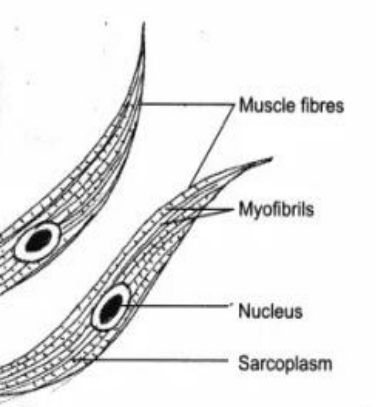
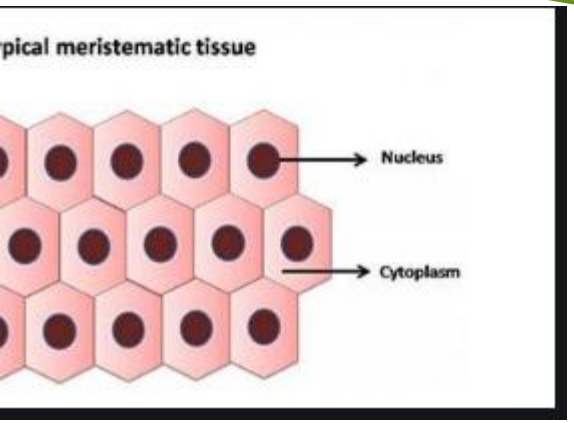
પુ.ના International School
Shree Swaminarayan Gurukul, Zundal

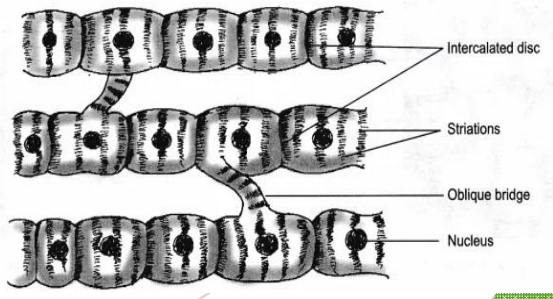


Class 9

Reflections on Teaching methodology For July2020

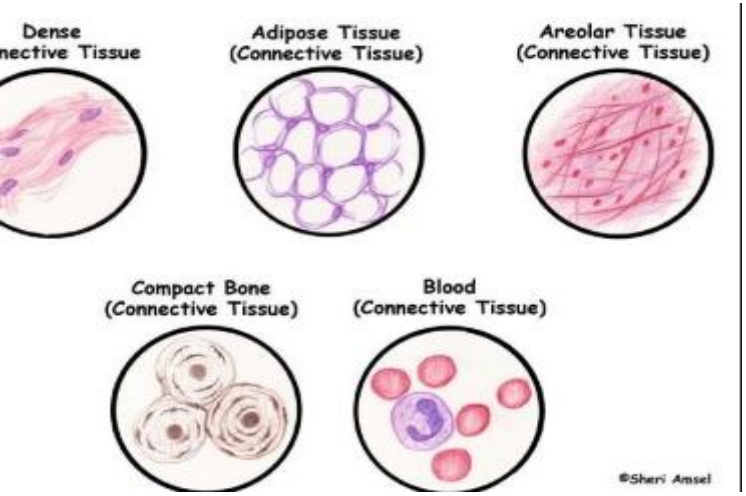


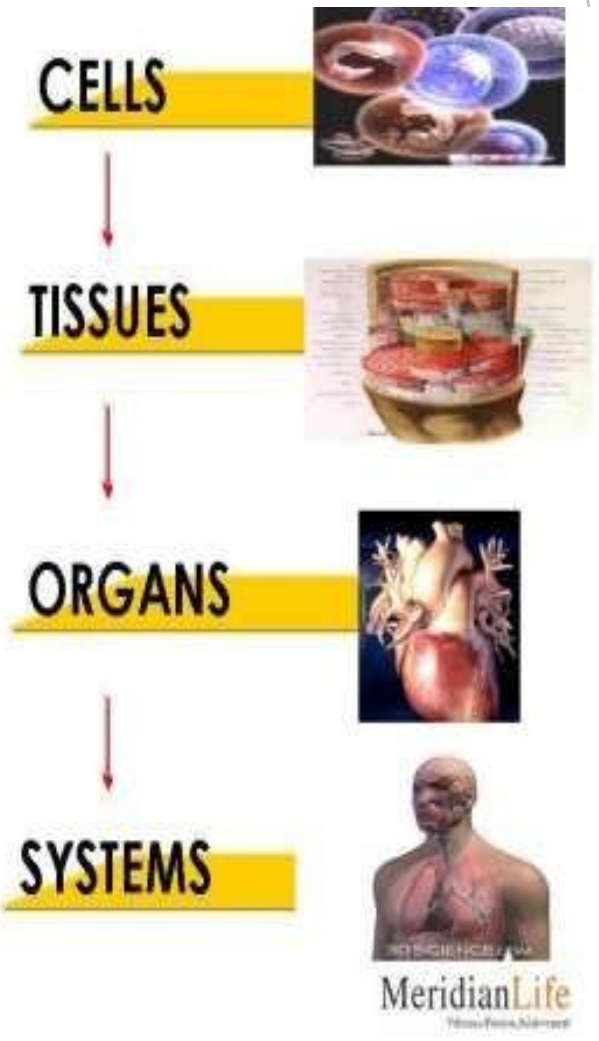
1) Biology



LESSON 6 Tissues

**roup of cells that
e similar in structure
d origin (come from
ame parent) and
rform same function
e called tissues**





Content

What are tissues ?

Are plant and animal tissue same ?

Which are plant tissues?

Types of plant tissues.

Which are animal tissues?

Types of animal tissues?

