epiphytic orchids (*e.g., Vanda*).

7 **(c)**

Nucleus of companion cells.

Sieve tube elements are long, tube-like structures, arranged longitudinally and are associated with the companion cells. Their end walls are perforated in a sieve-like manner to form the sieve plates. A mature sieve elements possesses a peripheral cytoplasm and a large vacuole but lacks a nucleus. Functions of sieve tubes are controlled by the nucleus of companion cells

8 **(a)**

Nerium is a xerophytic plant. It has sunken stomata in leaf, which is an adaptive structure in xerophytic plants for reducing the water loss during transpiration. *Nerium* has several layer of epidermis.

9 **(a)**

In plate meristem, the cells divide in several planes and consequently, there is an increase in the area of the organ. It results in the formation of flat structures, *e.g.,* in epidermal growth and leaf formation.

10 **(b)**

The cambium activity is seen in the temperate trees in two seasons of the year. In the spring season, cambium activity is highest as a result more amount of wood is formed due to long duration of favourable period. This type of wood is known as spring wood or early wood. In autumn season, cambium activity is arrested as a result dark-coloured, narrow band of autumn wood or late wood is formed. The two woods jointly constitute the annual rings or growth rings.

11 **(d)**

During the formation of primary plant body, specific regions of apical meristem produce dermal tissue for hardning and vascular tissue for transport and ground tissue

12 **(b)**

Vascular bundle, which possess both xylem and phloem are called conjoint vascular

bundle. In bicollateral conjoint vascular bundle, phloem present on both outer and inner side of xylem, *e.g., Cucurbita*.

13 **(b)**
When cambium is present between phloem and xylem tissue of a vascular bundle, the vascular bundle is called open but if cambium is absent, the vascular bundle is called closed.

14 **(a)**
Compound sieve plate consists of several pore regions, which are separated by bars of wall thickening, *e.g., Vitis*.

15 **(b)**
In angiosperms, xylem consists of tracheids, vessels or tracheae, xylem fibres and xylem parenchyma. Tracheae are absent in pteridophytes and gymnosperms. In angiospermic phloem, sieve elements are sieve tubes, while in gymnosperms and pteridophytes sieves cells are found.

16 **(a)**
Phloem transports food material, usually from leaves to other parts of the plant. Phloem in angiosperms is composed of sieve tube elements, companion cells, phloem parenchyma and phloem fibres. Gymnosperms have albuminous cells and sieve cells

17 **(b)**
In dicotyledous root, the outermost layer is epidermis. Many of the epidermal cells protrude in the form of unicellular root hairs which absorb water and minerals and increases the surface area

19 **(d)**
Meristematic activity is characterised by the presence of meristematic tissue which are present at root apex (root apical meristem), shoot apex (shoot apical meristem) between mature tissues, intercalary meristem and in mature regions (lateral meristem)

20 **(b)**
Only V.
In old trees, the greater part of secondary xylem is dark brown due to the deposition of organic compounds like tanins, resins, oils, gums, aromatic substances and essential oils in the central or innermost layers of the stem. These substances make it hard, durable and resistant to the attacks of microorganisms and insects. The region comprises dead elements with highly lignified walls and is called heart wood

ANSWER-KEY										
Q.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
A.	**d**	**d**	**a**	**a**	**a**	**a**	**c**	**a**	**a**	**b**
Q.	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
A.	**d**	**b**	**b**	**a**	**b**	**a**	**b**	**a**	**d**	**b**