

Faculty of Science
B.Sc (Biotechnology) II-Year, CBCS –III Semester
Backlog Examinations –June, 2023

PAPER: Molecular Biology and Recombinant DNA Technology

Time: 3 Hours

Max Marks: 80

Section-A

- I. Answer any EIGHT of the following questions (8x4=32 Marks)
1. Hershey & Chase experiment
 2. Prokaryotic genome
 3. Chloroplast genome
 4. Transcription
 5. Eukaryotic RNA polymerases
 6. Exons & Introns
 7. Tryptophan operon
 8. Splicing
 9. Ubiquitination
 10. Restriction endonucleases
 11. Shuttle vectors
 12. Bt-cotton

Section-B

- II. Answer the following questions (4x12=48 Marks)
- 13.(a) Describe (i) RNA as genetic material, (ii) Griffith's transformation experiment
(OR)
(b) Explain the mechanism of DNA replication in prokaryotes.
- 14.(a) Explain the mechanism of Translation in prokaryotic organisms.
(OR)
(b) Write the properties of Genetic code and add a note on Wobble Hypothesis.
- 15.(a) Explain "Lac operon" concept of gene regulation, as an inducible operon.
(OR)
(b) Describe Gal regulation in yeast- mating type gene switching.
- 16.(a) Write an essay on different cloning vectors used in recombinant DNA technology.
(OR)
(b) Define PCR and its working principle. Add notes on its potential applications.
