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## **Internal structure of dicot stem**

### **List of divisions in internal structure of dicot stem**

- Epidermis
- Hypodermis
- General cortex
- Endodermis
- Stele
- Pericycle
- Vascular bundle
- Pith
- Medullary rays

## **Epidermis in dicot stem**

Outermost layer of dicot stem

### **Number of layers in epidermis of dicot stem**

1

### **Types of cells present at the epidermis of dicot stem**

Parenchymatous

### **Contents of Epidermis in dicot stem**

- Stomata
- Trichomes

### **Approximation of thickness of walls of epidermis of dicot stem**

- Greatly thickened
- Heavily cutinized

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### **Spatial arrangement in cells of epidermis of dicot stem**

No intercellular space

### **Functions of cuticle in epidermis of dicot stem**

Minimize the rate of transpiration

### **Function of stomata in epidermis of dicot stem**

Gaseous exchange

### **Function of hairs in epidermis of dicot stem**

Protect against temperature fluctuations

## **Hypodermis in dicot stem**

Layer below epidermis in dicot stem

### **Number of layers in hypodermis in dicot stem**

4-5

### **Types of cells present at the hypodermis of dicot stem**

Collenchymatous

### **Approximation of thickness of cells of hypodermis of dicot stem**

Thickened at corners

### **Cause of thickness of corners of cells of hypodermis of dicot stem**

Deposition of cellulose and pectin

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### **Condition of presence of life at the cells of hypodermis of dicot stem**

Living

### **Contents of cells of hypodermis of dicot stem**

Chloroplast

### **Function of hypodermis of dicot stem**

- Mechanical strength
- Storage of food
- Elasticity

### **General cortex in dicot stem**

Layer lying internal to hypodermis in dicot stem

### **Approximation of thickness of cells of general cortex of dicot stem**

Thin

### **Lists of shapes of cells of general cortex of dicot stem**

- Rounded
- Oval

### **Condition of presence of life in cells of general cortex**

Living

### **Spatial arrangement of cells in general cortex of dicot stem**

Presence of intercellular space

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### **Contents of cortex in dicot stem**

- Isolated mucilage canals
- Resin ducts

### **Function of assimilatory cells in dicot stem**

- Manufacture of food materials

### **Functions of general cortex in dicot stem**

Storage of food

## **Endodermis in dicot stem**

Innermost layer of cortex separating cortex and stele

### **Shape of cells of endodermis in dicot stem**

Barrel

### **Spatial arrangement of cells of endodermis in dicot stem**

Absence of intercellular space

### **Contents of cells of endodermis in dicot stem**

Starch grains

### **Term for endodermis of dicot stem**

- Starch sheath

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### **Cause of name of starch sheath for endodermis of dicot stem**

Presence of starch grains

### **Casparian strips in endodermis of dicot stem**

Lateral and tangential thickening of wall

## **Stele in dicot stem**

Part of stem inside cortex

### **Divisions of stele in dicot stem**

- Pericycle
- Vascular bundle
- Pith
- Medullary rays

## **Pericycle in dicot stem**

Region between vascular bundle and cortex

### **Types of cells present at the pericycle of dicot stem**

- Parenchymatous
- Sclerenchymatous

### **Structural arrangement of sclerenchymatous pericycle in dicot stem**

Semilunar patches above vascular bundle

### **Hard bast in dicot stem**

Sclerenchymatous patches outside phloem



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### **Function of sclerenchymatous pericycle in dicot stem**

Mechanical support

### **Function of parenchymatous pericycle in dicot stem**

Storage of food

## **Vascular bundle in dicot stem**

Structure inside Pericycle

### **Type of vascular bundle present at dicot stem**

Conjoint Collateral Closed

### **Shape of vascular bundle present at dicot stem**

Ring

### **Contents of vascular bundle**

- Xylem
- Phloem
- Cambium

### **Primary xylem in dicot stem**

Xylem formed before activity of cambium

### **Types of primary xylem in dicot stem**

- Protoxylem
- Metaxylem

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### **Location of protoxylem in dicot stem**

Centre

### **Location of metaxylem in dicot stem**

Periphery

### **List of divisions of xylem in dicot stem**

- Xylem vessels
- Trachieds
- Xylem fibres
- Xylem parenchyma

### **Vessels in dicot stem**

Wood vessels

### **Structure of arrangement of vessels in dicot stem**

Radial rows

### **Approximation of thickness of vessels in dicot stem**

Thick walled

- Lignified

### **Types of vessels at protoxylem in dicot stem**

- Annular
- Spiral
- Scleriform

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### **Types of vessels at metaxylem in dicot stem**

- Reticulate
- Pitted

### **Arrangement of contents of vascular bundle at dicot stem**

- Patch of xylem ant centre
- Patch of phloem at outside
- Cambium between xylem and phloem

### **Location of tracheids in dicot stem**

Around Metaxylem vessels

### **Approximation of size of tracheids in dicot stem**

Small

### **Approximation of thickness of tracheids in dicot stem**

Thick

### **Shape of xylem fibres in dicot stem**

- Irregular
- Polygonal

### **Function of xylem fibres in dicot stem**

Mechanical support

### **Approximation of thickness of walls of xylem parenchyma in dicot stem**

- Thin walled

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**Location of xylem parenchyma in dicot stem**

Around protoxylem

**Function of xylem parenchyma in dicot stem**

Storage of food

**Location of phloem in dicot stem**

- Below sclerenchymatous patch

**List of divisions of phloem in dicot stem**

- Sieve tubes
- Companion cells
- Phloem parenchyma

**Approximation of thickness of walls of sieve tubes of dicot stem**

Thin walled

**Structural arrangement of sieve tubes of dicot stem**

Vertical rows

**Sieve plates in dicot stem**

Holes connecting adjacent cells in sieve tubes

**Condition of presence of nuclei at the mature cells of sieve tubes of dicot stem**

Absent

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**Function of seive tubes in dicot stem**

Conduct food material

**Location of companion cells in dicot stem**

Attached to seive tubes

**Types of cells present at phloem parenchyma**

Parenchymatous

**Cambium in dicot stem**

Meristematic cells between xylem and phloem

**Types of cells present at the cambium of dicot stem**

Meristematic

**Approximation of thickness of walls of cambium of dicot stem**

Thin walled

**Term for cambium of dicot stem**

Fasicular cambium

**Function of cambium of dicot stem**

- Secondary growth
- Thickness

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## **Pith in dicot stem**

Centre of stem

### **Term for pith in dicot stem**

Medulla

### **Types of cells present at the pith of dicot stem**

Parenchymatous

### **Spatial arrangement in cells of pith of dicot stem**

Presence of intercellular space

### **Approximation of thickness of walls of pith of dicot stem**

Thin walled

### **Function of pith in dicot stem**

Store food

## **Medullary rays**

Extension of pith

### **Location of medullary rays in dicot stem**

Between vascular bundle

### **Term for medullary rays in dicot stem**

Pith rays

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### **Types of cells present at the medullary rays in dicot stem**

Parenchymatous

### **Function of medullary rays in dicot stem**

- Store food material
- Translocate water
- Translocate other substances

### **Shape of medullary rays present in dicot stem**