Uganda Martyrs University

FACULTY OF EDUCATION

BACHELOR OF EDUCATION (PRIMARY) YEAR ONE

SEMESTER TWO EXAMINATIONS, 2022/23

AGRICULTURE EDUCATION

PAPER ONE: AGRONOMY, CROP PHYSIOLOGY AND CROP IMPROVEMENT

DATE: Fri 19/05/2023 **Time: 2:00 PM-5:00 PM**

Instructions:

- **Do not write anything on this question paper.**
- **Answer Four questions, by doing the Compulsory Question One, and any other three questions.**
- **Begin each selected question on a new page in the answer booklet.**
- **Follow instructions on this question paper and answer booklet carefully.**
- **Each question carries a total of 25 marks**

1. COMPULSORY QUESTION

(a) Imagine you have been approached by the LC of your village inviting you to advise the youth on the objectives of plant breeding during their village meeting. Mention any seven objectives of plant breeding you would base on to advise the youth. (7 Marks)

(b) Explain any five differences between cross pollinated plants and self-pollinated plants. (10 Marks)

(c) Describe any four advantages of a sexual reproduction in plants. (8 Marks)

2. In your home district, a range of crops are grown locally by farmers.

(a) Explain the term agronomy (5 Marks)

(b) Describe any ten (10) agronomical practices farmers apply to improve crop yields. (20 Marks)

3. (a) What is meant by the term transpiration? (2 Marks)

(b) Discuss any four metrological factors which determine transpiration. (8 Marks)

(c) Distinguish between ecology and ecosystems. (4 Marks)

(d) Describe any four climatic factors affecting plant growth. (8 Marks)

(e) Explain the relevance of decomposers in an ecosystem. (3 Marks)

4. (a) Briefly explain the term photosynthesis with the aid of a chemical equation. (3 Marks)

(b) Describe the (i) conditions, (ii) raw materials and (iii) products for photosynthesis. (18 Marks)

(c) Show the importance of photosynthesis to a farmer. (4 marks)

5. (a) Distinguish between mitosis and meiosis.(4 Marks)

(b) Distinguish between the following;

i) Dominant allele and Recessive allele. (4 Marks)

ii) Homozygote and Heterozygote (4 Marks)

iii) Phenotype and genotype. (4 Marks)

(c) Explain the significance of mitosis. (8 Marks)

(d) State Mendel's second law. (1 Mark)

6. Explain the methods of breeding the following crop plants;

(a) Breeding self-pollinated crop species. (8 Marks)

(b) Breeding cross pollinated crop species. (8 Marks)

(c) List the four major stages of mitosis. (8 Marks)

(d) What is cytokinesis? (1 Mark)

END