

SNS COLLEGE OF PHARMACY AND HEALTH SCIENCES



Affiliated To The Tamil Nadu Dr. MGR Medical University, Chennai

Approved by Pharmacy Council of India, New Delhi.

Coimbatore -641035

COURSE NAME : HUMAN ANATOMY & PHYSIOLOGY (ER20-14T)

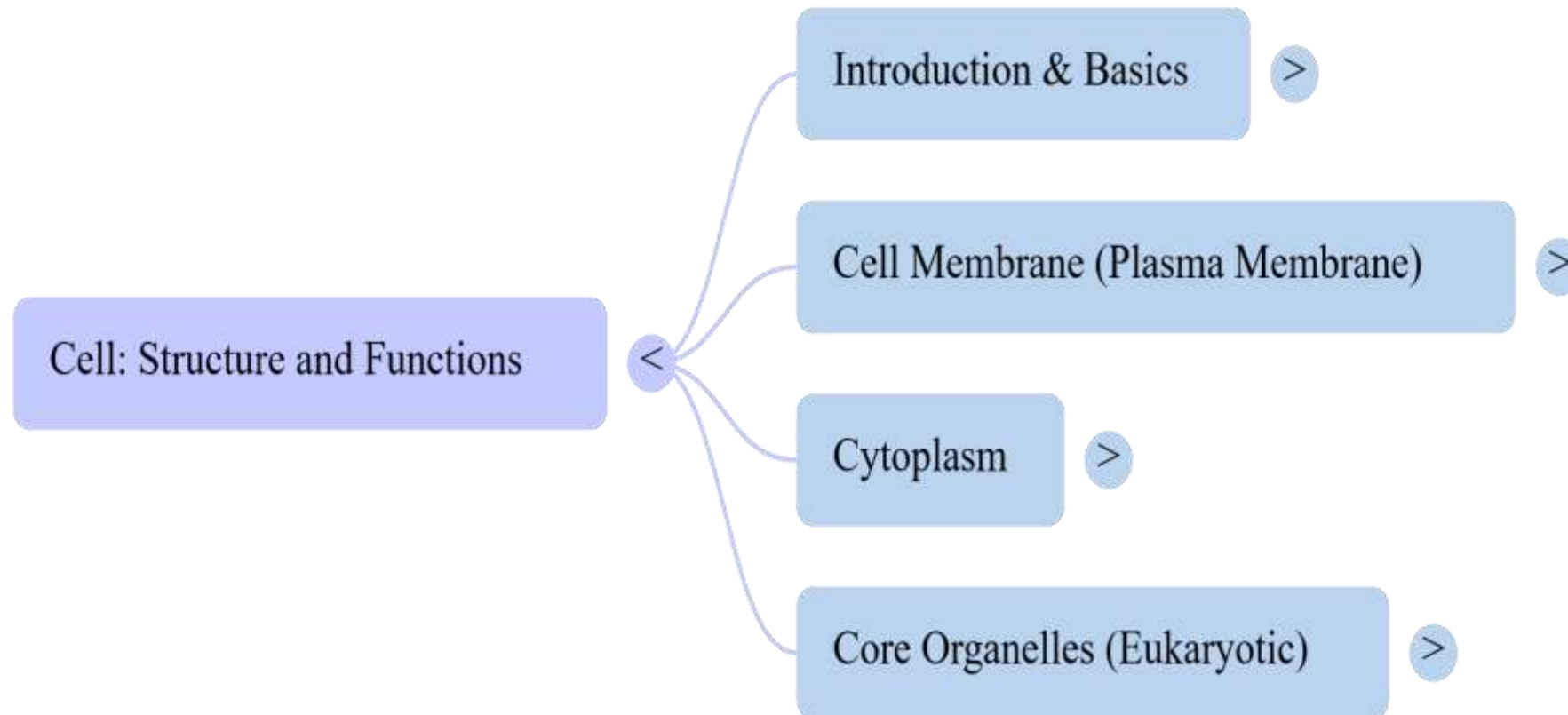
I- D. PHARM

TOPIC 1 : STRUCTURE OF CELL

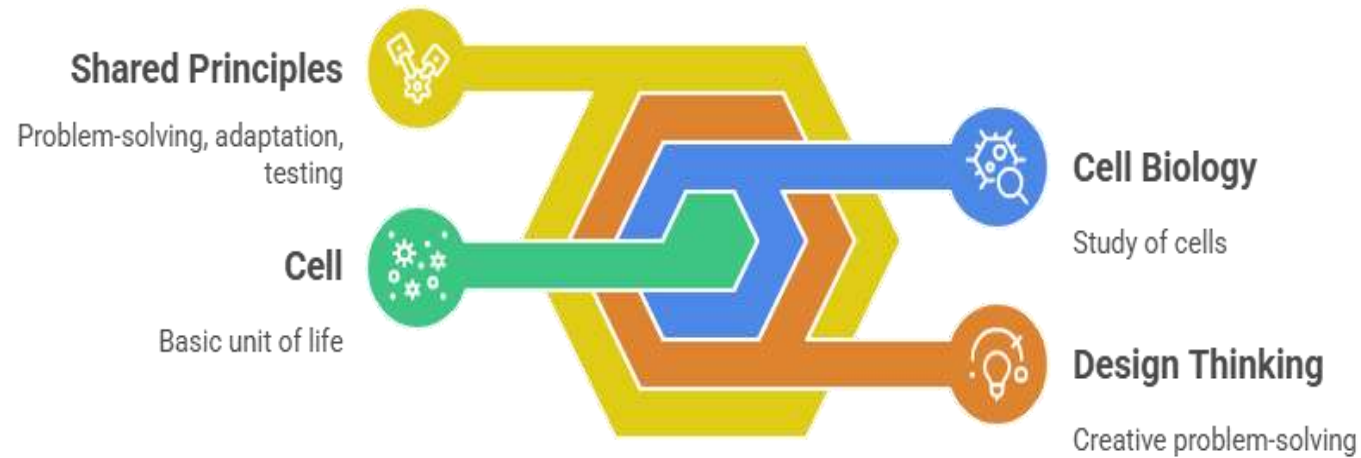
DESIGN THINKING IN STRUCTURE OF CELL

1. **Empathize** → Life's needs.
2. **Ideate** → Multiple survival strategies.
3. **Prototype** → Models & representations.
4. **Define** → Organelles as problem-solvers.
5. **Test** → Experiments & validations.

