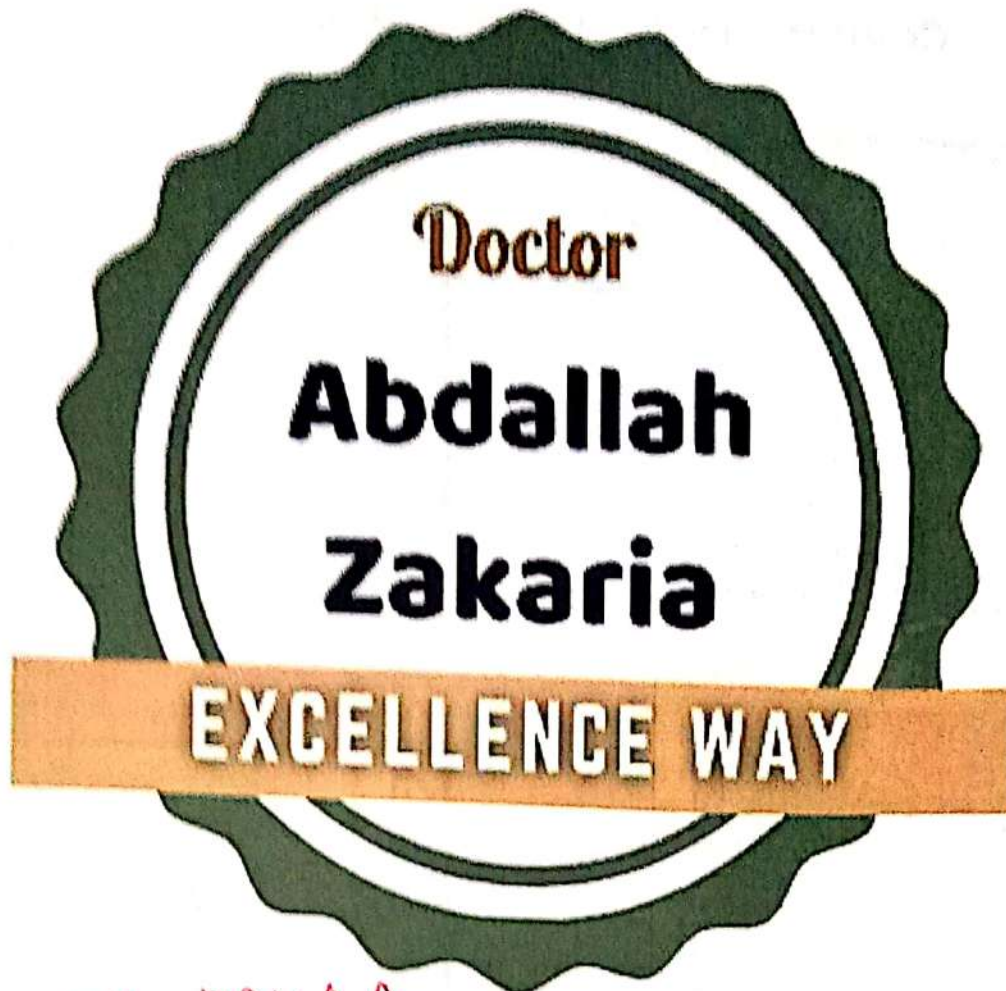




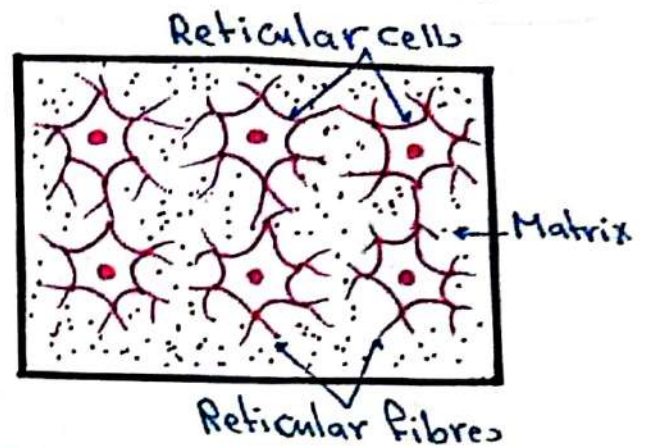
DR_BAHAA



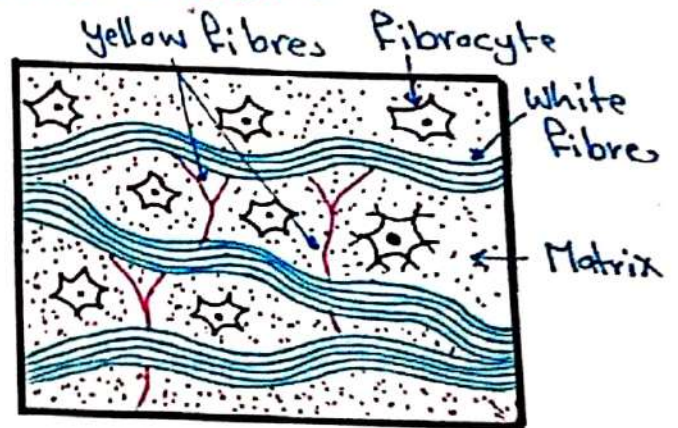
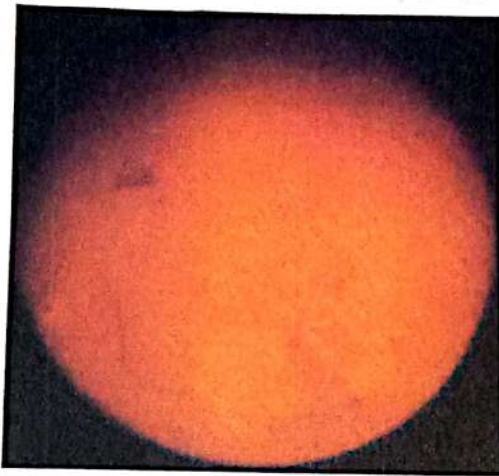
Practical Zoology

Histology scheme

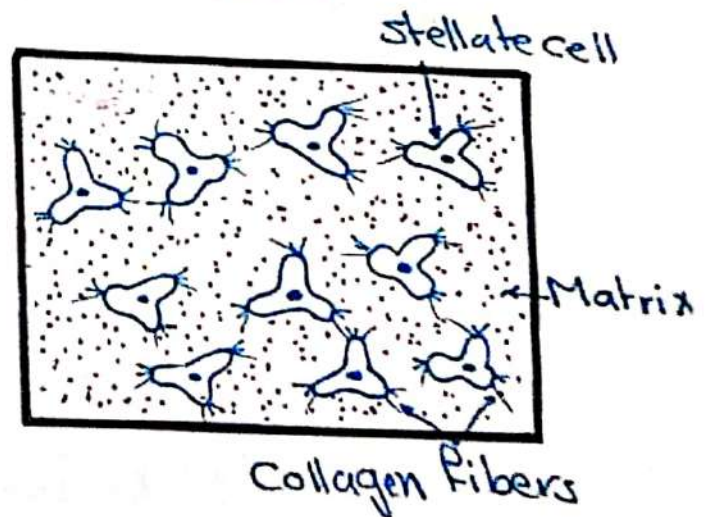
Connective tissue proper



„ Reticular connective tissue „

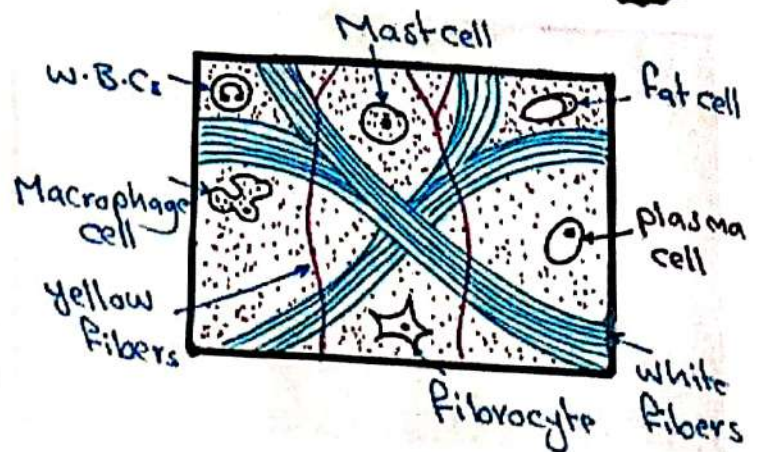


„ Fibrous connective tissue „

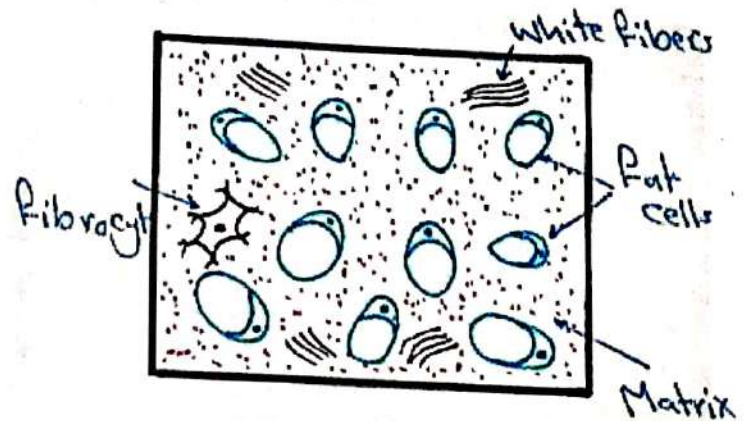
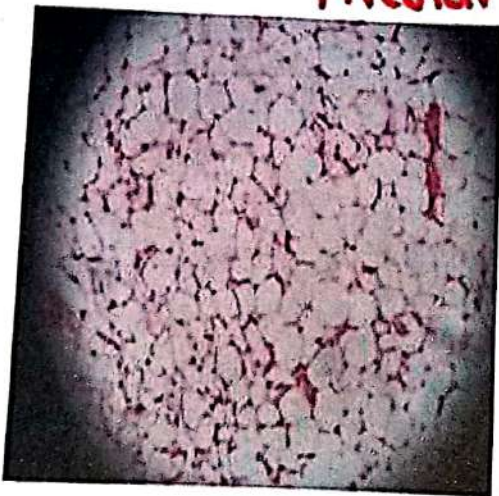


