



**KAIMOSI FRIENDS UNIVERSITY
SECOND YEAR SECOND SEMESTER UNIVERSITY
EXAMINATIONS**

2025/2026 ACADEMIC YEAR

SPECIAL EXAMINATIONS

FOR THE DEGREE OF BACHELOR OF IT /COMPUTER SCIENCE

COURSE TITLE: DATA ANALYSIS TECHNIQUES

COURSE CODE: BIT 220

DATE: 23/6/2026

TIME: 9-11 AM

INSTRUCTIONS TO STUDENTS

- 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.**
- 6. DURATION OF EXAMINATION: TWO (2) HOURS**

KAFU observes ZERO tolerance to examination cheating.

SECTION A – COMPULSORY (30 MARKS)

CASE SCENARIO

A hospital collected data to analyze factors affecting patient recovery time. The variables recorded include:

- Age
- Gender
- Treatment Type
- Length of Hospital Stay (days)
- Recovery Status (Recovered / Not Recovered)

The management wants to determine which factors significantly affect recovery outcomes.

QUESTION ONE

- a) Classify each variable as nominal, ordinal, interval, or ratio. (10 Marks)
- b) Identify appropriate statistical techniques in SPSS to:
 - i. Test association between treatment type and recovery status.
 - ii. Determine whether age affects length of hospital stay. (10 Marks)
- c) Explain how you would present and interpret SPSS output for management decision-making. (10 Marks)

SECTION B – ANSWER ANY TWO QUESTIONS (20 MARKS EACH)

QUESTION TWO

A researcher wants to determine whether there is a relationship between hours spent online and academic performance among university students.

- a) Explain how to perform correlation analysis in SPSS. (5 Marks)
- b) Interpret possible outcomes of the correlation coefficient. (5 Marks)
- c) Explain when a Chi-Square test is appropriate. (5 Marks)
- d) Describe the procedure of conducting a Chi-Square test in SPSS and interpreting the results. (5 Marks)

QUESTION THREE

- a) Discuss the importance of data visualization in statistical analysis. (8 Marks)
- b) Explain how to create and interpret boxplots and histograms in SPSS. (12 Marks)

QUESTION FOUR

A researcher developed a questionnaire to measure customer satisfaction and wants to test its reliability.

- a) Explain how to test reliability using Cronbach's Alpha in SPSS. (10 Marks)
- b) Interpret possible output results and their implications. (10 Marks)

QUESTION FIVE

A company wants to predict whether customers will subscribe to a service (Yes/No) based on age, income, and marketing exposure.

- a) Identify the appropriate statistical method. (5 Marks)
- b) Explain how to run logistic regression in SPSS. (7 Marks)
- c) Describe how to interpret odds ratios and model fit statistics. (8 Marks)