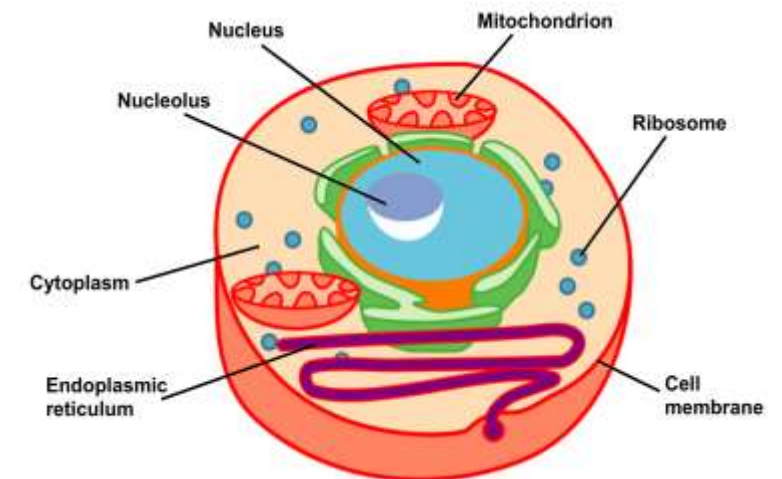
MINDMAP FOR STRUCTURE OF CELL



INTRODUCTION

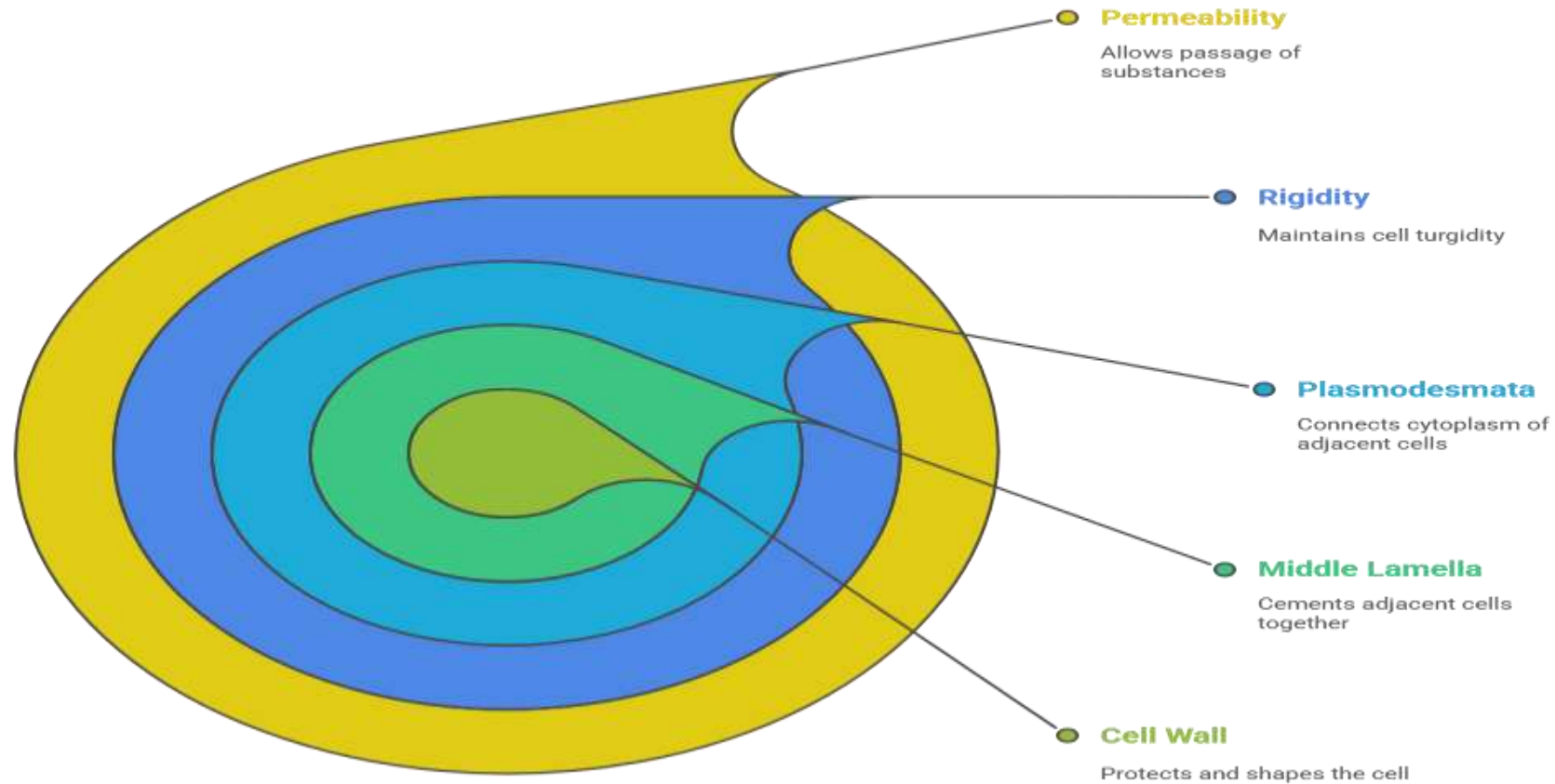


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FUNCTIONS OF CELL

