



UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

**SECOND YEAR EXAMINATION FOR THE DEGREE OF
BACHELOR OF SCIENCE (GEOGRAPHY)**

GEOG 214: PRACTICAL GEOGRAPHY AND FIELDWORK II

STREAM: R

TIME: 2 HRS

DAY: THURS [11.30AM – 13.30]

DATE: 08/12/2022

THIS QUESTION PAPER CONSISTS OF FOUR (4) PAGES

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QUESTION ONE (Compulsory-30 marks)

- (a) Differentiate between a choropleth and a dasymetric mapping of qualitative area data
(3 marks)
- (b) Table 1 below shows the hypothetical data for Nairobi County crimes. Use it to answer the following questions: -
- Discuss a suitable quantitative mapping technique for the crime point data
(2 marks)
 - Transfer the map of Nairobi shown in **figure 1** attached on the tracing paper provided to map the ungrouped crime point data using the method discussed above (Show your working)
(15 marks)
 - Highlight THREE shortcomings of the technique chosen above. (3 marks)

Table 1: Hypothetical Nairobi County Crime Zones Data

Crime Zone Number on the Map	Crime Zone Name on the Map	Total Crimes
1	Dagoretti	200
2	Embakasi Central	550
3	Embakasi East	322
4	Embakasi North	425
5	Embakasi South	395
6	Embakasi West	400
7	Kamukunji	150
8	Kasarani	295
9	Kibra	1,555
10	Kilimani	50
11	Langata	22
12	Makadara	280
13	Mathare	1,000
14	Roysambu	166
15	Ruaraka	150
16	Starehe	99
17	Westlands	44



- (c) **Figure 2** below represents a hypothetical parcel of land, Plot X, which has been surveyed and the coordinates for corner beacons are as shown below in metres. Compute the area of the plot. (7 marks)

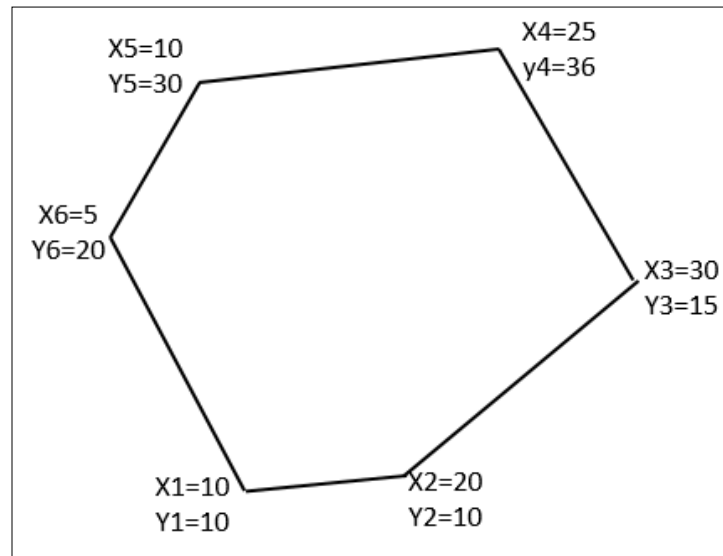


Figure. 2: Plot X

QUESTION TWO

- (a) Describe the following basic operations carried out when setting-up a land surveying instrument on a tripod:
- i) Levelling (2 marks)
 - ii) Centering (2 marks)
 - iii) Parallax elimination (2 marks)
- (b) Differentiate between the TWO main classes of land surveying. (4 marks)
- (c) Explain the importance of topographical base maps in the production of geological maps (10 marks)

QUESTION THREE

Write short notes differentiating the following:

- (a) Conformal and equidistance projections (4 marks)
- (b) Global positioning systems and GNSS (4 marks)
- (c) Vertical and horizontal controls (4 marks)
- (d) Isoline map and cartogram (4 marks)
- (e) Perspective and orthographic projections (4 marks)

QUESTION FOUR

The second year students at Laikipia University, counted the number of vehicles travelling from Nyahururu Town to various destinations and presented the data as shown in Table 2 below.

Table 2: Traffic volume from Nyahururu Town

Origin	Destination	Vehicles Counts
Nyahururu Town	Nairobi	1200
Nyahururu Town	Ol kalau	800
Nyahururu Town	Subukia	600
Nyahururu Town	Nyeri	1000
Nyahururu Town	Njabini	200
Nyahururu Town	Nakuru	14000

- Describe an appropriate quantitative technique one would use to represent the data (4 marks)
- Using the techniques described in (a) above, draw a sketch map to represent the data (5 marks)
- Comment on the results above (5 marks)

QUESTION FIVE

- Discuss THREE types of settlement patterns. (3 marks)
- Discuss THREE map generalization technique. (4 marks)
- Explain the strengths and limitations of the technique discussed above. (6 marks)
- Assume that you have been given the total population data for Kenya per county. Discuss the appropriate statistical method you would use to map the data. (7 marks)

