

[This question paper contains 3 printed pages.]

Your Roll No.

5169

B

B.Sc. Prog./III

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 *Four* questions in all including
Question No. 1 which is compulsory

1. (a) Define any *four* of the following : 1×4=4

(i) Biosensors

(ii) Spray Drying

(iii) Protoplast fusion

(iv) Filtration

(v) Stem Cells.

(b) Differentiate between any *two* of the
following : 2×4=8

(i) Physical and Biological containment

(ii) Fixed Bed and Fluidized Bed fermenters

(iii) Somatic and Zygotic embryos

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- (iv) Bioremediation and Biofertilizer
- (v) Cloning vector and Expression vector.
- (c) Expand any *four* of the following : $\frac{1}{2} \times 4 = 2$
 - (i) AFLP
 - (ii) FISH
 - (iii) HGPRT
 - (iv) CMV
 - (v) ELISA.
- 2. Discuss gene therapy in detail with suitable examples. 8
- 3. (a) What are recombinant vaccines? Discuss with suitable examples. 4
- (b) Give the application of genetic engineering in development of disease resistant plants. 4
- 4. (a) Discuss the role of microbes in the production of enzymes and pharmaceuticals. 6
- (b) Discuss the different methods of sterilization process in tissue culture. 2
- 5. (a) What is the principle of PCR? Explain the technique with suitable diagrams. 4
- (b) Define the development of hybridoma clones. 4

6. Write short notes on any *two* of the following : $2 \times 2 = 4$
- (i) Parasexual Hybridization
 - (ii) Southern Hybridization
 - (iii) Restriction Endonucleases
 - (iv) Single Cell Proteins.