

[This question paper contains 2 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5694

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Unique Paper Code : 3184002002/3184002009

Name of the Paper : Health and Body Defense System

Name of the Course : **B.Sc. (H) Biomedical Science (NEP-UGCF-2022)**

Semester : VI (Generic Elective)

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** questions in all.
3. Question No. **1** is compulsory.
4. Give illustrations and examples wherever required.
5. Subparts of the questions should be attempted together.

1.

a. Give a brief account on the following (Any three)

- i. Edward Jenner's contribution to immunology
- ii. ELISA test and its clinical significance
- iii. Apoptosis
- iv. Immunogen

(3 x3 = 9)

b. Differentiate between (Any three)

- i. Gram-positive and Gram-negative bacteria
- ii. Innate immunity and Adaptive immunity
- iii. Vaccination and Immunotherapy
- iv. Primary and Secondary immune response

(3 x3 = 9)

2.

a. Write short note on (Any four)

- i. T-helper cells (Th cells)
- ii. Immunodiffusion technique
- iii. Antigenic determinant (Epitope)
- iv. Memory cells
- v. Pathogen Associated Molecular Patterns (PAMPs)

(4 x3 = 12)

P.T.O.

- b. Explain the role of diet and gut microbiota in maintaining immunity. Discuss the importance of probiotics and dietary fibers in immune regulation (6)
- 3.
- a. Explain the role of herbal immunomodulators such as ginger, tulsi, and garlic in strengthening immunity
 - b. Describe the precipitation reaction and explain its importance in immunodiagnostic tests
 - c. Discuss the phenotypic markers and immune functions of effector T cells and memory T cells (6,6,6)
4. Give a schematic representation and brief explanation of the following
- a. Precipitation Reactions
 - b. Agglutination test (latex agglutination)
 - b. Immunohistochemistry (6,6,6)
- 5.
- a. Explain the role of normal microbiota and chemical barriers like lysozyme, gastric acid, and defensins in innate immunity
 - b. Describe the different classes of immunoglobulins and mention one major function of each
 - c. Discuss how nutritional requirements and immunity vary in children, adults, elderly, pregnant women, and athletes (6,6,6)
- (6)
- a. Describe the role of physical and chemical barriers in innate immunity. How do they prevent microbial invasion at the body's surfaces?
 - b. Discuss the various properties of an antigen.
 - c. Discuss the changing physiological requirements for maintaining a healthy body across different age groups and genders. (6,6,6)