PARUL UNIVERSITY FACULTY OF APPLIED SCIENCE M.Sc., Summer 2018-19 Examination

Semester: 4	Date: 01/04/2019
Subject Code: 11202251 Subject Name: Bioprocess Engineering and Technology	Time: 02:00 pm to 04:30 pm 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) Explain the design of a fermentor	
(b) Write the basic details about production of antibiotic s	reptomycin
Q.1. B) Answer the following questions (Any two)	
(a) Short note(Each of 02 marks)	(04)
1. Write the role of PH in fermentation process	
2. Applications of Industrially produced enzymes	
(b) Short note on sterilization methods	(04)
(c) Short note on preservation of industrially important cu	ltures (04)
Q.2. A) Answer the following questions.	
(a) Short note (Each of 02 marks)	(04)
1. Short note on Aeration	
2. What are antifoam and chelators	
(b) Explain the recovery mechanism of alcohol production	(04)
Q.2. B) Answer the following questions (Any two)	
(a) Multiple choice questions. (Each of 01 marks)	(03)
1. Fermentation which is carried by bacteria is called-	
a) Lactic acid fermentation	b) Alcoholic fermentation
c) Pyruvic acid fermentation	d) Acrylic fermentation
2. Which of the following is not a product of fermenta	ation
a) Oxygen	b) Carbon dioxide
c) Ethanol	d) Lactate
3. The final electron acceptor in lactic acid fermentati	on is
a) Oxygen	b) Lactic acid
c) Pyruvate	d) NAD
(b) Write a note on scope of Industrial Microbiology	(03)
(c) Short note on vitamin B12 production (A, C)	(03)
Q.3. A) Essay type/ Brief note $(4x2)$ (Each of 04 marks)	(08)
(a) Explain the immobilization methods of cells	
(b) Write the applications of single cell protein	
Q.3. B) Answer the following questions (Any two)	(04)
(a) Short hole(Each of 02 marks)	(04)
1. Kinetic properties of enzymes in minodifization	atioida
2. Mode of action of Bachius murniglensis as a biope	
(0) Short note on applications of immobilized angumes in	(04) (04)
(c) Short note on applications of minimobilized enzymes in $(A + A)$ A power the following questions	medical field (04)
(a) Short note (Each of 02 marks)	(04)
(a) Short note (Each of 02 marks)	(04)
2 Short note on anzyme reactors	
(b) What are bioconversions describe with one example	(04)
(0) what are bioconversions describe with one example (A = B) Answer the following questions (Any two)	
(a) Define the Terms (Fach of 01 marks)	(03)
1 Bioleaching	(03)
2. Biodegradation	
3. Bioremediation	
(b) Principle and applications of protein engineering	(03)
(c) Short note on Different types of hydrogel entrapment.	(03)