

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
B.Sc. Winter 2017-18 Examination

Semester: 4
Subject Code: 11101252
Subject Name: Microbial Biotechnology

Date: 08/01/2018
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) Essay type (08)**
(a) Describe Microorganism involved, Fermentation process and Recovery of the Citric acid
- Q.1. B) Answer the following questions (Any two)**
- (a) Short note on Good Lab Practices (04)
(b) Explain reverse osmosis for product recovery (04)
(c) Short note on Pyrogen Testing for Quality Control (04)
- Q.2. A) Answer the following questions.**
- (a) Brief note (2x2) (04)
1. Ion exchange Chromatography
2. Crystallization
(b) Short note on recovery of cell mass with the help of Centrifugation (04)
- Q.2. B) Answer the following questions (Any two)**
- (a) Short note (Each of 01 marks) (03)
1. Expand HPLC
2. Define Reverse Osmosis
3. What is process design in Industry
(b) Short note on Adsorption Chromatography (03)
(c) Short note on Carcinogenicity Testing (03)
- Q.3. A) Essay type (08)**
(a) Jot down the principles of strain improvements with special emphasis on modification of permeability
- Q.3. B) Answer the following questions (Any two)**
- (a) Brief note (2x2) (04)
1. Recovery of Penicillin
2. Medium used for industrial production of Protease
(b) Briefly describe Isolation of mutants which do not produce feedback inhibitors or repressors (04)
(c) Explain Removal and Recovery of cell mass by Precipitation (04)
- Q.4. A) Answer the following questions.**
- (a) Brief note (2x2) (04)
1. Ultrafiltration
2. Cell Disruption
(b) Short note on Fermentation Economics (04)
- Q.4. B) Answer the following questions (Any two)**
- (a) Name the organism responsible for industrial production of: (Each of 01 marks) (03)
1. Pectinase
2. Gluconic Acid
3. Vitamin B12
(b) Short note on Sterility Testing (03)
(c) Short note on Industrial Filtration Processes (03)