Tissue Level of Organization
(Muscular Tissues & Nervous Tissues)

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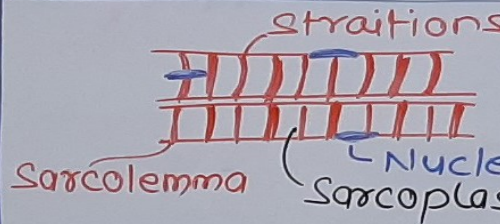
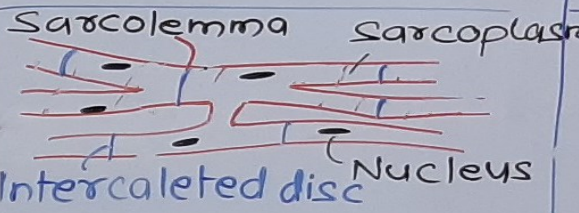
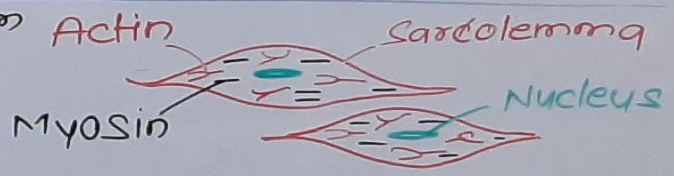
MUSCULAR TISSUES - Tissues have ability to contract & Relax, Made by Myocytes

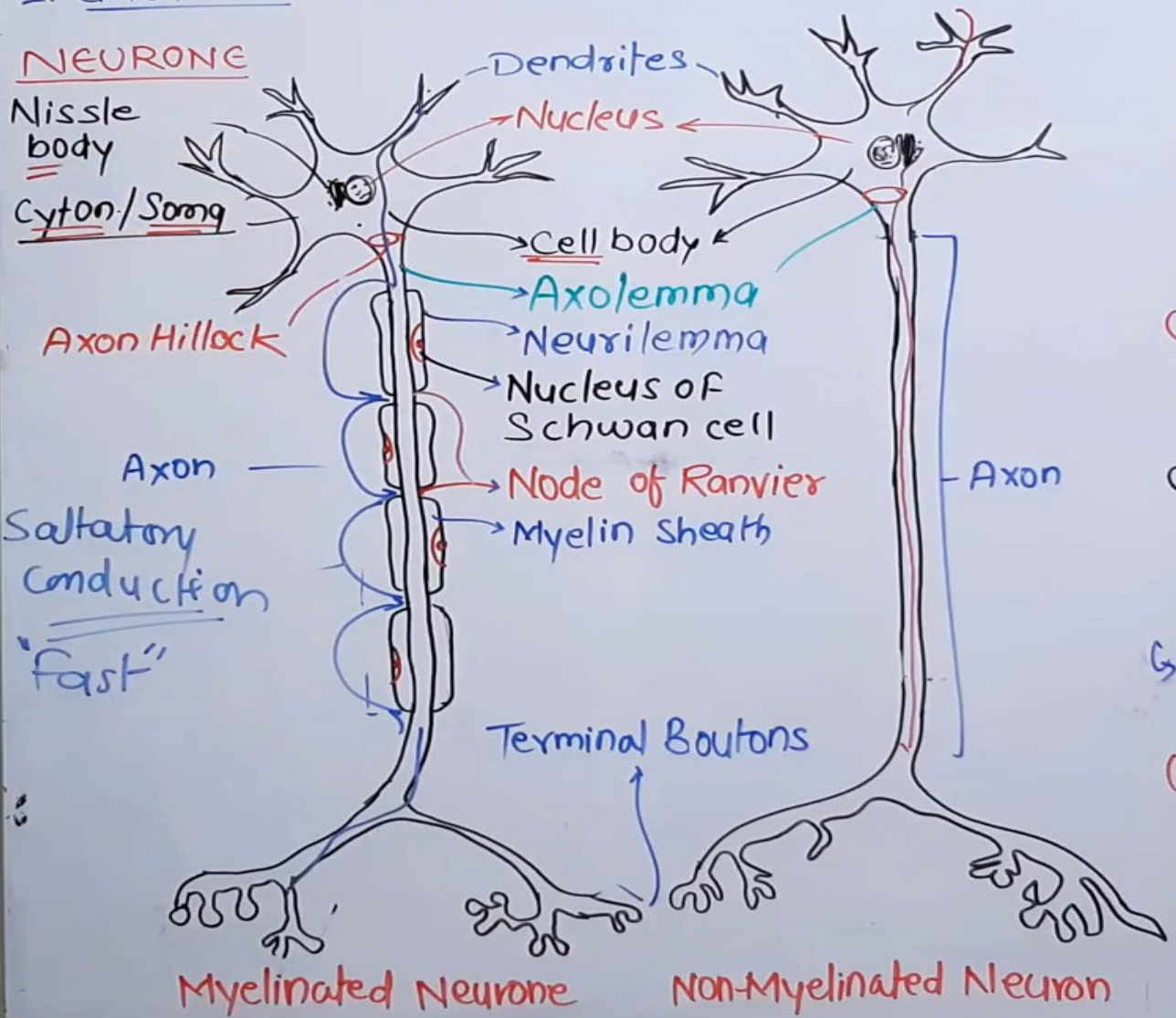
Function :- Movement within the body & of the body itself

