

[This question paper contains 3 printed pages.]

1974

Your Roll No. ....

**B.Sc. Prog./III**

**E**

EL-310 (iii) BIOTECHNOLOGY

(Admissions of 2005 and onwards)

*Time : 2 Hours*

*Maximum Marks : 38*

*(Write your Roll No. on the top immediately  
on receipt of this question paper.)*

*Attempt any four questions in all.*

*Question no. 1 is compulsory.*

1. (a) Discuss in detail (any one):
  - (i) The role of transgenic plants in agriculture.
  - (ii) The advantages and disadvantages of different types of fermenters. (4)
- (b) Expand the following acronyms (any eight):
  - (i) DBT
  - (ii) ADA
  - (iii) SCP

P.T.O.

(iv) IPM

(v) IgG

(vi) RFLP

(vii) FISH

(viii) CMV

(ix) HGPRT

(x) ELISA

(0.5×8=4)

2. Differentiate between the following (any **four**):

(i) Type II and Type III Restriction endonucleases

(ii) Southern Blot and Western Blot

(iii) Somatic embryo and Zygotic embryo

(iv) Physical and Biological containment

(v) Phagemid and Cosmid

(vi) Filtration and Centrifugation

(2.5×4=10)

3. Write short notes on any two of the following:

(i) Hybridoma technology

(ii) Biofertilizers

(iii) Cloning vectors

(5×2=10)

4. (a) What is gene therapy? Explain in detail with suitable examples. (6)
- (b) Discuss the techniques used for protoplast fusion. What are the applications of protoplast fusion? (4)
5. (a) Define the following terms:
- (i) Recombination
  - (ii) Somatic cell hybridization
  - (iii) Bio-fuels
  - (iv) Cryopreservation (4)
- (b) What is Polymerase Chain Reaction (PCR)? Explain the principle and steps involved with suitable diagrams. (6)