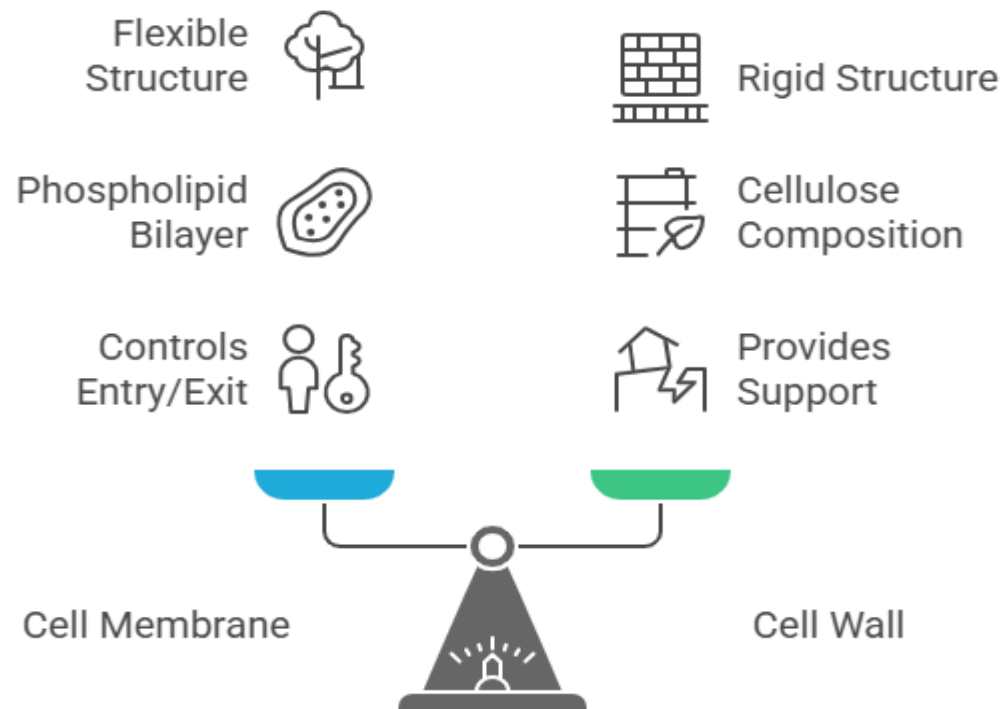
Cell Wall Structure and Function



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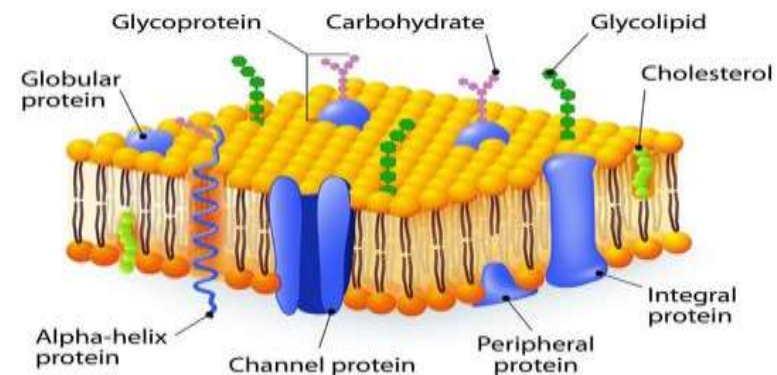
CELL COMPONENTS

