Exam.Code:0001
Sub. Code: 0085

2123

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

Industrial Microbiology

IMB-102: Microbial Genetics and Molecular Biology

Time allowed: 3 Hours

Max. Marks: 33

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

x-x-x

I. Write in brief:-

a) Characteristics of genetic code

b) Reverse transcriptase

c) Auxotrophs

d) Cosmids

e) Spontaneous mutations

f) Photoreactivation (6x1½)

UNIT - I

II. a) Explain the structure of DNA and how is it different from RNA?

b) Discuss the initiation of replication process in both prokaryotes and eukaryotes? (3,3)

III. Discuss the process of initiation, elongation and termination of translation in prokaryotes? (6)

UNIT - II

IV. a) Define mutations? Explain what is forward and reverse mutations? What are resistant mutations?

b) Describe the replica plating and other techniques for selection of mutants? (3,3)

V. Discuss the various chemical mutagens and their mode of action? (6)

UNIT - III

VI. Explain the process of natural Transformation and Transduction? (6)

VII. Discuss the process of production of recombinant proteins in yeast with examples? (6)

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UNIT - IV

VIII. What is extra chromosomal genetic material? Describe the structural and functional difference between Cosmids and transposons? (6)

IX. Discuss what is amplified genomic library? How are desired clones identified? (6)

x--x-x