	INDIAN SCHOOL AL WADI AL KABIR	
Class: IX	**Department: SCIENCE (BIOLOGY)** **2023-2024**	**Date : 22/11/2023**
Worksheet No: 02	**TOPIC: TISSUES-ANIMAL TISSUE**	**Note:** **A4 FILE FORMAT**
NAME OF THE STUDENT	**CLASS & SEC:**	**ROLL NO.**

I. OBJECTIVE TYPE QUESTIONS

Multiple choice Questions: -

1. The tissue present in the lining of kidney tubules and ducts of salivary glands is
   (a) squamous epithelium tissue
   (b) glandular epithelium tissue
   (c) cuboidal epithelium tissue
   (d) columnar epithelium tissue

2. Involuntary muscles are found in
   (a) alimentary canal
   (b) iris of the eye
   (c) bronchi of lungs
   (d) All the above

3. The connective tissue that connects muscle to bone is called
   (a) ligament
   (b) tendon
   (c) nervous tissue
   (d) all of the above

4. Cartilage and bone are types of
   (a) muscular tissue
   (b) connective tissue
   (c) meristematic tissue
   (d) epithelial tissue

5. Fats are stored in human body as
   (a) Cuboidal epithelium
   (b) Adipose tissue

(c) Bones
(d) Cartilage

II. Assertion and reasoning:

a) Assertion and Reason are true and Reason is the correct explanation of the Assertion.
b) Assertion and Reason are true but Reason is not a correct explanation of the Assertion.
c) Assertion is true but the Reason is false.
d) Assertion and Reason are false.

6. **Assertion:** The inner lining of intestine has tall epithelial cells.
   Reason: Columnar epithelium facilitates absorption and secretion.
7. **Assertion:** Ciliated epithelium helps in movement of particles.
   Reason: Cilia help in movement.
8. **Assertion:** The squamous epithelium is made of a single layer of flattened cells with irregular boundaries
   Reason: They are found in walls of blood vessels.
9. **Assertion:** Simple epithelium covers surface exposed to mechanical abrasions.
   Reason: Protection of underlying tissues is major function of simple epithelium
10. **Assertion:** Surface of skin is impervious to water
    Reason: Surface of skin is covered by stratified cuboidal epithelium

III. CASE STUDY BASED QUESTIONS

11. **Read the following and answer questions given below -**

A. Epithelial cells are type of cells that lines the surface of your body. They are found on your skin, blood vessels, etc. They act as a protective barrier and stop viruses to enter the body. There are three main types of epithelial cell.

i. Which tissue forms a barrier to keep different body systems separate?
ii. Which epithelium forms the lining of blood vessels?
iii. Where is fat stored in the body? How is it useful for the organisms?

OR

How are glandular epithelium formed?

B. Connective tissue is specialised to connect various body with each other, for example it connects two or more bones to each other, muscles to bones, bind different tissues together and also gives support to various parts of the body. The cells of connective tissue are loosely packed, living and embedded in an intercellular matrix that may either be jelly like fluid, dense or rigid in nature. The nature of matrix differs in concordance with the function of the particular connective tissue. The various types of the connective tissue are blood, bones, ligaments, tendons, cartilage,

areolar tissue, adipose tissue

i. How are the cells of connective tissues spaced?

ii. What type of matrix is found in the cartilage?

iii. Differentiate between ligament and tendons.

OR

Differentiate between bone and cartilage.

IV. VERY SHORT QUESTIONS CARRYING 02 MARKS EACH. ANSWERS TO THESE QUESTIONS SHOULD BE IN THE RANGE OF 30 TO 50 WORDS.

12. State the function of blood.
13. What is ciliated columnar epithelium? What is the function of ciliated columnar epithelium?
14. Differentiate between voluntary and involuntary muscles. Give one example of each type.
15. (i) What is the lining of blood vessels made up?
    (ii) What is the lining of small intestine made up of?
16. Why do animals in the arctic region have thicker layer of fat-storing tissue below their skin?

V. SHORT ANSWER TYPE QUESTIONS CARRYING 03 MARKS EACH. ANSWERS TO THESE QUESTIONS SHOULD BE IN THE RANGE OF 50 TO 80 WORDS.

17. What is the name of bone cells? Describe the function of bones.
18. Tabulate the differences between three types of muscles on the basis of location, characteristics and function.
19. How are messages conveyed from one place to another within the body?
20. Draw a labelled diagram of a neuron. What does a neuron consist of?
21. Write three features of unstriated muscles.

