



MACHAKOS UNIVERSITY

University Examinations for 2022/2023 Academic Year

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

FOURTH YEAR FIRST SEMESTER SPECIAL/SUPPLEMENTARY EXAMINATION FOR BACHELOR OF ARTS AND BACHELOR OF EDUCATION

AGE 402: SURVEYING

DATE: 9/3/2023

TIME: 8.30 – 10.30 AM

INSTRUCTIONS:

Answer Question ONE and any other two Questions.

Use illustrations where appropriate

QUESTION ONE (30 MARKS)

- (a) Explain the relationship between surveying and any other TWO sciences or Arts (4 marks)
- (b) Differentiate between:-
 - Topographic and cadastral surveys (4 marks)
 - Forward and backward bearing (4 marks)
 - Geodetic and plain survey (4 marks)
- (c) Explain and demonstrate how horizontal and angular measurements are done to construct a closed traverse (6 marks)
- (d) Assess the practical process of chain survey (6 marks)
- (e) Examine the relationship between Surveying and GIS (2 marks)

QUESTION TWO (20 MARKS)

- (a) Assess the effect of technology on the development of surveying (8 marks)
- (b) Examine the concepts of offsets in chain survey (4 marks)
- (c) Elaborate how you will carry out fieldwork in surveying (8 marks)

QUESTION THREE (20 MARKS)

Assess the role of the following surveying instruments; Levelling equipment, Ranging rod, Total station and prismatic compass (20 marks)

QUESTION FOUR (20 MARKS)

Using illustrations, explain the procedure of taking horizontal measurements across a hill in chain surveying (20 marks)

QUESTION FIVE (20 MARKS)

- (a) With an example, elaborate how you will determine the height of a tree in an inaccessible place (8 marks)
- (b) Suppose a sewer line is being constructed, suggest appropriate instrumentation for the exercise. (12 marks)