Exam.Code:0005
Sub. Code: 0461

1127

B.A./B.Sc. (General) Fifth Semester

Bio-Chemistry

Paper - A: Molecular Biology – I

Time allowed: 3 Hours Max. Marks: 45

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

x-x-x

I. Attempt the following:-

a) What are okazaki fragments and Klenow fragment?

b) Define Topoisomerase and DNA Gyrase.

c) Write down the function of various types of RNA.

d) What do you mean by Degeneracy of Genetic Code?

e) Define Spliceosome.

f) What are Consensus and Conserved sequences? (6x1½)

UNIT – I

II. Write short note on following:-

a) A, B, Z Types of DNA

b) Heterochromatin and Euchromatin (5,4)

III. a) Describe the experiment to prove DNA as genetic Material.

b) Explain briefly Organization of Eukaryotic genome. (5,4)

UNIT – II

IV. Describe Prokaryotic DNA replication. Also Explain the Role of Telomeres in eukaryotic replication. (9)

V. Describe the following:-

a) Various types of Mutations

b) Experiment to prove DNA Replication is semi-conservative (5,4)

UNIT – III

VI. Write Short notes on following:-

a) Prokaryotic and Eukaryotic RNA Polymerases

b) Role of Transcription factors (5,4)

P.T.O.

VII. Write short notes on following:-
   a) Alternative Splicing
   b) mRNA Editing (4,5)

UNIT – IV

VIII. a) Explain the process of Amino acid Activation

b) Write Down the Difference between prokaryotic and Eukaryotic Translation (4,5)

IX. Write notes on:-
   a) Structure of tRNA
   b) Wobble Hypothesis (5,4)

x-x-x