STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2006 – 07)

SUBJECT CODE: BY/PC/IM35

M. Sc. DEGREE EXAMINATION, NOVEMBER 2008
BIOTECHNOLOGY
THIRD SEMESTER

COURSE : CORE
PAPER : IMMUNOLOGY
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS: (20 x 1 = 20)
DEFINE / EXPLAIN THE FOLLOWING. EACH WITH IN 50 WORDS.

1. What are C-reactive proteins?
2. Define heterophile antigens.
3. What are Null cells?
4. Define adaptive immunity.
5. How will you precipitate antibodies?
6. What are opsonins?
7. Explain 'Zone of Equilibrium'.
8. Define anaphylatoxins.
9. Highlight the significance of CD3.
10. What are professional antigen presenting cells?
11. Define cytokines.
12. What is antigenic drift?
13. Explain the function of dendritic cells.
14. Name a substance mitogenic to B-cells.
15. Explain the application of MLR.
16. What are HLAs?
17. Define active immunization.
18. What is Salk vaccine?
19. Define adjuvants
20. What is tetanus toxoid?

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SECTION – B

ANSWER ANY FOUR QUESTIONS. EACH IN ABOUT 600WORDS: (4 x 10 = 40)

21. What are primary and secondary lymphoid organs? Give examples and explain their functional features.
22. a) Describe the primary structure of an antibody molecule.
    b) Explain the structural characteristics of IgG and Igm.
23. Explain various events in differentiation of antigenically activated B-cells. Highlight the immunological significance of each event.
24. Discuss the major types of immune response generated against viral infection.
25. How will you isolate and characterize T cell subset?
26. Elucidate the rationale for identification of T and B cell epitopes. Explain their relevance in vaccine development.

SECTION – C

ANSWER ANY TWO QUESTIONS. EACH IN ABOUT 1500WORDS:(2 x 20 = 40)

27. Explain in detail the method of production of monoclonal antibodies by hybridoma technology. Add a note on their applications.
28. "MHC molecules are key components in the process of antigen presentation" – Discuss.
29. What is ELISA? Explain various types of ELISA and their biomedical applications.
30. a) Discuss the principle and preparation of various types of vaccines.
    b) Explain the desirable features of vaccines.

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