


RAN-2303080602030003
M. Sc. (Sem. - II) Examination September - 2025
Microbiology (Paper - MB-2003) Advances and Challenges in Immunology
Time: 3 Hours]
[Total Marks: 70
સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book
- (2) Mention the given details in the answer book.
- (3) Figures to the right indicate full marks.
- (4) Draw labeled diagrams wherever necessary.

Seat No.:

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Student's Signature

Q. 1. Answer the following (Any two) (18)

- a. Write a detailed note on structure of class II MHC molecule and its function in immune response regulation.
- b. Elaborate a note on the T-cell receptor.
- c. Explain the genomic organization of MHC.

Q. 2. Answer the following (Any two) (18)

- a. Explain antigen recognition and antigen induced B cell activation.
- b. Discuss the process of CD8⁺T cell activation.
- c. Explain one medical condition resulting from primary B cell deficiency and T cell deficiency each.

Q. 3. Answer the following (Any two) (18)

- a. Explain the specific mechanisms and role of physical and chemical agents and virus in tumor antigen induction.
- b. Describe the engineered antibodies for therapy in detail.
- c. Enlist different immunoconjugates and discuss the development and clinical applications of any two types of immunoconjugates.

Q. 4. Answer the following (Any two) (16)

- a. Discuss the mechanisms of antimicrobial resistance.
- b. Describe Swine and Avian influenza virus infection as emerging zoonosis disease.
- c. Write descriptive notes on the stem cell-based therapy for human disease.