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School of Biological and Life sciences

**Master of Science in Biochemistry
Semester End Examination - Jun 2024**

Duration : 180 Minutes

Max Marks : 100

Sem II - P1PP201T / MSDB5006 Immunology*General Instructions*

Answer to the specific question asked

Draw neat, labelled diagrams wherever necessary

Approved data hand books are allowed subject to verification by the Invigilator

- 1) Define the role of human leukocyte antigen (HLA) K1 (2)
- 2) Describe the role of complement components C1, C2, and C3 in the classical pathway. K2 (4)
- 3) Briefly discuss the lymphoid and myeloid progenitor cells K2 (6)
- 4) Construct the basic structure of an antibody. K3 (9)
- 5) Draw and explain the alternative pathway of complement system K3 (9)
- 6) How does the lectin pathway of complement activation differ from the classical pathway? K5 (10)
- 7) Illustrate and define the mechanism of Ouchterlony double immunodiffusion assay K4 (12)
- 8) Summarize the four basic properties of cytokines K5 (15)
- 9) Design an experiment for your ELISA assay? How did you choose the type of ELISA (direct, indirect, sandwich, etc.) for your experiment? What considerations did you take into account when selecting antibodies for your ELISA? K5 (15)
- 10) Hypothesize the pathways of antigen presentation by MHC class I and MHC class II molecules K6 (18)