

2124

B.A./B.Sc. (General) Fifth Semester
Biochemistry
Paper -A: Molecular Biology – I

Time allowed: 3 Hours

Max. Marks: 45

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.

x-x-x

I. What is the difference between :-

- a) leading and lagging strand
- b) Topoisomerase I and topoisomerase II
- c) DNA polymerase I and DNA polymerase III
- d) Polycistronic and monocistronic mRNA
- e) Prokaryotic and eukaryotic Ribosomes
- f) LINE and SINE.

(6x1½)

UNIT - I

II. a) Discuss Extrachromosomal Genomes.

b) Describe the Experimental proof for DNA as genetic material.

(3,6)

III. Write short note on

- a) Heterochromatin and euchromatin
- b) Minisatellites and Microsatellites
- c) A-DNA and Z DNA.

(3x3)

UNIT - II

IV. a) Explain the mechanism of replication in and eukaryotes.

b) Explain the role of telomeres in DNA replication.

(6,3)

V. a) Explain photo reactivation DNA repair mechanism.

b) Describe holliday model of recombination.

c) Inhibitors of Replication

(3x3)

(2)

UNIT - III

VI. Write short notes on following:

- a) Spliceosome mediated splicing event in transcription
- b) Mechanism of termination of transcription using Diagrams
- c) Various inhibitors of Transcription

(3x3)

VII. Write short notes on

- a) Structure of prokaryotic promoters and Eukaryotic promoters
- b) Types of RNA polymerase in prokaryotes and Eukaryotes.
- c) mRNA editing

(3x3)

UNIT - IV

VIII. Explain

- a) Post translational modifications of proteins
- b) Mechanism and action of antibiotics on protein synthesis.
- c) Structure of tRNA

(3x3)

IX. a) Enlist the major features of genetic code.

b) Discuss the differences between prokaryotic and eukaryotic translation. (3,6)

x-x-x