Roll No. : .....

Total No. of Questions : **11**] [Total No. of Printed Pages : **3**

BPG–1115

M.Sc. (Previous) Examination, 2021

BIOTECHNOLOGY

Paper - IV

(Molecular Biology and Genetic Engineering)

Time : 1½ 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 2 each

1. (i) Write the function of DNA Gyrase.

   (ii) Define Oncogenes.

   (iii) What do you understand by a Poly A tail ?

   (iv) Define Operon.

(v) Define PBR322.

(vi) Define Cosmid Vector.

(vii) Define Shotgun Sequencing.

(viii) What do you understand by a hot start in PCR ?

(ix) What do you understand by a Tetracutter Restriction Endonuclease ?

(x) Define Transposons.

Section–B 5 each

2. Write a short note on the Satellite DNA.

Or

Write briefly about Holiday junction.

3. Write briefly about post-transcriptional modification.

Or

Write a short note on post-translational modification.

4. Write a short note on YAC.

Or

Write a short note on BAC.

5. What are Genomic Libraries ?

Or

Write briefly about anti-sense technology.

6. Write a short note on linkage maps.

Or

Write briefly about DNA probes.

Section–C 10 each

7. Write an essay on DNA damage and repair.

8. Explain positive and negative regulation of gene expression.

9. Write an essay on types, classification and application of restriction endonucleases.

10. Explain DNA footprinting and fingerprinting.

11. Describe in detail about the application of Genetic Engineering.