

Seat No. : _____

AB-116

April-2023

B.Sc., Sem.-VI

CC-307 : Microbiology (Genetic Engineering)

Time : 2:30 Hours]

[Max. Marks : 70

- Instructions :** (1) All questions are compulsory.
(2) Figures on the right indicate marks.
(3) Mention correct question number against the answer.
(4) Draw figures wherever necessary.

1. Give general steps for gene cloning with detailed functions of enzymes. **14**
OR
(A) Define vector and give a brief idea about pBR 322. **7**
(B) Write a note on properties of good host. **7**
2. Describe different types of PCR techniques. **14**
OR
(A) Describe Sanger's di-deoxy chain termination gene sequencing method in detail. **7**
(B) Write a detailed note on southern blotting. **7**
3. How is rDNA transferred into suitable non-bacterial host cells ? **14**
OR
(A) Write a note on genomic library. **7**
(B) Write a note on Colony hybridization. **7**
4. Note down the ethical, legal and social impacts of rDNA technology. **14**
OR
(A) Discuss in detail about production and medical application of insulin. **7**
(B) Define meta-genomics and note down its application in environmental biotechnology. **7**

5. Answers the following in **1-2** lines : (any 7)

14

- (1) Mention elements contained in YEP 13.
 - (2) Define Palindrome sequence with examples.
 - (3) Draw neat model of Cosmid.
 - (4) Define: Hybridization probe with application.
 - (5) What is next generation sequencing ?
 - (6) What are DNA chips ? Give one application of DNA chips.
 - (7) Which chemical stimulates the uptake of naked DNA by protoplast ? What is the application of protoplast fusion in rDNA technology ?
 - (8) Explain role of Xgal with full form of the same.
 - (9) Give application of marker gene with example.
 - (10) Give the name of antigen used for Hepatitis B vaccine production.
 - (11) Give 2 examples of GMO food.
 - (12) Give 2 examples of transgenic plant.
-