„ Mucous connective tissue „

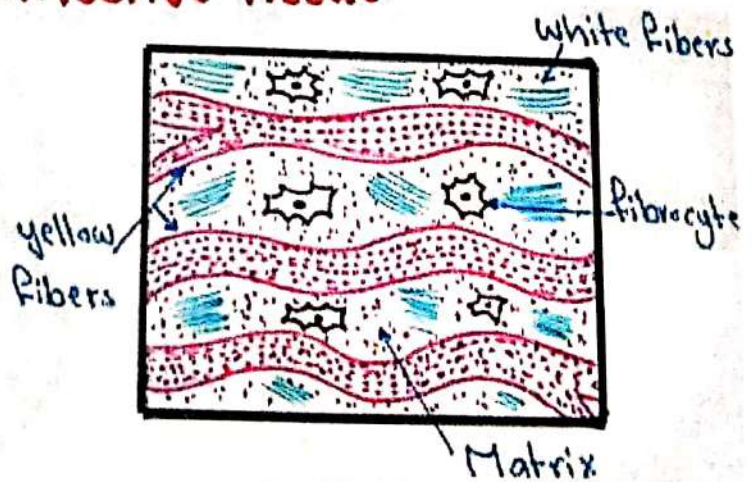
Connective tissue proper



Areolar connective tissue

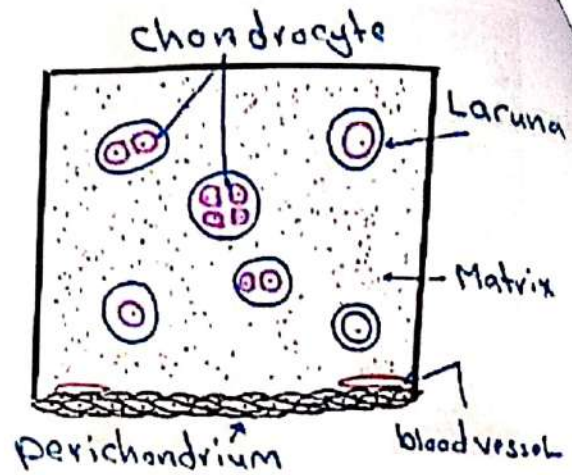


Adipose connective tissue

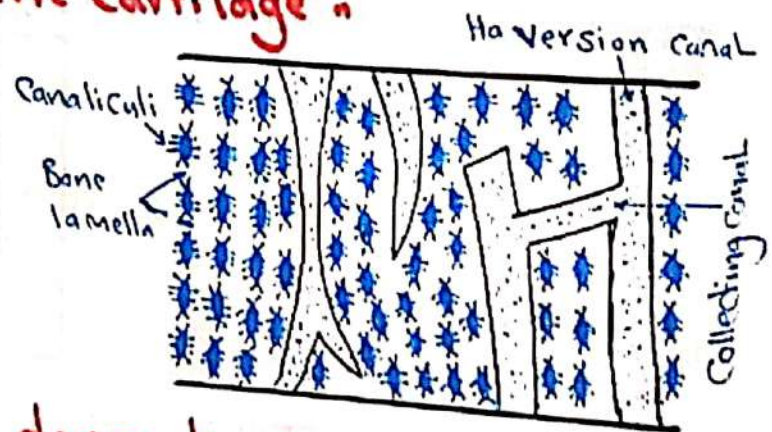


Elastic connective tissue

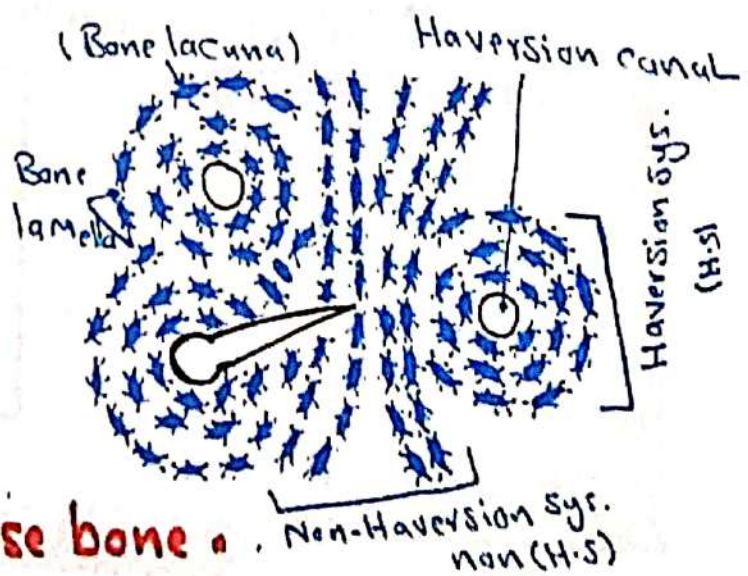
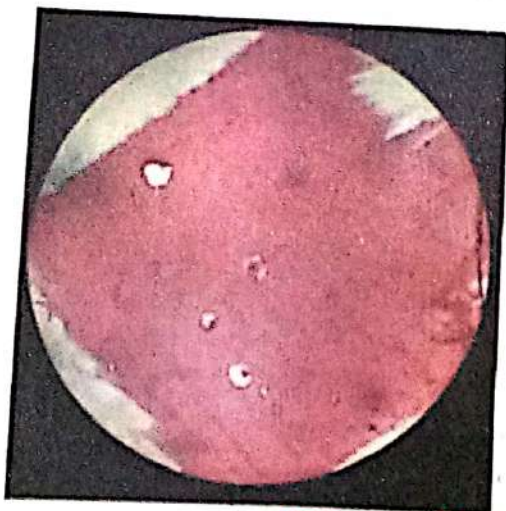
Skeletal connective tissue



" Hyaline Cartilage "

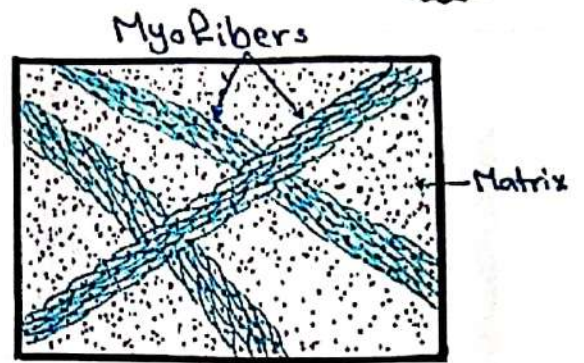
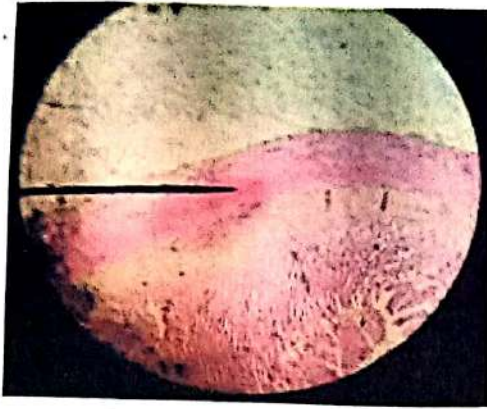


" L.S of dense bone "

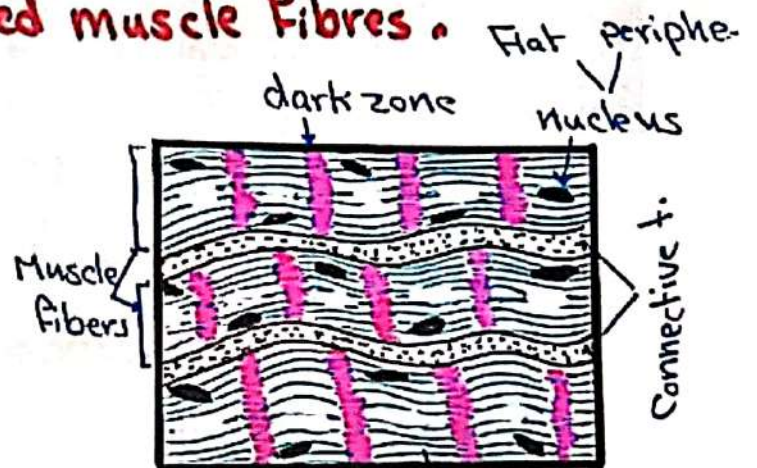
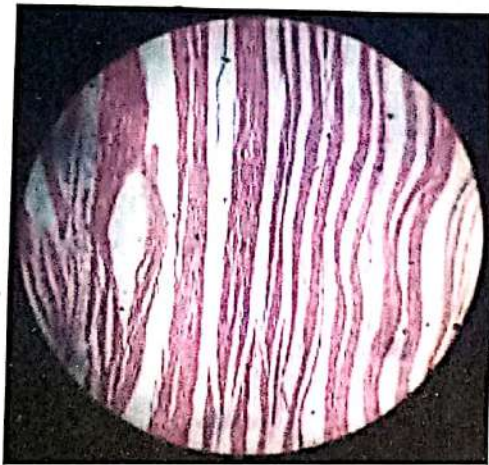


