

**ST JOSEPH’S UNIVERSITY, BENGALURU -27**

**M.Sc (MICROBIOLOGY) – II SEMESTER**

**SEMESTER EXAMINATION: APRIL 2023**

**(Examination conducted in May 2023)**

**MB 8221: IMMUNOLOGY**

**(For current batch students only)**

**Time: 2 Hours Max Marks: 50**

**This paper contains 1 printed page and 4 parts**

**I. Answer any Five of the following 5X3=15**

1. What are superantigens? What does its activation result in?
2. How is age related to immunity?
3. Differentiate between lysozome and phagosome.
4. What is the role of peripheral tolerance and why do we need it?
5. Give the functions of IL4, TNFγ and TGFβ.
6. Mention the importance of cyclosporine in transplantation.
7. List the products of C3, C4 and C5 and their function.
8. **Answer any Two of the following 2X5=10**
9. Classify autoimmune diseases and write a note on Multiple Sclerosis.
10. What is the role of Fyn, Lck, ZAP-70, Immunophillins and NF-kB in T cell activation?
11. Write a note on how multiple antigens affect an immune response.

**III. Answer any Two of the following 2X10=20**

11. Explain the mechanism of an inflammatory response.

12. Describe how a viral antigen can be processed and presented?

13. Give an account of the detection tests of Type I hypersensitivity.

1. **Answer the following 1X5=5**

14. A laboratory is interested in the detection of a chemical whose concentrations in

 biological fluids are extremely low (within picogram range).

 a) What immunoassay would you recommend to set up? 1

 b) Give the principle of the immunoassay. 4