

Chapter 6 – Structure and function of plant & animal cells

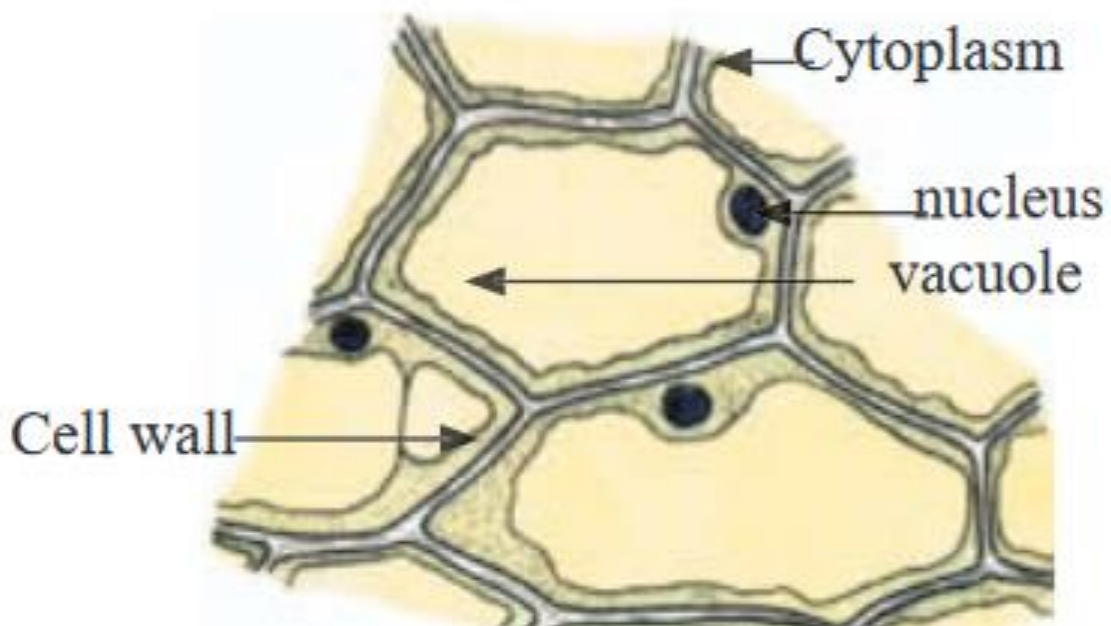
1. The scientist who saw cells for the first time.....
2. Schleiden, Schwann and Radolf Virchow introduced the
3. Cell is the and unit of organism
4. Organisms are made up of one or more
5. New cells are formed from cells
6. The organisms having one cell are called.....
7. The organisms having many cells are called.....
8. Most of the cells are and cannot be seen from the naked eye

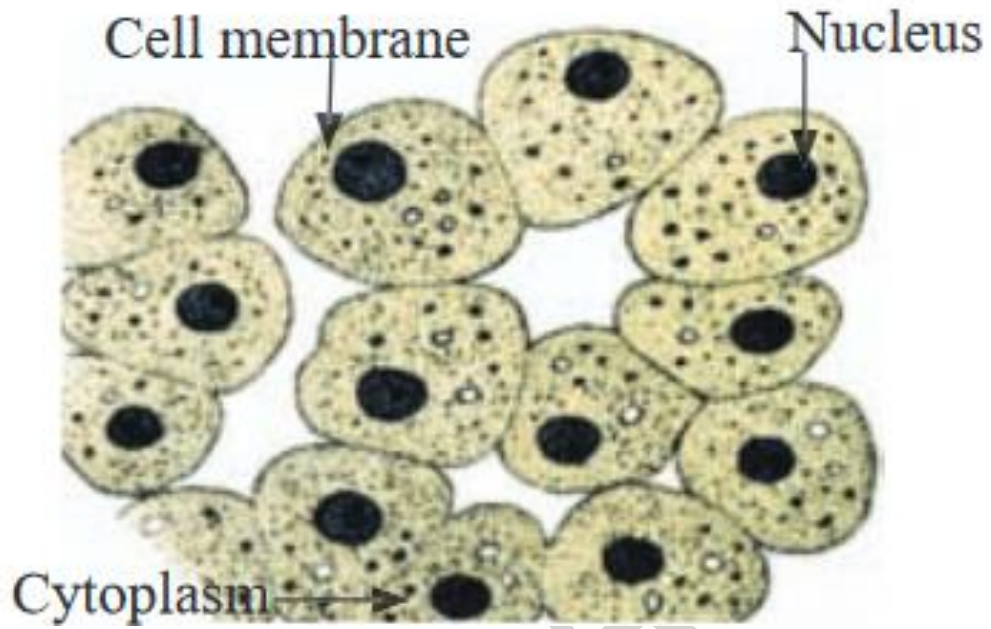
How to view onion cells

1. Add some water on to a
2. Remove a peel from an onion and transfer it to the
3. Put a water drop on a clean glass
4. Transfer the specimen on to the glass using a pain
5. Cover it with a cover without trapping any air
6. First observe it through
7. Then observe it through

Typical Cell

- 1) The small structures found in a cell are called
- Eg – Nucleus,, Golgi apparatus, ribosomes, vacuoles,
- 2) These perform different functions.
- 3) All the are not found in any cells.
- 4) A cell contains only some according to the of the cell.
- 5) In theory we prepare a cell with all the and called a cells.
- 6)cells do not exist in this world.

