Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III • EXAMINATION – SUMMER 2013

Subject Code: 131402 **Date: 04-06-2013**

Subject Name: Basic Food Microbiology

Time: 02.30 pm - 05.00 pm **Total Marks: 70**

Instructions:

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

Q.1	**(a)**	State various groups of microorganisms and write major characteristics of each group.	**06**
	(b)	Explain various physical agents used to control growth of microorganisms.	**04**
	c)	What are functions of cell membrane?	**04**
Q.2	**(a)**	Draw typical bacterial cell indicating various internal and external structures and write their major functions	**07**
	(b)	Discuss various techniques are used for isolation and cultivation of pure culture of microorganism.	**07**
		OR	
	(b)	Give classification of bacteria based on arrangement of flagella. What are functions of flagella in bacterial?	**07**
Q.3	**(a)**	Discuss various types of media used for cultivation of microorganism with specific important of each medium component.	**07**
	(b)	List the energy sources and nutritional compounds requires for bacterial growth and Classify the bacteria based on the requirement of temperature and oxygen for their growth	**07**
		OR	
Q.3	**(a)**	Enlist various part and its functions used in light microscope.	**07**
	(b)	Define terms: (1) Generation time, (2) Numerical Aperture (3) óD-valueô (4) Antagonism (5) Mordant.(6) Growth rate , (7) Heterotrops. .	**07**
Q.4	**(a)**	Write used of dyes in microbial study. Explain method of Gram staining of bacteria.	**07**
	(b)	Write contribution of following scientists: 1. Louis Pasture 2.Antony van Leeuwenhoek 3. Francesco redi 4. Edward Jenner. Write in short about Kochonôs Postulate on diseases.	**07**
		OR	
Q.4	**(a)**	State various techniques for preservation for storage of microorganisms.	**07**
	(b)	List various extrinsic and intrinsic parameters affecting growth of microorganisms in food and explain role of microorganisms in food.	**07**
Q.5	**(a)**	Give differences between electron and light microscopes.	**07**
	(b)	State role and mode of action of various antimicrobial chemical substances used to control microorganisms.	**07**
		OR	
Q.5	**(a)**	Give account on the various mechanism of genetic transfer among bacteria for recombination.	**07**
	(b)	What are endospores? Indicate shape and location of endospore in bacterial cell and describe structural changes in the bacterial cell during sporulation with suitable diagram.	**7**

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