BIOLOGY

BOOKS - CENGAGE BIOLOGY

TISSUES

Question

1. Who am I ?

My name has been given the 'father of plant anatomy'

I form the framework of all plant organs.

I also help in the conduction of food substances in the liquid form.

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2. Describe the role of each tissue system in a leaf .

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3. Describe how the epithelial tissue that lines the stomach lumen is well suited to its function.

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4. How are muscles and nervous tissues interdependent ?

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Mandatory Exercise Exercise Set I

1. Which of the following is enucleate at maturity?

A. Palisade cell

B. Companion cell

C. Cortical cell

D. Sieve tube element

Answer: D

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2. Secondary growth helps in increasing the _____of the roots and stems.

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3. Companion cells are specialised parenchyma cells which are closely associated with the _____ elements.

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4. Differentiate between sapwood and heartwood.

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5. Make corrections wherever you find mistake in spellings/words in the following paragraph/sentences: Phloem is made up of four kinds of elements - sieve elements, tracheids, bast fibres, and prosenchyma.

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6. Make corrections wherever you find mistake in spellings/words in the following paragraph/sentences: Schlieden is called the 'father of plant anatomy He coined the term 'tissue'

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7. Assertion. Sieve tube members have abundant cytoplasm but there is no nucleus.

Reason. Nucleus is present in companion cell.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion

C. If Assertion is true but Reason is false

D. If both Assertion and Reason are false.

Answer: B

8. The cross section of a trunk of a tree show's 50 annual rings. The age of tree is

A. 50 years

B. 50 months

C. 100 years

D. 25 years

Answer: A

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9. Mention the regions of the plant body where the following tissues are formed:

Parenchyma : _____

10. Mention the regions of the plant body where the following tissues are formed:

Collenchyma : _____

11. Mention the regions of the plant body where the following tissues are formed:

Sclerenchyma : _____

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12. Name the main components of xylem. Which of these is most suitable for carrying water?

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13. State True or False: Primary growth in a stem is due to the activity of apical meristem.

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14. State True or False: Prosenchyma consists of parenchyma cells that contain chloroplasts and carry out photosynthesis in plants.

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15. State True or False: Phloem fibres are also known as bast fibres.

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16. State True or False: Each stoma is surrounded by a pair of kidney-shaped cells called accessory cells.

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17. _____ is found at the centre of a tree trunk.

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18. Where are guard cells typically found?

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19. The opening between two guard cells is called a _____

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20. Stomata function in _____

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21. Complete the table which relates the structure of some plant tissues to their functions.

Tissue/Cell	Feature	Function
Parenchyma	Thin cell walls	_____
	Angular thickening of cellulose and pectin	_____

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22. Mention five characteristics of meristematic tissues.

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Mandatory Exercise Exercise Set Ii

1. There are _____ types of tissues. Match the following forms in column A with some of

their main functions in column B.

A	B
(i) Epithelium	(p) Electrical transport
(ii) Connective tissue	(q) Liner
(iii) Muscle tissue	(r) Support, padding, chemical transport
(iv) Nervous tissue	(s) Motion

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2. Name the plant from which commercial cork is obtained.

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3. Which of the components of phloem is non-living?

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4. Name the conductivity elements of xylem.

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5. Name two lateral meristem which help in secondary growth of stem and root.

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6. Who is the father of histology?

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7. Which type of blood cell is similar to mast cells of connective tissue in producing heparin, histamine and serotonin?

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8. What is a tendon?

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9. Which part of bone is specialized to form blood cell?

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10. Which type of tissue forms glands?

Watch Video Solution

11. Which type of tissue forms the inner lining of a blood vessel?

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12. Write true or false

Epithelial tissue is a protective tissue in animal body.

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13. Write true or false

The lining of blood vessels, lung alveoli and kidney tubules are all made up of epithelial tissue.

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14. Write true or false

Epithelial cells have a lot of intercellular spaces.

