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**School of Biological and Life sciences**

Bachelor of Science Honours in Biomedical Science

Semester End Examination - Jun 2024

Duration : 180 Minutes

Max Marks : 100

**Sem IV - P1UC404C - Concepts of 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) Differentiate between antigens and haptens. K1 (2)
- 2) How does immunotherapy differ from traditional vaccination? K2 (4)
- 3) Why is antigen processing and presentation crucial for adaptive immunity? K2 (6)
- 4) Discuss the steps involved in the development and production of a vaccine. K3 (9)
- 5) Describe the principle behind immunodiffusion techniques such as radial immunodiffusion (RID) and double immunodiffusion (Ouchterlony method). K3 (9)
- 6) Differentiate between the five classes of immunoglobulins (IgG, IgM, IgA, IgD, and IgE) based on their structural features and properties. K5 (10)
- 7) Make an outline for the workflow for performing a Western blot. K4 (12)
- 8) Provide an overview of the structure and functions of the key organs that significantly contribute to the immune system. K5 (15)
- 9) Explain the significance of the thymus gland in T cell development and maturation, highlighting the process of positive and negative selection. K5 (15)
- 10) What are some advantages and limitations of immunodiffusion techniques compared to other immunological assays, such as ELISA K6 (18)