CBCS SCHEME

USN | | | | | | | | | |

18BT42

Fourth Semester B.E. Degree Examination, Dec.2023/Jan.2024
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. What is Chromosomal Theory of Inheritance? Explain in detail. **(10 Marks)**
b. Discuss in detail the salient features of Generic Code. **(10 Marks)**

OR

2 a. Describe how DNA is replicated in Eukaryotes. **(10 Marks)**
b. Explain in detail different types of RNA. **(10 Marks)**

Module-2

3 a. Explain different stages of Transcription in Eukaryotes. **(08 Marks)**
b. Explain types of RNA polymerase and their function. **(06 Marks)**
c. Write a note on Prokaryotic promoters. **(06 Marks)**

OR

4 a. Explain Post – Transriptional processing. **(10 Marks)**
b. Give a detailed note on : i) Fidelity of RNA synthesis ii) Ribozomes. **(10 Marks)**

Module-3

5 a. Discuss in detail the process of translation in Eukaryotes. **(10 Marks)**
b. Explain Protein folding and Splicing. **(10 Marks)**

OR

6 a. Discuss Prokaryotic versus Eukaryotic translation. **(10 Marks)**
b. Write the Inhibitors of Prokaryotic and Eukaryotic protein synthesis. **(10 Marks)**

Module-4

7 a. What is Inducible Operon? Explain the an example. **(10 Marks)**
b. Explain trp (tryptophon) Operon of gene regulation. **(10 Marks)**

OR

8 a. Explain Ara (arabinose) Operon of E.Coli. **(10 Marks)**
b. What are Homeotic gener? Explain Homeotic genes control in development of body segments in insects. **(10 Marks)**

Module-5

9 a. What is Genetic Recombination? Explain Site Specific Recombination. **(10 Marks)**
b. Give a detailed note on Retroviruses. **(10 Marks)**

OR

10 a. What are Mutations? Summarize the types of Mutations. **(10 Marks)**
b. Discuss the role of Recombination and Transposition in Evolution. **(10 Marks)**

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