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Seat No.:	Enrolment No.

## GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-8• EXAMINATION – SUMMER 2015

Subject Code: 180401 Date: 15/05/2015

**Subject Name: Bio-Process Engineering- II** 

Time: 10:30AM- 01:30PM Total Marks: 70

**Instructions:** 

- 1. Make suitable assumptions wherever necessary.
- 2. Figures to the right indicate full marks.
- 3. Attempt all questions.

	Q.1	(a)	How feeds are sterilized in fermentation?	07
	20	(b)	What are the consequences those may occur if foreign microorganism invades fermentation?	07
	Q.2	(a)	Compare Batch sterilization and continuous sterilization.	07
		(b)	Explain the economics of bioseparations.  OR	07
		(b)	Discuss in detail: transducers for biosensors.	07
	Q.3		Taking suitable examples, explain the terms with reference to 'Models': lumped parameter model, distributed parameter model, static model, dynamic model, linear model, intermediate variables, control variable.  OR	14
	Q.3	(a)	Enlist advantages and applications of MATLAB.	07
		(b)	Discuss the principles of: FTIR and GC-MS	07
	Q.4	(a)	Write a short note on: Gel chromatography	07
		(b)	Describe in detail about types of extraction and its parameters.  OR	07
	Q.4	(a)	Discuss the principle and practice of batch adsorption.	07
		(b)	Discuss about the classical and modern biotechnology consideration of downstream processing in biotech industry.	07
	Q.5	(a)	Explain the terms: cross filtration, gradient elution, crystallization.	07
		(b)	Desribe about the precipitation of proteins and compare it with other purification techniques of proteins.	07
			OR	0.5
	Q.5	(a)	Draw a neat sketch of electrodialysis and explain the principle with application.	07
		(b)	Write notes on the operation of tubular bowl centrifuge and disc stack centrifuge.	u,
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