INDIAN SCHOOL AL WADI AL KABIR

Class: IX	**DEPARTMENT OF SCIENCE 2024-25** **SUBJECT: BIOLOGY**	**DATE: 13-11-2024**
WORKSHEET NO: 4 WITH ANSWERS	**TOPIC: ANIMAL TISSUE**	**A4 FILE FORMAT (PORTFOLIO)**
CLASS & SEC	**NAME OF THE STUDENT:**	**ROLL NO.**

I. OBJECTIVE TYPE QUESTIONS:

1. The Esophagus and lining of mouth are covered with:
   a) Squamous epithelium
   b) Columnar epithelium
   c) Cuboidal epithelium
   d) Connective tissue
2. Two bones are connected together by:
   a) Tendons
   b) Ligaments
   c) Plasma
   d) Cartilage
3. The fat storing connective tissue present under skin is:
   a) Areolar
   b) Adipose
   c) Adrenals
   d) Cartilage
4. _____ is a striated and involuntary muscle.
   a) Cardiac muscle
   b) Skeletal muscles
   c) Smooth muscles
   d) Striated muscles
5. The matrix is fluid in which connective tissue?
   a) Areolar
   b) Adipose
   c) Cartilage
   d) Blood

For the questions 6 to 10, two statements are given-one labelled Assertion (A) and the other labelled Reason(R). Select the correct answer to these questions from the options (i), (ii), (iii) and (iv)as given below:

i) Both A and R are true, and R is the correct explanation of the assertion.

ii) Both A and R are true, but R is not the correct explanation of the assertion.

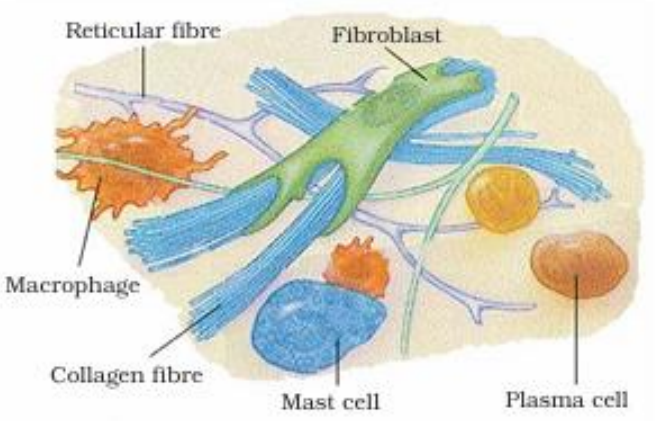
iii) A is true but R is false.

iv) A is false but R is true.

6. **Assertion (A):** Bone is a connective tissue which is very hard and rigid.
   Reason (R): The matrix consists of calcium and phosphate.
7. **Assertion (A):** Epithelium have only a small amount of cementing material between them and almost no intercellular spaces.
   Reason (R): Anything entering or leaving the body must cross at least one layer of epithelium.
8. **Assertion (A):** Skin epithelial cells are arranged in a single layer.
   Reason (R): Skin epithelium prevent wear and tear.
9. **Assertion (A):** Two bones can be connected to each other by another type of connective tissue called the Ligaments.
   Reason (R): This tissue is not elastic. It has considerably less strength.
10. **Assertion (A):** The functional combination of nerve and muscle tissue is not fundamental to most animals.
    Reason (R): This combination able animals to move rapidly in response to stimuli.

II. SHORT ANSWER TYPE QUESTIONS (2M):

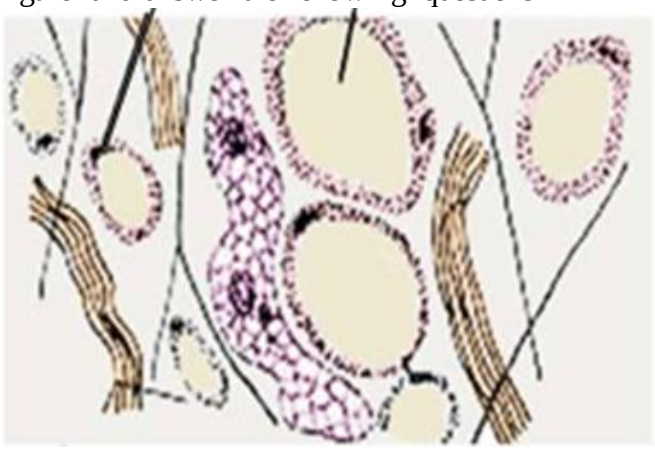
11. Identify the tissue:
    a) That has an ability to respond to stimuli.
    b) Fat storing adipose tissue.
12. Name the connective tissue that has hard matrix. What is its importance?
13. Identify the tissue in the figure given below and write its function.