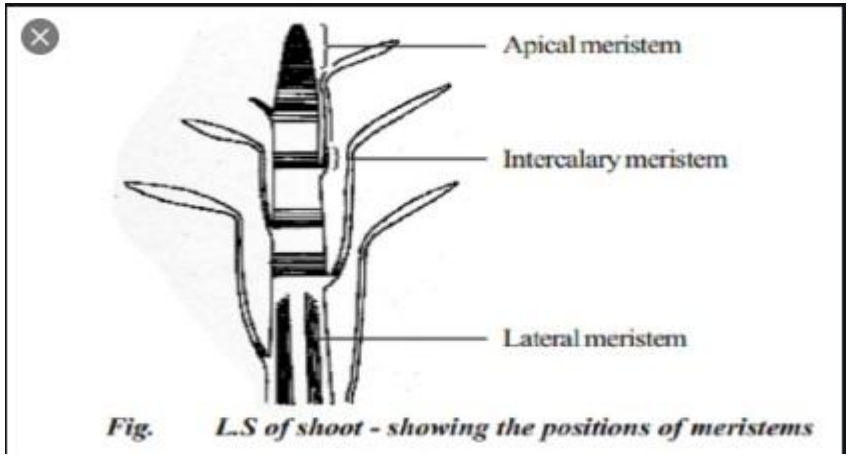
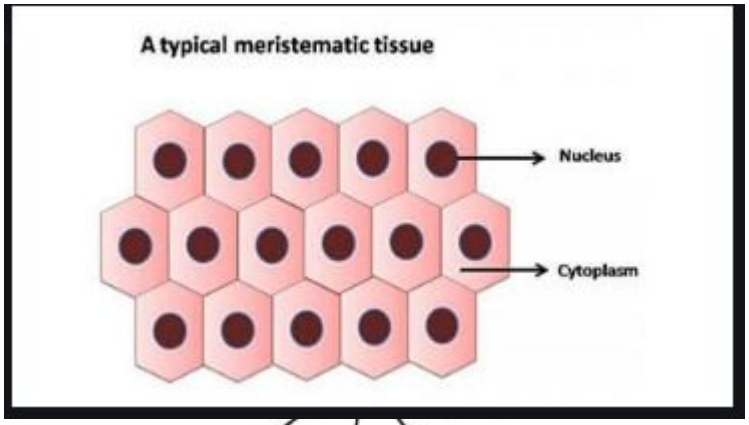
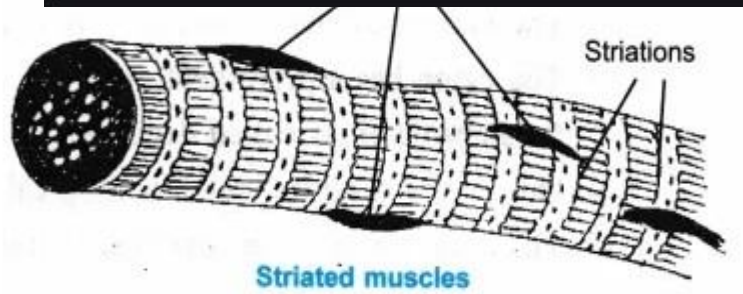


Fig. L.S of shoot - showing the positions of meristems



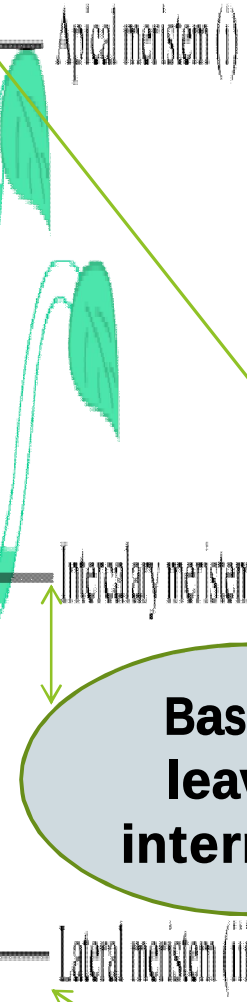


Striated muscles

Plant Tissue

- Meristematic
- Permanent
  - Simple permanent
    - renchyma
      - mple tissue esent all ver the plant dy
      - Chlorenchyma
    - Collenchyma
      - Strong and Flexible tissue
    - Sclerenchyma
      - Strong Mechanical tissue
  - Complex permanent
    - **Xylem**
      - •Tracheids
      - •Vessels
      - •Xylem fibre
      - Xylem parenchyma
    - **Phloem**
      - •Sieve tubes
      - •Companion cells
      - •Phloem fibre
      - •Phloem parenchyma

Meristematic Meristem



Characteristics

- Active
- Dense cytoplasm
- Thin cellulose walls
- Prominent nuclei
- Lack vacuole