Comparing Cell Membrane and Cell Wall



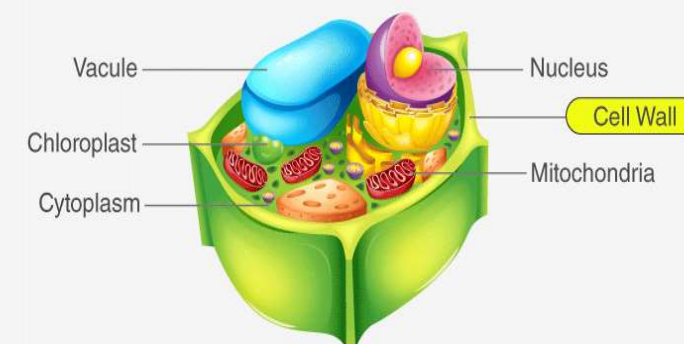
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CELL MEMBRANE



CELL WALL

BYJU'S
The Learning App



CELL COMPONENTS

Nucleus and Centrosome



Membrane-bound organelle



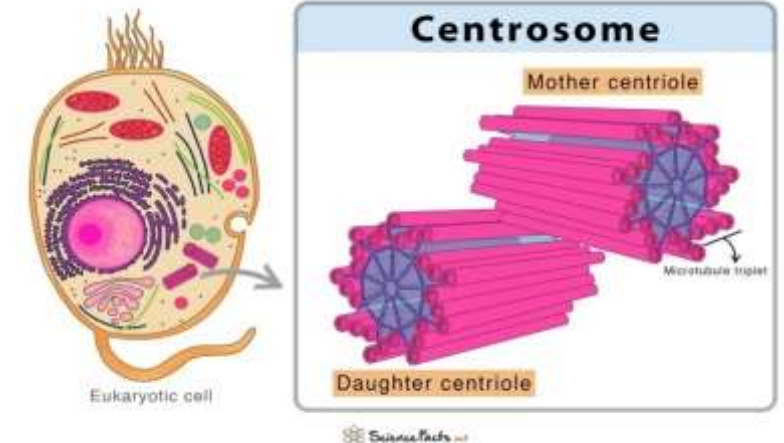
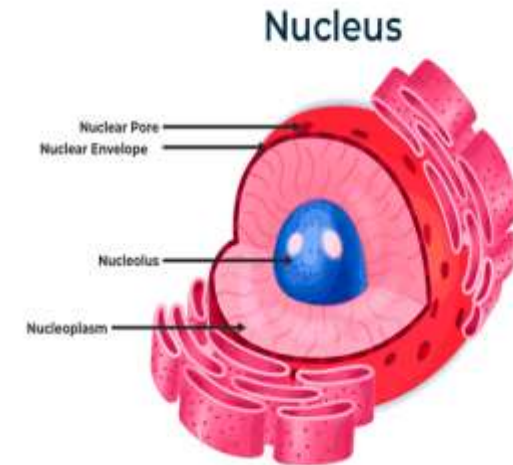
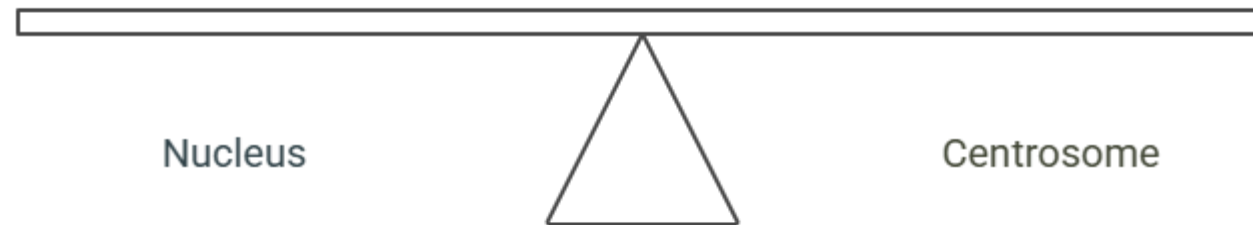
Controls cellular activities



