

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V (NEW) EXAMINATION – SUMMER 2019****Subject Code: 2150402****Date: 20/06/2019****Subject Name: Immunology****Time: 02:30 PM TO 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) Mention the classes of antibodies with their heavy chains. **03**
(b) Differentiate between T_C and T_H cells. **04**
(c) Draw basic structure of immunoglobulin molecule with proper annotation. **07**
- Q.2** (a) List major events of inflammatory response. **03**
(b) Explain the terms adjuvant and hapten. **04**
(c) Explain the process of positive and negative selection of T cells. **07**
- OR**
- (c) Explain the process of maturation of B cells. **07**
- Q.3** (a) Enlist primary lymphoid organs. Explain its role in immune response. **03**
(b) List four nonspecific components of innate immune system **04**
(c) How is lecting pathway initiated? Explain formation of Membrane attach complex by above pathway. **07**
- OR**
- Q.3** (a) Draw structure of MHC class I and class II **03**
(b) Explain the basis of transplantation technology. **04**
(c) Explain cause and remedies of type I Hypersensitivity. **07**
- Q.4** (a) What is MALT, GALT and CALT? **03**
(b) Explain principle of western blotting. **04**
(c) Write a short note on whole organism vaccine. **07**
- OR**
- Q.4** (a) Name three factors that are unique to the alternative complement pathway **03**
(b) What are cytokines? Give examples. **04**
(c) Explain principle and working of ELISA. **07**
- Q.5** (a) What is advantage of vaccination? **03**
(b) Enlist different immune cells. Explain role of any two. **04**
(c) Explain pathway for processing and presentation of endogenous antigens. **07**
- OR**
- Q.5** (a) What are toxoids and allergens? **03**
(b) What is difference between primary and secondary immune response? **04**
(c) Explain hybridoma technology. **07**
