Seat No. : _____

ND-103

December-2015

B.Sc., Sem.-V

Core Course-303 : Microbiology
(Principles of Immunology)

Time : 3 Hours] **[Max. Marks : 70**

Instructions : (1) Draw figures wherever necessary.

(2) Mention correct question number against each answer.

(3) Figures to the right indicate marks.

1. Answer the following (any **two**) : **14**

   (a) Explain in detail various types of innate immunity.

   (b) Discuss discrimination, diversity, specificity, memory and transferability as the characteristics of immune response.

   (c) What is the role of MHC and HLA in immune response ?

   (d) Describe the functions of different cells in immune system.

2. Answer the following (any **two**) : **14**

   (a) Discuss physicochemical and biological properties of antigens.

   (b) What are skin tests ? Explain its role in diagnosis of disease.

   (c) Explain how a human can probably make more than 10^{12} different antibody molecules.

   (d) Explain the principle and applications of precipitation reaction.

3. Answer the following (any **two**) : **14**

   (a) Chronic illnesses can result from a hypo or hyper functioning of the immune system. Justify.

   (b) Explain giving examples the inherited immunodeficiency disorders.

   (c) Discuss in brief Type I hypersensitivity.

   (d) What is transplant rejection ? Explain its mechanism and how can such rejections be reduced ?

4. Answer the following (any **two**) : **14**

(a) How different antigens present on RBCs helps in classification of blood groups and narrate its clinical significance.

(b) Explain functions and significance of various blood constituents.

(c) Describe various types of immunoprophylaxis in brief.

(d) Discuss the recommended immunization schedule for a child.

5. Give short and specific answers in **1–2** lines only. **14**

(a) What is herd immunity ?

(b) Which are the two arms of immune response ?

(c) What is the function of Null cells ?

(d) Name two secondary lymphoid organs.

(e) Give two examples of immunogens.

(f) Concentration of which antibody increases during allergic reactions ?

(g) Which radioactive isotope is commonly used for labelling antigens in RIA ?

(h) Give an example of immunosuppressive agent.

(i) What is SCID ?

(j) Name chemical compounds present in the poison ivy plants, which are responsible for cell mediated hypersensitivity ?

(k) What is the maximum permitted shelf life of the whole blood ?

(l) Give examples of toxoid-based vaccines.

(m) What type of antigen is expressed by blood group 'O' individuals ?

(n) Which disease is identified using PPD skin test ?

———————