" T.S of dense bone "

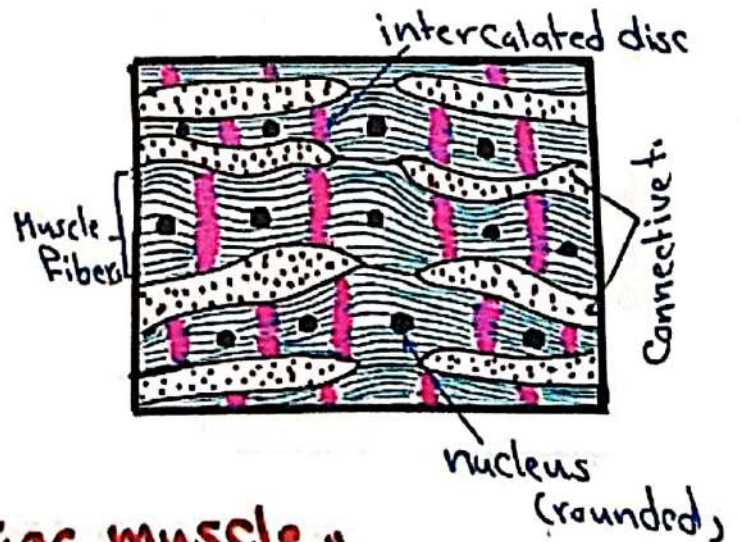
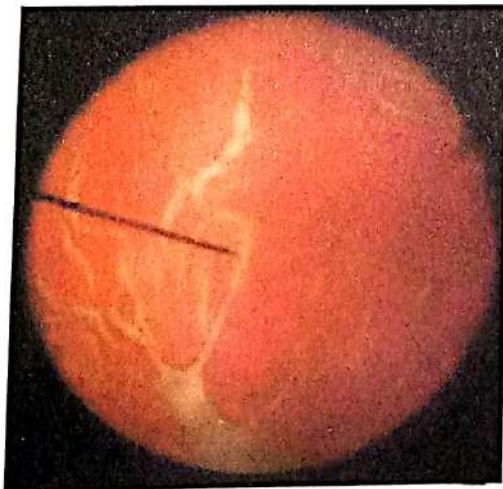
Muscular tissue



„ unstriated muscle fibres „

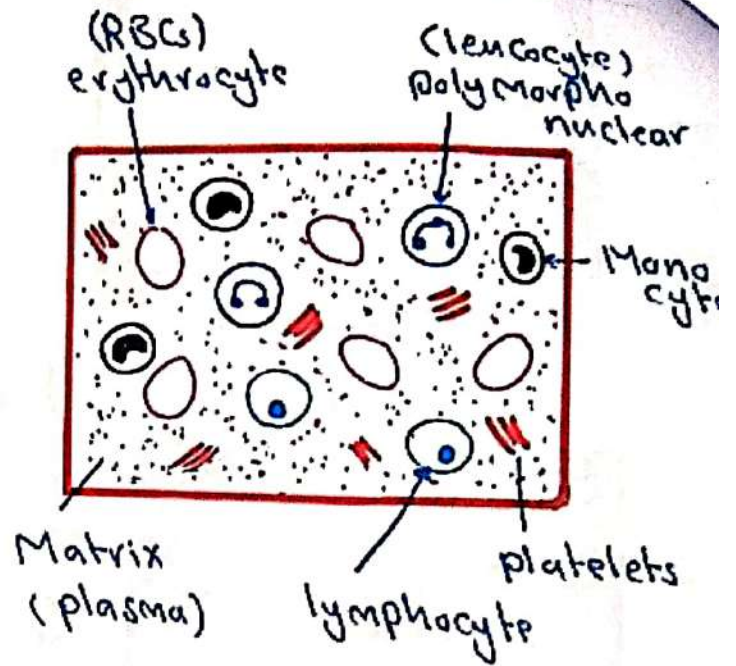


„ L.S in striated muscles „



„ L.S of cardiac muscle „

Vascular connective tissue



Film of Human blood



بص علي الشريحة من برا

Nervous system



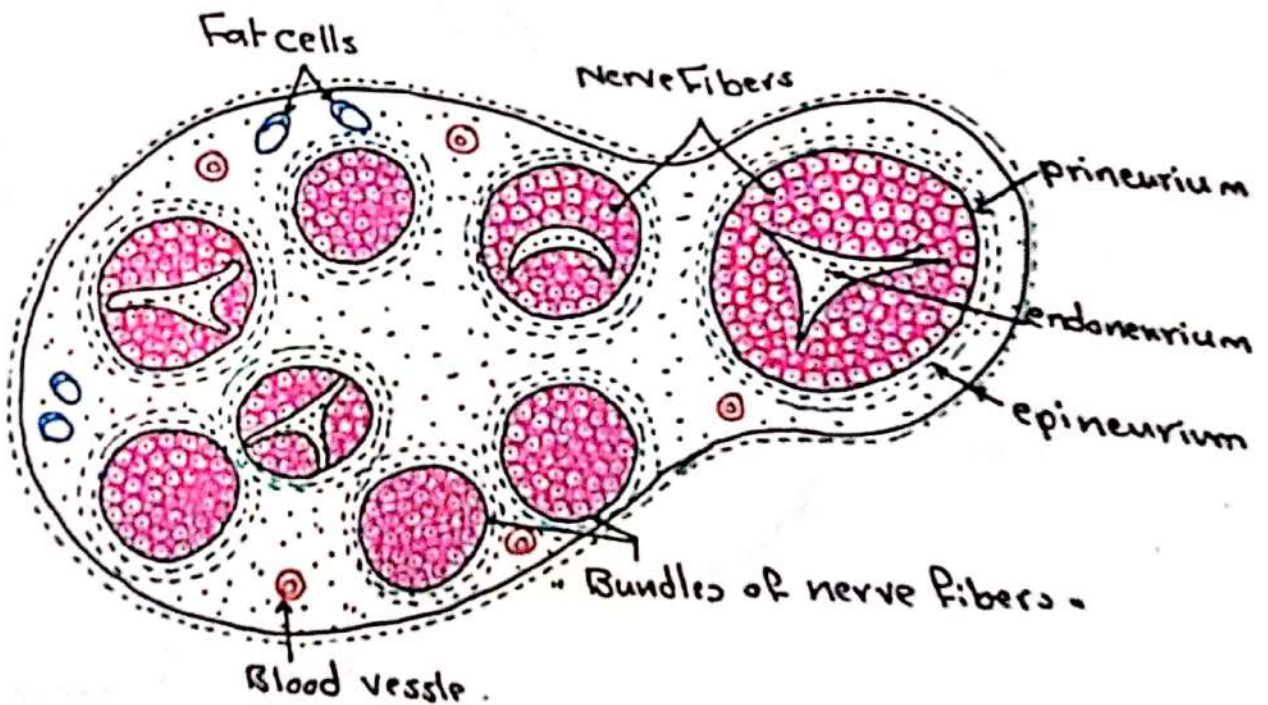
T.S in sciatic nerve of cat :



• شكل القطاع تحت الميكروسكوب
يزي المساحة و هتلاقى شكل
ال • Bundles • واضح ادي
تحت الميكروسكوب



Bundles of nerve fibers



Nervous system

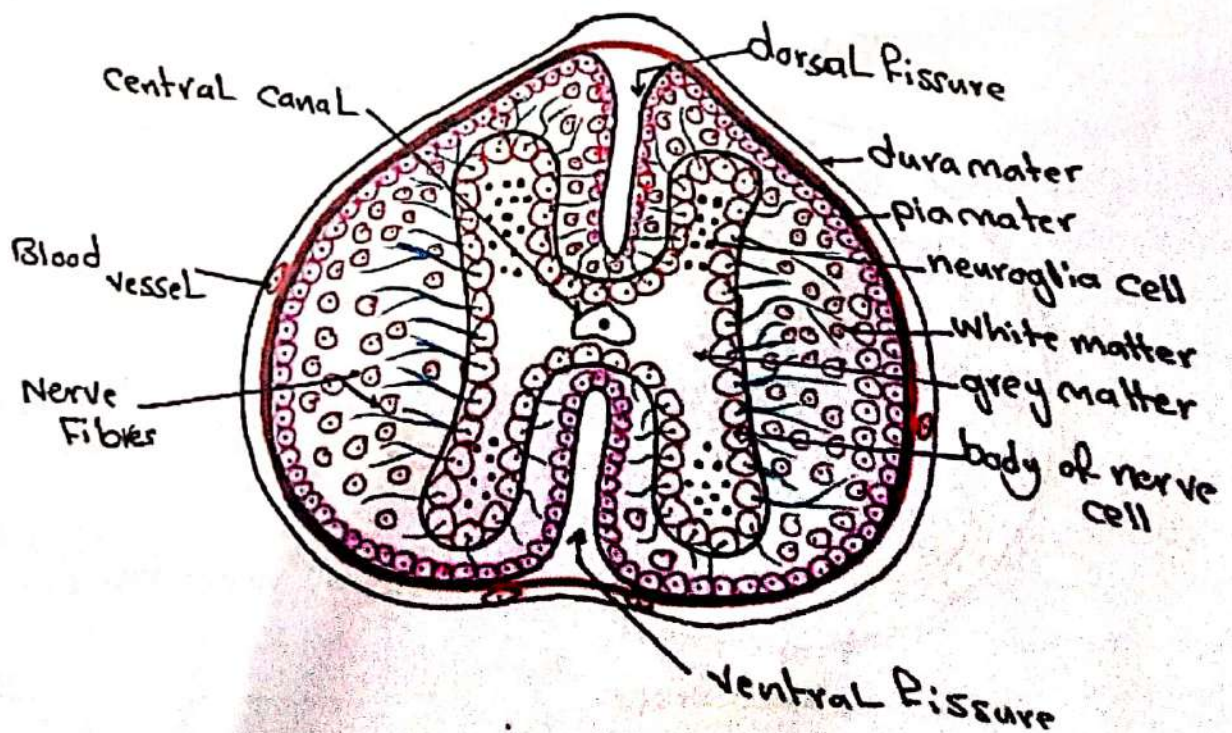


T.s of spinal cord of the Rabbit:



