

**B.Sc. MEDICAL TECHNOLOGY (LABORATORY) (BMLT)
SEMESTER -II EXAMINATION, JUNE-2026**

(BMLT202) INSTRUMENTATION AND BASIC 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. Vaccination induces:</p> <ol style="list-style-type: none"> Active natural immunity Passive natural immunity Active artificial immunity Passive artificial immunity <p>b. Weil-Felix reaction is a serological test based on:</p> <ol style="list-style-type: none"> Heterophile antigen Sheep brain antigen Specific antigen haptens <p>c. Which immunoglobulin class can pass through placenta?</p> <ol style="list-style-type: none"> IgG IgM IgA IgE <p>d. VDRL test is an example of:</p> <ol style="list-style-type: none"> Agglutination test Flocculation test Immunofluorescence All of the above <p>e. What is the chemical nature of components of complement?</p> <ol style="list-style-type: none"> Protein Lipopolysaccharides Lipid Polysaccharides | <p>f. CD8 cells can recognize:</p> <ol style="list-style-type: none"> MHC class I antigens MHC class II antigens MHC class III antigens All of the above <p>g. B-lymphocytes which have a long lifespan and can recognize the same antigen on subsequent exposure are named:</p> <ol style="list-style-type: none"> Memory cells Killer cells Natural killer cells Null cells <p>h. Which of the following hypersensitivity reactions has cell mediated immune response?</p> <ol style="list-style-type: none"> Type I Type II Type III Type IV <p>i. Temperature and time period used in hot air oven is:</p> <ol style="list-style-type: none"> 160°C for two hours 140°C for two hours 180°C for two hours 140°C for one hours <p>j. The Foot-pad of Mouse is used for cultivation of?</p> <ol style="list-style-type: none"> Mycobacterium leprae Enterobacter aerogenes Micrococcus luteus Streptococcus salivarius |
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Q. 2. Short notes/ Short answer type questions (Attempt any Five)

(05 x 04 = 20)

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| a. Haptens | (PO1,4, CO1) |
| b. IgM | (PO1,4, CO1) |
| c. Prozone phenomenon | (PO1,4, CO1) |
| d. Autoclave | (PO1,4, CO2) |
| e. Guinea pig (care and uses) | (PO1,4,5, CO1) |
| f. Serum sickness | (PO1,4, CO1) |
| g. Macrophages | (PO1,4, CO1) |

Q. 3. Structured questions (Attempt any Three)

(03 x 10 = 30)

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| a. What is an antigen? Discuss briefly the various factors of antigenicity. | (PO1,4, CO1) |
| b. What is agglutination? Describe the various types of agglutination reaction. | (PO1,4, CO1) |
| c. Describe the classical pathway of complement and give a schematic representation. | (PO1,4, CO1) |
| d. Classify hypersensitivity reactions and describe type I hypersensitivity reactions. | (PO1,4, CO1) |

Q. 4. Long Answer/ Essay type questions (Attempt any Two)

(02 x 15 = 30)

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| a. Discuss the mechanisms of innate immunity. Enumerate the differences between active and passive immunity. | (PO1,4, CO1) |
| b. Write down the mechanism of antibody mediated immune responses. Differentiate between primary and secondary immune responses. | (PO1,4, CO1) |
| c. Name the different immunoglobulin classes. Draw a well labelled structure of immunoglobulin and enumerate the differences between different classes of immunoglobulin. | (PO1,4, CO1) |