**Plant cells**

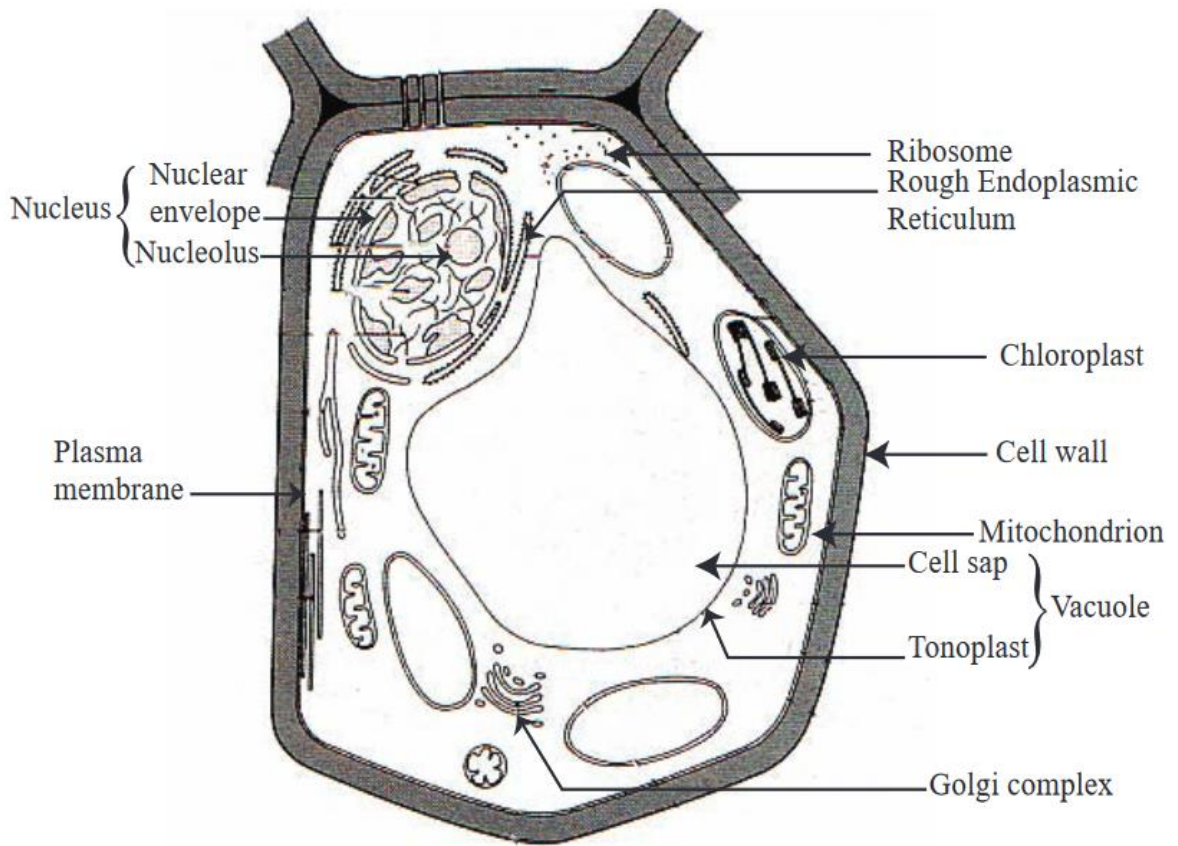


Animal Cells

The parts found only in plant cells

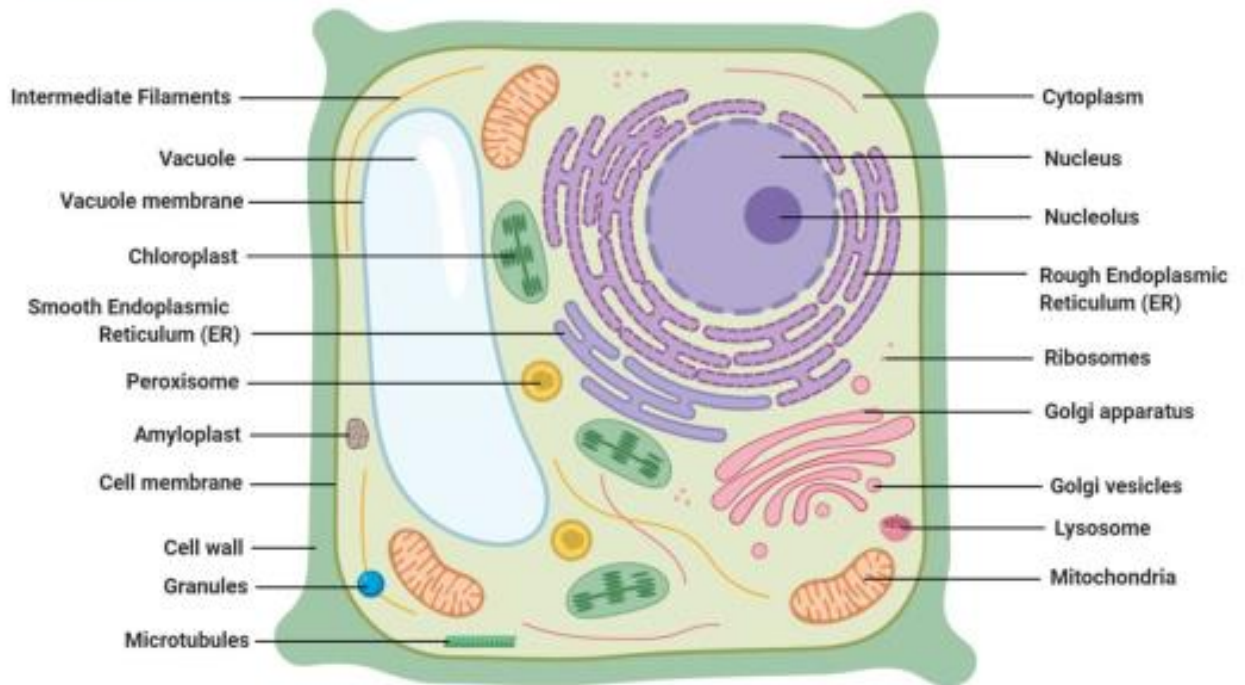
1. Cell.....
2. Chloroplast
3. Large central

Typical plant cell



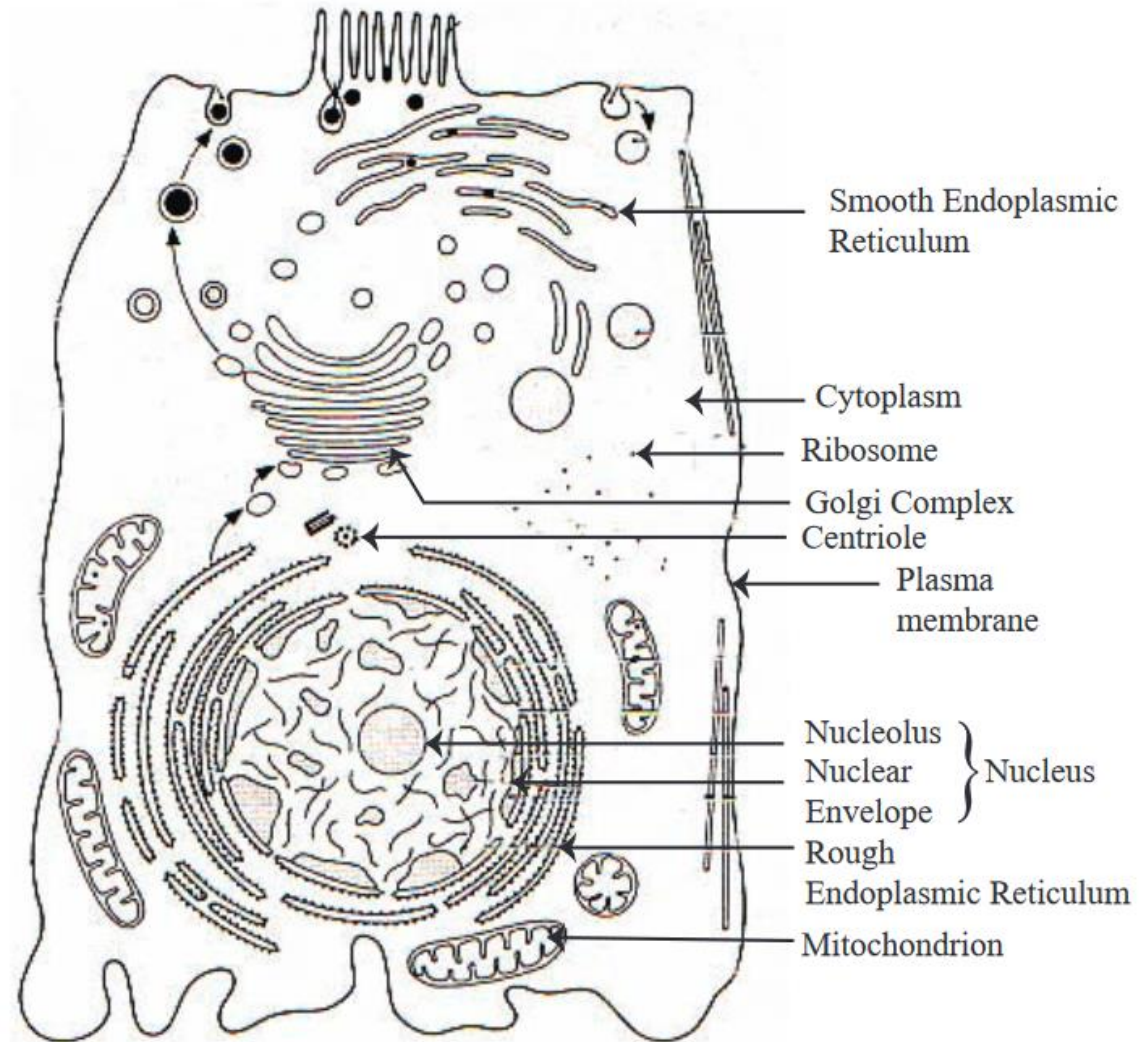
Channa

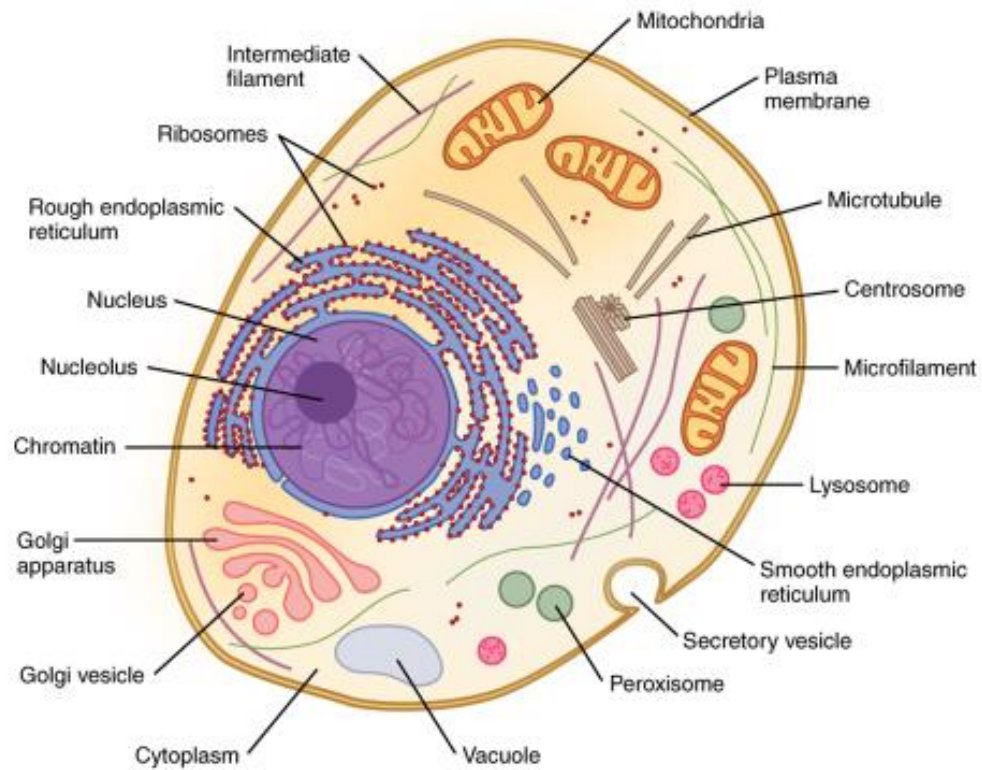
Plant Cell Structure



Channa

Typical animal cell





The nonliving parts of a cell

1. Cell
2.

The parts of cells that can be seen even by light microscope.

