



KAIMOSI FRIENDS UNIVERSITY

MAIN CAMPUS

**SPECIAL EXAMINATIONS
2024/2025 ACADEMIC YEAR**

**SECOND YEAR SECOND SEMESTER EXAMINATIONS
FOR THE DEGREE
OF
BACHELOR OF INFORMATION TECHNOLOGY**

**COURSE CODE: BCS 222/BIT 224: RESEARCH METHODS AND
TECHNICAL WRITING (PAPER 1)**

DATE 23/6/2026

TIME: 9-11AM

INSTRUCTIONS TO CANDIDATES

- 1. ANSWER QUESTION ONE AND ANY OTHER TWO FROM THE CHOICES GIVEN.**
- 2. PHONES, SMART WATCHES, EAR PHONES OR ANY OTHER UNAUTHORIZED DIGITAL AND AI GADGETS AND APPLICATIONS ARE NOT ALLOWED IN THE EXAMINATION ROOM.**
- 3. ANSWER ALL QUESTIONS IN THE EXAM ANSWER BOOKLET PROVIDED.**
- 4. DO NOT WRITE ON THIS QUESTION PAPER.**
- 5. ALL KAFU EXAMINATION RULES AND REGULATIONS APPLY.**

DURATION OF EXAMINATION: TWO (2) HOURS

SECTION A: COMPULSORY

QUESTION ONE (30 MARKS)

- a) Define the term research and justify why it is considered as a systematic process 3 Mks
- b) Differentiate between basic and applied research and give one example for each 4 Mks
- c) Briefly describe two types of hypotheses as used in research 4 Mks
- d) A university department is experiencing low student uptake of a new e-learning portal.
 - i. Write one problem statement to depict the above scenario 2 Mks
 - ii. Formulate two SMART objectives and research questions aligned to the problem stated in i above 4 Mks
- e) Select an appropriate research design for assessing factors that influence e-health app adoption, and justify your choice with two reasons 4 Mks
- f) Distinguish between qualitative and quantitative research approaches and give an example for each 5 Mks
- g) Observation is one of data collection tools. Give a scenario where is suitable and two advantages of this tool in research 4 Mks

SECTION B: ANSWER ANY THREE QUESTIONS

QUESTION 2 (20 MARKS)

ExCello Company which is a local IT firm in Vihiga county has reported a high rate of system failures in their newly implemented customer management system." As a researcher, you have been contracted to investigate this issue.

- i. Formulate a suitable research title and a clear research problem statement 5 Mks
- ii. Define three research objectives and corresponding research questions for this study 6 Mks
- iii. Explain, with justification, whether you would adopt a qualitative, quantitative, or mixed-method approach for this research 4 Mks
- iv. Outline five specific steps you would take to investigate this problem 5 Mks

QUESTION 3 (20 MARKS)

- a) Compare and contrast probability and non-probability sampling techniques, providing one example of an IT-related scenario for each 8 Mks
- b) You need to study the user experience (UX) of a new mobile banking application among 10,000 active users. Suggest a sampling method and justify your choice 6 Mks
- c) Discuss three advantages and three disadvantages of using online questionnaires as a primary data collection method 6 Mks

QUESTION 4 (20 MARKS)

- a) Define research ethics and explain five ethical considerations to keep in mind when conducting research involving human participants 10 Mks
- b) Outline the essential components of a formal technical project proposal, explaining the purpose of each section 10 Mks

QUESTION 5 (20 MARKS)

- a) A pilot of 12 respondents yielded satisfaction scores: 3, 4, 4, 5, 2, 4, 5, 3, 4, 4, 5, 3. Compute the sample mean and interpret it in one sentence 3 Mks
- b) As a research expert with reference to the following research topic, answer the questions that follow:

Effects of generative AI technologies on academic quality in institutions of higher learning:

Case of KAFU University

- i) Formulate a problem statement from the above topic 3 Mks
- ii) Using a conceptual framework, show the Independent, Dependent and Moderating variables and their indicators 8 Mks
- iii) From the variables identified state Three objectives 3 Mks
- iv) Formulate research questions from the objectives stated above 3 Mks