

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. 1 which is compulsory and selecting one question from each Unit.

x-x-x

I. Briefly answer the following:-

- What are the differences between heterochromatin and euchromatin?
- Define nucleosome.
- Define leading, lagging strand and Klenow fragment.
- Define Rolling circle replication.
- Write the various inhibitors of translation and their site of action.
- What is TATA box and Pribnow box?

(6x1½)

UNIT - I

II. Define extranuclear genome. Explain various types of repetitive sequences present in eukaryotic genome. (9)

III. Describe topology of DNA. Discuss the function of various types of topoisomerases. (9)

UNIT - II

IV. Explain the protein and enzymes involved in DNA replication. (9)

V. Define Repair and proof reading. Discuss Nucleotide Excision repair and Base excision repair. (9)

UNIT - III

VI. Describe both prokaryotic and eukaryotic RNA polymerases. (9)

VII. What is splicing? Explain the addition of poly (A) tail and cap on pre -mRNA. How Pre tRNA is converted into functional tRNA? (9)

UNIT - IV

VIII. Explain the process of initiation of translation in prokaryotes and eukaryotes. Explain using Diagrams. (9)

IX. Explain the main features of genetic code and describe wobble hypothesis. (9)

x-x-x