



PRACHAND NEET



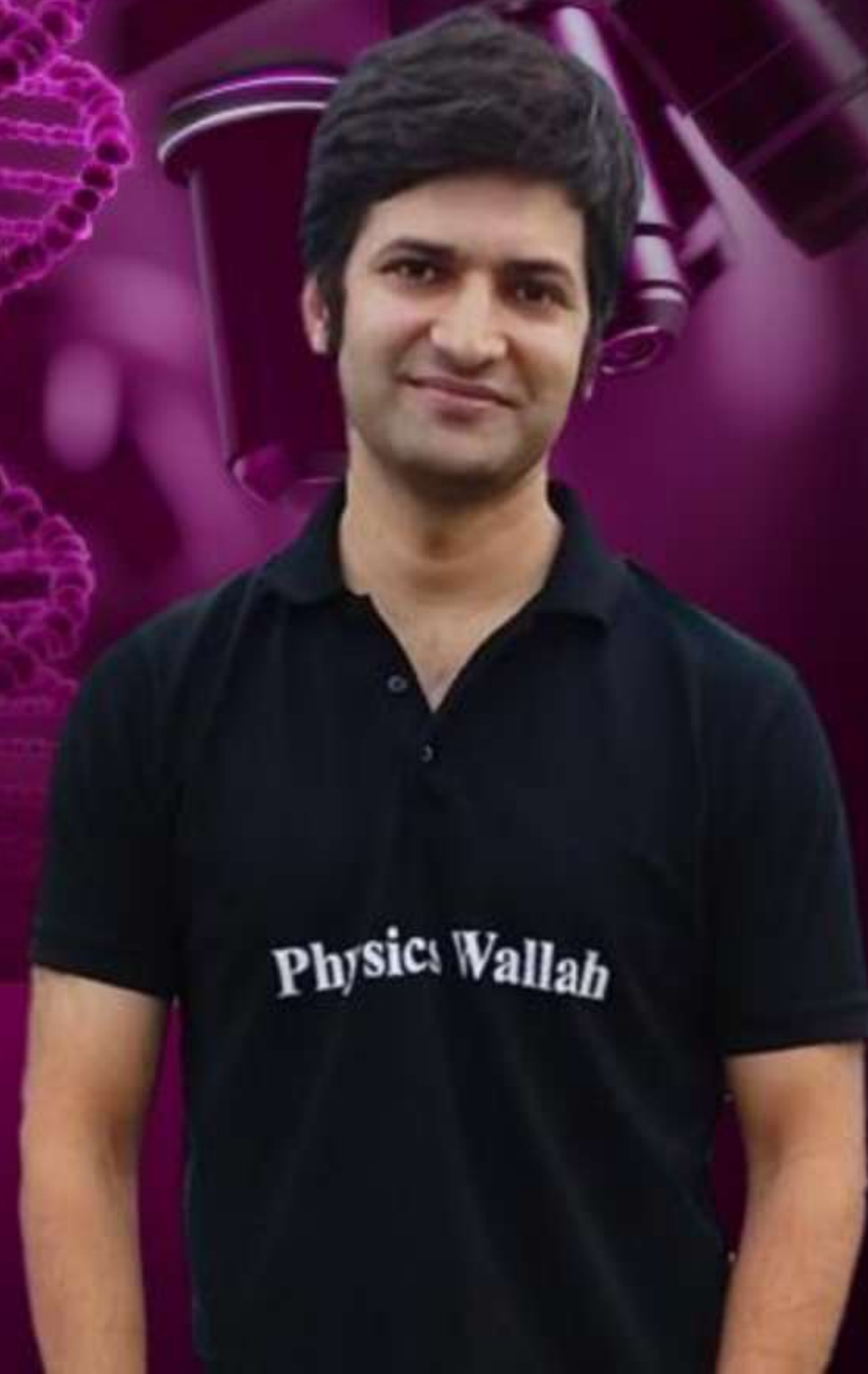
ONE SHOT



Botany

Cell : The Unit of Life

Rupesh Chaudhary Sir



Topics

to be covered



1

Cell : The Unit of Life

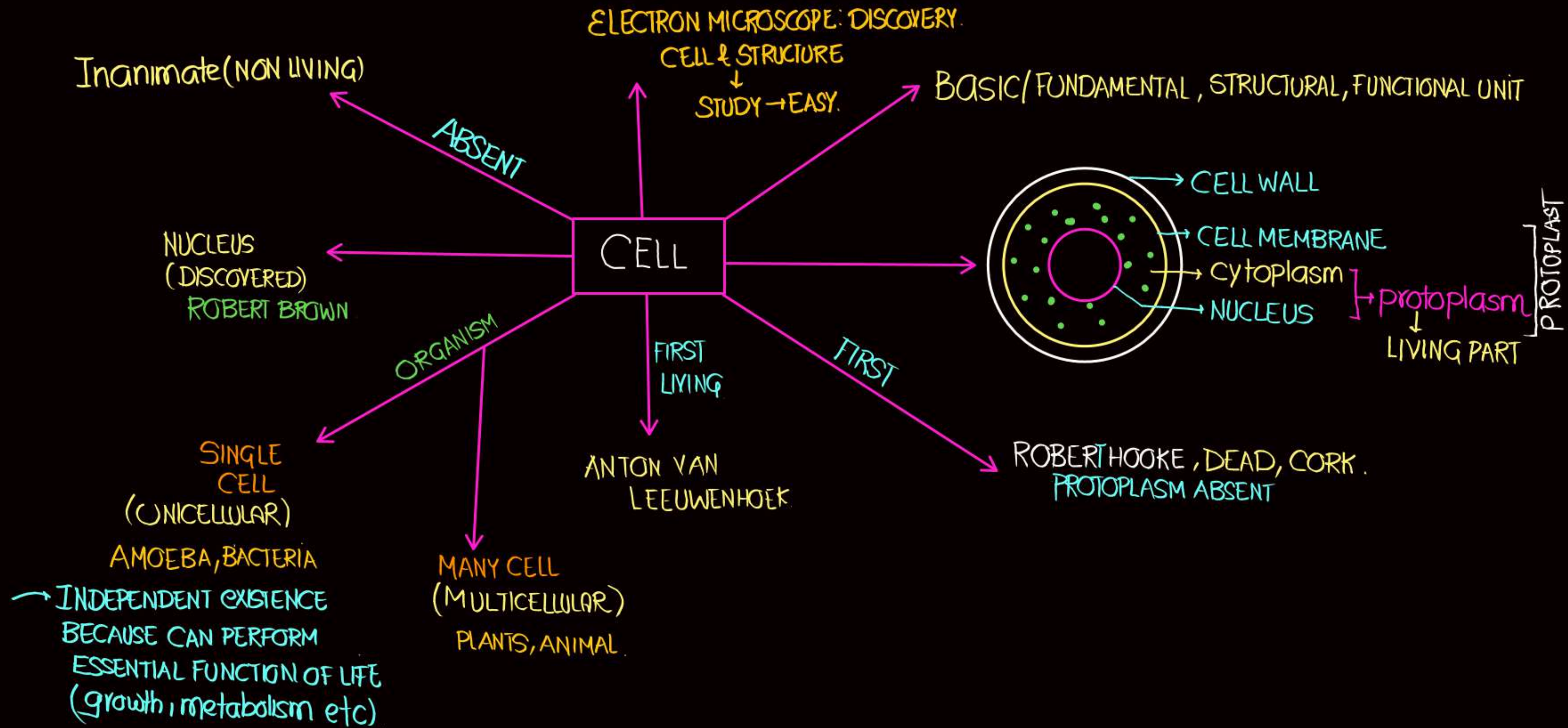


जिन घरों में खाने के लिए रोटी नहीं होती,
वहाँ घरों में **Motivational Video** नहीं देखा जाता !
करना है तो करना है।

By- Rupesh Sir

1. Detail Study
2. **Flow chart / Diagrammatic Based**
3. Covered Complete NCERT
4. All PYQ
5. Notes (Short Notes in Detail)
6. **5 Hours** Duration
7. **14 Years का Experience है** Paid Batch के **Equivalent Content** दूंगा.
8. After Class, **Comment** करके बताना **Lecture कैसा लगा।**

9) आपने मेरे NOTES पढ़ लिये तो
NCERT भी पढ़ने का NEED नहीं है
मेने सारा NOTES NCERT
को DECODE करके तैयार किया है
LET'S TAKE A CHALLENGE



CELL THEORY

FORMULATED BY

MATTHIAS SCHLEIDEN, 1838
GERMAN BOTANIST

STUDY: **ALL PLANTS**

COMPOSED OF CELLS
WHICH FORMS TISSUE

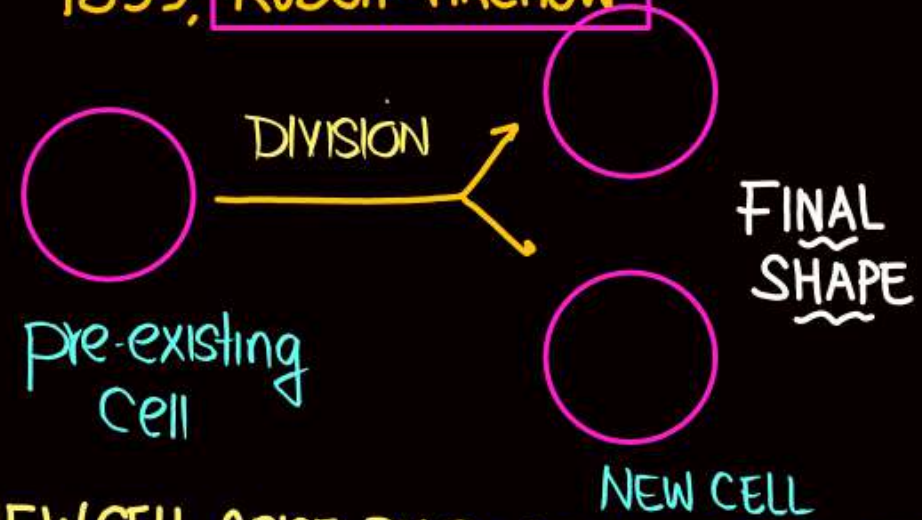
DRAWBACK

DIDN'T EXPLAIN

"HOW NEW CELLS WERE FORMED"

BUT

1855, **RUDOLF VIRCHOW**



THEODORE SCHWANN, 1839
BRITISH ZOOLOGIST

★ STUDY: **ANIMAL CELL** → COVERED BY THIN LAYER
PLASMA MEMBRANE

★ STUDY: **PLANT CELL** → CELL WALL PRESENCE:
UNIQUE CHARACTER

★ HYPOTHESIS: **PLANTS & ANIMALS**

↓
COMPOSED

↓
CELL & ITS PRODUCT (TISSUE)

① NEW CELL ARISE BY DIVISION OF PRE- EXISTING CELL

Omnis cellula e cellula

② ALL LIVING ORGANISM: COMPOSED: CELL & PRODUCT OF CELL

NEET

OVERVIEW OF CELL : EUKARYOTE CELL.

