



# **BIOLOGY**

## **BOOKS - MBD BIOLOGY (ODIA ENGLISH)**

### **ANATOMY OF ANGIOSPERMS (FLOWERING PLANTS)**

**Question Bank**

1. Through which of the following nutrient from leaves moves to other parts ?

A. phloem

B. Xylem

C. Pericycle

D. Pith

**Answer: A**



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2. According to Histogen theory, plerome gives rise to:

A. Epidermis

B. Hypodermis

C. Vascular bundles

D. External hairs

**Answer: C**



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3. A common structural feature of vessel elements and sieve tube elements is'

A. Enucleate condition

B. Thick secondary walls

C. Pores on lateral walls

D. Presence of p-protein

**Answer: A**



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4. Casparian thickenings are found in the cells of:

- A. Pericycle of the root
- B. Endodermis of the root
- C. Pericycle of the stem
- D. Endodermis of the stem

**Answer: B**



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5. Passage cells are thin-walled cells found in :

A. Phloem elements that serve as entry points for substance for transport to other plant parts

B. Testa of seeds to enable emergence of growing embryonic axis during seed germination

C. Central region of style through which the pollen tube grows towards the ovary

D. Endodermis of roots facilitating rapid transport of water from cortex to pericycle

**Answer: D**



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6. Length of petiole increases due to division of  
of

A. Apical meristem

B. lateral meristem

C. intercalary meristem

D. All of these

**Answer: C**



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**7. Collenchyma is :**

A. Living and contains protoplasm

B. Dead and hollow



C. Dead and filled with reserve food

D. Living and contains no reserve food

**Answer: A**



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**8. Vessels and companion cells are found in**

A. Angiosperm

B. Pteridophytes

C. Bryophytes

D. Gymnosperms

**Answer: A**



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9. Tunica corpus theory was proposed by

A. schmidt

B. C. nageli

C. Hanstein

D. clower

**Answer: A**



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**10.** The length of different internodes in a culm of sugarcane is variable because of :

A. Size of leaf lamina at the node below  
each internode

B. Intercalary meristem

C. Shoot apical meristem

D. Position of axillary buds

**Answer: B**



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**11.** Examples for lateral meristems are

A. Procambium and dermatogen

B. Fascicular cambium and cork cambium

C. Phellogen and procambium

D. Fascicular cambium and procambium

**Answer: B**



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**12.** Vascular tissue in higher plants develop from which of the following :?

A. Procambium

B. Protoderm

C. Periblem

D. Cortex

**Answer: A**



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**13.** Which of the following type is not a part of epidermal tissue system ?

A. Companion cells

B. Trichomes

C. root hairs

D. Guard cells

**Answer: A**



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**14. Monocot stem lacks**

- A. Tracheids
- B. Sieve tube
- C. Cambium
- D. None of these

**Answer: C**



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15. Which of the following is a complex tissue ?

- A. Parenchyma
- B. Collenchyma
- C. Xylem
- D. Schlerenchyma

**Answer: C**



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**16.** Tyloses are found in

A. Secondary phloem

B. Secondary xylem

C. Sclereids

D. Sclerenchyma fibers

**Answer: B**



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17. Quiescent centre occurs at the centre of:

A. Root tip

B. Cambium

C. Shoot tip

D. Leaf tip

**Answer: A**



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**18.** Function of companion cells is

A. Providing energy to sieve elements for active transport

B. Providing water to phloem

C. Loading of sucrose into sieve elements by passive transport

D. Loading of sucrose into sieve elements

**Answer: D**



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19. The casparian strip is found in

A. Endosperm

B. Endodermis of the root

C. Pericycle

D. Pith

**Answer: B**



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20. Mechanical tissue consists of :

- A. Collenchyma and Parenchyma
- B. Sclerenchyma and Parenchyma
- C. Xylem and Phloem
- D. Sclerenchyma and Chlorenchyma.