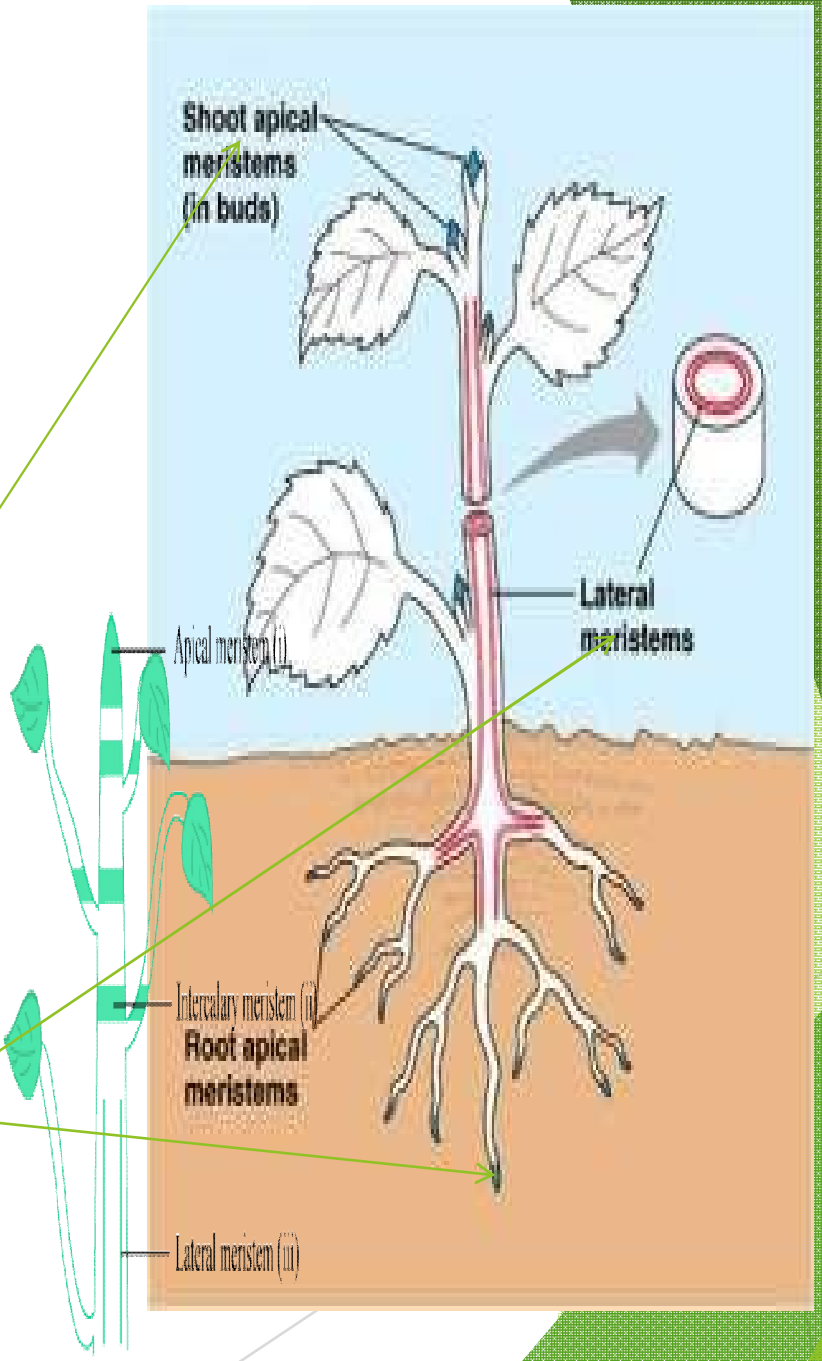
Base of leaves/ internodes

Location

Tips of shoots

Tips of roots

Sides of stems/roots Cambium

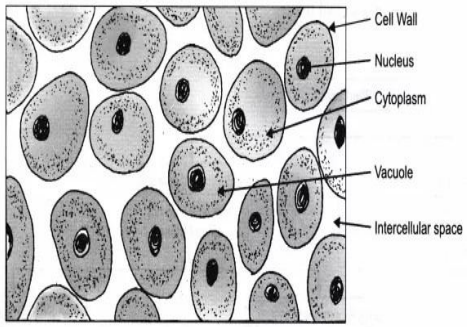


PERMANENT TISSUE

mple Permanent

Complex Permanent

Parenchyma
(living)

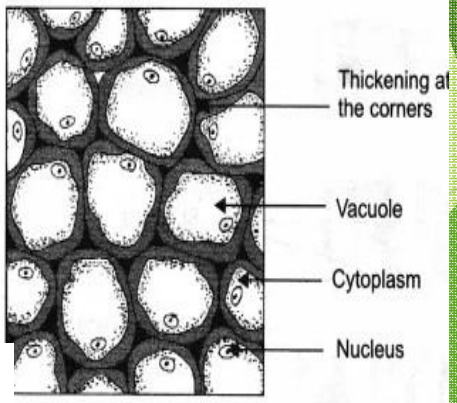


Parenchyma tissue (T.S.)

Pakageing tissue, fills space between other tissues

Collenchyma
(living)

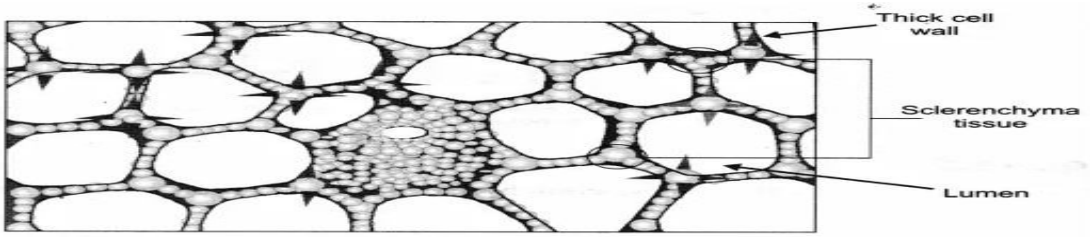
Elongated, irregularly thick at corners,made of cellulose and pectin



Collenchyma tissue (T.S.)

Long ,narrow thick walled due to lignin

Sclerenchyma (dead)



Sclerenchyma tissue (L.S.)

Complex Permanent

Xylem
(Thick walled)

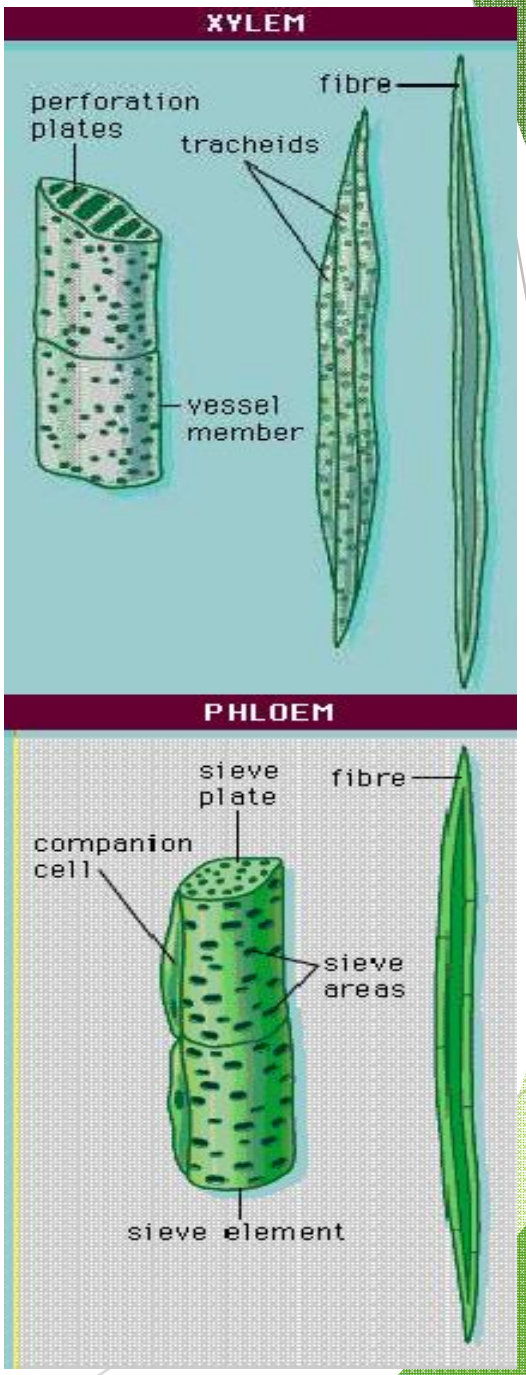
- ❑ Tracheids
- ❑ Vessels
- lem parenchyma
- em sclerenchyma

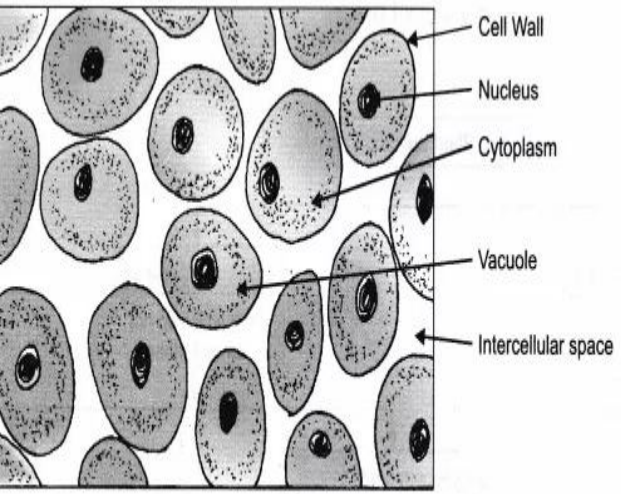
❑Xylem vessels help transporting water laterally
❑ Vertically
❑Provide support
❑To plant

