

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
(For candidates admitted during the academic year 2011 – 12)

**SUBJECT CODE: 11BY/PC/IM34**  
**M. Sc. DEGREE EXAMINATION, NOVEMBER 2012**  
**BIOTECHNOLOGY**  
**THIRD SEMESTER**

**COURSE : CORE**

**PAPER : IMMUNOTECHNOLOGY**

**TIME : 3 HOURS**

**MAX. MARKS: 100**

**SECTION – A**

**ANSWER ALL QUESTIONS:**

**(20 x 1 = 20)**

**DEFINE / EXPLAIN THE FOLLOWING.**

1. \_\_\_\_\_ are the blood counterparts of mast cells.
2. Thymus develops from the
  - a) Pharynx
  - b) sites adjacent to thyroid
  - c) 3<sup>rd</sup> & 4<sup>th</sup> pharyngeal pouches
  - d) 1<sup>st</sup> & 2<sup>nd</sup> pharyngeal pouches.
3. Forsman antigens shows reactivity with unrelated antibodies (True / False)
4. Among all kinds of external secretions \_\_\_\_\_ contains highest concentration of lactoferrin.
5. The first immunoglobulin heavy chain class to be expressed on the surface of a newly produced B – cell is
  - a) IgA
  - b) IgD
  - c) IgM
  - d) IgG
6. Catalytic monoclonal antibodies are called as \_\_\_\_\_
7. The RAST measures
  - a) Antigen concentration
  - b) IgE antibodies
  - c) Agglutination
  - d) IgG antibodies
8. Define opsonin.
9. The smaller fragments resulting from complement cleavage C3a, C4a and C5a are called \_\_\_\_\_.
10. The largest number of deaths from infectious disease are caused by
  - a) AIDS
  - b) acute respiratory infections
  - c) Tuberculosis
  - d) Measles
11. Type I hypersensitivity can be blocked by using
  - a) Histamine
  - b) Anti IgE myeloma
  - c) Disodium cromoglycate
  - d) Interleukin - 5
12. Define mitogen

13. Which of the following is a non-organ specific auto immune disease.
- a) Myasthenia gravis
  - b) SLE
  - c) Hashimoto's thyroiditis
  - d) Insulin dependent diabetes mellitus
14. Mention any two significances of HLA typing.
15. The disease most frequently seen in association with pernicious anemia
- a) Multiple sclerosis
  - b) Rheumatoid Arthritis
  - c) Autoimmune hemolytic anemia
  - d) Grave's disease
16. List any two whole organism that recently is used as vaccines.
17. Hepatitis B is a \_\_\_\_\_ vaccine.
18. Non professional Ag presenting cells in brain is called as \_\_\_\_\_.
19. Naturally or artificially acquired passive immunity has distinct immunological memory. (True/False)
20. A delayed hypersensitivity reaction is characterized by
- a) Edema without a cellular infiltrate
  - b) an infiltrate composed of neutrophils
  - c) an infiltrate composed of eosinophils
  - d) an infiltrate composed of helper T- cells and macrophages.

### SECTION – B

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

21. Narrate the functional features and immunological significance of innate immunity.
22. What is Antigen antibody reaction? Write short notes on RID & DID
23. What are monoclonal Antibodies? Explain the process of preparing monoclonal antibodies by hybridoma technology. Add notes on its therapeutic applications.
24. Explain the steps involved in B – cell activation and production of antibodies.
25. Describe the pathways of endogenous and exogenous antigens by which they are processed by antigen presenting cells.
26. Explain the basic concepts of autoimmune diseases with any four examples.

**SECTION – C**

**ANSWER ANY TWO QUESTIONS. EACH IN ABOUT 1500WORDS :( 2x20 = 40)**

27. Give a detailed account on the primary and secondary lymphoid organs with suitable diagrams.
28. Explain the primary structure of an antibody. What are different classes of immunology globulins. Explain the biological activities of each class.
29. Explain the role of complement in, classical, alternate and lectin pathway.
30. What is the principle and the strategies involved in the preparations of vaccines? Explain the preparations of subunit and DNA vaccines.

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