VI. Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.

22. Describe the structure and function of different types of epithelial tissues. Draw the diagram for each type of epithelium.
23. What are the two main components of blood? Why is blood considered a type of connective tissue?
24. Describe the types of connective tissues along with their functions.
25. Draw well labelled diagrams of various types of muscles found in human body.

V. BOARD BASED QUESTIONS

26. Multicellular organisms show division of labour. Explain with the help of an example. (1)
27. What are the different elements present in xylem? Give the functions performed by each one

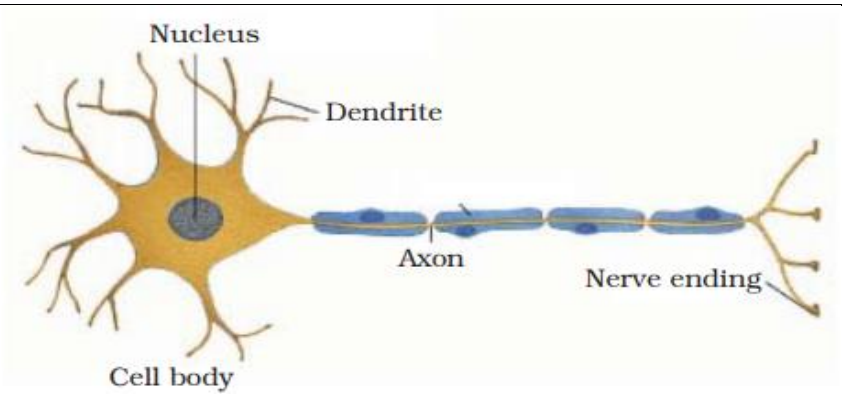
28. Schematically represent different types of connective tissue and write the special feature of each one. (5)
29. Explain the following terms: (a) Cuticle (b) Cork (c) Tendons (3)
30. Draw a labelled diagram of neuron. (3)
31. Give any three features of cardiac muscles. (3)

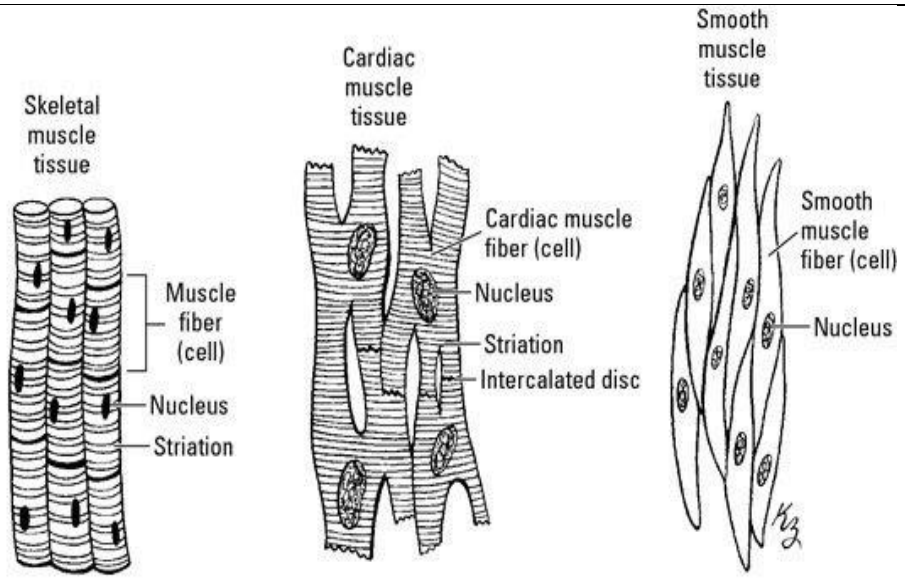
32. What are the functions of bones, cartilages and tendons? (3)

