

## B.Sc Sem.-6 (Rep) Examination

CC 307

Microbiology

September-2024

Time : 2-30 Hours]

[Max. Marks : 70

**Instructions:**

1. All questions are compulsory.
2. Figures on the right indicates marks.
3. Mention correct question number against the answer.
4. Draw figures wherever necessary.

**Q.1** Enlist different criteria for selection of cloning vector and explain cosmid vector in detail. (14)

**OR**

**Q.1 (A)** Discuss Fundamental steps of rDNA technology. (07)

**(B)** Describe the major function of enzymes terminal transferase and alkaline Phosphatase in genetic engineering. (07)

**Q.2** Describe Principle, method and applications of Southern blotting technique. (14)

**OR**

**Q.2 (A)** Write a Short note on Sanger's dideoxy chain termination method. (07)

**(B)** Discuss method and applications of Site directed Mutagenesis. (07)

**Q.3** Describe the construction of cDNA library and their applications in rDNA technology. (14)

**OR**

**Q.3 (A)** Discuss the role of reporter genes in selection of recombinant clone. (07)

**(B)** Write a Short note on "Linkers and Adaptors". (07)

**Q.4** Transgenic plants resistant to insect pests can be developed with the help of rDNA technology-explain. (14)

**OR**

**Q.4 (A)** Describe the application of rDNA technology in production of recombinant Insulin. (07)

**(B)** Metagenomics provides access to uncultured microbes-elaborate. (07)

**Q.5 Give short and specific answers in 1-2 lines only (any seven).** (14)

- 1 Give any two examples of selectable marker genes.
- 2 Define shuttle vector give suitable examples.
- 3 Write down the applications of Green Fluorescent Protein in genetic engineering.
- 4 What is an Oligonucleotide probe?
- 5 Enlist any two enzymes used in Polymerase Chain Reaction.
- 6 Define DNA microarray.
- 7 What is phosphoramidite?
- 8 How homopolymer tailing method works during cloning.
- 9 Give any two applications of protoplast Fusion technique in genetic engineering.
- 10 Define ELSI.
- 11 What is Bt toxin?
- 12 Define satellite RNA.