

**Bankura University**  
**B. Sc 4<sup>th</sup> Semester (Honours) Examination, 2022**  
**Sub: Botany**

Course ID: 41311

Course Code: SHBOT/401/C-8

Course Title: **Molecular Biology**

Full Marks- 25

Time -1h15min

The figures in the margin indicate full marks

**UNIT I**

1. Answer *any five* of the following questions: (1X5=5)

- a) Which concept was achieved from **Harshey & Chase** experiment?
- b) What do you mean by **cot** value?
- c) What is denaturation of DNA?
- d) What is constitutive heterochromatin?
- e) Why ***lac operon*** will be off in presence of glucose and lactose both in medium?
- f) What is **5' cap**?
- g) What is ribozyme?
- h) What is anticodon?

**UNIT II**

2. Answer *any two* of the following questions: (2X5=10)

- a) "In presence of tryptophan in medium the structural gene of **trp operon** will not be transcribed" – explain schematically
- b) Describe the initiation process of transcription in prokaryote.
- c) Describe the structure of **B-DNA** proposed by Watson & Crick. Distinguish it from **A-DNA**. **4+1=5**
- d) "**RNA** is the genetic material" – Prof

**UNIT III**

3. Answer *any one* of the following questions: (1X10=10)

- a) Describe the DNA replication process of linear ds-DNA. Why this process is semidiscontinuous. 8+2=10
- b) Describe the ultrastructure of chromatin by nucleosome concept. Distinguish euchromatin and heterochromatin. 7+3=10