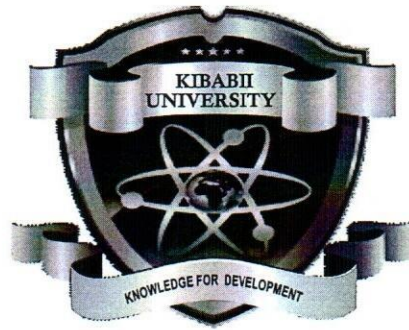# KIBABII UNIVERSITY

UNIVERSITY EXAMINATIONS 2022/2023 ACADEMIC YEAR

SECOND YEAR 2ND SEMESTER MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF SCIENCE AGRICULTURE EDUCATION AND EXTENSION

COURSE CODE: ACR 222

COURSE TITLE: ANNUAL CROPS

DATE: 21ST APRIL 2023   **TIME: 9 – 11 AM**

INSTRUCTIONS TO CANDIDATES

Answer Question ONE and any other TWO Questions.

TIME: 2 Hours

This paper consists of 2 printed pages. Please Turn Over ▶

1. (a) (i) Research has shown that if a farmer plants his maize crop two weeks after the onset of rains, they may lose an average of 2½ bags of maize per acre per week for the two weeks. Give two (2) reasons.   (2 marks)

(ii) Maize (*Zea mays*) can be economically classified as a cereal, fodder and oil crop. Briefly explain.   (3 marks)

(ii) Identify five (5) desirable yield characteristics in Maize hybrids.(5 marks)

(b)   (i) State four (4) disease management strategies in Rice (*Oryza sativa*) (5 marks)
       (ii) List five (5) physiological growth stages in Wheat (*Triticum aestivum*).
                                                                        (5 marks)

(c) A farmer has planned to crop 1.5 hectares (Ha) of land with Wheat (*Triticum aestivum*) in Njoro. The recommended fertilizer application rate at planting is 50 kg P_2O_5 per Ha and 75 kg N per Ha at top dressing. Calculate the quantity of fertilizer (bags) he will purchase if his source is:

(i) DAP 18:46:0 at planting.   (3 marks)

(ii) CAN 27% N at top dressing.   (3 marks)

(iii) How much phosphate (kg P_2O_5) will the crop receive in (i) above?
                                                                        (4 marks)

2. Discuss the factors causing crop yield decline in sub-Saharan Africa and recommend appropriate mitigation measures.   (20 marks)

3. Identify the diseases and pests of economic importance in Bean (*Phaseolus vulgaris*) and briefly discuss the management strategies employed in their control.   (20 marks)

4. Discuss the principles of preventive storage protection in agricultural crops.(20 marks)

5. Explain the impact of ecological factors on Maize (Zea mays) production in Kenya.Give specific examples.   (20 marks)