

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
B.Sc./IMSC Examination Summer 2017- 18

Semester: 4**Subject Code: 11101252****Subject Name: Microbial Biotechnology****Date: 15/05/2018****Time: 02:00PM TO 04:30PM****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) Describe the role of analogue resistant mutants and revertants for the isolation of primary metabolites with suitable example. (08)**
- Q.1. B) Answer the following questions (Any two)**
- (a) How can modification of permeability help in strain improvement? Describe with example. (04)
- (b) Enlist various methods for genetic recombination and explain protoplast fusion in detail. (04)
- (c) Describe the role of auxotrophic mutants for the isolation of primary metabolites with suitable example. (04)
- Q.2. A) Answer the following questions.**
- (a) What is filtration? Explain batch filters in detail. (04)
- (b) What is liquid-liquid extraction? Describe counter current flow extraction systems with suitable example. (04)
- Q.2. B) Answer the following questions (Any two)**
- (a) Do as directed: (03)
1. Define Feedback inhibition
 2. What is Enrichment Culture Technique?
 3. What does HPLC stand for?
- (b) Differentiate between Ion Exchange and Adsorption Chromatography (03)
- (c) Short note: Reverse Osmosis (03)
- Q.3. A) Describe microorganism involved, Inoculum preparation, Medium used, Fermentation process and Recovery of Citric acid. (08)**
- Q.3. B) Answer the following questions (Any two)**
- (a) Describe Fermentation process and Recovery of Protease (04)
- (b) Short note: Fermentation Economics (04)
- (c) Short note: GLPs (04)
- Q.4. A) Answer the following questions.**
- (a) Short note: Streptomycin Fermentation (04)
- (b) Explain recovery of Vitamin B12 (04)
- Q.4. B) Answer the following questions (Any two)**
- (a) Do as directed: (03)
1. Define: Sterility Testing
 2. What is Toxicity testing?
 3. Name the organism involved in the synthesis of: Penicillin.
- (b) Short note: Recovery of gluconic acid. (03)
- (c) Differentiate between Drum Drier and Spray Drier (03)