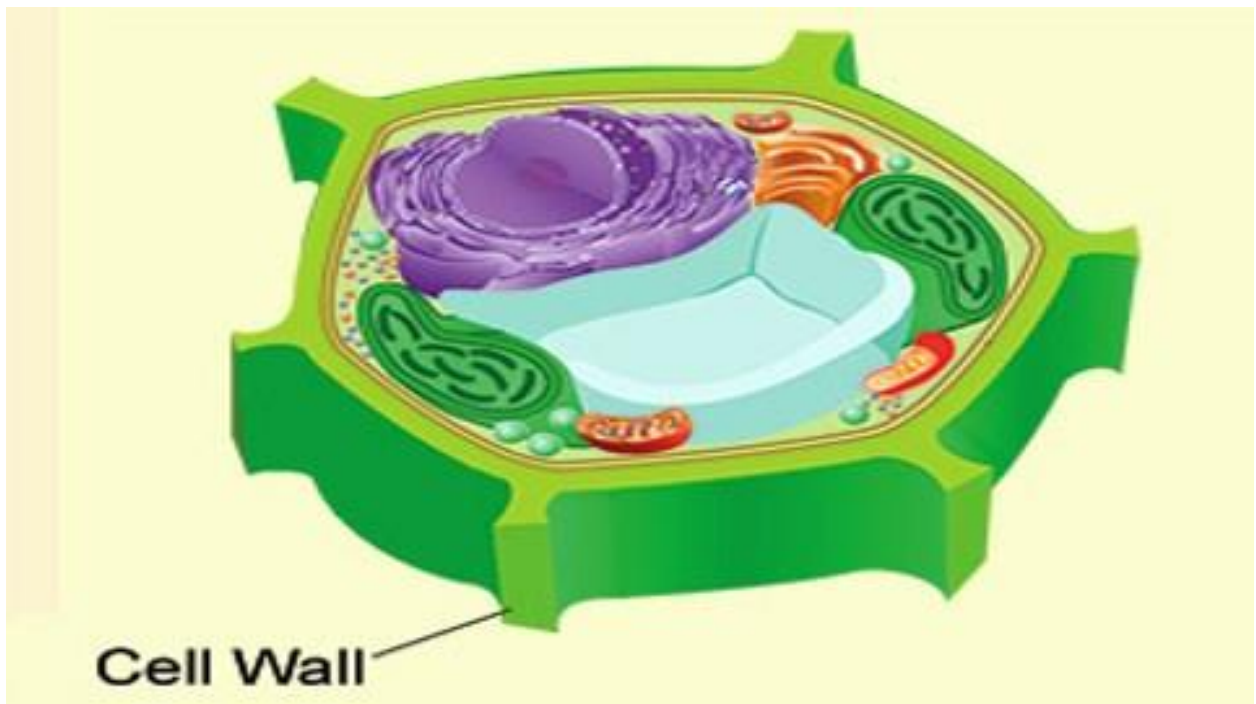
1.
2. Cell
3. Cell
4. Large central.....
4. Chloroplast
5. Cytoplasm

The organnels surrounded by membranes

1. Nucleus
2.
3.
4. Mitochondria
5.

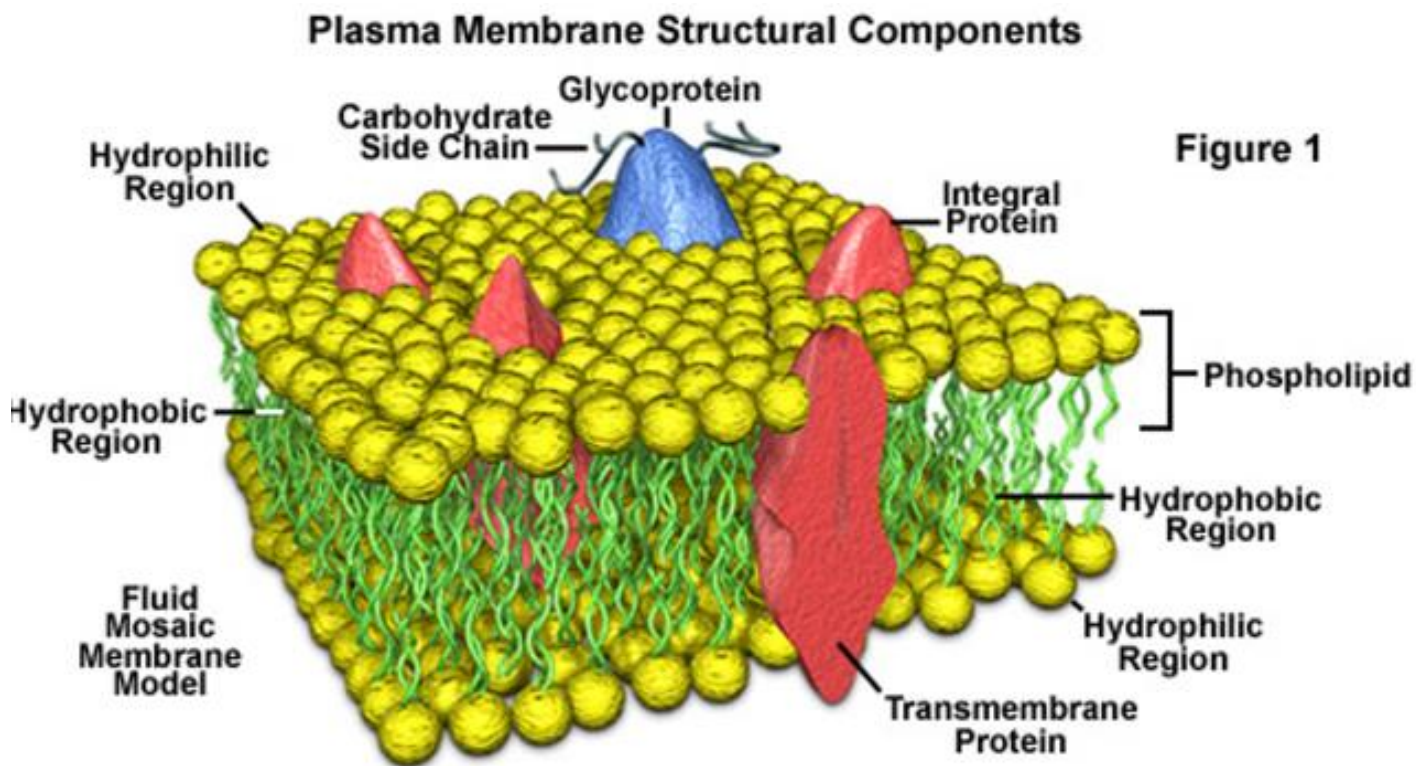
Cell wall

1. Found only in
2. Non.....
3. Can be seen even by a
4. The outer most covering (found outside the cell)
5. permeable
6. Made up of, hemi cellulose and pectin
7. Maintain the shape of the cell, provide protection to the inner parts of the cell



