

## CELL - A BASIC UNIT OF LIFE

### WORKSHEET - 9

Class 9

1. What is a gene? What is its chemical composition and function?
2. Briefly describe three important parts of cell.
3. Name the cell organelle found in plant cells only. Write its types and function.
4. What are different types of Endoplasmic reticulum write their function
5. Differentiate between diffusion and osmosis. What is its importance ?
6. If you are provided with some vegetables to cook, we generally add salt to the vegetables during cooking process. After adding salt, vegetables releases water. What mechanism is responsible for this?
7. What is cell theory? Who formulated it?
8. What are cell organelles? Write the names of different cell organelles.
9. Differentiate between plant cell and animal cell.

**CAREER BOOSTER**

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## SOLUTION

1. **Genes are the functional unit of chromosomes. Genes are composed of DNA. They are responsible for transmitting characteristics from one generation to another.**
2. **Three important parts of a cell are –**
  1. **Cell membrane – It is the protective outer covering of the cell which helps in the selective absorption of the substances.**
  2. **Nucleus – It control all the activities of the cell.**
  3. **Cell organelles – these are small structures present in the cytoplasm of the cell, which perform all the activities of the cell.**
3. **Chloroplast in found in plant cells only. It is of three types –**
  - (a) **Chloroplast – It is the coloured plastids, which provides different colours to flower, which attracts insects for pollination.**
  - (b) **Chloroplast – It is the green coloured plastid which contain chlorophyll. It helps in due synthesis of food**
  - (c) **Leucoplast – It is the colorless plastids. It helps in the storage of synthesized food.**
4. **Types of Endoplasmic reticulum (ER) are-**
  - (a) **Rough ER – Ribosome are attached on their surface. They synthesize proteins**
  - (b) **Smooth ER – Ribosome are not present on their surface. They synthesize lipids**
5. **Diffusion – It is the movement of substances (solid, liquid or gas) from a region of higher concentration to the region of lower concentration until they are spread out evenly.**

**Osmosis – Osmosis in the diffusion of a solvent, usually water, through a semi – permeable membrane from a dilute or weaker solution into a concentrated or stronger solution.**

**Importance – diffusion and osmosis are important for the transport of substances across the cell membrane.**
6. **After adding salt, the concentration of solvent decreases, hence water form**

vegetable move out from higher concentration to lower concentration

7. M.J Schleiden and Theoder Schwann proposed cell theory. According to cell theory –  
 (a) All living organisms, whether plants or animals, are made up of cells.  
 (b) Cells are the basic unit of life.
8. Cell organelles – organelles are the intracellular structures present in due cytoplasm various cell organelles are –  
 1. Mitochondrion – It produces energy  
 2. Endoplasmic reticular – synthesize lipids and proteins  
 3. Golgi apparatus - Storage, packaging and dispatch various substance.  
 4. Lysosomes – Digest intracellular substances  
 5. Ribosomes – Synthesize proteins  
 6. Vacuoles – Provide turgidity and store house of various organic substances

9.

Plant Cell	Animal Cell
Cells comparatively larger in size	Cells usually small in size
Cell wall present	Cell wall absent
Plastids present	Plastids absent
Vacuole are large and generally one	Vacuoles are absent, if present small in size and large in number
Dictyosomes (sub units of Golgi apparatus) are present	Prominent Golgi apparatus are present

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