CHARECTERISICS	1. SKELATAL	2 CARDIAC	3. SMOOTH
Structure			
LOCATION	Attached to Bone	Cardiac (Heart) wall	Walls of Visceral Organs
CELL TYPE	Long cylindrical (1-40 mm) arranged in bundles	short cylindrical (0·05 - 0·1 mm), Branched	Splndle shaped (0·1S - 0·5 mm) Bundle or sheets
NUCLEI	Multiple nuclei, flattened peripheral just below sarcolemma	One or two, oval nuclei at centre of each cell	One, oval or rode shaped, at centre of cell
MYOFIBRILS	Straited, Longitudinal Straitions (Strips)	Straited but fewer than Skeletal	Non Straited Fillaments
VASCULAR SUPPLY	GOOD	DENSE	FAIR
NERVE	Somatic	Autonomic	Autonomic
CONTRACTION MECHANISM	Ca^{2+}-Troponine	Ca^{2+}-Troponine	Ca^{+2}= Calmoduline

NERVOUS TISSUE

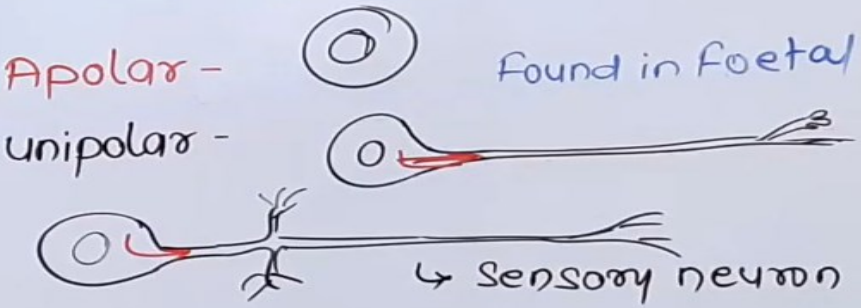
1. Neurones – Excitable cell, which initiate, recieve, conduct & transmit informations
2. Glial Cells – Non-excitable cell, these support the neurone

