



BIOLOGY

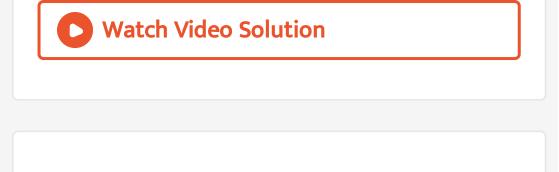
BOOKS - PEARSON IIT JEE FOUNDATION

TISSUES

Quick Recap

1. Explain the mechanism of functioning of

stomata?



2. Monocots do not show the secondary formation of tissues such as wood and cork. Why?



3. Explain the role of muscles in body movements.



4. Explain the role of platelets in the clotting of blood.



5. Structural and functional units of nervous

system are neurons/nephron.

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Test Your Concepts Fill In The Blanks

1. The process of taking up permanent shape,

size and function by tissues is known as _____

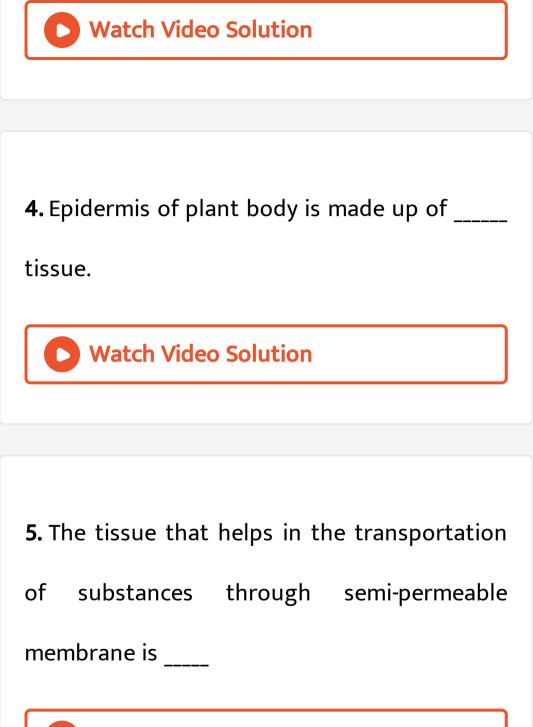


2. Girth of stem increases due to

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3. Large pores present on the bark which help

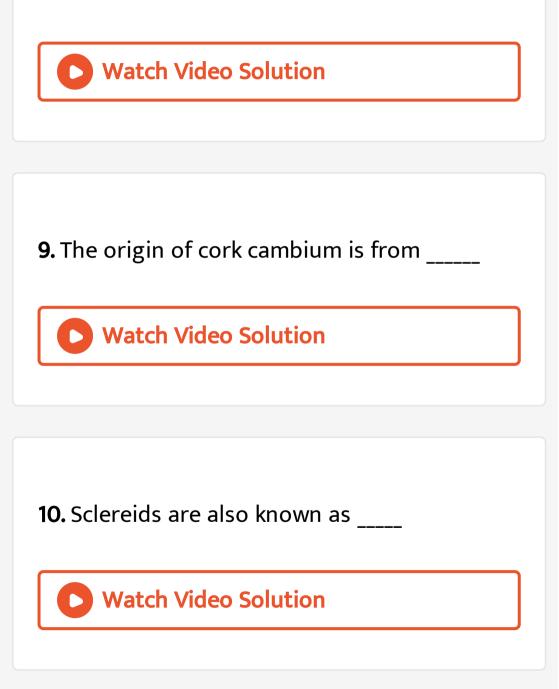
in aeration of plants are _____



6. The leaf bases of onion contain ______tissues.

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7. Phloem is a complex tissue for of		
organic substances.		
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8. Function of companion cells is



11. In plants _____ is a dead mechanical

tissue.

