



RAU-003-1012022

Seat No. 024594

**B. Sc. (Sem. II) (CBCS) Examination**

March/April – 2019

**Biochemistry : Paper - BC-201**

*(Cell Biology and Plant Biochemistry)*

**Faculty Code : 003**

**Subject Code : 1012022**

Time :  $2\frac{1}{2}$  Hours]

[Total Marks : 70

- 1 (a) Write the correct answer for the questions : 4
- (1) Define Cell.
  - (2) Give resolving power of eye.
  - (3) Define prion.
  - (4) Give example of Bacterial virus.
- (b) Write the answer in brief : (any 1 out of 2) 2
- (1) Give names of three branches of modern cell biology.
  - (2) Give contribution of any one scientist in the field of cell biology.
- (c) Write the answer in detail : (any 1 out of 2) 3
- (1) Briefly discuss homogenization process.
  - (2) State modern cell theory.
- (d) Write the short note in detail : (any 1 out of 2) 5
- (1) Give differences between Prokaryotes and Eukaryotes.
  - (2) Write an essay on cytoskeleton.
- 2 (a) Write the correct answer for the questions : 4
- (1) Write the name of the organelles which has its own genome.
  - (2) Write the function of nuclear pore.
  - (3) Write the names of at least two phospholipids which are the part of the cell membrane.
  - (4) Write the main function of ribosomes.

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- (b) Write the answer in brief : (any 1 out of 2) 2
- (1) Write two differences between RER and SER.
  - (2) Briefly explain : nucleolus.
- (c) Write the answer in detail : (any 1 out of 2) 3
- (1) Write a note on marker enzymes.
  - (2) Define microbodies and briefly explain any one of them.
- (d) Write short note : (any 1 out of 2) 5
- (1) Explain structure and functions of chloroplast. (with diagram)
  - (2) Write a note on structure and functions of plasma membrane with diagram.
- 3 (a) Write the correct answer for the questions : 4
- (1) Define Haematopoietic stem cell.
  - (2) Give name of 16 cell stage of embryo.
  - (3) Define Pluripotent.
  - (4) Name the cell which is in Go Stage.
- (b) Write the answer in brief : (any 1 out of 2) 2
- (1) Give importance of Cyclins in cell division.
  - (2) Why Meiosis is called as Reduction division ?
- (c) Write the answer in detail : (any 1 out of 2) 3
- (1) Briefly describe events occurring during Metaphase stage of mitosis.
  - (2) Give importance of G1 and G2 Phase in cell cycle.
- (d) Write a short note : (any 1 out of 2) 5
- (1) With diagram discuss stages of Meiosis 1.
  - (2) Discuss Cytokinesis in Animal and Plant cell.
- 4 (a) Write the correct answer for the questions : 4
- (1) Write the difference between simple diffusion and facilitated diffusion.
  - (2) Write the components present in the cell membrane.
  - (3) What do you understand by the phagocytosis.
  - (4) Which molecules cannot cross the cell membrane by simple diffusion ?

- (b) Write the answer in brief : (any 1 out of 2) 2
- (1) Explain osmosis with example.
  - (2) Write the functions of plasma membrane.
- (c) Write the answer in detail : (any 1 out of 2) 3
- (1) Write a brief note on facilitated diffusion.
  - (2) Write the difference between antiport and symport.
- (d) Write a short note : (any 1 out of 2) 5
- (1) Write a note on Active transport.
  - (2) Write the functions of protein in plasma membrane.
- 5 (a) Write the correct answer for the questions : 4
- (1) Define : Photosynthesis.
  - (2) What is Krenz anatomy ?
  - (3) Give the sources of Nitrogen.
  - (4) Write the function of Abscisic acid.
- (b) Write the answer in brief : (any 1 out of 2) 2
- (1) Write note on photosynthetic pigment.
  - (2) Write the two pathways for ammonia assimilation.
- (c) Write the answer in detail : (any 1 out of 2) 3
- (1) Write a short note on cyclic electron transfer mechanism.
  - (2) Write the difference between  $C_3$  and  $C_4$  plants.
- (d) Write a short note : (any 1 out of 2) 5
- (1) Explain in detail : Photorespiration.
  - (2) Write brief note on Nitrogen cycle.