No. of Printed Pages : 03 **Roll No. .....**

BB-333

M. Sc. EXAMINATION, May 2017

(Second Semester)

(Main & Re-appear)

BT-506-MS

BIOTECHNOLOGY

Genetic Engineering-I

Time : 3 *Hours*] [*Maximum Marks :* 100

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Write the mode of action of DNA polymerase and terminal transferase. **10**

(b) Discuss Restriction endonuclease enzyme and their types in detail. **10**

2. What are the Primers ? How they are designed in PCR ? Give stepwise illustration for amplification of genes by PCR and their application. **20**

3. Write short notes on the following : **5×4=20**

(a) Linkers and adapters

(b) CDNA library

(c) HRT

(d) T_4 DNA ligase.

Unit II

4. (a) What is genomic library and how it could be constructed ? **10**

(b) Discuss different methods of gene isolation in detail. **10**

5. (a) Give an comparative analysis of inverse and RT-PCR technique. **12**

(b) What are different types of Radioactive labelling ? How these are used as probes ? **8**

6. (a) How inclusion bodies produced in bacterial cell by RDT could be converted into functional proteins ? **10**

(b) Discuss different methods of transfections in mammalian cells. **10**

Unit III

7. (a) What are different application of RDT technique in plant biotechnology ? **10**

(b) Discuss the principles and application of northern and western blotting. **10**

8. Explain the following briefly : **20**

(a) RFLP

(b) miRNA

(c) BAC Vector

(d) PAGE.