Phloem
(Tube like)

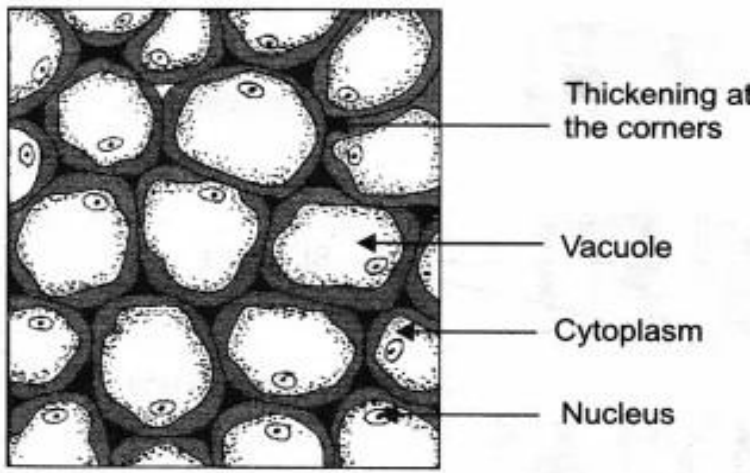
- ❑ Sieve tubes
- ❑Sieve elements
- ❑ Companion cells
- ❑ Phloem fibre

End walls are sieve plates Perforated due to pores ,transports Prepared food in both directions

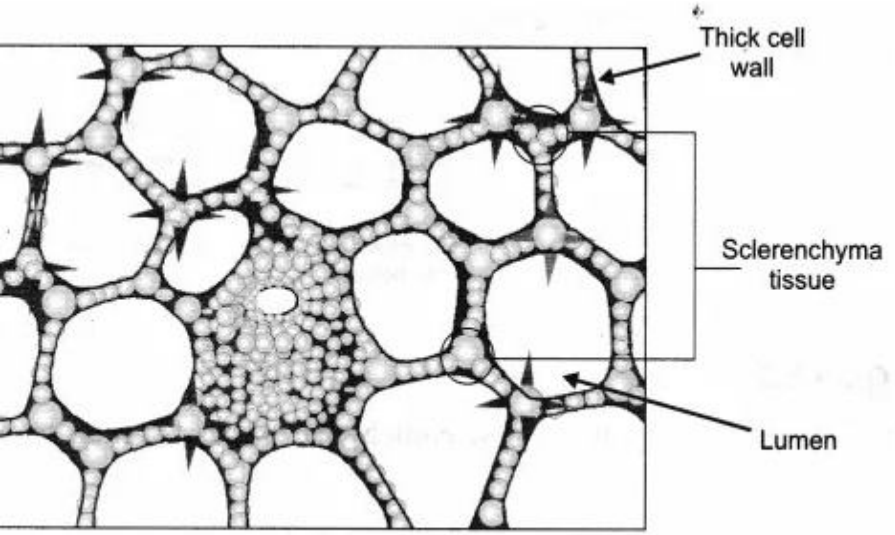




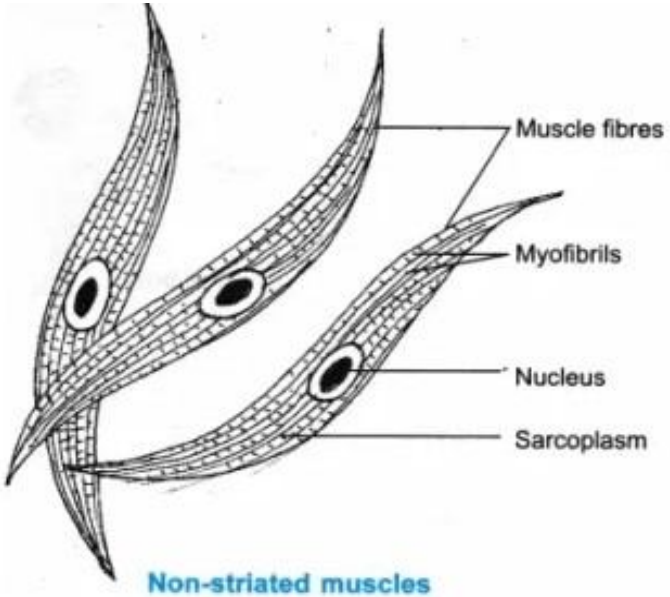
Parenchyma tissue (T.S.)