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12. Single-layered cells present in the outer

layer as surface tissue in plants is _____

13. Minute openings present on undersurface

of leaves are known as _____

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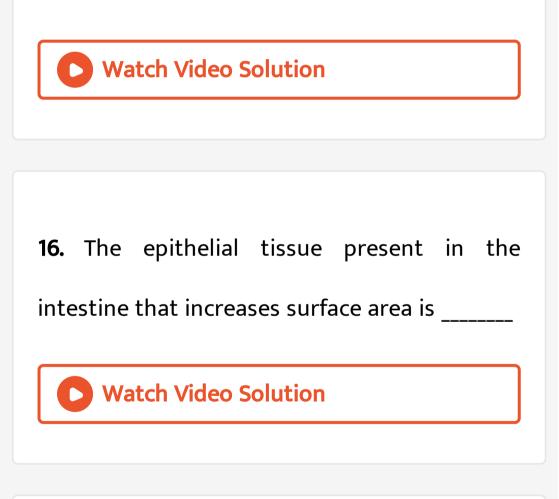
14. Write the adaptation in aquatic plants due

to which

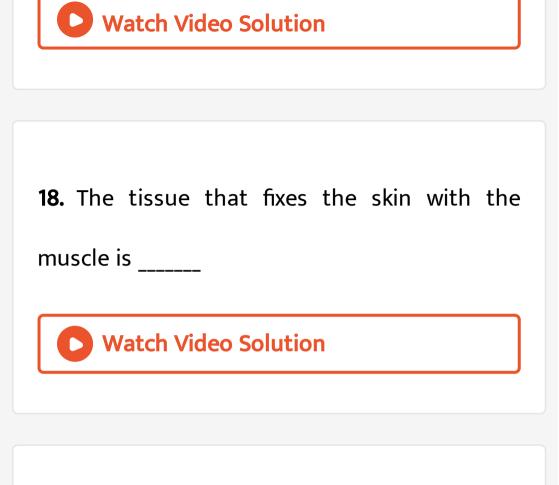
leaves can float on the surface of water.

15. Name the tissue which provides mechanical

strength to the plant organs.



17. Alveoli of lungs are lined by



19. Type of cartilage present in epiglottis is



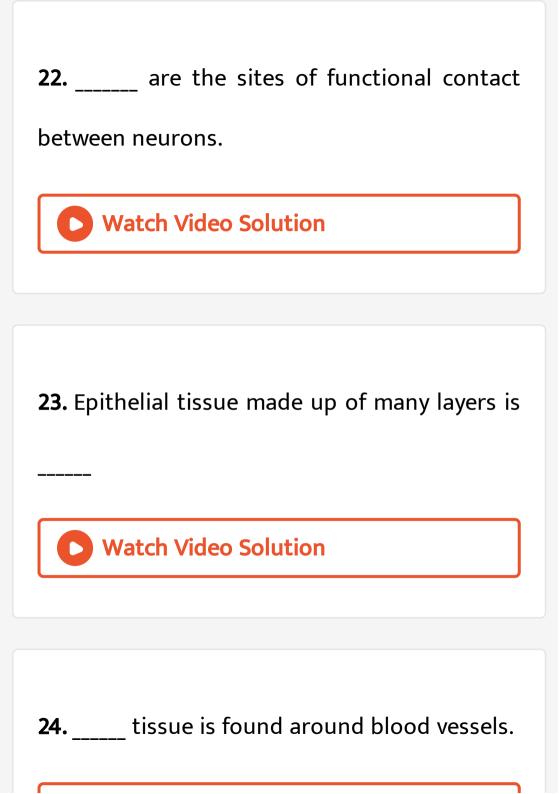
20. Presence of _____ discs is the characteristic

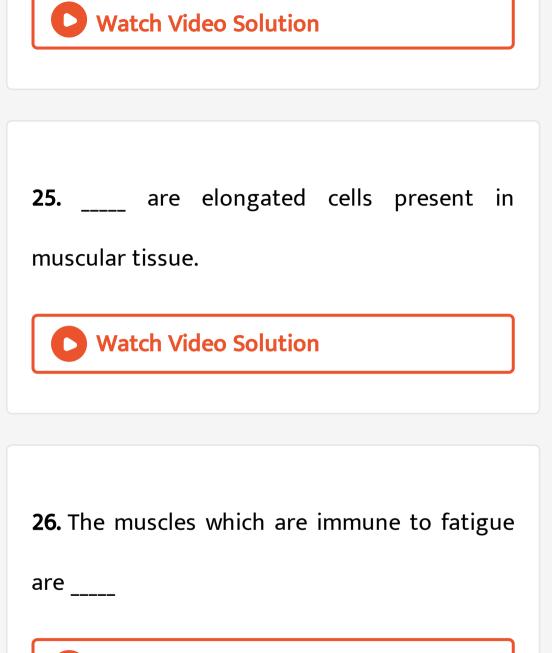
feature of cardiac muscle.