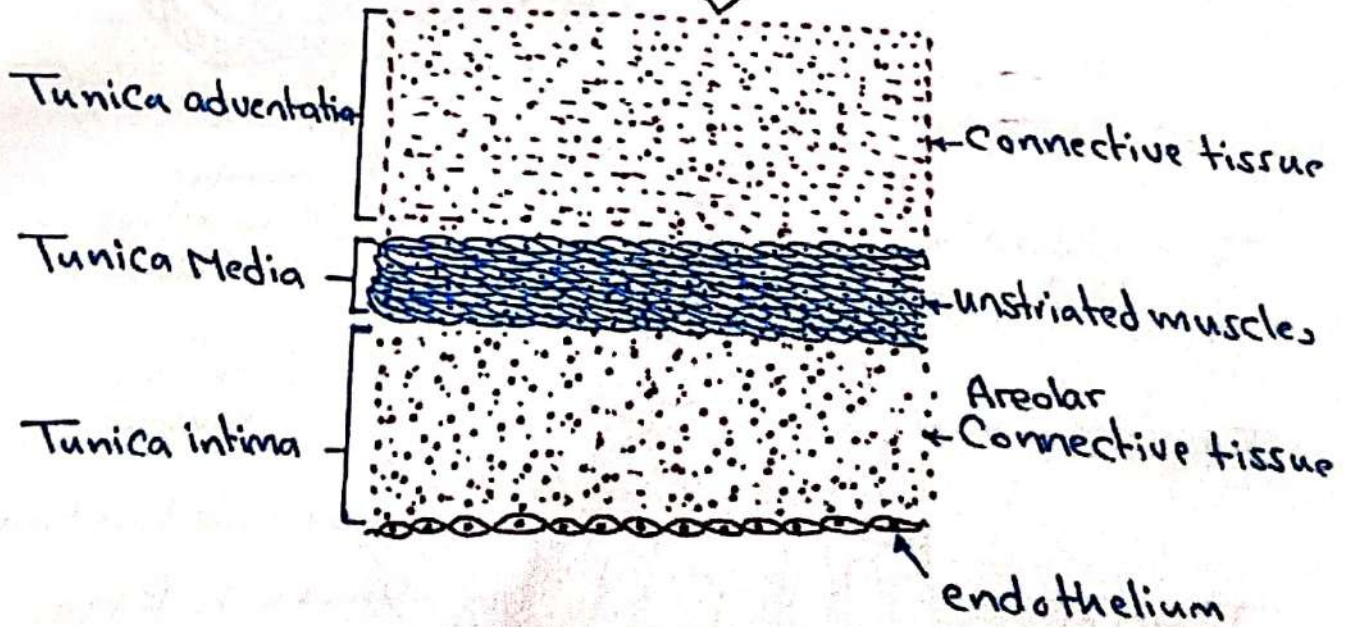
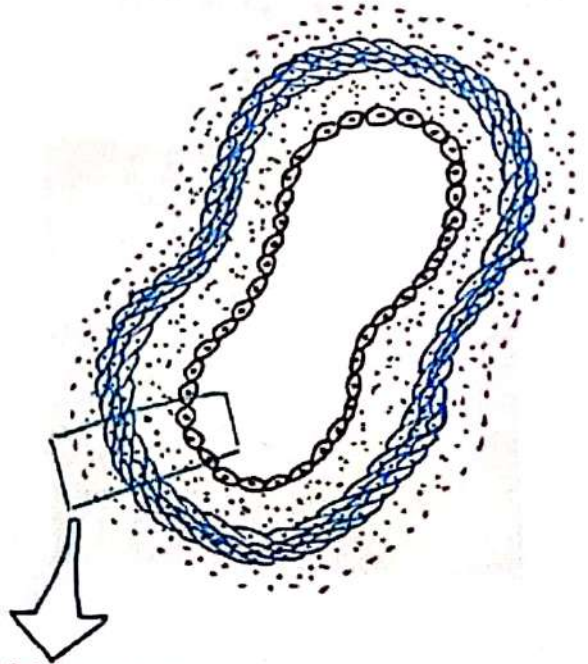
- الشريحة من برا هتلاقيها
واحدة حرف ال (H)
تحت الميكروسكوب، كن هتلاقي
ال [Central Canal] واحدة واحدة و المتكئة
الي حولها واحدة حرف (H)
و غامرة متوية عشان فيها

ال "grey matter"



Blood vessels

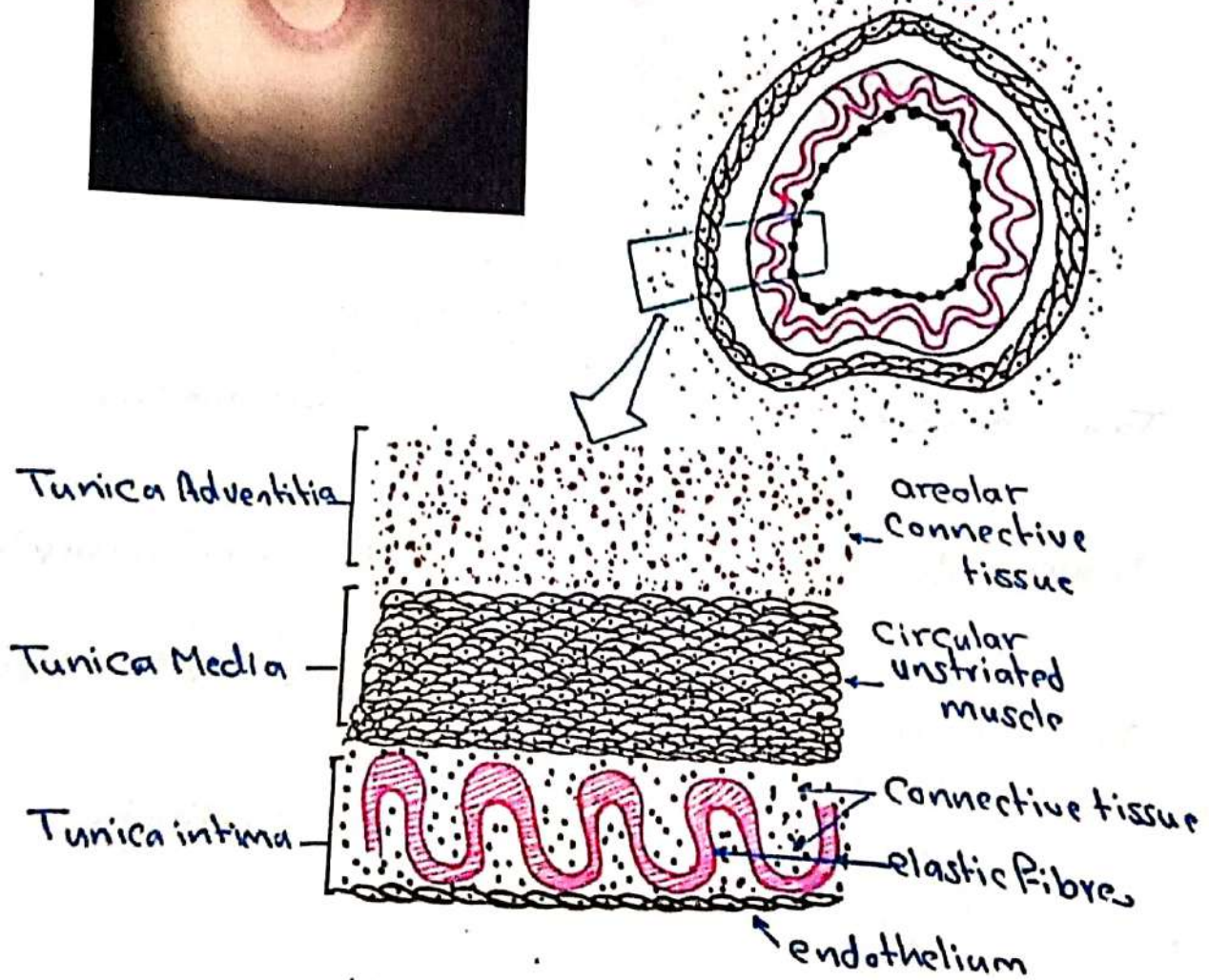
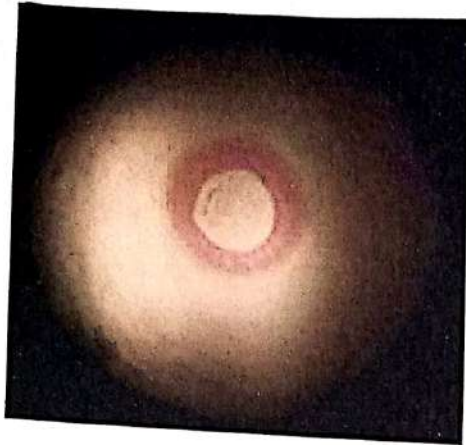
Sector of the wall of vein:



