

M.Sc. (Micro) Semester - 3 (CBCS) Examination
Oct/Nov. -2019 – [NEW COURSE]
Genetic Engineering and Protein Engineering (Core)

Time: 2:30 Hours

Marks: 70

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

SECTION-I

1. Answer the following

- A. Write a note on types of restriction modification system. 07
B. Write a note on restriction endonuclease and mention its molecular properties. 07

OR

1. Explain types of enzymes used in genetic engineering. 14

2. Answer the following

- A. Explain the phagemids as vector and mention its advantages. 07
B. Write a short note on YAC. 07

OR

2. Describe the lambda phage with suitable figure. 14

3. Do as direct (any seven out of eight questions each of one marks)07

1. What is shuttle vector?
2. Application of DNA ligase.
3. Define Blue-white screening.
4. Explain multiple cloning site.
5. Draw the molecular map of pUC18.
6. Define: IPTG.
7. List various types of DNA polymerase.
8. How restriction endonuclease is useful in molecular biology?

SECTION-II

1. Explain nucleic acid blotting techniques. 14

OR

1. Answer the following

- A. How to construct the cDNA Library? Explain. 07
B. Describe the chemical transformation techniques in bacteria. 07

2. What is DNA microarray? Describe in detail. 14

OR

2. Answer the following

- A. Write short note on protein engineering. 07
B. Write a note on phage display techniques. 07

3. Do as direct (any seven out of eight questions each of one marks)07

1. What is role of GMO in genetic engineering?
2. List various types of protein purification techniques.
3. Explain electroporation.
4. What is hybridization? explain in brief.
5. What is site directed mutagenesis?
6. How to enhance protein recovery?
7. Discuss the application of therapeutic protein.
8. Mention the application microarray.
