(i) Printed Pages : 2 Roll No. .....

(ii) Questions : 9 Sub. Code : 0 0 8 4

Exam. Code : 0 0 0 1

B.A./B.Sc. (General) 1st Semester

1125

INDUSTRIAL MICROBIOLOGY (Elective)

Paper : IMB–102 : Microbial Genetics and Molecular Biology

Time Allowed : 3 Hours] [Maximum Marks : 33

Note :– Attempt **five** questions in all. Question 1 is compulsory. Attempt only **one** question from each Unit.

1. Compulsory Question :

   (i) What are Auxotrophs ?

   (ii) Use of reverse transcriptase.

   (iii) What is capping of RNA ?

   (iv) What are Okazaki fragments ?

   (v) What is Point Mutation ?

   (vi) Name the scientist who discovered transposons. 1.5×6=9

UNIT–I

2. (a) Describe the structure and properties of DNA. 3

   (b) What do you understand by semi-conservative replication of DNA ? Describe the experiment which proved that DNA replication is semi-conservative. 3

3. (a) Describe the structure and function of RNA polymerase in transcription of prokaryotes. 3

(b) What is rho factor and what role does it play in termination of transcription ? 3

UNIT–II

4. (a) What do you understand by spontaneous and induced mutation ? 3

(b) Describe the replica plating technique for mutant selection. 3

5. (a) What are mutagenic agents ? Give example of chemical mutagens. 3

(b) How are mutants detected and isolated ? 3

UNIT–III

6. What is the difference between transduction and transformation of bacteria ? 6

7. List the major recombinant proteins produced in bacteria. 6

UNIT–IV

8. (a) What are Cosmids and what is their use ? 4

(b) What is the use of multiple cloning sites in any vector ? 2

9. (a) How is subgenomic library prepared ? 3

(b) Give any one method for identification of desired clones from the transformed colonies ? 3