



(University of Choice)

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

**UNIVERSITY EXAMINATIONS
2023/2024 ACADEMIC YEAR**

**FIRST YEAR SECOND SEMESTER EXAMINATIONS
MAIN EXAM**

**FOR THE DEGREE
OF
MASTER OF SCIENCE IN PLANT BREEDING**

COURSE CODE: APB 825

**COURSE TITLE: REGULATORY MECHANISMS IN PLANT
DEVELOPMENT**

DATE: 24.04.2024

TIME: 3-5PM

INSTRUCTIONS TO CANDIDATES

Answer **FOUR** questions
Question **ONE** is Compulsory

TIME: 3Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 2 Printed Pages. Please Turn Over. ►

Compulsory

1. Discuss fifteen (15) contents of plant tissue culture media and their plant growth regulatory potentials [15 marks]

Choose any three

2. Propose five (5) plant growth regulatory features that could be integrated into a maize *Zea mays* (Poaceae) lines to provide double edged protection against the root lesion nematode *Pratylenchus zeae* (Pratylenchidae) and drought conditions [15 marks]

3. Describe five (5) mechanisms through which sunlight regulates the growth of plants [15 marks]

4. Discuss plant-weed interactions between *Sorghum bicolor* (Poaceae) and *Striga hermonthica* (Orobanchaceae) mapping out potential areas of crop improvement for tolerance to the hemi-parasitic weed [15 marks]

5. Discuss the application of synthetic biology tools and techniques in the development of high yielding crop varieties [15 marks]