# KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
## UNIVERSITY EXAMINATIONS, 2022/2023 ACADEMIC YEAR
## END OF SEMESTER EXAMINATIONS
## FOR THE DEGREE OF BACHELOR OF EDUCATION (ARTS)
## **KGE 2102-CARTOGRAPHY AND MAP ANALYSIS**

Date: 14th December 2022
Time:11.30am-1.30pm

**INSTRUCTION TO CANDIDATES**
**ANSWER QUESTION ONE (COMPULSORY)AND ANY OTHER TWO QUESTIONS**
**QUESTION ONE (30 MARKS)**
a) Differentiate  cadastral from topographical and atlas maps.                                    (9 marks)
b) Explain the uses of the following drawing tools and equipment:
     i.Set squares.                                                                                                         (2marks)
     ii.French curves                                                                                                      (2marks)
     iii.Drawing compasses                                                                                            (2marks)
c) Use the map extract of Karatina (Sheet 121/3) provided to answer the following questions:
     i.Identify **three** types of lettering styles used giving examples                        (6 marks)
     ii.Delimit the area bounded by Eastings 02 and 05 and Northings 46 & 50, and calculate the
bifurcation ratio of River Rundu.                                                                                (9marks)

**QUESTION TWO    (20 MARKS)**
a)Describe **three** types of representing scales on maps.                                          (6 marks)
b)Explain the following with reference to maps
i) Bathymetric relief                                                                                                    (3 marks)
ii)Spot height                                                                                                              (3 marks)
iii)Hachures                                                                                                                (2marks)
c) Calculate the image and object distances for a sharp focus in a reduction of 2:5 with the camera focal
length 10cm.                                                                                                                (6 marks)

**QUESTION THREE    (20 MARKS)**

Study the map extract of Karatina Sheet 121/3 provided to answer the following questions:

a) Using a tracing paper, trace the course of River Kamungoini from Kamwangi Reservoir upstream
together with its tributaries.                                                                                        (10 marks)
b) Calculate the bifurcation ratio for the traced river course in (a) above.                  (4 marks)
c) Giving specific examples, identify TWO methods that have been used to depict relief in the map extract.
(6 marks)

## QUESTION FOUR   (20 MARKS)

a) Examine **four** map specifications used in topographical maps.                    (8marks)

b) State  **four** main requirements that symbols and signs used in maps must satisfy.          (4 marks)

c)Examine **four** factors that determine the choice of scales in cartography.            (8 marks)

## QUESTION FIVE  (20 MARKS)

a)  In a certain region of area 7,151,000m$^2$ thereare 7 churches labelled A to G. Given that the distances to the nearest neighbor are as shown in the table below, calculate the nearest neighbor index (Rn) and comment on the results     (10 marks)

| Church | Distance in metres |
|--------|--------------------|
| A | 150 |
| B | 150 |
| C | 130 |
| D | 240 |
| E | 130 |
| F | 230 |
| G | 230 |
| Sum Total | 1260 |

b) Discuss **five** properties of drawing materials.                    (10 marks)