⇒ ONION PEEL : PLANT : CELL WALL
 ⇒ HUMAN CHEEK : ANIMAL : CELL MEMBRANE } DELIMITING LAYER

⇒ MEMBRANE BOUND ORGANELLE

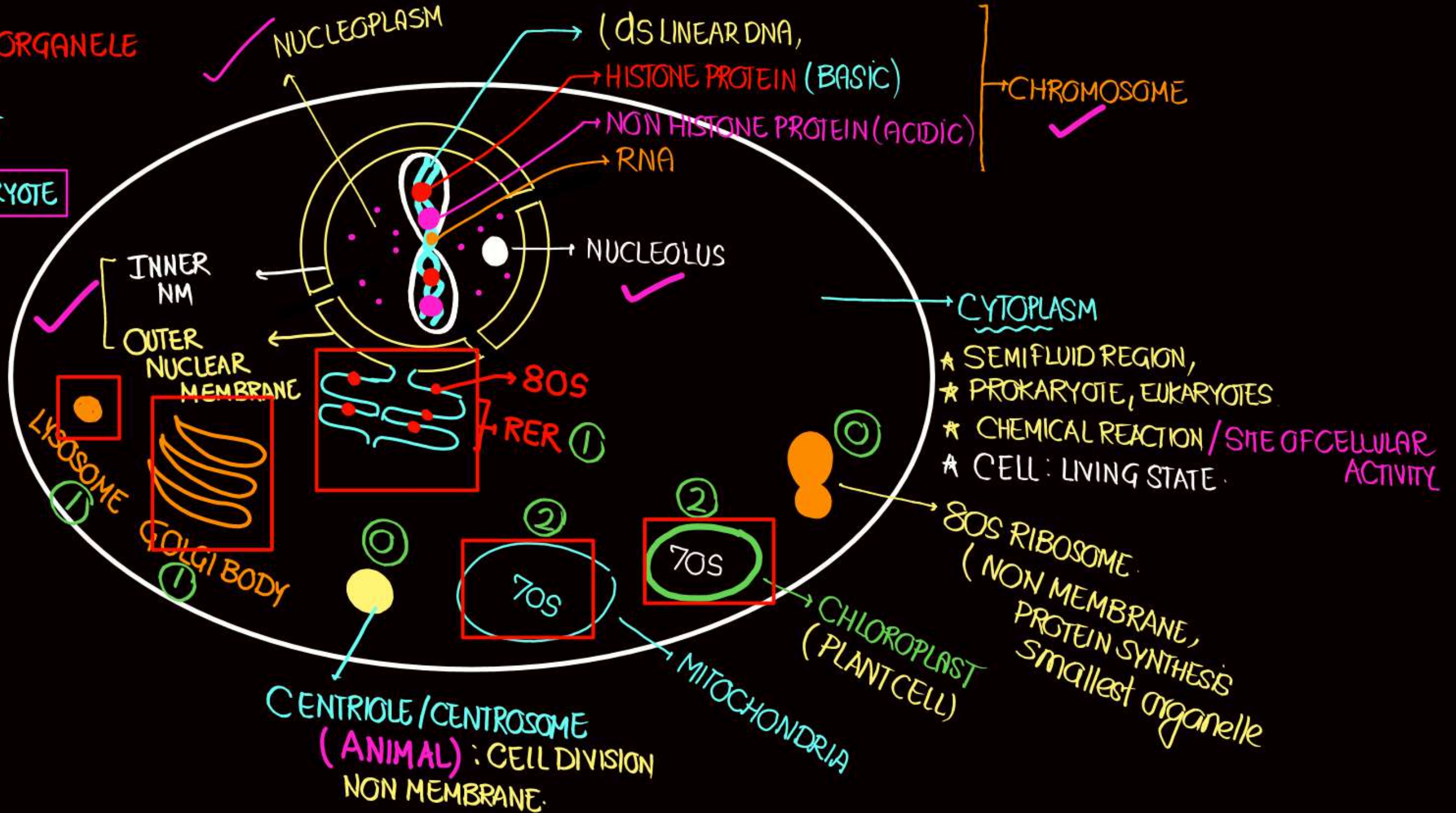
PRESENT

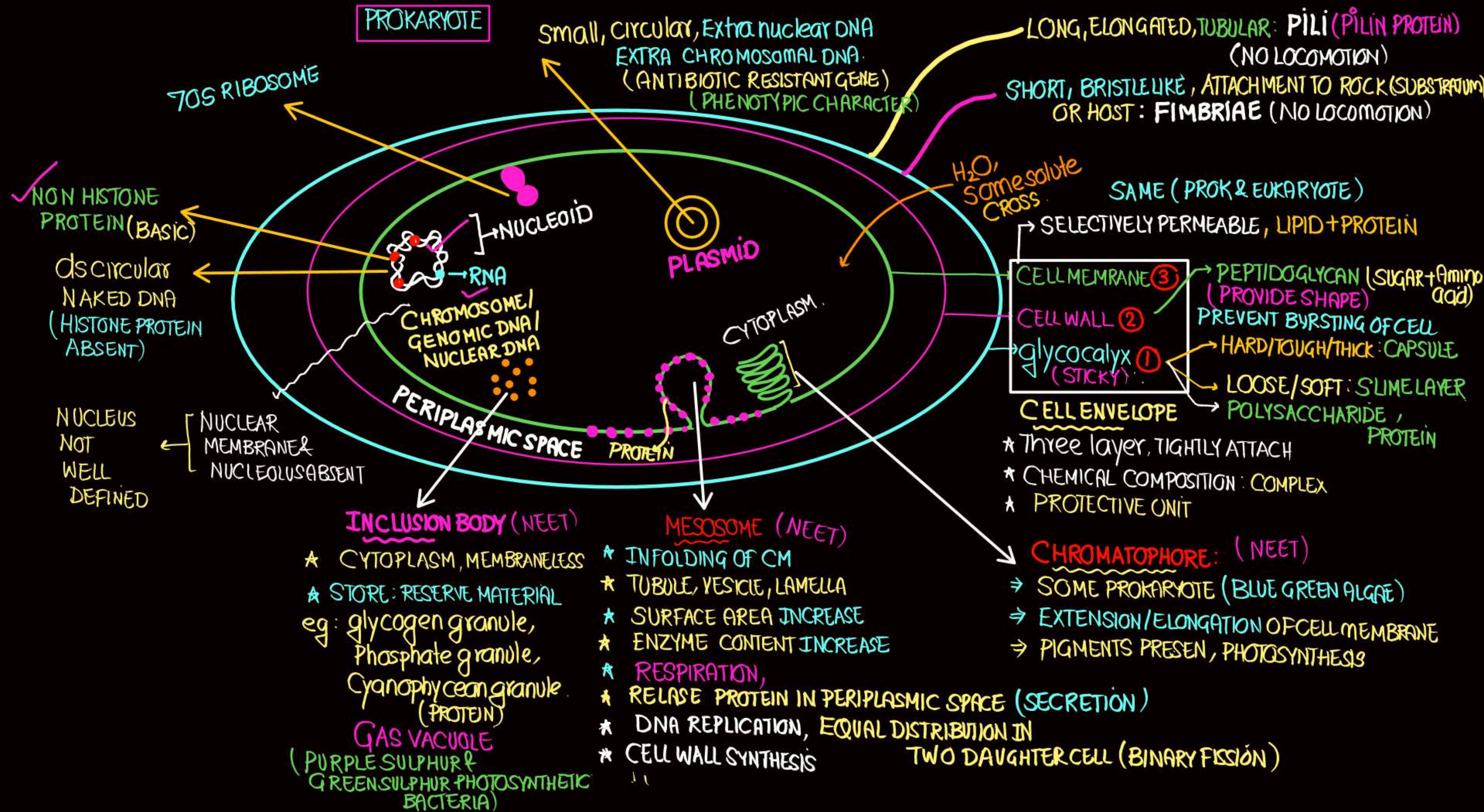
ABSENT

EUKARYOTE

PROKARYOTE

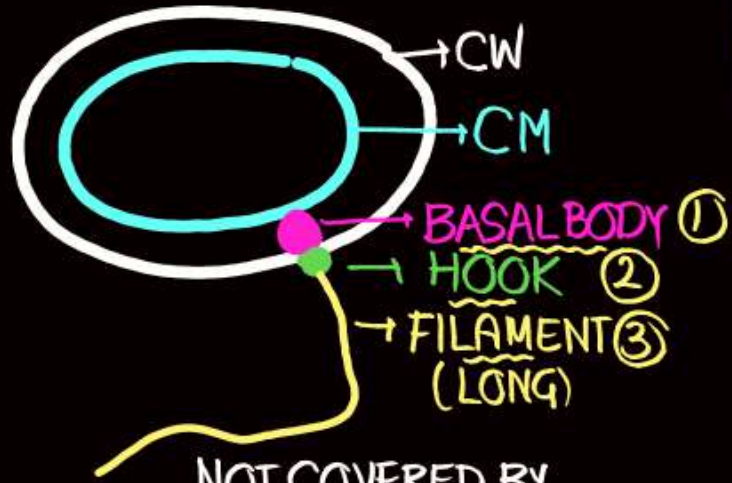
⇒ WELL DEFINED NUCLEUS : PRESENT.





FLAGELLA

EXTENSION OF CELL WALL



NOT COVERED BY CELL MEMBRANE

⇒ NUMBER & DISTRIBUTION: VARY IN BACTERIA

⇒ FLAGELLIN PROTEIN

⇒ LOCOMOTION (MOTILE)

GRAM STAINING



SHAPE OF BACTERIA 4 TYPES

COCCUS	: SPHERICAL	○
BACILLUS	: ROD LIKE	□
VIBRIO	: COMMA LIKE	⌣
SPIRILUM	: SPIRAL	⌢

* PROKARYOTES:

BACTERIA

BLUE GREEN ALGAE

MYCOPLASMA: CELL WALL
OR
PPLO (PLEURO PNEUMONIA)
LIKE ORGANISM) ABSENT

CATTLE: LUNG: PLEURAL FLUID

PNEUMONIA

ISOLATE ORGANISM

* PROK	EUKARY
Size: small	LARGE
MULTIPLY: FAST	SLOW

POLYRIBOSOME / POLYSOME



TRANSLATION

PROTEIN WITH HELP OF RIBOSOME

	PLANT	ANIMAL CELL
Cell wall	✓	X
PLASTID (CHLOROPLAST)	✓	X
LARGE CENTRAL VACUOLE	✓	X
CENTRIOLE	X	✓

⇒ COMPARTMENTALISATION

PRESENT
(EUKARYOTE)

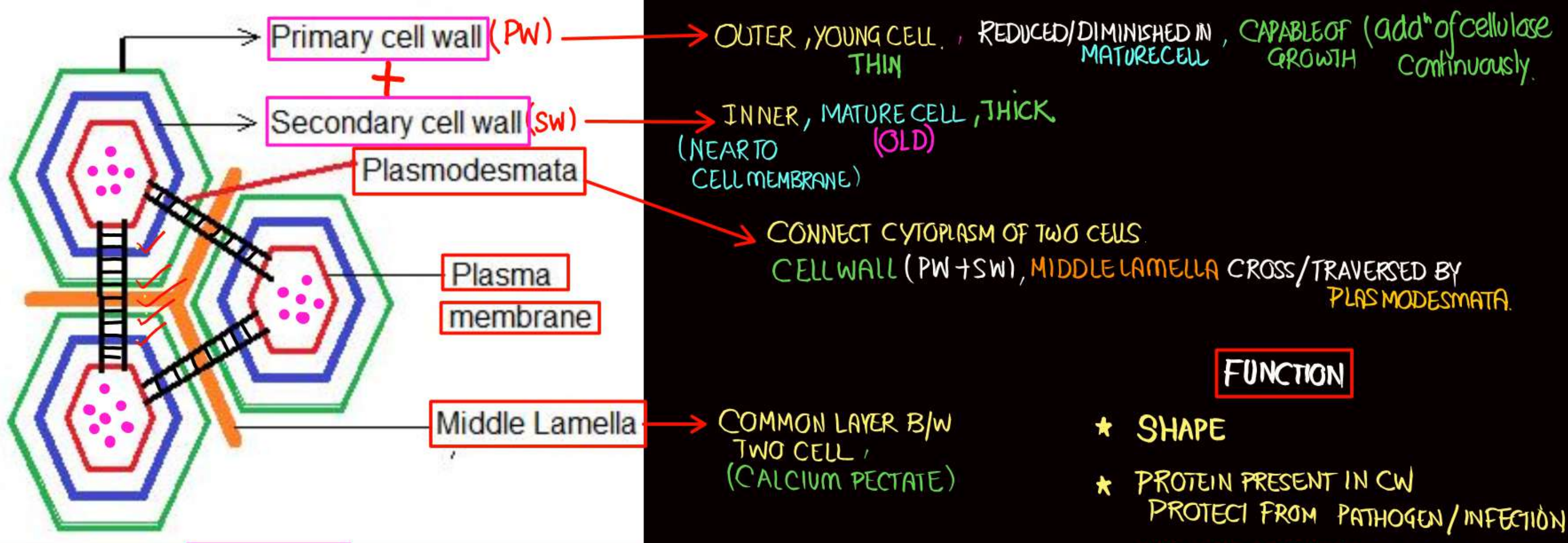
ABSENT
(PROKARYOTE)

MEMBRANE
BOUND ORGANELLE



COMPLEX LOCOMOT STRUCTURE &
CYTOSKELETON (MICROTUBULE, MICROFILAMENT, INTERMEDIATE FILAMENT)



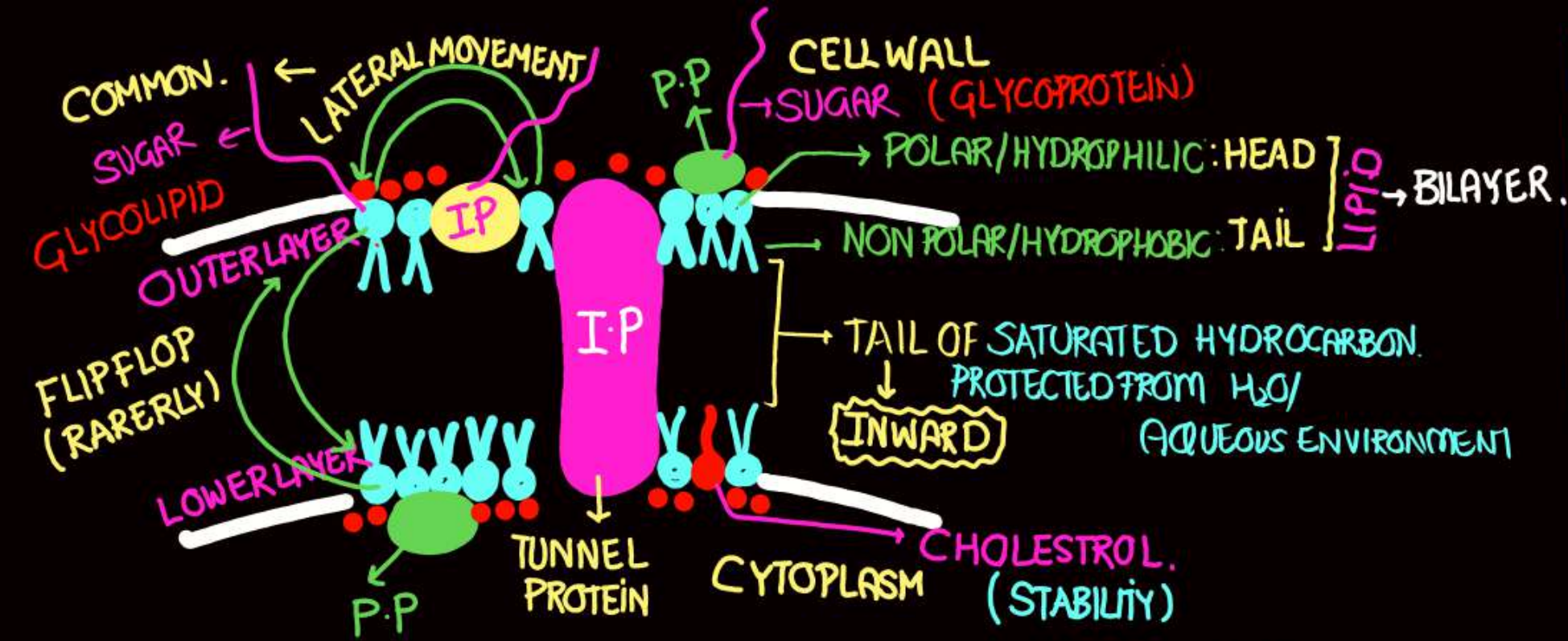


FUNCTION

- ★ SHAPE
- ★ PROTEIN PRESENT IN CW PROTECT FROM PATHOGEN/INFECTION
- ★ PROVIDE BARRIER TO UNDESIRABLE MACROMOLECULE (LARGE SIZE)
- ★ CELL TO CELL INTERACTION.

CELL WALL ⇒ PW + SW: DOUBLE LAYER

- ⇒ RIGID/HARD LAYER, NON-LIVING
- ⇒ OUTER TO CELL MEMBRANE (MINERAL)
- ⇒ ALGAE: CELLULOSE, GALACTAN, MANNAN, CaCO_3
- ⇒ PLANT: CELLULOSE, HEMICELLULOSE, PECTIN, PROTEIN
- ⇒ FUNGI: CHITIN



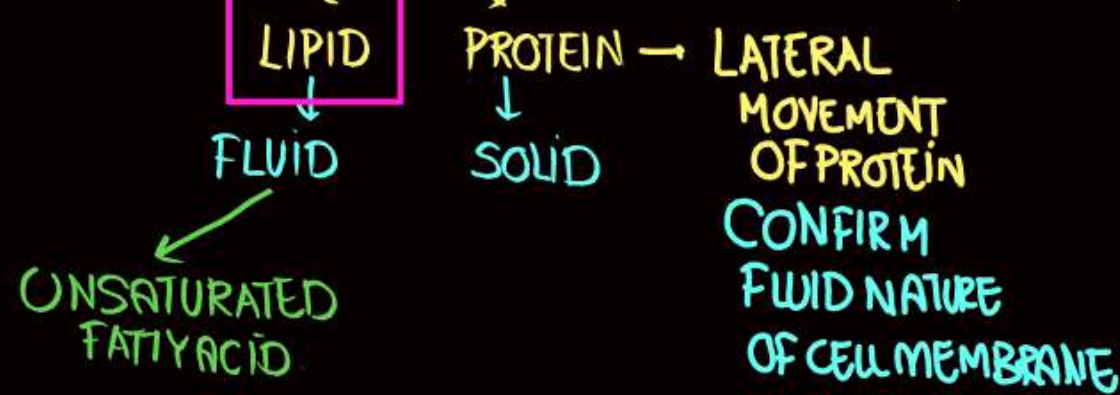
REMOVE
 P.P: PERIPHERAL PROTEIN, EASY
 I.P: INTEGRAL PROTEIN, DIFFICULT

TOTALY BURIED (2 LAYER)
 PARTIALLY BURIED (1 LAYER)

COMMON LIPID: PHOSPHOLIPID

SINGER & NICOLSON, 1972

FLUID MOSAIC MODEL (QUASI/SEMI FLUID)



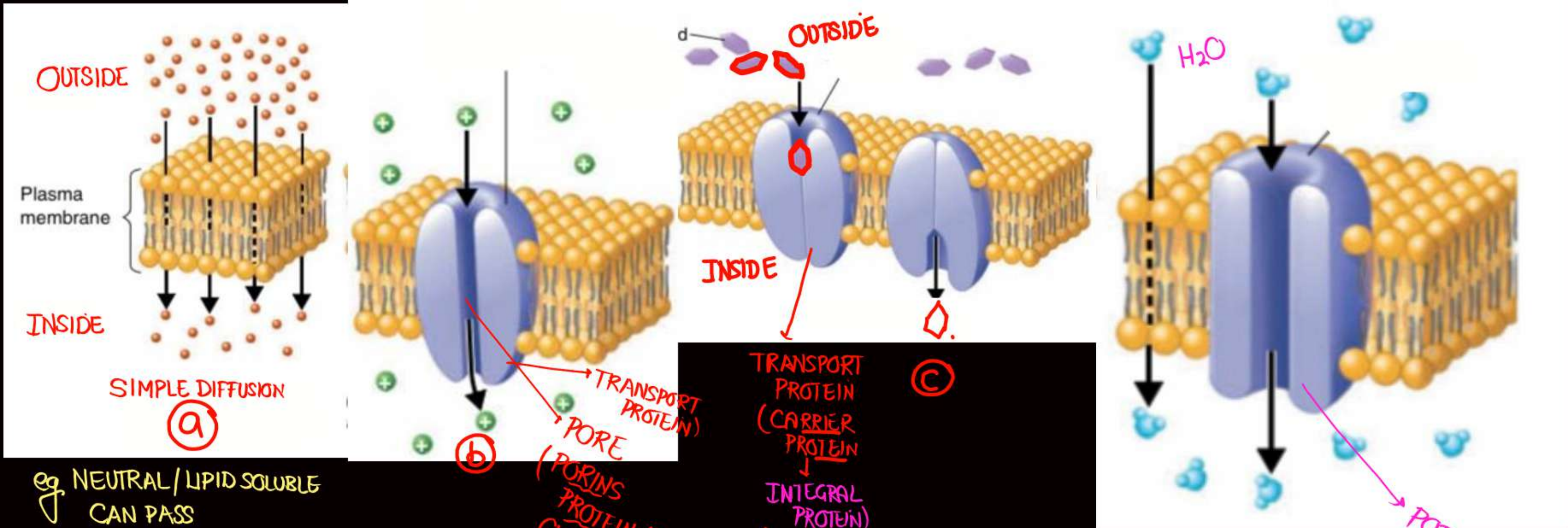
⇒ CHEMICAL STUDY: HUMAN RBC: CELL MEMBRANE (LIPID + PROTEIN)

⇒ BIOCHEMICAL STUDY

Membrane: Carbohydrate also present

RBC: Membrane: 52% P
 46% L } THIS RATIO VARY IN DIFFERENT CELL MEMBRANE

MAIN FUNCTⁿ (TRANSPORT)



eg NEUTRAL / LIPID SOLUBLE
CAN PASS
⇒ NO CARRIER PROTEIN
⇒ HIGH TO LOW CONⁿ
⇒ NO ENERGY
(PASSIVE MOVEMENT)

POLAR / HYDROPHILIC
MOVE THROUGH MEMBRANE
DIFFICULT

FACILITATED
DIFFUSION
HIGH → LOW CONⁿ
NO ENERGY
(PASSIVE MOVEMENT)

HIGH CONⁿ WATER MOVE LOW CONⁿ
THROUGH SELECTIVELY PERMEABLE /
CELL MEMBRANE
(OSMOSIS)

Active TRANSPORT

⇒ LOW → HIGH CONⁿ (SOME MOLECULES/
IONS)

