

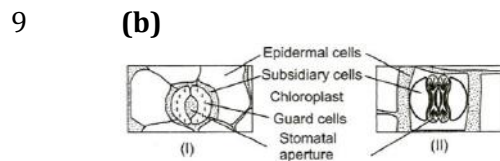
**Topic :-Anatomy Of Flowering Plants**

- 1 (c)  
Cambium is generally more active on the inner side than the outer. As a result the amount of secondary xylem produced is more than the secondary phloem and soon form a compact mass
- 2 (c)  
**Lateral Meristem** The meristem occurs on the sides and take part in increasing girth of the plant. Only one type of primary lateral meristem is found in plants. It is intrafascicular cambium. The cambium lies in vascular bundles of dicot and gymnosperm stem in between phloem and xylem
- 3 (a)  
The pith or medulla forms the central region of the stem and root. Usually, the pith of dicot stem is largely parenchymatous. It is devoid of chlorophyll in the mature state. The pith is not distinguishable in the mature state. The pith is not distinguishable in monocot stems.
- 4 (b)  
As growth begins, the cells of medullary rays, which lie in between vascular bundles become active and rise to cambial strip called interfascicular cambium constitute cambium.
- 5 (a)  
Tissue is a group of cells performing a particular function. Tissue are mainly of two types  
(i) **Meristematic tissues** These tissues contain immature and young cells that are much active and capable of showing continuous divisions and redivisions. They may be promeristem, primary meristem, secondary meristem, apical meristem, intercalary meristem and lateral meristem.  
(ii) **Permanent tissues** These are made up of mature cells, which have lost the capacity to divide and have attained a permanent shape, size and function, *e.g.*, simple (parenchyma, collenchyma, sclerenchyma), complex (xylem, phloem) and secretory tissue.

6 **(a)**  
Secondary growth increases the girth not length of the plant. Length of the plant increases by apical meristem

7 **(d)**  
Cork prevents the loss of water by evaporation. It also protects the interior against the entry of harmful microorganisms, mechanical injury and extremes of temperature. Cork is light, compressible, non-reactive and sufficiently resistant to fire. It is used as stopper for bottles, shock absorption and insulation

8 **(a)**  
**Dicot stem** In between the vascular bundles, there are few layers of radially placed parenchymatous cells. These parenchymatous cells are called medullary rays



**Diagram (I)** Represents the dicotyledon plant because having bean-shaped guard cells  
**Diagram (II)** Represents the monocotyledon plant because of having dumb-bell shaped guard cells

10 **(a)**  
Bast or phloem fibers are present in pericycle (e.g., *Corchorus capsularis* (jute), *Hibiscus cannabinus* (patsan), *Crotalaria juncea* (sunhemp)). These fibres are also known as extraxylary fibers.

11 **(b)**  
**Vascular Cambium**  
The meristematic layer that is responsible for cutting off vascular tissues (xylem and phloem) is called vascular cambium. In the young stem. It is present in patches as a single layer between the xylem and phloem. Later, it forms a complete ring

12 **(d)**  
The secondary phloem is made up of sieve tubes, companion cells and phloem parenchyma. Sclerenchyma fibres are rare. The secondary xylem is formed of vessels, tracheids and xylem parenchyma

13 **(b)**  
Hypodermis in the stem of *Cucurbita* is made up of angular collenchyma. Hypodermis is two or three-layered or sometimes altogether absent. The vascular bundles are conjoint, open and bicollateral, i.e., phloem is present on both side of xylem.

- 14 **(c)**  
The innermost layer of cortex is called endodermis. It comprises a single layer of barrel-shaped cells without any intercellular spaces. The tangential as well as radial walls of the endodermal cells have a deposition of water impermeable, waxy material called suberin in the form of casparian strips
- 15 **(b)**  
The isobilateral monocot leaves usually do not show a distinction into petiole and lamina. The leaf base is commonly sheathing, that is covering the stem partially or completely. The venation is parallel. Amphistomatic leaf have stomata on both the surface
- 16 **(a)**  
Cell wall in a plant cell is found in both the phases, *i.e.*, sporophytic and gametophytic.
- 17 **(d)**  
The 'ring' arrangement of vascular bundles is a characteristic of dicot stem. Each vascular bundle is conjoint, open and with endarch protoxylem
- 18 **(d)**  
Both apical meristem and intercalary meristem are primary meristems because they appear early in life of plants and contributes to the formation of primary plant body
- 19 **(b)**  
Collenchyma.  
The **collenchyma** occurs in layers below the epidermis in dicotyledonous plants. It is found either as a homogenous layer or in patches. It consists of cells which are much thickened at the corners due to the deposition of cellulose, hemicellulose and pectin. Collenchymatous cells may be oval, spherical or polygonal and often contain chloroplasts. These cells assimilate food when they contain chloroplasts. Intercellular spaces are absent. They provide mechanical support to the growing parts of the plant such as young stem and petiole of a leaf
- 20 **(d)**  
Lateral meristems occur laterally in the axis, parallel to the sides of stems and roots. This meristem consists of initials, which divide mainly in one plane (periclinal) and results in increase in the diameter of an organ, *e.g.*, cambium of vascular bundles (fascicular, interfascicular and extrastelar cambium), cork cambium or phellogen.

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

**PE**