Microtubule-organizing centers

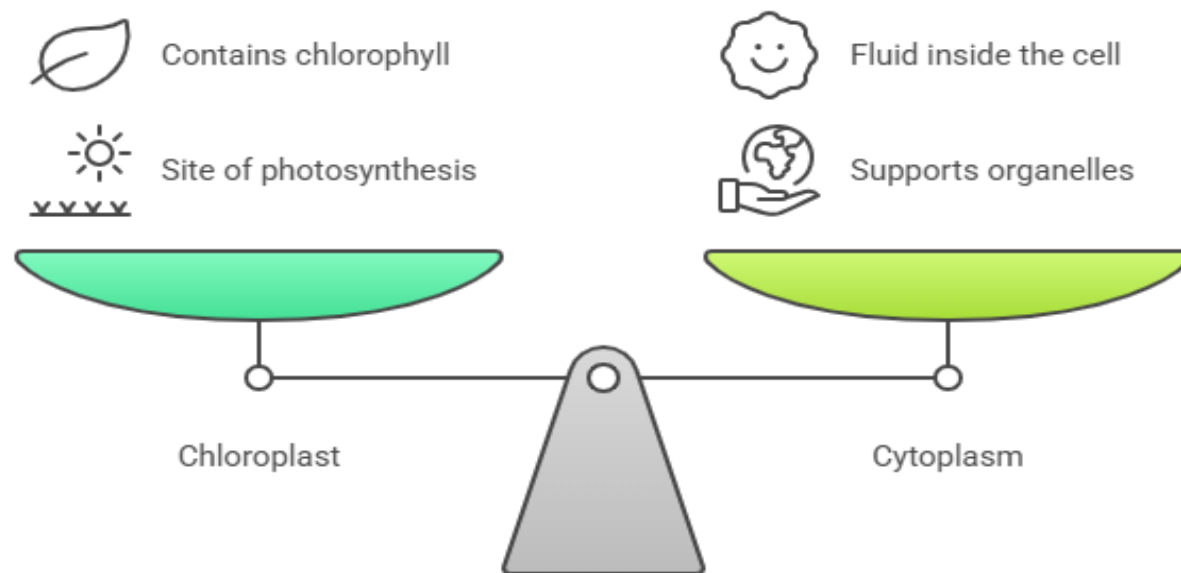


Organizes spindle fibers

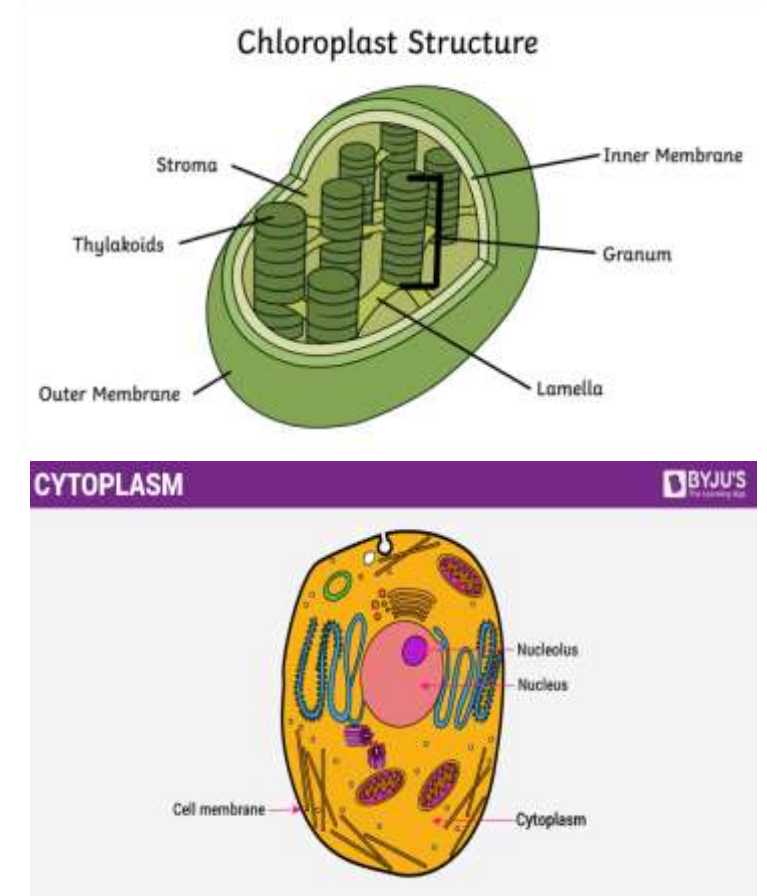


CELL COMPONENTS

Comparing Chloroplast and Cytoplasm Functions

