

073106T4LAS

LAND SURVEY LEVEL 6

LSM/OS/LS/CR/03/6/A

Conduct Cadastral Survey

Nov/Dec 2024



**TVET CURRICULUM DEVELOPMENT, ASSESSMENT AND CERTIFICATION COUNCIL
(TVET CDACC)**

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INSTRUCTIONS TO CANDIDATE

1. Marks for each question are indicated in the brackets.
2. The paper consists of **TWO** sections: **A** and **B**.
3. Candidates are provided with a separate answer booklet
4. **DO NOT** write on this question paper.

This paper consists of FOUR (4) printed pages.

**Candidates should check the question paper to ascertain that all pages
are printed as indicated and that no questions are missing.**

SECTION A (40 MARKS)

Answer ALL Questions in This Section

1. Terminologies in cadastral surveying are crucial for accurate property descriptions. Define the following terms commonly used in cadastral surveying. (2 Marks)
 - a) Boundary
 - b) Easement
2. Surveyors play a crucial role in determining property boundaries. Distinguish between a general boundary and fixed boundary as used in cadastral surveying. (4 Marks)
3. Deed plans are prepared after field work and accurate plotting of the survey data. Explain the below types of deed plans in cadastral surveying (4 Marks)
 - a) Mortgage
 - b) Resumption
4. Post-field work computation ensures precision and reliability of the survey. Highlight FOUR post-fieldwork computations that are carried out to generate the final list of coordinates. (4 Marks)
5. Abbreviations are commonly used in surveying. Explain the difference between R.I.M, P.D.P and a P.I.D of each of them (3 Marks)
6. Erasures and corrections are common occurrences during plotting of survey data. Highlight the survey regulations concerning erasures and corrections of a survey plan. (4 Marks)
7. Cadastral surveying entails measuring of distances, angles and direction. Highlight FOUR major applications of cadastral surveying (4 Marks)
8. A surveyor has several methods of obtaining the X and Y positions on the earth surface. Identify THREE methods a surveyor can use to generate horizontal controls (3 Marks)
9. The final output of any cadastral surveying project is a cadastral plan. Identify FOUR objectives of preparing a cadastral plan (4 Marks)
10. For convenient placings of survey points, a surveyor needs to properly place the instrument stations in the course of a project. Identify FOUR factors to consider in identifying an instrument station. (4 Marks)
11. Survey plans serve the important function of providing details needed for the amendment of R.I.Ms. Identify FOUR pieces of information contained in survey plans (4 Marks)

SECTION B: (60 MARKS)**Answer Any THREE Questions in This Section**

12.

- a) Reconnaissance is the initial and the most important stage of any survey project. In relation to cadastral survey;
- i) Describe the field procedure for carrying out the search for survey points. (4 Marks)
 - ii) Explain THREE purposes of carrying out reconnaissance survey. (6 marks)
- b) Having successfully completed a survey project, Surveyor. Koech submitted the surveyors report to the Director of Survey for processing. Explain FIVE contents of the report that Surveyor Koech prepared. (10 Marks)

13. Beacons are placed on the ground to mark points as it appears on the map and vice versa.

- a) Discuss THREE types of beacons placed by surveyors in cadastral surveying. (9 Marks)
- b) Highlight FIVE purposes of carrying out consistency checks in a cadastral plan. (5 Marks)
- c) Outline the provisions of the survey concerning the following. (6 Marks)
- i). Degree of accuracy for computation
 - ii). Erasures and corrections on a plan

14. a) With reference to boundaries, highlight (8 Marks)

- i). Two ways in which fixed boundaries are defined on a cadastral plan
- ii). Two ways of defining general boundaries on the ground

b) You have been tasked to subdivide Morara's piece of land among his four sons. Discuss the procedure and steps involved in subdividing the piece of land and subsequent registration in Kenya. (12 Marks)

15. **Table 1** shows data collected from a ray trace traverse survey method between old beacons W6 and H2. Use the data and the datum coordinates in **Table 2** to compute:

- (i) Swing and scale factor;
- (ii) Corrected bearings and distances for the traverse lines and the final coordinates of the new points. (20 Marks)

Table 1

Line	Bearing	Distance (m)
W6 - TP1	329° 01' 09"	67.227
TP1 - TP2	06° 22' 43"	99.962
TP2 - TP3	40° 33' 18"	101.759
TP3 - TP4	04° 05' 35"	105.032
TP4 - H2	303° 25' 23"	99.331

Table 2

Point	N (m)	E (m)
W6	—147912.146	—29063.323
H2	—147518.260	—29096.233