

Roll No.....

Total No. of Units : 04

Total No. of Printed Pages : 03

Code No. : 01/407

First Semester Examination, Dec. 2018

M.Sc. MICROBIOLOGY

Paper - IV

FUNDAMENTALS OF IMMUNOLOGY

Time : 3 Hrs.

Max. Marks : 80

- Part A and B of each question in each unit consist of very short answer type questions which are to be answered in one or two sentences.  
Part C (Short answer type) of each question will be answered in 200-250 words.
- Part D (Long answer type) of each question should be answered within the word limit 400-450.

**Unit - I**

- Q.1 A. Draw a well labelled diagram of a Neutrophil indicating its salient features. (2)
- Q.1 B. Name the secretions of human body which contains lysozyme. How does it help to provide immunity to our body? (2)
- Q.1 C. Point out the features of natural and acquired active immunity along with suitable examples. (4)

**OR**

Explain Lymphatic system in short.

- Q.1 D. Explain the structure and role of cells involved in maintaining the immune status of our body. Mention the conditions in which these cells show increase in their values. (12)

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**OR**

Describe the structure and properties of immunoglobulins.

**Unit - II**

Q.2 A. For which particular bacteria Montoux test is performed? (2)

Q.2 B. What are the components of  $C_1$  complement protein? Which component of it binds the  $F_c$  portion of antibody molecule? (2)

Q.2 C. Point out the difference between an antigen and a hapten. What properties should a molecule / substance possess so that it can behave as an antigen? (4)

**OR**

Make a note on Rh incompatibilities.

Q.2 D. Name the scientist who elucidated the complete sequence of an antibody molecule. Give a comparative account and biological functions of different immunoglobulin molecules. (12)

**OR**

Describe the agglutination and RIA test.

**Unit - III**

Q.3 A. Name the cells which express MHC. (2)

Q.3 B. What is Graves disease? (2)

Q.3 C. What is the mechanism involved in Allograft rejection? (4)

**OR**

Describe the insulin dependent diabetes mellitus.

Q.3 D. What are the causes of auto-immune diseases? Give a detail account of different types of auto-immune diseases and their pathogenicity. (12)

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**OR**

Compare the structure and function of MHC class I and MHC class II.

**Unit - IV**

Q.4 A. What is carcino embryonic antigen? (2)

Q.4 B. What do you mean by paracrine action of cytokines? (2)

Q.4 C. What is serum sickness? (4)

**OR**

Write a note on Tumor Marker.

Q.4 D. Explain the mechanism involved in type IV hypersensitivity along with suitable diagram and pathological conditions developed. (12)

**OR**

Give a detailed account on properties, classification and biological function of Cytokines.

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