NEURONE



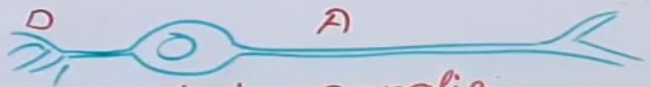
(1) Apolar – Found in Foetal

(2) unipolar –



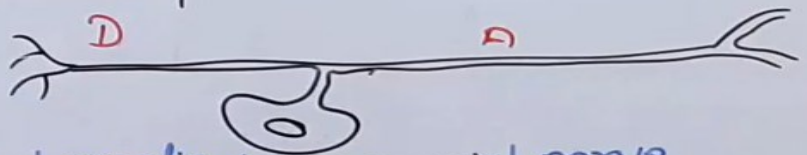
↳ Sensory neuron

(3) Bipolar



↳ Retina, Vestibular ganglia

(4) Pseudo unipolar



↳ all Spinal ganglia, & VIII cranial nerve

(5) Multipolar

↳ Cerebral Cortex
↳ Nuclei of Trigeminal nerve
↳ Motor Neuron of Spinal Cord

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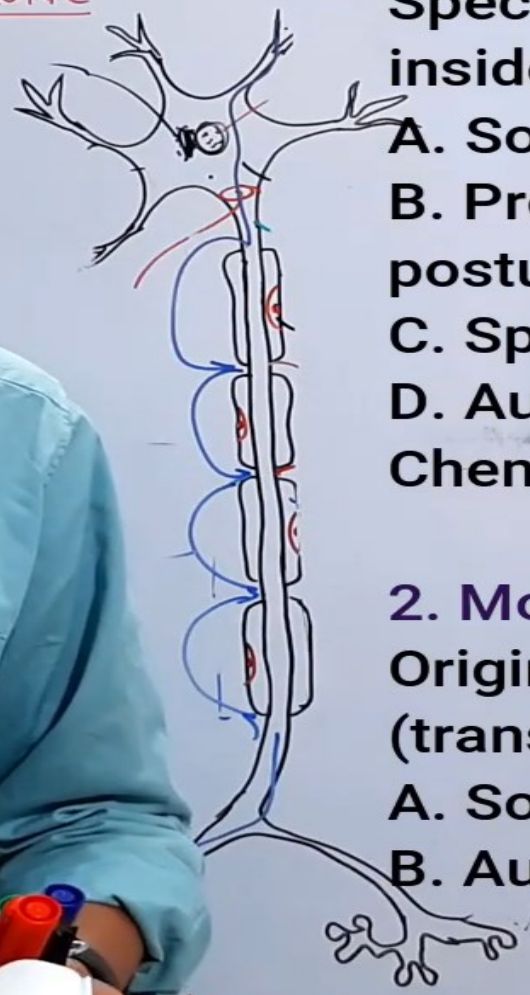
NEURONE



...nated Neurone

1. Sensory Neurones:

Specilised ending of sensory neurone to diffrent stimuli inside and outside the body (Carry Impulse)

A. Somatic:- Skin- Pain, Touch, Heat & cold

B. Propioceptor:- at joint & muscle to maintain balance and posture

C. Special Sense- Sight, Hearing, Smell, and Taste

D. Autonomic Nerve- at internal organs, glands- Baroreceptor, Chemoreceptor

2. Motor Neurones:

Originated in brain, spinal cord and autonomic ganglia (transmit the impulse to effector organ)

A. Somatic: Skeletal Muscles

B. Autanomic (Parasympathetic and Sympathetic):- heart

Feature :-

① Extreme long life 100y

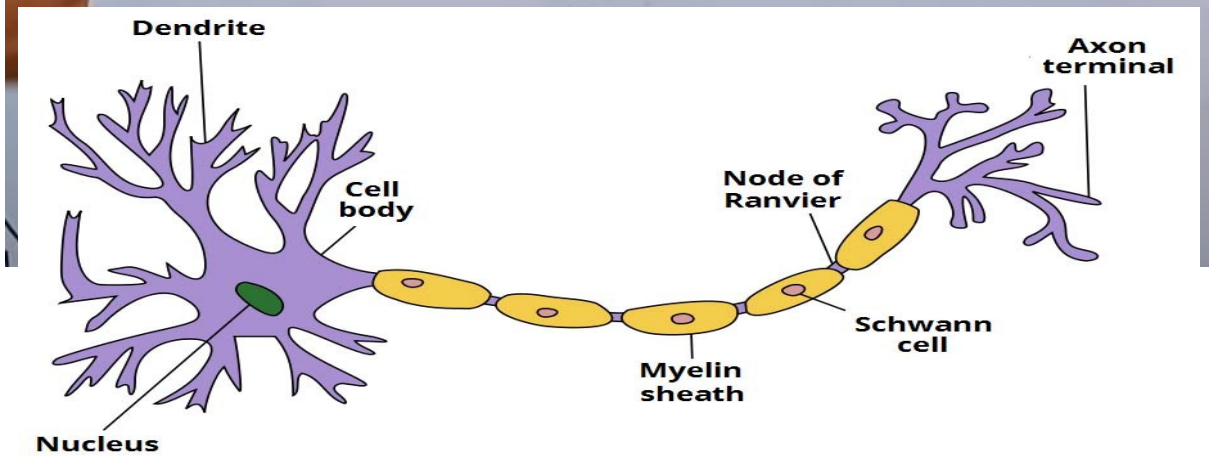
② They are Amitotic (NO cell devision)

