4. Explain :

(a) Cosmids. 4

(b) Colony Hybridization. 4

(c) cDNA library. 4

OR

(d) DNA ligase. 4

(e) What are plasmids ? How plasmids are isolated from cell. 4

(f) Bacteriophages. 4

5. Explain in detail the production of Recombinant Insulin.

OR

Explain in detail the production of any one Recombinant vaccine. 12

6. Explain :

(a) Batch Fermentation. 4

(b) Gluconic acid fermentation. 4

(c) UASB Bioreactor. 4

AR – 576

Fourth Semester B. Sc. (Part – II) Examination

4 S : BIOTECHNOLOGY (R/V)

Genetic Engineering and Microbial Biotechnology

P. Pages : 5

Time : Three Hours] [Max. Marks : 80

Note : (1) All questions are compulsory.
(2) Draw neat and labelled diagrams wherever necessary.

1. (A) Fill in the blanks :—

(i) Removal of _____ is called as splicing.

(ii) In citric acid fermentation _____ organism is used.

(iii) _____ is an example of Sulphur containing amino acid.

(iv) _____ enzyme is used for joining fragments of DNA. 2

(B) Choose the correct alternative :—

(i) Molecular scissors are _____

(a) DNA polymerase.

(b) Restriction endonuclease.

(c) Topoisomerase.

(d) DNA ligase.

(ii) Thymidine dimer is formed due to _____

(a) Acridine orange

(b) UV light

(c) Nitrous oxide

(d) EDTA.

(iii) The organism used for Recombinant insulin preparation _____

(a) **E. Coli.**

(b) Saccharomyces cerevisiae.

(c) Saccharomyces pombe

(d) None of the above.

(iv) _____ is an initiation codon in protein synthesis process.

(a) GUG

(b) CUG

(c) UUG

(d) AUG 2

(C) Answer in **one** sentence :—

(i) Define translation.

(ii) What is Genetic code ?

(iii) Give the long form of PCR.

(iv) Define bioleaching. 4

2. What is Recombination ? Describe holiday model of homologous recombination.

OR

What is genetic code ? Describe in detail characteristics of genetic code. 12

3. Explain :

(a) Lac operon structure. 4

(b) RNA splicing. 4

(c) Amino acyl + RNA synthetase. 4

OR

(d) RNA polymerase. 4

(e) Termination stage of transcription. 4

(f) Polyadenylation. 4

OR

(d) Flow sheet diagrams of Alcohol fermentation. 4

(e) Fluidized bed reactor. 4

(f) Continuous fermentation. 4

7. Explain :

(a) Anaerobic waste water treatment. 4

(b) Biopesticides. 4

(c) Biogas production. 4

OR

(d) Microbial bioremediation. 4

(e) Bioleaching of iron ore. 4

(f) Oxidation pond. 4

www.sgbauonline.com