



JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ENGINEERING AND TECHNOLOGY

**UNIVERSITY EXAMINATIONS FOR THE DEGREE IN SCIENCE IN CONSTRUCTION
MANAGEMENT**

2ND YEAR 1ST SEMESTER UNIVERSITY EXAMINATIONS 2021-2022 ACADEMIC YEAR

CENTRE: MAIN CAMPUS

COURSE CODE: TCB 1213

COURSE TITLE: ENGINEERING SURVEYING I

EXAM VENUE: STREAM: BSc CONSTRUCTION MGT

DATE: /12/2021 EXAM SESSION:

DURATION: 2 HOURS

Instructions

- 1. Answer question 1 (Compulsory) and ANY other two questions**
- 2. Candidates are advised not to write on question paper**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room**

QUESTION ONE (30 Marks)

- (a) There are two major categories of surveying. Name and describe them?
(6 Marks).
- (b) The Survey Process follows sequence of steps, Reconnaissance is one of them describe this?
(7 marks)
- (c) The responsibilities of the surveyor are many and varied. List and explain four (4) of these responsibilities?
(8 marks)
- (c) There are many different ways of obtaining differences in height. List and briefly describe three (3) common ones?
(9 Marks)

QUESTION TWO (20 Marks)

- (a) Direct measurement is obtaining the measurement directly which means measuring the length directly using simple equipment and there is no need to solve hard equations. List six (6) instruments used in direct measurement during field work?
(6 Marks)
- (b) Explain the principle of Differential Leveling?
(4 Marks)
- (c) Explain Reciprocal Leveling with a Sketch?
(4 Marks)
- (d) Errors in measurements stem from three sources: personal, instrumental, and natural. Describe these three (3) sources?
(6 Marks)

QUESTION THREE (20 Marks)

- (a) There are THREE leveling techniques. List and describe them?
6 Marks)
- (b) Explain the difference between Accuracy and Precision in Survey?
(4 marks)
- (c) Name and explain the FOUR steps in chain surveying?

(4 Marks)

(d) Many textbooks on surveying refer to a blunder as a gross error. One can easily make a case for a blunder to be considered an error. Name SIX examples of blunders in Surveying?

(6 Marks)

QUESTION FOUR (20 Marks)

(a) There are TWO general types of errors, systematic and random. Describe them?

(4 Marks)

(b) Name and briefly describe THREE types of levels?

(6 Marks)

(c) Explain the electromagnetic principles of Electronic Distance Measurement (EDM) theory and operation?

(6 Marks)

(d) The system of measurement used for surveying is Système International (SI). Fill in the missing gaps for Units and Symbols?

(4 Marks)

<u>Quantity</u>	<u>Unit</u>	<u>Symbol</u>
Length		
Area		
Volume		
Angle		
Mass (Weight)		
Temperature		

END