Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III(New) EXAMINATION – SUMMER 2016

Subject Code:2131407 **Date:31/05/2016**

Subject Name:Basic Food Microbiology

Time:10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

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

MARKS

Q.1 **Short Questions (1 mark each)** **14**

1. Given name of 3 domains of life: _____, _____, _____
2. Nucleus of prokaryote is also called as _____
3. Meiotic division occurs in _____ cells
4. _____ is an example of comma shaped bacteria
5. Binomial nomenclature was given by _____
6. _____ is an example of bacterial name given as per convention based on place
7. Extension step of PCR occurs at _____ °C
8. Order of addition of reactants in indirect ELISA _____
9. Mutants which cannot grow in absence of a particular amino acid _____
10. Example of chemolithoheterotroph _____
11. The term antibiosis was given by _____
12. IMVic result of *E.coli* is _____
13. Example of primary metabolite is _____
14. Psychrophilic bacteria means _____

Q.2 **(a)** Justify the comment "Louis Pasteur is aptly known as Father of microbiology" **07**

(b) Describe the difference between gram +ve and gram –ve bacteria **07**

OR

(b) Describe the difference between prokaryote and eukaryote **07**

Q.3	**(a)**	Describe Griffith experiment to demonstrate bacterial transformation of "R" into "S" strain.	**07**
	(b)	Draw a diagram to depict the growth phases of microorganisms. Label the phases and give example of primary and secondary metabolite. During which phase these metabolites are produced?	**07**
		OR	
Q.3	**(a)**	Describe the significance of spread plating technique to evaluate the microbiological quality of foods. Calculate log cfu/ml for 250 colonies in plate of 7th dilution	**07**
	(b)	Draw a scheme with characteristics of 5 kingdom classification	**07**
Q.4	**(a)**	Enlist various methods to control microorganisms using any physical and chemical agents.	**07**
	(b)	Draw flowchart to depict the steps of western blotting technique	**07**
		OR	
Q.4	**(a)**	A typical bacterial cell increases from one cell to 512 cells in 10 hours. What is the generation time of this organism?	**07**
	(b)	Draw a diagram to depict a typical PCR cycle. What is the significance of Taq polymerase?	**07**
Q.5	**(a)**	Draw flowchart depicting steps of ELISA.	**07**
	(b)	Draw diagram to depict conjugative transfer of plasmid DNA.	**07**
		OR	
Q.5	**(a)**	Draw a diagram to depict the steps of transduction method of transfer of bacterial DNA through bacteriophage.	**07**
	(b)	Describe koch postulates in form of flowchart to establish that microorganism cause disease.	**07**

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