

B.Sc. Semester-IV Examination, 2022-23**BOTANY [Honours]**

Course ID : 41311 Course Code : SH/BOT/401/C-8

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.*Answer **all** the questions.**UNIT-I**

1. Answer any **five** of the following questions: 1×5=5
- Name the scientists who proved that the genetic material of TMV is associated with its RNA.
 - What is θ (theta) mode of DNA replication?
 - What will be the T_m -value of 5'-GGTACGTTGTCCACATGC-3' sequence?
 - Where do you find covalently closed circular DNA as chromosome?
 - Mention the role of SSB proteins in DNA replication.
 - Differentiate between Group-I and Group-II introns.
 - What is meant by gene silencing? [Turn Over]

- h) What is the role of protein in transcription?

UNIT-II

2. Answer any **two** of the following questions:
5×2=10
- Give an outline of Griffith's experiment (1928). What was the outcome of that experiment?
4+1
 - Why are tRNAs considered as adapters in protein synthesis? Establish your answer with proper justification.
4+1
 - Compare and contrast the salient features of chloroplast and mitochondrial DNA. 5
 - Write a note on 'post translational modifications of proteins'. 5

UNIT-III

3. Answer any **one** of the following questions:
10×1=10
- What are the special features of ribozyme? Briefly discuss the process of capping and tailing of mRNA during its processing. 2+8
 - What is transcription attenuation? How is this process involved in the fine regulation of tryptophan operon? 3+7