



**JBD-003-1191001** Seat No. \_\_\_\_\_

**M. Sc. (Microbiology) (Sem. I) (CBCS)  
(W.E.F. 2016) Examination**

**December - 2019**

**MICRO - 101 : Cell Biology**

**Faculty Code : 003**

**Subject Code : 1191001**

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

[Total Marks : 70

- 1** Answer briefly any seven of the following : (2 Marks each) **14**
- (a) What are the functions of lysosome in a cell?
  - (b) What are the three stages of cellular communication?
  - (c) Define single pass and seven pass receptors with suitable example.
  - (d) What are the functions of Glyoxisomes?
  - (e) What is the role of Perforin in apoptosis?
  - (f) Enlist properties of ideal receptor.
  - (g) What is the difference between symport and antiport?
  - (h) What is the role of nuclear pore complex?
  - (i) What are intracellular junctions?
  - (j) Define stimulatory G protein (Gs) with suitable example.
- 2** Answer any **two** of the following : (7 Marks each) **14**
- (a) What is cell cycle? Give a detailed account on major events occur during Mitosis.
  - (b) Discuss components and structure of plasma membrane. Highlight its functional role in a cell.
  - (c) Explain the nucleosome and solenoid structure. Discuss its packaging into chromosomes.

- 3** Answer the following : (7 Marks each) **14**
- (a) What are the components of GERL system? Discuss its functions in detail.
  - (b) Discuss ultra structure, cellular energetics and evolutionary significance of mitochondria.

**OR**

- 3** Answer the following : (7 Marks each) **14**
- (a) Give an account on structure, reaction centers and functions of Chloroplasts.
  - (b) Discuss the role of selectin and integrins in cellular adhesion process.

- 4** Answer the following questions : (7 Marks each) **14**
- (a) Discuss the transport process across the cell membrane in detail.
  - (b) Give a detailed account on mitochondrial pathway of apoptosis.

- 5** Answer any two of the following questions : **14**  
(7 Marks each)
- (a) Write a note on G - protein coupled receptor.
  - (b) Explain receptor mediated endocytosis.
  - (c) Discuss ultra structure and functions of microtubules and microfilaments.
  - (d) Write a note on regulation of apoptosis by Bcl-2 family members.

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