**Answer: D**



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21. The arrangement of xylem in stem is

A. Dicot root

B. Monocot root

C. Cycas root

D. Dicot stem

**Answer: D**



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**22. Lateral roots originate from:**

A. Epidermis

B. Hypodermis

C. Endodermis

D. Pericycle

**Answer: D**



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**23.** Mesophyll tissue comprising of spongy and pallisade cells is found in leaves of

A. Monocot

B. Dicot

C. Gymnosperms

D. All of the above

**Answer: B**



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**24.** Water excreting structures present at the tip of margins of certain leaves are

A. Schizogenous cavities



B. Hydathodes

C. Lysigenous cavity

D. Tyloses

**Answer: B**



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**25.** The arrangement of vascular bundles in a dicot root is:

A. Conjoint

B. Collateral

C. Radial

D. Concentric

**Answer: C**



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**26.** For a critical study of secondary growth in plants, which one of the following pairs is suitable?

A. teak and pine

B. Deodar and fem

C. Wheat and maiden hair fem

D. Sugarcane and sunflower

**Answer: A**



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**27. Which of the following is enucleated ?**

A. Vessel

B. Sieve cell

C. Companion cell

D. Tracheids

**Answer: B**



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**28.** Conjoint and closed vascular bundles with no phloem parenchyma may be observed in

A. Monocot stem

B. monocot root

C. Dicot stem

D. dicot root

**Answer: A**



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**29. Vascular bundle of monocot is**

A. Scattered

B. Endarch

C. Closed

D. All of these

**Answer: D**



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**30.** What do you mean by closed vascular bundle ?

A. Cambium present

B. Cambium absent

C. Periderm absent

D. None of these

**Answer: B**



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**31.** Which one of the following pairs is an example for lateral meristem ?

A. Procambium and phelloderm

B. Interfascicular cabium and phellem

C. phellogen and phelloderm

D. phellogen and fascicular cambium

**Answer: D**



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**32. Ground tissue includes**

A. All tissues external to endodermis

B. All tissues except epidermis and vascular bundles



C. Epidermis and cortex

D. All tissues internal to endodermis

**Answer: B**



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**33.** Polyarch condition is found in

A. Monocot root

B. Dicot root

C. Monocot stem

D. Dicot stem

**Answer: A**



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**34. Fusiform initial forms**

A. Vascular rays

B. Ray parenchyma

C. Tracheary elements

D. Primary phloem

**Answer: C**



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**35. Lateral roots originate from:**

A. Endoderm cells

B. Pericycle cells

C. Epiblema

D. Cortical cells below root hairs

**Answer: B**



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**36.** The vascular bundles in the stem are generally scattered in

A. Dicots

B. Gymnosperms

C. Monocots

D. Algae

**Answer: C**



37. In autumn and winter , cambium produces

- A. Late wood
- B. Early wood
- C. Heart wood
- D. Sap wood

**Answer: A**



**38.** Cork cambium is commonly called as

- A. Primary meristem
- B. Lateral meristem
- C. Apical meristem
- D. Intercalary meristem

**Answer: B**



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39. Vascular tissue in higher plants develop from which of the following :?

A. Periblem

B. Dermatogen

C. Phellogen

D. Plerome

**Answer: D**



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40. Parenchymatous cells filling the space between dermal and vascular tissue is

- A. Ground tissue
- B. Epidermal tissue
- C. Pith
- D. Vascular budles

**Answer: A**



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**41.** In stems of dicots, vascular cambium arises from

A. Procambium

B. Cambium

C. Promeristem

D. Protoderm

**Answer: A**



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42. Leaf mesophylls are composed of

A. Pallisade parenchyma

B. Spongy parenchyma

C. Both of them

D. None of these

**Answer: C**



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**43.** Identify' the plant parts whose transverse section show a clear and prominent pit.