14. Why are skeletal muscles called voluntary muscles?
15. What does a neuron consist off?

III. SHORT ANSWER TYPE QUESTIONS (3 M):

16. Observe the given figure and answer the following questions-



i) Identify the tissue given in the figure
ii) Mention the characteristic features of these cells.
iii) Specify the function of this tissue.
iv) Name the part of the body where these tissues are present.

17. Name the different components of the fluid connective tissue. Write two functions of the same.

18. Tabulate the skeletal muscles, smooth muscles and the cardiac muscles under the following headings:
    i) Location
    ii) function
    iii) Shape

19. Draw a well labelled diagram of a nerve cell and write down the composition of a nervous tissue.

20. Write down the location, structure and function of columnar epithelium tissue.

IV. LONG ANSWER TYPE QUESTIONS (5M):

21. (i) Distinguish between bone and cartilage.
    (ii) What is the importance of ligament?
    (iii) Why is connective tissue known so?

22. What is a neuron? Write the structure and functions of a neuron.

23. Briefly describe striated and smooth muscles with their functions

24. With the help of labelled diagrams differentiate between striated muscles, unstriated muscles and cardia muscles?

V. CASE STUDY-BASED QUESTIONS

You have more than 600 muscles in your body that you use almost constantly. Some move your body — others help your internal organs keep you alive. It's OK to feel the occasional ache or muscle pain, but don't ignore chronic (long-term) soreness or weakness.

Muscles are pieces of soft tissue throughout your body. They help you do everything from holding your body still to running a marathon. Muscles also move and support your organs. Your heart is a hard-working muscle that beats thousands of times a day to keep you alive.

25. A. Name the location and function of the muscle you can control.

OR

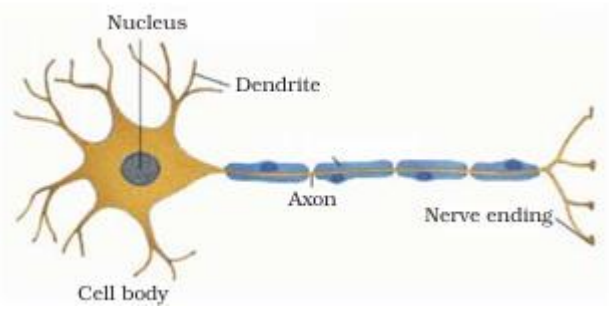
B. Name the hard-working muscle that beats thousands of times a day. What are its characteristic features?

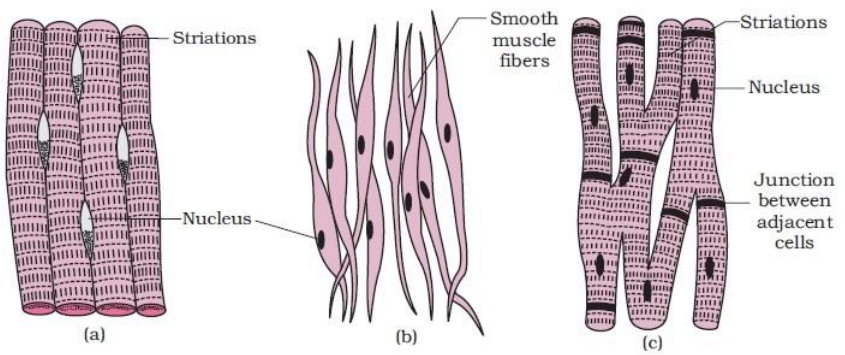
C. Name the muscles which are under your control.

