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**Worksheet – 1**

**[Based on Plant Tissue]**

Multiple Choice Questions :

1. In which of the following tissues, cells remain in continuous state of division?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Meristematic tissues | b) Parenchyma | c) Xylem and phloem | d) Sclerenchyma |

1. Which of the following is characteristics feature of meristematic tissues?
2. Cells of meristematic tissues are compactly arranged without intercellular spaces.
3. Cells of meristematic tissues have thick, inelastic primary cell wall.
4. Cells of meristematic tissues contains little cytoplasm and a very small nucleus.
5. Cells of meristematic tissues contains many large vacuoles.
6. Cork cambium and vascular cambium in vascular bundles of dicots are :

|  |  |
| --- | --- |
| a) Apical meristems | b) Lateral meristems |
| c) Intercalary meristems | d) None of these |

1. Apical meristems are responsible for :

|  |  |
| --- | --- |
| a) Non-linear growth of an organ | b) Linear growth of an organ |
| c) Both (a) and (b) | d) Neither (a) nor (b) |

1. Intercalary meristems are responsible for the growth of :

|  |  |
| --- | --- |
| a) roots | b) apices of stem and branches |
| c) Leaves and internodes | d) All of these |

1. The parenchyma which store gases to provide buoyancy in aquatic plants is called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chlorenchyma | b) Aerenchyma | c) Storage parenchyma | d) None of these |

1. Collenchyma, a type of simple permanent tissue in plants, provides flexibility to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Leaves | b) Young stems | c) Both (a) and (b) | d) Main trunk |

1. Cell walls of sclerenchyma tissue become strong, rigid and impermeable to water due to the uniform deposition of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cellulose | b) Calcium pectate | c) Glycogen | d) Lignin |

1. Intercalary meristem are responsible for :

|  |  |
| --- | --- |
| a) Linear growth of root | b) Secondary growth |
| c) Growth of leaves and internodes | d) Linear growth of shoot |

1. Phloem is a chief food conducting tissue of vascular plants . Following are some statements , which of the following are true with respect to phloem :
2. Phloem provides mechanical strength.
3. Conducting channels of phloem are sieve tubes.
4. Conduction in phloem may occur in upward or downward direction.
5. Sieve tubes, companion cells , phloem parenchyma and phloem fibres are living.

|  |  |  |  |
| --- | --- | --- | --- |
| a) (i) and (iv) | b) (ii) and (iii) | c) (i) , (ii) and (iii) | d) (i) , (ii) and (iv) |

1. Which of the following have extremely thick secondary walls due to uniform deposition of lignin

|  |  |  |  |
| --- | --- | --- | --- |
| a) Meristematic cells | b) Parenchyma cells | c) Collenchyma cells | d) Sclerenchyma cells |

1. The tissues mainly concerned with the transportation of water and inorganic solutes are :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Collenchyma | b) Sclerenchyma | c) Xylem | d) Phloem |

1. Which of the following tissue has dead cells?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Parenchyma | b) sclerenchyma | c) epithelial tissue | d) collenchyma |

1. Find out incorrect statement :
2. Parenchymatous tissue have intercellular spaces.
3. Collenchymatous tissues are irregularly thickened at corners.
4. Apical and intercalary meristems are permanent tissues.
5. Meristematic tissues, in its early stage, lack vacuoles.
6. Girth of stem increases due to :

|  |  |
| --- | --- |
| a) Apical meristems | b) Lateral meristems |
| c) Intercalary meristems | d) Vertical meristem |

1. Meristematic tissues in plants are :

|  |  |
| --- | --- |
| a) Localised and permanent | b) Not limited to certain region |
| c) Localised and dividing cells | d) Growing in volumes |

1. Which is not a function of epidermis?

|  |  |
| --- | --- |
| a) Protection from adverse conditions | b) Gaseous exchange |
| c) Conduction of water | d) Transpiration |

1. The dead element present in the phloem is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Companion cells | b) Phloem fibres | c) Phloem parenchyma | d) Sieve tube |

1. Which of the following does not loose their nucleus at maturity?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Companion cells | b) Red blood cells | c) Sieve tube cells | d) Vessel |

1. In desert plants, rate of water loss get reduced due to the presence of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cuticle | b) Stomata | c) Lignin | d) Suberin |

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

|  |  |
| --- | --- |
| a) Cambium | b) Apical meristem |
| c) Lateral meristem | d) Intercalary meristem |

1. Flexibility in plants is due to :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Collenchyma | b) Sclerenchyma | c) Parenchyma | d) Chlorenchyma |

