

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

SEMESTER END EXAMINATION NOVEMBER 2018

B.Sc. Biotechnology

16UBTCC19 - IMMUNOLOGY

Duration of Exam – 3 hrs

Semester – V

Max. Marks – 70

Part A (10x1= 10 marks)

Answer **ALL** questions

1. Write the name of any two innate immunity component.
2. Who is regarded as father of immunology?
3. Define antigen.
4. Define epitopes.
5. What do you understand by affinity of an antibody?
6. Mention the forces involved in antigen antibody interaction.
7. What are the main cardinal signs of inflammation?
8. Write any one difference between MHC class I and MHC class II molecules.
9. Differentiate between allograft and autograft.
10. Define autoimmune disease.

Part B (5x5= 25 marks)

Answer **ALL** questions

- 11a. Describe the contribution of Edward Jenner and Louis Pasteur in immunology.
OR
- 11b. Draw the labelled diagram of spleen and write its structure and important functions.
- 12a. Define and differentiate between: i) heptanes and adjuvants; ii) overlapping and non-overlapping epitopes
OR
- 12b. Define monoclonal antibodies. How HAT medium selectively allows growth of hybridoma cells for production of monoclonal antibodies?
- 13a. Define cross reactivity. How the cross reactivity is beneficial as well as harmful for our immune system?
OR
- 13b. What is prozone effect? Define and differentiate between agglutination and precipitation with suitable example.
- 14a. Draw the labelled diagram of MHC class I molecules and describe its structure and function.
OR
- 14b. Write short notes on Hypersensitivity reactions.

15a. Explain autoimmune disease by taking Type I diabetes as an example.

OR

15b. Give an account of immunosuppressive drugs with their mode of action.

Part C (5x7= 35 marks)

Answer **ALL** questions

16a. Describe the role of various innate immune component in protection against infection.

OR

16b. Write short notes on: i) T lymphocytes and ii) Thymus

17a. Describe the process of formation of membrane attack complex in alternative pathway of complement system.

OR

17b. Describe the structure of antibody molecules with suitable diagram.

18a. Write detailed note on principle and types of ELISA.

OR

18b. "Western Blotting or immuno-blotting is a superior technique to identify and analyze a specific antigen" validate it with explaining the principle and methodology.

19a. Describe the cytosolic pathway of antigen presentation with suitable diagram.

OR

19b. Write a detailed note on cytokines and its receptors.

20a. Describe the mechanism of rejection of graft in detail.

OR

20b. Write short note on: i) DNA vaccines and ii) Graves disease