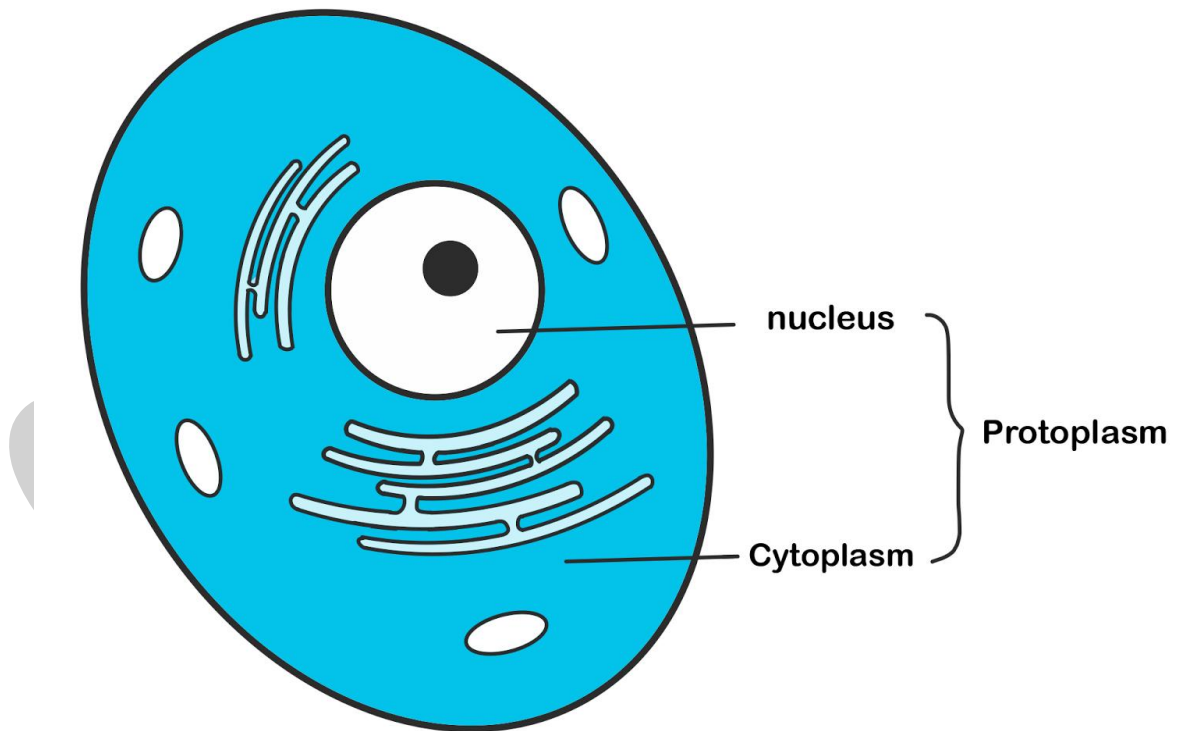
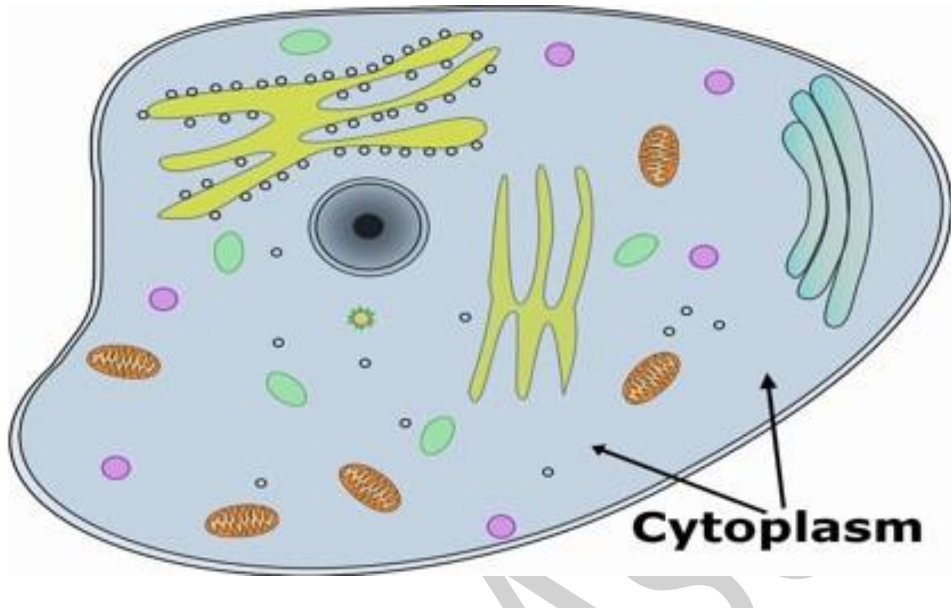
Plasma membrane (.....)

1. Found both in and
2. Living
3. Can be seen even by.....
4. Found interior to the of
and outer most covering of
5. Semi permeable (.....)
6. Made up of phospholipids &
7. Function – control the entry and exit of substances in and out of cell



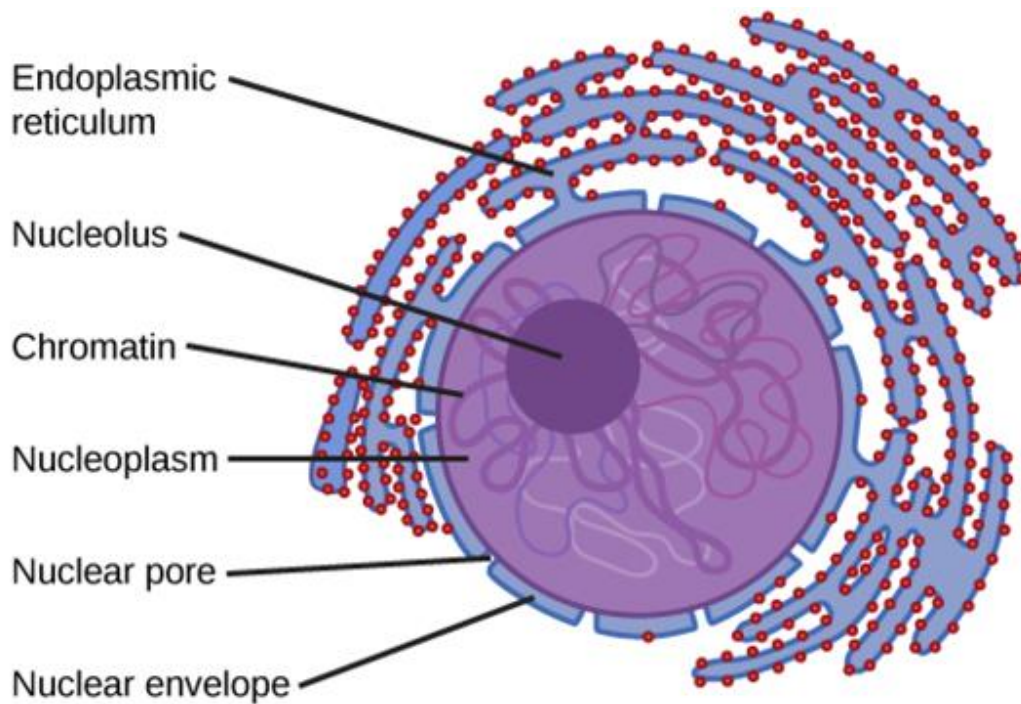
Cytoplasm

1. Found on the inner side of the
2. are submerged in it
3. Function – allow metabolic processes to take place and maintain the



