

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) Briefly explain SOS repair.
- b) What is the need of 5' CAP in mRNA?
- c) What is genetic code degenerate?
- d) What are frame shift errors?
- e) Name an inducible Operon and briefly explain its regulation.
- f) What is OriC?

(6x2)

UNIT - I

II. a) Discuss mechanism of transcription.

b) Write a note on nuclear export of mRNA and mRNA stability.

(8,4)

III. a) Discuss mechanism of replication in eukaryotes.

b) What is post-replication repair?

(8,4)

IV. Write notes on the following:-

a) Photo-reactivation repair

b) 3'end polyadenylation

c) Experimental proof of semi-conservative mode of DNA replication

(3x4)

UNIT - II

V. a) Explain Trp operon and its regulation.

b) What are transposable elements and their importance?

(8,4)

VI. Write note on the following:-

a) Constitutive synthesis of enzymes

b) Reversion and suppression

(2x6)

VII. a) Discuss mechanism of transcription in eukaryotes.

b) Enlist various types of mutagenic agents.

(8,4)

x-x-x