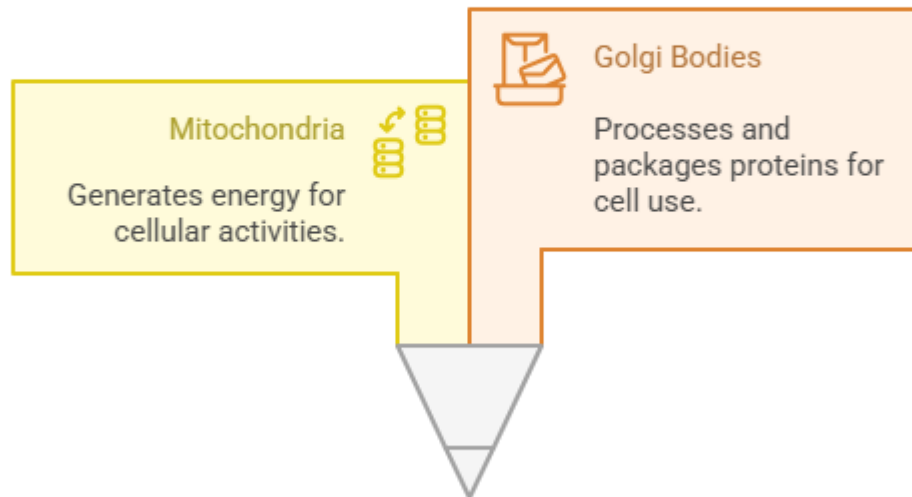


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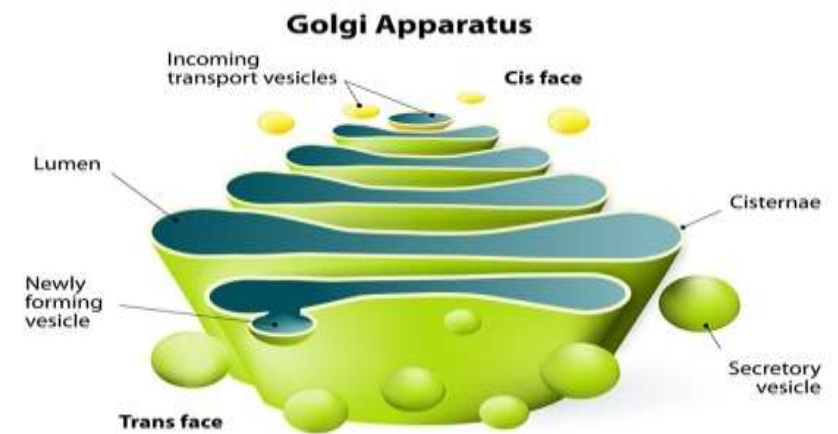
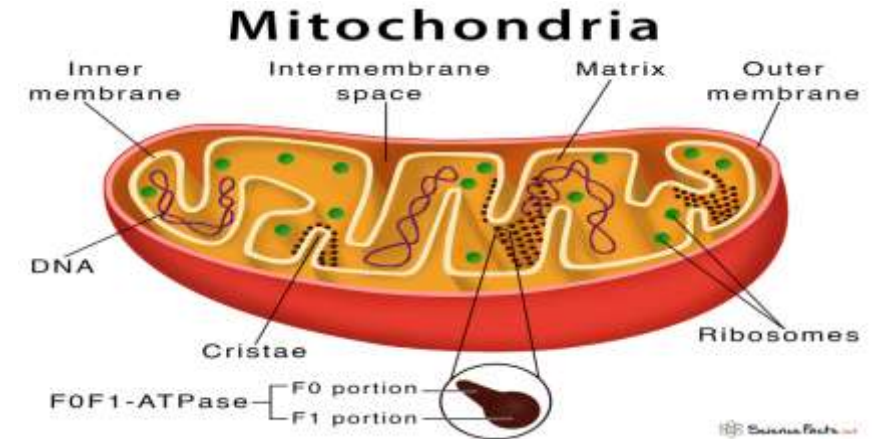


