



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF SPATIAL PLANNING AND NATURAL RESOURCES MANAGEMENT
UNIVERSITY EXAMINATION FOR DIPLOMA IN ENVIRONMENTAL SCIENCE**

**2nd Year 1st SEMESTER 2023/2024 ACADEMIC YEAR
MAIN REGULAR**

COURSE CODE : LSM/CU/LM/CR/02/6/A

COURSE TITLE: Engineering Survey

EXAM VENUE: STREAM: Dipl. in Land Survey

DATE: EXAM SESSION: Sep-Dec 2023

TIME: 3.00 HOURS

Instructions:

- i. Answer questions **one** and any other **three**.
- ii. Candidates are advised not to write on the question paper.
- iii. Candidates must hand in their answer booklets to the invigilator while in the examination room.

SECTION A

QUESTION ONE: 40 marks

- i. Define:
 - Benchmark
 - Reconnaissance
 - Traversing
 - Triangulation
 - Backsight(5 marks)
- ii. Name FOUR importances of reconnaissance in land survey(4 marks)
- iii. State THREE types of monuments (3 marks)
- iv. Name FIVE uses of GNSS in Land Survey (5 marks)
- v. Explain three applications of levelling in Land Survey (6 marks)
- vi. State FOUR advantages of Triangulation (4 marks)
- vii. Explain the **TWO** components of levelling (4 marks)
- viii. Name four applications of Trigonometric Heighting (4 marks)
- ix. State FIVE purposes of setting out in land survey (5 marks)

SECTION B: 60 marks

Answer any **THREE** questions. Each earns 20 marks.

QUESTION TWO

- a) Explain FIVE steps involved in Traversing (10 marks)
- b) Explain FIVE types of control points (10 Marks)

QUESTION THREE

- a) Explain FIVE importance of control point (10 marks)
- b) Explain FIVE safety precautions taken when in a field survey (10 marks)

QUESTION FOUR

- a) Explain FIVE limitations of Triangulation (10 marks)
- b) Explain the FIVE steps in Trigonometric heighting (10 marks)

QUESTION FIVE

- a) Discuss FOUR components of Triangulation (10 marks)
- b) Explain FIVE applications of control point (10 marks)

QUESTION SIX

- a) Explain FIVE importances of setting out (10 Marks)
- b) Explain FIVE methods of Setting out in Land Survey (10 Marks)