Nucleus

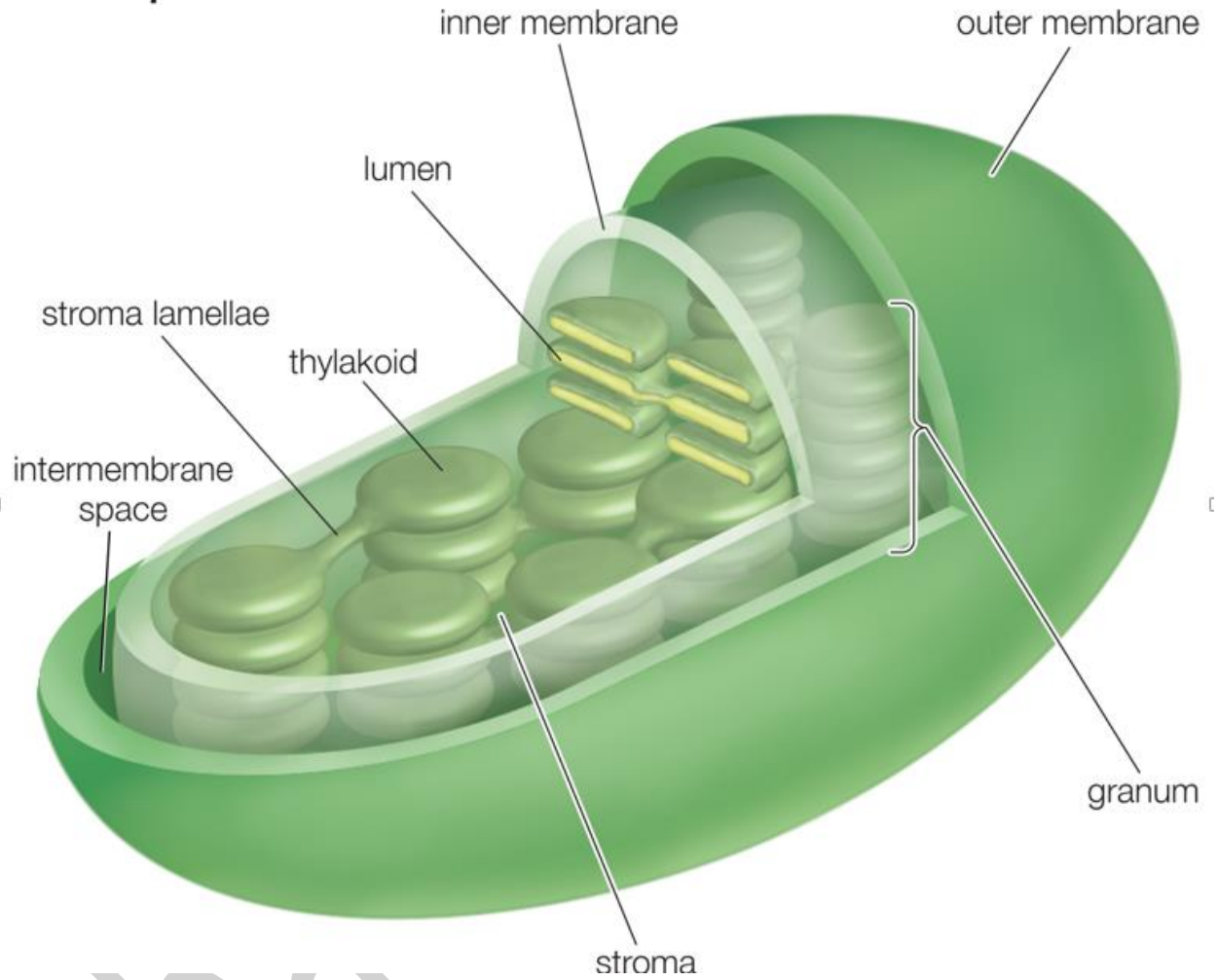
1. The main of the cell
2. Found in both and
3. Living
4. Can be seen even by
5. An organelle covered by a
6. Contains -envelope, and chromatin
7. Chromatin becomes during cell division.
8. The number of in a cell is specific to all the organisms in a species
9. In a human body cell there are (.....pairs) chromosomes
10. The pair of chromosomes having the same size and same shape and contains the same hereditary information is called a
11. One chromosome of a has come from the and the other chromosome has come from the
12. Therefore, out of chromosomes in a cell, chromosomes have come from and chromosome has come from.....
13. contains genes made up of
14. Function - transmit hereditary characters to their off springs, and control all the cellular activities



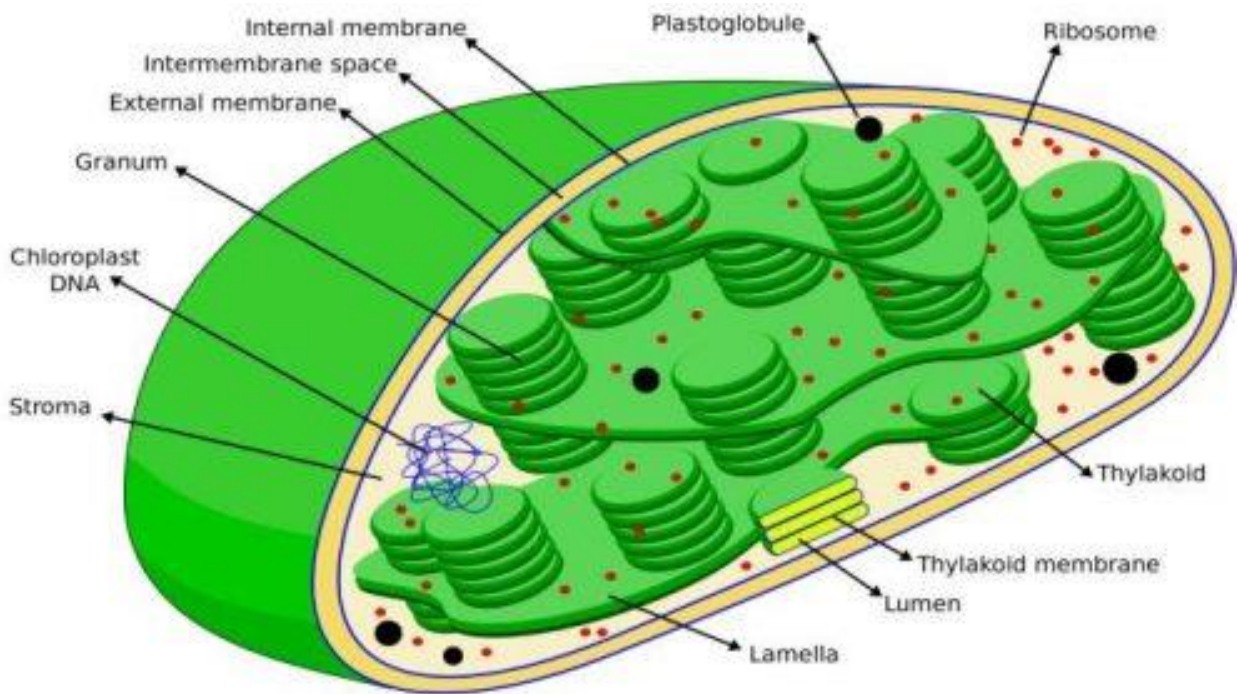
Chloroplasts

1. Found in both and
2. Living
3. Can be seen even by
4. An organelle not covered by a
5. Function – produce food (.....)

