

MODULE 1: CELL: BASIC STRUCTURE AND FUNCTION

Q.1. Fill in the names of cellular organelles ?

- (i) Site of cellular respiration -----
- (ii) Site of light reaction in plants -----
- (iii) Site of protein synthesis in eukaryotic cell-----
- (iv) Dictyosomes is another name for ----
- (v) Membrane surrounding the vacuole in plant cell is called -----
- (vi) In bacteria the cell wall is made up of -----.

Answers:

- (i) Mitochondrion
- (ii) Chloroplast
- (iii) Ribosomes
- (iv) Golgi bodies
- (v) Tonoplast
- (vi) Peptidoglycan

Q.2. Enlist two major features that differentiate a plant cell from an animal cell?

Ans: Presence of cell wall; Presence of vacuoles.

Q.3. Discuss role of plasma membrane in a cell?

Ans: Role of plasma membrane:

- Protective barrier between cell and environment
- Regulate transport in & out of cell in selectively permeable manner
- Allow cell recognition
- Provide anchoring sites for filaments of cytoskeleton
- Provide a binding site for enzymes and other receptors
- Interlocking surfaces bind cells together (junctions)
- Contains the cell cytoplasm

Q.4. Distinguish between (a) smooth ER and rough ER w.r.t their function (b) Gram positive and Gram negative cells?

Ans: (a) smooth ER and rough ER w.r.t their function

The ribosome's present in rough endoplasmic reticulum are associated with the **protein synthesis** in the cell while the function of the smooth endoplasmic reticulum is to **synthesize lipids** in the cell. The smooth ER is also helps in the detoxification of harmful substances in the cell.

(b) Gram positive and Gram negative cells Gram + cells have thicker cell walls and composed of predominantly peptidoglycan and teichoic acid polymers wherein lipids are conspicuously absent. The teichoic acid polymers play key role in antigenicity of the cell. Gram – cells thin peptidoglycan (sandwiched between the cell membrane and outer envelope) and lipopolysaccharides with no teichoic acid.

Q.5. Diagrammatically represent the site of cellular respiration and mark its components?

Ans:

