

- All questions are compulsory.
- Figures to Right indicate marks.
- Draw diagram wherever necessary.

**Q.I.A. Answer the following questions (any 4)**

[8M]

1. Name the cell organelles not present in animal cell but present in plant cell.
2. Give the function of lysosomes.
3. Name the compounds used at the start of the Miller's experiment.
4. Name two scientists supporting spontaneous generation theory.
5. What is a plastid?
6. What do you mean by the term aerobe?
7. Define eukaryote.
8. Give the function of vacuoles.

**Q.I.B. Answer the following questions in brief.( any 2)**

[6M]

1. Give a brief account on endosymbiont theory.
2. How did Redi contribute to the disproval of spontaneous generation theory?
3. Differentiate between eukaryote and prokaryote.
4. Which evolved first heterotroph or autotroph? Support your answer.

**Q.I.C. Answer the following questions in detail (any 1)**

[6M]

1. Differentiate between animal cell and plant cell.
2. Briefly describe Urey- Miller's experiment.

**Q.II.A. Answer the following (any 4)**

[8M]

1. What are the layers of plant cell wall?
2. Define passive transport.
3. Name the proteins present in the cell membrane.
4. What is plasmolysis?
5. Give the components of gram positive cell wall.
6. What do you mean by antiport?
7. Give the basic functions of plant cell wall.
8. How are gases transported through the cell membrane?

(contd.)

**Q.II.B. Answer the following (any 2)**

1. Differentiate between passive and active transport.
2. Explain facilitated diffusion in brief.
3. What is endocytosis?
4. What is Gram negative cell wall composed of?

[6M]

**Q.II.C. Answer the following (any 1)**

1. Give a brief account on gram negative bacterial cell wall.
2. Elaborate on passive transport.

[6M]

**Q.III. A. Answer the following: (any 4)**

1. What is sarcosome?
2. What is stroma lamellae?
3. Write any two functions of lysosomes?
4. Mention any two functions of rough ER.
5. What do you mean by middle and trans cisternae?
6. Name some common enzyme present in outer membrane of mitochondria.
7. What is cristae?
8. What is light reaction?

[8M]

**Q.III. B. Answer the following: (any 2)**

1. Write a note on enzymes found in different compartments of mitochondria.
2. Elaborate on chromoplast.
3. Give any three functions of SER.
4. Write a note on plant lysosomes.

[6M]

**Q.III. C. Answer the following: (any 1)**

1. Describe the ultrastructure of chloroplast.
2. Write a note on polymorphism of lysosome.

[6M]

**Q.IV.1.A. Answer in short (any 1)****[2M]**

1. Name the bacterial cell which gave rise to mitochondria according to endosymbiont theory.
2. Name the ribosome present in prokaryotes.

**Q.IV.1.B. Choose the correct alternative (any 3)****[3M]**

1. The function of mitochondria is
  - a) intracellular transport of proteins.
  - b) photosynthesis.
  - c) cellular respiration (ATP synthesis)
2. In humans which cell lacks nucleus
  - a) Neutrophil
  - b) Basophil
  - c) RBC
3. Which of the following organelles are found only in animal cell?
  - a) Centriole
  - b) Mitochondria
  - c) Golgi apparatus
4. Which of the following clues would tell you whether a cell is prokaryotic or eukaryotic?
  - a) The presence or absence of a rigid cell wall
  - b) Presence or absence of well defined nucleus.
  - c) the presence or absence of ribosomes
5. Which is the biggest animal cell?
  - a) Ostrich's egg
  - b) Hen's egg
  - c) PPLO
6. Synthesis of biological compound during origin of life occurred with the help of
  - a) Lightning
  - b) UV radiations
  - c) Both a and b

**(contd.)**

**Q.IV.2.A. Answer the following (any 1)**

[2M]

1. Name the protein present in microtubules.
2. Define hypotonic solution.

**Q.IV 2.B. Fill in the blanks (any 3)**

[3M]

1. A cell wall component of gram negative bacteria which anchors the outer membrane to the peptidoglycan layer is \_\_\_\_\_  
(murein, Braun's lipoprotein, Lignin)
2. Plasma membrane is composed of \_\_\_\_\_  
(Lipids and proteins, Proteins, cellulose)
3. The immediate source of energy for active transport \_\_\_\_\_  
(carbohydrates, lipids, ATP)
4. Filaments present in flagella/cilia are \_\_\_\_\_  
(microtubules, microfibrils, microfilaments)
5. The major component of middle lamella layer of plant cell wall is \_\_\_\_\_  
(pectin, lignin, hemicellulose)
6. Passage of oxygen molecules through the cell membrane is an example of \_\_\_\_\_  
(passive transport, active transport, secondary transport)

**Q.IV. 3.A. Explain the following: (any 1)**

[2M]

1. stroma.
2. Plastid.

**Q.IV 3.B. Fill up the blanks [any 3]**

[3M]

1. Mitochondria contains ribosomes called \_\_\_\_\_ (mitoribosome/sarcosomes/sarcomere)
2. Porin protein present in \_\_\_\_\_ of mitochondria.  
(outer membrane / Inner membrane / peri mitochondrial space)
3. Lysosomes contain 40 different type of \_\_\_\_\_.  
(hydrolytic enzyme/reductase enzyme/lyase enzyme)
4. \_\_\_\_\_ forms skeletal framework of a cell.  
(ER./Lysosome/Ribosome)
5. Group of \_\_\_\_\_ is called dictyosome.  
(golgi cisternae/ golgi lamellae/golgi)
6. Mitochondrion is a \_\_\_\_\_ organelle. (semiautonomous/autonomous/secondary)

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