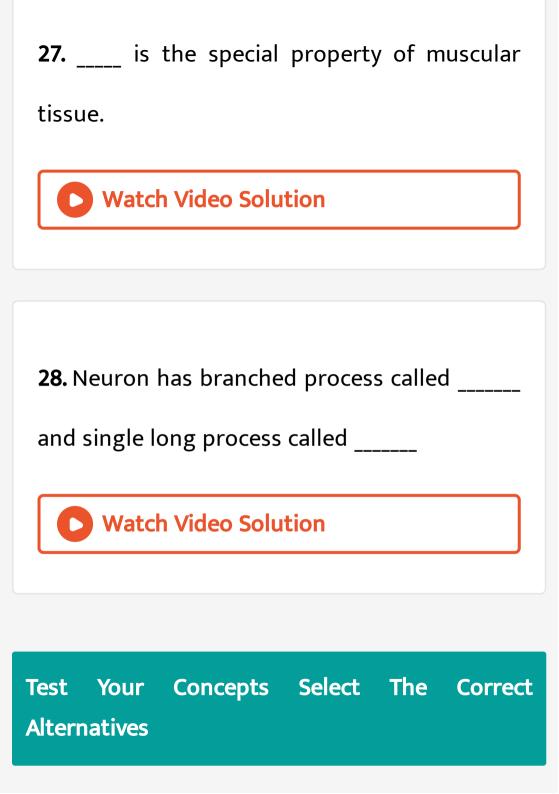
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21. The muscles showing slow and prolonged

contractions are _____







1. Identify the growth that occurs by the activity of intercalary meristems.

A. Growth in width

B. Growth in girth

C. Linear growth

D. All of these

Answer: C

2. All the cells of young embryo are:

A. cork cells

B. collenchymatous

C. meristematic

D. sclerenchymatous

Answer: D

3. The connective tissue in which the matrix is

not secreted by its component cells is

A. Lymph

B. Bone

C. Blood

D. Ligament

Answer: C

4. Identify the epithelial tissue found in

respiratory tract.

A. Cuboidal

- B. Ciliated columnar
- C. Squamous
- D. Glandular

Answer: B

5. Identify the tissue that fills space inside the

organs and supports internal organs.

A. Adipose tissue

B. Muscular tissue

C. Areolar tissue

D. Blood

Answer: C

6. Identify the tissue which is strong and non-flexible.

A. Cartilage

B. Bone

C. Tendon

D. Muscle

Answer: B

7. The tissue that attaches the eye balls to the

bones is _____

A. cartilage

B. tendons

C. ligaments

D. nerves

Answer: B

8. A person met with an accident in which two long bones of hand were dislocated. Which among the following may be the possible reason ?

A. Tendons

B. Skeletal muscles

C. Ligaments

D. Areolar tissue

Answer: C

9. The space between the muscle cell and nerve terminal is called _____

A. tendon junction

B. cartilage junction

C. neuromuscular junction

D. ligament junction

Answer: C

10. White fibrous connective tissue which can with stand stretch from several directions is found in _____

A. tendons

B. trachea

C. valves of heart

D. nasal septum

Answer: A

11. Identify the white blood cells which increase during allergy.

A. Monocytes

B. Platelets

C. Neutrophils

D. Eosinophils

Answer: D

12. The tissues present in tendons are _____

A. striated voluntary muscle

B. smooth and striated muscle

C. cardiac and smooth muscle

D. smooth and involuntary muscle

Answer: A

13. Skeletal muscles show which of the following characteristics.(i) richly vascular(ii) striped

(iii) voluntary

(iv) spindle shaped

A. (i),(iii)

B. (ii),(iii)

C. (i),(iv)

D. (i),(ii) and (iii)

Answer: D



- 14. Glial cells in nervous tissue help in
- (i) Support
- (ii) Conducting impulses
- (iii) Nourishment
- (iv) Multiplication
 - A. (i),(ii)
 - B. (ii),(iii)

