



**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
(MMUST)**

(MAIN CAMPUS)

**UNIVERSITY EXAMINATIONS (MAIN PAPER)  
2023/2024 ACADEMIC YEAR**

**FIRST YEAR FIRST SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
MASTER OF SCIENCE (MEDICAL LABORATORY  
SCIENCE/BIOMEDICAL SCIENCES AND TECHNOLOGY**

**COURSE CODE: BML 816**

**COURSE TITLE: ADVANCED LABORATORY  
DIAGNOSTICS AND INSTRUMENTATION**

**DATE: 6<sup>TH</sup> DECEMBER 2023**

**TIME: 2.00-5.00PM**

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**INSTRUCTIONS TO CANDIDATES**

This paper has one section containing five (5) questions. **Answer ONLY FOUR questions. DO NOT WRITE ON THE QUESTION PAPER.**

**TIME: 3 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over

1. Discuss the routine use of flow cytometry in basic research, clinical practice and clinical trials (25 marks).
2. Discuss the principle, components, test procedure, results interpretation and applications of immunochromatography in a diagnostic laboratory (25 marks).
3. Describe the basic functioning of a Coulter counter, how the original Coulter counters improved blood cell counts, and how these improvements benefited patients and medical staff (25 marks).
4. Discuss the diagnostic role of enzyme – linked immunosorbent assays (25 marks).
5. Describe different types of immunoprecipitations indicating different methods involved in immunoprecipitation (25 marks).