CELL COMPONENTS

Cellular Harmony



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CELL COMPONENTS

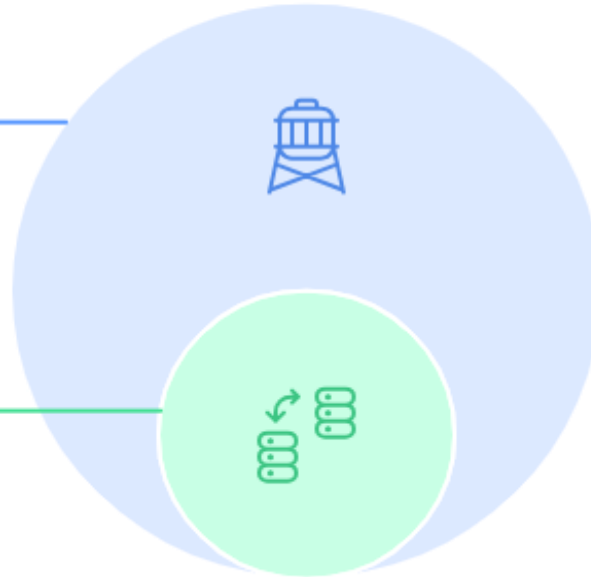
Ribosomes and Vacuoles

Vacuoles

Storage and waste management

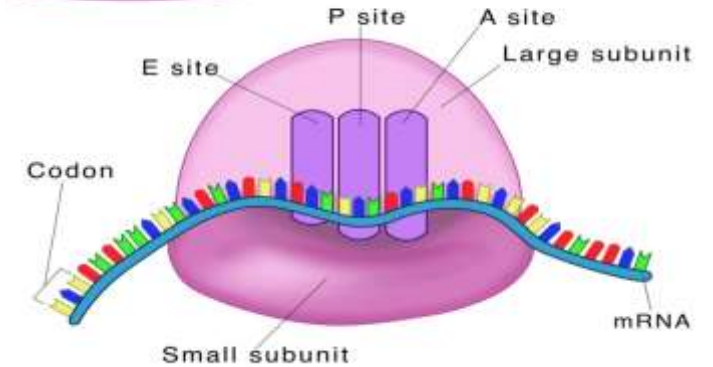
Ribosomes

Protein synthesis machinery

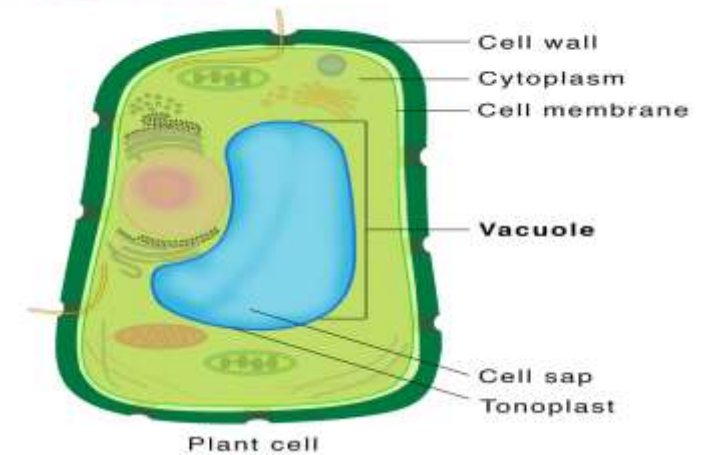


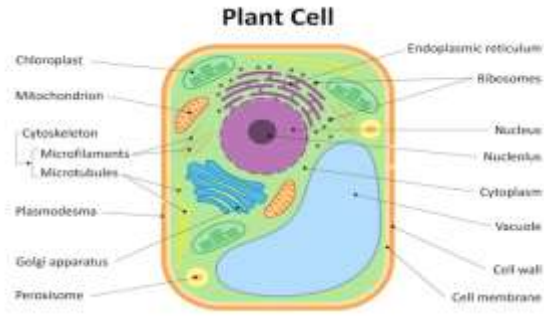
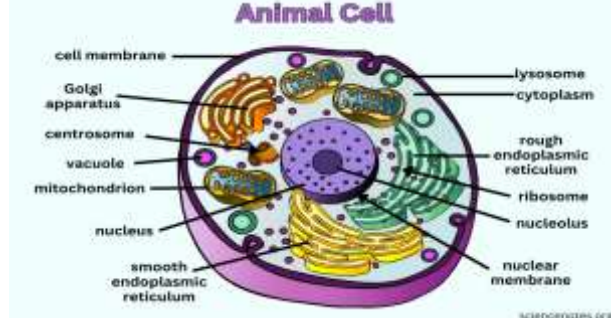
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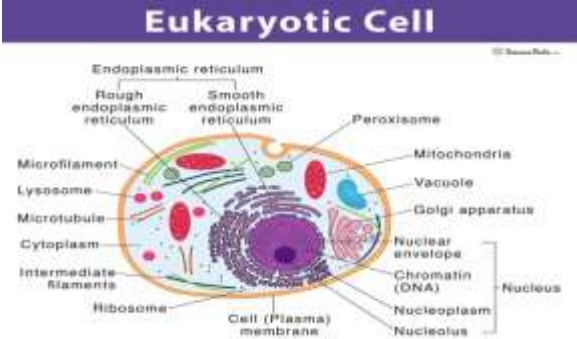
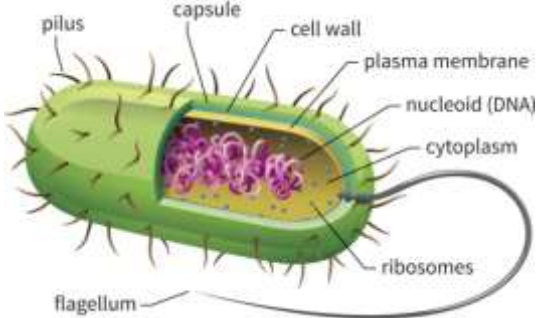
Ribosome



Vacuole



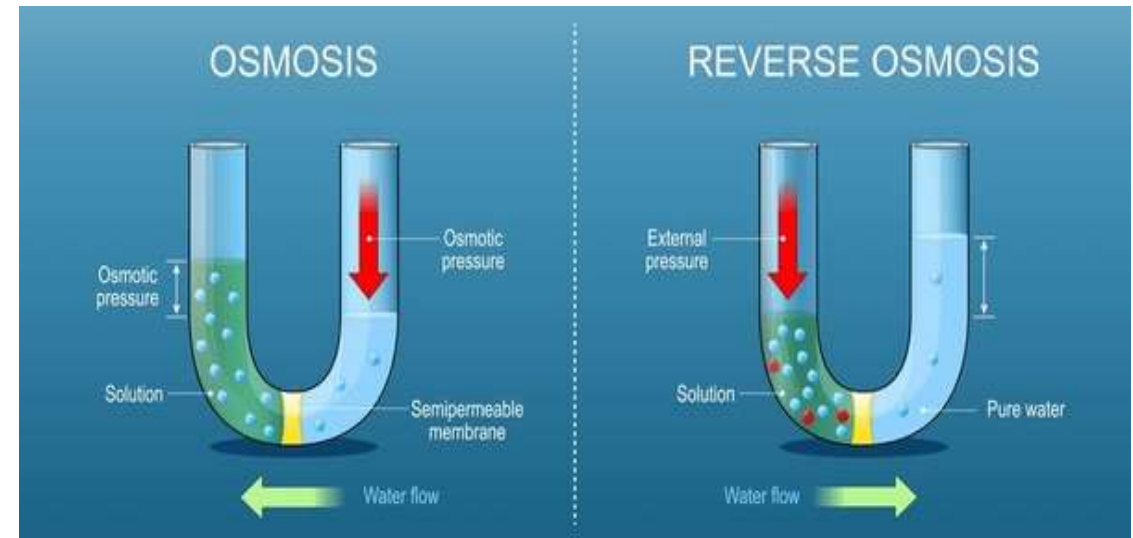
PLANT CELL	ANIMAL CELL
1. Cellulose cell wall present external to cell membrane.	1. No cell wall, outermost structure is cell membrane or plasma membrane
2. Vacuoles are usually large.	2. Generally vacuoles are absent and if present, are usually small.
3. Plastids present.	3. Plastids absent.
4. Golgi body present in the form of units known as dictyosomes.	4. Golgi body well developed having 2 cisternae
5. Centriole absent.	5. Centriole present.
Plant Cell 	Animal Cell 