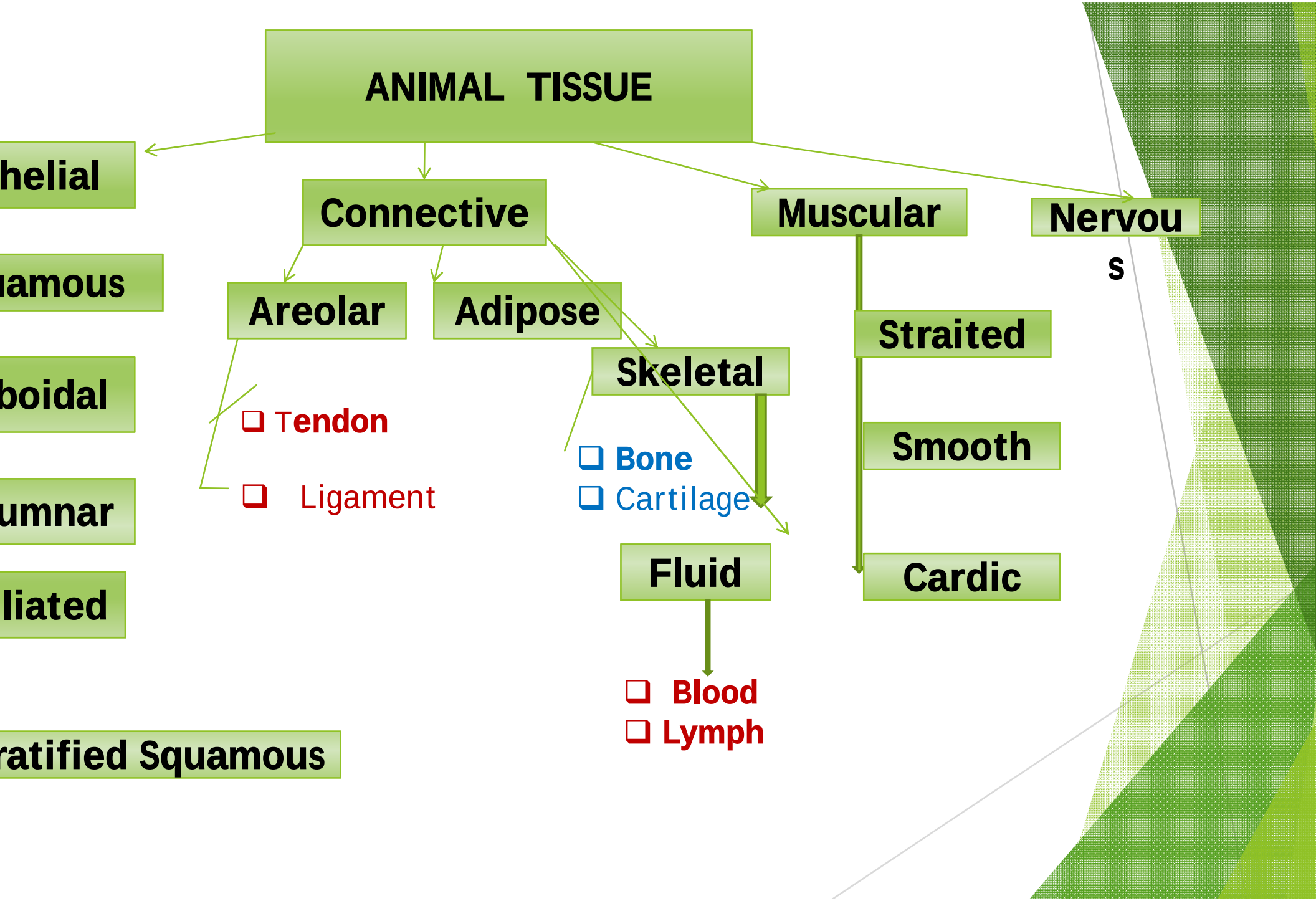
Collenchyma tissue (T.S.)



Sclerenchyma tissue (L.S.)

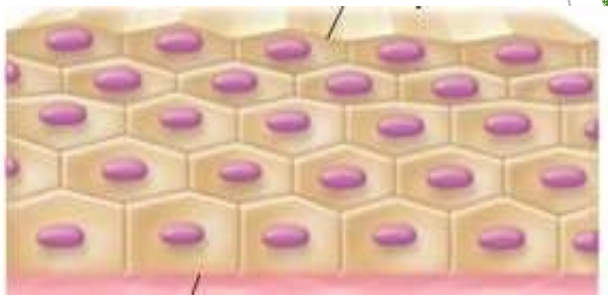


Non-striated muscles

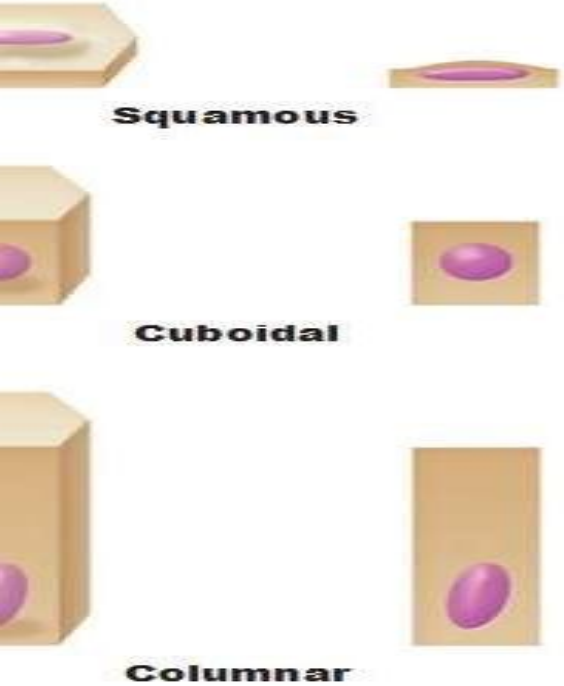

ANIMAL TISSUE
helial
uamous
boidal
umnar
liated
ratified Squamous
Connective
Areolar
Adipose
Tendon
Ligament
Skeletal
Bone
Cartilage
Fluid
Blood
Lymph
Muscular
Straited
Smooth
Cardic
Nervou
s

Classification of Epithelium

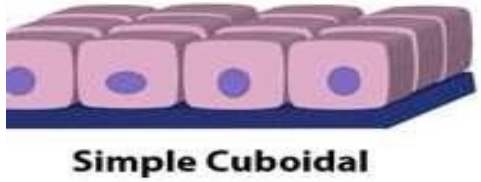
he basis of number of layers

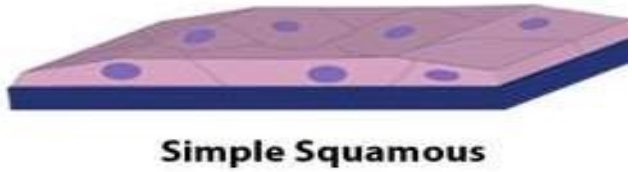


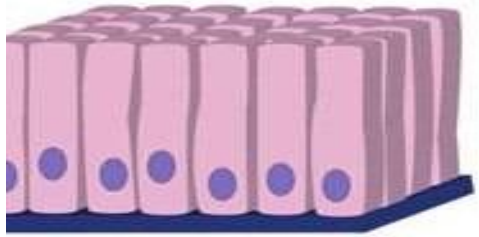
e made of single layer

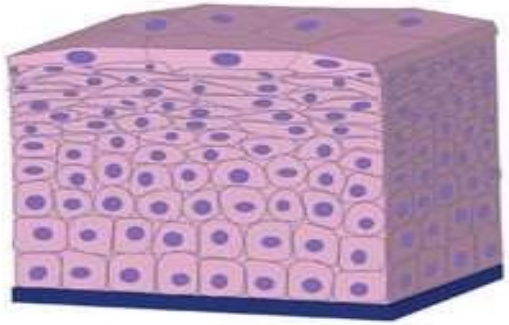


Stratified Made of many cell layers



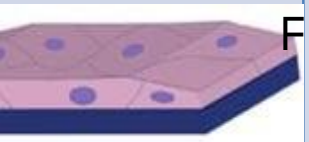






https://www.youtube.com/watch?v=mpH0DHHQ2cs

❑ TYPE OF EPITHELIUM

of Epithelium	Structure	Location	Function
nous 	Thin , flat , irregular Fits likefloor tiles	Oesophagus , lining of the mouth , alveoli ,lungs,	Protects the underlying tissue from injury, exchange of gas in lings
dal 	Cuboidal round nucleus in the centre	Kidney tubules , ducts of salivary glands	It gives mechanical Strength, at times it folds and become glandular
nanar  mous	Tall pillar like placed side by side. Nucleus is placed near the base	Inner lining of respiratory track cells have cillia that push the mucus	Help in absorption secretion and excretion
	Flat cells arranged in many layers o prevent wear and tear of the parts	Skin, tongue, oesophagus and inner lining of the mouth	Protection wear and tear