Blood vessels

Sector of the wall of artery :

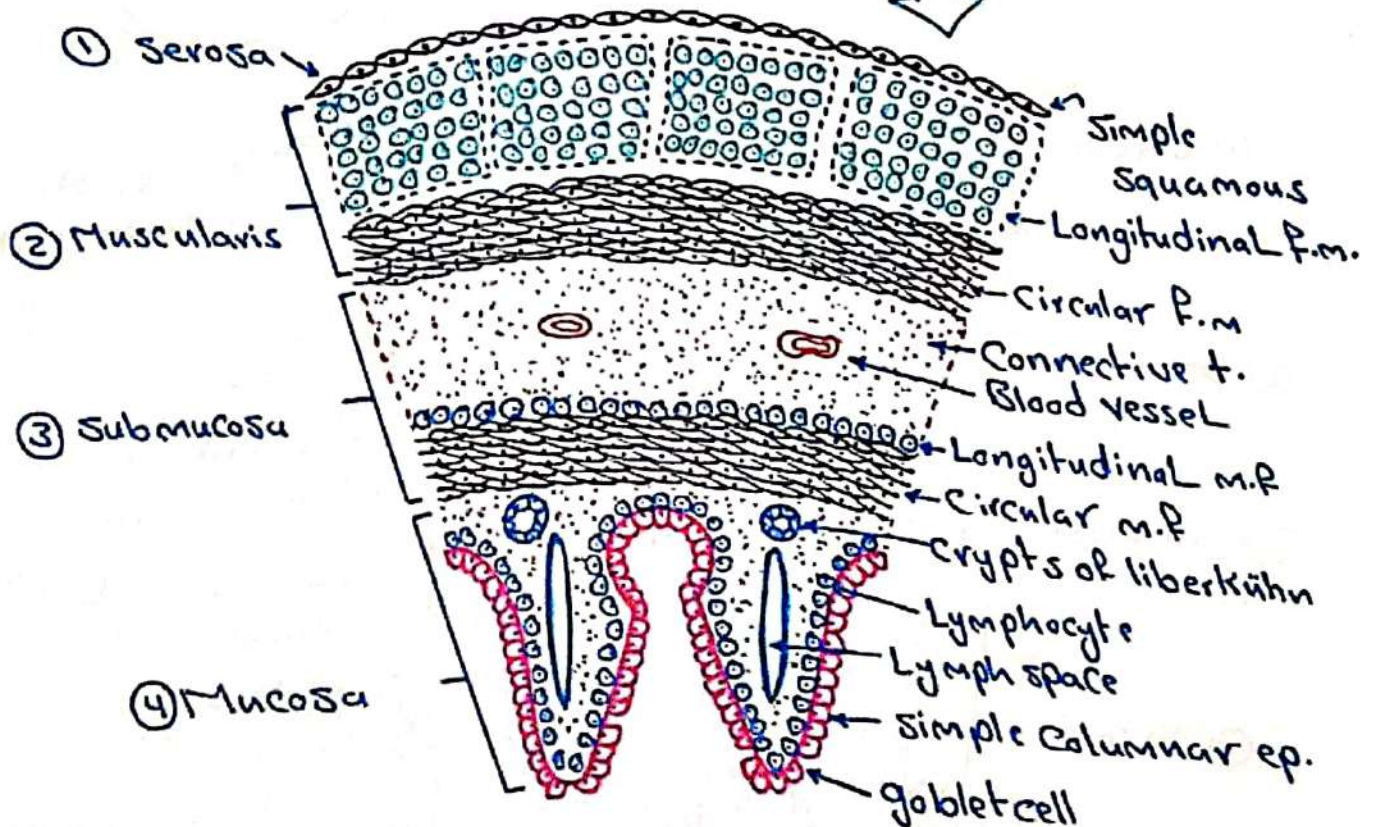
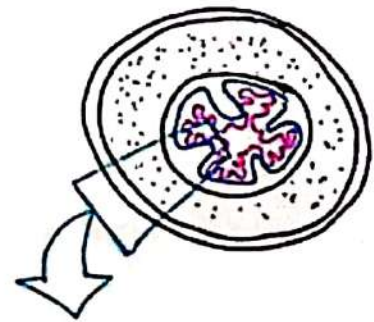
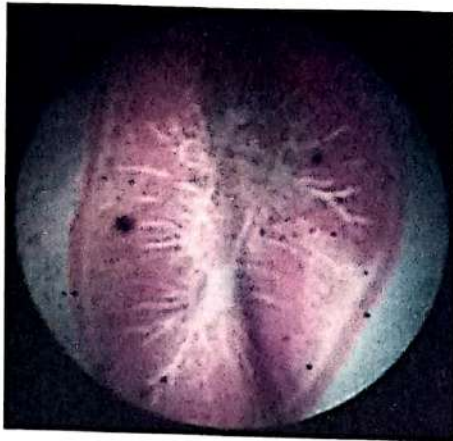
• هتلاقى الشريجة من جوه
فارغة - عبارة عن جدار الشريان
فقط



Digestive system



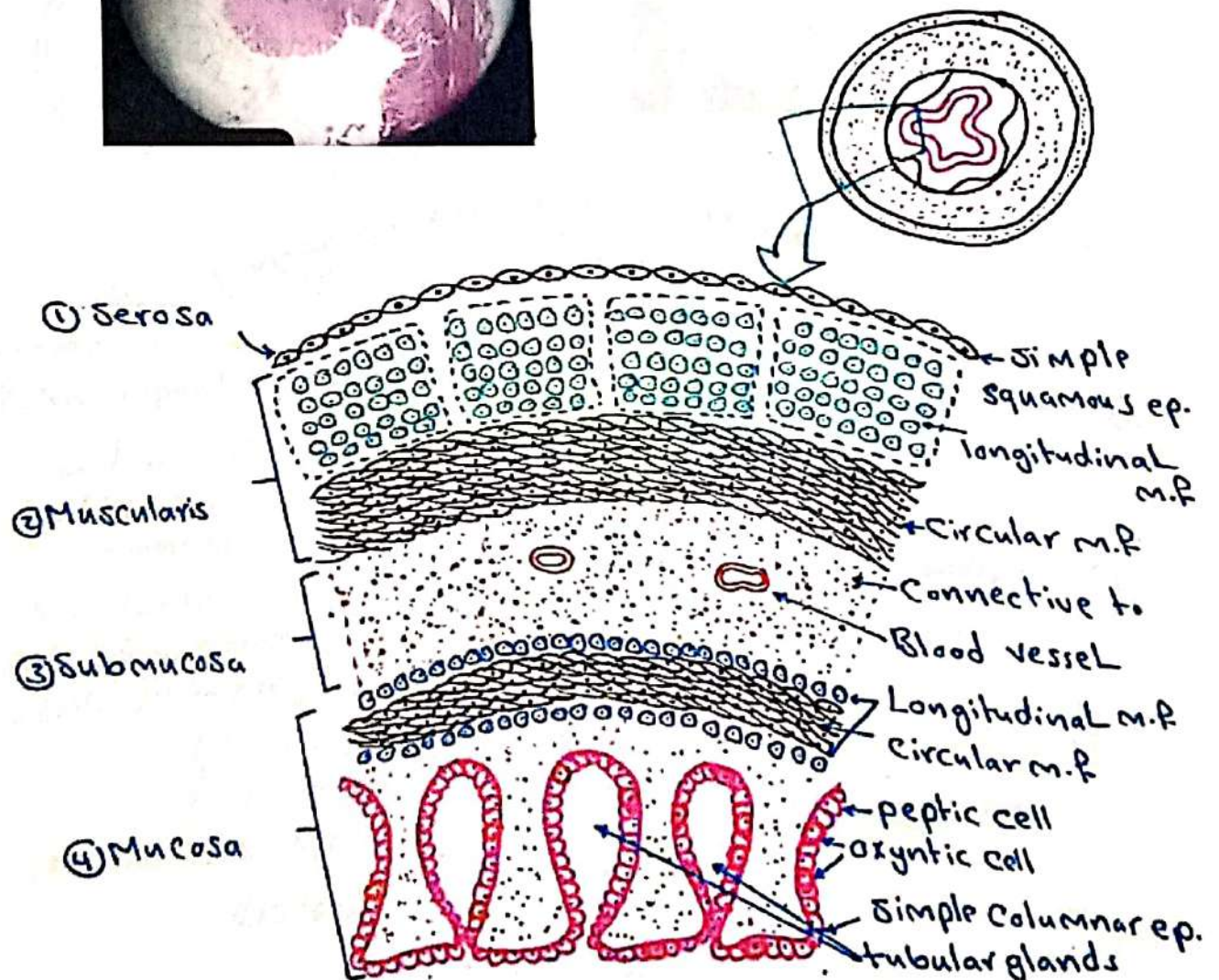
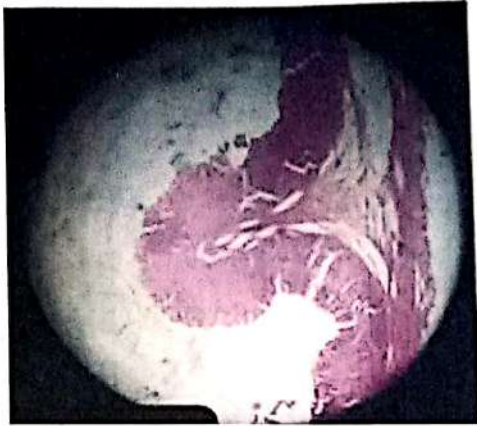
T.S of the ileum of the Rabbit:



