

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086**  
**(For candidates admitted during the academic year 2015 – 2016 & thereafter)**

**SUBJECT CODE: 15BY/PC/IM34**

**M. Sc. DEGREE EXAMINATION - NOVEMBER 2018**  
**BIOTECHNOLOGY**  
**THIRD SEMESTER**

**COURSE : CORE**  
**PAPER : IMMUNOLOGY**  
**TIME : 3 HOURS**

**MAX. MARKS: 100**

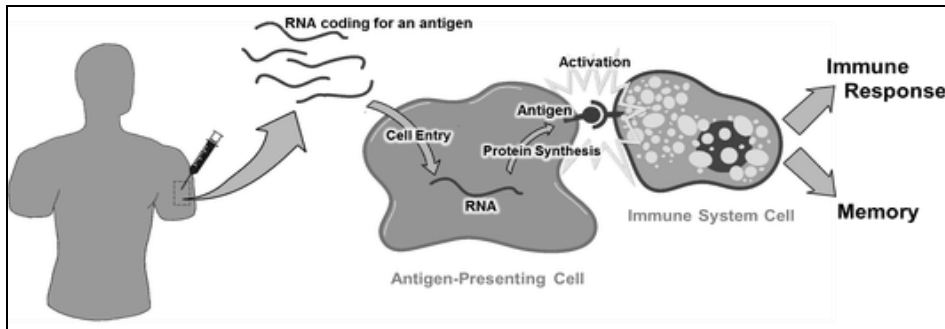
**SECTION – A**

**ANSWER ALL QUESTIONS:**

**(20 x 1 = 20)**

1. State the class of antibody that plays an important role in the immune function of mucous membranes.
2. Comment on classical signs of inflammation.
3. Define opsonization.
4. What are PALS in the spleen?
5. Mention any two functions of the complement system.
6. Where are the MHC genes located in humans?
7. Distinguish T-helper cells and T-cytotoxic cells based on their receptors.
8. Where do B-cells originate and where do they mature?
9. What are cytokines?
10. Give an example of a cytokine related disease.
11. Based on Gell and Coombs classification, what type of hypersensitivity is peanut allergy?
12. What are kupffer cells and in what organ are they found?
13. Comment on the innate immune response to viral infection.
14. Define Autoimmunity.
15. What is a nude mouse?
16. Give an example of a secondary immunodeficiency that has claimed millions of lives worldwide.
17. Name the type of transplant between two genetically identical individuals.
18. Define an oncogene.
19. What type of rejection is associated with bone marrow or stem cell transplants?

20. Comment on the technology depicted in the given figure.



### SECTION – B

ANSWER ANY FOUR QUESTIONS.

(4 x 10 = 40)

21. Differentiate between innate and adaptive immunity.
22. Describe in detail the primary structure of an antibody.
23. Describe the structure of MHC class I molecule and add a note on its function.
24. Explain the pattern of inheritance in MHC genes.
25. Briefly explain the response of the immune system to dengue.
26. Explain immunotherapy and comment on its application in breast cancer.
27. Write a short note on DNA vaccines and highlight its potential advantages and disadvantages.

### SECTION – C

ANSWER ANY TWO QUESTIONS.

(2x20 = 40)

28. Present an overview on hematopoiesis and the cells of the immune system.
29. Outline the different types of hypersensitivity reactions with examples.
30. Explain Organ Specific Autoimmunity with an example.
31. Write an essay on the mechanism of acute and chronic graft rejection.

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