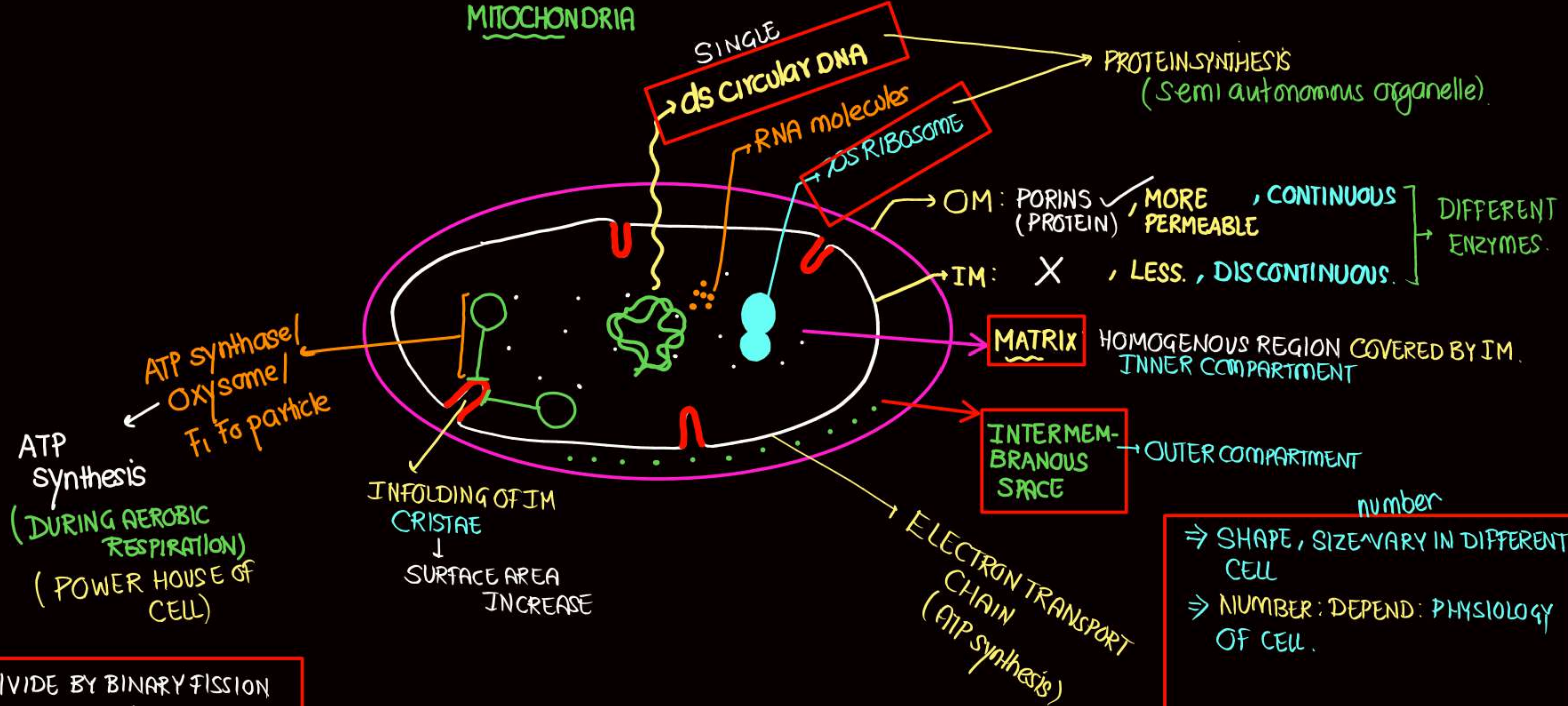
⇒ AGAINST CONCENTRATION

⇒ ATP / ENERGY ✓

⇒ CARRIER PROTEIN ✓

eg. $\text{Na}^+ \text{K}^+$ pump.

MITOCHONDRIA

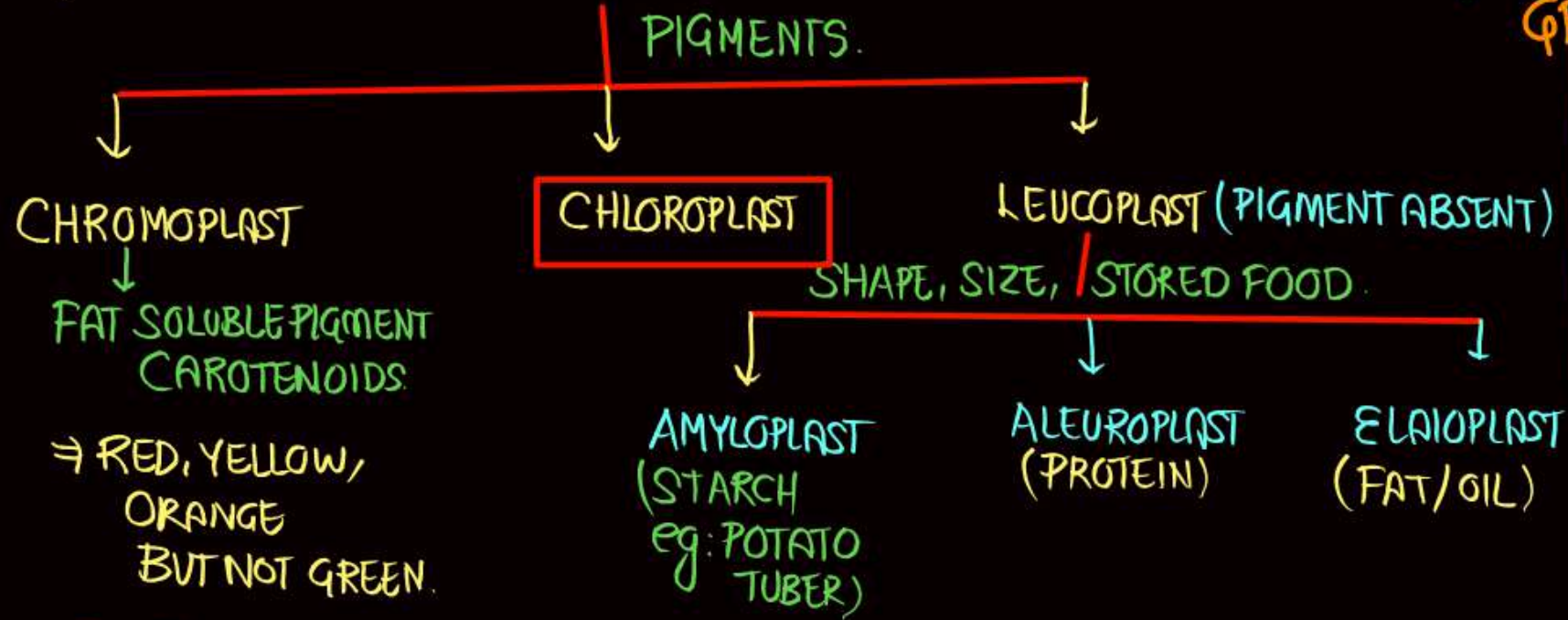


- ⇒ DIVIDE BY BINARY FISSION
- ⇒ CYLINDRICAL / SAUSAGE STRUCTURE
- ⇒ NOT VISIBLE IN MICROSCOPE UNTIL STAIN BY DYE.

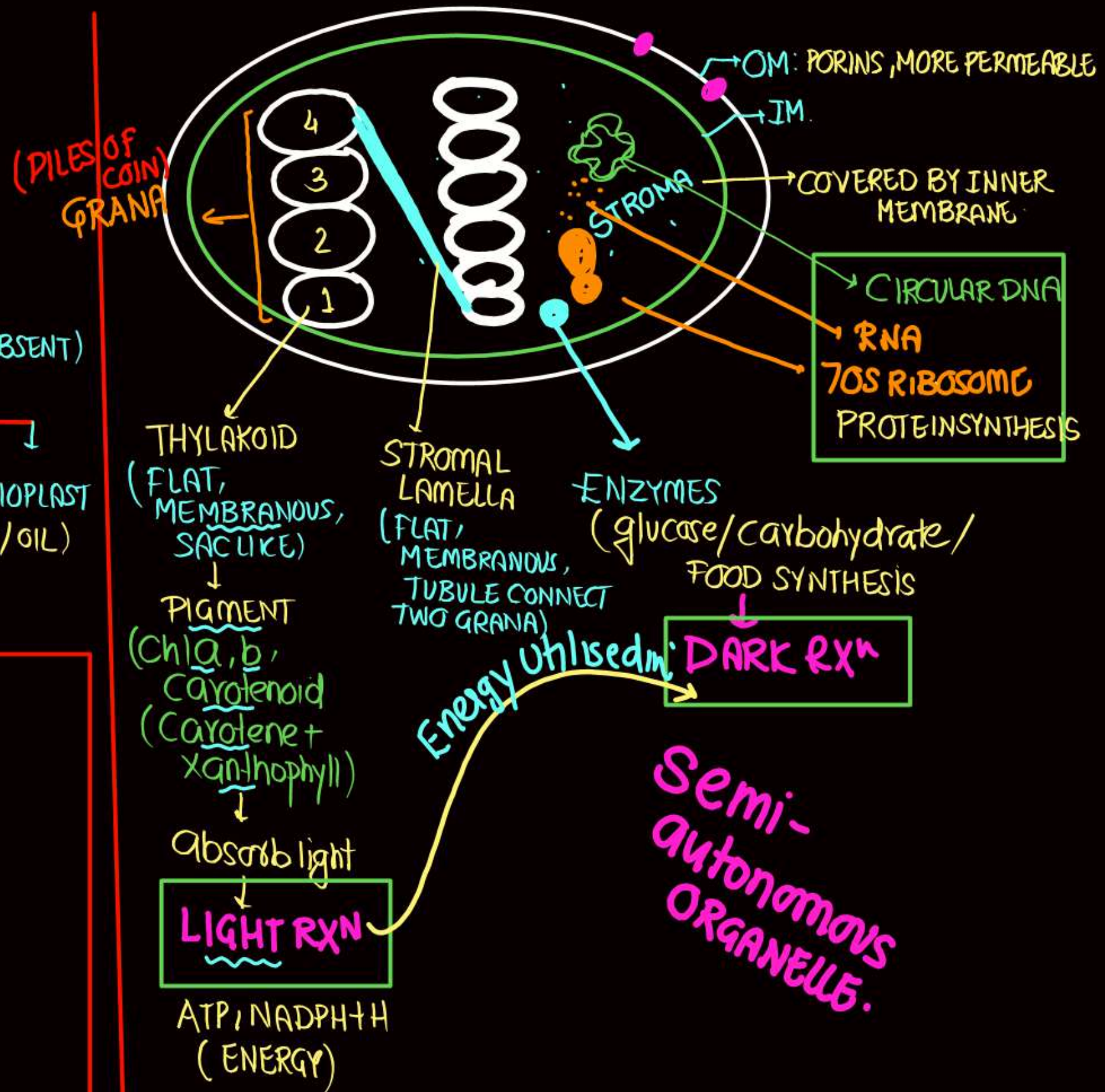
- number
- ⇒ SHAPE, SIZE VARY IN DIFFERENT CELL
 - ⇒ NUMBER: DEPEND: PHYSIOLOGY OF CELL.

PLASTID

- ⇒ ALL PLANTS, EUKLENOID: PRESENT
- ⇒ LARGE ORGANELLE: VISIBLE IN MICROSCOPE
- ⇒ PIGMENTS PRESENT

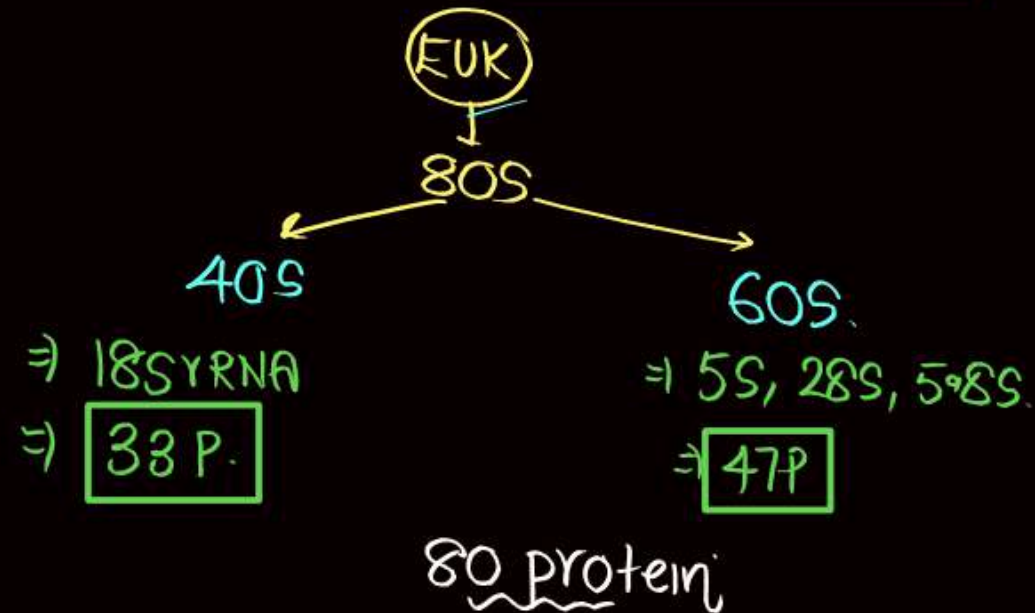
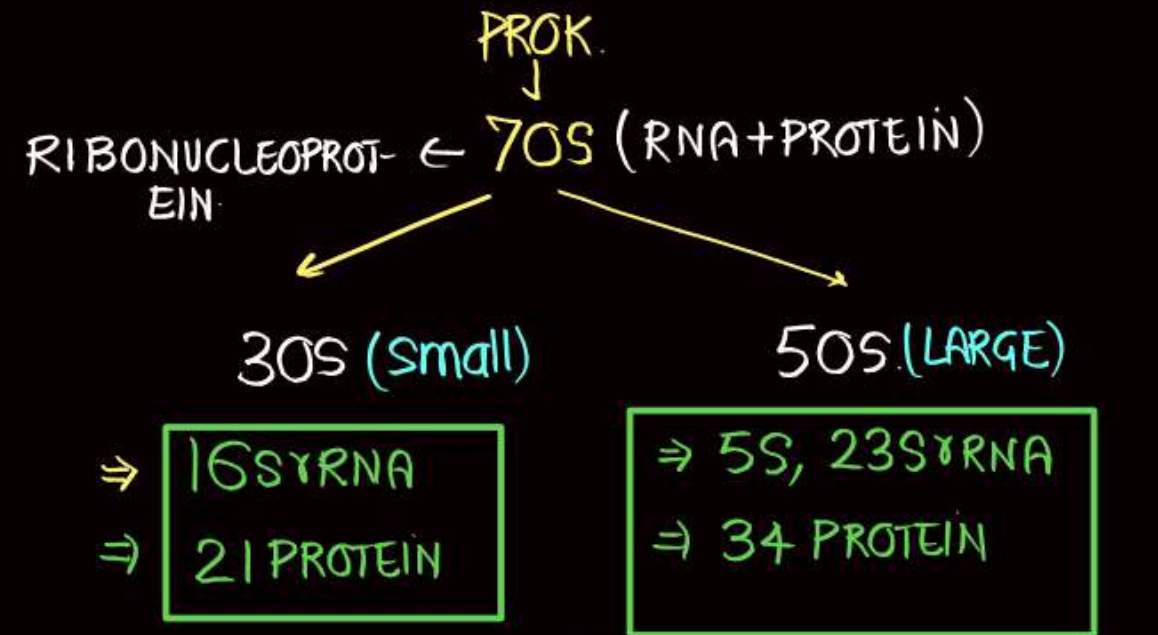


LR + DR → PHOTOSYNTHESIS



RIBOSOME

⇒ PROTEIN SYNTHESIS, MEMBRANLESS
SMALLEST ORGANELLE, PALADE PARTICLE.

