

Reg. No. :

| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|

Question Paper Code:95D01

B.E./B.Tech. DEGREE EXAMINATION, NOV 2022

Fifth Semester

Biotechnology

19UBT501- Molecular Biology

(Regulations 2019)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (10x 2 = 20 Marks)

- | | | |
|-----|--|----------|
| 1. | What is the basic difference between B and Z type of DNA? | CO2- App |
| 2. | How does RNA differ from DNA? | CO2- App |
| 3. | List out certain inhibitors of DNA replication | CO1- U |
| 4. | What do you mean by conservative replication? | CO1- U |
| 5. | What is the role of Rho factor in Transcription? | CO1- U |
| 6. | Add a note on core enzyme and holo enzyme of E.Coli RNA polymerase | CO1- U |
| 7. | Write a note on Operator genes. | CO2- App |
| 8. | Differentiate TIM & TOM. | CO2- App |
| 9. | How can you define the term gene regulation? | CO1- U |
| 10. | Differentiate negative and positive regulators with examples. | CO1- U |

PART – B (5 x 16= 80Marks)

- | | | | |
|-----|--|--------|------|
| 11. | (a) Outline the structure and functions of DNA. Classify and explain the variants of double helical DNA. | CO1- U | (16) |
| | Or | | |
| | (b) Explain in detail the scope and history of Molecular Biology. | CO1- U | (16) |
| 12. | (a) Elaborate on different types of plasmid replication with appropriate diagram. | CO1- U | (16) |
| | Or | | |
| | (b) Elaborate on Rolling circle replication and D-loop model. | CO1- U | (16) |

13. (a) Write a summary on post transcriptional process that occurs in prokaryotic system. CO2- App (16)
- Or
- (b) Explain self-splicing introns. How do class I introns differ from class II introns. CO2- App (16)
14. (a) Explain the process of Translation in prokaryotes. State any four differences from eukaryotic translation. CO1- U (16)
- Or
- (b) Explain the basis and significance of Wobble hypothesis. CO1- U (16)
15. (a) What are the 5 structural genes of Trp Operon? Tryptophan is externally supplied to E.coli then, Trp Operon is switched OFF. How can you support this statement? CO3- Ana (16)
- Or
- (b) Explain how the regulatory protein AraC can be both a repressor and an activator. CO3- Ana (16)