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15. Write true or false

Epithelial layer does not allow regulation of materials between body and external environment.

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16. Write true or false

Phloem helps in food transport in plant.

Watch Video Solution

17. Write true or false

Xylem and phloem together form a vascular bundle.

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18. Write true or false

Meristematic tissues do not have the capacity to divide.

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19. Write true or false

Cambium has the apical meristem.

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20. Write true or false

Cardiac muscles undergo rhythmic contraction and relaxation throughout life.

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21. Water and minerals are conducted by _____

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22. Vascular tissue, xylem and phloem are examples of _____ tissues.

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23. Chlorenchyma tissues perform the function of _____

Watch Video Solution

24. Cork cambium is purely a _____

Watch Video Solution

25. Permanent tissues are derived from _____

Watch Video Solution

26. Cartilage cells are called _____ and bone cells are called _____

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27. Blood is a _____ tissue.

Watch Video Solution

28. A ligament attaches a _____ to _____

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29. Neuron receive impulses through _____ and pass them on to the next neuron through _____

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30. Matrix of cartilage contains ____ and of bone _____ protein.

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31. Match the Column A with Column B .

Column A		Column B	
1.	Aerenchyma	A.	Thin walled packing cell
2.	Collenchyma	B.	Carbon fixation
3.	Parenchyma	C.	Localised thickening
4.	Permanent Tissue	D.	Buoyancy
5.	Photosynthesis	E.	Sclerenchyma
6.	Stratified squamous epithelium	F.	Subcutaneous layer
7.	Stratified muscle	G.	Cartilage
8.	Fluid connective tissue	H.	Skeletal muscle
9.	Adipose tissue	I.	Blood
10.	Surface of joints	J.	Skin

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32. Assertion : All tissues lying inside vascular cambium are called as bark.

Reason : Bark is made up of phellogen, phellem and phelloderm lying inside secondary phloem.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: D

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33. Assertion : Permanent tissue is composed of mature cells.

Reason : Meristematic tissue is a group of actively dividing cells.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: B

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34. Assertion : Apical and intercalary meristems contribute to the growth in length, while the lateral meristems bring increase in girth in maize.

Reason : Apical and intercalary meristems always increase the height of plants.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: B

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35. Assertion : In collateral vascular bundles phloem is situated toward inner side.

Reason : In monocot stem, cambium is present

.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: D

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36. Assertion: In dicot stem, the vascular bundles are open.

Reason: Cambium is present between xylem and phloem of vascular bundle in dicot stem.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: A

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37. Assertion: Exocrine gland are without ducts secrete hormones passing directly to blood.

Reason: Endocrine glands are with duct.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: D

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38. Assertion: Every living organism is not multicellular.

Reason: Few multicellular organism do not have tissue.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: B

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39. Assertion: Node of Ranvier occur in myelin nerve fibre.

Reason: Myelin sheath is discontinuous.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: A

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40. Assertion. Whales can live in cold water as they have a thick coat of blubber under the skin.

Reason. Blubber consists of adipose tissue that insulates the body.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: A

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41. Different between exocrine and endocrine glands

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42. Mark the odd word in each group: Sarcoplasm, sarcomere, neurilemma, sarcolemma

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43. Mark the odd word in each group: Cyton, actin, axon, dendron

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44. Mark the odd word in each group: RBC, WBC, platelets, cartilage

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45. Note the relationship between the first two words and suggest a suitable word for the fourth place.

Muscle cell: sarcoplasm :: nerve cell: _____

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46. Note the relationship between the first two words and suggest a suitable word for the fourth place.

Bilobed nucleus : basophil :: multilobed nucleus : _____

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47. Note the relationship between the first two words and suggest a suitable word for the fourth place.

Tendons : white fibres :: ligaments : _____

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48. Nerve impulses come to the cell body of a neuron along it.....and go away from the cell body along its .....