Chloroplast

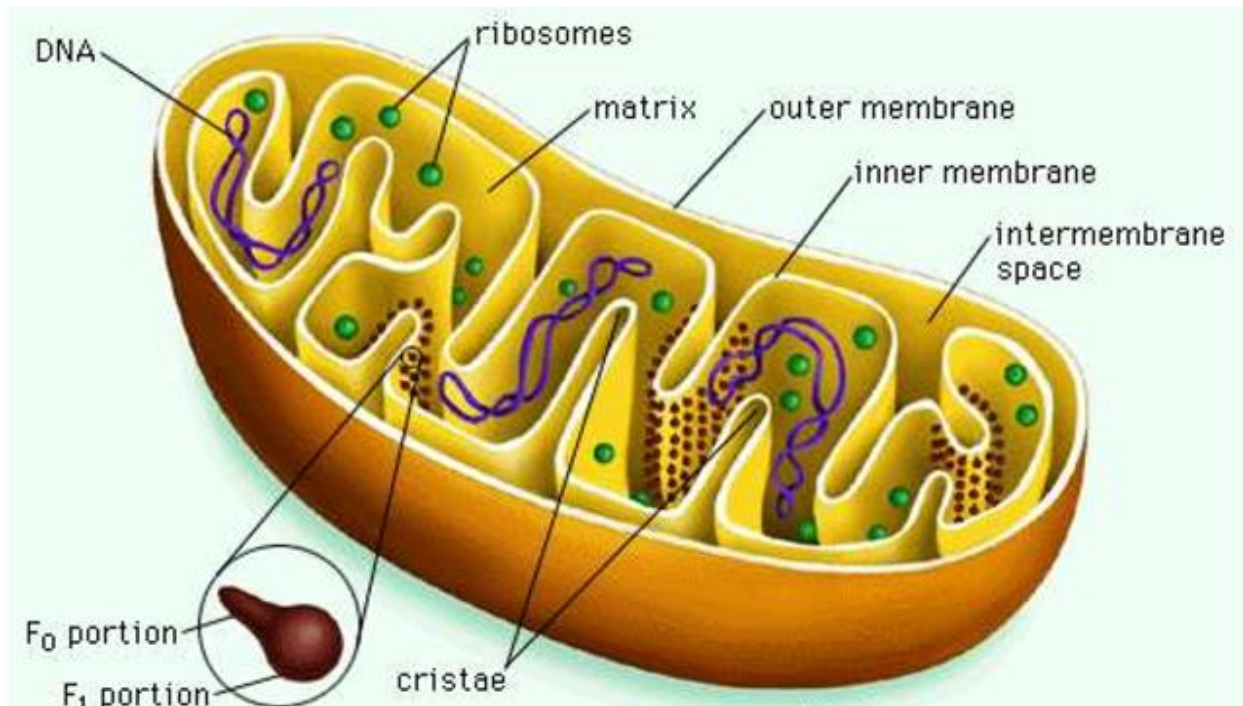


Channa



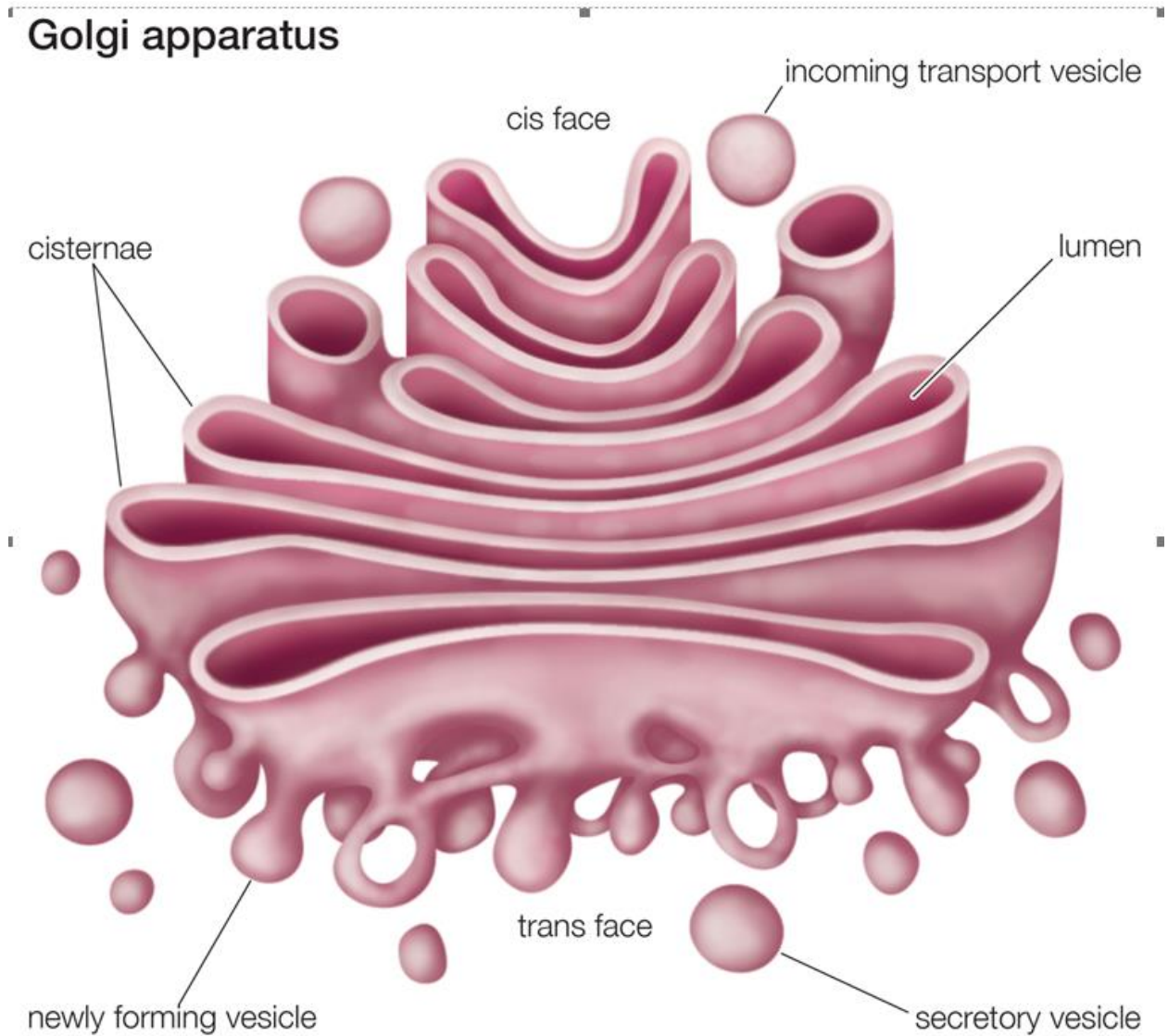
Mitochondrion (singular) – Mitochondria (plural)

6. Found in both and
7. Living
8. Can be seen only by
9. shaped or rod shaped.
10. An organelle covered by a
11. The inner membrane produce folds named
12. The center is called the
13. Function – Do aerobic cellular respiration to produce.....
14. Therefore this is known as the of a cell



Golgi complex or golgi bodies

1. Found in both and
2. Living
3. Can be seen only by
4. An organelle covered by a
5. They have sacs stacked on top of the other and secretory vesicles
6. Function – producesubstances and internal transportation (packing and secreting)

