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**UNIVERSITY EXAMINATIONS**  
**2023/2024 ACADEMIC YEAR**  
**FOURTH YEAR FIRST SEMESTER**  
**MAIN EXAMINATION**

**FOR THE DEGREE OF BACHELOR OF SCIENCE IN; AGRICULTURE  
AND BIOTECHNOLOGY**

**COURSE CODE: ACR 411**

**COURSE TITLE: PRECISION AGRICULTURE & ORGANIC FARMING**

**DATE: 13<sup>TH</sup> DECEMBER 2023**

**TIME: 2 – 4 PM**

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**INSTRUCTIONS TO CANDIDATES**

Answer Question One and Any other TWO (2)

TIME: 2 Hours

This Paper Consists of 2 Printed Pages. Please Turn Over. 

**QUESTION ONE: (COMPULSORY)**

**(30 MKS)**

- a) List FOUR factors that determine the accuracy of Global Positioning System use in precision agriculture (4 MARKS)
- b) Outline THREE important features a complete Farm Management System (FMS) should provide (6 MARKS)
- c) Define the following terms as applied in precision agriculture
  - i. Remote Sensing (RS) (2 MARKS)
  - ii. Geographic information systems (GIS) (2 MARKS)
- d) Outline THREE challenges of precision agriculture (6 MARKS)
- e) Outline THREE concepts of organic farming (6 MARKS)
- f) List FOUR objectives of precision Agriculture (4 MARKS)

**QUESTION TWO**

Briefly describe FOUR precision agriculture system elements applied in agriculture (20 MARKS)

**QUESTION THREE**

Discuss FIVE Benefits of Precision Agriculture in Organic Farming (20 MARKS)

**QUESTION FOUR**

Discuss FIVE environmental benefits of organic agriculture (20 MARKS)

**QUESTION FIVE**

- a. Outline FOUR key principles for sustainability of organic agriculture (8 MARKS)
- b. Outline FOUR principles of Organic agriculture (12 MARKS)