

## **MAP READING**

- i. Grid Reference
- ii. Area
- iii. Distance
- iv. Detour index
- v. Trend
- vi. Bearing and Direction
- vii. Vertical interval
- viii. Inter-visibility
- ix. Direction of flow of river
- x. Amplitude
- xi. Location and hemisphere
- xii. Drawing a sketch map
- xiii. Cross section
- xiv. Describing relief
- xv. Describing drainage
- xvi. Drainage patterns/types
- xvii. Describing vegetation
- xviii. Describing settlement
- xix. Describing settlement patterns
- xx. Describing Transport and communication
- xxi. Describing Relationships between geographical aspects e.g., Relief Drainage, Relief and Transport, Drainage and Settlement etc.
- xxii. Factors for the presence of geographical aspects
- xxiii. Describing economic activities/land use types using map extract
- xxiv. Describing problems/challenges faced by people in the areas
- xxv. Sample Map Reading questions

## **PHOTOGRAPHIC INTERPRETATION**

- i. Types of photographs
- ii. Drawing a landscape sketch
- iii. Economic activities/ land use types
- iv. Relationships between geographical aspects in the photograph
- v. Formation of various features seen in the photograph
- vi. Economic importance of features and land use types
- vii. Problems faced by the region seen in the photograph

viii. Effects of the land use type on the environment

ix. Sample photographs and questions

## **FIELD WORK**

i. Topic of study

ii. Objectives/Aims/Goals of the study

iii. Pre-field activities (preparation stage)

iv. Data collection (How different method are used)

v. Advantages and disadvantages of using particular methods

vi. Problems faced during data collection

vii. Skills obtained from the field

viii. Sketches

✓ Sketch map of the area studied/Lay out

✓ Cross section/relief section/line Transect/Transverse/Catena

✓ Panoramic view (panorama)

ix. Relationships between geographical aspects

(Importance/findings/significances/ Conclusions)

✓ Physical –physical

✓ Physical-human

✓ Human-human

x. Effect of land use on physical environment

xi. Follow-up activities (post field work)

xii. Recommendation

## **MAP READING**

A map is a representation of physical and human features of a particular area on a sheet of paper as seen, drawn and printed from above using Conventional symbols.

### **LOCATING FEATURES ON THE MAP EXTRACT**

Features on the map can be located using 3 methods namely;

- Use of place names,
- Grid reference and
- Use of latitudes and longitudes

### **USE OF PLACE NAMES**

This method / skill involves looking for the name of a geographical feature / phenomena on a map extract e.g., nature of hills i.e., conical or flat-topped hills with their local names.

## GRID REFERENCES

These are networks of lines running vertically and horizontally on the map extract.

They are used to locate features on a map extract.

The **horizontal lines** are known as **Nothings** while **vertical lines** are known as **Eastings**.

**Illustration:**

**Eastings**

**01 02 03 04 05**

**01 02 03 04 05**

**NB.** They are called easting because they increase in number eastwards

**Northing**

**05—————05**

**04—————04**

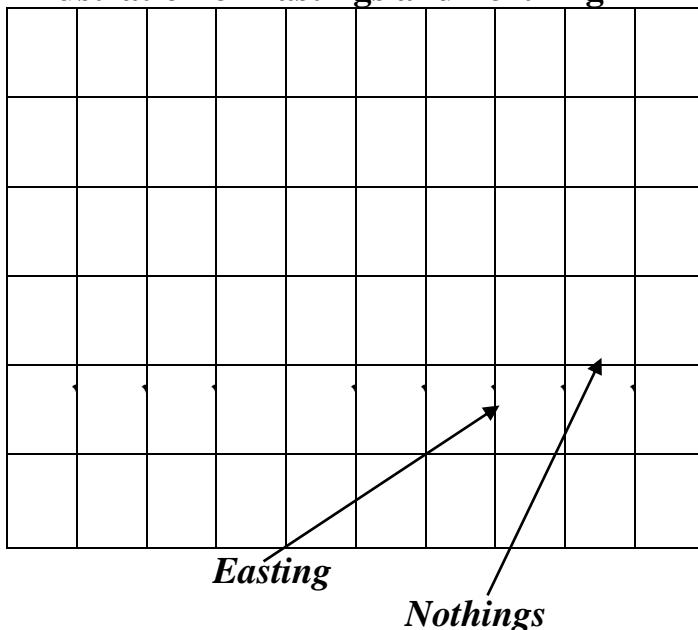
**03—————03**

**02—————02**

**01—————01**

**NB.** They are called northing because they increase in number northwards

### Illustration of Eastings and northing



2 There are two ways in which grid reference is used to find location of places on a map extract.

a) Four figure grid reference (grid square)

b) Six figure grid reference

### **Four figure grid reference**

This is a grid reference made up of four digits. The first two digits are

**Eastings** and the last two digits are **Northings**.

It is also referred to as **Grid Square**. For example, state the grid square of the following points:

I. A

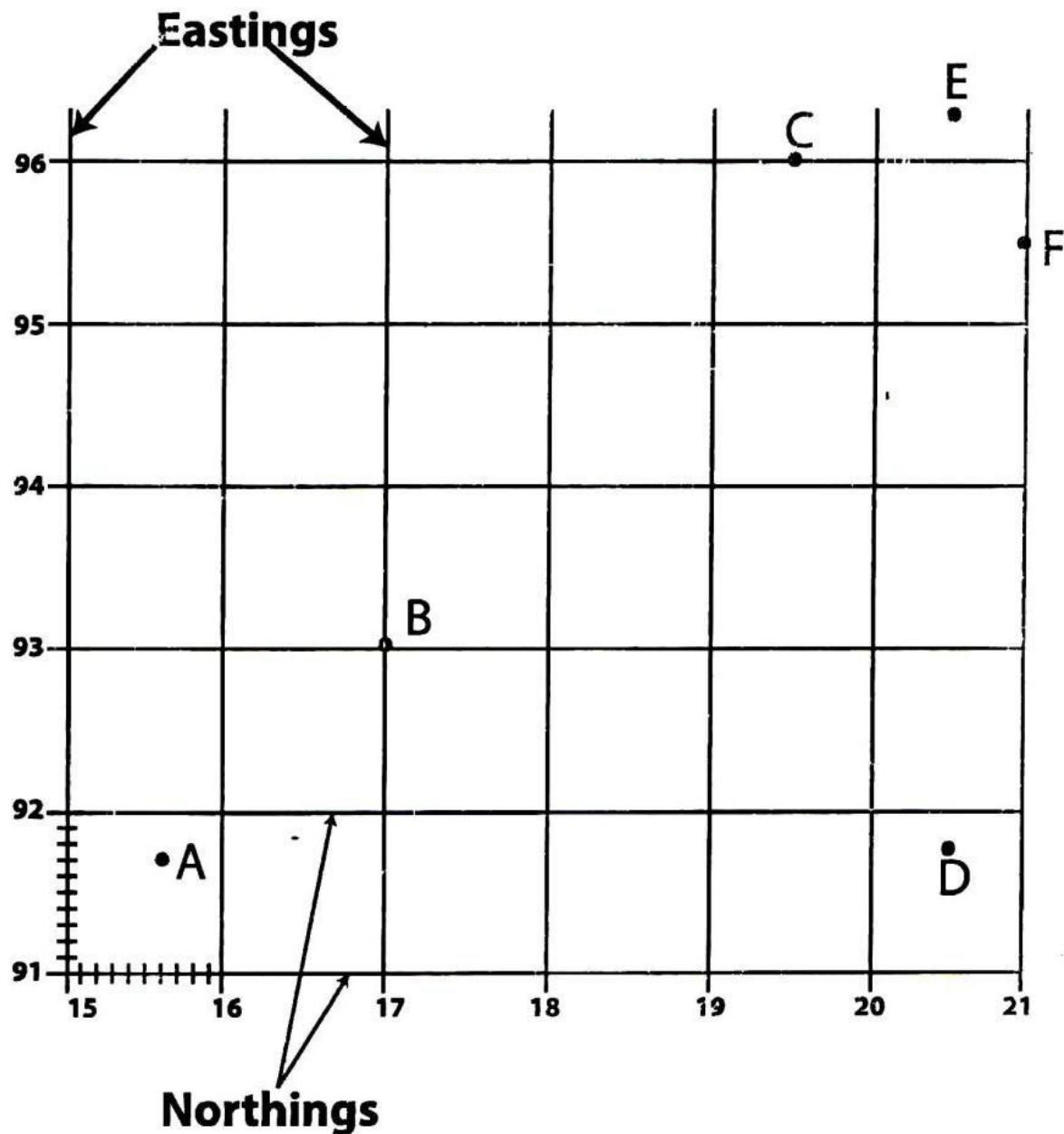
II. B

III. C

IV. D

V. E

VI. F



- A.** 1591
- B.** 1793
- C.** 1996
- D.** 2091
- E.** 1996
- F.** 2095

***Six figure grid reference***

This is the grid reference made up of six digits. The first three digits are **Eastings** and the last three digits are **Northings**.