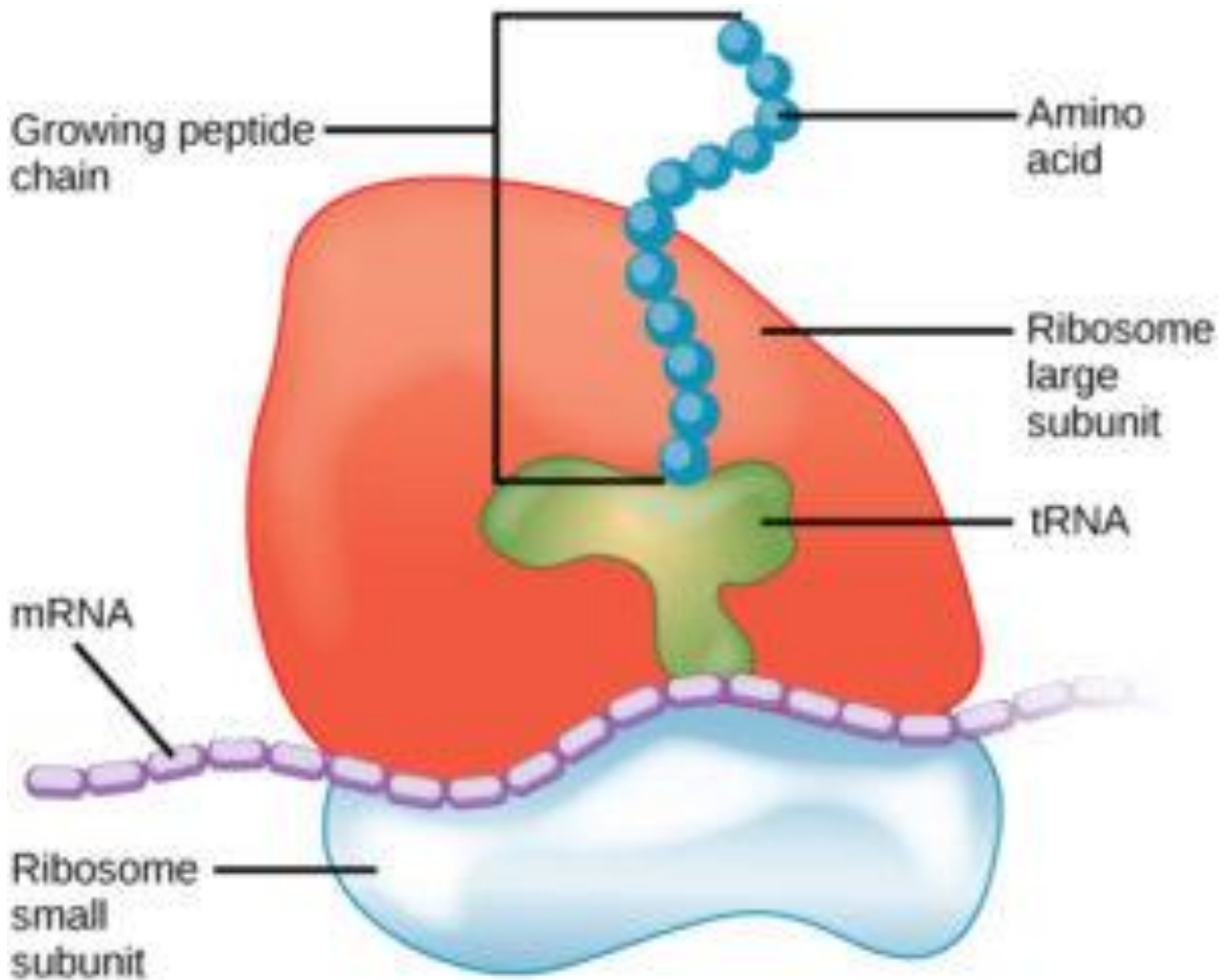


Ribosomes

1. Found in both and
2. Living
3. Can be seen only by
4. Contain a and a small
5. An organelle not covered by a

6. Found attached to or stay freely in the.....

7. Function -



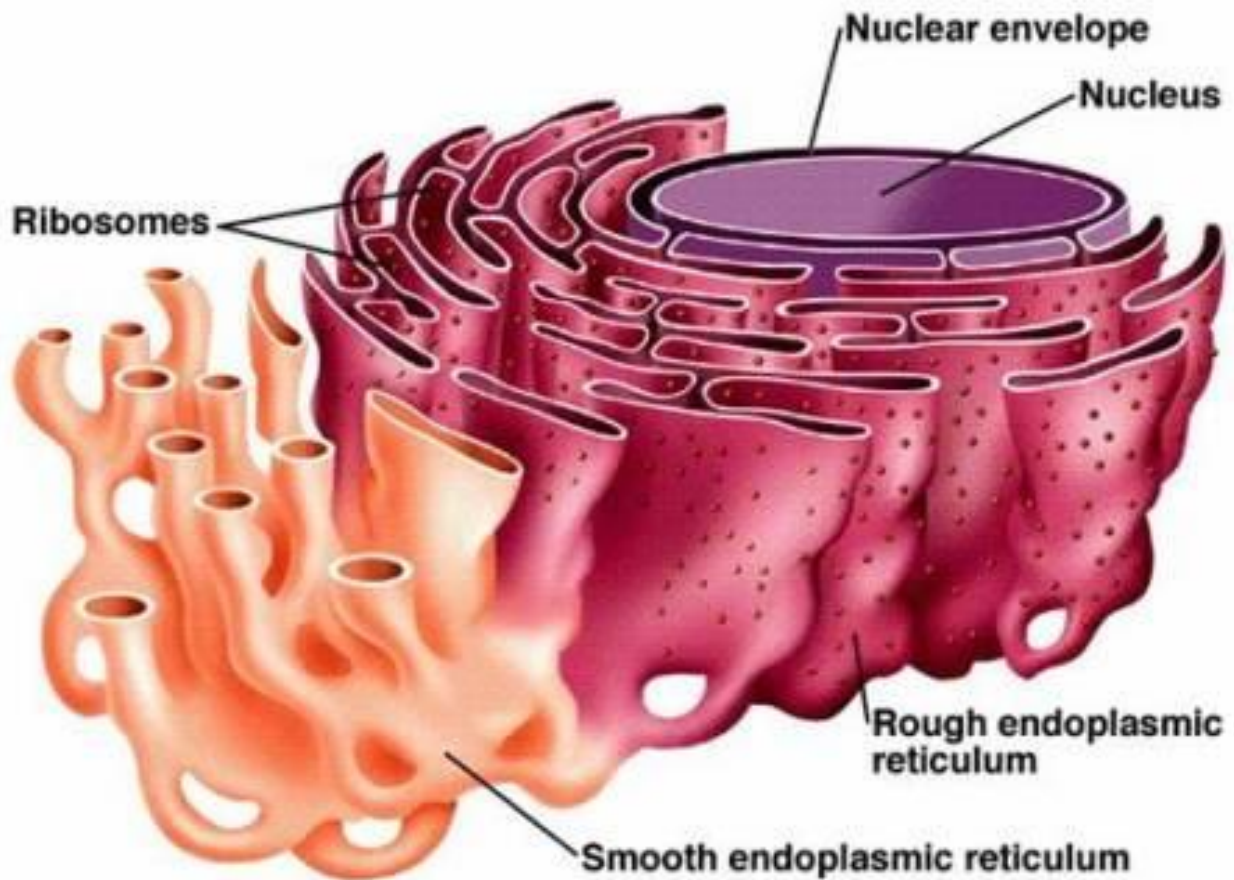
Endoplasmic reticulum (singular) – Endoplasmic reticulae (plural) – ER

1. Found in both and

2. Living

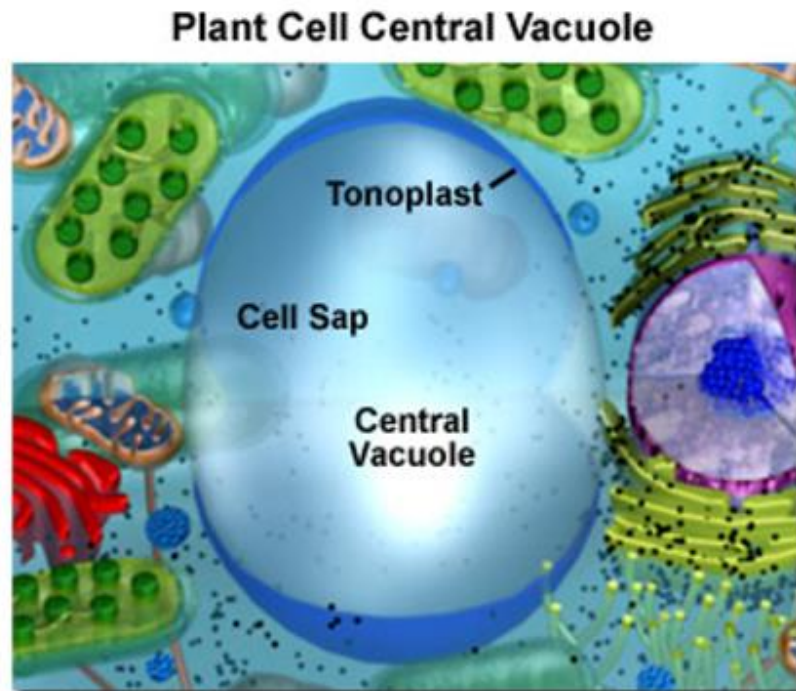
3. Can be seen only by

4. shaped (inter membranous network)
5. An organelle covered by a
6. Two type of ER - and
7. Function of – transport proteins
8. Function of – Synthesis of lipids, steroids and transport them within the cell.



Vacuole

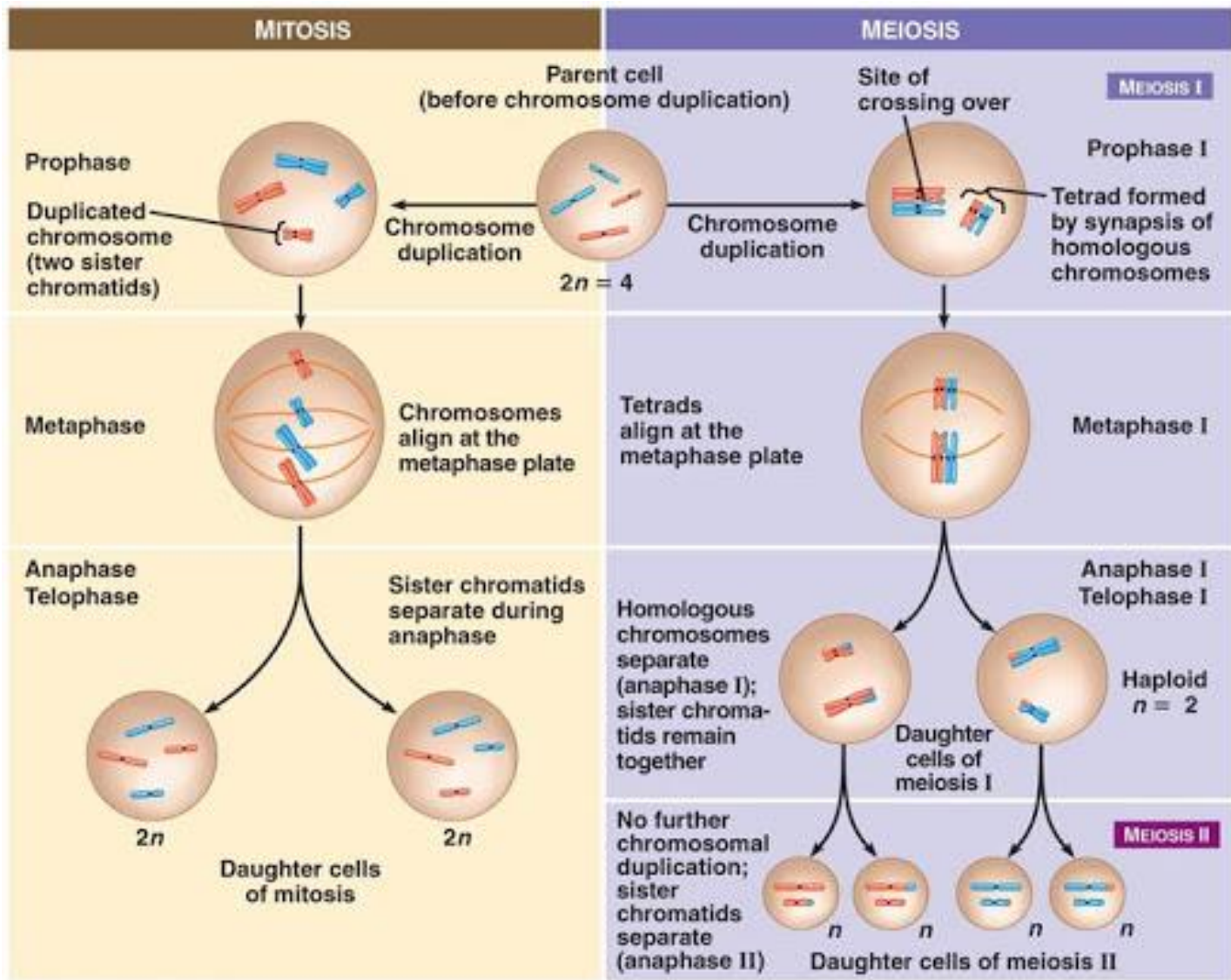
1. Large central vacuoles are found only in
2. Small vacuoles may or may not be found in
3. Living
4. Can be seen only by
5. The membrane which covers a vacuole is called a
6. The fluid in a vacuole is called the
7. The fluid contains,,
8. Functions – maintenance of balance, store



