



RAN - 2103001106020003

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**M. Sc. Integrated Biotechnology (Sem. - VI) Examination April - 2023**

**Biotechnology : Paper - BT-19**

**Microbial Biotechnology**

**Time: 2 Hours ]**

**[ Total Marks: 50**

**सूचना : / Instructions**

(1)

नीचे दृश्यावलोकन निशानीवाणी विगतो उत्तरवही पर अवश्य लभवी.  
Fill up strictly the details of signs on your answer book

Name of the Examination:

**M. Sc. Integrated Biotechnology (Sem. - VI)**

Name of the Subject :

**Biotechnology : Paper - BT-19 Microbial Biotechnology**

Subject Code No.: **2103001106020003**

Seat No.:

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Student's Signature

- (2) Figures to the right indicate full marks.  
(3) Draw neat and labelled diagrams wherever necessary.

**Q. 1. Write answers to Any Four:**

**[08]**

- State two microbial strains responsible for production of Citric acid.
- Define: Primary & Secondary Screening.
- Define: Mutants.
- Name structural components of fermentor involved in aeration and agitation.
- CSTF operates on which principle?

**Q. 2. Attempt Any Two:**

**[14]**

- Explain in detail: Production of penicillin at industrial scale through fermentation.
- Justify the statement: The fermentation process at industrial level comprises of six different components.
- Write a detailed note on: Secondary screening.

**Q. 3. Explain in detail Any Two:** [14]

- a) Explain various techniques used for preservation of strains of microorganisms.
- b) Describe ways to select the induced mutants able to produce high amount of primary metabolites.
- c) Elaborate on the techniques used for isolation of microorganisms utilizing desired characteristics.

**Q. 4. Attempt Any Two of the following:** [14]

- a) Write a note on: Parasexual cycle as a means of industrially important microbial strain improvement.
  - b) Define: Containment. Explain different criteria used for risk assessment during fermentation.
  - c) Write a note on: Airlift fermentor.
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