

## **Mode of Examination: ONLINE**

### **Set - I**

Unique Paper Code	: 223451
Name of the Paper	: Molecular Biology
Name of the Course	: B.Sc. (Prog.) Life Sciences
Semester	: IV
Duration	: 2 h
Maximum Marks	: 75

### **Instruction for Students**

Write your Roll No., Name of the paper, Course, Semester, and Date of examination on the first page of answer sheet.

Attempt **ANY FOUR** questions. All questions carry equal marks.

1. Elaborate the structure of DNA as proposed by Watson and Crick. Give the distinguishing features of A-DNA with that of B-DNA.
2. Discuss the role of various proteins that assemble at the replication fork during prokaryotic DNA replication. Differentiate between the theta ( $\Theta$ ) mode of replication with the rolling circle mode of replication in prokaryotes. Give appropriate illustrations.
3. Explain the process of transcription termination in prokaryotes and eukaryotes. Give an account on post-transcriptional modification that occurs for synthesis of mature mRNA.
4. What is an operon? Describe its structure. With the help of example differentiate a negative inducible operon from a negative repressible operon.
5. Compare and contrast the process of protein synthesis in bacterial and eukaryotic cells giving similarities and differences in the process of translation in these two types of cells.

6. Enlist the properties of cancer cells which are considered as transformed normal healthy cells. Add an account on how various types of viruses, oncogenes and tumor suppressor genes lead to change in the properties.

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