



UNIVERSITY OF CHOICE

**MASINDE MULIRO UNIVERSITY OF  
SCIENCE AND TECHNOLOGY  
MAIN CAMPUS**

**UNIVERSITY EXAMINATIONS  
2023/2024 ACADEMIC YEAR**

**MAIN EXAMS FOR  
MASTER OF SCIENCE IN PLANT HEALTH MANAGEMENT  
AND RELATED OPTIONS**

**COURSE CODE: APB 815/APH 822**

**COURSE TITLE: RESEARCH METHODS FOR  
AGRICULTURAL SCIENCES**

**DATE 23.04.2024**

**TIME: 8-10AM**

**INSTRUCTIONS TO CANDIDATES**

- i) Answer ALL questions in SECTION A and any TWO questions in SECTION B
- ii) Write clearly and Show logical steps clearly when giving illustrative examples

*MMUST observes ZERO tolerance to examination cheating*

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

**SECTION A: ANSWER ALL QUESTIONS (40 Marks)**

**QUESTION ONE**

- i) Outline the components of a research process. (7 Marks)
- ii) Briefly discuss the methods available to a plant health management research scientist for acquiring knowledge (7 Marks)

**QUESTION TWO**

Discuss briefly the qualities of:

- i) Good statement of a research problem. (6 Marks)
- ii) Good research objectives (6 Marks)

**QUESTION THREE**

Discuss briefly the following research designs in the context of their internal validity, social validity and external validity:

- a) Cross sectional Survey (4 Marks)
- b) Randomized block (5 Marks)
- c) Case study (5 Marks)

**SECTION B ANSWER ANY TWO QUESTIONS (20 Marks)**

**QUESTION FOUR**

In plant health management studies there are applicable sampling methods Critically discuss the above statement (10 Mark )

**QUESTION FIVE**

Outline what would guide a researcher to construct the following:

- i) Theoretical framework (5 Marks)
- ii) Conceptual framework (5 Marks)

### QUESTION SIX

The rice bean project in Kakamega county, Kenya has received reports from farmers that their rice bean crop leaves have wilted before the start of flowering. Outline the steps a plant health research scientist at the the KALRO station, Kakamega will follow to investigate the above mentioned rice bean crop disease (10 Marks)

