



**MAASAI MARA UNIVERSITY**  
**MAIN EXAMINATION 2024/2025 ACADEMIC**  
**YEAR**  
**THIRD YEAR FIRST SEMESTER EXAMINATIONS**  
  
**FOR**  
  
**THE DEGREE OF BACHELOR OF SCIENCE**  
**MATHEMATICS AND BACHELOR OF SCIENCE IN**  
**APPLIED STATISTICS**  
  
**STAT 3234-1: RESEARCH METHODS AND ANALYSIS**

DATE: APRIL, 2024

DURATION: 2 HOURS

**INSTRUCTIONS TO CANDIDATES**

1. This paper contains **FOUR** (4) questions
2. Answer question **ONE** (1) and any other **TWO** (2) questions
3. Do not forget to write your Registration Number.

**Question 1 (20 Marks)**

- a) (i) Give the definition of a research and data analysis (2 Marks)
- (ii) Give and describe two types of research (6 Marks)
- b) List three main components of a research (3 Marks)
- c) Describe any three criteria used for selecting a research topic (6 Marks)
- d) List three uses of probability sampling (3 Marks)

**Question 2 (15 Marks)**

- a) (i) Give considerations that a research has to make when formulating a problem statement (2 Marks)
- (ii) State four steps used in qualitative data analysis (2 Marks)
- b) Mention information included in the statement of a problem (7 Marks)
- c) State four challenges encountered during topic selection (4 Marks)

**Question 3 (15 Marks)**

- a) State four qualities of an effective research title (4 Marks)
- b) Define the general objective and explain what are the specific objectives in a research study (4 Marks)
- c) When a researcher is stating his/her objectives, what considerations should he/she put into account? (5 Marks)
- d) Define the term Hypothesis and state two types of hypothesis (2 Marks)

**Question 4 (15 Marks)**

- a) Describe each of the following scales of measurements
  - i) Nominal scale (1 Mark)
  - ii) Ordinal scale (1 Mark)
  - iii) Interval scale (1 Mark)
- b) Differentiate between a numerical variable and a categorical variable (2 Marks)
- c) Define a variable and state four types of variables (3 Marks)
- d) Discuss any four types of research design (4 Marks)
- e) Define experimental research (2 Marks)