Seat No.:		Enrolment No	Enrolment No	
		GUJARAT TECHNOLOGICAL UNIVERSITY ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016		
Su	bject	Code: 2721601 Date: 27/05/20	Date: 27/05/2016	
Tir	ne: 1 tructio 1. 2.	Name: Industrial Biotechnology 0:30 am to 01:00 pm Total Marks:  Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	70	
Q.1	(a) (b)	Discuss primary and secondary metabolites with examples. State importance of minerals as media component.	07 07	
Q.2	<ul><li>(a)</li><li>(b)</li></ul>	Explain methods of storage of microorganism, 'Storage under liquid Nitrogen' and 'Lyophylization' in detail.  Describe different methods for strain improvement and explain any one in detail.	07 07	
		OR		
	<b>(b)</b>	Discuss different methods for sterilization process.	07	
Q.3	(a) (b)	Explain internal and external feedback system with schematic diagram.  Describe the methods of immobilization for microbial cell.  OR	07 07	
Q.3	(a) (b)	Why transfer of inoculums at proper time is required?  Describe the method for screening of microorganism on solidified media with example.	07 07	
Q.4	(a) (b)	Discuss the various areas where industrial biotechnology is applicable. What is vaccine and how does it work?	07 07	

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Write in detail about 'Lipase' including its significance and applications.

OR

Explain in detail about the factors affecting on the 'scale up' of fermentation

Write in detail about different parts and design of the fermenter.

Write significance of biofertilizer and biopesticides in detail.

Write production process for 'beer' with neat diagram.

Define 'Antibiotic'. Describe production process for 'Tetracycline'.

**Q.4** 

Q.5

Q.5

**(b)** 

(a)

(a)

process.

07

**07** 

**07** 

**07** 

07

**07**