

P-251

B. Sc. (Biotechnology) Part - II Examination, 2017

BIOTECHNOLOGY

Paper : VIII

(Immunology)

Time : Three Hours ]

[ Maximum Marks : 75

Note : Attempt all questions from Section - A (Objective type questions), seven questions from Section - B (Short answer type questions) and two questions from Section - C (Long/ Essay type questions).

SECTION - A

Choose the correct option.

1. Which MHC Class binding groove accommodates larger peptides ?

- (a) MHC I (b) MHC II  
(c) MHC III (d) None

2. Which of these is systemic autoimmune disease ?

- (a) Grave's disease (b) myocardial infarction  
(c) rheumatoid arthritis (d) diabetes

3. Which antibody can cross placenta ?

- (a) IgM (b) IgD (c) IgG (d) IgE

4. Which of the following does not participate in the formation of antigen-antibody complexes ?

- (a) hydrophobic bonds (b) covalent bonds  
(c) hydrogen bonds (d) Van der Waal forces

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5. The technique used for blood group testing is :
- (a) Précipitation (b) ELISA  
 (c) Agglutination (d) SDS PAGE
6. Which of the following is not antigen antibody reaction ?
- (a) ELISA (b) ELISPOT (c) Agglutination  (d) LTT
7. The cells which are actively involved in phagocytosis :
- (a) T lymphocytes  (b) Macrophages  
 (c) Mast cells (d) Null cells
8. Which antibody is most efficient in agglutination reaction :
- (a) IgG (b) IgA (c) IgD  (d) IgM
9. For most research, diagnostic, and therapeutic purposes which one is used among them :
- (a) Monoclonal antibody (b) Polyclonal antibody  
 (c) Allotype (d) Idiotypic
10. Which of these is a primary lymphoid organ ?
- (a) Bone marrow (b) lymph node  
 (c) Peyer's patch (d) pancreas

## SECTION - B

1. What is innate immunity Write about its barriers ?
2. Describe epitope. Write about B and T cell epitopes.
3. Describe inflammation and its process. What are its mediators ?

(2)

4. What are the different techniques to measure antigen antibody interaction ? Describe precipitation reactions in detail.
5. Describe T cell receptor and its role.
6. What are exogenous antigens ? Describe Endocytic pathway of antigen presentation.
7. What are the advantages and disadvantages of using attenuated organisms as vaccine ?
8. What is cell mediated immune response (CMI). Write the technique for the measurement of CMI.
9. How antibodies can be targeted as therapeutic agents ? Give the examples.
10. What is autoimmunity ? How do you differentiate between organ specific and systemic auto immune diseases ? Give examples of both types.

#### SECTION - C

1. Write in detail about Primary and Secondary lymphoid organs.
2. Define antigen. Describe isotype, idiotype and allotype antigenic determinants.
3. Describe structure of Class 1 and 2 MHC molecules and also polymorphism of MHC genes. *multiallelic*
4. How monoclonal antibodies are produced ? Write the uses of monoclonal antibodies in research and therapeutics.
5. Define Vaccine ? Write about active immunisation with examples. Give examples of common vaccines of humans.