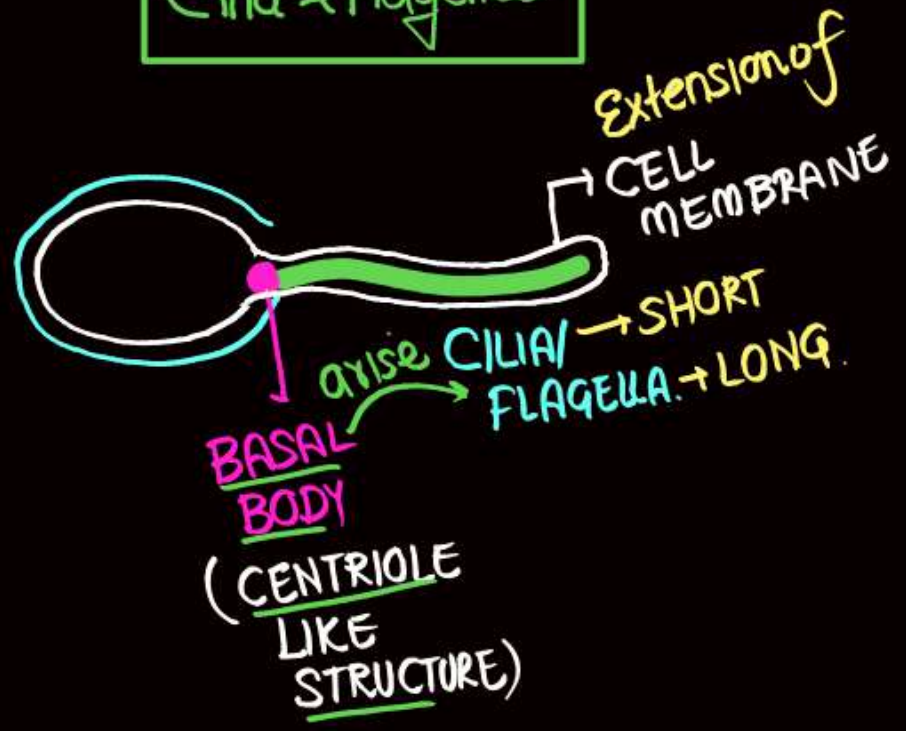


S: Svedberg UNIT

↓
IS SEDIMENTATION
COEFFICIENT
HIGH. (VELOCITY)
HIGH

(Indirect measure
size & density)

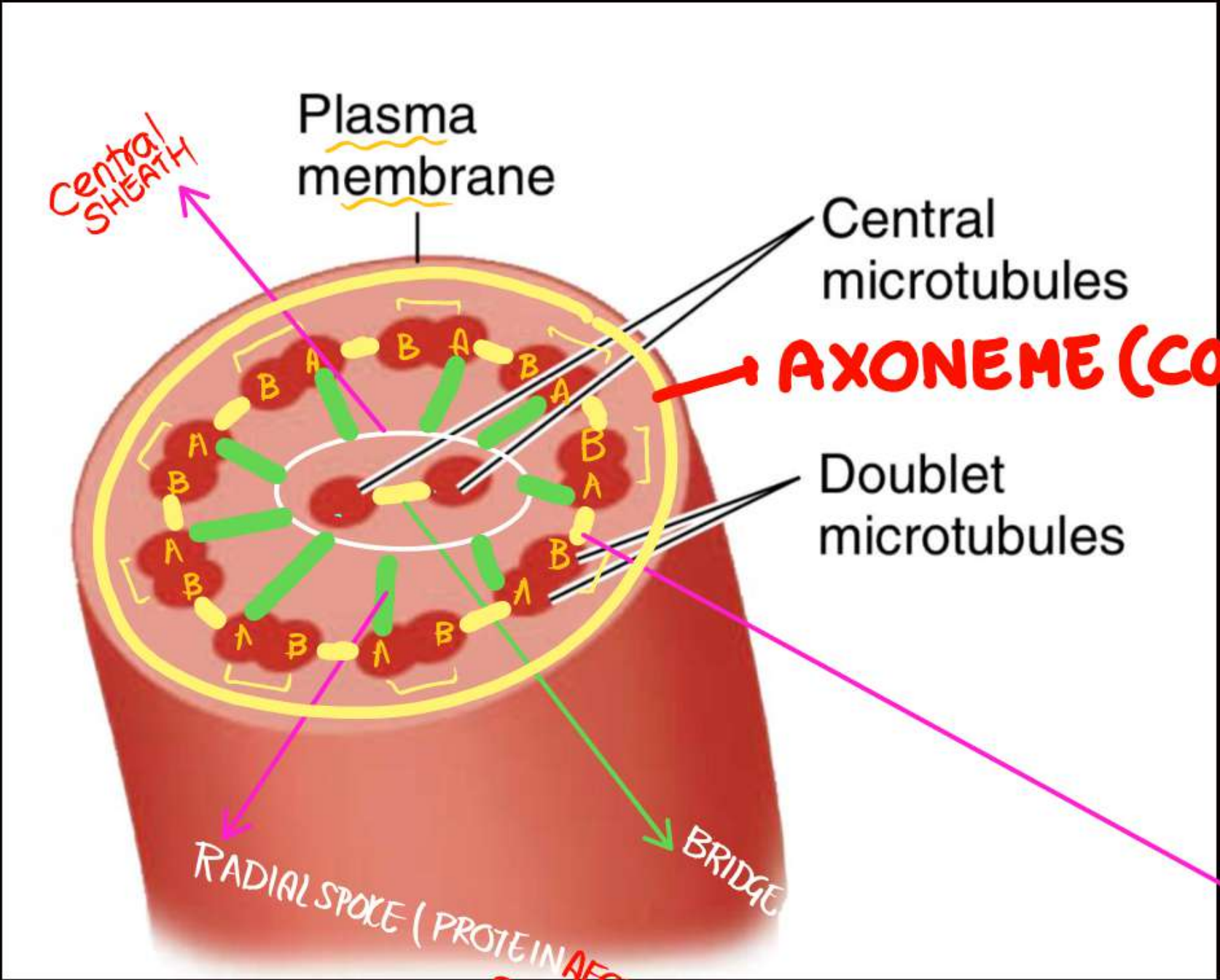
Cilia & Flagella



⇒ A [MICROTUBULE) (M.T)
 ⇒ B [TUBULIN PROTEIN

PERIPHERAL MICROTUBULE : (M.T)
 ⇒ 9 (doublet)
 ⇒ 1 doublet : 2 M.T $\begin{cases} A \\ B \end{cases}$
 ⇒ $9 \times 2 = 18 \text{ M.T}$

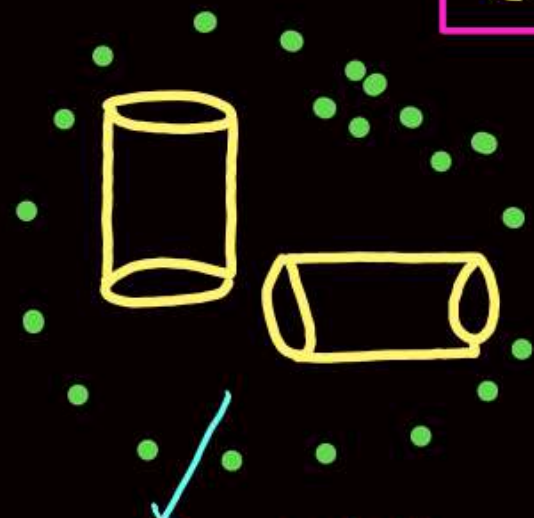
CENTRE : 2 M.T (PAIR OF M.T)



(Periphery centre)
 $9 (\text{doublet}) + 2$
 $9 \times 2 = 18 + 2$
 $\Rightarrow 20 \text{ M.T.}$

⇒ Central M.T connected BY BRIDGE
 ⇒ Central M.T covered By Central SHEATH
 ⇒ RADIAL SPOKE : 9
 arise from one of Two (A M.T)
 ⇒ INTERDOUBLET/LINKERS CONNECT TWO PERIPHERAL DOUBLET

CENTROSOME & CENTRIOLE



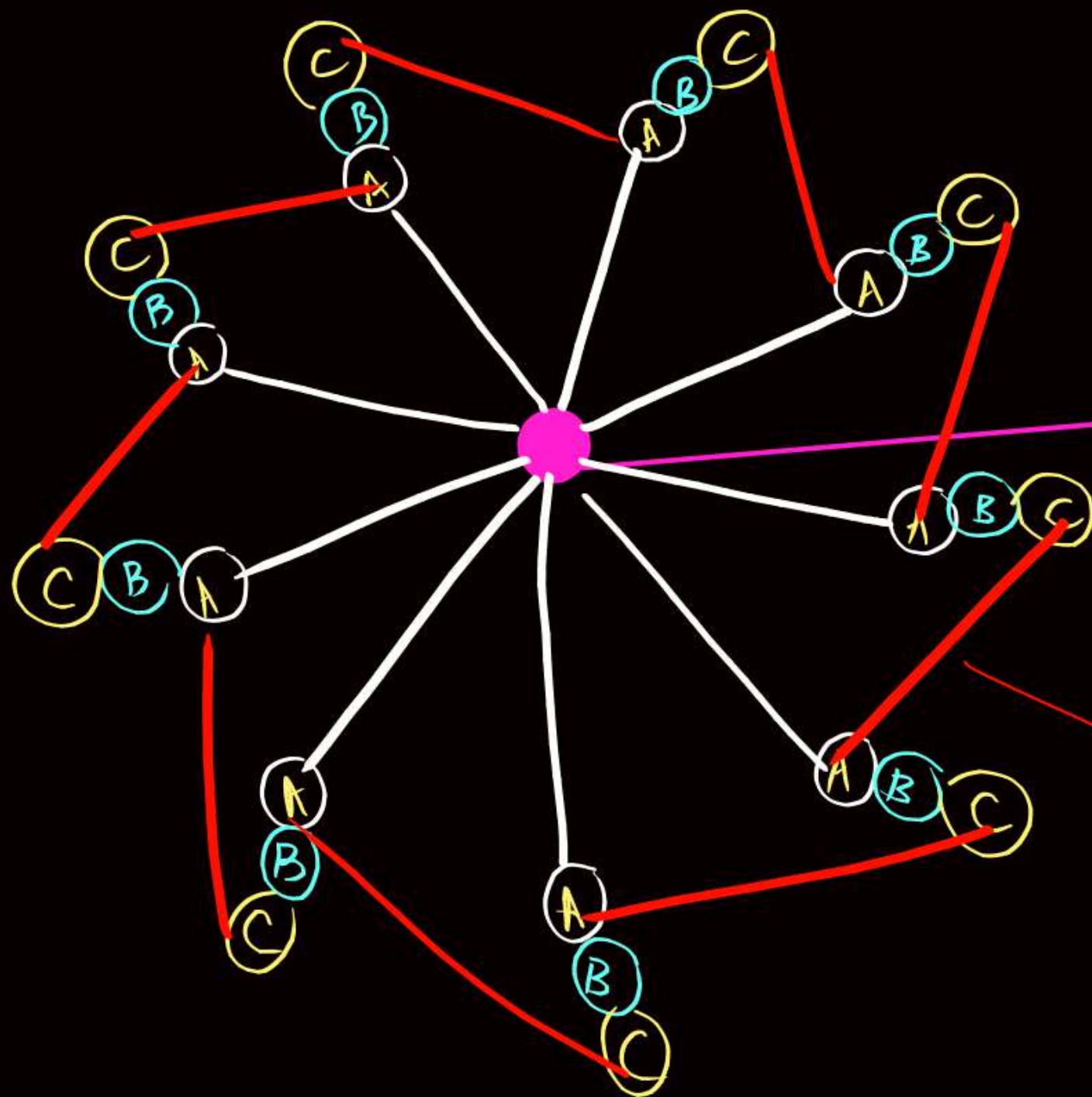
pericentriolar material (protein)

⇒ 1 CENTROSOME:

2 CENTRIOLE (CYLINDRICAL STRUCTURE)

⇒ 90° to each other

⇒ membranless, cartwheel structure



⇒ PERIPHERAL: 9 TRIPLET

⇒ 1 TRIPLET: 3 M.T (A, B, C)

⇒ PERIP: $9 \times 3 = 27$ M.T

CENTRAL HUB: PROTEINAEUS STRUCTURE

⇒ $9(\text{TRIPLET}) + 0$

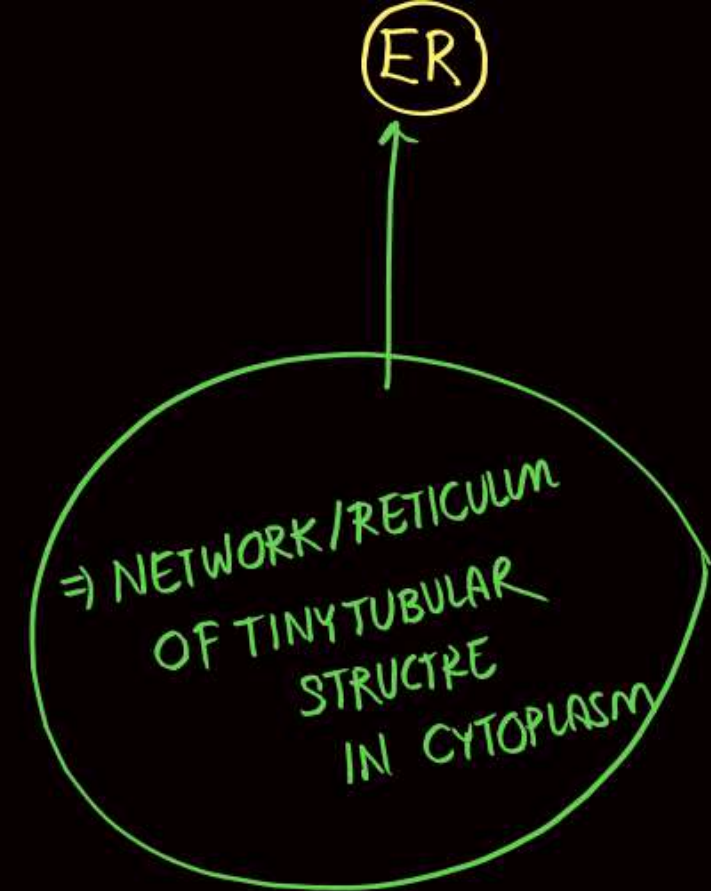
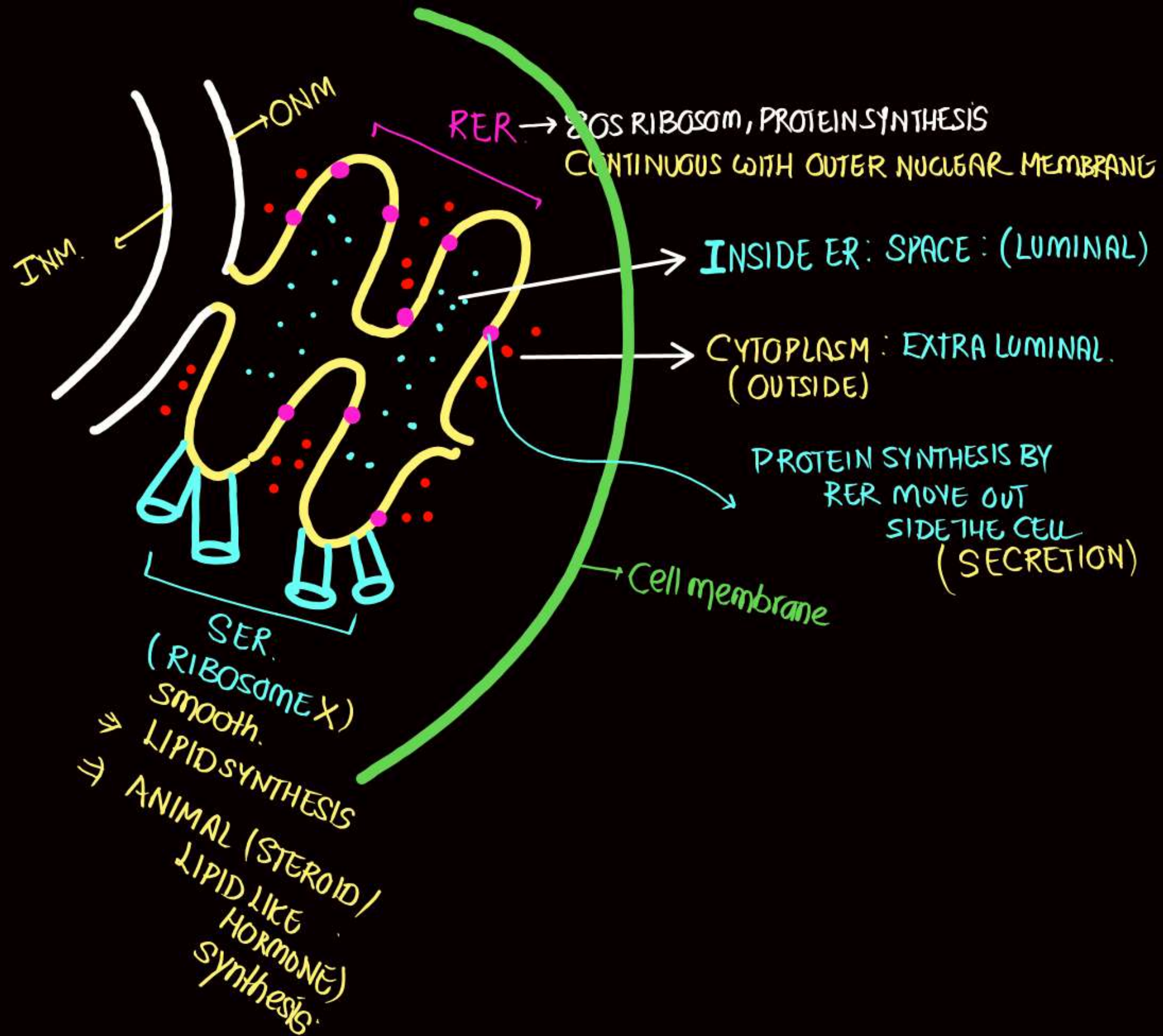
⇒ $9 \times 3 = 27 + 0 = 27$