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

|  |  |
| --- | --- |
| a) Intercalary meristem | b) Conducting meristem |
| c) Apical meristem | d) Parenchymatous meristem |

1. The water conducting tissue generally present in gymnosperms is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Vessels | b) Sieve tube | c) Xylem fibres | d) Tracheids |

**Answers**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1. a | 1. a | 1. b | 1. b | 1. c | 1. b | 1. c |
| 1. d | 1. c | 1. b | 1. d | 1. c | 1. b | 1. c |
| 1. b | 1. c | 1. c | 1. b | 1. a | 1. a | 1. d |
| 1. a | 1. b | 1. d |  |  |  |  |

Fill in the Blanks :

1. The distribution of different functions among different parts of the organism’s body which get specialized for the particular function is called \_\_\_\_\_\_\_\_\_\_\_.
2. Meristem tissues are a group of \_\_\_\_\_\_ cells which are located at specific locations and \_\_\_\_\_\_\_\_ continuously to add \_\_\_\_\_\_\_ to the plant body.
3. Depending upon their position in the plant body, meristems are categorized as \_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_.
4. Apical meristem is located at the \_\_\_\_\_\_\_ of main and lateral shoots and roots.
5. \_\_\_\_\_\_\_\_\_ are forms of complex tissues.
6. \_\_\_\_\_\_\_\_\_ have guard cells.
7. Cells of cork cambium contain a chemical called \_\_\_\_\_\_\_\_\_\_.
8. Husk of coconut is made up of \_\_\_\_\_\_\_\_\_\_\_ tissue.
9. \_\_\_\_\_\_\_\_\_\_ gives flexibility in plants.
10. \_\_\_\_\_\_\_\_\_ tissue consists of thick walled dead cells. Its main function is to give mechanical support to plant parts.
11. The important complex vascular tissues of vascular plants are \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_.
12. Xylem transports \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_ from soil.
13. Phloem transports \_\_\_\_\_\_\_\_ from \_\_\_\_\_\_\_\_\_ to other parts of the plant.
14. \_\_\_\_\_\_\_\_\_ is the chief conducting tissue of vascular plants responsible for conduction of water and \_\_\_\_\_\_\_\_\_ solutes (minerals).

True/False :

1. Meristematic tissue is a collection of living cells in plants which are located at specific locations and divide continuously to add new cells to the plant body.
2. Plant have three types of complex tissues, namely parenchyma , phloem and xylem.
3. Major function of parenchymatous in plants is to provide mechanical support.
4. Collenchyma is simple permanent tissue consisting of living cells. Cell walls show Localised thickenings in the corners. It provides mechanical strength and elasticity in young dicot stem.
5. Xylem translocates organic solutes from leaves to storage organs and later from storage organs to growing parts.
6. Sclerenchyma in plants consists of thick walled dead cells and it provides mechanical support to plant parts.
7. Companion cells are usually always associated with the sieve tubes in phloem.

Match The Following Questions :

1. Match column I and column II

|  |  |
| --- | --- |
| Column I | Column II |
| A. Parenchyma | I. Provides mechanical support to plants. |
| B. Collenchyma | II. Assimilation and storage of reserve food material. |
| C. Sclerenchyma | III. They divide continuously to add new cells. |
| D. Meristematic tissue | IV. Provide flexibility to soft aerial parts of plants. |

