

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-III (New) EXAMINATION – WINTER 2015

Subject Code:2131407**Date:21/12/2015****Subject Name: Basic Food Microbiology****Time: 2:30pm to 5:00pm****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	14
Short Questions (1 mark each)	
1 Write full form of ELISA	
2 Which enzyme is used for extension of DNA in PCR?	
3 Name one each gram +ve cocci and gram-ve bacilli	
4 Write full form of IMViC	
5 Which blotting is used for RNA	
6 Penicillin is commercially produced from which fungus?	
7 What is facultative anaerobic microorganism	
8 Name the inventor of 1 st synthetic antibiotic.	
9 Name an example of photoautotrophic bacteria	
10 What is a thermophilic bacteria? Give one example	
11 Bacteriocin is a primary or secondary metabolite?	
12 Give an example of differential medium	
13 Suggest an application of bacteria in environment	
14 Name 3 domains of life.	
Q.2	03
(a) Draw a scheme with characteristics of 5 kingdom classification	
(b) What is the generation time of a bacterial population that increases from 10,000 cells to 10,000,000 cells in four hours of growth?	04
(c) Describe the difference between gram +ve and gram -ve bacteria	07
OR	
(c) Describe the difference between prokaryote and eukaryote	07
Q.3	03
(a) Draw flowchart to depict the steps of western blotting technique	
(b) If 280 colonies were obtained on a given plate which was prepared by spread plating with 5th dilution, determine the microbial count in terms of log cfu/ml	04
(c) 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	03
(a) Describe the concept of IMViC test. Suggest how it helps in differentiating enteric bacteria	
(b) What is the difference between auxotroph and	04

- bradotropic microorganism. Draw a schematic illustration to depict replica plating for isolation of auxotrophs.
- (c) Justify the comment “Louis Pasteur is aptly known as Father of microbiology” **07**
- Q.4** (a) Enlist various methods to control microorganisms using any physical and chemical agents. **03**
- (b) Enlist advantages of molecular methods to detect microorganisms in foods **04**
- (c) Describe Griffith experiment to demonstrate bacterial transformation of “R” into “S” strain. **07**
- OR**
- Q.4** (a) A typical bacterial cell increases from one cell to 256 cells in 10 hours. What is the generation time of this organism? **03**
- (b) Enlist various fermented foods and microorganisms used to prepare the fermented foods in tabular form **04**
- (c) Draw a diagram to depict a typical PCR cycle. What is the significance of Taq polymerase? **07**
- Q.5** (a) What are probiotics and its health benefits? What are prebiotics, explain with example. **03**
- (b) What is the difference between HFr and F’ plasmids? Draw diagram to depict conjugative transfer of plasmid DNA. **04**
- (c) Draw flowchart depicting steps of ELISA. **07**
- OR**
- Q.5** (a) Draw a diagram to depict the steps of transduction . **03**
- (b) Describe the steps of negative staining. How negative staining is useful than a heat fixed smear required for conventional staining methods? **04**
- (c) Describe koch postulates in form of flowchart. **07**
