Printed Pages: 01 **Subject Code:RBT402**

Paper Id: 154257 **Roll No:** | | | | | | | | | | |

BTECH
(SEM IV) THEORY EXAMINATION 2018-19
IMMUNOLOGY

Time: 3 Hours ***Total Marks:70***

Notes: *Assume any Missing Data.*

SECTION A

1. Attempt all parts. Each part carries equal marks : **(2X7=14)**

(a) Spread out the following: IFN, NK, TNF, LPS, MHC and GMCSF.
(b) Give the names of different complement activation pathways.
(c) Describe the role of M cell in immune response.
(d) Clarify the Super-antigens.
(e) Portray class switching (Isotype) and switch sequences.
(f) Delineate the characteristics features of Antigen Presenting Cells.
(g) Comment on Vaccines.

SECTION B

2. Attempt any three question from this section **(7x3=21)**

(a) Differentiate between innate and adaptive immunity.
(b) Explain the Structure of Class I and class II MHC with appropriate diagram and explain how antigens are presented on the surface of MHC?
(c) Elucidate the principal of ELISA and RIA
(d) Tell the various steps in monoclonal antibodies production.
(e) Discuss the activation of classical pathway of complement system.
(f) Give details on the type IV hypersensitive reaction.

SECTION- C

3. Attempt any one part of the following: **(7x1=7)**

(a) Illustrate the process of phagocytosis and inflammation.
(b) Express your views on the diverse barriers of innate immunity.

4. Attempt any one part of the following: **(7x1=7)**

(a) Give detail account on ABO blood group system.
(b) Differentiate between the immunogen vs antigens and what attribute are required to be a good immunogen ?

5. Attempt any one part of the following: **(7x1=7)**

(a) Delineate the functions of complement system?
(b) Write a brief note on applications of monoclonal antibodies and cytokines.

6. Attempt any one part of the following: **(7x1=7)**

(a) Give a brief picture of primary and secondary lymphoid organs with suitable figure.
(b) Explain the different classes of antibodies in detail.

7. Attempt any one part of the following: **(7x1=7)**

(a) What do you understand by defense against intracellular pathogens?
(b) Write short notes on type I hypersensitivity.