

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE - SEMESTER-III EXAMINATION – WINTER 2015**

**Subject Code:131402****Date:02/01/2016****Subject Name: Basic Food Microbiology****Time: 02:30pm to 05:00pm****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) Describe the difference between gram +ve bacteria and gram –ve bacteria. **07**  
(b) Justify the statement “Louis Pasteur is aptly known as Father of Microbiology”. **07**
- Q.2** (a) Describe the growth phases of bacterial growth. Why the growth curve is known as S-shaped/sigmoid curve? **07**  
(b) Describe the contributions of Robert Koch. Enlist the Koch postulates which help in establishing a causative of a particular disease. **07**
- OR**
- (b) Describe role of microorganisms in agricultural industry. **07**
- Q.3** (a) Draw a diagram to depict steps of transduction. What is the difference between generalized and specialized transduction? **07**  
(b) Describe any three physical and chemical methods used to control microorganisms. **07**
- OR**
- Q.3** (a) Describe morphology of microorganisms in reference to shape, arrangement, flagella. Also draw diagram wherever necessary. **07**  
(b) Using a schematic diagram, describe the steps of western blotting technique. For which substance, northern blotting is used? **07**
- Q.4** (a) Describe Griffith experiment to demonstrate bacterial transformation of “R” into “S” strain. **07**  
(b) How serological characteristics are used in ELISA? What is the role of primary and secondary antibody in ELISA **07**
- OR**
- Q.4** (a) How plasmids are transferred from one bacterium to another through conjugation? What is the difference between HFr and F’? **07**  
(b) Draw a diagram to depict a typical PCR cycle. What is the significance of Taq polymerase? **07**
- Q.5** (a) Describe the role of intrinsic and extrinsic parameters affecting microbial growth in foods **07**  
(b) Enlist various fermented foods and microorganisms used to prepare the fermented foods in tabular form **07**
- OR**
- Q.5** (a) Describe the steps of gram staining. Give reason why gram staining is also known as differential staining. Give example of each a gram+ve and a gram –ve bacteria? **07**  
(b) Draw a diagram to depict effect of air on microbial growth in broth. **07**

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