③ Highly metabolic Rate

Properties →

① Irritability → initiate nerve impulse

② Conductivity = Ability to transmit impulse



1 Cell Body

1. Cell Body:-
   - Form Grey matter of the nervous system
   - group of cell bodies- Nuclei in CNS and Ganglia in P
   - biosynthetic centre of neurone
   - consist of cell orgenels except centriole
   - RER reffer as Nissle bodies
2. Dentrites:
   - Shorter and Branched
   - recieve and carry impulse towards cell body
   - at motor synaps and sensory receptor
   - conduct electrical signal as action potential
3. Axon:
   - cytoplasmic long extension of cell body
   - form white matter
   - carry impulse toward the synaps

Nervous Tissue

1. Neurones – Excitable cell, which initiate, recieve, conduct & transmit informations
2. Glial Cells – N

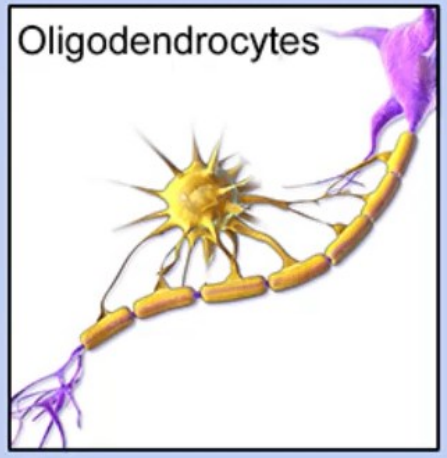
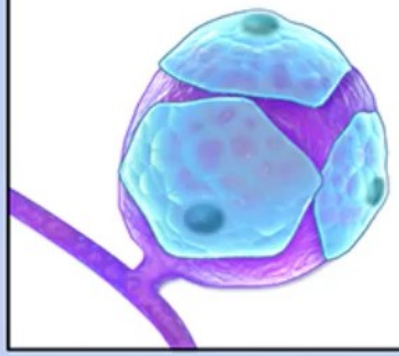
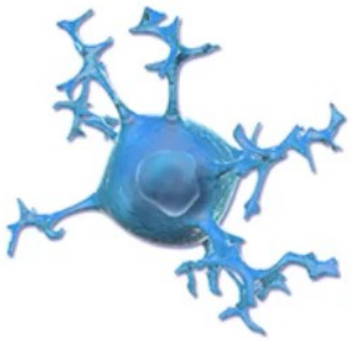
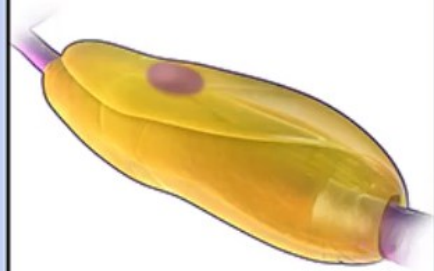
1) Astrocyte

2) Microgalia

3) Ependymal

godendrocy

Types of Neuroglia

Central Nervous System		Peripheral Nervous System
Ependymal cells 	Oligodendrocytes 	Satellite cells 
Astrocytes 	Microglia 	Schwann cells 

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2) Microgalia

3) Ependymal

4) Oligodendrocyte

1. Astrocyte:
- Main Supporting cell and part of BBB
- Provide Selective PermiabilityMi

2. Microglial Cell:
- Macrophages cell, phagocytic action

3. Ependymal:
- elipithelial lining of ventricles of brain and central canal of spinal cord

4. Oligodentrocyte:
- from and maintain myelin in CNS

*** in PNS myelin produced by schwan cell**