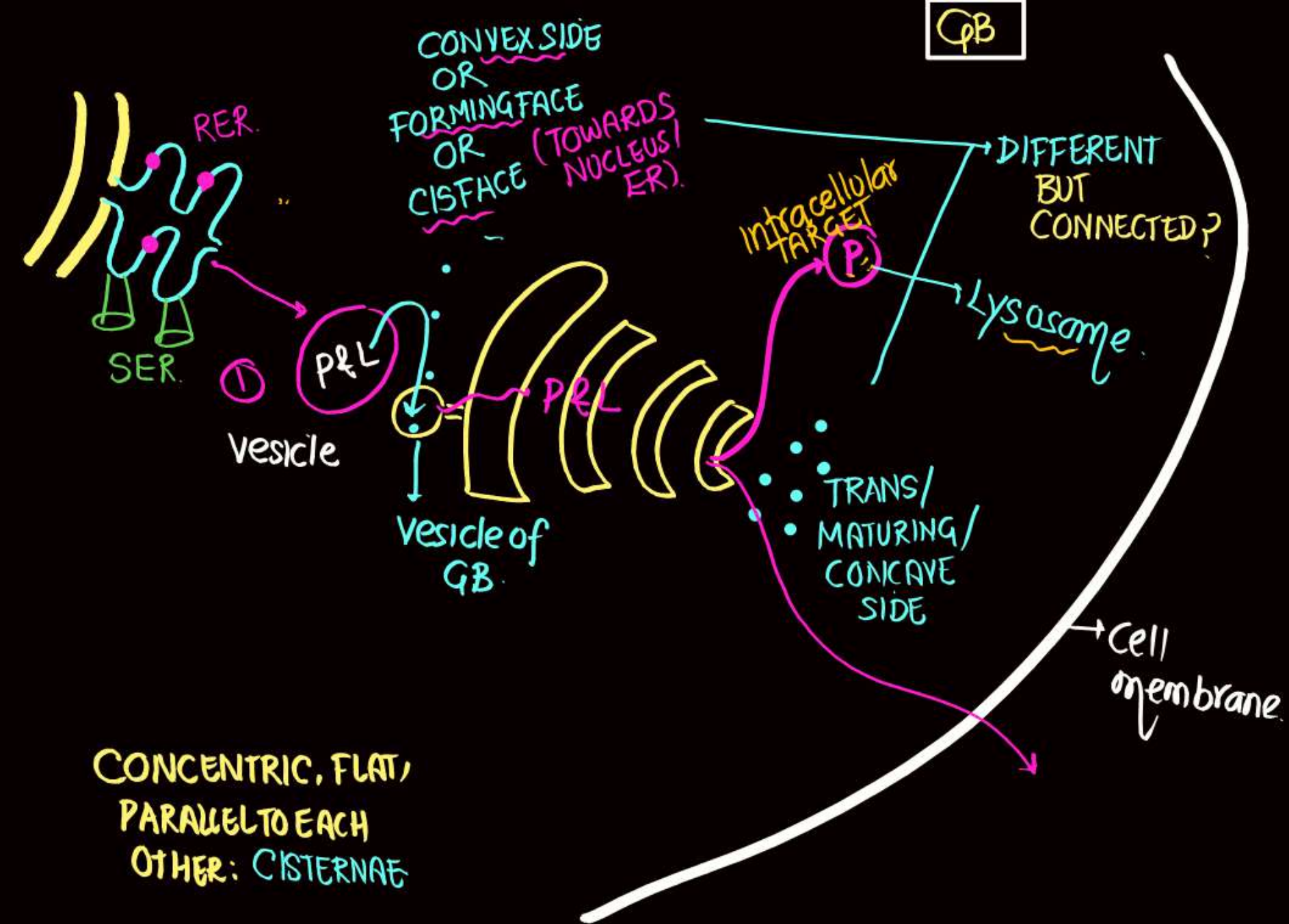
⇒ 9 RADIAL SPOKE (PROTEIN)

C-A LINKER (PROTEIN)

⇒ Cell division in/ animal cell

⇒ HELP SPINDLE FIBRE FORMATION





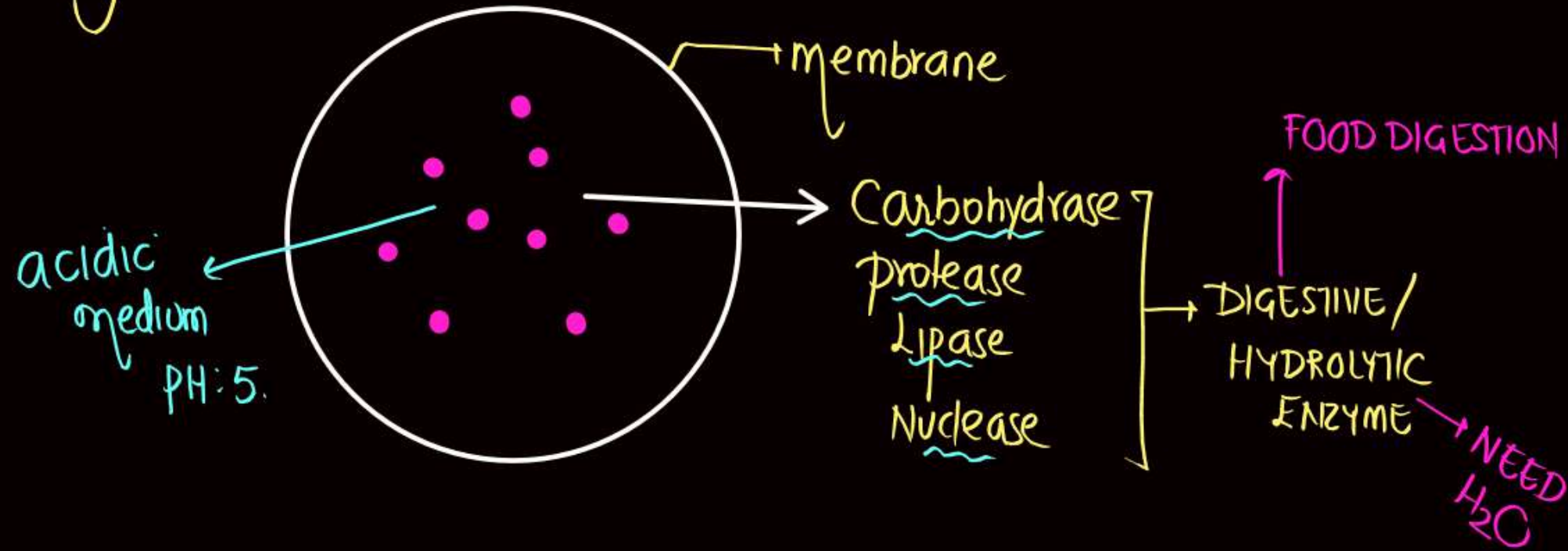
- ① Vesicle come from ER (PROTEIN & LIPID)
- ② moves to cis side of GB
- ③ P & L enters into vesicle of GB.
- ④ P & L moves to cisternae.

$P + \text{sugar} \rightarrow \text{glycoprotein}$ (glycosylation of protein & lipid)
 $L + \text{sugar} \rightarrow \text{glycolipid}$ (modification (cisternae))
- ⑤ Some protein move outside the cell (secretory protein)
- ⑥ Some protein after modification Release inside the cell in form of lysosome
- ⑦ Lysosome formed due to packaging By g.B. But RER provide protein for synthesis of lysosome

ENDOMEMBRANE SYSTEM : ER, GB, LYSOSOME, VACUOLE (WORK IN COORDINATION)
NON ENDOMEMBRANE SYSTEM : MITOCHONDRIA, CHLOROPLAST, PEROXISOME (NOT WORK IN COORDINATION)

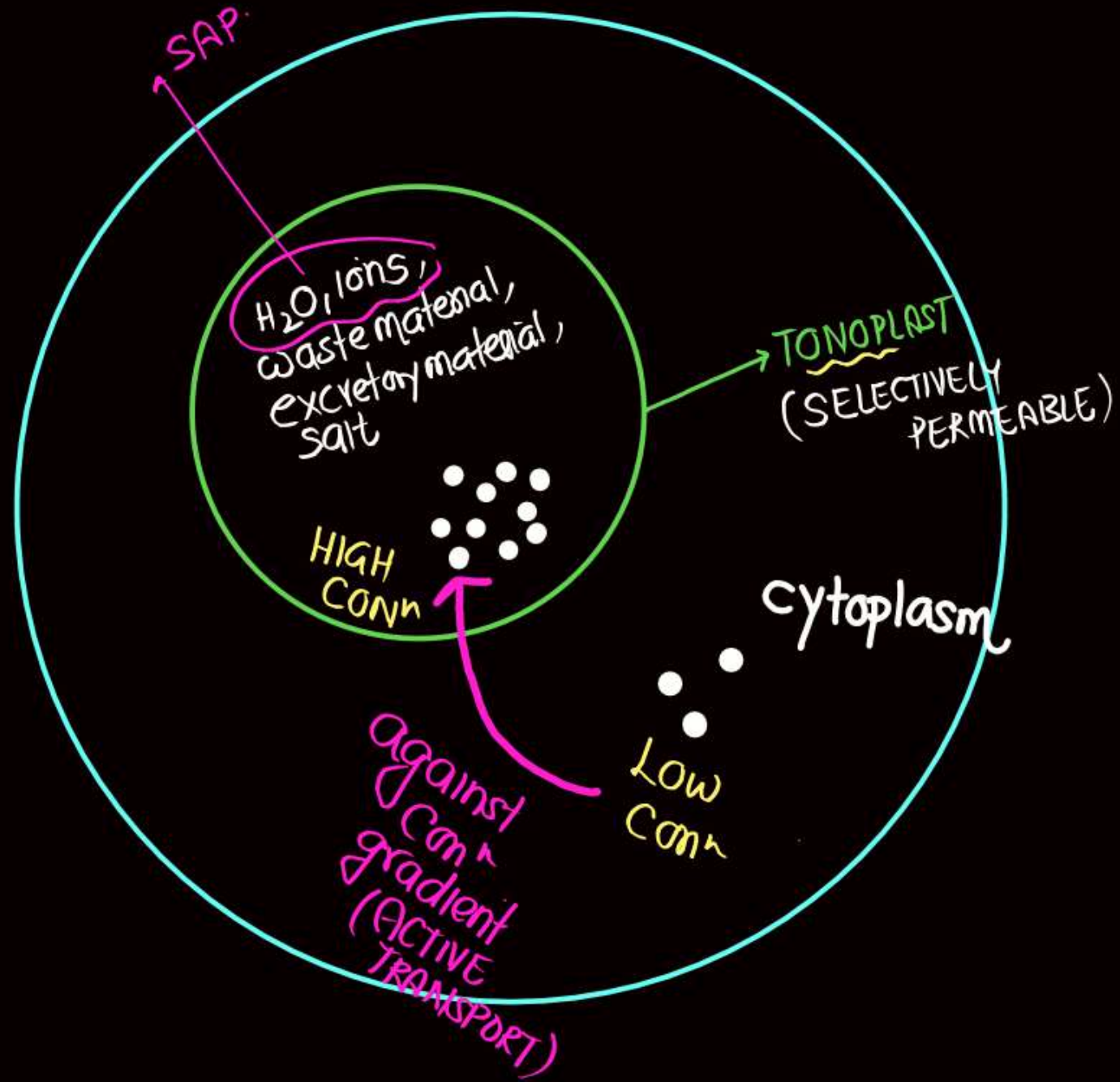
Lysosome

⇒ formation by G.B.



VACUOLE

PLANT CELL,
LARGE, OCCUPY 90% VOLUME OF CELL

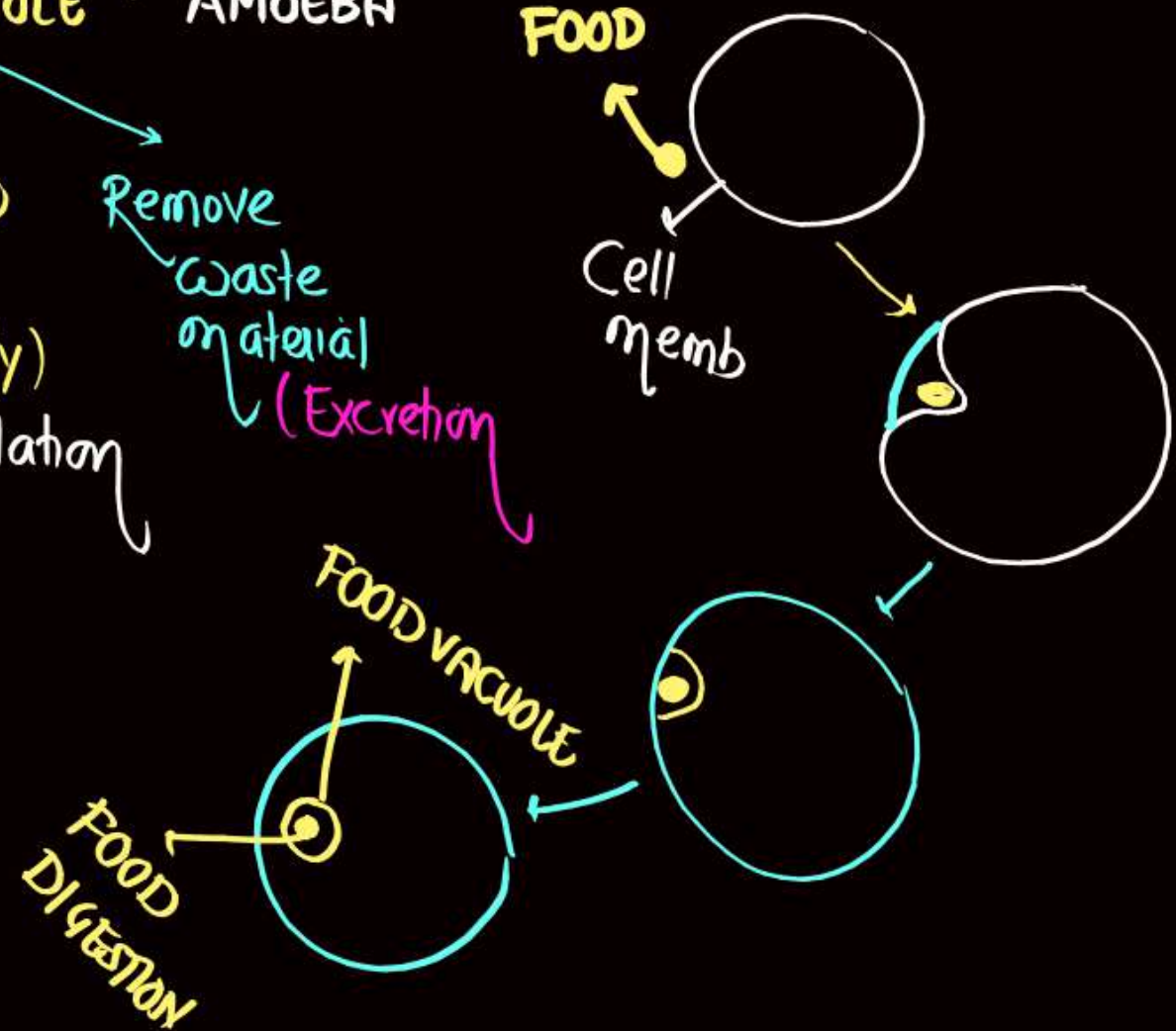


CONTRACTILE VACUOLE : AMOEBA

Excess H₂O
(Remove from Body)
Osmoregulation

Remove waste material
(Excretion)

FOOD VACUOLE (PROTISTA)

