

5. Describe in detail Commercial Production of SCP and give its application. 12

OR

What is insulin ? Describe in detail the industrial production of Hormone insulin. 12

6. Describe in brief industrial production of the following from Actinomycetes :

- (a) Enzymes—Primary metabolite. 4
(b) Insecticidal—Secondary metabolites. 4
(c) Amino acids—Primary metabolite. 4

OR

- (d) Vitamins—Primary metabolite. 4
(e) Siderophores—Primary metabolite. 4
(f) Antiviral—Secondary metabolite. 4

7. Describe in detail production of Yogurt and give its medicinal application. 12

OR

Define Prebiotics, Probiotics and Symbiotics.

What are the various types of Probiotics and give their beneficial characteristics. 12

AP-507

B.Sc. (Part—III) Semester—V Examination

5S : INDUSTRIAL MICROBIOLOGY

(Industrial Biotechnology)

Time—Three Hours]

[Maximum Marks—80

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

(2) Draw neat and well labelled diagrams wherever necessary.

1. (A) Fill in the blanks : 2

- (i) One of the termination codon is _____.
(ii) Sex factors are coded on _____ plasmid.
(iii) In PCR, the enzyme _____ is used for DNA amplification.
(iv) Enzymes used in cutting DNA molecule are known as _____.

- (B) Choose correct alternative : 2

- (i) The technique of Maxam Gilbert is used for _____.
(a) DNA sequencing
(b) Microinjection
(c) Macroinjection
(d) Colony Hybridization

(ii) Select a method of gene transfer :

- (a) Replication
- (b) Electrophoresis
- (c) Transformation
- (d) All of the above

(iii) Hepatitis vaccine is used for :

- (a) Jaundice
- (b) Cholera
- (c) Typhoid
- (d) None of the above

(iv) Streptomycin is :

- (a) Antibacterial
- (b) Antiviral
- (c) Both
- (d) None

(C) Answer in **ONE** sentence :

- (i) Genetic engineering
- (ii) Gene therapy
- (iii) Interferon
- (iv) Ketir.

2. Describe in brief :

- (a) Southern Blotting. 4
- (b) Exo and Endo nucleases. 4
- (c) Plasmid—cloning vehicle. 4

OR

- (d) Agarose Gel Electrophoresis. 4
- (e) DNA manipulating enzymes. 4
- (f) Bacteriophages—cloning vehicles. 4

3. (a) Discuss Electroporation. 4

- (b) Colony hybridization. 4
- (c) Maxam Gilbert technique. 4

OR

- (d) Explain in brief mechanism of transduction. 4
- (e) DNA chips and its application. 4
- (f) Genomic DNA Library. 4

4. Describe in brief :

- (a) Ames test. 4
- (b) Antibiotic resistant mutants. 4
- (c) Analogue resistant mutants. 4

OR

- (d) Auxotrophic mutants. 4
- (e) Mutant resistant to toxic compounds. 4
- (f) Enlist various genetic techniques in strain improvement. 4