- A. Dicot stem and monocot stem
- B. Dicot stem and monocot root
- C. Dicot root and monocot root
- D. Dicot stem and dicot root

**Answer: B**



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**44.** In the following pairs where do you get lignin in both the elements

- A. Tracheid and collenchyma
- B. Sclerenchyma and sieve tube
- C. Sclerenchyma and tracheids
- D. Parenchyma and endodermis

**Answer: C**



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**45.** Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by

- A. Absence of secondary phloem
- B. Presence of cortex
- C. Position of protoxylem
- D. Absence of secondary xylem

**Answer: C**



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**46.** Alburnum is otherwise known as

A. Periderm

B. Sapwood

C. Heart wood

D. Bark

**Answer: B**



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47. In an annual ring, the light coloured part is known as

A. Early wood

B. Late wood

C. Heart wood

D. Sapwood

**Answer: A**



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**48.** Interfascicular cambium is

- A. Primary meristematic tissue
- B. Primordial meristem
- C. Type of protoderm
- D. Secondary meristematic tissue

**Answer: D**



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**49.** Cork cambium gives rise to which of the following tissue

A. Cork and secondary cortex

B. Vascular cambium

C. Xylem and phloem

D. All of the above

**Answer: A**



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50. The arrangement of xylem in stem is

A. Endarch

B. Exarch

C. Mesarch

D. Both (a) and (b)

**Answer: A**



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51. The cork cambium, cork and secondary cortex are collectively, called

A. Phelloderm

B. Phellogen

C. Periderm

D. Phellem

**Answer: C**



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52. Anatomically fairly old dicotyledonous root is distinguished from the dicotyledonous stem by

- A. Absence of secondary xylem
- B. Possessing lenticel
- C. Possessing protoxylem
- D. Absence of secondary phloem

**Answer: B**



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53. Quiescent centre occurs at the centre of:

A. Root

B. Root apex

C. shoot

D. Shoot apex

**Answer: B**



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54. Vascular cambium and cork cambium are

- A. Apical meristem
- B. Intercalary meristem
- C. Lateral meristem
- D. Primary meristem

**Answer: C**



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**55. Jute of commerce is obtained from**

- A. Primary xylem

B. Primary phloem

C. Secondary xylem

D. Secondary phloem

**Answer: D**



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**56.** Dead torn cells of root cap are replaced by the activity of

A. Dermatogen

B. Periblem

C. Plerome

D. Calyptrogen

**Answer: A**



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**57. Which is a secondary body?**

A. Stoma

B. Lenticel



C. Hydathode

D. Cuticle

**Answer: B**



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**58.** In monocot root vascular bundle is

A. Tetrarch and exarch

B. Tetrarch and endarch

C. Polyarch and exarch

D. Polyarch and endarch

**Answer: C**



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**59.** A monocot root differs from a dicot root by the presence of

- A. Exodermis
- B. piliferous layer
- C. Exarch xylem

D. Large pith

**Answer: D**



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**60.** Which is a dead tissue ?

A. Companion cell

B. Phloem-fibre

C. Sieve tube

D. Phloem parenchyma

**Answer: B**



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**61.** Four radial vascular bundles are seen in

- A. Dicot stem
- B. Monocot stem
- C. Dicot root
- D. Monocot root

**Answer: C**



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62. Usually hypodermis is sclerenchymatous in:

- A. Dicot stem
- B. Monocot stem
- C. Dicot root
- D. Monocot root

**Answer: B**



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**63.** Cork cells have a deposition of :

A. Lignin

B. Suberin

C. Cutin

D. pectin

**Answer: B**



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**64.** Which tissue is produced towards the periphery of vascular cambium during secondary growth ?

- A. Primary xylem
- B. Primary phloem
- C. Secondary xylem
- D. Secondary phloem

**Answer: D**



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65. Thin walled rounded cells in the endodermis are called as

- A. passage cells
- B. passive cells
- C. casparian cells
- D. Starch sheath cells

**Answer: A**



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66. Calyptrogen gives rise to

A. Calypta

B. Coleoptile

C. Root

D. Root cell

**Answer: D**



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67. Wound healing in plants takes place by

- A. Apical meristem
- B. Lateral meristem
- C. Secondary meristem
- D. Intercalary meristem

**Answer: C**



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**68.** Tunica and corpus are constituents of

