



*(University of Choice)*

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

**(MAIN CAMPUS)**

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**FIRST YEAR SECOND TRIMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF  
MASTERS OF SCIENCE IN MEDICAL HEMATOLOGY AND BLOOD  
TRANSFUSION SCIENCES**

**COURSE CODE: BMH 823**

**COURSE TITLE: COMPARATIVE AND DEVELOPMENTAL  
HEMATOLOGY**

**DATE: 22/04/2022**

**TIME: 12.00 -3.00 PM**

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**INSTRUCTIONS TO CANDIDATES**

This paper is divided into three sections, A B and C, carrying respectively: Multiple Choice Questions (MCQs), Short Answer Questions (SAQs) and Long Answer Questions (LAQs). **Answer all questions. DO NOT WRITE ON THE QUESTION PAPER.**

**TIME: 2 Hours**

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over

**ANSWERQUESTION 1 AND ANY OTHER THREE QUESTIONS (EACH 20Mks)**

1. Describe the following concepts of Red blood cell hematology
  - a) Erythron concept
  - b) RBC Flexibility
  - c) Disturbances of Erythropoiesis
  - d) Erythrocyte Membrane Composition
  - e) Metabolism of the Erythrocyte
2. Describe Hematopoietic microenvironment highlighting Hematopoietic stem theory, stem cell tracking and chemokines.
3. Describe the structure, differentiation and maturation of Megakaryocytic system.
4. Describe the Regulation, Maturation and Compartmentalization of the Leukopoietic system
5. Compare and contrast mammalian and non-mammalian blood characteristics
6. Describe the cytological and phenotypic characteristics of hematopoiesis during embryonic life and Adult hematopoietic tissues.