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**RAN-2203000206026001**

**T.Y.B.Sc. (Micro) (Sem. VI) Examination March - 2025**

**Microbiology**

**MB 601: Genetic Engineering**

**Time: 2 Hours ]**

**[ Total Marks: 50**

**સૂચના : / Instructions**

(૧)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:  
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Name of the Subject :  
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Subject Code No.:

Seat No.:

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Student's Signature
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- (2) Figures to the right indicate full marks of the question  
(3) Draw neat and labeled diagrams whenever necessary.

**Q-1. Give the specific answers**

**08**

- Who developed the techniques for gene mapping?
- Write the full form of TNF and LT.
- State the role of ligase in Gene cloning.
- Define cloning vectors.
- Enlist two most appropriate vectors name used for construction of genomic library.
- State that which salts is used to create competent cells for transformation
- State two examples of recombinant pharmaceuticals
- Elaborate CODIS.

**Q-2. Explain/comment on ANY TWO of the following.**

**14**

- Comment on - "Various Enzymes are used for gene cloning".
- Justify: Insertion of phage DNA into bacterial cells can be achieved by two different methods.
- Explain the Cloning of  $\delta$ -endotoxin genes in chloroplasts.

**RAN-2203000206026001 ]**

**[ 1 ]**

**[ P.T.O. ]**

**P0130**

**Q.2. Answer the following. (ANY TWO) 14**

- a. Write a detailed note on Potential applications of genetic engineering
- b. Describe Phagemid vectors in detail.
- c. Discuss in detail about Colony and Plaque hybridization methods

**Q-4. Write short note on ANY TWO of the following. 14**

- a. Conventional breeding technique for Gene manipulation
  - b. pBR322 vector
  - c. Production of recombinant insulin
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