C. (i),(iii)

D. (ii),(iv)

Answer: C



15. Identify the functions of blood from the following.

- (i) Transportation of nutrients
- (ii) Regulation of body temperature

(iii) Exchange of gases

(iv) Protection against infections

A. (i),(iv)

B. (ii),(iii)

C. (iii),(iv)

D. (i),(ii) , (iii),(iv)

Answer: D



16. Which type of connective tissue is present

in blubber of whale and hump of camel ?

A. Areolar tissue

B. Cartilage tissue

C. Epithelial tissue

D. Adipose tissue

Answer: D

17. Identify the correct combination from the

following table .

Type of cartilage	Nature of matrix	Location
(i) Fibrous cartilage	Contain more collagen fibres	Inter-vertebral discs
(ii) Hyaline cartilage	Contain elastic fibres	Tip of nose
(iii) Elastic cartilage	Contain both collagen and elastin fibres	Epiglottis
(iv) Calcified cartilage	Contain megakaryocytes	Pinna of the ear

A. (i) and (iii)

B. (ii) and (iv)

C. (iii) and (iv)

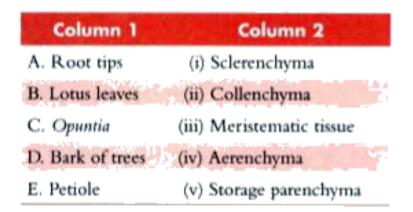
D. (i) and (iv)

Answer: A



1. Match the entries of Column 1 with those of

Column 2.



2. Match the entries of Column 1 with those of

Column 2.

Column 1	Column 2
A. Adipose tissue	(i) Connects bone to bone
B. Glandular epithelium	(ii) Acts as cable wires
C. Tendon	(iii) Secretory
D. Striped muscle	(iv) Connects bone to muscle
E. Axon	(v) Acts as insulator
F. Ligament	(vi) Voluntary
	(vi) Involuntary

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Mastering The Concepts Knowledge And Understanding **1.** Name the tissue associated with the following plant products or parts.

Jute



2. Name the tissue associated with the

following plant products or parts.

Rose wood

3. Name the tissue associated with the following plant products or parts.Hard shells of fruits



4. Name the tissue associated with the following plant products or parts.

Cork

5. What is the utility of tissues in multicellular

organisms?



6. Give differences between meristematic

tissue and permanent tissue.

7. Explain the cells responsible for conduction

of food to various parts of the plant.



8. Write a note on the tissue system which

forms the main bulk of the plant body?

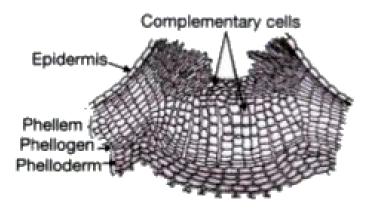


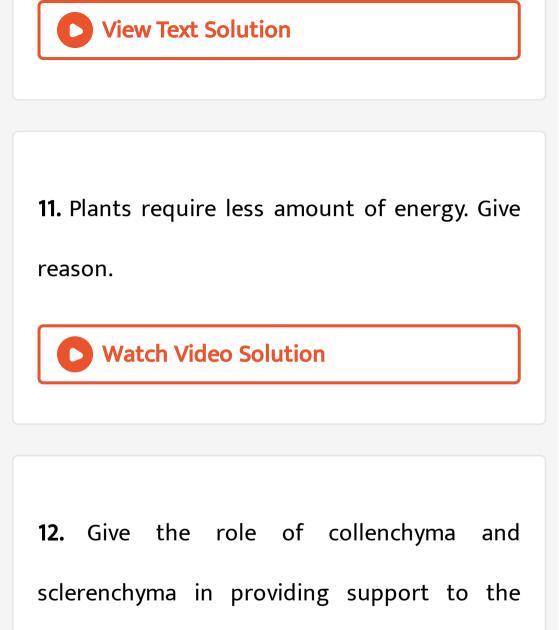
9. What change do you notice in plant if the

stem tip is cut?

