

Roll No. :

Total No. of Questions : 16]

[Total No. of Printed Pages : 3

NBIO-168

M.Sc. (Ist Semester) Examination, 2023

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 :- The candidate is required to answer all the *ten* questions carries 1 mark each. The answer should not exceed **50** words.

Section-B

(Marks : 3 × 5 = 15)

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

Section-C

(Marks : 5 × 3 = 15)

Note :- The candidate is required to answer *three* questions by selecting *one* question from each Unit. Each question carries **5** marks. The answer should not exceed **500** words.

BRI-1050

(1)

NBIO-168 P.T.O.

Section–A

1. (i) Name the enzymes used in Replication.
- (ii) Write the name of the scientist who proved DNA replication is semi-conservative in nature.
- (iii) Define supercoiled DNA.
- (iv) What do you mean by Polyadenylation ?
- (v) Give the types of RNA polymerase enzymes used in eukaryotic transcription.
- (vi) Write the role of σ (sigma) factor in transcription.
- (vii) Who gave Operon Model ?
- (viii) Name tumor suppressor genes in man.
- (ix) Define Antitermination.
- (x) What is meant by Catabolic Repression ?

Section–B

Unit–I

2. Explain mechanism of Holliday model in Recombination.
3. Prove with any *one* experiment that DNA acts as a genetic material.
4. Write the mechanism of replication in Prokaryotes.

Unit–II

5. Give the mechanism of transcription in Prokaryotes.
6. Write a short note on Co and Post-translational Modification.
7. Write the inhibitors of transcription and translation.

Unit–III

8. Define Transposons. Write its types and give its importance in variation and evolution.
9. Write difference between positive and negative control regulation.
10. Write a short note on Tryptophan Operon Model.

Section–C

Unit–I

11. Write an essay on DNA damage and repair.
12. Write short notes on the following :
 - (a) Satellite DNA
 - (b) Inhibitors of DNA replication

Unit–II

13. Write the mechanism of RNA processing.
14. Write the difference between mechanism of translation in prokaryotes and eukaryotes.

Unit–III

15. Define Gene Expression. Write an essay on Operon Model.
16. Define Cancer. Give its types and treatments involved to treat cancer.