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B.M.S. COLLEGE FOR WOMEN, AUTONOMOUS
BENGALURU – 560004
SEMESTER END EXAMINATION – SEPTEMBER 2023

B.Sc in Biotechnology–4th Semester

MOLECULAR BIOLOGY
(NEP Scheme 2021-22 onwards)

Course Code: BT4DSC04

Duration: 2 ½ Hours

QP Code: 4019

Max. Marks: 60

Instructions: 1. Answer all the sections.

2. Draw diagrams wherever necessary.

SECTION-A

I. Answer any FOUR of the following. Each question carries TWO marks. (4X2=8)

1. Define ribozyme
2. List the functions of topoisomerase in replication
3. Mention the role of alkylation in DNA damage
4. List the function of sigma factor
5. What is a promoter?
6. Give the importance of Shine-Dalgarno sequence

SECTION-B

II. Answer any FOUR of the following. Each question carries FIVE marks. (4X5=20)

7. Explain the Watson and Crick's structural model of DNA
8. Summarize the steps of photo reactivation in DNA repair
9. Describe Hershey-Chase experiment to prove DNA as genetic material
10. Outline genetic code in eukaryotes
11. Explain 5' cap formation during pre-mRNA processing
12. Illustrate attenuation in Trp operon

SECTION-C

III. Answer any FOUR of the following. Each question carries EIGHT marks. (4X8=32)

13. Discuss extra chromosomal DNA in chloroplast
14. Outline the initiation of translation in prokaryotes
15. Summarize the mechanism of transcription in prokaryotes
16. Explain the DNA replication in eukaryotes
17. Explain the regulation of gene expression in lac operon
18. Describe the excision repair pathways in prokaryotes

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