Exam.Code:5143
Sub. Code: 14322

2125

B.Sc. (Hons.) Bioinformatics (FYUP)
Third Semester
BIFD-303: Fundamentals of Molecular Biology
(Common with B.Sc. Biotechnology 3rd Semester NEP)

Time allowed: 3 Hours Max. Marks: 60

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

x-x-x

I. Give answer in a very short:-

a) Give name of one enzyme involved in DNA replications.
b) Give names of two post-transcription modifications of RNA.
c) Write the names of two proteins involved in gene expression.
d) Outcomes of RNA splicing.
e) Gives name of two modified nucleotides present in tRNA.
f) Two functions of rRNAs.
g) Jumping gene.
h) Give names of stop codons.
i) Give name of a trigger for DNA repair.
j) What is the Activator?
k) Where is CAAT box present?
l) *Lac* operon is linked with which nutritive molecule (12x1)

UNIT - I

II. a) Briefly describe the semi-conservative DNA replication.
b) Name the enzyme responsible for unwinding the DNA double helix and explain its function briefly. (2x6)

III. a) Explain the function of RNA polymerase in prokaryotic transcription.
b) Describe in brief about eukaryotic mRNAs features. (2x6)

IV. a) What is the role of the sigma (σ) factor in prokaryotic transcription?
b) Write the main benefits of mRNA stability. (2x6)

P.T.O.

UNIT - II

V. a) Write in brief about the roles of genetic code.

b) Write a short note on structure and functions of tRNA. (2x6)

VI. a) Explained in brief about the *Lac* operon.

b) Describe the Base excision repair (BER). (2x6)

VII. a) Write a short note on splicing of RNA and its benefits to cell.

b) What is the initiation stage of translation in prokaryote? (2x6)

x-x-x