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49. Name the types of agranulocytes.

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50. A tendon attaches a __to a _____

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51. What is the decreased condition of the RBC count in blood called?

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Mandatory Exercise Exercise Set Ii Mcqs

1. The vitamin, which is essential for blood clotting is

A. Vitamin-A

B. Vitamin-B

C. Vitamin-C

D. Vitamin-K

Answer: D

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2. Myoglobin is present in

A. All muscle fibres

B. White muscle fibres only

C. Red muscle fibres only

D. Both white and red muscle fibres

Answer: D

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3. NEURONS

A. acts as biological transducers

B. may be sensory or motor

C. cannot regenerate or divide

D. all of these

Answer: D

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4. Which of the following is an epidermal structure of marnmals?

A. Sebaceous gland

B. Receptors

C. Hair

D. Sweat gland

Answer: A

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5. Which of the following plant tissue provide mechanical strength to plants?

A. Parenchyma

B. Collenchyma

C. Sclerenchyma

D. Aerenchyma

Answer: C

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6. The function of a vessel is

A. Conduction of food

B. Conduction of water and minerals

C. Conduction of hormone

D. All of these

Answer: B

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7. The age of tree is calculated by counting annual rings is called

A. Dendrochronology

B. Ageing

C. Chronology

D. Zoology

Answer: A

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8. Which of the following is a dead empty cells, but work efficiently?

A. Sieve tube

B. Companion cells

C. Vessels

D. Both A and B

Answer: C

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9. A group of cells alike in form, function and origin is called

A. tissue

B. organ

C. organelle

D. none of these

Answer: A

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10. Which of the following statements given below is correct about meristematic tissue ?

A. Is made up of cells that are incapable of cell division

B. is made up of cells that are capable of cell division

C. Is composed of single type of cells

D. Is composed of more than one type of cells

Answer: B

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11. The nuclei of meristematic cells are

A. small

B. large

C. medium sized

D. none of these

Answer: B

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12. Parenchyma which contains chlorophyll is called:

A. Collenchyma

B. Sclerenchyma

C. Chlorenchyma

D. None of these

Answer: C

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13. Parenchyma is a type of _____

A. Complex tissue

B. Simple tissue

C. Xylem

D. Phloem

Answer: B

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14. Collenchyma mainly form _____

A. hypodermis

B. epidermis

C. phloem

D. inner cortex

Answer: A

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15. Permanent tissue differs from meristematic tissue is the

A. inability to divide

B. attainment of definite shape and size

C. performing a distinct function

D. all of the above

Answer: D

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16. Tissue that is absent in monocots is

A. Chlorenchyma

B. Sclerenchyma

C. Aerenchyma

D. Collenchyma

Answer: D

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17. Grit of pear is formed of

A. Sclerids

B. Sclerenchyma fibres

C. Tracheids

D. Companion cell

Answer: A

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18. Which one is made of dead cells ?

A. Sclerenchyma

B. Tracheids

C. Vessels

D. All of the above

Answer: D

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19. Xylem is made of

A. tracheids

B. vessels

C. both (A) and (B)

D. none of these

Answer: C

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20. Which of the following is not a example of simple tisse in plants ?

A. Parenchyma

B. Collenchyma

C. Xylem

D. Sclerenchyma

Answer: C

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21. Which of the following components of xylem is living

A. tracheids

B. vessels

C. xylem parenchyma

D. xylem sclerenchyma

Answer: C

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22. Which of the following components of phloem is absent in monocot stem

A. Sieve tubes

B. Companion cells

C. Bast fibers

D. Phloem parenchyma

Answer: C

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23. Of the following components of phloem is non-living

A. sieve tubes

B. companion cells

C. bast fibers

D. phloem parenchyma

Answer: C

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24. Father of histology is

A. Malpighi

B. Bichat

C. Mayer

D. None of these

Answer: B

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25. The term tissue was given by

