TENDER HEART HIGH SCHOOL

CLASS - 8 DATE - 23.12.2024

SUBJECT - Biology TEACHER - Nidhi Rana

CHAPTER - 3 TISSUES : Plant & animal tissues

This lesson is of Class 8 for the subject of Biology Topic - Animal Tissues which is covered in Chapter 3 titled Tissues: Plant & animal tissues starting on Page no 23 of your text book titled Concise Biology - Selina Publications and is being submitted to you on 23.12.2024

MUSCLE TISSUE

Muscular tissue is a contractile tissue consisting of large elongated cells or fibres. Muscle cells are able to shorten to a half of their length and return to their original state Thus muscles can contract and relax Muscle tissue is held together by connective tissue. The cells of the muscular tissue help the body in its movements and locomotion of the individual

TYPES OF MUSCULAR TISSUE

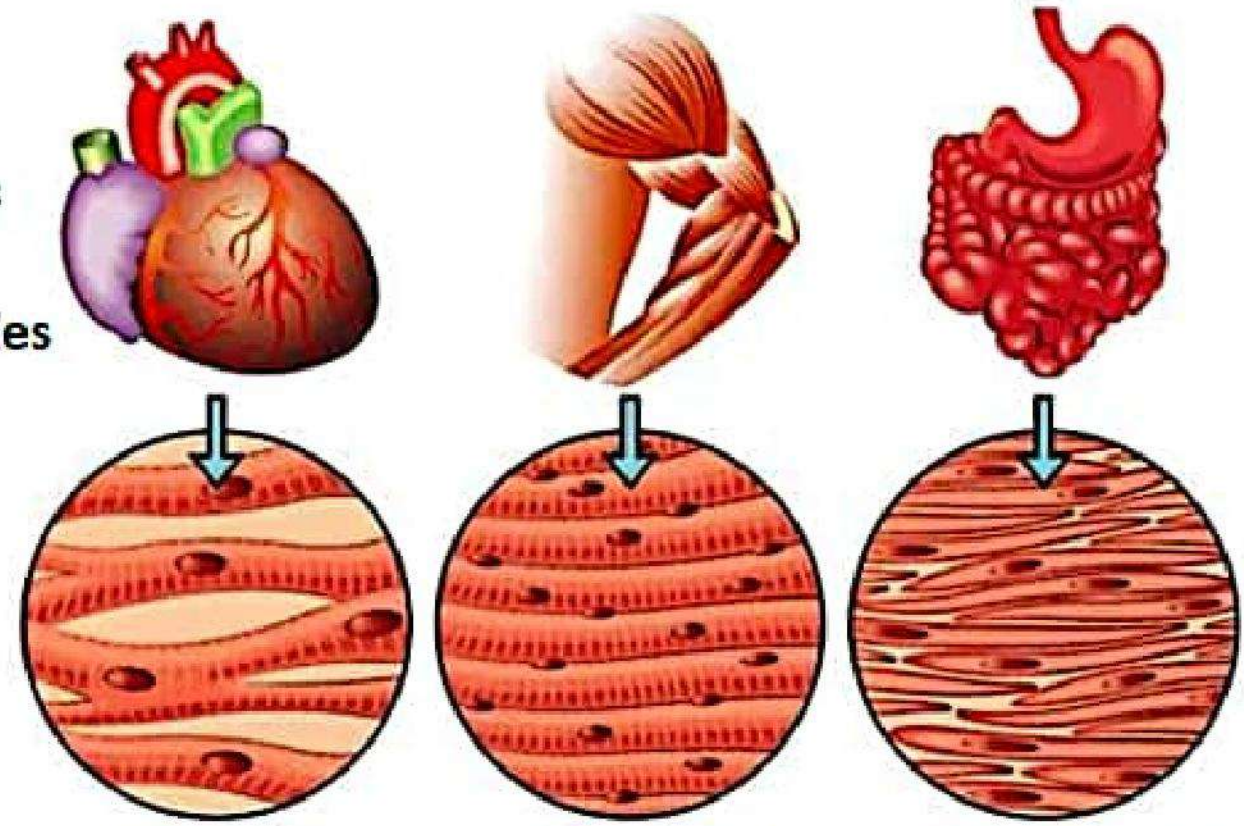
i) Striated or striped or skeletal or voluntary muscle
ii) Unstriated or smooth or unstriped or involuntary muscle
iii) Cardiac or heart muscle