❑ Connective tissue

nnects various tissues in any organs
nction Binding ,supporting packing of organs of the body
aracteristics ; Few cells loosely packed ,large intercellular spaces filled with
lly like substance called matrix.

d : has fluid matrix called plasma
proteins, salts and hormones in
h
, WBC and platelets are lying. It
sports food, gases, hormone and
e to different parts of the body

ments n tendons connect bones. It
elastic and has strength and very
matrix. Elasic tendons connects
cles to bones. They are less elastic

eolar : it fills space inside the organs.
lps in tissue repairs. Found between kin
d muscles, around blood vessels and
ne marrow

Bone gives support and anchors muscles. It is strong , non flexible.In which bone cells are embedded in a hard matrix made of Phosphorous and calcium.

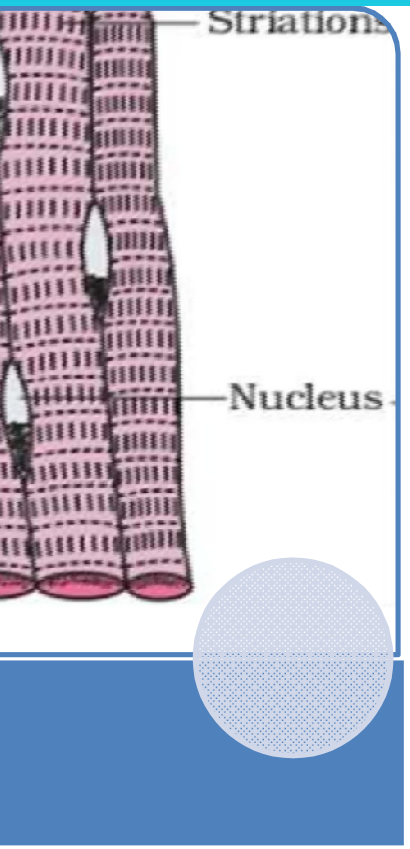
Cartilage is hard elastic tissue softer than bone. Matrix is solid due to the presence of protein called chondrin it can bend where as bone cannot

Adipose stores fat found below skin and internal organs

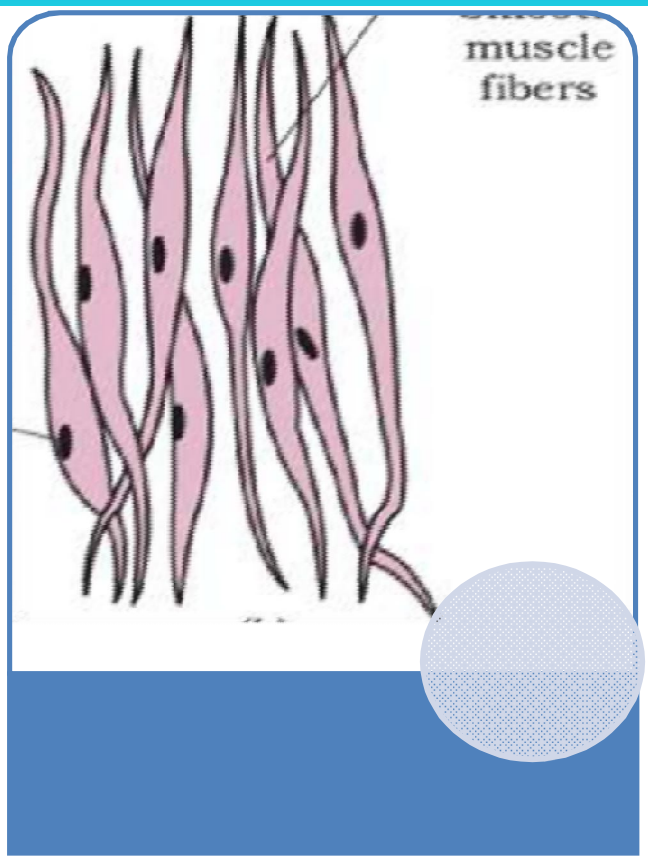
❑ Muscular tissue

ction : It helps in movements of the body

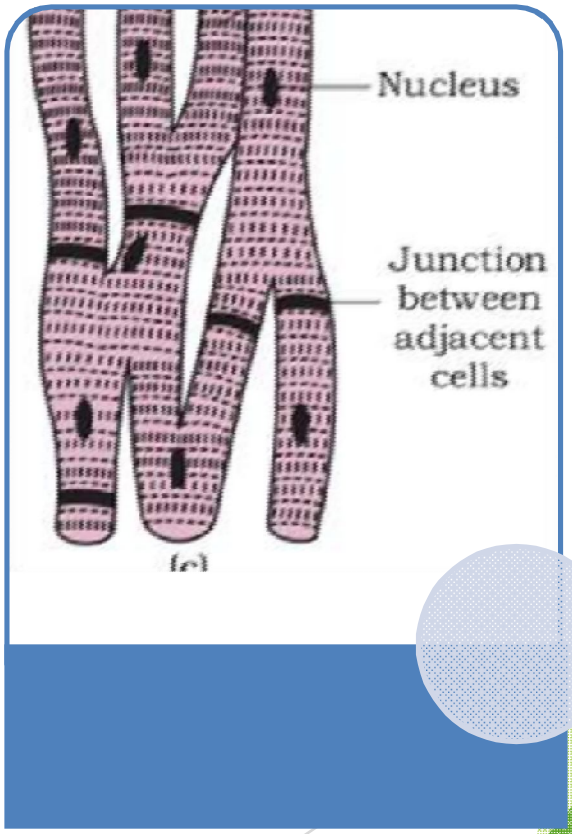
racteristics : Cells are long called Muscles fibres. Muscles have special protein ed Contractile protein which bring expansion and contraction of the muscles and g Movements of the body