A. Robert Hooke

B. Mayer

C. Bichat

D. Leeuwenhoek

Answer: C

26. Blubber of whale and hump of camel are

A. Areolar tissue

B. Muscular tissue

C. Tendon

D. Adipose tissue

Answer: D

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27. Heart muscles are

A. voluntary and striated

B. involuntary and striated

C. voluntary and multinucleate

D. involuntary, striated and uninucleate

Answer: D

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28. Simple tissue are these

A. parenchyma, xylem and collenchymas

B. parenchyma, collenchymas and sclerenchyma

C. parenchyma, xylem and sclerenchyma

D. parenchyma, xylem and phloem

Answer: B

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29. The most common type of ground tissue is

A. epidermis

B. collenchymas

C. sclerenchyma

D. parenchyma

Answer: D

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30. Which living cells provide tensile and mechanical strength?

A. Collenchyma

B. Sclerenchyma

C. Phloem

D. Sclereids

Answer: A

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31. Lignified elongated dead cells are

A. Parenchyma

B. Collenchyma

C. Sclerenchyma

D. None of the above

Answer: C

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32. Simple epithelium is a tissue in which cells are

A. hardened and provide support to organs

B. continuously dividing to provide to form an organ

C. cemented directly to one another to form a single layer

D. loosely connected to one another to form an irregular layer

Answer: C

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33. Pavement epithelium is the name of

A. Squamous epithelium

B. Cuboidal epithelium

C. Ciliated epithelium

D. Columnar epithelium

Answer: A

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34. Brush bordered epithelium is found in

A. stomach

B. small intestine

C. fallopian tube

D. trachea

Answer: B

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35. Tendon is a structure which connects

A. a bone with another bone

B. a muscle with a muscle

C. a muscle with a bone

D. a nerve with a muscle

Answer: B

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36. Smooth muscles occur in

A. Uterus

B. Artery

C. Vein

D. All of the above

Answer: D

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37. Which are not true cells in the blood?

A. Platelets

B. Monocytes

C. Basophils

D. Neutrophils

Answer: A

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38. The end of a long bone is connected to another bone by

A. ligament

B. tendon

C. cartilage

D. connective tissue

Answer: A

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39. Meristematic tissues in plants are

A. growing in volume

B. localised and permanent

C. localised and dividing cells

D. not limited in certain regions

Answer: C

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40. Girth of stem increases due to

A. Apical meristem

B. Lateral meristem

C. Intercalary meristem

D. Vertical meristem

Answer: B

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41. Which cell does not have perforated cell wall?

A. Tracheids

B. Companion cells

C. Sieve tubes

D. Vessels

Answer: B

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42. Parenchyma cells are

A. relatively unspecified and thin walled

B. lignified

C. thick-walled and specialised

D. none of these

Answer: A

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43. The dead element present in the phloem is

A. companion cells

B. phloem fibres

C. phloem parenchyma

D. sieve-tube cells

Answer: B

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44. If the tip of sugarcane plant is removed from the field, even then it keeps on growing in length. It is due to the pressure of

A. cambium

B. apical meristem

C. lateral meristem

D. intercalary meristem

Answer: D

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45. Which of the following does not lose their nucleus at maturity?

A. Vessel

B. Companion cells

C. Red blood cells

D. Sieve tube cells

Answer: B

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46. Cork cells are made impervious to water and gases by the presence of

A. cellulose

B. lipids

C. lignin

D. suberin

Answer: D

47. Which is not a function of epidermis?

A. protection from diverse condition

B. gaseous exchange

C. conduction of water

D. transpiration

Answer: C

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48. Which muscles act involuntarily?

(i) Striated muscles (ii) Smooth muscles

(iii) Cardiac muscles (iv) Skeletal muscles

A. i and ii

B. ii and iii

C. iii and iv

D. i and iv

Answer: B

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49. While doing work and running, you move your organs like hands, legs, etc.

