Enrollment No. _____

**Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous), Rajkot**

Affiliated to Saurashtra University, Rajkot

**SEMESTER END EXAMINATION NOVEMBER - 2017**

**M.Sc. Biotechnology**

**16PBTCC09 – GENETIC ENGINEERING**

***Duration of Exam – 3 hrs*** ***Semester – III*** ***Max. Marks – 70***

***Part A (5x2= 10 marks)***

Answer **ALL** questions

1. The Bam HI restriction endonuclease will cut the DNA sequence after _____ base pairs.
2. Define shuttle vector.
3. What is Capture method?
4. Give 2 examples of radiolabel probes.
5. Give 2 applications of RFLP.

***Part B (5x5 = 25 marks)***

Answer **ALL** questions

6a. Explain the mechanism of Ligases.

**OR**

6b. Explain the Restriction modification system.

7a. Explain the YAC vector.

**OR**

7b. Write a brief about phagemids.

8a. Define genomic library. Explain one method.

**OR**

8b. Write a note on nonradiolabelled probes.

9a. Explain the phenomenon of South-Western and North-Western screening.

**OR**

9b. Explain the blue white screening.

10a. What is PCR? Explain the features and steps in PCR.

**OR**

10b. Define Marker . Explain the RFLP.

***Part C*** ***(5x7 = 35 marks)***

Answer **ALL** questions

11a. Explain about the DNA polymerase enzyme.

**OR**

11b. Explain the enzyme alkaline phosphatases.

12a. What is Bacteriophage vector? Give 2 examples of Bacteriophage vector.

**OR**

12b. Give a detail account of Expression Vector.

13a. Write a detail note on c-DNA Synthesis & cloning.

**OR**

13b. Explain the phenomenon of RACE.

14a. Explain the Screening of expression libraries.

**OR**

14b. Explain subtractive cloning.

15a. Define DNA sequencing. Explain its types.

**OR**

15b. Explain any 2 Applications of Genetic engineering.