Digestive system



T.S of the stomach of Rabbit :

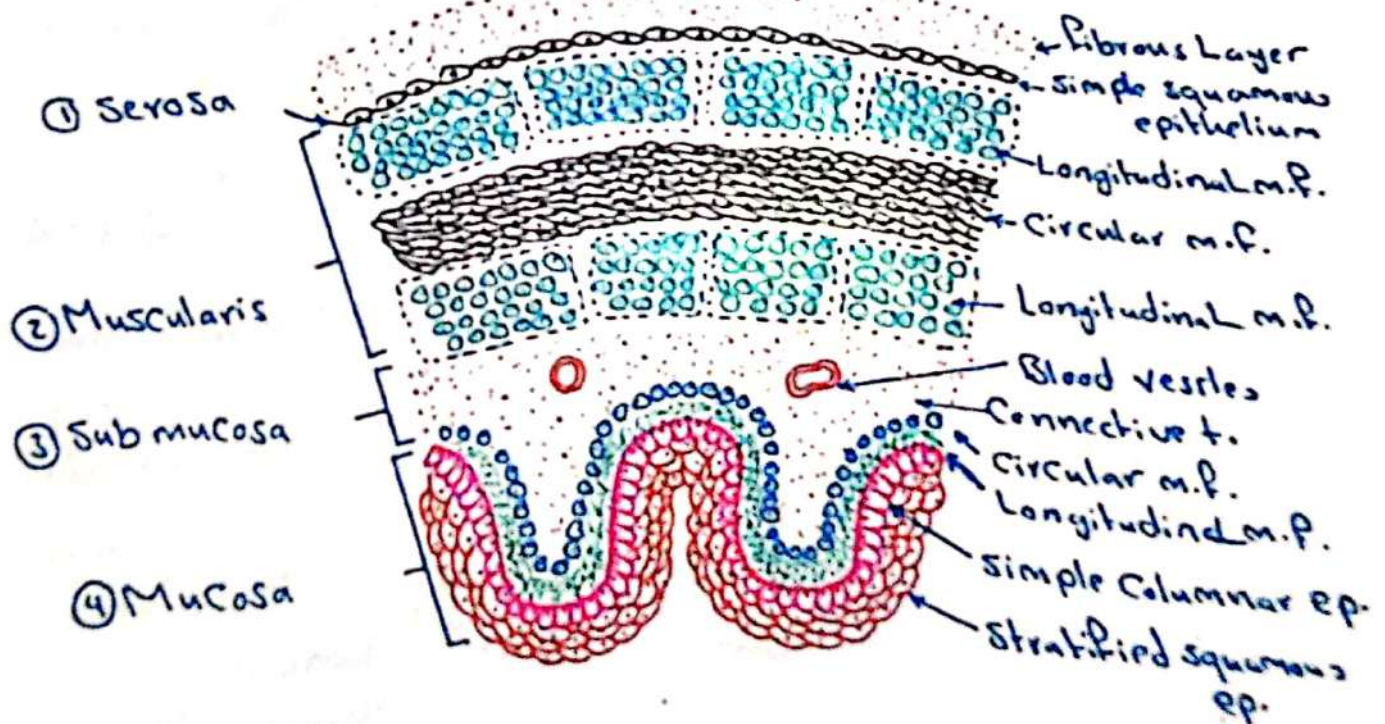
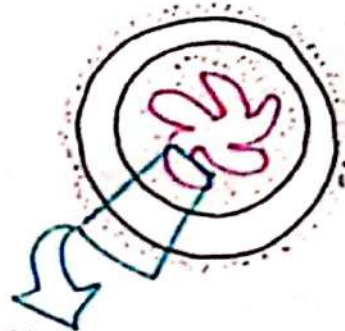


Digestive system

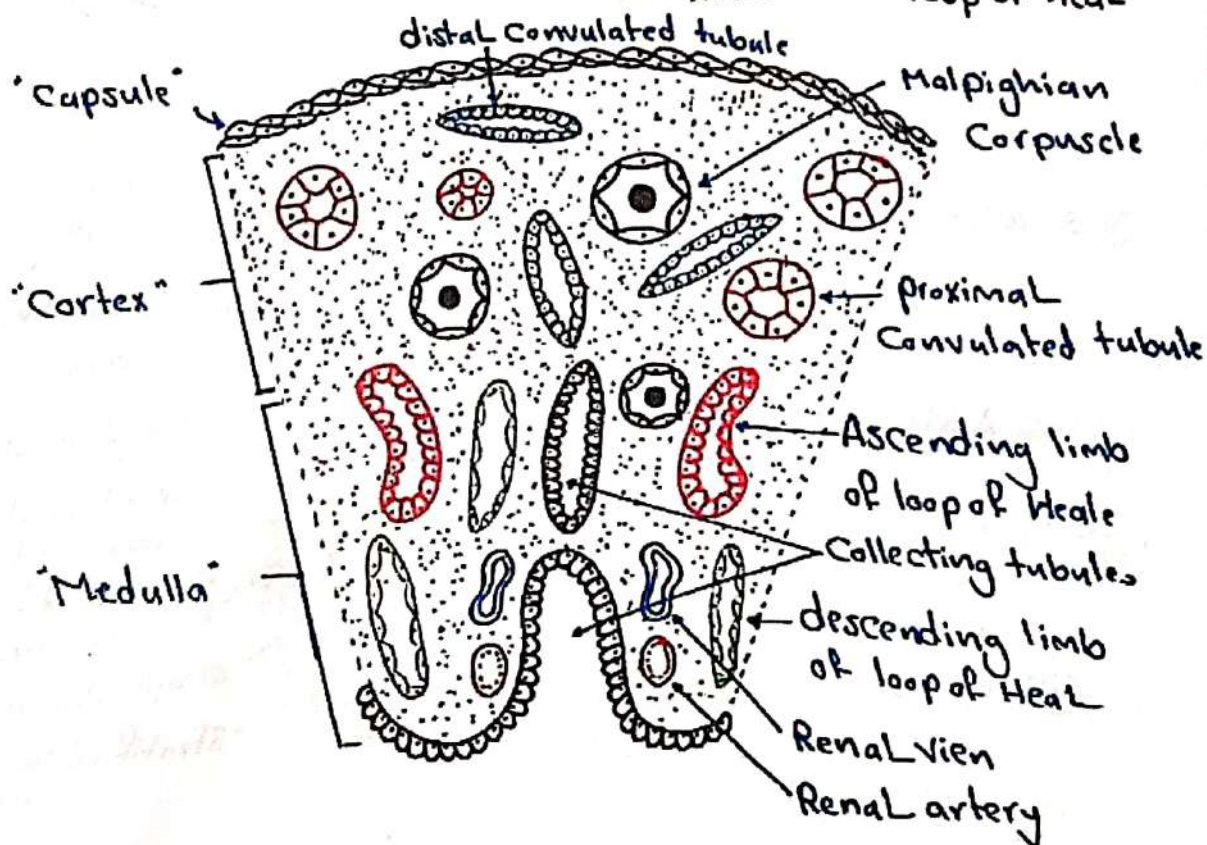
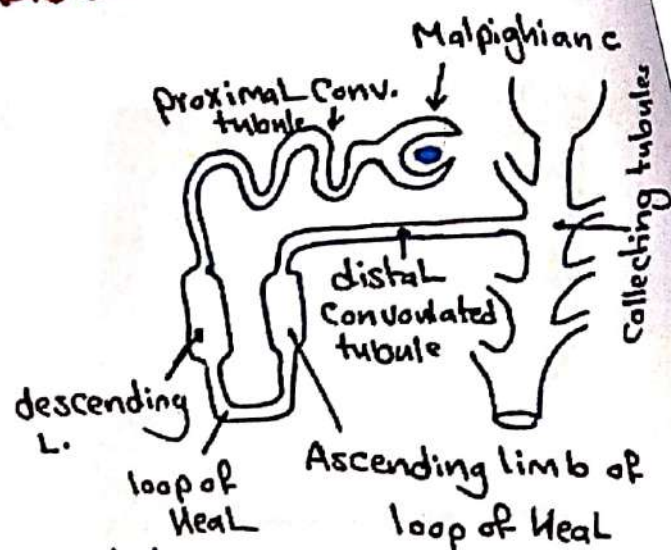


