MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

(Main Examination)

FOR THE DEGREE

OF

MASTER OF SCIENCE IN PLANT HEALTH MANAGEMENT

COURSE CODE: APH 821

COURSE TITLE: PLANT BREEDING FOR STRESS RESISTANCE

DATE: 27TH APRIL, 2022 **TIME: 2-5 PM**

INSTRUCTIONS TO CANDIDATES

Answer **ANY THREE** questions **(60 Marks)**

TIME: **3 hours**

MMUST observes ZERO tolerance to examination cheating

This paper consists of 3 printed pages. Please Turn Over

1. Define the following terms as used in plant breedingtechniques.

(20 marks)

a) Chasmogamy
b) Asexual reproduction
c) Biofortification
d) Seed dormancy
e) Thigmotropism
f) Emasculation
g) Plant male sterility
h) Monoecy
i) Self-pollination
j) Hybridization

2. a).Malnutrition is a major concern in the third world developing countries. To overcome this, state and explain some of the objectives that must be put into consideration for the breeding program in biofortification process. **(10 marks)**

b). As a scholar and a certified plant breeder, you have been invited (guest speaker) to give a talk on plant breeding for stress resistance to be held at KARI, Nairobi Kenya. State and explain some of the merits you would talk about in plant breeding to the workshop attendees. **(10 marks)**

3. a). Define plant hormone. **(2 marks)**

b). State some of the plant hormones and the role they play. **(8 marks)**

c). Briefly discuss the merits of crop domestication in relation to the current society **(10 marks)**

4. Discuss breeding methods that can be applied in self-pollinated and cross pollinated crops **(20 marks)**

5. Discuss the application of genetic engineering in plant breeding for biotic stress resistance **(20 marks)**