**Answers**

1. Division of labour 2. Living , divide , new 3. Apical , lateral , intercalary

4. Apex 5. Xylem , phloem 6. Stomata 7. Suberin

8. Sclerenchyma 9. Collenchyma 10. Sclerenchyma

11. Xylem , Phloem 12. Water , minerals 13. Food , leaves 14. Xylem , inorganic

15. True 16. False 17. False 18. True

19. False 20. True 21. True

22. A – II ; B – IV ; C – I ; D – III

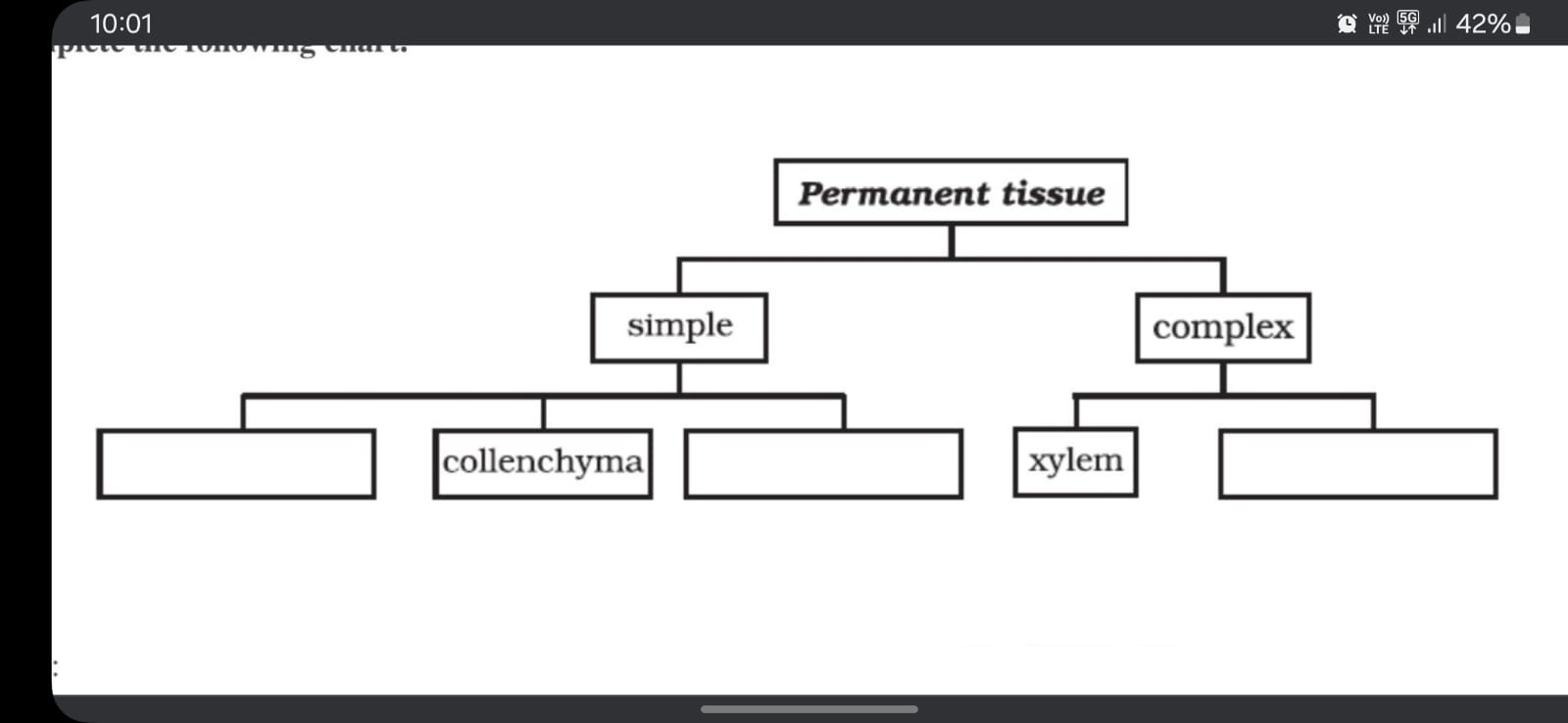
Answer The Following Questions :

1. What is a tissue?
2. What is the utility of tissues in multicellular organisms?
3. Name types of simple tissues.
4. Where is apical meristem found?
5. Which tissue makes up the husk of coconut?
6. What are the constituents of phloem?
7. How many types of elements together make up the xylem tissue? Name them.
8. How are simple tissues different from complex tissues in plants?
9. Differentiate between Parenchyma , Collenchyma , Sclerenchyma on the basis of their cell wall.
10. (a) Differentiate between Meristematic and Permanent tissue.

(b) Define differentiation.

(c) Name any two simple and two complex permanent tissue.

1. Differentiate between Xylem and Phloem.
2. Complete the table :



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**Worksheet – 2**

**[Based on Animal Tissue]**

Multiple Choice Questions :

1. Which of the following is also termed as pavement epithelium?

|  |  |
| --- | --- |
| a) Squamous epithelium | b) Columnar epithelium |
| c) Glandular epithelium | d) Cuboidal epithelium |

1. White collagen fibres, present in areolar tissue, are made up of a protein called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Elastin | b) Collagen | c) Globulin | d) Albumins |

1. Cords formed by yellow elastic tissue and bound by areolar tissue which serve to bind the bones together are called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Choroid plexus | b) Tendons | c) ligaments | d) Cartilage |

1. Blubber in whales, is infact an:

|  |  |
| --- | --- |
| a) Adipose tissue | b) Areolar tissue |
| c) Dense regular connective tissue | d) Cartilage |