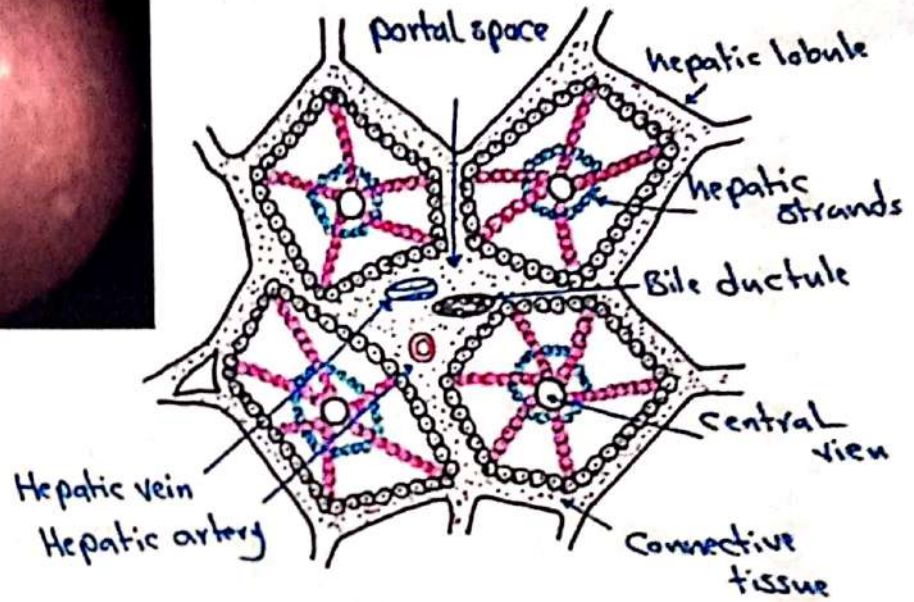
T.S of the oesophagus of Rabbit:

شكل السمية تحت الميكروسكوب
شبه الكوبية

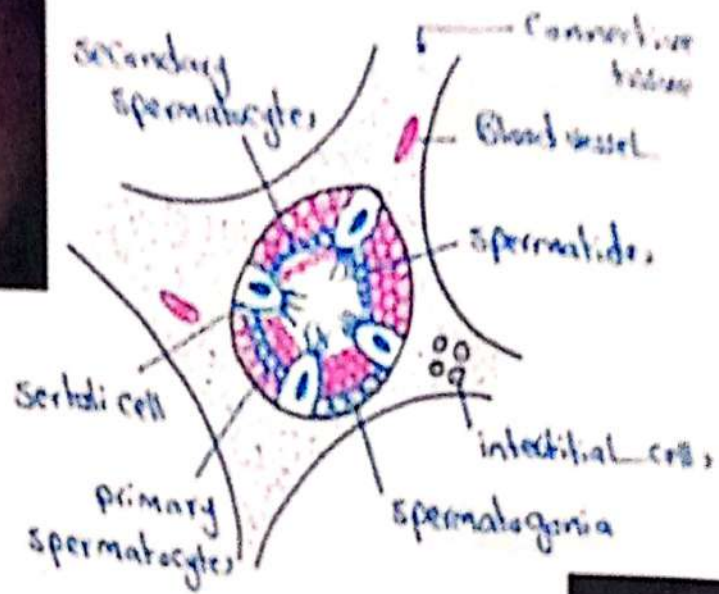


T.S of the kidney of Rabbit:

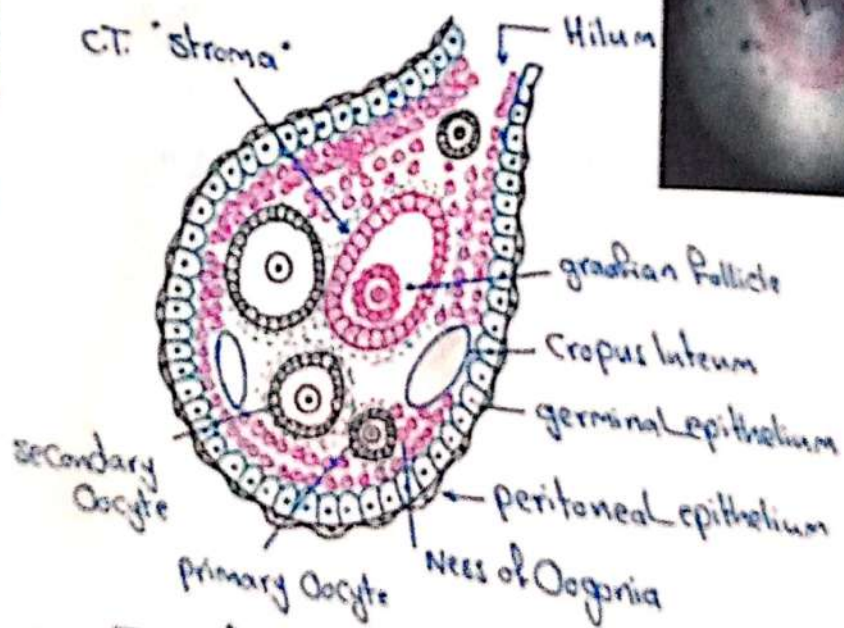




• Section of liver of the pig "



• T.s of testis of Rat .



• T.s of ovary of cat .

Dr. Abdallah Zakaria C.

"Oral histology"

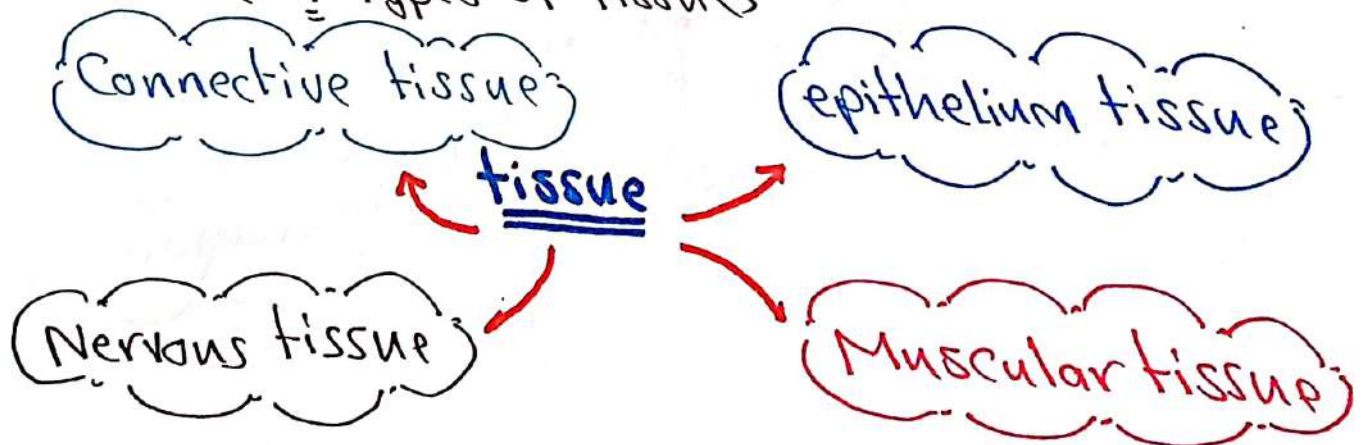
By doctor: A. Zakaria

Histology is a branch of science which deals w study of structure and function of tissue

Tissue: a group of cells similar in structure and perform the same function and bounded by "matrix"

☺ (intercellular subst-) ↓

➤ there are 4 types of tissues



Epithelial tissue

General characters:

① Origin $\Rightarrow$ $\begin{cases} \text{ectoderm.} \\ \text{mesoderm.} \\ \text{endoderm.} \end{cases}$

② Called

- 1- epithelium $\Rightarrow$ Cover the outer surface of the body.
- 2- endothelium $\Rightarrow$ lining hollow organs
- 3- mesothelium $\Rightarrow$ lining the internal body cavity.

③ Rest on $\Rightarrow$ Basement membrane.

④ have scanty matrix..

⑤ have no 'Blood vessels' or 'lymphatics'

⑥ have $\rightarrow$ nerve fibers

Classification:



Covering and lining epithelium

"simple epithelium"

- Formed From one layer of cells

- ① Squamous epithelium
- ② Columnar epithelium
- ③ Cuboidal epithelium
- ④ Ciliated Columnar epi.
- ⑤ pseudostratified epi
- ⑥ ciliated pseudostratified epi

"Stratified epithelium"

- Formed From more than one layer of cells

- ① Squamous epi.
- ② Cuboidal epi.
- ③ Columnal epi.
- ④ ciliated columnar epi.
- ⑤ transitional epi.

➤ all types of epithelium tissue rest on basement membrane except ⇒ "simple squamous epithelium"

➤ Stratified epithelium Formed mainly From three layers

- ← outer most layer
- middle most layer
- lower most layer

Simple squamous epi.



have flattened cells and flattened nucleus

e.g.: • Bowman's capsule
• Blood vessel.

Simple cuboidal epi.



have cuboidal cells and large, central, rounded nucleus

e.g.: • thyroid gland.
• kidney tubules.

Columnar epithelium



have columnar cells w oval and basal nucleus

e.g.: Stomach
intestine
secretory
absorptive

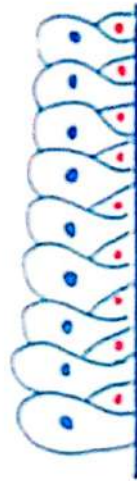
Ciliated columnar



Like columnar epi.
+ have cilia

e.g.: Branchioles of
lungs.

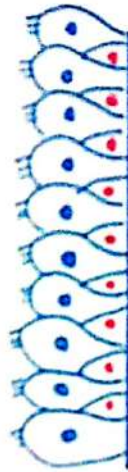
pseudostratified



have two types of cells
large
small.

e.g.: parathyroid gland.