Which among the following is correct?

A. Smooth muscles contract and pull the ligament to move the bones.

B. Smooth muscles contract and pull the tendons to move the bones.

C. Skeletal muscles contract and pull the ligament to move the bones.

D. Skeletal muscles contract and pull the tendon to move the bones.

Answer: D

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50. Voluntary muscles are found in

A. alimentary canal

B. limbs

C. iris of the eye

D. bronchi of lungs

Answer: B

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51. Select the incorrect sentence.

A. Blood has matrix containing proteins, salts and hormones

B. Two bones are connected with ligament

C. Tendons are non-fibrous tissue of fragile

D. Cartilage is a form of connective tissue

Answer: C

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52. Bone matrix is rich in

A. fluoride and calcium

B. calcium and phosphorus

C. phosphorus and potassium

D. calcium and potassium

Answer: B

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53. Contractile proteins are found in

A. bones

B. blood

C. muscles

D. cartilage

Answer: C

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54. Fats are stored in human body as

A. cuboidal epithelium

B. adipose tissue

C. bones

D. cartilage

Answer: B

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55. Cartilage is not found in

A. nose

B. ear

C. kidney

D. larynx

Answer: C

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56. Nerve cell does not contain

A. axon

B. nerve endings

C. tendons

D. dendrite

Answer: C

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57. Which of the following cells is found in the cartilaginous tissue of the body ?

A. basophils

B. mast cells

C. osteocytes

D. chondrocytes

Answer: D

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58. In desert plants, rate of water loss gets reduced due to the presence of

A. cuticle

B. stomata

C. lignin

D. suberin

Answer: A

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59. Flexibility in plants is due to

A. collenchyma

B. sclerenchyma

C. parenchyma

D. chlorenchyma

Answer: A

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60. Survival of plants in terrestrial environment has been made possible by the presence of

A. intercalary meristem

B. conducting tissue

C. apical meristem

D. parenchymatous tissue

Answer: B

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61. Choose the wrong statement.

A. Cells of striated muscles are multinucleate and unbranched.

B. Fats are stored below the skin and in between internal organs.

C. The nature of matrix differs according to function of tissue.

D. Epithelial tissue have intercellular spaces between them.

Answer: D

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Consolidated Exercise Comprehension

1. Read the passage and answer the questions that follow:

Simple tissues are also known as ground tissues. They include the tissues known as parenchyma, collenchyma, and sclerenchyma. The parenchyma tissue is composed of

parenchyma cells, which are found throughout the plant. They are particularly abundant in the stems and roots. The leaf cells that carry out photosynthesis are also parenchyma cells. Unlike many other plant cells, parenchyma cells are alive at maturity and retain the ability to divide. They perform many functions. Some are special ised for photosynthesis, some for storage, and oth ers for secretion and transport.

Like parenchyma cells, collenchyma cells are alive at maturity. They differ from parenchyma cells in that they have thick cell walls. The col

lenchyma tissue is most often found in the form of strands or cylinders of cells in stems and leaves. The thick cell walls of collenchyma cells provide support to these plant structures. The strands of tissues in celery are collenchyma tissues. Even collenchyma cells retain the ability to divide. Sclerenchyma consists of thick-walled dead cells. It possesses extremely thick secondary walls due to uniform deposition of lignin. It provides mechanical strength. The cells may occur singly or in groups and may be long and fibrous or stony.Stone cells (sclereids) are

found in seed coats and some fruits (e.g, pear). What type of tissue accounts for the crunch when you eat celery?

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2. Read the passage and answer the questions that follow:

Simple tissues are also known as ground tissues. They include the tissues known as parenchyma, collenchyma, and sclerenchyma. The parenchyma tissue is composed of

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found in seed coats and some fruits (e.g, pear).

Which type of tissue is responsible for the hardness of the coconut shell?

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3. State True or False

The stratified squamous epithelium covers moist surfaces like the buccal cavity.

