



(University of Choice)

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

(MAIN CAMPUS)

**UNIVERSITY EXAMINATIONS (MAIN PAPER)  
2022/2023 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
MASTER OF MEDICAL LABORATORY SCIENCES & TECHNOLOGY  
(HAEMATOLOGY AND BLOOD TRANSFUSION OPTION)**

**COURSE CODE: BMH 822**

**COURSE TITLE: ADVANCED HAEMATOLOGICAL LABORATORY  
METHODS AND INSTRUMENTATION**

**DATE: 25<sup>TH</sup> APRIL 2023**

**TIME: 11.00AM – 02.00PM**

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**INSTRUCTIONS TO CANDIDATES**

This examination paper contains five questions of 25 marks each. Answer QUESTION ONE and any other THREE questions. Illustrate your answers with labeled diagrams where appropriate.

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over

**QUESTION ONE**

Discuss quality assurance in haematology laboratory (25 marks).

**QUESTION TWO**

Discuss laboratory assessment of Qualitative Haemoglobinopathies (15 marks).  
Describe Molecular techniques used in haematology laboratory (10 marks)

**QUESTION THREE**

Describe the preparation, staining, examination and interpretation of Peripheral blood film (25 marks).

**QUESTION FOUR**

Describe infection prevention and control in haematology laboratory (10 marks)

**QUESTION FIVE**

Describe the application of Hematological analysis to the following body fluids (1. Cerebrospinal fluid 2. Pleural fluid 3. Peritoneal 4. Pericardial fluids) (25 marks)



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**2022/2023 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
MASTER OF SCIENCE MEDICAL LABORATORY SCIENCES  
(CLINICAL CHEMISTRY)**

**COURSE CODE: BMC 826**

**COURSE TITLE: ADVANCED PHARMACOLOGY AND  
THERAPEUTIC DRUG MONITORING**

**DATE: 26<sup>TH</sup> APRIL 2023**

**TIME: 08.00 – 11.00AM**

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**INSTRUCTIONS TO CANDIDATES**

**Answer All questions. DO NOT WRITE ON THE QUESTION PAPER.**

**TIME: 3 Hours**

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1. Discuss the principle, types, instrument components, method development and procedure of thin layer chromatography (TLC) **(20marks)**
2. Using five specific examples discuss the therapeutic drug monitoring of antiepileptic drugs under the following headings: goals, sample type, sample timing, analytical method selection, therapeutic ranges **(20 marks)**
3. Using five specific examples discuss the therapeutic drug monitoring of antiarrhythmic drugs, under the following headings: goals, sample type, sample timing, analytical method selection, therapeutic **(20 marks)**
4. Discuss the drugs used in the pharmacotherapy of peptic ulcers diseases, including selection criteria, challenges and recent advances **(20marks)**
5. A) Discuss three major mechanisms via which drugs causes toxicity **(15 marks)**  
B) Explain why liver is highly vulnerable to drug toxicity **(5 marks)**