

(b) Write brief notes on the following :

(i) Post translational modifications

(ii) Operon concept.  $5 \times 2 = 10$

No. of Printed Pages : 04

Roll No. ....

**AA-331**

**M. Sc. EXAMINATION, May 2018**

(First Semester)

(Re-appear Only)

**BIOTECHNOLOGY**

**BT501MS**

Cell and Molecular Biology

*Time : 3 Hours]*

*[Maximum Marks : 100*

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Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

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**Note :** Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

### Unit I

1. (a) Compare prokaryotic and eukaryotic cell giving sub-cellular differences between them. **10**  
(b) Explain the mechanism of active transport across the membrane. **10**
2. Protein sorting is the biological mechanism by which proteins are transported to appropriate destinations in the cell. Discuss. **20**

### Unit II

3. (a) Discuss the role of adhesion molecules and extra cellular matrix in cell to cell interactions. **10**  
(b) Give a diagrammatic representation of cell cycle. How is it regulated ? **10**
4. Cell signaling governs basic activities of cell and coordinates all cell actions. Explain the role of G-protein linked cell surface receptors and enzyme linked cell surface receptors in cell signaling. **20**

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### Unit III

5. (a) Give the structure of purines and pyrimidines. **5**  
(b) Describe eukaryotic genome organization. **5**  
(iii) Discuss the role of various enzymes and proteins involved in DNA replications. **10**
6. Write explanatory notes on the following :  
(i) Replication in phages  
(ii) DNA repair mechanism. **10×2=20**

### Unit IV

7. (a) With the help of suitable diagram, explain the mechanism of transcription in eukaryotes. **10**  
(b) Give important characteristics of genetic code. **10**
8. (a) Explain the main steps involved in translation of eukaryotes. **10**

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P.T.O.