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4. State True or False

The transitional epithelium prevents loss of water from the blood to the urine.

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5. State True or False

Nissl's granules are found in the granulocytes.

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6. State True or False

Abnormal rise in the WBC count is called polycythemia.

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7. State True or False

Apical meristem is secondary in origin.

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8. Different between vessels and tracheids

Watch Video Solution

9. The difference between blood and lymph :

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10. Draw the structure of a neuron and label it.

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11. Give scientific reasons: Lymph is a colourless fluid.

Watch Video Solution

12. Give scientific reasons: Monocot plants do not show secondary growth.

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13. Write the terms suitable for the definitions.

Plant tissue composed of tubular cells that transport water and minerals from the roots to the rest of the plant. _____

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14. Write the terms suitable for the definitions.

Areas where new cells are produced in plants.

_____

Watch Video Solution

15. Write the terms suitable for the definitions.

Tubular cells, with tapered ends, which transport water throughout a plant. _____

Watch Video Solution

16. Write the terms suitable for the definitions.

Openings in the cuticle of the leaf that control the exchange of gases. _____

Watch Video Solution

17. Write the terms suitable for the definitions.

Dermal tissue composed of flattened parenchyma cells that cover all parts of the plant. _____

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18. Name any one exocrine gland.

Watch Video Solution

19. What is Xylem also known as?

Watch Video Solution

20. Which parenchymal cell makes the aquatic plants light and buoyant?

Watch Video Solution

21. Which are the extremely variable outgrowths occurring in both vegetative and

reproductive parts of the plant?

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22. Which muscle tissue is self-excitatory and which is voluntary ?

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23. Name the blood corpuscle which is smallest in size.

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24. What is the study of tissues called?

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25. What cells form the insulating sheaths around axons? Where are these cells found?

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26. Write the functions of basophils, eosinophils, monocytes, and neutrophils.

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Olympiad And Ntse Level Exercises

1. Ram wanted to see the internal structure of a plant stem. He took the transfer section of the stem and observed under the microscope. He saw a number of cells arranged in 3-4

layers of parenchyma cells, followed by pericycle. To which tissue system do these parts belong to?

A. Vascular tissue system

B. Ground tissue system

C. Epidermal tissue system

D. Meristematic tissue

Answer: B

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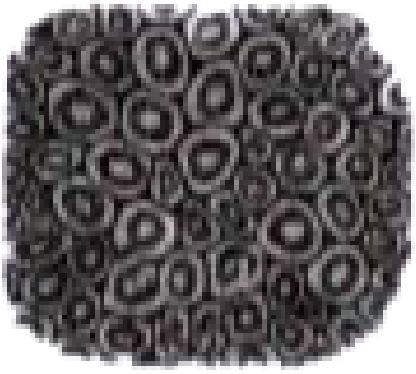
2. Label the component in order.

A

B



C

A. A-parenchyma, B-collenchyma, C-sclerenchyma

B. A-collenchyma, B-sclerenchyma, C-parenchyma

C. A-arenchyma, B-sclerenchyma, C-collenchyma

D. A-arenchyma, B-collenchyma, C-sclerenchyma

Answer: C

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3. Match the importance of these tissues :

	A		B
(i)	Jute	(a)	Parenchyma
(ii)	Bending fibres	(b)	Sclerenchyma
(iii)	Protection of seeds	(c)	Sclerids
(iv)	Cell division	(d)	Collenchyma

A. (i)-(d) , (ii)-(b) , (iii)-(a) , (iv)-(c)

B. (i)-(b) , (ii)-(d) , (iii) - (c) , (iv)-(a)

C. (i)-(c),(ii)-(b),(iii)-(a),(iv)-(d)

D. (i)-(d),(ii)-(c),(iii)-(a),(iv)-(b)

Answer: B

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4. Differentiate the following activities on the basis of voluntary (V)

involuntary (IV) muscles.

