



Dr. MPS GROUP OF INSTITUTIONS

DEPARTMENT OF BIOTECHNOLOGY

QUESTION BANK

M.SC IIIRD SEMESTER EXAMINATION
SUBJECT: GENETIC ENGINEERING

FACULTY NAME: DR. PRAVAL PRATAP

(Each question carries 15 marks.)

01. What are restriction enzymes?
02. Why plasmids are good cloning vectors? Explain about the Insertion vectors and replacement vectors
03. Differentiate between jumping and cloning libraries.
04. Write any two applications of PCR.
05. Which are the key features required for a DNA polymerase for polymerase chain reaction?
06. What is meant by knock out mouse?
07. What is gene therapy?

08. Differentiate between the following
 - a) Ti vectors and Ri vectors
 - b) Cosmids and phagemids
 - c) YACs and BACs

09. a) Explain fluorescence insitu hybridization
b) Explain chromatin immunoprecipitation.

10. Describe the construction of a genomic library. What are the applications?

11. a) Discuss c DNA cloning.
b) Explain the insertion of foreign DNA in to host cells.

12. Write short notes on the following
 - d) Reverse transcriptase PCR
 - e) Nested PCR
 - f) Real time PCR
 - g) Touch down PCR

13. a) Explain the design of primers for PCR.
b) Explain site specific mutagenesis.

14. Explain the chemical sequencing of DNA, its applications, advantages and disadvantages.

15. Explain gene silencing techniques, principle and applications of gene silencing.