

M.Sc. (Micro) Semester - 3 (CBCS) Examination**DEC/JAN. - 2020 - [NEW COURSE]****Genetic Engineering and Protein Engineering (Core (New))****Time: 1:30 Hours****Marks: 42****Instructions:**

1. Figure to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any three of the following questions.
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Que-1 Answer the following (Any seven out of Ten, each of 02 marks)**[14]**

1. What are the stages of cloning?
2. What is a recombinant product?
3. What does a phosphodiesterase do?
4. What are cosmid vectors?
5. What is PAC vector?
6. What are cDNA libraries used for?
7. How do marker genes work?
8. What is the use of protein engineering?
9. How do you design a site directed mutagenesis primer?
10. What is the principle of Western blotting?

Que-2 Answer the following (each of 07 marks) (Any Two)**[14]**

- a. Write a note on enzymes used in genetic engineering
- b. What are different types of restriction endonucleases?
- c. Write a note on reverse transcriptase

Que-3 Answer the following (each of 07 marks) (Any Two)**[14]**

- a. Write a brief note on plasmid as a vector
- b. What is lambda phage? Why and how it is used as vector?
- c. Write a note on YAC

Que-4 Answer the following (each of 07 marks) (Any Two)**[14]**

- a. Write a note on biosafety guideline for handling GMOs.
- b. Explain sequence dependent screening
- c. Write a note cDNA Synthesis.

Que-5 Answer the following (each of 07 marks) (Any Two)**[14]**

- a. What is DNA microarray? Give its applications.
- b. How protein engineering is used to stabilize industrial enzymes?
- c. Write a note on site directed mutagenesis.
