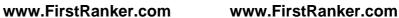


Seat No	o.:	Enrolment No	Enrolment No		
		GUJARAT TECHNOLOGICAL UNIVERSITY			
	I	BE - SEMESTER-VI(NEW) - EXAMINATION - SUMMER 2019			
Subject Code: 2161408 Date: 21/05					
Subje	ct Na	me: Food Fermentation Technology			
•	AM TO 01:00 PM Total Marks	: 70			
Instructions:					
		tempt all questions.			
		ake suitable assumptions wherever necessary. gures to the right indicate full marks.			
	J. 11 ₈	sures to the right mateute run marks.			
Q.1	(a)	Give mathematical derivation for Kla value	03		
	(b)	Draw a well labeled diagram to depict the structure of a fermenter.	04		
	(c)	Explain using a well-illustrated flowchart the steps of beer	07		
		production. How the green colored beer transforms into golden yellow color? What is the significance of hops flowers in beer			
		composition?			
		composition.			
Q.2	(a)	Give health benefits of wine consumption	03		
	(b)	In fermentation what do you understand by upstream and	04		
		downstream processing?	0=		
	(c)	Enlist various methods of protein purification	07		
	(c)	Which genes are responsible for production of beta galactosidase	07		
	(C)	enzyme? Explain the regulation of genes in case of presence and/or	U1		
		absence of glucose and/ or lactose			
Q.3	(a)	List down applications of amylase enzyme in food industry.	03		
	(b)	What is SDS-PAGE? What is the difference between 1-D and 2-D	04		
		gel electrophoresis?			
	(c)	Describe the concept of adsorption chromatography using an	07		
		illustration. What are the disadvantages of adsorption chromatography? How does it differ from affinity elution			
		chromatography? How does it differ from armity entition chromatography?			
		OR			
Q.3	(a)	Comment on the following statement "The larger particles elute first	03		
		during gel filtration"			
	(b)	What is the difference between a) curd and yogurt b) cheese and	04		
	(a)	paneer What is the difference between batch fed batch and centingers	07		
	(c)	What is the difference between batch, fed batch and continuous fermentation? Draw diagram for each type of fermentation	07		
		Termemation: Draw diagram for each type of fermemation			
Q.4	(a)	Comment on the statement "The yogurt starter culture grow	03		
=		synergistically".			
	(b)	Explain with an example the application of recombinant DNA	04		
		technology in production of protein at large scale fermentation			





	(c)	Describe the following methods of protein purification: a) ammonium sulphate precipitation b) gel filtration	07
		OR	
Q.4	(a)	What do you understand by strain development and strain improvement	03
	(b)	Write a note on 'scale up of batch sterilization process'	04
	(c)	A better microbial strain to produce a yogurt production is required. What steps would you take to isolate it? What is the significance of strain improvement in fermentation industry?	07
Q.5	(a)	Write a short note on antifoaming agents	03
C	(b)	Draw a flowchart to depict production of tempeh, an oriental	04
	. ,	fermented food	
	(c)	Describe types of fermentations based on media feeding, air requirement, sophistication, metabolite, starter.	07
		OR	
Q.5	(a)	Write a short note on types of spirits	03
	(b)	Explain Richards rapid method for calculation of del factor	04
	(c)	Enlist any 14 fermented products alongwith the starter organism used	07
		for its preparation.	
