

U.G. 4th Semester Examination - 2022**MICROBIOLOGY****[HONOURS]****Course Code : MB-H-CC-L-10****(Immunology)**

Full Marks : 40

Time : $2\frac{1}{2}$ Hours*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **five** of the following questions:

2×5=10

- a) What are immunogens?
- b) Which are the secondary lymphoid organs?
- c) What are interferons and its types?
- d) What is the function of chemokines?
- e) Write down the biological role of humoral immunity.
- f) What is paratope?
- g) Differentiate between active and passive immunity.
- h) What is DNA vaccine?

2. Answer any **two** from the following: 5×2=10

- a) What are antigens? Describe its types and properties in detail. 2+3
- b) Describe the classical pathway of complement activation. 5
- c) Write short notes on rheumatoid arthritis. 5
- d) Explain the endogenous pathway of antigen presentation. 5

3. Answer any **two** from the following: 10×2=20

- a) What are monoclonal antibodies? Briefly describe the method of production and mention their application. 2+(5+3)
- b) What are lymphoid organs? Discuss structure and functions of primary lymphoid organs. 2+(4+4)
- c) What are Antigen presenting cells (APCs) and what is their role? Describe exogenous pathway of antigen presentation. (2+2)+6
- d) Classify hypersensitivities as per Gel and Coomb's classification. Give a brief account on Immunodiffusion and western blot. 4+(3+3)

[Turn Over]