

Exam.Code:0006
Sub. Code: 0556

1058

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. a) Define the following:-

- i) Zinc fingers
 - ii) Regulative development and mosaic development
 - iii) Inducer
 - iv) Restriction endonucleases
 - v) Transposable elements
- b) Which is the stronger bond A-T or G-C.? Why?
- c) DNA ligase is used to join two DNA ends together. How is it used in cloning?
- d) Why is blunt end ligation less efficient than sticky end ligation?
- e) Write mating types in yeast life cycle. (9x1)

UNIT – I

- II. a) Write the mechanism of gene regulation in tryptophan operon.
- b) Describe the process of protein folding and processing. (5,4)
- III. a) How is the balance between lytic cycle and lysogeny maintained in phage lambda?
- b) What are chaperons? Write briefly their function (6,3)

UNIT – II

- IV. a) Describe different mechanisms known for regulation of gene activity at the translational level in eukaryotes.
- b) What are histone and non histone proteins? (6,3)
- V. a) What are signal transduction pathways?
- b) Write short note on leucine zippers. (5,4)

P.T.O.

(2)

UNIT - III

- VI. a) What is gene library? Describe the procedure for the preparation of cDNA libraries.
b) Discuss different kinds of vectors available for gene cloning. What are their advantages over one another? (4,5)
- VII. a) Discuss isolation of genes in prokaryotes.
b) Discuss developmental genetics in *Drosophila*. (4,5)

UNIT - IV

- VIII. Write a short note on:-
a) DNA finger printing
b) Genome sequencing
c) Microarray (3x3)
- IX. a) What are SNPs?
b) Write the role of SNPs in diseases and forensics. (3,6)

x-x-x