

B.Sc. Semester - 4 (NEP-2020) Examination**March/April-2026****BIT: Immunology (Minor-3)****Time: 2:00 Hours****Marks: 50****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

- Que.1 (1) Define immune response. Explain the components of the mammalian immune system. (05)
- (2) Describe the molecular structure of immunoglobulins. (05)
- OR
- (1) Describe the functions of helper T-cells in human body. (05)
- (2) What is immunity? Write a short note on cell mediated immune response. (05)
- Que.2 (1) Explain clonal selection theory of antibody production. (05)
- (2) What is immunologic memory? Explain its importance. (05)
- OR
- (1) Write a note on allelic exclusion. (05)
- (2) Explain the genetic basis of antibody diversity. (05)
- Que.3 (1) Describe Class I MHC antigens and their functions. (05)
- (2) Explain antigen processing and presentation. (05)
- OR
- (1) Write a note on immunity to bacterial infections. (05)
- (2) Explain pathogen defense strategies to avoid immune recognition. (05)
- Que.4 (1) Define vaccines. Explain the role of adjuvants in vaccination. (05)
- (2) Describe DNA vaccines in brief. (05)
- OR
- (1) Explain recombinant vaccines with examples. (05)
- (2) Write a short note on cytokines. (05)
- Que.5 (1) Explain cytotoxic T-cells and their role in immune response. (05)
- (2) Describe ELISA technique used in immunodiagnostics. (05)
- OR
- (1) What is allergy? Write a note on autoimmune diseases. (05)
- (2) Define vaccinology and explain passive and active immunization. (05)