EUKARYOTIC CELL	PROKARYOTIC CELL
✓ Nucleus distinct, with well formed	✓ Nucleus not distinct, it is in the form of a nuclear zone 'nucleoid'. Nuclear membrane absent.
✓ Ribosomes - 80 S	✓ Ribosomes - 70 S
✓ Distinct compartments in the cell i.e. the cytoplasm and the nucleus	✓ No compartments.
✓ Each chromosome is linear with its two ends free.	✓ The chromosome is circular and remains attached to cell membrane at one point.
✓ Each chromosome has one linear double- stranded DNA	✓ The chromosome has single double-stranded circular DNA molecule and is not associated with histones.
Eukaryotic Cell 	

EXPERIMENT & VALIDATE CELL CONCEPTS

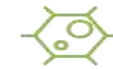
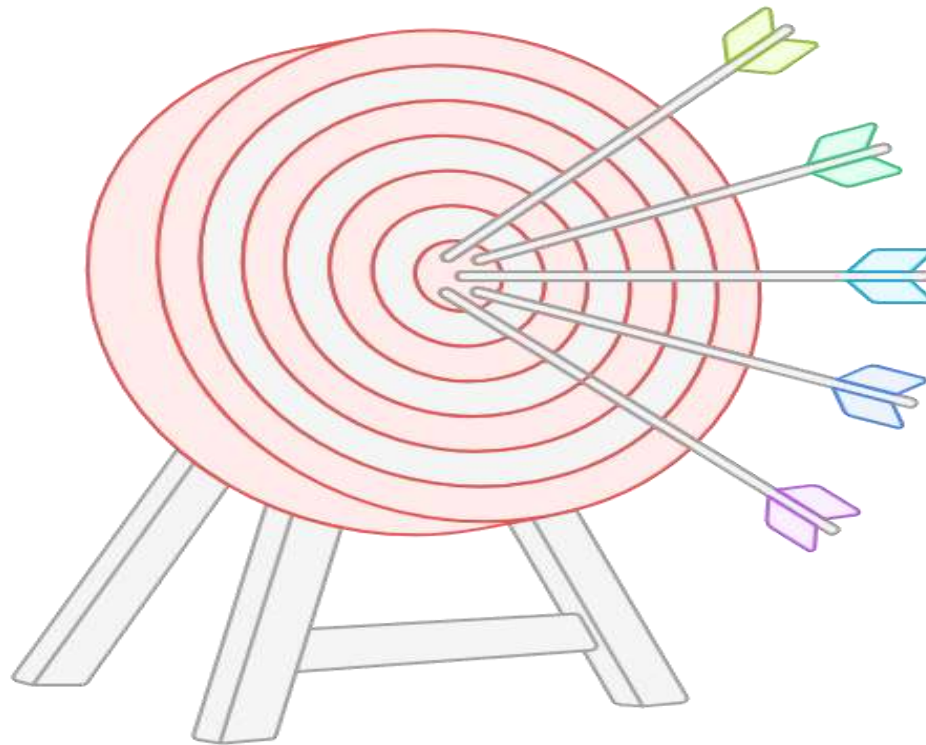


Microscope observation (nucleus, membrane



Osmosis/diffusion experiments for membrane

SUMMARY



Cell

Basic unit of life



Plasma Membrane

Outer boundary regulating substance movement



Cytoplasm

Gel-like substance containing organelles



Organelles

Specialized structures performing specific tasks



Nucleus

Control center storing DNA

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CLASS ASSESSMENTS

Which scientist coined the term "cells" after observing small compartments in a piece of cork in 1665?

The "Cell Theory," formulated by M.J. Schleiden and Theodore Schwann, maintains all of the following except:

Which of the following components is absent in a prokaryotic cell?

A eukaryotic cell's ribosome type is 80 S, while a prokaryotic cell's ribosome type is:



REFERENCES

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THANK YOU