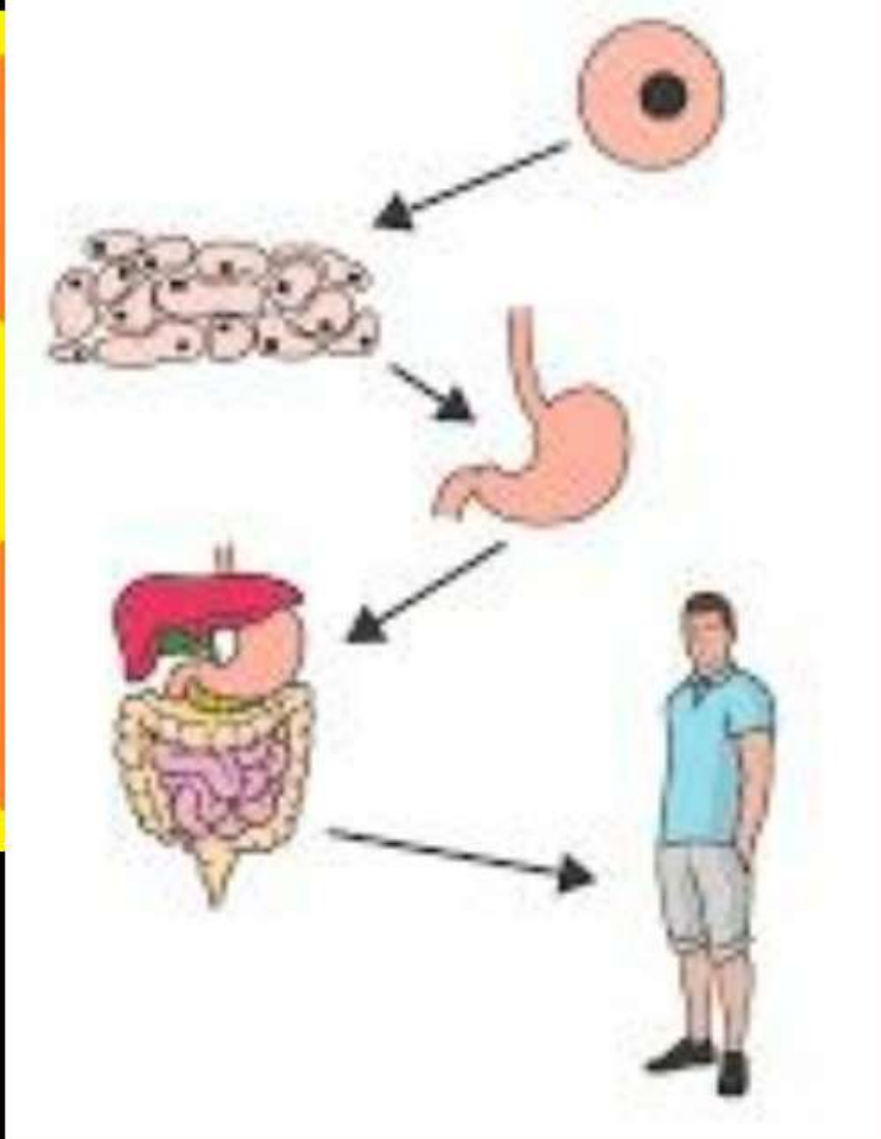
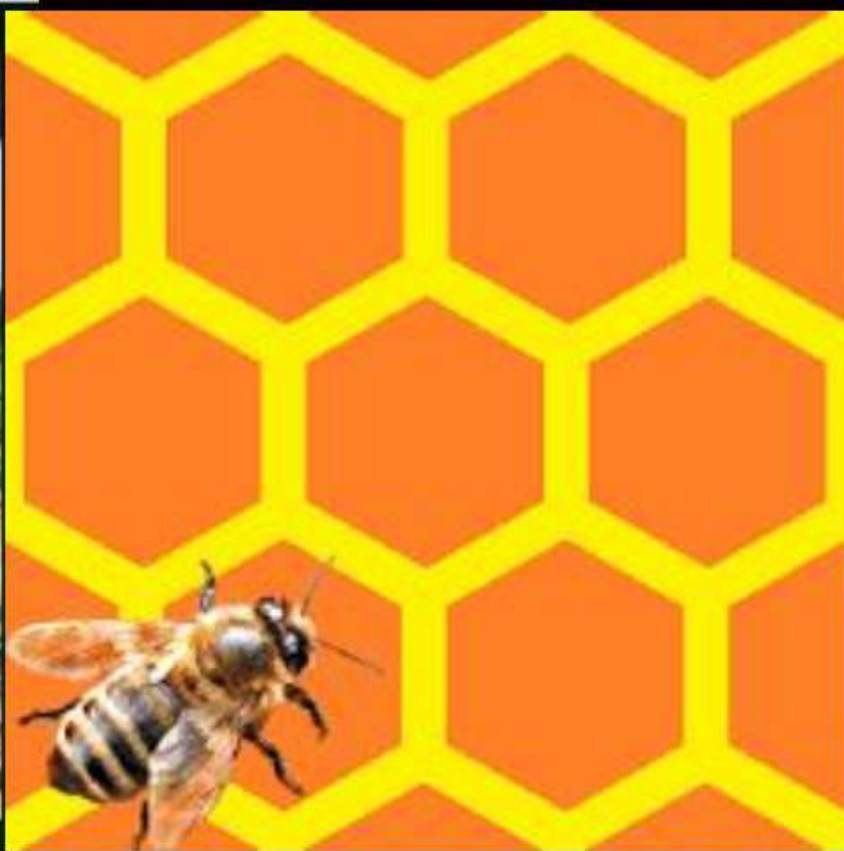


PRACHAND SERIES

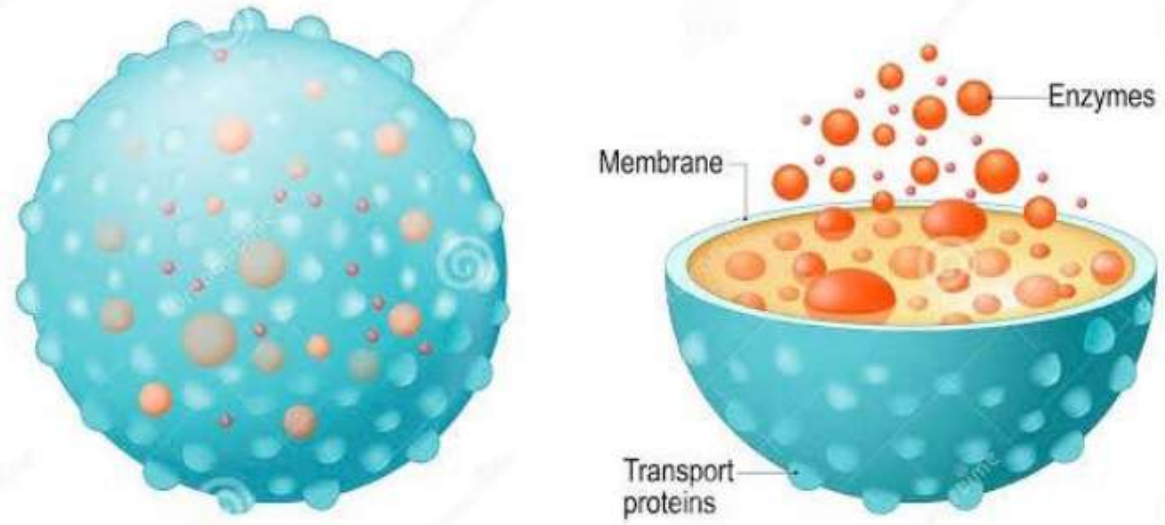
TELEGRAM CHANNEL



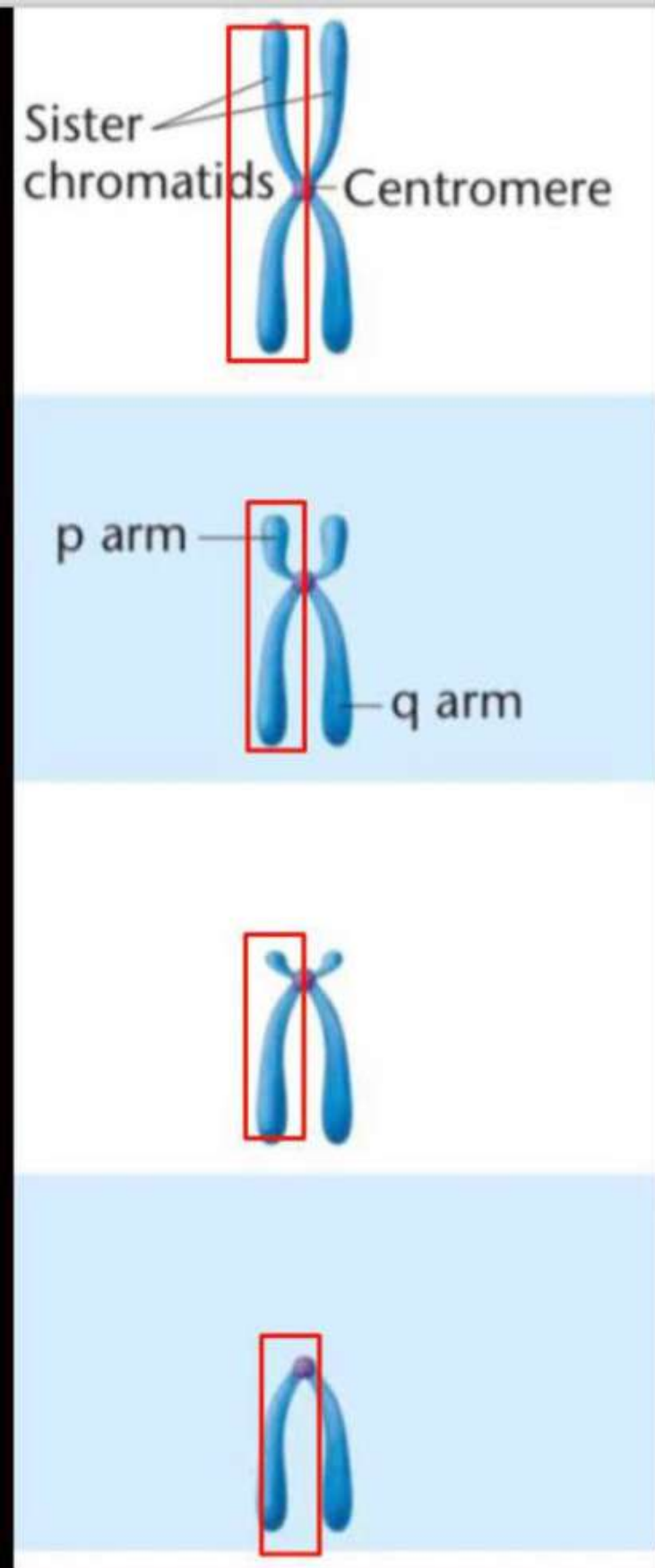
@PW_YAKEENDROPPER



LYSOSOME

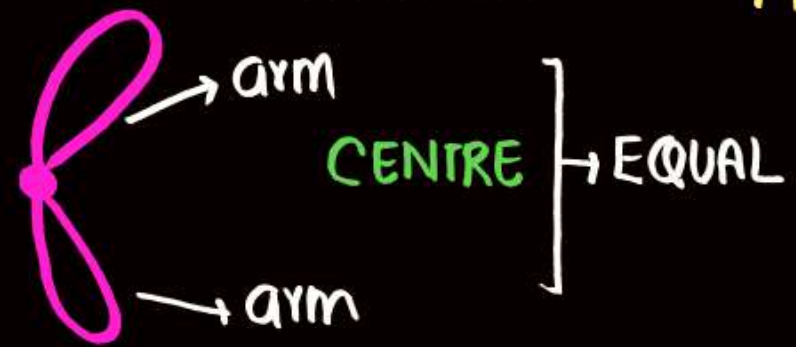




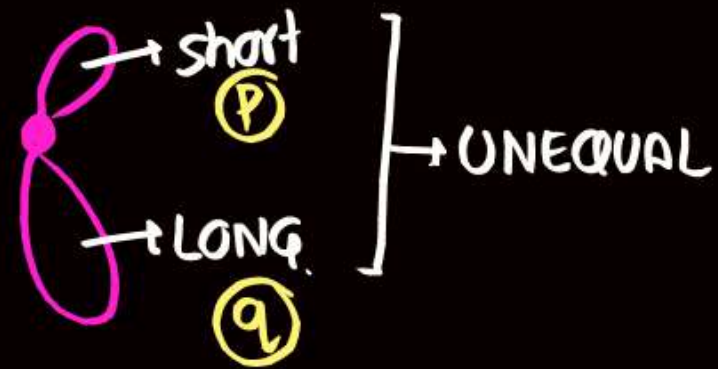


CENTROMERE

TYPE OF CHROMOSOME (ON POSITION OF CENTROMERE)



METACENTRIC = (V)



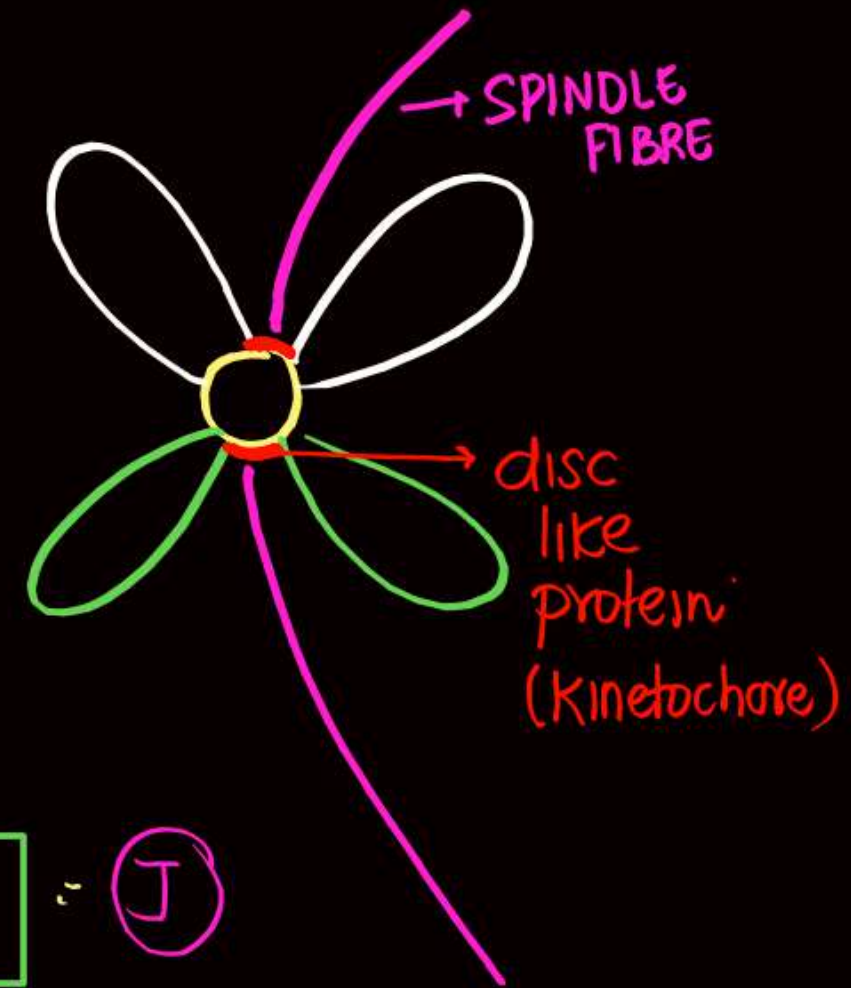
SUB-METACENTRIC = (L)



Acrocentric = (J)



TELOCENTRIC



NUCLEUS

- ⇒ ROBERT BROWN, 1831
- ⇒ cell: generally: one nucleus.
- ⇒ paramecium: two nucleus.

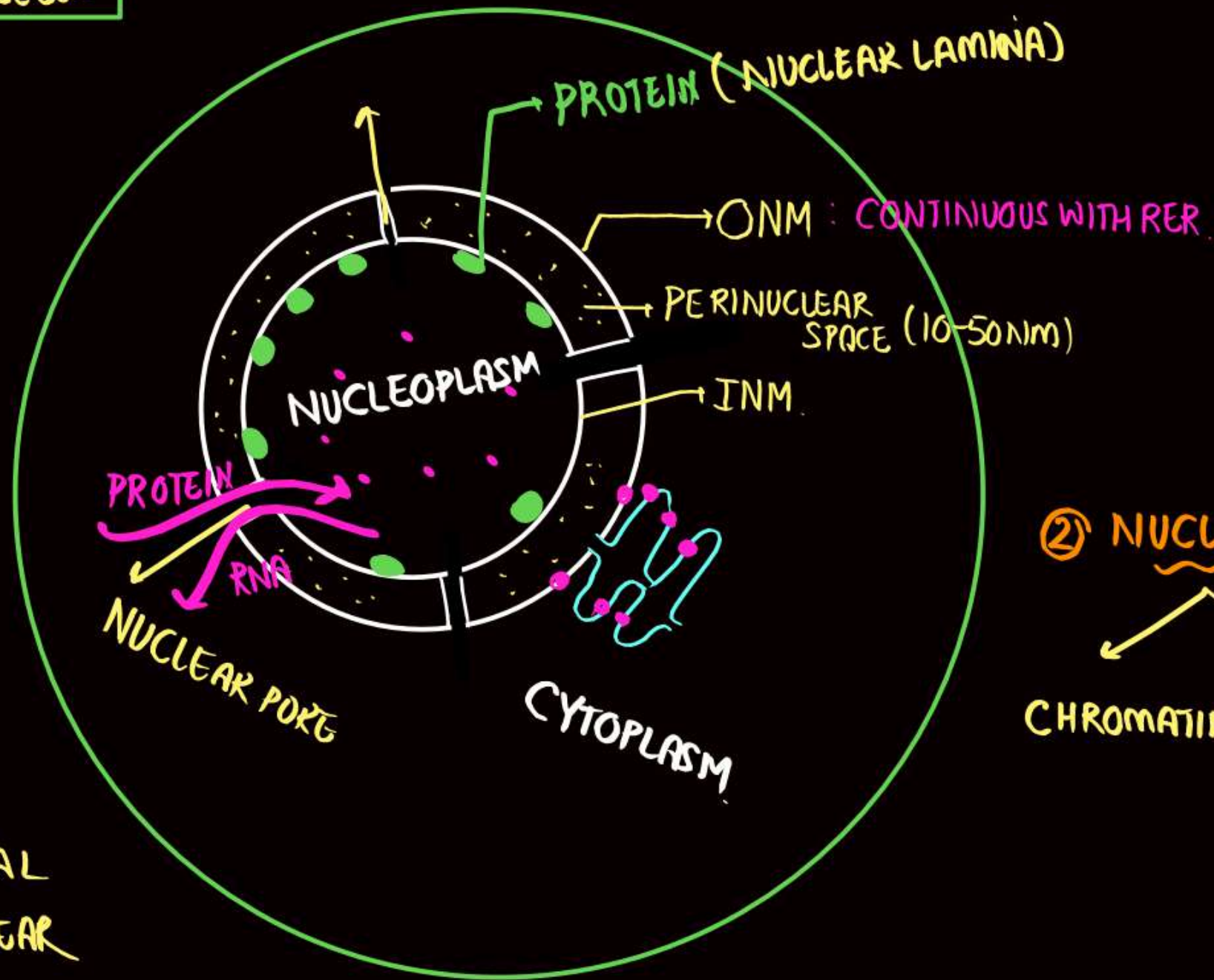
⇒ Mature sieve tube, mammalian RBC } NUCLEUS ABSENT
↓
LIVING.

