

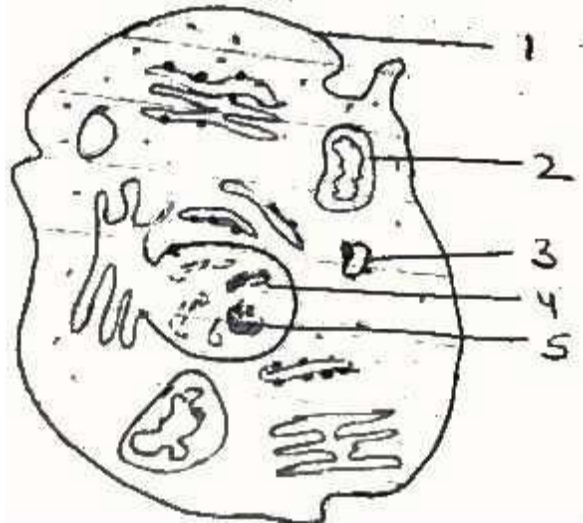
CELL - A BASIC UNIT OF LIFE

WORKSHEET - 8

Class 9

1. What is prokaryotic cell? Differentiate between prokaryotic cell & eukaryotic cell?
2. If cell of onion peel and RBC are separately placed in hypotonic solution, what among the following will take place? Explain the reason.
 - (a) Both the cells will swell
 - (b) RBC will burst early while cells of onion peel will resist bursting to some extent
 - (c) Both a and b are correct
 - (d) RBC and onion peel cells will behave similarly
3. Write short notes on – mitochondrion, chloroplast
4. Write the main function of each of the following.
 - (a) Plasma membrane
 - (b) cell wall
 - (c) Ribosome
 - (d) Lysosome
 - (e) Nucleolus
 - (f) Endoplasmic reticulum
5. Write short note on nucleus.
6. what happens when, if cell is placed in –
 - (a) Hypertonic solution
 - (b) Hypotonic solution
 - (c) Isotonic solution
7. Why lysosomes are called 'suicidal bags'?
8. Draw the structure of mitochondria.
9. Observe the diagram of the cell below – answer the following questions.
 1. Label the parts of the cell
 2. what function does part 1 perform ?
 3. If the organelle 2 is removed from the cell, what effect is it going to make on the functions of the cell ?
 4. Identify, whether it is plant cell or animal cell

5. Which structure is called 'Power house of the cells'?



10. Draw a plant cell and label the parts –
- (a) Synthesize food
 - (b) produce energy
 - (c) Store house of organic substances like protein, organic acids
 - (d) Packages material coming from endoplasmic reticulum
 - (e) Determine function and development of the cell.

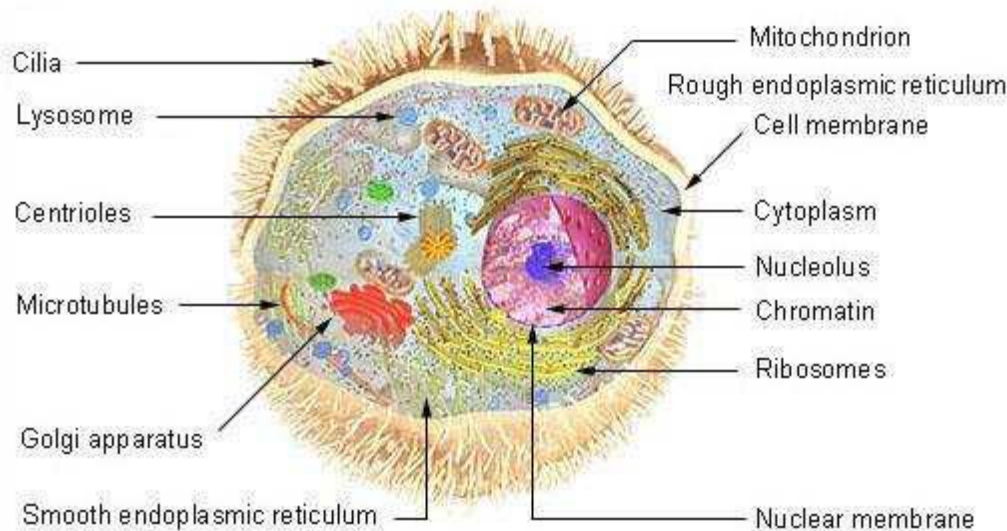
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SOLUTION

1. **Prokaryotic cells are incomplete cells. They do not have membrane bound organelles. For ex-Bacteria, Mycoplasma, etc.**

Prokaryotic cell		Eukaryotic cell
1.	These are incomplete cells.	These are complete cells.
2.	Their genetic material is not bounded by membrane, called nucleoid.	Genetic material is bounded by nuclear membrane, called nucleus
3.	It contain single chromosome	It contains more than one chromosome.