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10. Identify the figure given below and mention how these parts are useful to the plants.





plant.



13. Give the organizational hierarchy in higher animals.

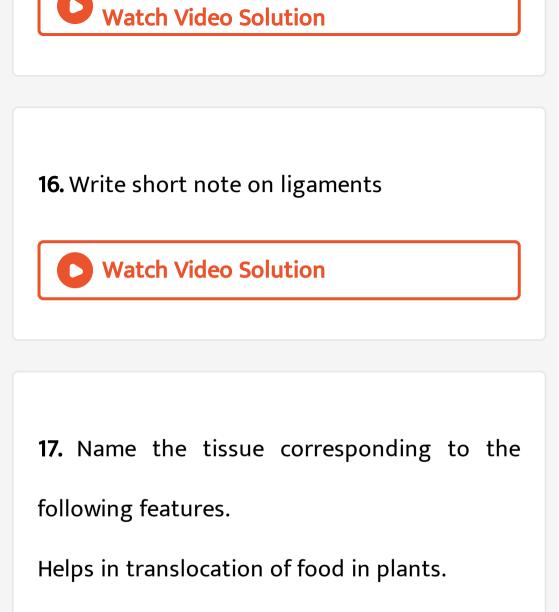


14. What is bone marrow? Give it functions.

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15. Write short note on tendons





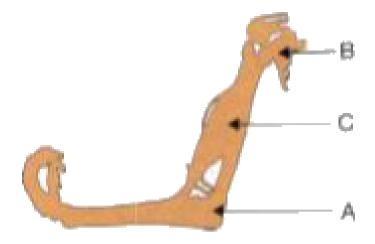
18. Name the tissue corresponding to the

following features.

Aids in transportation of hormones

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19. Observe the following figure and answer the questions.



- (a) Identify and label the parts A, B and C.
- (b) Give the functions of A.
- (c) Write a note on functions of B.



20. What happens to the bone material if the

bones are heated at high temperature?

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21. A bone is crushed to fine powder and put in

concentrated hydrochloric acid. How does this

affect the composition of bone?

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22. Mention any four parts in human body

which are made up of cartilage.

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23. Differentiate between simple tissue and complex tissue in animals. Write a note on the types of epithelial tissue and mention their location and function.

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24. What is the role of areolar and adipose

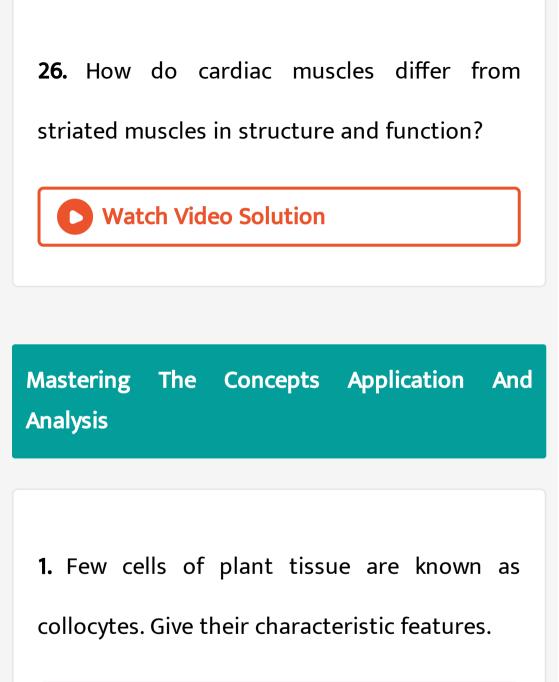
tissues in human beings?



25. Mention differences between cartilage and

bone.





2. What happens when the tree gets injured?

Name the structures responsible for that.



3. Why thickness of the stem increases as age

advances in dicot plants?