① NUCLEAR MEMBRANE

⇒ DOUBLE LAYER.

⇒ PERINUCLEAR SPACE /
NM SEPERATE CYTOPLASM &
NUCLEOPLASM

⇒ protein & RNA: BIDIRECTIONAL
MOVEMENT THROUGH NUCLEAR
PORE.

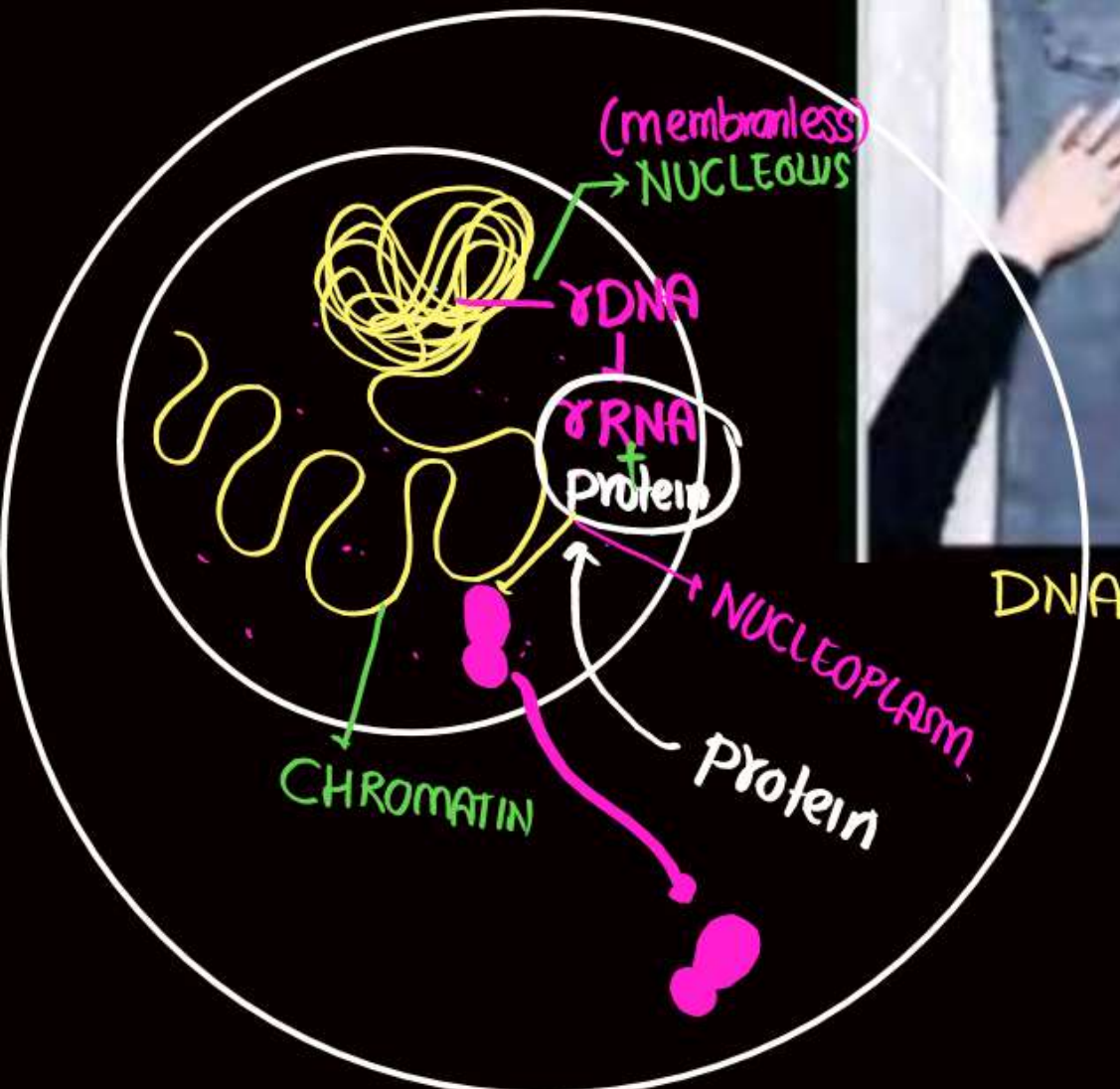


② NUCLEOPLASM

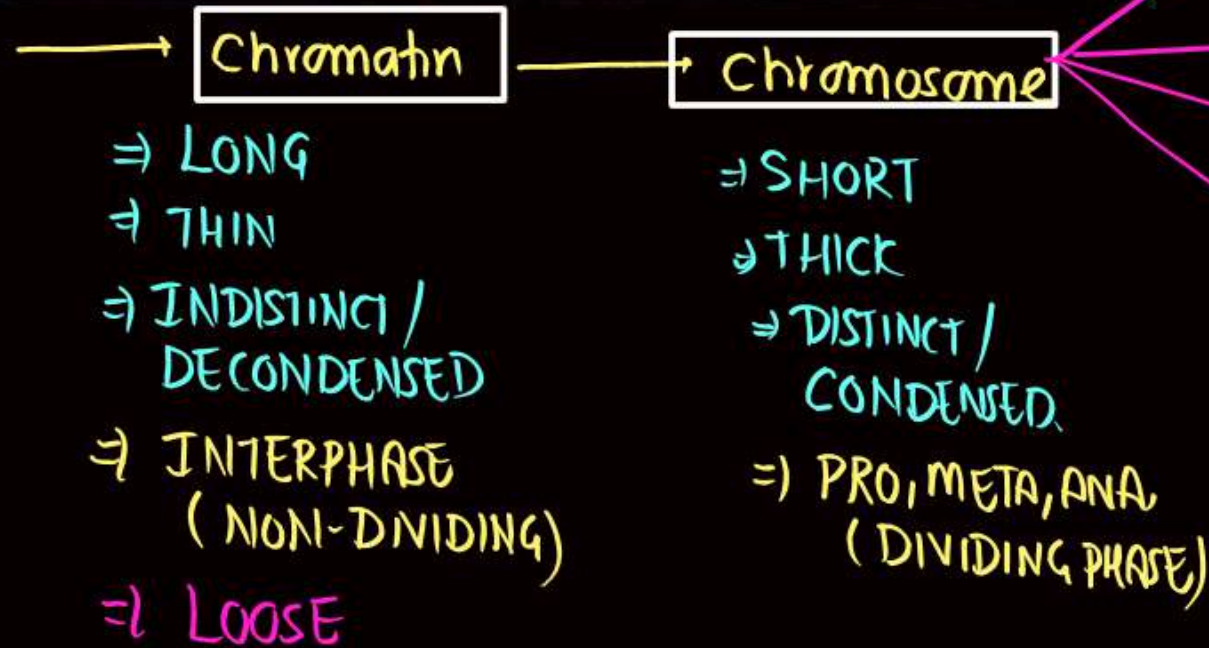
CHROMATIN

NUCLEOLUS.

③ CHROMATIN: flemming, stain By BASIC DYE



NOTE: NUCLEOLUS: MORE IN NUMBER,
LARGE IN SIZE
(CELL ACTIVELY
INVOLVED
PROTEIN SYNTHESIS)



(me)

⇒ Chromatin: collected
(NUCLEOLUS)
⇒ No separation Betw
NUCLEOLUS &
NUCLEOPLASM
Because
NUCLEOLUS IS
MEMBRANELESS.

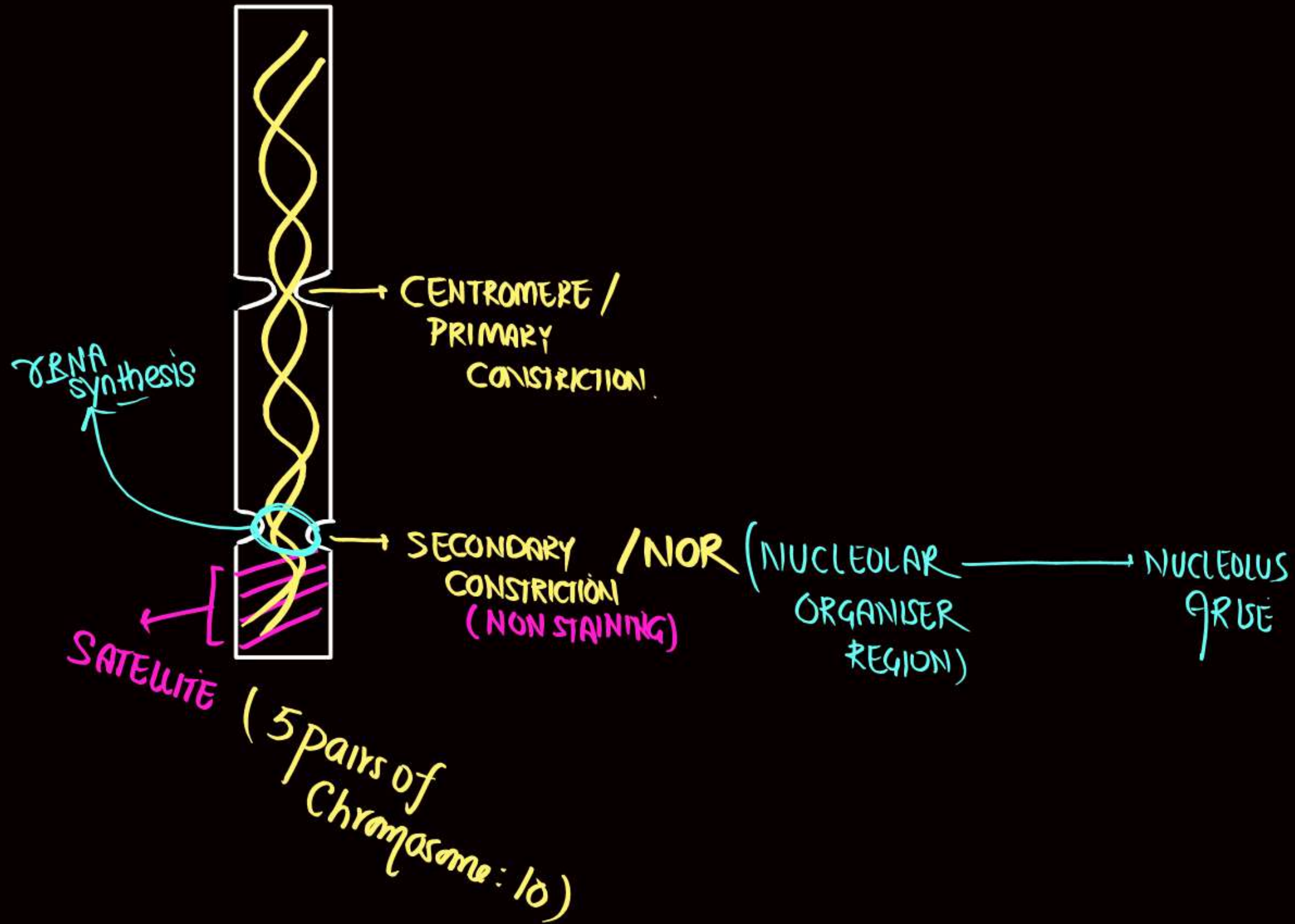
⇒ NUCLEOLUS (rDNA) → rRNA)

⇒ Protein → NUCLEUS
(Cytoplasm)

⇒ rRNA + protein → RIBOSOME
(NUCLEUS)

⇒ RIBOSOME → CYTOPLASM
(NUCLEUS)

Chromosome



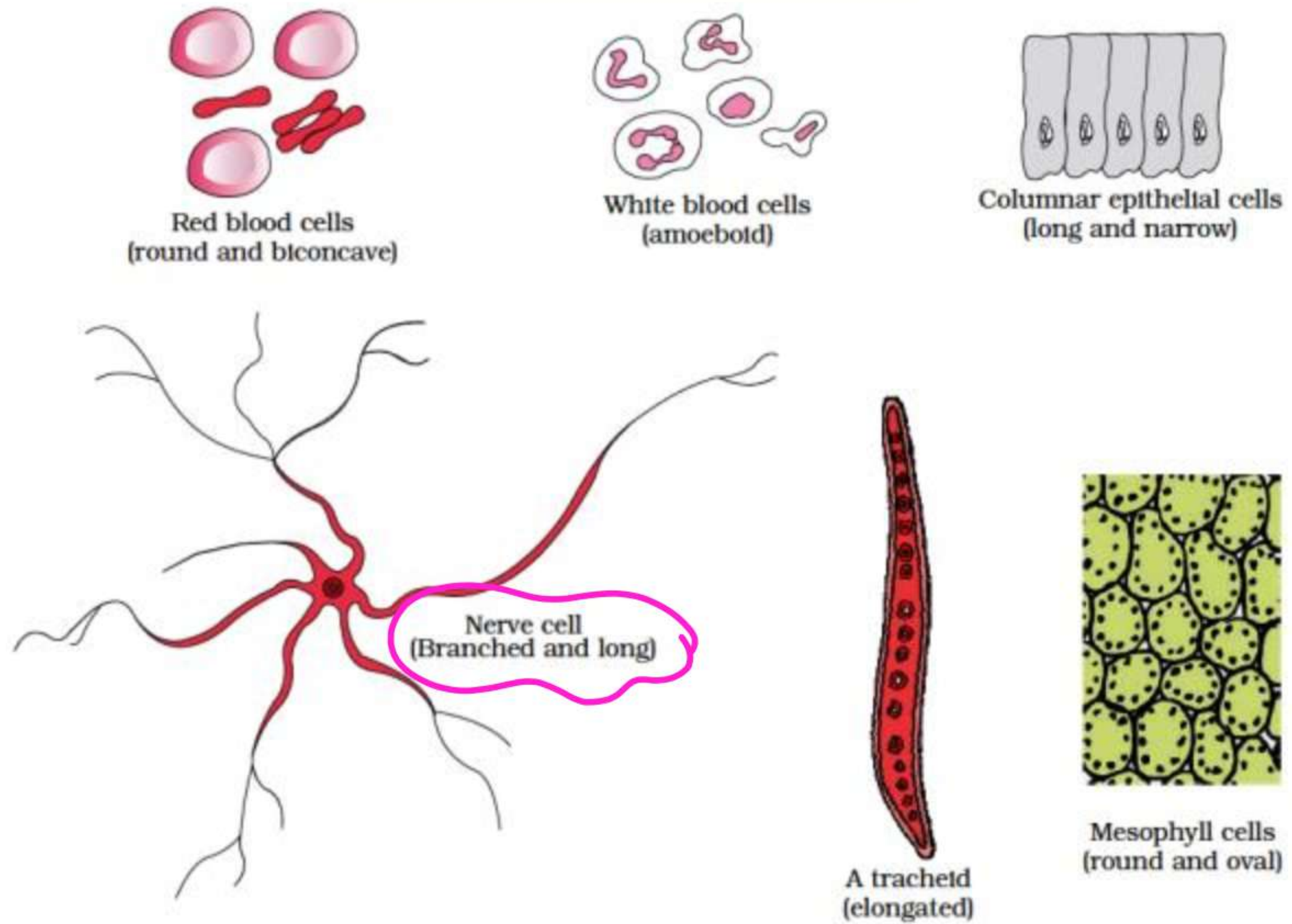


Figure 8.1 Diagram showing different shapes of the cells

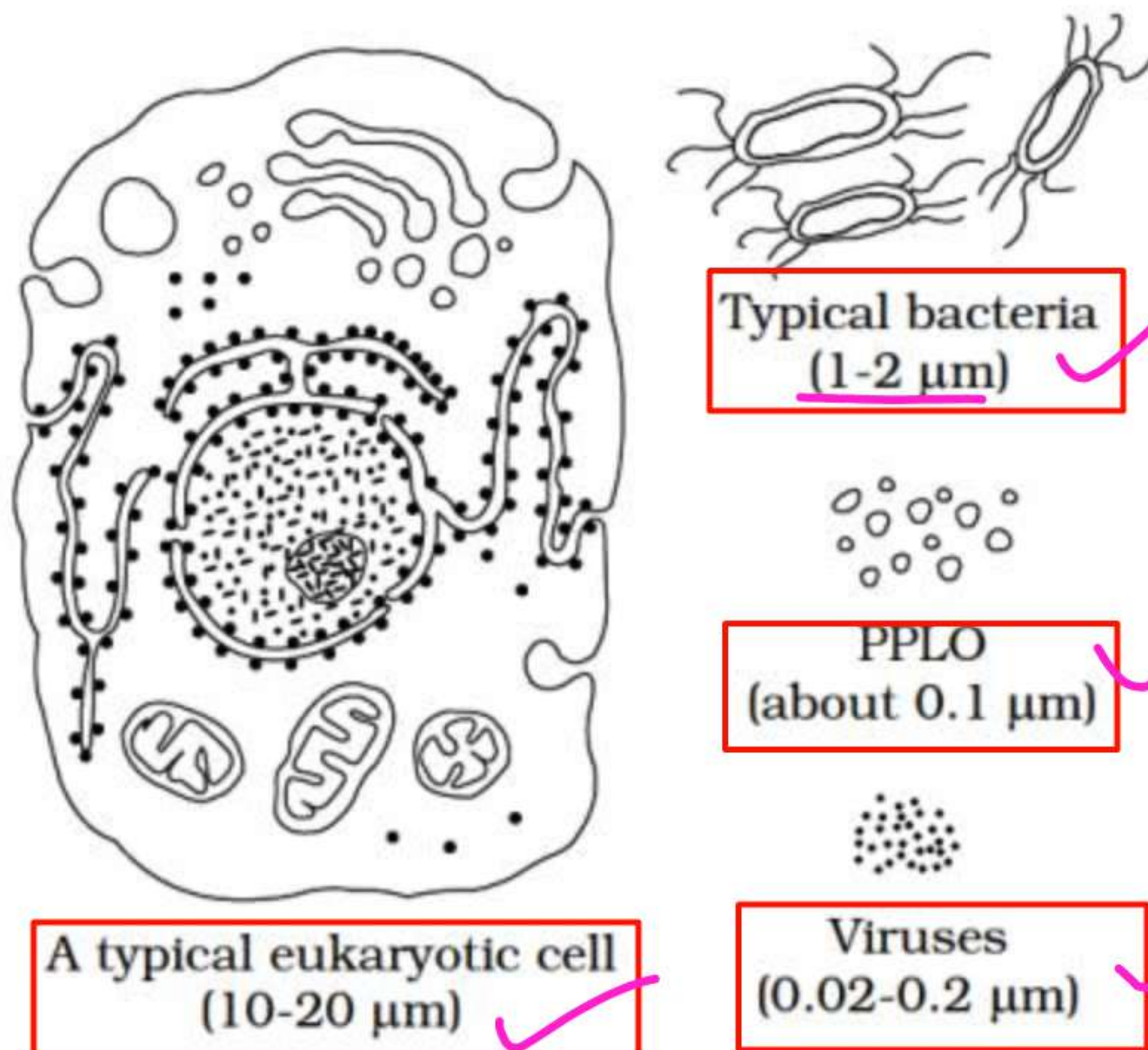


Figure 8.2 Diagram showing comparison of eukaryotic cell with other organisms

NEET

7. Cytoskeleton

An ^{COMPLEX} elaborate network of filamentous proteinaceous structures consisting of microtubules, microfilaments and intermediate filaments present in the cytoplasm is collectively referred to as the **cytoskeleton**. The cytoskeleton in a cell are involved in many functions such as mechanical support, motility, maintenance of the shape of the cell.

