Exam.Code:0041
Sub. Code: 18000

2124

B.Sc. (Hons.) Bio-Informatics

Third Semester

BIN-3001: Fundamentals of Molecular Biology

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. Answer the following:-

a) What is the function of DNA polymerase III?

b) Briefly explain SOS repair.

c) What is the importance of sigma factor in RNA synthesis?

d) How do acridine dyes cause mutations?

e) Why is the genetic code degenerate?

f) Briefly explain catabolite repression. (6x2)

UNIT - I

II. a) Differentiate between mechanism of prokaryotic and eukaryotic DNA replication.

b) Discuss 5' CAP formation of RNA. (8,4)

III. a) Differentiate between semi-conservate mode and dispersive mode of DNA replication.

b) What is photo-reactivation repair? (2x6)

IV. a) Discuss mechanism of transcription.

b) Differentiate between leading and lagging DNA stands synthesis. (8,4)

UNIT - II

V. a) Explain regulation of a repressible operon.

b) What are transposons and their importance? (8,4)

VI. a) Discuss Wobble hypothesis and its importance.

b) Write a note on constitutive synthesis of enzymes. (8,4)

VII. a) Discuss Lac operon and its regulation.

b) Draw a well labelled diagram of a tRNA molecule. (8,4)

x-x-x