

B.Sc. Semester - 2 (CBCS) Examination
March/April - 2023 (OLD 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 the following questions. (Any One) (07)

1. Write the difference between plant cell and animal cell.
2. Draw and explain structural organization of prokaryotic cell.

Q.1(B) Answer the following question. (Any One) (04)

1. Draw the structure of animal cell.
2. Discuss: Viroid is contained unique characteristics.

Q.1(C) Answer the following question. (Any Three) (03)

1. Explain: Cell.
2. The term cell was given by _____ scientist.
3. A plant cell wall is mainly composed of cellulose. (True/False)
4. Explain: Prions.
5. How many pair of chromosomes in normal human cell?

Q.2(A) Answer the following questions. (Any One) (07)

1. Write short note on isolation of organelles by differential centrifugation.
2. Discuss in detail: Endosymbiosis hypothesis.

Q.2(B) Answer the following question. (Any One) (04)

1. Draw well labbled diagram of golgi complex.
2. Difference between gram positive and gram negative bacteria.

Q.2(C) Answer the following question. (Any Three) (03)

1. Define: Cytoplasm.
2. Explain: Cell membrane.
3. Peroxisome contain _____ enzyme.
4. Write the main function of mitochondria.
5. During differential Centrifugation nucleus separated first. (True / False)

Q.3(A) Answer the following questions. (Any One) (07)

1. Detailed note on: Mitosis.
2. Write in brief: Cell cycle and its stages.

Q.3(B) Answer the following question. (Any One) (04)

1. Write the basic concept of cell differentiation.
2. Explain: Meiosis - I.

Q.3(C) Answer the following question. (Any Three) (03)

1. Define: Meiosis.
2. In cell cycle Telophase that has the longest duration. (True/False)
3. Write any two names of chemical usually used to colour chromosomes.
4. During which phase of the cell cycle does the DNA get synthesized?
5. Meiosis occurs in _____ cell.

Q.4(A) Answer the following questions. (Any One) (07)

1. Detailed note on: Simple diffusion and Facilitated diffusion.
2. Write the structure and mechanisms of sodium potassium ATPase.

Q.4(B) Answer the following question. (Any One) (04)

1. Write short note on: Fluid mosaic model of plasma membrane structure.
2. Concept of membrane asymmetry.

Q.4(C) Answer the following question. (Any Three) (03)

1. Assisting in chromosome segregation is the function of plasma membrane. (True/False)
2. Define: Membrane.
3. Full form of FRAP.
4. Explain: Antiport
5. Write examples of simple transport.

Q.5(A) Answer the following questions. (Any One) (07)

1. Discuss: Biological nitrogen fixation.
2. Detailed note on: Plant growth hormones.

Q.5(B) Answer the following question. (Any One) (04)

1. Detailed note on: Hill reaction.
2. Explain: CAM pathway.

Q.5(C) Answer the following question. (Any Three) (03)

1. Define: Photosynthesis.
2. Full name of ATP.
3. Write the two name of plant growth promoting hormones.
4. Write any two name of microorganisms which fix non-symbiotic nitrogen fixation.
5. Give any two examples of C4 plant.