ANSWER KEY AND HINTS

I.	**OBJECTIVE TYPE QUESTIONS - Multiple choice Questions: -**
1.	(c) cuboidal epithelium tissue
2.	(d) All the above
3.	(b) tendon
4.	(b) connective tissue
5.	(b) Adipose tissue
II	**Assertion and reasoning:**
6.	a) Assertion and Reason are true and Reason is the correct explanation of theAssertion.
7.	a) Assertion and Reason are true and Reason is the correct explanation of theAssertion.
8.	b) Assertion and Reason are true but Reason is not a correct explanation of theAssertion.
9.	a) Assertion and Reason are true and Reason is the correct explanation of the Assertion.
10.	b) Assertion and Reason are true but Reason is not a correct explanation of the Assertion.
III.	**CASE STUDY BASED QUESTIONS**
11. a	i. Epithelial tissue
	ii. Squamous epithelium
	iii. Fat-storing adipose tissue is found below the skin and between internal organs. The cells of this tissue are filled with fat globules. Storage of fats also lets it act as an insulator **OR** Sometimes a portion of the epithelial tissue folds inward, and a multicellular gland is formed. This is called glandular epithelium.
b.	i. The cells of connective tissue are loosely spaced and embedded in an intercellular matrix
	ii. Jelly-like matrix
	iii. Two bones can be connected to each other by another type of connective tissue called the ligament. This tissue is very elastic. It has considerable strength. Tendons connect muscles to bones and are another type of connective tissue. Tendons are fibrous tissue with great strength but limited flexibility **OR**

	Bone cells are embedded in a hard matrix that is composed of calcium and phosphorus compounds Cartilage, has widely spaced cells. The solid matrix is composed of proteins and sugars.
IV.	**VERY SHORT QUESTIONS CARRYING 02**
12.	Transports gases, digested food, hormones and waste materials to different parts of the body
13.	In the respiratory tract, the columnar epithelial tissue also has cilia, these are called ciliated columnar epithelium. Function - These cilia can move, and their movement pushes the mucus forward to clear it.
14.	Voluntary muscles can be moved by the conscious will when we want to move them. For example, the muscles of our limbs or skeletal muscles. Involuntary muscles cannot be moved by the conscious will when we want to move them. They function on their own. For example, cardiac muscles
15.	i. Squamous epithelium ii. Columnar epithelium
16.	Storage of fats also lets it act as an insulator.
V.	**SHORT ANSWER TYPE QUESTIONS CARRYING 03 MARKS EACH.**
17.	Bone cells -osteocytes, It forms the framework that supports the body. Anchors the muscles and supports the main organs of the body.
18.	**Compare muscle tissue** **Skeletal** / **Cardiac** / **Smooth** Striation: striated / somewhat striated / non-striated Cells: straight cylindrical parallel, non-branching / tapered cylinders parallel & branched / spindle shape Nucleus: multi-nuclei, peripheral / mostly uni-nucleus most peripheral / uni-nucleus central Discs: none / intercalated / none Location: attach bones / cardiac wall / hollow organs Control: voluntary / involuntary / involuntary Function: body movement / heart contraction / visceral & circulatory Speed of contraction: fastest / intermediate / slowest
19.	Cells of the nervous tissue are highly specialised for being stimulated and then transmitting the stimulus very rapidly from one place to another within the body.

20.	 A neuron consists of a cell body with a nucleus and cytoplasm, from which long thin hair-like parts arise (Fig. 6.12). Usually each neuron has a single long part, called the axon, and many short, branched parts called dendrites.
21.	long, narrow unbranched spindle-shaped fibres. Each fibre contains a single oval nucleus in its thick middle part.
VI.	**Long Answer type questions carrying 05 marks each.**
22	The different types of epithelial tissues – Simple squamous, stratified squamous epithelium, columnar, ciliated columnar epithelium, cuboidal epithelium and their modifications. Refer class notes and text book for elaboration and diagram.
23	Components of blood – Blood has a fluid (liquid) matrix called plasma, in which RBCs, WBCs, Platelets are suspended. Because it fulfills the criteria of a connective tissues have both components.
24.	Types of Connective Tissues Areolar Connective Tissue. Adipose Tissue. Cartilages. Bones. Blood. Refer class notes for their functions

25.	
	BOARD BASED QUESTIONS
26.	Mention the function of different systems (1 mark)
27.	Tracheid and vessels – transport of water and minerals, parenchyma- storage and lateral conduction, fibres – mechanical support (5 marks)
28.	Special feature of Blood, bone, cartilage, adipose and areolar (5 marks)
29.	Cuticle – outermost waxy coating, prevents water loss Cork – Replaces epidermis, impervious Tendons – Connect muscles to bones
30.	Refer Q. no.20
31.	**Three features of cardiac muscles are:** The cells of cardiac muscles are cylindrical, branched, and uni-nucleate. Cardiac muscles are involuntary muscles that contract rapidly but do not get fatigued. They control the contraction and relaxation of the heart.
32.	**Bones refer Q.No. 17** Cartilage – Provides flexibility and helps in movement Tendons – Connect muscle to bones

PREPARED BY Mr GERARD THOMAS	CHECKED BY HoD SCIENCE