

U.G. 4th Semester Examination - 2021**BOTANY****Course Code : BBOTCCHC401****Course Title : Molecular Biology**

Full Marks : 30

Time : 2 Hours

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

1×10=10

- Name any two inhibitors of translation.
- How was DNA replication proved as Semiconservative?
- Define promoter.
- What is Wobble hypothesis?
- Mention any two main differences between prokaryotic and eukaryotic translation.
- Name any two proteins involved in the DNA replication in prokaryotes.

- What is polysome?
- What are VNTRs?
- Define anticodon.
- Write two characteristic features of mitochondrial Genome.
- What is RNase P?
- What are SSB proteins?
- Differentiate between DNA polymerase I and DNA polymerase III.
- Where the Rifampicin is used?
- What is Shine Dalgarno sequence?

2. Answer any **five** from the following questions:

2×5=10

- Discuss briefly the Watson and Crick model of DNA.
- What is transcriptional attenuation?
- What do you mean by Type II topoisomerases?
- Explain Chargaff's rule.
- List out the forces that stabilize the structure of DNA.
- Explain the hyperchromic effect of DNA.

g) What is gene imprinting?

h) What do you mean by alternative splicing?

3. Answer any **two** from the following questions:

$$5 \times 2 = 10$$

a) Describe briefly the process of eukaryotic mRNA processing.

b) Write a short note on post-translational modifications of proteins.

c) Mention the beneficial effects of capping and tailing of RNA.