1. Hump in camels is rich in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Adipose tissue | b) Areolar tissue | c) Vascular tissue | d) Skeletal tissue |

1. The pinnae of ears have :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Collagen fibres | b) Cartilage | c) Elastin fibres | d) Bones |

1. The living cells present in a compact bone are called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chondroblasts | b) Adipocytes | c) Osteoblasts | d) Sclereids |

1. Which of the following blood cells plays a role in defence mechanism?

|  |  |  |  |
| --- | --- | --- | --- |
| a) W.B.C | b) R.B.C | c) Platelets | d) None |

1. How many numbers of W.B.Cs are present generally per mm3 of blood?

|  |  |
| --- | --- |
| a) 4.5 to 5 million/mm3 | b) 7000 to 10000 /mm3 |
| c) 1 to 2 Lakh/mm3 | d) uncountable number |

1. Which of the following helps in transmission of nerve impulse across a synapse?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chondrin protein | b) Elastin protein | c) Acetylcholine | d) Globulins |

1. The fine branching at the terminal end of axon up in a structure called :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Synaptic knob | b) Synaptic cleft | c) Dendritic cleft | d) dendritic knob |

1. The structural and functional unit of nervous tissue is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nephron | b) Neuron | c) Neuroglial cells | d) Nerves |

1. Nissl’s granules present in the cell body of neuron comprise of :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Ribosomes | b) RER | c) Both | d) None |

1. The axon carry nerve impulses :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Towards cell body | b) Away from cell body | c) Both | d) None |

1. Which of the following types of cells are present in lymph?

|  |  |  |  |
| --- | --- | --- | --- |
| a) W.B.C | b) R.B.C | c) Platelets | d) All |

1. Which of the following cells of blood contain iron rich, red coloured protein pigment haemoglobin?

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| a) Lymphocytes | b) Neutrophiles | c) Platelets | d) R.B.C |  | b) | c) | d) |

1. Soluble proteins present in blood plasma include :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Albumins | b) Globulins | c) Fibrinogen | d) All |

1. Adipose tissue primarily serves :

|  |  |
| --- | --- |
| a) To bind bones together | b) As a fat storing tissue |
| c) As a packaging tissue | d) To bind muscles to the bones |

1. Which of the following represent adipose tissue?

|  |  |
| --- | --- |
| a) Blubber in whales and hump in camels | b) Tendons and ligaments |
| c) Cartilage and Bones | d) Blood and Lymph |

1. Which of the following provides flexibility and strength?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Elastin fibres | b) Macrophages | c) Collagen fibres | d) Fat droplets |

1. Skeletal tissues comprises :

|  |  |
| --- | --- |
| a) Tendons and ligaments | b) Blood and Lymph |
| c) Cartilage and Bones | d) All of these |

1. Major functions of connective tissues are :
2. Binding and joining one tissue to another.
3. Forming a supportive framework.
4. Packaging together different organs of the body.
5. Forming protective sheath.

Choose the correct options

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

1. Intestine absorbs the digested food materials. What type of epithelial cells are responsible for that?

|  |  |
| --- | --- |
| a) Stratified squamous epithelium | b) Columnar epithelium |
| c) Spindle fibres | d) Cuboidal epithelium |

1. While doing work and running, you move your organs like hands, legs , etc. Which among the following is correct?
2. Smooth muscles contract and pulls the ligament to move the bones.
3. Smooth muscles contract and pulls the tendons to move the bones.
4. Cardiac muscles contract and pulls the ligament to move the bones.
5. Skeletal muscles contract and pulls the ligament to move the bones.
6. Which muscles acts involuntary?

(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) |

1. Select the incorrect sentence :
2. Bone has matrix containing proteins, salts and hormones.
3. Two bones are connected with ligaments.
4. Tendons are non-fibrous tissue and fragile.
5. Cartilage is a form of connective tissue.
6. Cartilage is not found in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Nose | b) Larynx | c) Kidney | d) Ear |

1. Fats are stored in human body as :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cuboidal epithelium | b) Adipose tissue | c) Cartilage | d) Bones |

1. Bone matrix is rich in :

|  |  |
| --- | --- |
| a) Fluoride and Calcium | b) Calcium and Phosphorus |
| c) Calcium and Potassium | d) Phosphorus and Potassium |

1. Contractile proteins are found in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Cartilage | b) Blood | c) Muscles | d) Bones |

1. Voluntary muscles are found in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Alimentary canal | b) Bronchi of lungs | c) Iris of eyes | d) Limbs |

1. Nervous tissue is not found in :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Brain | b) Spinal cord | c) Tendons | d) Nerves |