(a) Jumping of frog

(b) Pumping of the heart

(c) Writing with hand

(d) Movement of chocolate in your intestine

A. (i)-(a), (ii)-(b) ,(iii)-(a) , (iv)-(b)

B. (i)-(b),(ii)-(a),(iii)-(b),(iv)-(a)

C. (i)-(a),(ii)-(a),(iii)-(b),(iv)-(b)

D. (i)-(b),(ii)-(b),(iii)-(a),(iv)-(a)

Answer: A

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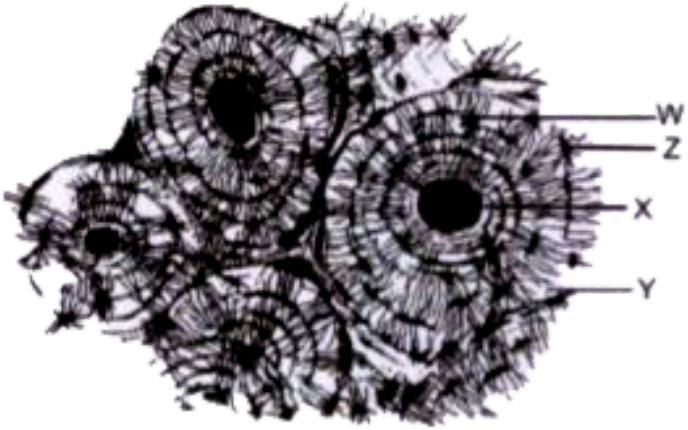
5. Identify W,X,Y,Z in the given diagram.



A. W $\rightarrow$ lamellae, X $\rightarrow$ Harversian canal, Y $\rightarrow$ canaliculus, Z $\rightarrow$ lacuna

B. W $\rightarrow$ lacuna, X $\rightarrow$ lamellae, Y $\rightarrow$ Harversian canal, Z $\rightarrow$ canaliculus

C. W $\rightarrow$ lamellae, X $\rightarrow$ lacuna, Y $\rightarrow$ Harversian canal, Z $\rightarrow$ canaliculus

D. W $\rightarrow$ Harversian canal, X $\rightarrow$ canaliculus, Y $\rightarrow$ lamellae, Z $\rightarrow$ lacuna

Answer: A

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6. Assertion: Spongy bones are specialised to form erythrocytes.

Reason: They contain osteocytes and osteoblasts.

A. If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

B. If both Assertion and Reason are true, but Reason is not the correct explanation of Assertion.

C. If Assertion is true, but Reason is false.

D. Both Assertion and Reason are false.

Answer: B

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7. Four healthy people in their twenties got involved in injuries resulting in damage and death of few cells of the following. Which of the cells are least likely to be replaced by new cells

A. Osteocytes

B. Liver cells

C. Neurons

D. Malpighian layer of skin

Answer: C

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8. Which among the following is true among the following.

A. A simple ciliated columnar epithelium helps to move debris through the lower

respiratory tract, away from the lungs.

B. Cells of epithelia are tightly packed, mostly a vascular and without significant matrix.

C. Nervous tissues are located only in the brain and spinal cord.

D. Red blood cells

Answer: A

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9. In the following passage, identify Y: Non-vascular plants whose plant body is not differentiated into true roots, stems and leaves and have unicellular and non-jacketed sex organs are included in the Taxon Y. Also, the plants included in the taxon are chlorophyllous plants which are autotrophic when it comes to their mode of nutrition. These plants may be of green, yellow, orange, red colour, etc.

A. Thallophyta

B. Bryophyta

C. Gymnosperms

D. Pteridophyta

Answer: A

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Challenging Exercise

1. What is an advantage of having collenchyma supportive tissue when sclerenchyma provides

more structural support?

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2. Raju has sustained a severe injury during football practice and is told that he has a torn knee cartilage. Can he expect a quick, uneventful recovery? Explain your response.

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