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**NY—202—2023**

**FACULTY OF SCIENCE**

**M.Sc. (First Year) (Second Semester) EXAMINATION**

**NOVEMBER/DECEMBER, 2023**

**(CBCS/New Pattern)**

**BIOTECHNOLOGY**

**Paper BT-VII**

**(Process Biotechnology)**

**(Monday, 11-12-2023)**

**Time : 10.00 a.m. to 1.00 p.m.**

*Time—Three Hours*

*Maximum Marks—75*

*N.B. :— (i) Attempt All questions.*

*(ii) All questions carry equal marks.*

*(iii) Draw well labelled diagrams wherever necessary.*

1. Describe methods of isolation and preservation of microorganisms. 15

*Or*

Describe strain improvement by modification of permeability.

2. Describe design and body construction of bioreactor. 15

*Or*

Describe packed bed and air-lift bioreactor.

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3. Describe mass transfer in bioreactor. 15

Or

Describe use of computers in fermentation.

4. Describe growth kinetics of bacteria in batch culture. 15

Or

Describe del factor.

5. Write notes on (any *three*) : 15

(i) D value

(ii) Biosensors

(iii) Fed-batch

(iv) Photobioreactor

(v) Strain improvement.

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