



**Q1/ A: Write about the following: (8 Marks)**

1. The features of writing a scientific name with an example.
2. The principles of Cell Theory.

**B: Draw and label ONLY ONE of the following: (4 Marks)**

1. A plasma membrane of an animal cells with labelling to all parts.
2. A cell where it's shape fits with its function with labelling.

**Q2/ A: Give the reason(s) for the following statements. (12 Marks)**

1. Role of cholesterol in cellular plasma membrane fluidity.
2. Cells are capable of performing their activities independently.
3. Cell membrane contains both proteins and lipids, the exact ratio between the two varies with the function of the cell.

**B: Compare between: (12 Marks)**

- a. Integral membrane proteins VS Peripheral membrane proteins
- b. Facilitated diffusion VS Active transport.

**Q3/ Indicate True or False, then CORRECT the False one if there is any. (14Marks)**

1. Motor proteins are just one of many types of molecular “machines” employed by cells to carry out mechanical activities.
2. The fluidity of a cell membrane depends on the lipid composition, integral proteins and temperature.
3. In human, liver cells release glucose into the blood stream to supply cells with energy.
4. Both DNA replication and RNA transcription occur inside the nucleus.
5. Diffusion is the movement of water particles from an area of low concentration to a higher concentration area.
6. Monera kingdom comprised of *Amoeba* and *Paramecium*, where they are single eukaryotic cells.
7. Erythrocytes possess three lobbed nucleoli.

**Q4 / Choose the correct answer of the following (Multiple Choice Questions):**

**10 MARKS**

1. A membrane-enclosed intracellular structure is observed to release a protein through a pore into the cytosol, called:
  - a. Golgi complex.
  - b. Lysosome.
  - c. Mitochondria.
  - d. Peroxisome.
2. The nuclear lamina is composed mainly of:
  - a. Collagens.
  - b. Microtubules.
  - c. Phospholipids.
  - d. Intermediate filaments.
3. A mitotic cell is described as residing in telophase. Which of the following may be observed in this cell?
  - a. Chromosome alignment at the equator.
  - b. Cleavage furrow formation.
  - c. Mitotic spindle dissociation.
  - d. RNA and protein synthesis.
4. A eukaryotic cell that is actively participating in the cell cycle is observed to increase in size and to duplicate its organelles during a particular phase. In which phase does this eukaryotic presently reside?
  - a) G1 phase.
  - b) G2 phase.
  - c) Prophase.
  - d) S phase.
5. Which of the following statements describing the Mitosis is NOT False?
  - a) Assuring functional copies of the daughter cell's genetic material.
  - b) Promising that each daughter cell will have identical.
  - c) Producing the parent cells genetically different to the daughter cells.
  - d) Culminating in two separate nuclei incomplete to each other.

**15 MARKS**

**Q5/ A: Briefly write about how each of the following functions:**

1. The inner mitochondrial membrane.
2. Golgi apparatus Organelle.
3. RER and SER membrane.

**B: Enumerate each the following:**

**10 MARKS**

1. Checkpoints for cell cycle control.
2. Distinct compartments of structure of mitochondria.

**Q6/ Give the following THREE reasons:**

**15 MARKS**

1. Fast and muscle cells require the most mitochondria.
2. The second phase in an interphase of the cell cycle called S phase.
3. The nuclear envelope is a hub of activity from eukaryotic cell.
4. Lysosome is considered to be digestion machine.

**Good Luck**

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