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|  **CHUKA** |  | **UNIVERSITY** |

**UNIVERSITY EXAMINATIONS**

**EXAMINATION FOR THE AWARD OF DEGREE OF MASTER OF SCIENCE IN AGRICULTURE**

**AGRI 820: ADVANCES IN PLANT BREEDING**

**STREAMS: MSC AGRI TIME: 3 HOURS**

**DAY/DATE: WEDNESDAY 06/10/2021 2.30 P.M – 5.30 P.M.**

**INSTRUCTIONS:**

* **Answer ALL questions in section A (20 marks) and any two in section B (40 marks).**

**SECTION A**

1. (a) Describe the three categories of clonally propagated species based on their flowering behaviour. (6 marks)

 (b) Giving an example, describe the use of undomesticated plants in crop improvement. (6 marks)

2. Describe doubled haploid technology in crop improvement and explain any two of its advantages. (8 marks)

**SECTION B**

3. (a) Explain the terms adaptability and stability in breeding. (4 marks)

 (b) Describe marker assisted selection and its main advantages over conventional

 breeding. (16 marks)

4. (a) Describe the three factors that determine genetic advance and the causes of biological variation. (10 marks)

 (b) Describe genetic and phenotypic assertive systems of matting in plants.(10 marks)

5. Discuss genetic modification as an advanced method in crop improvement. (20 marks)

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