Uganda Martyrs University

FACULTY OF EDUCATION

BACHELOR OF EDUCATION (PRIMARY) YEAR ONE

SEMESTER TWO EXAMINATIONS, 2023/24

AGRICULTURE EDUCATION

PAPER ONE: AGRONOMY, CROP PHYSIOLOGY AND CROP IMPROVEMENT

Wed 22/05/2024 **Time: 2:00 PM-5:00 PM**

Instructions:

- **Do not write anything on this question paper.**
- **Answer any *four* questions choosing two questions from each of the sections A and B.**
- **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**

SECTION A: (AGRONOMY, AND CROP PHYSIOLOGY)

Qn. 1. (a) Distinguish between Leaf Area Index (L.A.I) and Net Assimilate Rate (NAR) under Crop Growth Rate (C.G.R). **(7 marks)**

(b) Suggest any five factors that influence the buildup of Leaf Area Index (L.A.I) early in the season. **(10 marks)**

(c) Briefly explain the major negative factors crops face during their growth. **(8 marks)**

Qn.2(a) Explain the terms and give examples where necessary;

(i) Mutualism **(3 marks)**

(ii) Commensalism **(3 marks)**

(iii) Symbionts (or naturalism) **(3 marks)**

(iv) Parasitism **(3 marks)**

(b) Identify any five ways human beings have continuously destroyed the environment. **(10 marks)**

(c) Mention any three examples of decomposers in the ecosystem. **(3 marks)**

Qn.3(a) Explain the term plant propagation. **(5 marks)**

(b) Discuss any five methods of vegetative propagation. **(10 marks)**

(c) Suggest any five advantages of vegetative propagation over use of seeds. **(10 marks)**

SECTION B: CROP IMPROVEMENT

Qn.4. (a) What is mitosis? (2 marks)

(b) Discuss the stages of mitosis with good drawings. **(20 marks)**

(c) Identify the significance of mitosis in organisms. **(3 marks)**

Qn.5. (a) State Mendel's First Law of inheritance. **(2 marks)**

(b) Use a cross between a pea plant producing round peas with a plant producing wrinkled peas to illustrate Mendel's First Law of Inheritance. **(7mkrs)**

(c) (i) What is variation? **(2 marks)**

(ii) Discuss the forms of variation with examples. **(8 marks)**

(iii) Identify the sources of variation. **(6 marks)**

Qn.6. (a) Suggest any five objectives of plant breeding. **(10 marks)**

(b) With examples, give the characteristics of cross-pollinated plants (out breeders). **(12 marks)**

(b) i) What is mutation? **(1 marks)**

ii) Explain the types of mutation. **(2 marks)**

END