Exam.Code:0006
Sub. Code: 0556

1059

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

Bio-Chemistry

Paper – A: Molecular Biology –II

Time allowed: 3 Hours Max. Marks: 45

NOTE: *Attempt five 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 is operon?

b) What is lysogenic mode of infection?

c) How are transcription factors activated?

d) Differentiate between eukaryotic and prokaryotic mRNAs.

e) Define vector.

f) What is yeast gal gene?

g) Discuss SNPs.

h) Define DNA profiling.

i) What are Chaperones? (9x1)

UNIT – I

II. a) Describe the functioning and importance of lac-operon.

b) Write about bacterial virus structural organization and discuss its life cycles. (4,5)

III. a) Discuss protein targeting and translocation to different cell organelles.

b) Discuss specific and non-specific DNA-protein interactions. (5,4)

UNIT – II

IV. a) Discuss in detail the various factors involved in the transcription regulation along with the role of antibiotics in the process.

b) How hormones control transcription? (7,2)

V. Write short notes on:-

a) TATA box

b) Transcription bubble

c) Helix-turn-helix motifs (3x3)

P.T.O.

UNIT - III

VI. a) Give a detailed account of isolation and purification of genomic DNA from higher eukaryotes.

b) Elaborate the different steps of construction of genomic libraries? (5,4)

VII. a) Explain in detail about filamentous phage vector.

b) Discuss developmental genetics in *Drosophila.*

c) Explain Ri and Ti plasmid. (3x3)

UNIT – IV

VIII. Write short note on:-

a) Transcriptome

b) Exon shuffling

c) Proteome (3x3)

IX. a) What are microarrays? Write their use.

b) Discuss the principle and applications of DNA finger printing technique. (5,4)

x-x-x