1. Nerve cell does not contain :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Dendrites | b) Nerve endings | c) Tendons | d) Axon |

1. Which of the following helps in repair of tissue and fills up the space inside the organ?

|  |  |  |  |
| --- | --- | --- | --- |
| a) Tendon | b) Adipose tissue | c) Areolar tissue | d) Cartilage |

1. The muscular tissue which function throughout the life continuously without fatigue is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Skeletal muscles | b) Cardiac muscles | c) Voluntary muscles | d) Smooth |

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

|  |  |  |  |
| --- | --- | --- | --- |
| a) Chondrocytes | b) Basophils | c) Osteocytes | d) Mast cells |

**Answers**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1. a | 1. b | 1. c | 1. a | 1. a | 1. b | 1. c |
| 1. a | 1. b | 1. c | 1. a | 1. b | 1. c | 1. b |
| 1. a | 1. d | 1. d | 1. b | 1. a | 1. c | 1. c |
| 1. d | 1. b | 1. d | 1. b | 1. c | 1. c | 1. b |
| 1. b | 1. c | 1. d | 1. c | 1. c | 1. c | 1. b |
| 1. a |  |  |  |  |  |  |

Fill in the Blanks :

1. On the basis of functions they perform, the animal tissue can be classified into 4 major groups namely, \_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Epithelial tissue acts as \_\_\_\_\_\_\_\_\_ covering.
3. Muscular tissue is grouped into \_\_\_\_\_\_\_\_ types of muscles, namely , striated , smooth and \_\_\_\_\_\_\_\_\_ muscle.
4. Cardiac muscles are confined to the wall of the \_\_\_\_\_\_\_\_\_\_\_\_\_ , pulmonary veins and superior vena cava.
5. \_\_\_\_\_\_\_\_\_\_\_\_\_ tissue is called packaging tissue of the body.
6. Skeletal tissue forms the rigid skeleton which supports the vertebrates body, helps in locomotion and provides protection to many vital organs. Two types of skeletal tissues are \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_.
7. Blood is a fluid tissue, consist three types of blood corpuscles, namely, \_\_\_\_\_\_\_ , \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_.
8. Neurons consists three parts, namely , \_\_\_\_\_\_\_\_\_\_ , cell body and \_\_\_\_\_\_\_\_\_\_.
9. Neurons lie end to end in chains but are not connected. There occur a minute gap called \_\_\_\_\_\_\_ between terminal part of axon of one neuron and dendrite of other neuron.

True/False :

1. The cell body of each neuron consists Nissl’s granules.
2. RBCs have haemoglobin and helps in 97 % transport of carbon dioxide and very little of oxygen.
3. Lymph is a coloured fluid that plays a key role in blood clotting.
4. Cardiac muscles is an example of involuntary muscles.
5. Straited muscles are found in the body wall and limbs. They help in movement of body parts and locomotion.
6. Glandular epithelium consists of columnar cells modified to secrete chemicals. It lines the glands such as gastric gland , Intestinal gland , etc.
7. Intercalated discs are present in cardiac muscles. These muscles contract and relax rapidly and continuously with a rhythm, but never get fatigue.
8. Tendons are tough, elastic bundles of yellow collagen fibres and connect bone with a bone.
9. Adipose tissue is primarily a fat storing tissues. It is found beneath the skin and insulates the body against heat loss.
10. A compact bone consists of living bone cells, called osteoblasts, embedded in a firm, calcified matrix.
11. In the skin, squamous epithelium cells are arranged in many layers to prevent wear and tear. Such an epithelium is called stratified squamous epithelium.

Match The Following Questions :

1. Match column I and column II

|  |  |
| --- | --- |
| Column I | Column II |
| A. Areolar Tissue | I. It forms the rigid support and Helps in locomotion. |
| B. Adipose Tissue | II. It includes Blood and Lymph, that perform many functions. |
| C. Skeletal Tissue | III. It stores fat and insulates the body. |
| D. Vascular Tissue | IV. It is commonly called Packaging tissue of the Body. |

**Answers**

1. Epithelial tissue , Muscular tissue , connective tissue , Nervous tissue 2. Protective

3. 3 , cardiac 4. Heart 5. Areolar tissue 6. Bones , Cartilage

7. RBC , WBC , Platelets 8. Dendrites , Axon 9. Synapse

10. True 11. False 12. False 13. True 14. True

15. True 16. True 17. False 18. True 19. True

20. True 21. A – IV ; B – III ; C – I ; D – II