

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted during the academic year 2019 – 2020 and thereafter)**

**B. Sc. DEGREE EXAMINATION APRIL 2024**  
**BRANCH VI.A. ADVANCED ZOOLOGY & BIOTECHNOLOGY**  
**SIXTH SEMESTER**

**COURSE : MAJOR CORE**  
**PAPER : IMMUNOLOGY**  
**SUBJECT CODE : 19ZL/MC/IM64**  
**TIME : 3 HOURS** **MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL QUESTIONS: (10 X 3 = 30)**

1. What is the role of Th1 cells?
2. Define active acquired immunity.
3. Explain the importance of an agglutination reaction.
4. Highlight the function of complementarity determining region in an antibody.
5. List the functions of complement.
6. Define wheal and flare reaction and its relation to hypersensitivity.
7. Elaborate on the anti-viral mechanism of interferon- $\gamma$ .
8. Explain the role of IgE in anti-parasite responses.
9. What is M Cell?
10. Describe the composition of Freund's complete adjuvant.

**SECTION – B**

**ANSWER ANY FIVE QUESTIONS: (5 X 6 = 30)**

11. With a neat diagram explain the structure of Bursa of Fabricius.
12. What is an antibody? Using IgG as an example describe the structure and parts of a typical antibody.
13. With an example elucidate the pathogenesis associated with delayed type hypersensitivity reactions.
14. Highlight the different types of graft rejection reaction giving examples.
15. Elaborate on the immunological significance of chemokines.
16. Describe the pathophysiology of Rheumatoid Arthritis in relation to autoimmune disease.
17. Write short notes on a) Subunit vaccine and b) Live attenuated vaccine.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS: (2 X 20 = 40)**

18. With a neat labeled diagram comment on the structure and immunological significance of a) Spleen and b) Peyer's patch.
19. Differentiate antigen and immunogen. Elucidate the properties of a good antigen.
20. Describe the mechanism of activation of complement by the alternate pathway and its regulation.
21. With a neat diagram elucidate the molecular mechanism of JAK-STAT signaling in type II cytokine receptor signaling.

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