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D61

B. Tech. EXAMINATION, 2020

(Fourth Semester)

(B Scheme)

(Re-appear Only)

BT

BT202B

MOLECULAR BIOLOGY

Time : 3 *Hours*] [*Maximum Marks :* 75

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. Explain the following : **5×3=15**

(a) Overlapping Genes

(b) Split Genes

(c) Hershey Chase Experiement.

2. Explain the important features of double helical of DNA. Enumerate the features of various forms of DNA. **15**

Unit II

3. Differentiate between the mechanism of transcription in prokaryotes and eukaryotes along with the promoters and RNA polymerases. **15**

4. Describe the process of DNA replication in Prokaryotes along with the protein and enzymes involved along with the mechanism of replication. **15**

Unit III

5. Write short notes on any *three* of the following : **5×3=15**

(a) Molecular Chaperones

(b) Nature and properties of Genetic code

(c) Role of *t*-RNA in translation

(d) Protein synthesis in prokaryotes.

6. Compare the process of protein synthesis in prokaryotes and eukaryotes. **15**

Unit IV

7. Discuss the overall mechanism of regulation of genes involved in lactose metabolism. **15**

8. Write detailed notes on any *two* of the following : **7½×2=15**

(a) RNA silencing

(b) Role of G proteins in signal transduction

(c) Trp operon.