AU–123

## B.Sc. (Part—II) Semester—IV Examination

## BIOTECHNOLOGY (R/V)

### (Genetic Engineering and Microbial Biotechnology)

Time : Three Hours] [Maximum Marks : 80

**N.B.** :— (1) **All** questions are compulsory.

(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

(i) Transcription in prokaryotes is terminated by _____ factor.

(ii) Cosmid vector is a combination of plasmid and _____.

(iii) Interferon interferes with multiplication of _____.

(iv) Organism involved in alcohol fermentation is _____. 2

(B) Choose the correct alternative :

(i) Southern blotting is used for :

(a) Detection of DNA fragment (b) Detection of protein

(c) Detection of amino acids (d) Detection of carbohydrates

(ii) Kornberg enzyme is also known as :

(a) RNA polymerase (b) DNA polymerase I

(c) Alkaline phosphatase (d) Ligase

(iii) Which of the following organism is involved in bioleaching of copper ?

(a) E.coli (b) Proteus vulgaris

(c) Thiobacillus (d) Thermus aquaticus

(iv) Which of the following is a fungal pesticide ?

(a) Penicillium notatum (b) Aspergillus niger

(c) Alternaria (d) Beavueria 2

(C) Answer in **one** sentence each :

(i) Vaccine

(ii) Plasmid

(iii) Degenerate code

(iv) Lac repressor. 4

2. Explain :

(a) Nucleotides of DNA 4

(b) DNA damage 4

(c) Transposon. 4

**OR**

(d) Initiation and Termination codons 4

(e) Nitrogenous bases of DNA 4

(f) Dark repair of DNA. 4

3. Describe in detail Lac operon. 12

**OR**

Describe in detail prokaryotic transcription. 12

4. Describe :

(a) Isolation of genomic DNA 4

(b) Bacterial plasmid vector 4

(c) Colony hybridization. 4

**OR**

(d) PCR 4

(e) Cosmids 4

(f) Applications of Southern Blotting. 4

5. Describe :

(a) Erythropoietin 4

(b) Dextran 4

(c) Recombinant hepatitis vaccine. 4

**OR**

(d) Insulin 4

(e) Interferon 4

(f) Amino acids in medicine. 4

6. Explain :

(a) Differences between batch and continuous fermentation 4

(b) Recovery of penicillin 4

(c) Uses of citric acid. 4

**OR**

(d) Uses of amylase 4

(e) Mechanism of alcohol fermentation 4

(f) Fluidized bed reactor. 4

7. Describe in detail bioleaching of ores. 12

**OR**

Describe in detail aerobic wastewater treatment. 12