

B.Sc. Semester - 2 (CBCS) Examination
March/April – 2023 (New Course)
BIO-CHEMISTRY (CORE)

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

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1(A) Answer the following questions. (Any One) (07)

1. Discuss structural organization of a eukaryotic cell.
2. Discuss structure and functions of microtubules.

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

1. Write a note on prions.
2. Distinguish between plant cell and animal cell.

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

1. True or false : A virus has either DNA or RNA.
2. What are viroids?
3. True or false : Viruses are acellular entities.
4. What is the function of actin filaments?
5. Define : cell

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

1. Explain : Differential centrifugation in isolation of cell organelles.
2. Discuss structure and function of golgi bodies.

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

1. Write on endosymbiosis hypothesis on origin of mitochondria.
2. Write on glyoxisome and peroxisome.

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

1. Why lysosome is called a suicide sac?
2. True or false: Mitochondria has paternal origin.
3. Give an example of a marker enzyme.
4. What do you mean by RER and SER?
5. Name components of bacterial cell wall.

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

1. Discuss meiotic type of cell division.
2. Explain cell cycle.

- Q.3(B) Answer the following question. (Any One) (04)**
1. Explain cell differentiation.
 2. Discuss mitotic cell division.
- Q.3(C) Answer the following question. (Any Three) (03)**
1. True or false :Haploids are generated due to meiosis.
 2. What is physiological importance of mitosis?
 3. True or false : Meosis is characteristic of bacterial cells.
 4. Interphase is followed by
 5. In a cell cycle, DNA content is copied during
- Q.4(A) Answer the following questions. (Any One) (07)**
1. Discuss FRAP Experiment.
 2. Explain Singer and Nicholson model of plasma membrane structure.
- Q.4(B) Answer the following question. (Any One) (04)**
1. Write on : Applications of ionophores.
 2. Explain active transport.
- Q.4(C) Answer the following question. (Any Three) (03)**
1. Name general types of ionophores.
 2. What is simple diffusion?
 3. True or false : Movement in lateral diffusion occurs rapidly.
 4. True or false : Flipflop movement of phospholipids does not require energy.
 5. True or false : Sodium Potassium ATPase pump is an example of active transport.
- Q.5(A) Answer the following questions. (Any One) (07)**
1. Explain biological nitrogen fixation.
 2. Explain dark reaction of photosynthesis.
- Q.5(B) Answer the following question. (Any One) (04)**
1. Write a note on cytokinins and auxins.
 2. Discuss CAM metabolism.
- Q.5(C) Answer the following question. (Any Three) (03)**
1. What is photorespiration?
 2. What is the full name of RuBiSCO?
 3. True or false : Role of phosphoenolpyruvate carboxylase is important in C4 plants.
 4. What is Hill reaction?
 5. True or false : Genus *Azospirillum* is important in nitrogen fixation.
