



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

**MAIN CAMPUS  
MAIN EXAMINATIONS**

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**SECOND YEAR END OF SEMESTER II EXAMINATIONS**

**FOR THE DEGREE  
OF  
BACHELOR OF SCIENCE IN BIOCHEMISTRY**

**COURSE CODE: SBM 221**

**COURSE TITLE: TECHNIQUES IN CELL BIOLOGY**

**DATE: TUESDAY, 19<sup>TH</sup> APRIL 2022 TIME: 8:00 – 10:00 A.M.**

**INSTRUCTIONS TO CANDIDATES**

Answer QUESTION 1 and ANY other THREE questions

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

SBM 221: TECHNIQUES IN CELL BIOLOGY  
This Paper Consists of 2 Printed Pages. Please Turn Over. 

**QUESTION 1 (25 MARKS)**

- a. Describe the qualities of a good biological buffer. (10 marks)
- b. List the applications of centrifugation in cell biology. (5 marks)
- c. Explain the principle behind scanning electron microscopy. (5 marks)
- d. How can precipitation be prevented during preparation of buffers. (5 marks)

**QUESTION 2 (15 MARKS)**

- a. Outline the steps to be followed in cryopreservation of a biological material. (10 marks)
- b. Enumerate the benefits of cryopreservation in cell biology. (5 marks)

**QUESTION 3 (15 MARKS)**

Describe the cell separation techniques. (15 marks)

**QUESTION 4 (15 MARKS)**

Describe the steps for processing of paraffin biopsy sections. (15 marks)

**QUESTION 5 (15 MARKS)**

Describe the different light microscopy techniques. (15 marks)