4. Why heartwood is considered more durable

than the sapwood?

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5. Sieve tubes do not have nuclei, why are they

considered as living cells?

6. Cuticle is absent on epidermis of roots. Give

reason.

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7. Vascular tissue is responsible for survival of

plants in terrestrial conditions.

8. Epidermal cells secrete thick and waxy layer

in cactus. Why?

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9. Comment on the following statement.

One of the characteristic features of plant cell

is the presence of vacuoles. But vacuoles are

absent in meristematic cells.

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10. Why are the surfaces of woody plants

impermeable to water and gases?



11. Young stems (twigs) bend but do not break.

Why?

12. Why are inte-rvertebral discs considered to

be the strongest form of cartilages?

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13. Mention the type of adipose tissue found in infants. How does it differ from adipose tissue of adults?

14. Why is spleen known as hematopoietic and

haemolytic tissue?

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15. Why do wrinkles appear on the skin with growing age?

16. Can a person survive if blood is completely

drained out from the body? Discuss.

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17. In old people knees make a bit crunching sound when they change their posture from sitting position to standing position. Why does this happen?

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18. Why does our skin shiver during winter?



19. There are 270 bones in the human body at the time of birth. Does this remain same in adult stage? Justify that.

20. Why do we sweat when we do physical exercise?

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21. Clusters of egg cells are not considered as

tissue. Give reason.



22. Epithelial tissue in animals is non-vascular

but permeable. Give reason.

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23. Thin people feel colder than fat ones. Give

reason.



24. Blood is known as fluid connective tissue.

Give reason.





contractions. Why?



26. Mitochondria are abundant in neurons.

Give reason.

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27. Bones become more and more fragile in

old age. Justify.

28. Camels can remain alive without food for

many days. Give reason.

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29. When we fall sick for a long period of time,

we become thin. Give reason.

30. When we do strenuous and unusual physical activity, we are likely to get inflammation in some body parts. Comment.



31. The bones are harder and stronger than

cartilage. Give reason.



32. The body of a baby is soft and becomes

harder as the baby grows. Justify.

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33. Plants have larger proportion of dead

tissue than animals. Justify this statement.

34. Why does your ankle swell up when it is

sprained?

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Mastering The Concepts Assertions And Reasons

 Assertion (A): Lateral meristems help in secondary growth of the plant body.
 Reason (R): Lateral meristems divide mostly anti-clinally and increase the thickness of plant

organs.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

B. Both Assertion and Reason are true, but Reason is not the correct explanation for

Assertion.

C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:



2. Assertion (A): Parenchyma is responsible for wound healing regeneration and grafting in plants.

Reason (R): Parenchyma can become a meristem by differentiation and produce new cells.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

- B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion.
- C. Assertion is true and Reason is false.
- D. Assertion is false and Reason is true.

Answer:



3. Assertion (A): Aerenchyma is the chief anatomical adaptation of hydrophytes.

Reason (R): Aerenchyma helps the plant in the exchange of gases and gives buoyancy.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but

Reason is not the correct explanation for

Assertion.

C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:

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4. Assertion (A): Young stems and petioles of dicots bend but do not break.

Reason (R): Parenchymatous tissue containing

chlorophyll and undergo photosynthesis is chlorenchyma.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

B. Both Assertion and Reason are true, but Reason is not the correct explanation for

Assertion.

C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:



5. Assertion (A): Young stems and petioles of dicots bend but do not break.
Reason (R): Sclerenchymatous tissue gives mechanical strength and rigidity to the plant.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but

Reason is not the correct explanation for

Assertion.

C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:

6. Assertion (A): Guttation occurs throughout the day in plants.

Reason (R): Stomata have guard cells which

open and close and help in transpiration.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion. C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:



7. Assertion (A): Complex tissues are made up

of more than one type of cells.

Reason (R): Vascular tissues in plants are a type of complex tissues.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

- B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion.
- C. Assertion is true and Reason is false.
- D. Assertion is false and Reason is true.

Answer:



8. Assertion (A): Outgrowths of parenchymatous cells on xylem vessels are known as tyloses.

Reason (R): Tyloses are selectively permeable to water and nutrients.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but

Reason is not the correct explanation for

Assertion.