- A. Shoot apex

B. Root apex

C. Leaf apex

D. All of these

**Answer: A**



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**69.** Intercalary meristem helps in \_\_\_\_growth

bundles are found in :

A. Internal

B. Longitudinal

C. Dicot root

D. Dicot stem

**Answer: B**



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**70.** Conjoint and closed vascular bundles with no phloem parenchyma may be observed in

A. Monocot root

B. Monocot stem

C. Dicot root

D. Dicot stem

**Answer: B**



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71. Living cells providing mechanical and tensile strength are :

A. Parenchyma

B. Chlorenchyma

C. Collenchyma

D. Sclerenchyma

**Answer: C**



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**72. Vessels of heartwood are blocked by:**

A. Minerals

B. Cellulose

C. Middle lamella

D. Tyloses

**Answer: D**



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**73. Xylem in root is:**

A. Endarch

B. Exarch

C. Mesarch

D. Monarch

**Answer: B**



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**74.** Growth rings are formed due to activity of

- A. Primary xylem
- B. Primary phloem
- C. Secondary xylem
- D. Secondary xylem and phloem



**Answer: C**



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**75.** In old dicot stems a major part of the wood is filled up with tannins, resins, gums, etc. This part is called

A. Heartwood

B. Sapwood

C. Hardwood

D. Softwood

**Answer: A**



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**76. Bordered pits are found in:**

- A. Phloem
- B. Protoxylem
- C. Metaxylem
- D. Sclerenchyma

**Answer: C**



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77. Growth rings are formed due to activity of

- A. Primary cambium
- B. Intrastelar cambium
- C. Extrastelar cambium
- D. Fascicular cambium

**Answer: B**



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78. \_\_\_\_\_ is a living mechanical tissue



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79. The substance mainly deposited at the corners of collenchymatous cell is \_\_\_\_\_



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80. Outer layer of secondary xylem is called

\_\_\_\_\_



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**81.** Innermost layer of the cortex is the \_\_\_\_\_



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**82.** Cork cambium in the dicot root is derived from \_\_\_\_\_



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**83.** Distinct annual rings are seen in plants growing in \_\_\_\_\_ regions



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**84.** \_\_\_\_\_ component of phloem is absent in monocot stem



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**85.** Mesophyll is heterogeneous in \_\_\_\_\_ leaves



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**86.** Multiple epidermis in roots of aerial orchids for the purpose of absorption of moisture is called \_\_\_\_\_



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**87.** A concentric vascular bundle where phloem surrounds the xylem is called \_\_\_\_\_



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**88.** The alternative name for cork cambium is \_\_\_\_\_



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**89.** Lateral roots originate from:



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**90.** The arrangement of vascular bundles in a dicot root is:



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**91.** In isobilateral leaves the phloem is present facing the \_\_\_\_\_ epidermis

A. Lower

B. Upper

C. Middle

D. Lateral

**Answer: Lower**



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**92.** Extrastelar secondary growth in stems is due to the activity of \_\_\_\_\_



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93. Mass of n-walled cells present below the lenticels are \_\_\_\_\_ cells



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94. Stomata belong to \_\_\_\_\_ tissue system



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95. \_\_\_\_\_ cells are commonly found in monocots for rolling of leaves



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96. \_\_\_\_\_ is the outer boundary of stelar zone



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97. Wood is common name for \_\_\_\_\_ tissue



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**98.** The substance mainly deposited at the corners of collenchymatous cell is \_\_\_\_\_



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**99.** Glands responsible for fragrance of flowers are called \_\_\_\_\_



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**100.** Mesophyll is heterogeneous in \_\_\_\_\_ leaves



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**101.** A concentric vascular bundle where phloem surrounds the xylem is called \_\_\_\_\_



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**102.** Bicollateral vascular bundles are found in \_\_\_\_\_ stem



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**103.** Sclereid with bone-like broad ends are called \_\_\_\_\_.



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**104.** Water excreting structures present at the tip of margins of certain leaves are



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**105.** A condition of xylem where protoxylem lies towards the centre.