TUBULIN

actn,
myosin

NC/CLEAR LAMINA (INNER
NUCLEAR
MEMBRANE)

Cilia &
flagella

11. Microbodies

Many membrane bound minute vesicles called microbodies that contain various enzymes, are present in both plant and animal cells.

QUESTION



Match List I with List II:

(2024)

Choose the correct answer from the options given below:

1 A-IV, B-III, C-II, D-I

2 A-IV, B-II, C-III, D-I

3 A-II, B-IV, C-I, D-III

4 A-II, B-I, C-IV, D-III

	List I		List II
A.	Axoneme	i.	Centriole
B.	Cartwheel pattern	ii.	Cilia and flagella
C.	Crista	iii.	Chromosome
D.	Satellite	IV.	Mitochondria

QUESTION



The DNA present in chloroplast is:

(2024)

- 1 Linear, double stranded
- 2 Circular, double stranded
- 3 Linear, single stranded
- 4 Circular, single stranded

QUESTION



Match List I with List II :

(2024)

Choose the correct answer from the options given below:

- 1 A-IV, B-III, C-II, D-I
- 2 A-IV, B-II, C-III, D-I
- 3 A-II, B-IV, C-I, D-III
- 4 A-II, B-I, C-IV, D-III

	List-I		List-II
A.	Nucleolus	I.	Site of formation of glycolipid
B.	Centriole	II.	Organization like the cartwheel
C.	Leucoplasts	III.	Site for active ribosomal RNA synthesis
D.	Golgi apparatus	IV.	For storing nutrients

A-III
B-II
C-IV
D-I

QUESTION



Movement and accumulation of ions across a membrane against their concentration gradient can be explained by (2023)

- 1 Facilitated Diffusion
- 2 Passive Transport
- 3 Active Transport
- 4 Osmosis

ATP

QUESTION



How many different proteins does the ribosome consist of?

(2023)

80S

- 1 60
- 2 40
- 3 20
- 4 80

QUESTION



Which of the following are NOT considered as the part of endomembrane system?(2023)

- A. Mitochondria ✓
- B. Endoplasmic reticulum
- C. Chloroplasts ✓
- D. Golgi complex
- E. Peroxisomes ✓

Choose the most appropriate answer from the options given below:

- 1** A, C and E only ✓
- 2** A and D only
- 3** A, D and E only
- 4** B and D only

QUESTION



Which of the following functions is carried out by cytoskeleton in a cell?

(2023)

- 1 Protein synthesis
- 2 Motility ✓
- 3 Transportation
- 4 Nuclear division

QUESTION



Given below are two statements:

(2023 manipur)

Statement-I: In bacteria, the mesosomes are formed by the extensions of plasma membrane.



Statement-II: The mesosomes, in bacteria, help in DNA replication and cell wall formation.



In the light of the above statements, choose the most appropriate answer from the options given below:

- 1** Statement-I is correct but Statement-II is incorrect.
- 2** Statement-I is incorrect but Statement-II is correct.
- 3** Both Statement-I and Statement-II are correct. ✓
- 4** Both Statement-I and Statement-II are incorrect.

QUESTION



Which of the following statements are correct with respect of Golgi apparatus?

- A. It is the important site of formation of glycoprotein and glycolipids. ✓ (2023 manipur)
- B. It produces cellular energy in the form of ATP.
- C. It modifies the protein synthesized by ribosomes on ER. ✓ glyco
- D. It facilitates the transport of ions.
- E. It provides mechanical support.

Choose the most appropriate answer from the options given below:

- 1 B and C only
- 2 A and C only ✓
- 3 A and D only
- 4 D and E only

QUESTION



Match the List-I with List-II.

Choose the correct answer from the options given below:

(2022)
D-II
A-III B-I
C-IV

- 1 A-Q, B-P, C-S, D-R
- 2 A-S, B-R, C-Q, D-P
- 3 A-P, B-R, C-S, D-Q
- 4 A-R, B-Q, C-P, D-S

	List-I		List-II
A.	Metacentric chromosome	I.	Centromere situated close to the end forming one extremely short and one very long arms
B.	Acrocentric chromosome	II.	Centromere at the terminal end
C.	Submetacentric	III.	Centromere in the middle forming two equal arms of chromosomes
D.	Telocentric chromosome	IV.	Centromere slightly away from the middle forming one shorter arm and one longer arm

QUESTION



Which of the following statements with respect to Endoplasmic Reticulum is incorrect?
(2022)

- 1 SER are the sites for lipid synthesis
- 2 RER has ribosomes attached to ER
- 3 SER is devoid of ribosomes
- 4 In prokaryotes only RER are ^apresent

ER absent)

QUESTION



Which type of substance would face difficulty to pass through the cell membrane?

2022 (Phase 2)

- 1 Substance with hydrophobic moiety
- 2 Substance with hydrophilic moiety
- 3 All substance irrespective of hydrophobic and hydrophilic moiety
- 4 Substance soluble in lipids

POLAR / WATER SOLUBLE

QUESTION



If the pH in lysosomes is increased to alkaline, what will be the outcome? 2022 (Phase 2)

- 1 Hydrolytic enzymes will function more efficiently
- 2 Hydrolytic enzymes will become inactive ✓
- 3 Lysosomal enzymes will be released into the cytoplasm
- 4 Lysosomal enzymes will be more active

Which of the following is an incorrect statement?

(2021)

- 1 Microbodies are present both in plant and animal cells. (C)
- 2 The perinuclear space forms a barrier between the materials present inside the nucleus and that of the cytoplasm. (C)
- 3 Nuclear pores act as passages for proteins and RNA molecules in both directions between nucleus and cytoplasm. (C)
- 4 Mature sieve tube elements ^{absent)} ~~possess a conspicuous nucleus and~~ usual cytoplasmic organelles.

QUESTION



Match the List-I with List-II

(2021)

Choose the correct answer from the options given below.

- 1 (A)-(I); (B)-(IV); (C)-(III); (D)-(II)
- 2 (A)-(III); (B)-(IV); (C)-(I); (D)-(II)
- 3 (A)-(II); (B)-(III); (C)-(IV); (D)-(I)
- 4 (A)-(IV); (B)-(III); (C)-(II); (D)-(I)

	List-I		List-II
A.	Cristae	I.	Primary constriction in chromosome
B.	Thylakoids	II.	Disc-shaped sacs in Golgi apparatus
C.	Centromere	III.	Infoldings in mitochondria
D.	Cisternae	IV.	Flattened membranous sacs in stroma of plastids

QUESTION



When the centromere is situated in the middle of two equal arms of chromosomes, the chromosome is referred as: (2021)

- 1 Telocentric
- 2 Sub-metacentric
- 3 Acrocentric
- 4 Metacentric



QUESTION



The organelles that are included in the endomembrane system are:

(2021)

- 1 Endoplasmic reticulum, Golgi complex, Lysosomes and Vacuoles.
- 2 Golgi complex, Mitochondria, Ribosomes and Lysosomes.
- 3 Golgi complex, Endoplasmic reticulum, Mitochondria and Lysosomes.
- 4 Endoplasmic reticulum, Mitochondria, Ribosomes and Lysosomes.

Which of the following statements about inclusion bodies is incorrect?

(2020)

- 1** These are involved in ingestion of food particles. ✓
- 2** They lie free in the cytoplasm C
- 3** These represent reserve material in cytoplasm C
- 4** They are not bound by any membrane C

QUESTION



Which is the important site of formation of glycoproteins and glycolipids in eukaryotic cells?
(2020)

- 1 Peroxisomes
- 2 Golgi bodies ✓
- 3 Polysomes
- 4 Endoplasmic reticulum

QUESTION



The biosynthesis of ribosomal RNA occurs in:

(2020 Covid)

- 1 Golgi apparatus
- 2 Microbodies
- 3 Nucleolus
- 4 Ribosomes

QUESTION



Inclusion bodies of blue-green, purple and green photosynthetic bacteria are:(2020 Covid)

- 1 Gas vacuoles
- 2 Centrioles
- 3 Microtubules
- 4 Contractile vacuoles

QUESTION



Match the following Lists and select the correct option;

(2020 Covid)

	(A)	(B)	(C)	(D)
1	(III)	(I)	(II)	(IV)
2	(IV)	(II)	(I)	(III)
3	(I)	(II)	(III)	(IV)
4	(II)	(I)	(III)	(IV)

	List-I		List-II
A.	Smooth Endoplasmic Reticulum	I.	Protein synthesis
B.	Rough endoplasmic reticulum	II.	Lipid synthesis
C.	Golgi complex	III.	Glycosylation
D.	Centriole	IV.	Spindle formation

QUESTION



The size of Pleuropneumonia - like Organism (PPLO) is:

(2020 Covid)

- 1 1 - 2 μm
- 2 10 - 20 μm
- 3 0.1 μm
- 4 0.02 μm

QUESTION



Which of the following pair of organelles does not contain DNA?

(2019)

- 1 Mitochondria and Lysosomes
- 2 Chloroplast and Vacuoles
- 3 Lysosomes and Vacuoles
- 4 Nuclear envelope and Mitochondria

QUESTION



The shorter and longer arms of a sub-metacentric chromosome are referred to as (2019)

- 1 s-arm and l-arm respectively
- 2 p-arm and q-arm respectively
- 3 q-arm and p-arm respectively
- 4 m-arm and n-arm respectively

Which of the following statements is not correct?

(2019)

- 1 Lysosomes have numerous hydrolytic enzymes.
- 2 The hydrolytic enzymes of lysosomes are active under acidic pH.
- 3 Lysosomes are membrane bound structures.
- 4 Lysosomes are formed by the process of packaging in the ~~endoplasmic reticulum~~ *golgi Body*.

QUESTION



The concept of "*Omnis cellula e cellula*" regarding cell division was first proposed by (2019)

1 Rudolf Virchow

2 Theodor Schwann

3 Schleiden

4 Aristotle

Which of the following statements regarding mitochondria is incorrect?

(2019)

- 1 Outer membrane is permeable to monomers of carbohydrates, fats and proteins.
- 2 Enzymes of electron transport are embedded in ~~outer~~ ^{INNER MEMB} membrane.
- 3 Inner membrane is convoluted with infoldings.
- 4 Mitochondrial matrix contains single circular DNA molecule and ribosomes.

QUESTION



Which of the following cell organelles is present in the highest number in secretory cells?
(2019 odisha)

- 1 Mitochondria
- 2 Golgi complex
- 3 Endoplasmic reticulum
- 4 Lysosomes

★

SECRETION

(protein cell outside):

packaging modification:

delivered.

secretory protein)

QUESTION



Non-membranous nucleoplasmic structures in nucleus are the site for active synthesis of
(2019 odisha)

1 protein synthesis

2 mRNA

3 rRNA

4 tRNA

QUESTION



prokaryote?

Which of the following nucleic acids is present in an organism having 70 S ribosomes only?
(2019 odisha)

- 1 Single stranded DNA with protein coat
- 2 Double stranded circular naked DNA ✓
- 3 Double stranded DNA enclosed in nuclear membrane
- 4 Double stranded circular DNA with histone proteins

QUESTION



Match the List-I with List-II.

(2019 odisha)

Choose the right match from options given below:

1 A-R, B-S, C-Q, D-P

2 A-S, B-R, C-P, D-Q

3 A-R, B-Q, C-S, D-P

4 A-P, B-Q, C-S, D-R

	List-I		List-II
A.	Golgi apparatus	P.	Synthesis of protein
B.	Lysosomes products	Q.	Trap waste and excretory
C.	Vacuoles	R.	Formation of glycoproteins and glycolipids
D.	Ribosomes	S.	Digesting biomolecules

QUESTION



Which among the following is not a prokaryote?

(2018)

1 *Saccharomyces* (yeast) Eukarya ✓

2 *Mycobacterium*

3 *Nostoc*

4 *Oscillatoria*

QUESTION



Many ribosomes may associate with a single mRNA to form multiple copies of a polypeptide simultaneously. Such strings of ribosomes are termed as (2018)

- 1 Polysome ✓
- 2 Polyhedral bodies
- 3 Plastidome
- 4 Nucleosome

QUESTION



The Golgi complex participates in

(2018)

- 1 Fatty acid breakdown
- 2 Formation of secretory vesicles
- 3 Respiration in bacteria
- 4 Activation of amino acid

QUESTION



Which of the following events does not occur in rough endoplasmic reticulum? (2018)

- 1 Protein folding
- 2 Protein glycosylation
- 3 Cleavage of signal peptide
- 4 Phospholipid synthesis

→ SER

Which of the following is true for nucleolus?

(2018)

- 1** Larger nucleoli are present in dividing cells.
- 2** It is a membrane-bound structure.
- 3** It takes part in spindle formation.
- 4** It is a site for active ribosomal RNA synthesis ✓

QUESTION



Which of the following components provides sticky character to the bacterial cell?

[OS] (2017-Delhi)

- 1 Cell wall
- 2 Nuclear membrane
- 3 Plasma membrane
- 4 Glycocalyx



QUESTION



Which of the following cell organelles is responsible for extracting energy from carbohydrates to form ATP?

(2017-Delhi)

- 1 Lysosome
- 2 Ribosome
- 3 Chloroplast
- 4 Mitochondrion

QUESTION



A complex of ribosomes attached to a single strand of RNA is known:

(2016 - I)

- 1 Polysome
- 2 Polymer
- 3 Polypeptide
- 4 Okazaki fragment

Mitochondria and chloroplast are

- A. Semi-autonomous organelles
- B. Formed by division of pre-existing organelles and they contain DNA but lack protein synthesizing machinery

Which one of the following options is correct?

(2016-I)

- 1 Both (A) and (B) are correct
- 2 (B) is true but (A) is false
- 3 (A) is true but (B) is false
- 4 Both (A) and (B) are false

Microtubules are the constituents of:

(2016-I)

- 1** Cilia, Flagella and Peroxisomes
- 2** Spindle fibres, Centrioles and Cilia
- 3** Centrioles, Spindle fibres and Chromatin
- 4** Centrosome, Nucleosome and Centrioles

Select the wrong statement:

(2016 - II)

- 1** Cyanobacteria lack flagellated cells.
- 2** Mycoplasma is a wall-less microorganism
- 3** Bacterial cell wall is made up of peptidoglycan.
- 4** Pilli and fimbriae are mainly involved in motility of bacterial cells

QUESTION



Select the mismatch:

(2016 - II)

- 1 Protists-Eukaryotes
- 2 Methanogens-Prokaryotes
- 3 Gas vacuoles-Green bacteria
- 4 Large central vacuoles-Animal cells

QUESTION



A cell organelle containing hydrolytic enzymes is:

(2016 - II)

- 1 Ribosome
- 2 Mesosome
- 3 Lysosome
- 4 Microsome

THANK YOU

