

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**B.Sc./IMSC, Summer 2017-18 Examination**

**Semester: 4****Subject Code: 11101255****Subject Name: Immunology-II****Date: 17/05/2018****Time: 10:30am to 1:00pm****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) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Explain how pepsin and papain digestion helped understand Immunoglobulin structure  
 (b) Explain how  $\gamma$ -globulin fraction was discovered.
- Q.1. B) Answer the following questions (Any two) (04)**  
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)  
 1. Draw fine structure of Ig with labelled diagrams  
 2. Explain 2 differences between Antigenicity and Immunogenicity  
 (b) Short note on antigenic determinants of Ig (04)  
 (c) Short note on ADCC (04)
- Q.2. A) Answer the following questions. (04)**  
 (a) Short note on Passive Antibody Therapy (04)  
 (b) Short note on Antigens and Epitopes (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
 (a) Short questions. (Each of 01 marks) (03)  
 1. Define: CDR  
 2. Define: Somatic Hypermutation  
 3. Define: MHC  
 (b) Short note on Variability Index Plot (03)  
 (c) Short note on Lectin Pathway of Complement activation (03)
- Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Write a note on Classical Complement Fixation  
 (b) Write a note on Cell Mediated Immune Responses
- Q.3. B) Answer the following questions (Any two) (04)**  
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks) (04)  
 1. Brief note on Monoclonal Antibody  
 2. Brief note on steps of Hybridoma technology  
 (b) Short note on Vaccines derived using whole organisms (04)  
 (c) Short note on Subunit and Recombinant Vaccines (04)
- Q.4. A) Answer the following questions. (04)**  
 (a) Short questions. (Each of 02 marks) (04)  
 1. What is the type of vaccine used in BCG and MMP ?  
 2. What kind of vaccine is designed against HIV and H1N1 ?  
 (b) Short note on Allergy (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
 (a) Short questions. (Each of 01 marks) (03)  
 1. Define Cell Mediated Hypersensitivity  
 2. Full form of FACS  
 3. Full form of PBMC  
 (b) Short note on Rheumatoid Arthritis (03)  
 (c) Short note on Rhesus incompatibility (03)