

B.Sc. Semester - 2 (CBCS) Examination
June/July-2022 [NEW COURSE]
BIO-CHEMISTRY (CORE)

Time: 2:30 Hours**Marks: 70****Instructions:**

1. All questions are compulsory.
 2. Figures to the right indicate marks.
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Q.1 (A): Answer any one of the following questions [7]

1. Differences between prokaryotic and eukaryotic organism.
2. Explain structural and functional diversity of eukaryotic cells with suitable examples.

(B) Answer any one of the following questions..... [4]

1. Draw the labelled diagram of a typical animal cell.
2. Write a note on microtubules with its functions.

(C) Answer any three of the following questions..... [3]

1. Define histology.
2. Write two examples of eukaryotic cell.
3. Write the contribution of cell theory in the development of cell biology.
4. Give two examples of microfilaments.
5. Write the contribution of any one scientist in cell biology.

Q.2 (A): Answer any one of the following questions [7]

1. Explain the structure and functions of golgi body with diagram.
2. Write a detailed note on Nucleus with diagram.

(B) Answer any one of the following questions..... [4]

1. Write a note on marker enzymes and their significance.
2. Write the types of Endoplasmic reticulum and give functions of each.

(C) Answer any three of the following questions..... [3]

1. What is the function of ribosome?
2. Write at least two examples of cell organelles.
3. Write the name of cell organelle important for the synthesis of lipids.
4. Define the role of nuclear pore.
5. Write the name of organelle which is made of single membrane.

Q.3 (A): Answer any one of the following questions [7]

1. Explain the processes meiosis.
2. Write an essay on cell cycle checkpoint.

(B) Answer any one of the following questions..... [4]

1. Give major difference between meiosis-I and meiosis-II
2. Define Cytokinesis and discuss cytokinesis in plants.

(C) Answer any three of the following questions..... [3]

1. Define spindle fibre.
2. What do you understand by synapse.
3. Define homologous chromosome.
4. Give importance of G2 phase in cell cycle.
5. Give full form of MPF.

Q.4 (A): Answer any one of the following questions [7]

1. Discuss FRAP experiment for studying the rate of lateral movement of molecules in biological membranes.
2. Discuss Singer Nicholson model of plasma membrane structure with suitable diagram.

(B) Answer any one of the following questions..... [4]

1. Write differences between simple v/s facilitated diffusion
2. Explain lateral movement and flip flop movement of phospholipids in membranes.

(C) Answer any three of the following questions..... [3]

1. How glucose is transported across the RBC membrane?
2. Why does the active transport of substances across the membrane require energy?
3. How water molecules can easily cross the membrane?
4. What is antiport? Give example of substances transported by antiport
5. List examples of substances that can be transported by simple diffusion across the membrane.

Q.5 (A): Answer any one of the following questions [7]

1. Explain in detail: Photorespiration.
2. Write brief note on Nitrogen cycle.

(B) Answer any one of the following questions..... [4]

1. Give the three ways of nitrogen fixation.
2. Give note on photosynthetic apparatus with diagram.

(C) Answer any three of the following questions..... [3]

1. Why plants are looking green in colour?
2. What is Kranz anatomy?
3. Give the two types of nitrogen fixing bacteria with examples.
4. Give the site of Cytokinin synthesis.
5. Name the pathways for electron transfer in photosynthesis.
