



AAN-481

Seat No. _____

B. Sc. (Sem. V) Examination

October/November - 2016

Microbiology : MI-504

(r-DNA Technology)

Time : 3 Hours]

[Total Marks : 70

- 1 (a) Answer any two : 15
- (1) Scope of Genetic Engineering.
 - (2) How Recombinant DNA is prepared ?
 - (3) Milestone in bio-technology.
- (b) Define the following : 2
- (a) Palindrome sequence
 - (b) Clone.
- 2 (a) Discuss the following : (any two) 15
- (a) Application of DNA ligase. Alkaline phosphatase and DNA-Polymerase in Gene-cloning.
 - (b) Role of plasmids and bacteriophages as cloning vector.
 - (c) Reverse transcriptase in Gene-cloning.
- (b) Define the following : 2
- (a) TAQ-Polymerase.
 - (b) Draw genetic map of P^{BR} 322.

- 3 (a) Describe the following : (any two) 15
- (a) Yeast - E.Coli shuttle vector.
 - (b) Electroporation and liposome mediated gene-transfer
 - (c) Ti-Plasmid.
- (b) Define/Explain the following : 3
- (a) What is colony-hybridization ?
 - (b) What is site-directed mutagenesis ?
 - (c) Name any two techniques used for Gene transfer in animals.

- 4 (a) Answer any one : 15
- Applications of R-DNA technology in the field of medical science.

OR

- Enlist various application sectors of R-DNA technology and discuss its role in Environmental sustainability and Genetically modified crop production.
- (b) Define/answer in brief : 3
- (a) What is Recombinant vaccine ?
 - (b) Name the organism used for production of vitamin B₁₂.
 - (c) What is Bioreactor ?