UNIT V : CELL: STRUCTURE AND FUNCTIONS

9. CELL: THE UNIT OF LIFE

(1 × 2) + (1 × 4) = 6 Marks

ROOT POINTS

1. **Cell** is the **basic unit of life** and structural, functional unit of an organism.
2. All living organisms are made of cells or aggregates of cells.
3. Cells vary in shape, size and functions.
4. Cell theory was proposed by Schleiden and Schwann and later by Rudolf Virchow.
5. **Cell theory**: (i) All living organisms are composed of cells and their products.
   (ii) New cells arise from pre-existing cells.
6. **Types of cells:** (i) **Prokaryotic cells** (ii) **Eukaryote cells**:
7. Vacuoles play an important role in **osmo regulation** of plant cells. **[IPE]**
8. **Meta centric** chromosome has middle centromere forming two equal arms of the chromosome.
9. The **satellite chromosome** contains a small segment called satellite which is separated from the main body of the chromosome by a secondary constriction. **[IPE]**
10. **Middle lamella** is a layer made up of **calcium pectate.** It holds the neighbouring cells together.
11. The **cell organelles** which contain chlorophyll pigment are called **chloroplasts**. **[IPE]**
12. **Mitochondria** are the **power houses of cell**. **[IPE]**
13. **Structure of Nucleus** consists of four main parts: **[IPE]**
    i. Nuclear envelope ii. Nuclear matrix iii. Chromatin material iv. Nucleolus
14. **Types of chromosomes** (based on the position of centromere): **[IPE]**
    i. Metacentric ii. Sub metacentric iii. Acrocentric iv. Telocentric
15. **Nucleosome** is a structural unit of eukaryotic chromosome, consisting of a length of DNA coiled around a core of histones. **[IPE]**

FRUITY Qs OF IPE

(1 x 2) + (1 x 4) = 6 Marks

1. What is the significance of vacuole in a plant cell?
2. What does 'S' refer in a 70S & and 80S ribosome?
3. Mention a single membrane bound organelle which is rich in hydrolytic enzymes.
4. What is the function of a polysome?
5. What is referred to as satellite chromosome?
6. What is middle lamella made of ? What is its functional significance?

7. Briefly describe the cell theory.
9. What are nucleosomes? What are they made of ?
9. Describe the cell organelle which contains chlorophyll pigments.
10. Describe the structure and function of power houses of cell.
11. Describe the structure of nucleus.
12. Give a brief account of the types of chromosomes based on the position of centromere.

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