



(University of Choice)

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

**UNIVERSITY EXAMINATIONS**

**2021/2022 ACADEMIC YEAR**

**MAIN EXAMINATIONS  
MAIN CAMPUS**

**SECOND YEAR SECOND SEMESTER EXAMINATIONS**

**FOR THE DEGREE  
OF**

**BACHELOR OF SCIENCE IN BIOLOGY / BIOTECHNOLOGY /  
BIOCHEMISTRY / NATURAL RESOURCES MANAGEMENT /  
AGRICULTURAL EDUCATION AND EXTENSION  
BIOTECHNOLOGY / EDUCATION (SCIENCE)**

**COURSE CODE: SBT 222**

**COURSE TITLE: PLANT STRUCTURE AND FUNCTIONS**

**DATE: TUESDAY, 26<sup>TH</sup> APRIL 2022**

**TIME: 3:00 – 5:00 P.M.**

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**INSTRUCTIONS TO CANDIDATES**

Answer ALL questions in section A and ANY TWO selected from section B

TIME: 2 Hours

MMUST observes ZERO tolerance to examination cheating

**SECTION A: (SHORT ANSWER QUESTIONS, 40 MARKS)**

1. Define the following biological terms: (5 marks)
  - a) Cell
  - b) Tissue System
2. Differentiate primary and secondary growth in plants. (5 marks)
3. Distinguish between apical and lateral meristems. (5 marks)
4. Explain Osmosis. (5 marks)
5. Using a well labeled diagram of mitochondria mention the function of mitochondria. (5 marks)
6. Distinguish mesophytes and hydrophytes. (5 marks)
7. List any five plastids giving their functions. (5 marks)
8. Draw a well labeled diagram of external morphology of dicotyledonous plant leaf. (5 marks)

**SECTION B (ESSAY QUESTIONS, 30 MARKS)**

9. Discuss how xerophytes are adapted to their ecological zones. (15 marks)
10. Using well labeled diagram, explain the structure and function of root tip meristem. (15 marks)
11. Describe internal leaf anatomy and its adaptation to leaf functions, using well labeled diagram. (15 marks)