

**Shree Manibhai Virani and Smt. Navalben Virani Science College (Autonomous), Rajkot**  
Affiliated to Saurashtra University, Rajkot

**SEMESTER END EXAMINATION APRIL -2019**

**B.Sc. Biochemistry**

**16UBCCC23 - IMMUNOLOGY**

*Duration of Exam – 3 hrs*

*Semester – VI*

*Max. Marks – 70*

**Part A (10X1= 10 marks)**

Answer **ALL** questions

1. Name the scientist who gave Rabies vaccine.
2. Name the components of anatomical barriers of innate immunity.
3. Define epitope.
4. Name the primary lymphoid organs.
5. Define opsonization.
6. Which genes are responsible for heavy chain synthesis?
7. Name any two systemic auto immune diseases.
8. Name the type of cancer associated with the following antigens: i) HBsAg      ii) PSA
9. Write full form of HAART.
10. What is the role of CLIP in antigen presentation process?

**Part B (5X5= 25 marks)**

Answer **ALL** questions

- 11a. Write differences between innate and adaptive immunity.  
**OR**
- 11b. Describe the structure of MHC molecules.
- 12a. Write about NK cells and macrophage cells.  
**OR**
- 12b. What are monoclonal antibodies? Enlist their various applications.
- 13a. What are precipitation reactions? Explain precipitation curve.  
**OR**
- 13b. Explain the process of class switching for antibody synthesis.
- 14a. Describe Type I and Type II hypersensitive reactions.  
**OR**
- 14b. Describe Type III and Type IV hypersensitive reactions.
- 15a. Write a note on endocytic pathway of antigen presentation.  
**OR**
- 15b. Write about severe combined immunodeficiency disease.

**Part C (5X7= 35 marks)**

Answer **ALL** questions

16a. Define and explain the process of inflammation.

**OR**

16b. Write a note on B and T cells.

17a. Define antigen. Describe the various factors affecting antigenicity.

**OR**

17b. Write a note on structure and types of antibodies.

18a. Describe classical pathway of complement activation.

**OR**

18b. Write a note on agglutination reactions.

19a. Define and write a note on organ specific auto immune disorders.

**OR**

19b. Explain in brief, how immune system recognizes and eradicates tumor cells.

20a. Write a note on different types of vaccines.

**OR**

20b. Write a note on Human immunodeficiency virus.

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