CBSE Test Paper 01

Chapter 05 The Fundamental Unit of Life

1. 'Ribosomes' are associated with the synthesis of: **(1)**

   a. Proteins
   b. Vitamins
   c. Carbohydrates
   d. Fats

2. The cell sap in plant cells consists of **(1)**

   a. water + organic substances
   b. both (water only) and (water + inorganic substances)
   c. water only
   d. water + inorganic substances

3. Who proposed the Cell theory? **(1)**

   a. Prophase
   b. Watson & Crick
   c. Mendel
   d. Schleiden & Schwann

4. We generally mount the material in the slide **(1)**

   a. In the centre of slide
   b. On the right side of slide
   c. On the left side of slide
   d. Both (b) and (c)

5. The cell organelle involved in forming complex sugars from simple sugars are **(1)**

   a. Endoplasmic reticulum
   b. Plastids
   c. Golgi apparatus

d. Ribosomes

6. Which organelle is associated with ribosome formation? **(1)**

7. What is hypertonic solution? **(1)**

8. What is hypotonic solution? **(1)**

9. What is the chemical composition of cell wall in plants and fungi respectively? **(1)**

10. Define diffusion. **(1)**

11. What is a gene? What is its chemical composition and function? **(3)**

12. What is cell division? Give the types of cell division. **(3)**

13. The cells which do not possess a well-defined nucleus. These cells are primitive without having membrane-bound organelles. **(3)**

14. Why are lysosomes known as suicide bags? **(3)**

15. Make a comparison and write down ways in which plant cells are different from animal cells. **(5)**

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Answers

1. a. Proteins

   Explanation: 'Ribosomes' are associated with the synthesis of proteins from amino acids. Proteins are required by a cell for functions such as repair or directing chemical processes.

2. b. both (water only) and (water + inorganic substances)

   Explanation: The liquid found inside the plant cell vacuole is referred to as the cell sap and it is a dilute fluid consisting of water, amino acids, glucose i.e. (water + inorganic substances) , water may also be inhabited with negligible amount of salts because it somehow depends on the mineral excess inside the body of plants. The excess material is temporarily stored inside the cell sap. Thus, vacuoles act as store house in plants.

3. d. Schleiden & Schwann

   Explanation: The '**Cell theory**' was proposed by **Matthias Jakob Schleiden** and **Theodor Schwann.** According to this theory, all living organisms are made up of cells. **Rudolf Virchow** also contributed to the Cell theory. He proposed that new cells arise from pre-existing cells.

4. a. In the centre of slide

   Explanation: In the centre of slide

5. c. Golgi apparatus

   Explanation: Golgi bodies consist of a system of membrane-bound vesicles arranged in stacks parallel to each other called cisterns. These membranes have connections with the membrane of endoplasmic reticulum (ER). Functions:

   i. It also stores, modifies and helps in the packaging of products in vesicles.
   ii. In some cases, complex sugars may be made from simple sugars in it.
   iii. It also helps in the formation of lysosomes.

6. Nucleolus
7. A solution having solute concentration higher than that of the cell sap is called

hypertonic solution.

8. A solution having solute concentration lower than that of the cell sap is called hypotonic solution.
9. Plant cell walls are composed of cellulose, while fungal cells walls are composed of chitin. Both are long-chain starches comprised of many glucose subunits.
10. Movement of molecules from a region of their high concentration to a region of their low concentration is called diffusion.
11. Genes are the functional unit of chromosomes. Genes are composed of DNA. They are responsible for transmitting characteristics from one generation to another.
12. Cell division is process of formation of new cell of its own type from the; mother cell which are similar in structure and function. Cell division occurs in three ways:
    1. Amitosis 2. Mitosis 3. Meiosis
    In each case division of nucleus (Karyokinesis) occurs before the division of cytoplasm (Cytokinesis).
13. Prokaryotic cells example bacteria.
14. Lysosomes are a kind of waste disposal system of the cell. Lysosomes contain digestive enzymes against all types of organic materials. If their covering membrane breaks as it happens during injury to cell, the digestive enzymes will spill over the cell contents and digest the same. Therefore, lysosomes are called suicide bags as they can kill the cells possessing them.
15.

Plant cell	**Animal cell**
1. cell wall is present.	1. cell wall is absent.
2. Plastids are present.	2. Plastids are absent.
3. They have dictyosomes instead of Golgi body.	3. They have Golgi apparatus.
4. centrosomes and centrioles are absent.	4. centrosomes and centrioles are present.
5. Vacuoles are larger in size.	5. vacuoles are smaller in size.
6. Daughter cells separate from each other due to formation of cell plate.	6. Daughter cells separate from each other due to contrition or furrow formation.