



Cell:

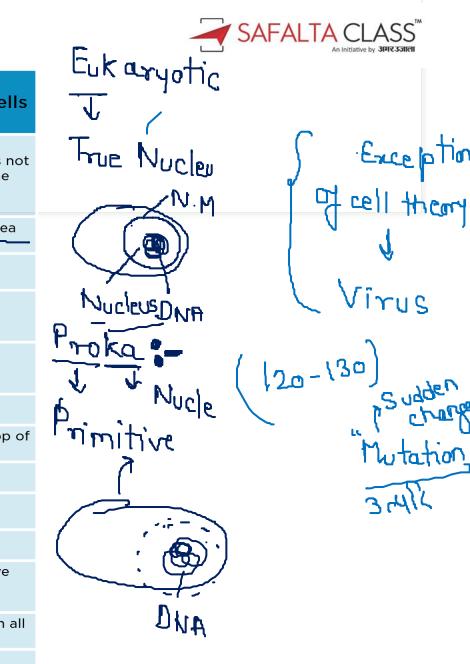
प्रियात्मर भेर्यात्मर क्रियात्मर

- A cell is the smallest (biological, structural and functional) unit of life.
- Cell(dead cell) was discovered by Robert Hook in 1665 but first living cell was discovered by Antony Van Leuwenhoek.

Cell Theory:

- It was given by theodor Schwann and Matthias Jakob Schleiden
 The three principles of the cell theory are as described below:
- All living organisms are composed of one or more cells."
- The cell is the basic unit of structure and organization in organisms.
- Cells arise from pre-existing cells.

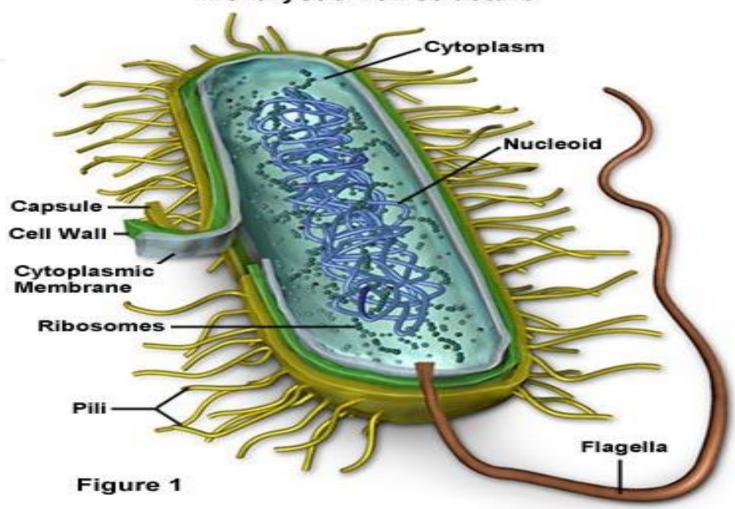
Cell D-sebo	Eukaryotic vs. Prokaryotic Cells		
1 Husepo	Characteristics	Eukaryotic Cells	Prokaryotic Cells
Tissue 3rda	Definition	Any cell that contains a clearly defined nucleus and membrane bound organelles	Any unicellular organism that does not contain a membrane bound nucleus or organelles
(• • • • • • • • • • • • • • • • • • •	Examples	Animal, plant, fungi, and protist cells	Bacteria and Archaea
Osbar Bhefein	Nucleus	Present (membrane bound)	Absent (nucleoid region)
	Cell Size	Large (10-100 micrometers)	Small (less than a micrometer to 5 micrometers)
	DNA Replication	Highly regulated with selective origins and sequences	Replicates entire genome at once
	Organism Type	Usually multicellular	Unicellular
R -U.,	Chromosomes	More than one	One long single loop of DNA and plasmids
13 OB-9	Ribosomes	Large	Small
Vince law.	Growth Rate/Generation Time	Slower	Faster
Heellular 314/19/4/	Organelles	Present	Absent
	Ability to Store Hereditary Information	All eukaryotes have this ability	All prokaryotes have this ability
	Cell Wall	Simple: Present in plants and fungi	Complex: Present in all prokaryotes
	Plasma Membrane	Present	Present
	Cytoplasm	Present	Present





• Prokaryotic Cell (Bacterial Cell):





Function	Organelle
Propels the cell	Flagella
Appendages that allow a bacterium to stick to a surface	Frimbriae/pili
Rigid structure that surrounds, supports, and protects the cell	Cell wall
Acts as a selective barrier, allowing passage of oxygen, nutrients, and wastes	Plasma membrane
Site of protein synthesis	Ribosome
Contains the genes that control the cell	Nucleoid







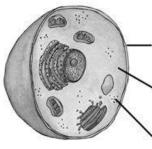
Eukaryotic Cell: It can be divided into 2 parts-

PLANT CELLS VERSUS ANIMAL CELLS

Plant cells are usually larger in size	Animal cells are smaller in size	
Have a rectangular, fixed shape	Have a round, irregular shape	
Composed of a cell wall made up of cellulose	Don't have a cell wall	
Have one or more, comparatively very smaller vacuoles	Have one, large, central vacuole taking 90% of cell volume	
Centrioles are present in lower forms of plants	Centrioles are present in all animals	
Composed of chloroplast to produce their own food	Do not contain chloroplast	
Don't consist of lysosomes	Consist of lysosomes	
Composed of glyoxysomes	Not composed of glyoxysomes	
Reserve food in the form of starch	Reserve food in the form of glycogen	

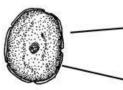


Animal Cell:



Animal Cell Organelles

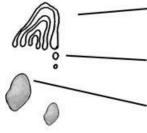
- 1. Each cell has a protective outer layer the plasma membrane. The plasma membrane lets certain things into the cell that it needs, but keeps other things out. This is called semi-permeable.
- 2. Inside the cell is a watery medium that everything floats in called cytoplasm. The cytoplasm contains all the working parts of the cell, the organelles.
- 3. Little grains floating around inside the cell are ribosomes, where proteins are made.
- 4. The nucleus has our DNA that contains all our genetic information. The DNA is found on structures in the nucleus called chromosomes There are 23 pairs (46 total) of chromosomes in each nucleus of each cell.
- 5. The nucleus is surrounded by a nuclear membrane, which controls what goes in and out.
- 6. Rough endoplasmic reticulum (rough ER) is a series of folded membrane pathways spotted with ribosomes. Together the ribosomes and the rough ER make new proteins and new membranes that the cell needs.
- 7. Smooth Endoplasmic Reticulum (smooth ER) has no ribosomes on it and forms containers called transport vesicles that are used to move things around inside the cell.
- 8. Golgi apparatus are made up of saccules that package up things to be transported around the cell or that need to leave the cell. like hormones.
- 9. Lysosomes are vesicles that have digestive enzymes inside them and break down the things that the cell doesn't need. They also kill bacteria that invades the body.
- 10. Vacuoles are membrane large membranous sacs for storing things. Vesicles are smaller sacs.
- 11. Mitochondria have a double membrane that folds in on itself forming little finger-like projections called cristae. Inside is a gellike matrix with enzymes that break down sugars to make ATP. which is used by the cell as energy. These very important organelles contain their own DNA and ribosomes, reproduce by division and can even produce some of their own proteins.

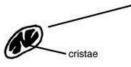














Largest organ: Skin Longest organ-SI

Que :

1) Largest cell: Ostrich egg

Smallest cell: My cap lasma (PPLO)-Bacteria organism

(IV) Largest " : Egg cell 3405 thistyl

(v) Smallest " " Sperm & 4 mg

