

MZO-008

ASSIGNMENT BOOKLET

M.Sc. (Zoology) Programme

(MSCZOO)

Immunology

Valid from 1st January, 2025 to 31st December, 2025



**School of Sciences
Indira Gandhi National Open University
Maidan Garhi
New Delhi-110068**

(2025)

Dear Student,

Please read the Section on assignments in the Programme Guide for M.Sc. (Zoology). A weightage of 30 per cent, as you are aware, has been earmarked for continuous evaluation, which would consist of one tutor-marked assignment for this course. The assignment is in this booklet. The total marks for this assignment is 100, of which 40 marks are needed to pass it.

Instructions for formatting your Assignments

Before attempting the assignment please read the following instructions carefully:

- 1) On top of the first page of your answer sheet, please write the details exactly in the following format:

ROLL NO.:

NAME:

ADDRESS:
.....
.....

COURSE CODE:

COURSE TITLE:

ASSIGNMENT NO.:

STUDY CENTRE:

DATE:

PLEASE FOLLOW THE ABOVE FORMAT STRICTLY TO FACILITATE EVALUATION AND TO AVOID DELAY.

- 2) Use only foolscap size writing paper (but not of very thin variety) for writing your answers.
- 3) Leave 4 cm margin on the left, top and bottom of your answer sheet.
- 4) Your answers should be precise.
- 5) Solve this assignment, and **submit the complete assignment answer sheets within the due date.**
- 6) The assignment answer sheets are to be submitted to your Study Centre within the due date. **Answer sheets received after the due date shall not be accepted. We strongly suggest that you retain a copy of your answer sheets.**
- 7) This assignment is valid from 1st January, 2025 to 31st December, 2025. If you have failed in this assignment or fail to submit it till its validity, then you need to get the assignment for the next year and submit it as per the instructions given in the Programme Guide.
- 8) **You cannot fill the examination form for this course** until you have submitted this assignment.

We wish you good luck.

ASSIGNMENT

Course Code: MZO-008
Assignment Code: MZO-008/TMA/2025
Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it.

1.
 - a) What is IgM antibody. Discuss the functional importance of IgM. (5)
 - b) Explain the concept of antigens and their classification as foreign or self-antigens. (5)
2. Differentiate between the following pairs of terms: (2 ½× 4= 10)
 - a) Classical Pathway and Alternative Pathway of complement activation
 - b) B cell receptor (BCR) and T cell receptor (TCR)
 - c) Active Immunization and Passive Immunization
 - d) Primary Immunodeficiency (PID) and Secondary Immunodeficiency
3. Write short notes on the following: (2 ½× 4= 10)
 - a) Ouchterlony Double Diffusion
 - b) Superantigens
 - c) Anaphylaxis
 - d) Immunosuppressive Therapy
4.
 - a) Define the term “chimeric antibodies” and discuss their applications. (5)
 - b) Explain Edward Jenner contributed to the development of vaccines? (5)
5. Describe the role of the bone marrow in the immune system, focusing on its structure and the process of hematopoiesis. (10)
6.
 - a) Define autoimmunity and discuss its role in immune system dysfunction. (5)
 - b) Explain how Gell and Coombs classified hypersensitivity reactions. (5)
7.
 - a) Describe the process of complement-induced lysis through MAC formation. (5)
 - b) Briefly. describe the autocrine, paracrine, and endocrine functions of cytokines (5)
8.
 - a) Discuss the pathways for processing both endogenous and exogenous antigens. (5)
 - b) Explain the peptide-binding properties of Class I and II MHC molecules with a suitable diagram. (5)

9. a) Discuss the flow cytometry principles and its components. (5)
- b) Explain the DOT ELISA techniques and their working principles. (5)
10. Explain the importance of donor and recipient matching in transplantation immunology, focusing on the role of human leukocyte antigen (HLA) typing and its impact on reducing graft rejection. (10)

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