

2303001109020002
EXAMINATION NOVEMBER 2024
MASTER OF SCIENCE (BIOTECHNOLOGY)
NINETH SEMESTER
BIOPROCESS TECHNOLOGY - LEVEL 2

[Time: As Per Schedule]

[Max. Marks: 70]

Instructions:

1. Fill up strictly the following details on your answer book

- a. Name of the Examination: **MASTER OF SCIENCE (BIOTECHNOLOGY) NINETH SEMESTER**
 - b. Name of the Subject: **BIOPROCESS TECHNOLOGY - LEVEL 2**
 - c. Subject Code No: **2303001109020002**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

Q.1 Attempt any two.

18

1. Write Difference between Bioprocess technology and Fermentation technology.
2. Explain Law of conservation of mass.
3. What is Bioreactor technology? Explain design and uses of Stirred tank Bioreactor and Airlift Bioreactor.

Q.2 Attempt any two.

18

1. What is SCP? Write growth conditions for cultivation of algal cells and applications of algal cells as SCP.
2. Explain Process of Producing Human Recombinant Insulin.
3. Write a note on Citric acid production and Applications of citric acid.

Q.3 Attempt any two.

18

1. Discuss the importance of Current Good Manufacturing Practice (CGMP) guidelines in the design and operation of cell separation systems.
2. Explain: Recovery of citric acid and ethanol.
3. Give a brief on Working principle of decanter centrifuge and disk type centrifuge.

Q.4 Attempt any two.

16

1. What is full form of CFPS? Write steps involve in CFPS.
2. Explain in detail about biomanufacturing through synthetic biology approach.
3. Give a note on Process Analytical Technology.