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**106.** Name the aerating pores present on the surface of woody stems.



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**107.** Condition where phloem and xylem occur on the same radius in a vascular bundle.



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**108.** The total product of extrastelar secondary growth in dicot stem.



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**109.** Outer layer of secondary xylem is called

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**110.** Plant cell with ergastic substances



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**111.** The epidermal outgrowths are known as

A. Stomata

B. Leaves

C. Trichomes

D. Flower buds

**Answer: Trichome**



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**112.** Determination of age of plants by calculating annual rings



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**113.** What is promeristem ?

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**114.** Meristems formed from primary permanent tissue by rejuvenation are called?

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**115.** Tunica corpus theory was proposed by



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**116.** Who proposed the Histogen theory ?



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**117.** What are parenchyma containing chlorophyll called?



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**118.** What are the two types of cells of sclerenchyma ?



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**119.** Which cells provide grittiness in the pulp of fruits?



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**120.** Nucleus of which cell controls the metabolic activity of sieve tube?



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**121.** Epithem cells are associated with which process?

A. '

B.

C.

D.

**Answer: Guttation**



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**122.** What are the two types of secretory tissues ?



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**123.** Velamen belongs to which tissue system ?





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**124.** What is the main function of bulliform cells ?



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**125.** What are trichomes ?



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**126.** Hypodermis, general cortex and endodermis constitute?



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**127.** In stem cuttings the adventitious roots develop from which tissue ?



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**128.** What are two types of conjoint vascular bundles?



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**129.** Distinct annual rings are seen in plants growing in \_\_\_\_\_ regions



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**130.** WRITE SHORT NOTES ON : Sclerenchyma



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**131. WRITE SHORT NOTES ON: Cambium**



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**132. WRITE SHORT NOTES ON : Tracheid**



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**133. WRITE SHORT NOTES ON : Companion cell**



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**134.** WRITE SHORT NOTES ON : Mechanical tissue



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**135.** Bicollateral vascular bundles are. found in\_\_\_\_\_stem



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**136. WRITE SHORT NOTES ON : Annual ring**



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**137. WRITE SHORT NOTES ON : Secondary growth in roots**



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**138. WRITE SHORT NOTES ON : Meristem**



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**139. WRITE SHORT NOTES ON : Parenchyma**



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**140. WRITE SHORT NOTES ON : Collenchyma**



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**141. WRITE SHORT NOTES ON : Xylem**



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**142. WRITE SHORT NOTES ON : Phloem**



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**143. WRITE SHORT NOTES ON : Cork**



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**144. WRITE SHORT NOTES ON : Mesophyll**



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**145. DISTINGUISH BETWEEN :** Meristematic tissue and permanent tissue



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**146. DISTINGUISH BETWEEN :** Simple tissue and complex tissue



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**147. DISTINGUISH BETWEEN :** Pallisade parenchyma and spongy parenchyma



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**148. DISTINGUISH BETWEEN :** Xylem and phloem



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**149. DISTINGUISH BETWEEN :** Tracheids and vessels



**Watch Video Solution**

**150. DISTINGUISH BETWEEN :** Collateral and bicollateral vascular bundles



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**151. DISTINGUISH BETWEEN :** Dicot and monocot stem anatomy



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**152. DISTINGUISH BETWEEN :** Interfascicular and intrafascicular cambium



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**153. DISTINGUISH BETWEEN :** Primary and secondary xylem



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**154. DISTINGUISH BETWEEN :** Vascular and cork cambium



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**155. DISTINGUISH BETWEEN :** Heartwood and sapwood



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**156. DISTINGUISH BETWEEN :** Collenchyma and sclerenchyma



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**157. DISTINGUISH BETWEEN :** Meristematic tissue and permanent tissue



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**158.** How many types of permanent tissues are there ? Discuss the structure and function of complex tissues.?



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**159.** Describe briefly the secondary growth in a dicot stem ?



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**160.** Describe briefly the secondary growth in a dicot stem ?



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