2. **(b) RBC will burst early whereas onion peel cell well resist bursting to some extent. This is due to the presence of cell wall.**
3. **Mitochondrion – It is a double membrane self replicating organelle. It in called 'Power house' of the cell. It contain F1 particles which produces energy and store in the form of the ATP.**
Chloroplast – It is also a double membrane self replicating organelle. It contains green pigment chlorophyll which absorbs solar energy and helps in the synthesis of food. Hence, it in called kitchen of the cell.
4. **(a) Plasma membrane – It helps in selective absorption of the molecules.**
(b) Cell wall – It is protective in nature
(c) Ribosome – It helps in protein synthesis
(d) Lysosome –It contain enzymes which helps in digestion of foreign substances.
(e) Nucleolus – It synthesizes ribosome
(f) Endoplasmic Reticulum – Produces lipids and proteins
5. **Nucleus is also known as the 'boss of the cell'. It is generally centrally placed. It is bounded by nuclear membrane, in which nuclear pores are present. The fluid inside the nucleus in called nucleoplasm. Nucleoplasm contain thread like structure called chromatin and nucleolus. Chromatin contains DNA, which condensed to form chromosomes during cell division. Nucleolus synthesize ribosomes.**

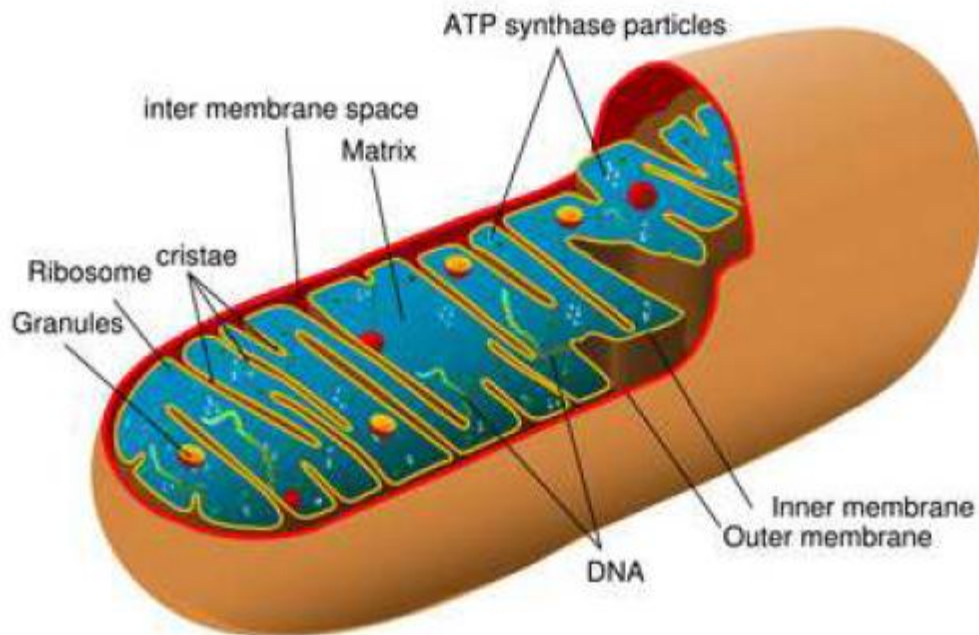


6. (a) Cell will shrink due to exo – osmosis.
(b) Cell will swell up due to endo – osmosis
(c) There will be no net movement of solvent. Hence, there will be no change in the shape and size of the cell
7. Lysosomes contain digestive enzymes, they digest any foreign substance which enters into the cell. But somehow, if cell is not working properly or become dead, lysosomes burst and digest their own cell in which they are present. Hence, they are called 'suicidal bag'.

