

**M.Sc. LABORATORY TECHNOLOGY (MSc LT)
SEMESTER -II EXAMINATION, AUGUST-2026**

MSc LT-202- IMMUNOLOGY

[Time allotted: Three Hours]

[Max Marks: 100]

Note: Read all the instructions carefully
Answer all questions in serial order, Draw suitable diagrams wherever necessary

Q. 1. Objective type questions: (Attempt All)**(10 x 02 = 20)**

(Very short/ Short answer/ MCQ/ One liners/ Fill in the blanks/ True/False)

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| <p>a. Which immunoglobulin crosses the placenta?</p> <p style="margin-left: 20px;">i. IgA
ii. IgM
iii. IgG
iv. IgE</p> <p>b. The first antibody produced during primary immune response is:</p> <p style="margin-left: 20px;">i. IgM
ii. IgA
iii. IgG
iv. IgD</p> <p>c. Alternative complement pathway is activated by:</p> <p style="margin-left: 20px;">i. Antigen-antibody complex
ii. Endotoxin
iii. IgE
iv. Mast cells</p> <p>d. The principal cells of innate immunity are:</p> <p style="margin-left: 20px;">i. B lymphocytes
ii. Plasma cells
iii. Neutrophils
iv. Memory cells</p> <p>e. ELISA is based on:</p> <p style="margin-left: 20px;">i. Radioactivity
ii. Enzyme-labelled antibodies
iii. Fluorescence
iv. Electron microscopy</p> | <p>f. Which hypersensitivity is antibody-mediated cytotoxicity?</p> <p style="margin-left: 20px;">i. Type I
ii. Type II
iii. Type III
iv. Type IV</p> <p>g. Rheumatoid factor is usually:</p> <p style="margin-left: 20px;">i. IgM against IgG Fc
ii. IgG against IgM
iii. IgA against IgE
iv. IgE against IgG</p> <p>h. C-reactive protein is an example of:</p> <p style="margin-left: 20px;">i. Immunoglobulin
ii. Acute phase protein
iii. Complement protein
iv. Cytokine</p> <p>i. Which cell secretes antibodies?</p> <p style="margin-left: 20px;">i. T helper cell
ii. Plasma cell
iii. Macrophage
iv. NK cell</p> <p>j. Widal test detects antibodies against:</p> <p style="margin-left: 20px;">i. Salmonella
ii. Shigella
iii. Vibrio
iv. Brucella</p> |
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Q. 2. Short notes/ Short answer type questions (Attempt any Five)**(05 x 04 = 20)**

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| <p>a. Structure of antibody</p> <p>b. Types of antigens</p> <p>c. Complement pathways</p> <p>d. Monoclonal antibodies</p> <p>e. Principle of ELISA</p> <p>f. Innate immunity</p> <p>g. CRP test</p> | <p>(CO1, PO1)</p> <p>(CO1, PO1)</p> <p>(CO1, PO1)</p> <p>(CO1, PO1)</p> <p>(CO2, PO1)</p> <p>(CO1, PO1)</p> <p>(CO 2,3 ; PO1)</p> |
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Q. 3. Structured questions (Attempt any Three)**(03 x 10 = 30)**

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| <p>a. Explain antigen-antibody reactions and factors affecting them.</p> <p>b. Describe immunoglobulin classes and biological functions.</p> <p>c. Explain Classical complement pathways with flowchart.</p> <p>d. Difference between innate and adaptive immunity.</p> | <p>(CO1, PO1)</p> <p>(CO1, PO1)</p> <p>(CO1, PO1)</p> <p>(CO1, PO1)</p> |
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Q. 4. Long Answer/ Essay type questions (Attempt any Two)**(02 x 15 = 30)**

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| <p>a. Describe MHC molecules.</p> <p>b. Explain Type 1 hypersensitivity reactions with suitable examples.</p> <p>c. Describe Direct ELISA in detail including principle, procedure and applications.</p> | <p>(CO1, PO1)</p> <p>(CO1, 4; PO1)</p> <p>(CO 2,3; PO1)</p> |
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