

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

(BMLT201) BIOPHYSICS, ENZYMOLOGY & CLINICAL BIOCHEMISTRY

[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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|--|---|
| a. What is a cofactor? | (PO4 , CO5) |
| b. What is the normal pH of blood? | (PO1,4 CO1,3) |
| c. Define molarity. | (PO1,2,4,CO3) |
| d. Name two purine bases. | (PO4, CO4) |
| e. Which type of bag is general waste put into? | (PO1,4,5 CO2) |
| f. Write the current correct order of draw in the form of vacutainers? | PO1,4 CO1) |
| g. Define Buffers | (PO1, 4CO1,3) |
| h. A disinfectant used on metal surface is:
(PO1, 4 CO2) | j. When solid particles in a solution settle out, it is called:
(PO1, 4 CO3) |
| i. 10% Formalin | i. Distillation |
| ii. 70% Alcohol | ii. Sedimentation |
| iii. 1% Hypochlorite | iii. Deionization |
| iv. 15% Iodine | iv. Filtration |
| i. $\frac{1}{8}$ dilution of urine is: (PO1, 4,5CO3) | |
| i. 1 part water and 8 parts urine | |
| ii. 1 part urine and 8 parts water | |
| iii. 1 part urine and 7 parts water | |
| iv. 1 part water and 7 parts water | |

Q. 2. Short notes/ Short answer type questions (Attempt any Five)**(05 x 04 = 20)**

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|--|-------------------|
| a. Uses of vacutainers in clinical laboratory | (PO1, 3, 4 CO1) |
| b. Henderson–Hasselbalch equation and applications | (PO1,4 CO1,3) |
| c. Factors affecting enzyme activity | (PO1, 4 CO5) |
| d. Difference between plasma vs serum | (PO1, 3, 4 CO1,3) |
| e. Differentiate between DNA and RNA | (PO1, 4 CO4) |
| f. Difference between diffusion and osmosis | (PO1, 4CO3) |
| g. Types of biological specimens | (PO1, 4 CO1,3) |

Q. 3. Structured questions (Attempt any Three)**(03 x 10 = 30)**

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|--|----------------|
| a. Explain buffers with examples. Clinical importance of pH regulation | (PO1, 4 CO1,3) |
| b. Classify enzymes with examples | (PO1, 4 CO5) |
| c. Describe structure and functions of DNA | (PO1, 4 CO4) |
| d. Biomedical waste management principles | (PO1,3, 4CO2) |

Q. 4. Long Answer/ Essay type questions (Attempt any Two)**(02 x 15 = 30)**

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|---|----------------|
| a. Explain regulation of enzyme activity | (PO1, 4 CO5) |
| b. Describe different anticoagulants and preservatives used in laboratory | (PO1, 3, 4CO1) |
| c. Explain structure and functions of RNA. Draw a labelled diagram of t-RNA | (PO1, 4CO4) |