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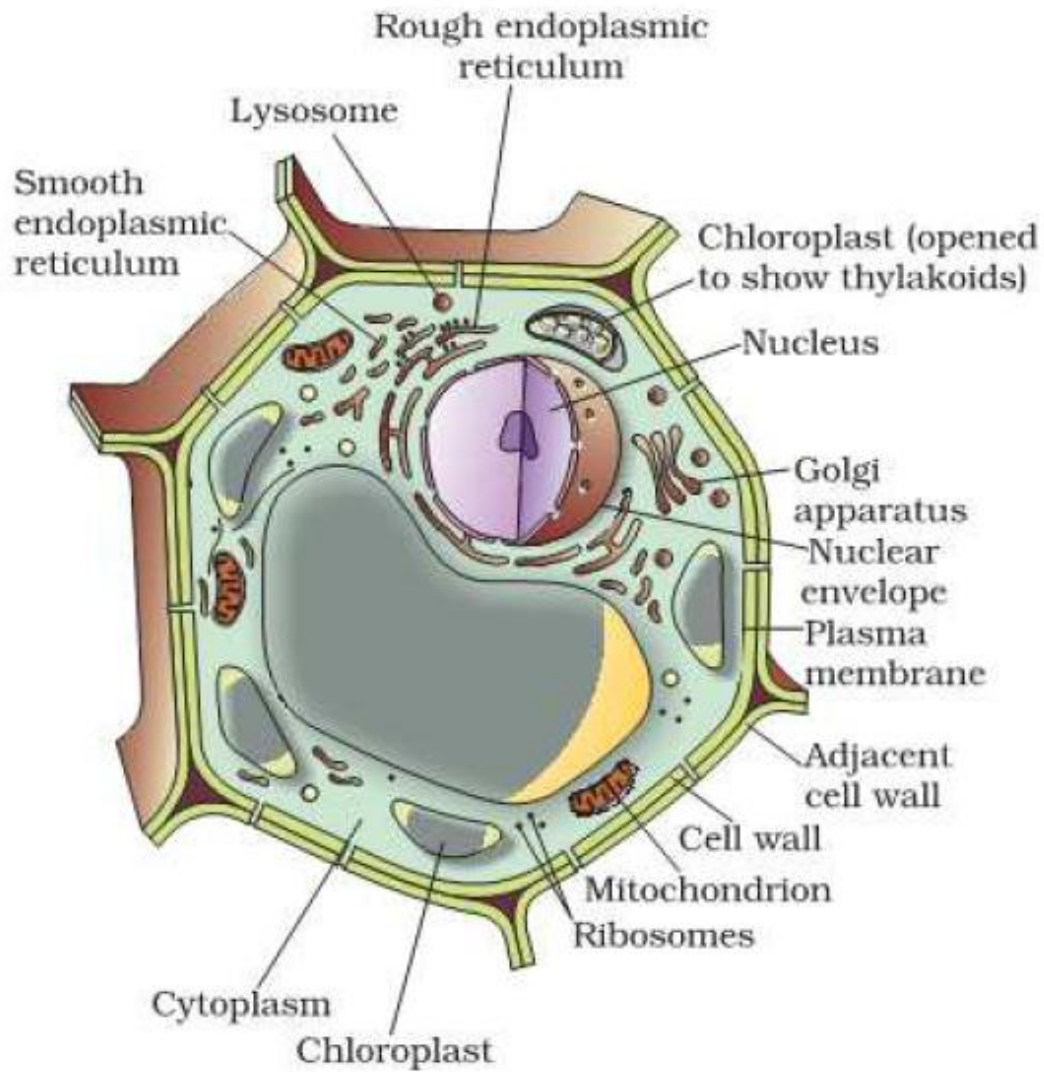
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8. Structure of mitochondrion.



9. (a) 1. Cell membrane 2. Mitochondrion 3. RER 4. Chromosome 5. Nucleolus
(b) Selective absorption
(c) Cell become energy deficient
(d) Animal cell (large vacuole absent)
(e) Mitochondria
10. (a) Chloroplast (b) Mitochondrion (c) Vacuole (d) Dictyosomes (e) Nucleus

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