

Roll No. :

Total No. of Questions : 16]

[Total No. of Printed Pages : 3

BIOTSEM-137

M.Sc. (Ist Semester) Examination Dec., 2022

BIOTECHNOLOGY

Paper -BT-104

(Molecular Biology)

Time : 3 Hours]

[Maximum Marks : 40

The question paper contains three Sections.

Section-A (Marks : 1 × 10 = 10)

Note :- Answer all *ten* questions. Answer should not exceed **50** words. Each question carries **1** mark.

Section-B (Marks : 3 × 5 = 15)

Note :- Answer *five* questions by selecting at least *one* question from each Unit. Answer should not exceed **200** words. Each question carries **3** marks.

Section-C (Marks : 5 × 3 = 15)

Note :- Answer any *three* questions by selecting at least *one* question from each Unit. The answer should not exceed **500** words. Each question carries **5** marks.

Section-A

1. Define the following :

(i) Linking number

BRI-37

(1)

BIOTSEM-137 P.T.O.

- (ii) Introns
- (iii) DNA damage
- (iv) Satellite DNA
- (v) RNA polymerase
- (vi) Promoters
- (vii) Central Dogma
- (viii) Operon concept
- (ix) Oncogenes
- (x) Attenuation

Section-B

Unit-I

- 2. Explain chemical structure of DNA.
- 3. Discuss site specific recombination with example.
- 4. Write short note on supercoiled DNA.

Unit-II

- 5. How Transcription in Prokaryotes differs from Eukaryotes ?
- 6. Discuss various RNA polymerase involved in Eukaryotic transcription.
- 7. Explain post translation modification of Proteins.

Unit-III

- 8. Write short note on catabolite repression.
- 9. Explain the role of Tumor Suppressor genes.
- 10. What do you mean by antitermination ? Explain.

Section-C

Unit-I

- 11. Describe mechanism of DNA replication.
- 12. Explain about various repair system in DNA.

Unit-II

13. Discuss translation in Prokaryotes.
14. Give a detailed account on RNA Processing.

Unit-III

15. Describe Lac Operon model of gene expression.
16. Discuss various types of transposable elements and their importance.