Cell growth and cell division

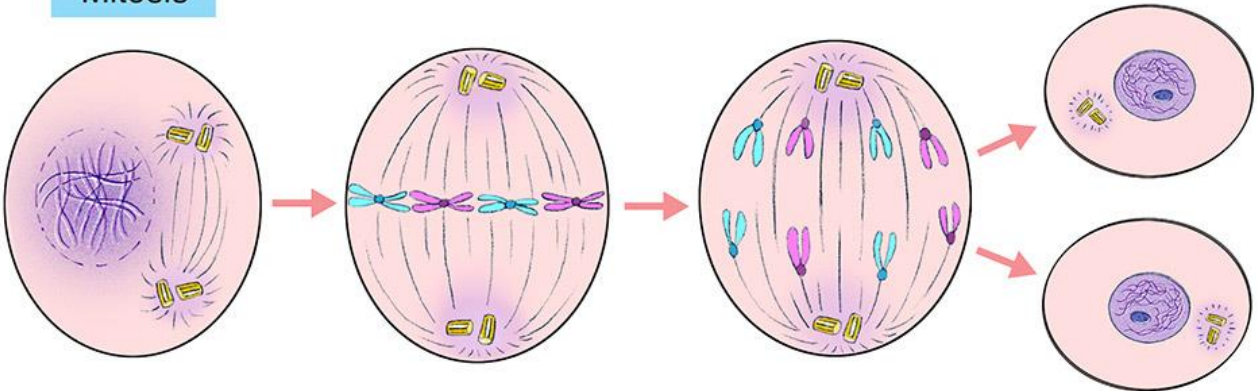
1. The irreversible increase of size or dry mass is called
2. Cells can only upto a certain limit and then they
3. Cells and increase in number
4. During first the divides and then the divides
5. Before the divides, the will become and can be seen very clearly.
6. In a normal body cell, there are pairs of
7. Therefore the normal body cells are.....
8. There are two types of
- (i)
- (ii)
9. In, a mother cell produces two daughter cells.
10. Each splits into two and go into each daughter cell.
11. Therefore in, each daughter cell will have the same number of which was found in the mother cell.
12. Therefore the daughter cells are also
13. Therefore in, the daughter cells will be identical to the mother cells.
14. is important in (.....) reproduction, healing wounds, growth of organisms.
15. In, a mother cell produces four daughter cells (.....).

16. In, the daughter cells (.....) will have the number of chromosomes found in the mother cells.
17. Therefore the daughter cells produced by are (.....)
18. During the genes in the chromosomes get mixed up. Therefore the structure of chromosomes change.
19. It will help to produce new Therefore helps in.....
20. Therefore the daughter cells produced by will be different to each other and also be different to the mother cell.
21. will help to have the same number of chromosomes during growth, vegetative reproduction & healing of wounds.
22. will help to have the same number of chromosomes during sexual reproduction. Therefore helps to maintain the same number of chromosomes in their off springs.



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Mitosis



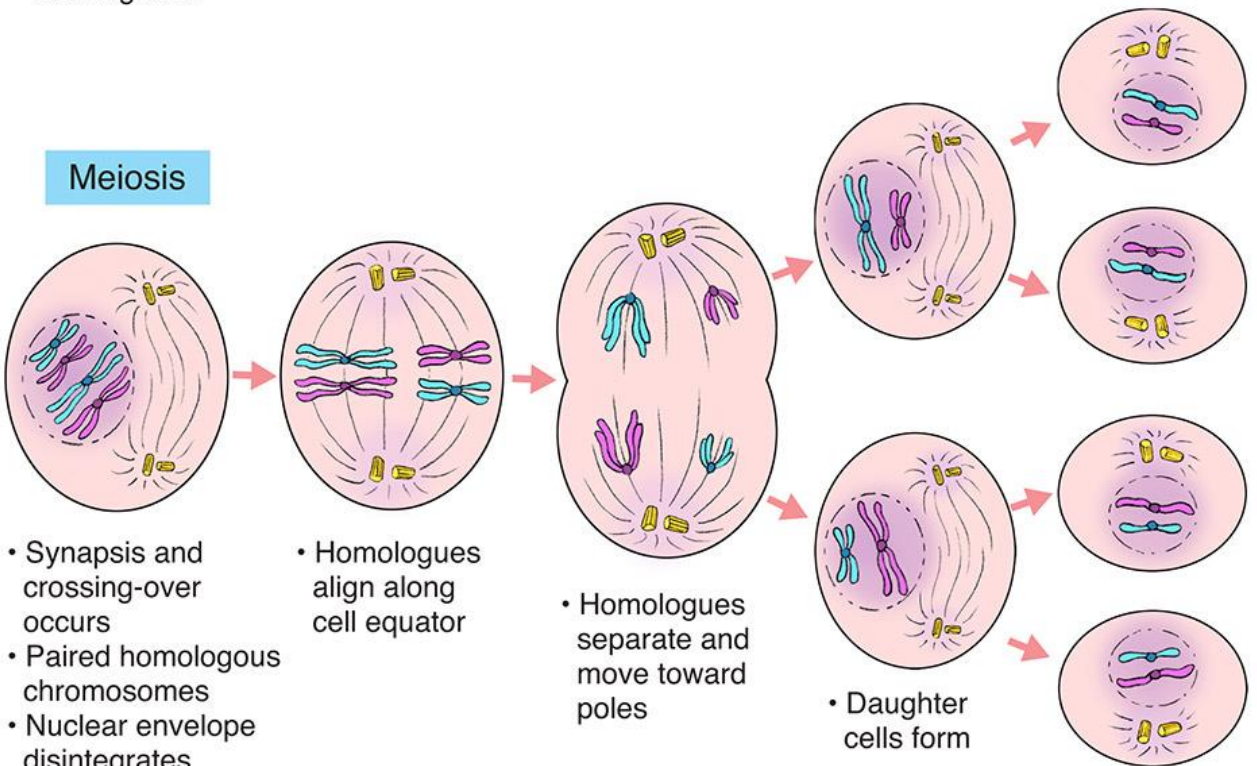
- Centrioles move toward poles
- Chromatin begins to form into chromosomes
- Nuclear envelope disintegrates

- Chromosomes align along cell equator to form metaphase plate

- Sister chromatids separate and move toward poles

- Daughter cells form
- Nuclei are genetically identical to parent cell

Meiosis



- Synapsis and crossing-over occurs
- Paired homologous chromosomes
- Nuclear envelope disintegrates

- Homologues align along cell equator

- Homologues separate and move toward poles

- Daughter cells form

- Daughter chromosomes separate to form gametes
- Nuclei are not genetically identical to parent cell

Mitosis	Meiosis
A mother cell produces daughter cells	
The daughter cells have the number of chromosomes as in mother cells.	
Daughter cells are	
Daughter cells are to each other and also to the mother cell.	
No variations occur	
Do not help in	
Produce normal body cells	