

B.Sc. Semester-III Examination, 2022-23**MICROBIOLOGY [Honours]****Course ID : 32213 Course Code : SH/MCB/303/C-7****Course Title : Molecular Biology**

Time : 1 Hour 15 Minutes Full Marks : 25

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **five** of the following questions:

1×5=5

- What is meant by Proofreading of DNA polymerase?
- Name one prokaryotic protein synthesis inhibitor.
- What is TATA box?
- What do you mean by linking number?
- What are split genes?
- Differentiate exon and intron.
- Write the role of enzyme topoisomerase during DNA replication.
- How is initiator methionine different from elongation methionine?

2. Answer any **two** of the following questions:

5×2=10

- What is DNA repair? Write a short note on Mismatch repair. 1+4=5
- Draw the structure of a typical tRNA and mention the unusual bases found in it. 4+1=5
- Write a short note on DNA methylation. What is the significance of capping? 4+1=5
- Discuss in brief rolling circle model of DNA replication. 5

3. Answer any **one** of the following question:

10×1=10

- Write in detail about the initiation of translation process in prokaryotes with suitable diagrams. Write a short note on RNA polymerase. 7+3=10
- What are inducible and repressible operons? Describe the positive regulation of lac operon. 2+8=10