Fig 1 shows 3 types of muscles

[i] **Striated muscles** are also called striped, skeletal or voluntary muscles. These are normally attached to bones and help in body movements, hence called skeletal muscles These are called voluntary because their contraction is under the control of our mind or will.

Fig 2 shows striated muscles

Fig 1
Types
of
muscles



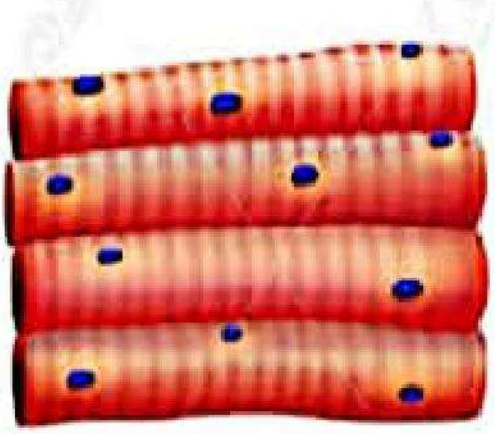


Fig 2
Striated Muscles

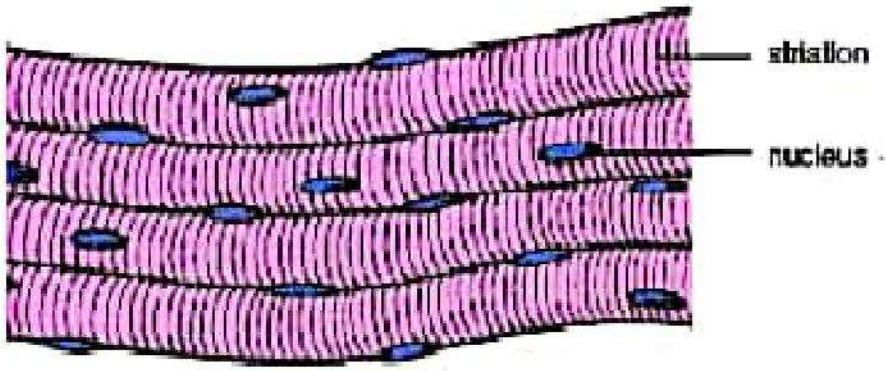


Fig 3 Striations in
striated/voluntary muscles

Under the microscope each striated muscle fibre shows striations i.e. light and dark bands running across the fibres, placed at right angles to the long axis Hence these muscles are called **STRIATED MUSCLES**

Fig 3 shows striations in striated muscles

Further each muscle fibre is long, cylindrical unbranched and non tapering with multinucleate condition i.e. cell with many nuclei are present. Striated muscles contract rapidly and are responsible for quick movements These muscles occur in limbs, face, neck etc.

[ii] **UNSTRIATED MUSCES** are also called smooth or involuntary muscles. These are called involuntary muscles as their movements are not controlled by our mind or will. Each unstriated muscle fibre is a long flattened, spindle shaped / slender, tapering and uninucleate cell i.e. with one nucleus only. These muscle fibres do not show striations and contract and relax very slowly.

Fig 4 shows unstriated muscles

Such muscles are found in the walls of all tubular organs like stomach, intestine blood vessels, breathing passages, urinary bladder, uterus, muscles of the iris of the eye etc.

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Cardiac muscles occur only in the walls of the heart These are richly supplied with the blood These muscles show rhythmic contraction without outside stimulation and do not get tired soon. Cardiac muscles show characters of both striated and unstriated muscles The fibres of cardiac muscles are striated, uninucleated (i.e. with one nucleus) and branched Cardiac muscles though striated in structure are involuntary in nature. and keep on performing their function throughout life

Fig 5 shows Cardiac muscles

Before going further let us take a short break. Answer the following questions during the break.

