Seat No:_____ Enrollment No:_____

# PARUL UNIVERSITY

## FACULTY OF APPLIED SCIENCE

## M.Sc., Summer 2022-23 Examination

**Semester: 4** **Date: 22-03-2023**
**Subject Code: 11201252** **Time: 2:00pm to 4:30pm**
**Subject Name: Industrial Microbiology & Fermentation Technology** **Total Marks: 60**

---

**Instructions:**
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

**Q.1. A) Essay type/ Brief note (4x2) (Each of 04 marks)** **(08)**
(a) Write a note on design of ideal fermentor.
(b)What is isolation? Write a note on isolation of industrial important organisms.

**Q.1. B) Answer the following questions (Any two)**
(a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2)(Each of 02 marks) **(04)**
1.Define screening
2.Define sterilization
(b) What is sparger? Write a short note on it. **(04)**
(c) Write a note on batch culture. **(04)**

**Q.2. A) Answer the following questions.**
(a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) **(04)**
1. What is the role of impeller?
2. What is baffles?
(b) Short note on sterilization of media. **(04)**

**Q.2. B) Answer the following questions (Any two)**
(a) Short note/ Multiple choice questions. (Each of 01 marks) **(03)**
1. Give the examples of antifoam agents.
2. Give the name of physical mutagen for strain improvement.
3. Stainless steel contain how much chromium as per AISI?
(b) Write a short note on agitators. **(03)**
(c) Write a short note on continuous fermentation. **(03)**

**Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks)** **(08)**
(a) Write a note on production and recovery of penicillin.
(b) Differentiate between batch & fed batch fermentation.

**Q.3. B) Answer the following questions (Any two)**
(a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) **(04)**
1. What is filter aids?
2. Write an applications of proteases.
(b) Write a short note rotary vacuum filter. **(04)**
(c) Write a criteria for selection of recovery procedure. **(04)**

**Q.4. A) Answer the following questions.**
(a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) **(04)**
1. Define biosensors.
2. Enlist the types of biosensors.
(b) Write a brief note on filtration. **(04)**

**Q.4. B) Answer the following questions (Any two)**
(a) Short note/ Multiple choice questions. (Each of 01 marks) **(03)**
1. Give the example of amylase producing fungi.
2. Who discover penicillin?
3. Which organism is useful for penicillin production?
(b) Write a short note on range of fermentation processes. **(03)**
(c) Write an importance of Vit B2. **(03)**