

Roll No. :

Total No. of Questions : 11]

[Total No. of Printed Pages : 3

BPP-1103

M.Sc. (Previous) Examination, 2022

BIOTECHNOLOGY

Paper - IV

(Molecular Biology and Genetic Engineering)

Time : 3 Hours]

[Maximum Marks : 75

Section-A

(Marks : 2 × 10 = 20)

Note :- Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section-B

(Marks : 5 × 5 = 25)

Note :- Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section-C

(Marks : 10 × 3 = 30)

Note :- Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

Section-A

1. (i) Define Replisome.
- (ii) Define Holiday function.
- (iii) Define RNA splicing.

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- (iv) What do you understand by a trp operon.
- (v) Define Ti plasmid.
- (vi) Define Nucleases.
- (vii) Comment on DNA library.
- (viii) What do you understand by a 'Gene Therapy' ?
- (ix) Define Molecular markers.
- (x) Define IPR.

Section-B

2. Write a short note on DNA replication.

Or

Write the role of Rec A protein and other recombinase.

3. Write a short note on RNA processing.

Or

Write briefly about post translational modification.

4. Write a short note on expression vector.

Or

Write briefly about single and double phages.

5. Write short note on Southern blotting technique.

Or

Explain DNA fingerprinting.

6. Write briefly about *tetrad analysis*.

Or

Describe application of genetic engineering in medical and industry.

Section–C

7. Write an essay on 'Biology of Cancer'.
8. Explain regulation of gene expression.
9. Write an essay on types, classification and application of restriction endonucleases.
10. Write an essay on PCR (polymerase chain reaction) and its application.
11. What is DNA probes ? Explain their application in molecular diagnosis of genetic and other human disorders.