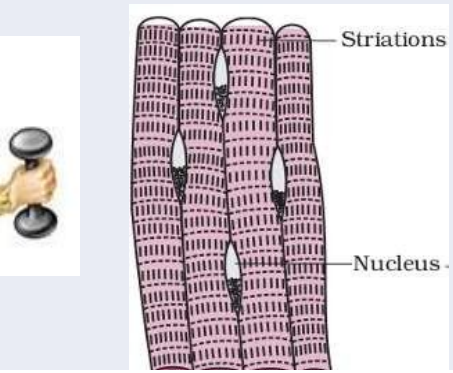
Straited

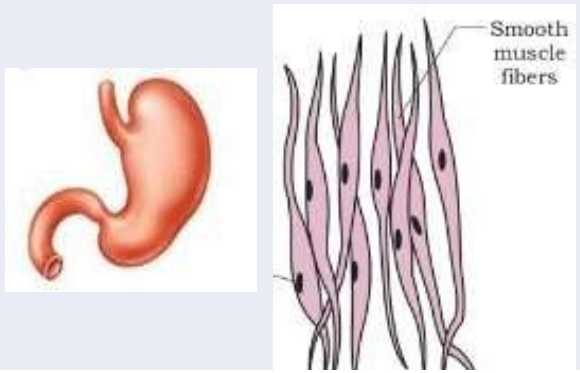


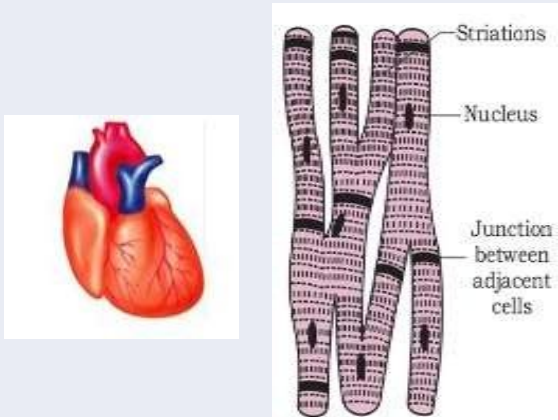
Unstraited

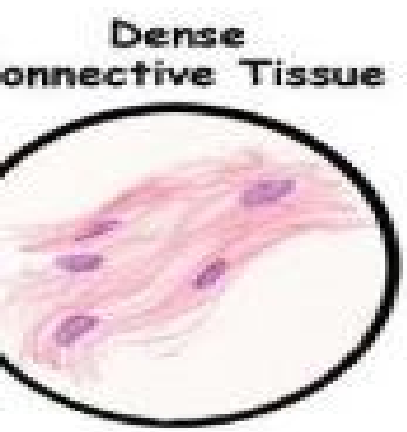


Cardic

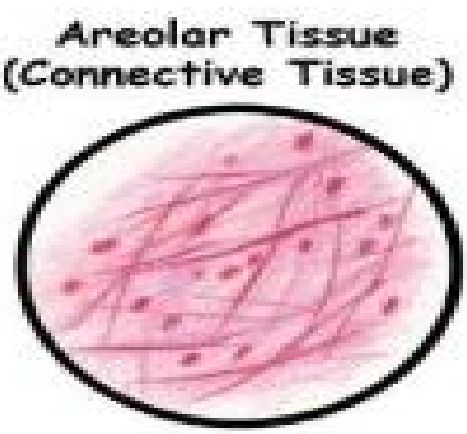

Striations
Nucleus


Smooth muscle fibers

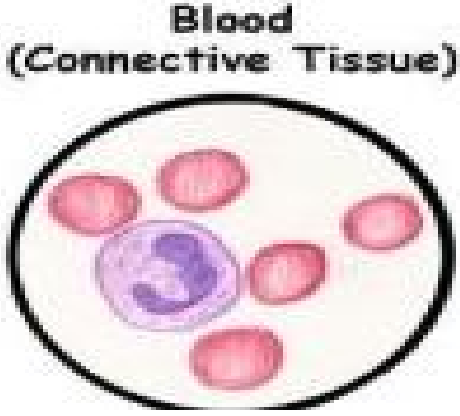

Striations
Nucleus
Junction between adjacent cells


Dense
onnective Tissue


Adipose Tissue
(Connective Tissue)


Areolar Tissue
(Connective Tissue)


Compact Bone
(Connective Tissue)


Blood
(Connective Tissue)

Nervous

ll of nervous tissues are called neurons Many nerve cells are bound by nnective tissue to make a nerve.

nction : Highly specialised to pass stimuli from one place to another place in r body

ntrols all activities of the body

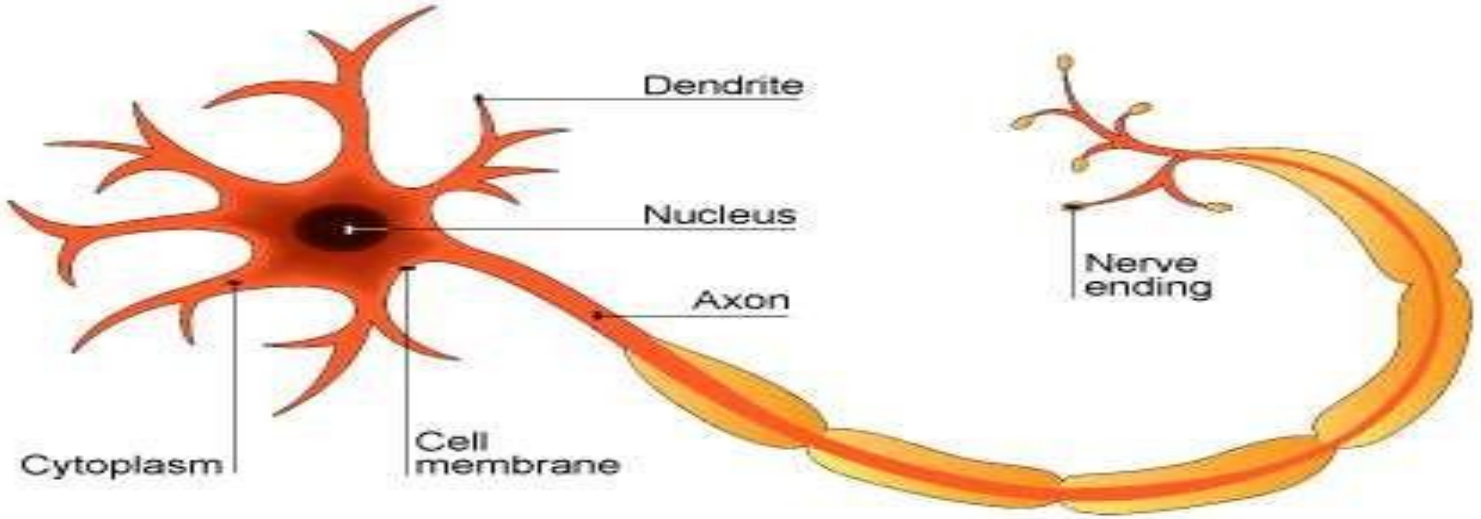
cation : Brain , spinal chord and nerves are made of nervous tissue