C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:

9. Assertion (A): Tyloses are considered as vascular plugs of plants.

Reason (R): They block the lumen of old and injured vessels.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion. C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:



10. Assertion (A): Seive tubes are made up of

sieve plates that help in conduction.

Reason (R): Phloem parenchyma gives mechanical support.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

- B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion.
- C. Assertion is true and Reason is false.
- D. Assertion is false and Reason is true.

Answer:



11. Assertion (A): Lymph acts as a middle man between blood and tissue fluid.

Reason (R): Lymph is a colourless fluid.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but Reason is not the correct explanation for

Assertion.

C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:

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12. Assertion (A): Areolar tissue supports internal organs and helps in tissue repair.Reason (R): Areolar tissue is the most widely distributed tissue in the body of adults.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

- B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion.
- C. Assertion is true and Reason is false.
- D. Assertion is false and Reason is true.

Answer:



13. Assertion (A): External ear lobe shows high degree of flexibility.

Reason (R): Ear is made up of fibrous cartilage.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion. C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:



14. Assertion (A): Hyaline cartilage is the weakest of all types of cartilages.Reason (R): Very thin collagen fibres are present in matrix of hyaline cartilage.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

- B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion.
- C. Assertion is true and Reason is false.
- D. Assertion is false and Reason is true.

Answer:

15. Assertion (A): Skeletal muscles show rhythmic contractions and relaxations.

Reason (R): Cardiac muscles are skeletal muscles which are voluntary in function.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but

Reason is not the correct explanation for

Assertion.

C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:

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16. Assertion (A): The main body of neuron is called dendron.

Reason (R): Cell body of a neuron does not

contain nucleus.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

- B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion.
- C. Assertion is true and Reason is false.
- D. Assertion is false and Reason is true.

Answer:

17. Assertion (A): Epithelial tissue lining the urinary bladder is transitional epithelium.
Reason (R): Transitional epithelium helps in changing the size of the bladder accordingly.

A. Both Assertion and Reason are true and

Reason is the correct explanation for

Assertion.

B. Both Assertion and Reason are true, but

Reason is not the correct explanation for

Assertion.

C. Assertion is true and Reason is false.

D. Assertion is false and Reason is true.

Answer:

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18. Assertion (A): Blood is known as fluid connective tissue.

Reason (R): Blood cells are formed in bone

marrow.

A. Both Assertion and Reason are true and

Reason is the correct explanation for Assertion.

- B. Both Assertion and Reason are true, but Reason is not the correct explanation for Assertion.
- C. Assertion is true and Reason is false.
- D. Assertion is false and Reason is true.

Answer:

Assessment Tests Select The Correct Alternatives

1. Meristamatic tissue is absent at the tips of

A. roots

B. stem

C. leaves

D. branches

Answer:





2. The tissue having high water holding capacity is:

A. chlorenchyma

B. collenchyma

C. fibres

D. tracheids

Answer:

3. Identify the vascular tissue mostly made up of dead cells.

A. Chlorenchyma

B. Xylem

C. Parenchyma

D. Phloem parenchyma

Answer:

4. Areolar connective tissue connects:

A. bone with bone

B. bone with muscle

C. fat with muscle

D. integument with muscle

Answer:

5. Trachea is made up of _____ tissue.

A. bone

B. muscle

C. cartilage

D. adipose

Answer:

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Assessment Tests Matching

1. Match the entries of Column 1 with those of

Column 2.