Q1 Name three kinds of muscular tissue.
Q2 Name the kind of muscles present in arms legs, face and neck.
Q3 Which type of muscles work throughout life and donot get tired soon?

You may now pause the lesson for 3 minutes to write their answers in your notebooks Break is over children. Listen to the correct answers first.

A1 Three kinds of muscular tissues are - Striated, Unstriated and Cardiac muscles.
A2 Striated or Voluntary muscles are present in legs, face, arms and neck.
A3 Cardiac muscles work throughout life and donot get tired soon.

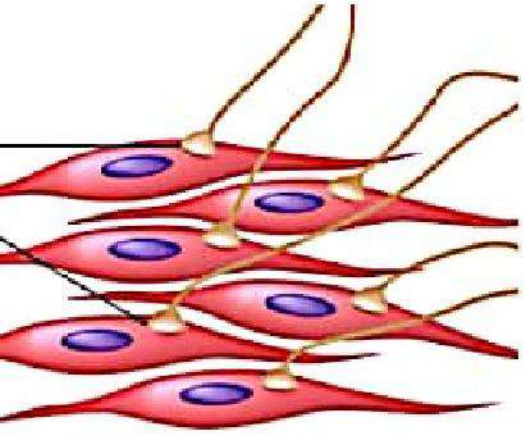

Fig 4 Smooth muscle

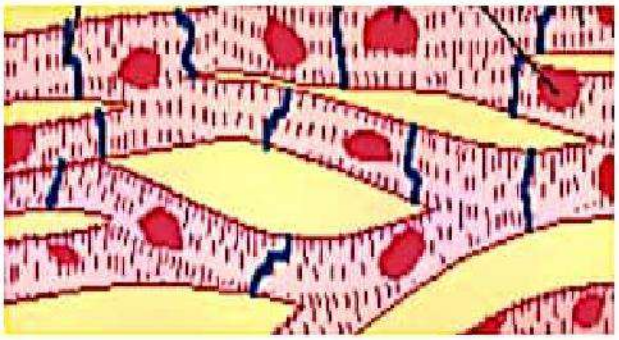

Fig 5 Cardiac Muscle

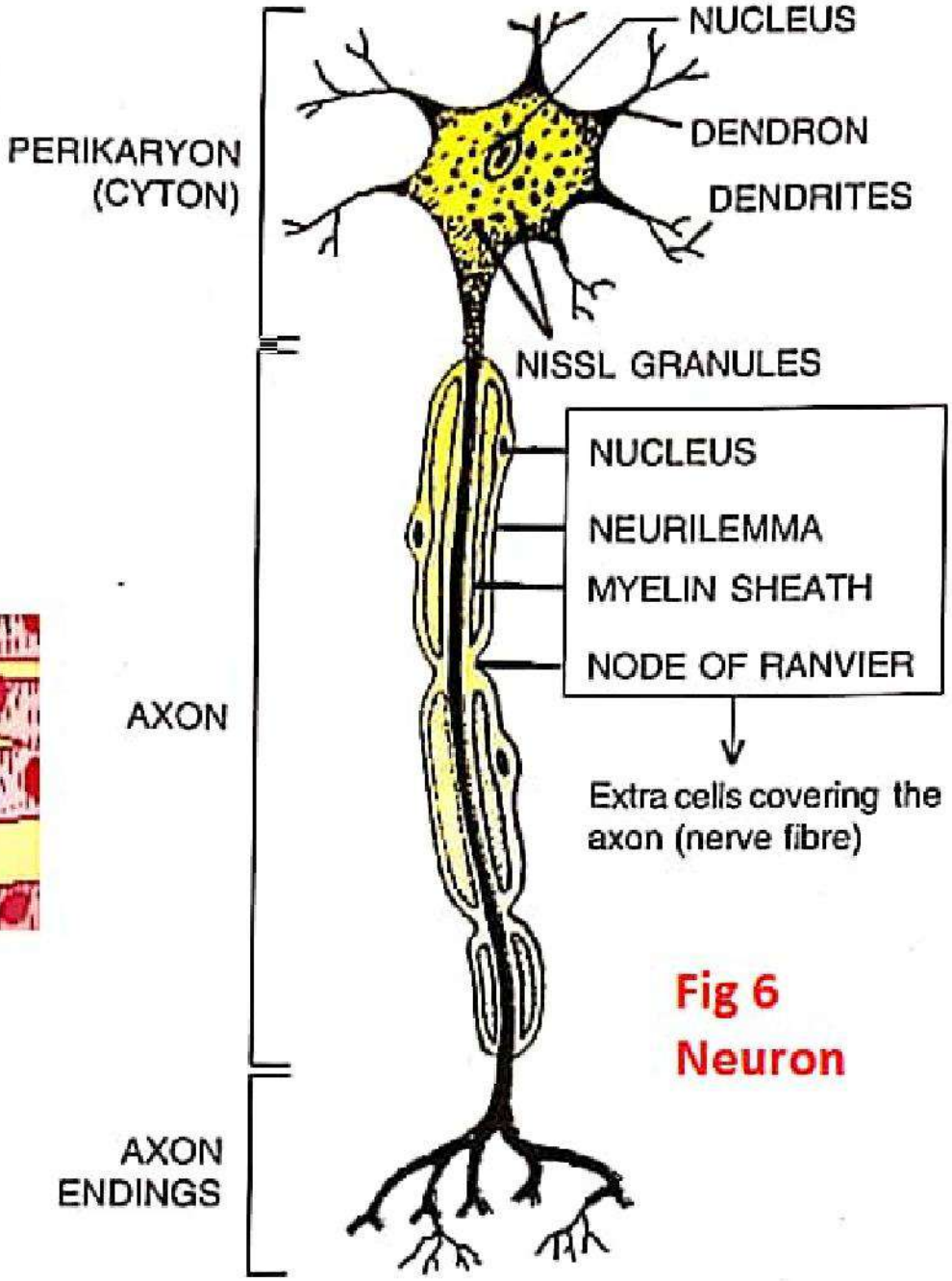

Fig 6 Neuron

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NERVOUS OR NEURAL TISSUE constitutes the nervous system and is specialised tissue for receiving stimuli or sensations and transmitting messages It is present in brain spinal cord and nerves. Nerve cells or neurons form the most important element of the nervous tissue.

NEURON Each neuron consists of 3 main parts-

(i) The main cell body called the Perikaryon or cyton containing nucleus.

(ii) The dendrons - are one or more elongated hair like extensions or processes arising from the cyton. Dendrons branch further into many thin branches called the dendrites. The dendrites receive the impulses.

(iii) The Axon - is a single long cylindrical process arising from the cyton The axon forms fine branches at its terminal end termed as axon endings. Axon takes impulses away from the cell body. Axons bundle together to form a nerve.

Fig 6 shows structure of a neuron.

Nerve cells are joined end to end forming long nerve fibres Nerve fibres branch out to every part of the body These nerve fibres conduct messages from one part of the body to the other. Thus nerve tissue is concerned with the perception and responses of animals.

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Dear students this finishes with the discussion of Chapter 3. Tissues. Kindly go through the given explanation in the given notes as well as the chapter as being discussed in the book. and with reference to the detailed explanation you are required to answer the following Home assignment questions in your notebooks

HOME ASSIGNMENT

Q1 Answer the following Review questions [given on Page 32 of your text book] in your notebooks.

C Short Answer Type
Q No 3

D Long Answer Type
Q No 2 part (d) and (e)

E Structured / Application Questions
Q No 2.

Q2 Draw a well labelled diagram of -
(i) A Neuron
(ii) Different Types of Muscular Tissues

THANK YOU