D. This muscle is pointed at the ends, and has a prominent nucleus in the center of the cell.

ANSWERS

<table>
<tr><td colspan="2">I.OBJECTIVE TYPE QUESTIONS (1 MARK)</td></tr>
<tr><td>1</td><td>(a) Squamous epithelium</td></tr>
<tr><td>2</td><td>(b) Ligaments</td></tr>
<tr><td>3</td><td>(b) Adipose</td></tr>
<tr><td>4</td><td>(a) Cardiac muscle</td></tr>
<tr><td>5</td><td>(d) Blood</td></tr>
<tr><td>6</td><td>(i) Both A and R are true, and R is the correct explanation of the assertion.</td></tr>
<tr><td>7</td><td>(i) Both A and R are true, and R is the correct explanation of the assertion.</td></tr>
<tr><td>8</td><td>(iv) A is false but R is true.</td></tr>
<tr><td>9</td><td>(iii) A is true but R is false.</td></tr>
<tr><td>10</td><td>(iv) A is false but R is true.</td></tr>
<tr><td colspan="2">II. SHORT ANSWER TYPE QUESTIONS (2 MARKS)</td></tr>
<tr><td>11</td><td>a) Nervous tissue
b) Adipose tissue</td></tr>
<tr><td>12</td><td>Bone – It forms the framework that supports the body. It also anchors the muscles and supports the main organs of the body.</td></tr>
<tr><td>13</td><td>Areolar connective tissue. It fills the space inside the organs, supports internal organs and helps in repair of tissues.</td></tr>
<tr><td>14</td><td>as they are mostly attached to bones and help in body movement.</td></tr>
<tr><td>15</td><td>A neuron consists of a cell body with a nucleus and cytoplasm, from which long thin hair-like parts arise. Usually each neuron has a single long part, called the axon, and many short, branched parts called dendrites.</td></tr>
<tr><td colspan="2">III. SHORT ANSWER TYPE QUESTIONS (3 MARKS)</td></tr>
<tr><td>16</td><td>(i) Adipose tissue
(ii) (iii) (iv) Refer connective tissues in text book</td></tr>
<tr><td>17</td><td>Blood connective tissue. Refer connective tissues</td></tr>
<tr><td>18</td><td>
<table>
<tr><th>Character</th><th>Striated Muscles</th><th>Unstriated Muscles</th><th>Cardiac Muscles</th></tr>
<tr><td>1. Shape</td><td>Cells are long, cylindrical, non-tapering and are unbranched.</td><td>Cells are long with tapering ends and are unbranched.</td><td>Cells are non-tapering and cylindrical in shape and are branched.</td></tr>
<tr><td>2. Location in body</td><td>In hands, legs and skeletal muscles.</td><td>The wall of stomach, intestine, ureter and bronchi, etc.</td><td>In the heart.</td></tr>
</table>
Refer muscular tissues for functions text book</td></tr>
</table>

<table>
<tr><td>19</td><td> 

Refer nervous Tissues in text book</td></tr>
<tr><td>20</td><td>Location - in the inner lining of the intestine
Structure - This columnar (meaning ‘pillar-like’)
Function - absorption and secretion</td></tr>
<tr><td colspan="2">LONG ANSWER TYPE QUESTIONS (5 MARKS)</td></tr>
<tr><td>21</td><td>(i)
<table>
<tr><th>Bone</th><th>Cartilage</th></tr>
<tr><td>Hard & Non-flexible</td><td>Flexible & not very hard</td></tr>
<tr><td>Porous</td><td>Non-Porous</td></tr>
<tr><td>Made of calcium & Phosphorus</td><td>Made of protein & Sugar</td></tr>
<tr><td>Bone cells are known as osteocytes.</td><td>Cartilage cells are known as chondrocytes.</td></tr>
</table>
(ii) Two bones can be connected to each other by another type of connective tissue called the ligament.
(iii) connect, support, and help bind other tissues.</td></tr>
<tr><td>22</td><td>Refer nervous tissue in text book</td></tr>
<tr><td>23</td><td>Refer muscular tissue in text book</td></tr>
<tr><td>24</td><td> 

Also refer muscular tissues in the text book</td></tr>
<tr><td colspan="2">V. CASE STUDY-BASED QUESTIONS</td></tr>
</table>

25 A.	Location - mostly attached to bones Function - help in body movement
25 B.	Cardiac muscle. Heart muscle cells are cylindrical, branched and uninucleate.
C	Skeletal/ Striated/Voluntary muscle
D	Smooth/Unstriated/Involuntary muscle

Prepared by *Mr Gerard Thomas*	*Checked by* *HoD Science*