Co	Column 1		Column 2	
A.	Fluid connective tissue	(i)	Skeletal muscle	
B.	Filling of space inside organs	(ii)	Cartilage	
Ċ,	Striated muscle	(iii)	Blood	
D.	Adipose tissue	(iv)	Areolar tissue	
E.	Surface of joints	(v)	Sub-cutaneous tissue	

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Assessment Tests True Or False

1. Meristematic tissues are formed from

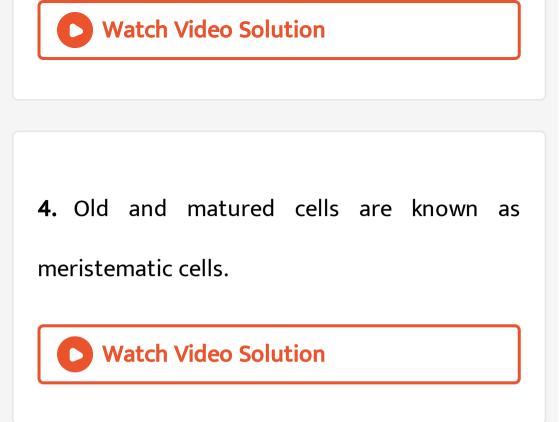
permanent tissues.



2. Meristematic cells are present in bark region.

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3. Apical meristems help in increasing the girth of the plant.



5. In tender plants, the turgid sclerenchyma

gives mechanical support.

6. The tissue having large air cavities and helps

in buoyancy is chlorenchyma.



7. Xylem parenchyma helps in storage of organic food materials such as resins and latex.

8. Vascular tissue contains parenchyma and collenchyma.
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9. Sclerenchyma consists of actively dividing

cells which help in growth.



10. Epithelial cells are supplied with blood vessels.

11. Xylem helps in the conduction of food material from roots to leaves.



12. Minute openings present in the epidermis

of leaves are called cork cells.

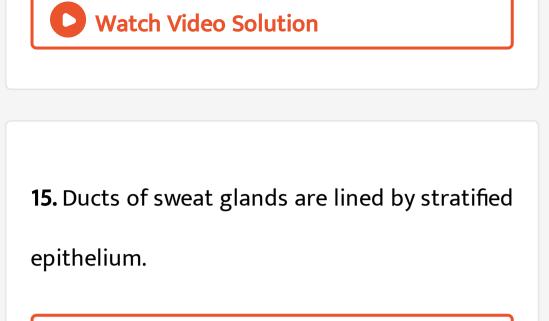


13. Nails, horns, claws and hoofs are developed

from bone.



14. Red blood cells help in clotting of blood.



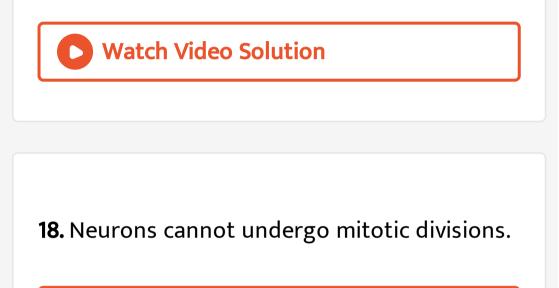
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16. The interstitial fluid that passes through

the lymphatic vessels is lymph.

17. During secondary growth, periderm is

produced by the activity of phellogen.





Assessment Tests Missing Correlated Terms

Meristematic tissue: ____ : : vascular tissue :

conduction



2. Write the missing correlated terms.

Apical meristems : root tips :: ____ : cambium



Undifferentiated cells : _____ : : differentiated

cells: permanent



4. Write the missing correlated terms.

Photosynthesis : chlorenchyma ::

aerenchyma

Stomata : transpiration :: Sieve tubes : ____

|--|

6. Write the missing correlated terms.

Adipose : insulator :: Areolar : _____

Cartilage : trachea : : _____ : tongue

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8. Write the missing correlated terms.

Bone : skeletal tissue : : Lymph : ____

Flesh : _____ :: Trachea : cartilage

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10. Write the missing correlated terms.

Muscular tissue: ____ :: Nervous tissue:

sensory

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Assessment Tests

Cellulose, lignin, pectin, collagen



2. Indicate the odd one from the following.

Parenchyma, chlorenchyma, collenchyma, cork

Carrot, beetroot, Opuntia, radish.



4. Indicate the odd one from the following.

Sieve tubes, tracheids, vessels, xylem fibres



Trachea, pinna of ear, tip of nose, skull

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6. Indicate the odd one from the following.

Brain, spinal cord, neurons, tendons

Cyton, tendon, axon, dendrites