Exam.Code:0439
Sub. Code: 3491

1129

M.Sc. (Bio-Informatics) First Semester
MBIN-8003: Fundamentals of Modern Biology

Time allowed: 3 Hours **Max. Marks: 60**

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

x-x-x

I. Answer the following briefly:-

a) Okazaki fragments

b) σ subunit of RNA polymerase

c) Exon shuffling

d) Colony hybridization

e) Genetic code

f) Transcription factors

g) Replication fork

h) Phagemids (8x1½)

UNIT – I

II. Discuss the initiation, elongation and termination of transcription in prokaryotes. (12)

III. a) Explain the different components of DNA and RNA.

b) How are the ends of the eukaryotic chromosomes replicated? (2x6)

UNIT – II

IV. a) Discuss the working of the splicosome machinery.

b) What is the role and significance of RNA editing? (8,4)

V. a) Explain the phenomenon of attenuation in Tryp Operon.

b) Write a note on the secondary and tertiary structure of t-RNA. Draw labeled diagram. (2x6)

UNIT – III

VI. a) Differentiate between Genomic and cDNA Libraries.

b) Elaborate on the different types of DNA modifying enzymes. (2x6)

P.T.O.

VII. a) Write a note on principle and applications of Polymerase Chain reaction.

b) Discuss the generation of in frame fusion proteins for expression in *E. coli.* (2x6)

x-x-x