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 transposions explain their importance? | (10 Marks) |
| | b. | Explain the major five basic mechanism of DNA repair. | (10 Marks) |

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