8. Write explanatory notes on any *two* of the following : **10×2=20**

(a) Mechanism of translation in Eukaryotes

(b) Characteristics of Genetic Code

(c) Operon Concept.

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AA331

M. Sc. EXAMINATION, May 2019

(First Semester)

(B Scheme) (Re-appear)

BIO-TECHNOLOGY

BT501MS

Cell and Molecular Biology

Time : 3 *Hours*] [*Maximum Marks :* 100

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.

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

Unit I

1. (a) Draw well labelled diagrams of prokaryotic and eukaryotic cell and give differences between the two. **10**

(b) Explain the movement of ions and macromolecules across the membrane. **10**

2. (a) Explain the mechanism by which protein molecules are transported across the membrane. **10**

(b) What is Vesicular Trafficking ? Taking help of a suitable diagram. Explain the transport of proteins from E.R. to Iysosomes via golgi apparatus. **10**

Unit II

3. (a) What do you mean by Cell to Cell Communication ? Discuss the role of different adhession molecules in Cell-Cell Interactions. **10**

(b) Give a diagrammatic representation of cell-cycle and explain its regulation. **10**

4. G-protein linked cell surface receptors and enzyme linked cell surface receptors are improtant component of cell signaling. Discuss in detail with the help of suitable examples. **20**

Unit III

5. Write short notes on the following : **5×4=20**

(a) Purines and Pyrimidines

(b) Supercoiling of DNA

(c) DNA reassociation Kinetics

(d) DNA organization into chromatin.

6. (a) How replication of DNA Occurs in Eukaryotes ? **10**

(b) What are the different mechanism by which damaged DNA is repair. **10**

Unit IV

7. Give an illustrated account of transcription in prokaryotes and eukaryotes. Why post-transcriptional processing of RNAs is required ? **20**