



MACHAKOS UNIVERSITY

University Examinations for 2020/2021

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

FIRST YEAR TERM 1 EXAMINATION FOR

DIPLOMA IN BUILDING TECHNOLOGY AND CIVIL ENGINEERING

SURVEYING 1

DATE: 3/6/2021

TIME: 8:30 – 11:30 AM

INSTRUCTIONS

ANSWER ALL QUESTIONS

1. a) Define the following terms as used in surveying
 - i) Topographical survey
 - ii) Cadastral survey
 - iii) Aerial survey
 - iv) Engineering survey
 - v) Hydrographical survey
 - vi) Archaeological survey (12 marks)
- b) Describe the two branches of surveying (4 marks)
- c) Give two reasons for the study of surveying (4 marks)
2. a) With the aid of diagram, describe the following chain surveying equipments
 - i) Cross staff
 - ii) Abney level
 - iii) Ranging rod
 - iv) Engineer's chain (20 marks)
3. a) Explain the three types of errors in chain surveying (6 marks)
- b) Give the three obstacles to chain surveying (3 marks)
- c) With the aid of a diagram, explain the procedure on how to chain through a river. (11 marks)

4.
 - a) Differentiate between chaining and ranging (4 marks)
 - b) With a diagram, describe the procedure on how conduct indirect chaining (8 marks)
 - c) With aid of a diagram, explain the procedure on how to chain through a building (8 marks)
5.
 - a) With the aid of a diagram, describe the following chain surveying equipments (20 marks)
 - i) Optical square
 - ii) Band
 - iii) Pegs
 - iv) Arrows
 - v) Clinometer