

# CBCS SCHEME

USN

--	--	--	--	--	--	--	--	--	--

18BT42

## Fourth Semester B.E. Degree Examination, Jan./Feb. 2023 Molecular Biology

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Explain the structure and forms of DNA with neat diagram. (10 Marks)  
b. Discuss the difference between central Dogma and dogma of molecular biology. (10 Marks)

OR

- 2 a. Explain the mechanism of DNA replication in eukaryotes. (10 Marks)  
b. Write a note on reversible denaturation and hyperchromic effect of DNA. (10 Marks)

### Module-2

- 3 a. Explain the structure and function of RNA polymerases in prokaryotes. (10 Marks)  
b. Write short note on post transcriptional processing of mRNA. (10 Marks)

OR

- 4 a. Explain the steps of transcription in prokaryotes. (12 Marks)  
b. Write short note on transcription inhibitors. (08 Marks)

### Module-3

- 5 a. Explain the mechanism of translation in eukaryotes. (10 Marks)  
b. Describe the enzyme involved in translation in prokaryotes. (10 Marks)

OR

- 6 a. Highlight the difference between prokaryotic and eukaryotic protein synthesis. (10 Marks)  
b. Write short note on inhibitors of translation. (10 Marks)

### Module-4

- 7 a. Explain lac operation in detail. (10 Marks)  
b. Explain various levels of gene expression. (10 Marks)

OR

- 8 a. Give a complete note on homeobox and hox genes. (10 Marks)  
b. Explain the negative regulation of trp Operon. (10 Marks)

### Module-5

- 9 a. Explain the three mechanism of recombination in prokaryotes in detail. (10 Marks)  
b. Write short note on retroviruses. (10 Marks)

OR

- 10 a. What are transposons explain their importance? (10 Marks)  
b. Explain the major five basic mechanism of DNA repair. (10 Marks)

\* \* \* \* \*

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.