

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc./IMSc, Summer 2018-19 Examination**

**Semester: 2/8**  
**Subject Code: 11201152**  
**Subject Name: Biology of the Immune System**

**Date: 01/04/2019**  
**Time: 10:30am to 01: 00pm**  
**Total Marks: 60**

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Describe the different components of Innate Immunity  
 (b) Write a note on Classical pathway of complement system
- Q.1. B) Answer the following questions (Any two) (04)**  
 (a) Brief note (2x2) (Each of 02 marks) (04)  
 1. Explain humoral immune response in adaptive immunity  
 2. Explain MHC restriction and its importance  
 (b) Short note on Thymus and its role in T-cell development (04)  
 (c) Draw the labelled flow chart for Hematopoiesis (04)
- Q.2. A) Answer the following questions. (04)**  
 (a) Brief note (2x2) (Each of 02 marks) (04)  
 1. Role of macrophages and dendritic cells in Immunity  
 2. Role of cytokines and interferons in Immune system  
 (b) Short note on Immunoglobulin structure and function (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
 (a) Define (Each of 01 marks) (03)  
 1. Immunogen  
 2. Adjuvants  
 3. Hapten  
 (b) Short note on Lectin pathway (03)  
 (c) Short note on Polymeric Immunoglobulins (03)
- Q.3. A) Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Explain antigen-antibody interactions and precipitin curve  
 (b) Write a note on Radial Immunodiffusion and its applications
- Q.3. B) Answer the following questions (Any two) (04)**  
 (a) Brief note (2x2) (Each of 02 marks) (04)  
 1. Draw flow chart for Complement fixation test  
 2. Draw flow chart for Rocket immuno electrophoresis  
 (b) Short note on Double Immunodiffusion (04)  
 (c) Short note on Sandwich ELISA for screening of Dengue (04)
- Q.4. A) Answer the following questions. (04)**  
 (a) Brief note (2x2) (Each of 02 marks) (04)  
 1. Write compatible blood donor types for AB+ recipient  
 2. Write compatible blood recipients for A- blood donor  
 (b) Instrumentation and Working of FACS (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
 (a) Explain the causes of: (Each of 01 marks) (03)  
 1. Type-I Hypersensitivity  
 2. Type-II Hypersensitivity  
 3. Type-IV Hypersensitivity  
 (b) Short note on Erythroblastosis fetalis (03)  
 (c) Short note on Rheumatoid Arthritis (03)