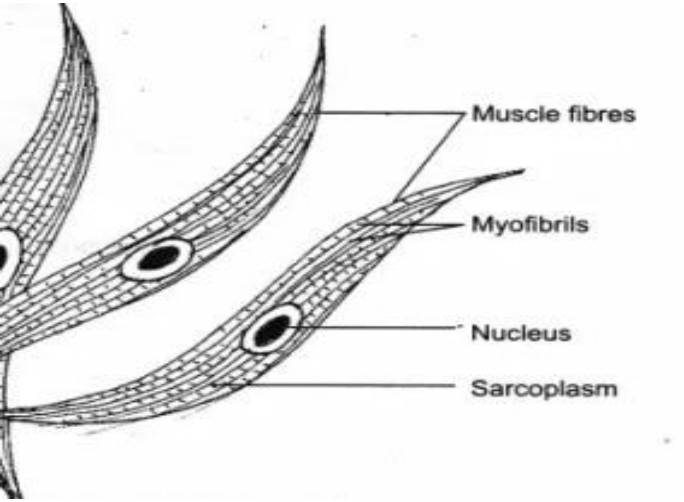
ructure:

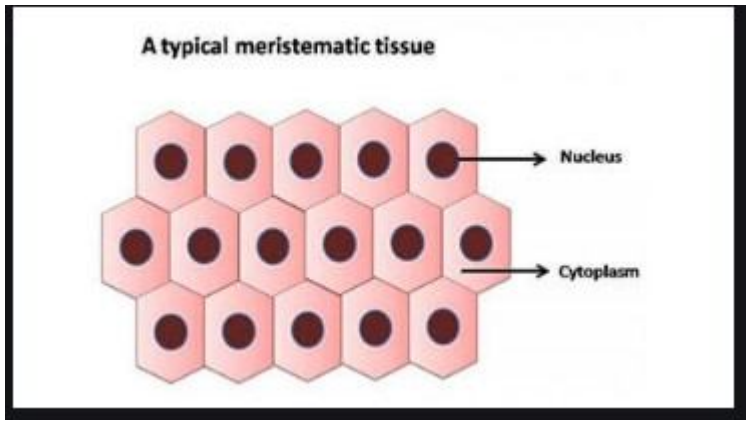
star shaped body which is called cyton which has nucleus and cytoplasm

single long part axon which carry message away from the cyton

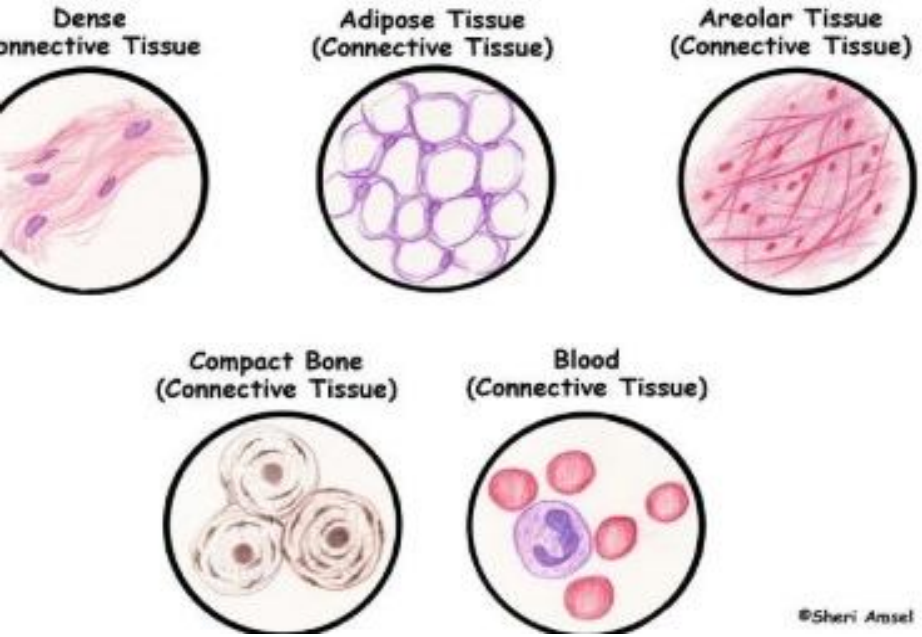
ort branched parts are called dendrites which carry information to cyton

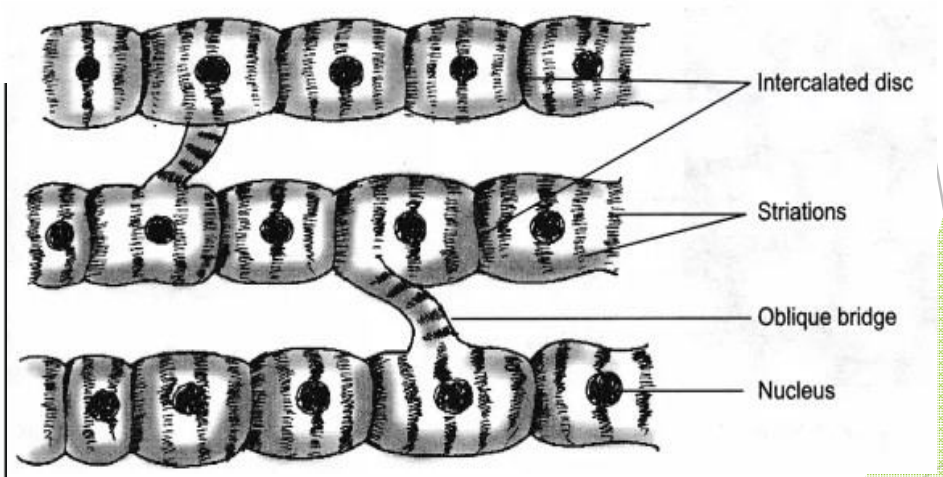






on striated muscles





Cardiac muscles

Observation of features

(a) binary fission in *Amoeba, and (b) budding in yeast and Hydra with the help of prepared slides.*

Teaching Aids

Youtube Videos

PPT

Youtube https://www.youtube.com/watch?v=CIM2Tz5VFU4 tissues

https://www.youtube.com/watch?v=HUh8Whurs1A Tissues

NCERT Text Book

Dr. P S Verma and VK Agarwal