Ciliated pseudostratified



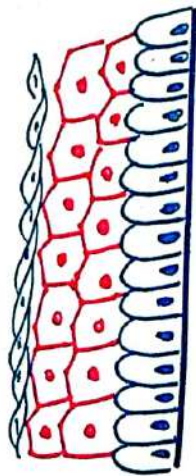
Like pseudostratified
+ have cilia

e.g.: "Trachea"
"parathyroid gland"

v. and "

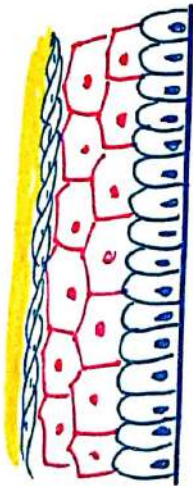
① stratified squamous

➤ Non-keratinized



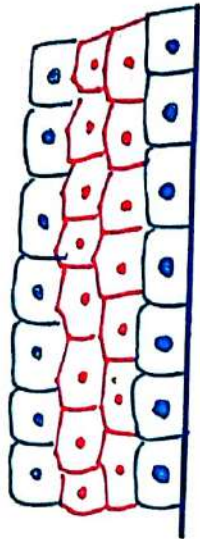
e.g: lining the digestive system

➤ Keratinized



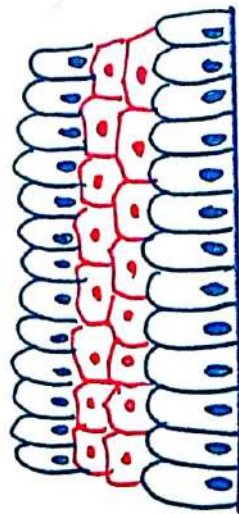
e.g: the epidermis of the skin.

② stratified cuboidal



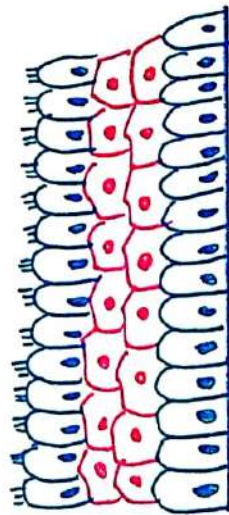
e.g: sweat gland
seminiferous tubules of testis

③ stratified columnar



e.g: lining epithelium of pharynx

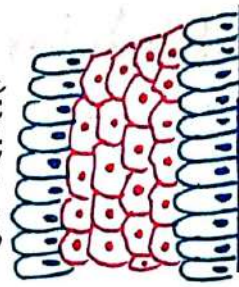
④ ciliated columnar



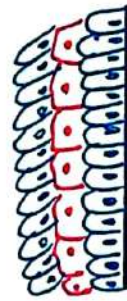
e.g: lining larynx
epithelium of foetal oesophagus.

⑤ Transitional

at relax.



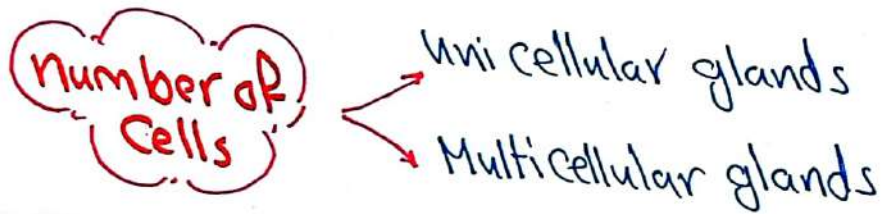
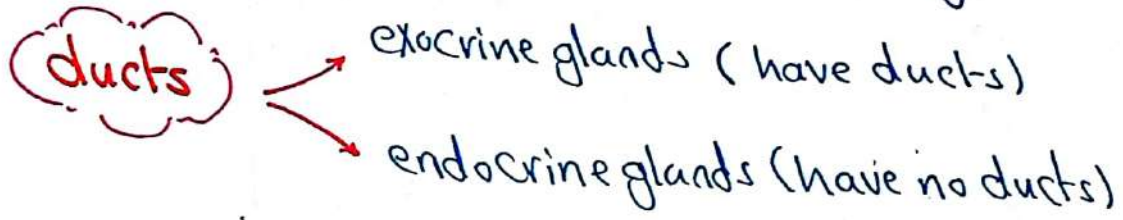
at Function



e.g: wall of urinary bladder.

"Glandular epithelium"

glandular epithelium classified according to:



they are classified according to the branching of the ducts into

Simple $\Rightarrow$ have one duct and one secretory part

Simple branched $\Rightarrow$ have one duct and more than secretory part.

Compound branched $\Rightarrow$ have more than one duct and more than one secretory part.

Nature of secretion

- Mucous gland e.g: platine glands
- Serous gland e.g: parotid glands
- Muco-Serous gland e.g: mandibular glands.

Mode of secretion

- Merocrine "Not destroyed"
- Holocrine "Complete destroyed"
- Apocrine "apical part of the cells destroyed"

" Neuro-epithelium "

A special type of epithelium , specialized For perception of external stimuli

e.g: taste buds

حبوب التذوق في
.. اللسان

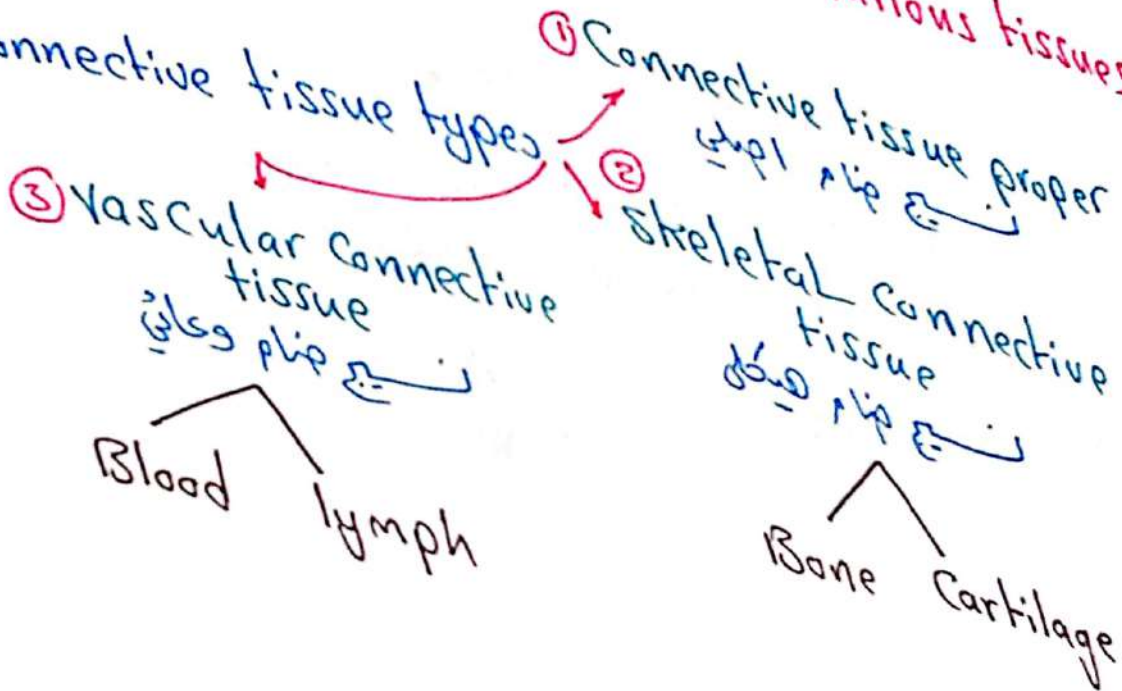
Function of epithelium tissue:

- ① protection of the body e.g: epidermis
- ② Absorption ③ excretion
- ④ secretion by glandular epi.
- ⑤ sensation by neuro-epi.
- ⑥ Reproduction by - germinal-epi -

" Connective tissue "

Called connective as it connects various tissues and organs.

Connective tissue types



"Connective tissue"

Formed From 3 Components

Cells

- ① Mesenchymal
- ② Fibroblasts
- ③ Fat cells
- ④ Mast cells
- ⑤ Macrophages
- ⑥ plasma cells
- ⑦ pigment cell
- ⑧ Eosinophils

Matrix

Solid

↓
in bone

Fluid

↓
in blood

Fibres

- ① white collagenous
- ② yellow elastic
- ③ Reticular

types of connective tissue proper:

- ① loose connective tissue.
- ② Adipose connective tissue.
- ③ Mucoid connective tissue
- ④ Dense connective tissue
- ⑤ yellow elastic C.T.
- ⑥ Reticular connective tissue

„the muscular tissue“

origin $\Rightarrow$ "Mesoderm"

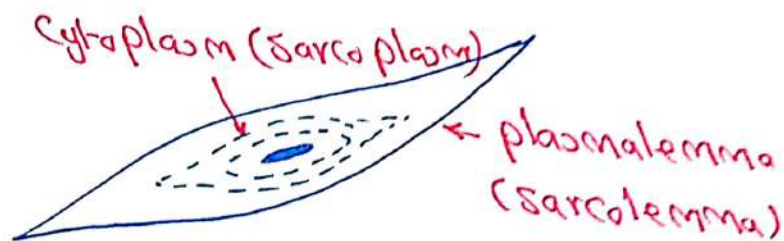
- have three types of muscles
 - Skeletal
 - Smooth
 - Cardiac

▷ muscles may be

- striated مخطط
- non-striated غير مخطط

▷ muscles may be

- volantry إرادي
- involantry غير إرادي



Skeletal
إرادي

volantry

striated

- attach to bone

Smooth
غير إرادي

involantry

non-striated

- Alimentary Canal
- Blood vessel

Cardiac
غير إرادي

involantry

show less striation.

- heart wall,

„Nervous tissue.“

origin $\Rightarrow$ endodermal.

- nervous tissue Formed From small unites Called "neuron", "nerve cells"

Neuron Framed From "cell body"
"axon"