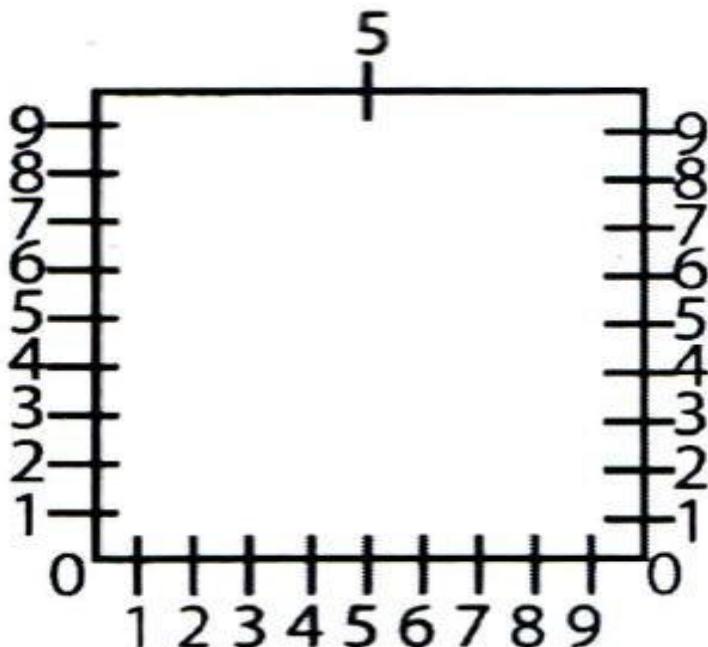
We use a **formula E/N** whereby;

E. = Eastings

N. = Nothings.

**NOTE:** grid reference is stated in a six-digit figures that is the first three for easting and the last three for nothings as well e.g., 252347 whereby **252** represents Eastings and **347** for nothings.

The first two digits for **Eastings** and **Northings** are identified as seen Earlier. The third digit is got by dividing the grid square into ten equal parts as follows.



Let's use the revision example as our worked-out example for even six figure grid reference.

State the grid reference of the following points.

- I. A
- II. B
- III. C
- IV. D
- V. E
- VI. F

**A** – 156917 **B** – 170930 **C** – 194960    **D** – 204917    **E** – 205964  
**F** – 210954

## LOCATING FEATURES USING LATITUDES AND LONGITUDES ON A MAP

### (a) DETERMINING HEMISPHERE ON A MAP.

➤ Look for the latitude figures on a map and determine the direction in which they are increasing. If they are increasing northwards, then the place is

located in the northern hemisphere and if they are increasing southwards then the place is located in the southern hemisphere.

- Then write your answer considering the latitude figures and the direction in which they are increasing as evidence.
- E.g., Masaka is located in the southern hemisphere because of the presence of the latitude lines marked  $0^{\circ}15'S$  and  $0^{\circ}20'$  increasing southwards.
- You may also consider the abbreviations usually written between nothings like  $0^{\circ}15'S$ ; which mean southern Hemisphere or  $0^{\circ}10'N$  meaning it's in the northern hemisphere

## **DESCRIBING LOCATION OF THE AREA SHOWN ON A MAP**

E.g., describe the location of Aloï.

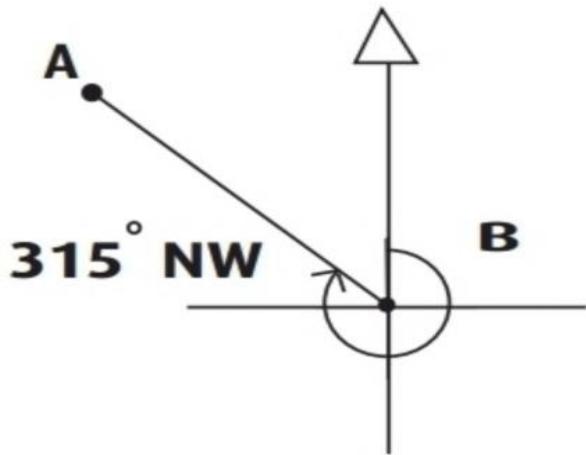
- Use both latitudes and longitudes

Aloï is located between latitude  $2^{\circ}15'$  and  $2^{\circ}20'$  north of the equator and longitude  $33^{\circ}05'$  and  $33^{\circ}15'$  east of the Greenwich.

### **Locating places using bearing on a map**

- Locate the two points.
- Draw a straight line linking the two places
- Draw a compass at the point which is at “from”
- Then use a protractor to determine the bearing. Measurements must start from **true north** following clockwise direction
- Write the bearing with 3 figures (digits) e.g.,  $250^{\circ}$ ,  $045^{\circ}$  etc.

- Include the direction. E.g., what is the bearing of point A from point B



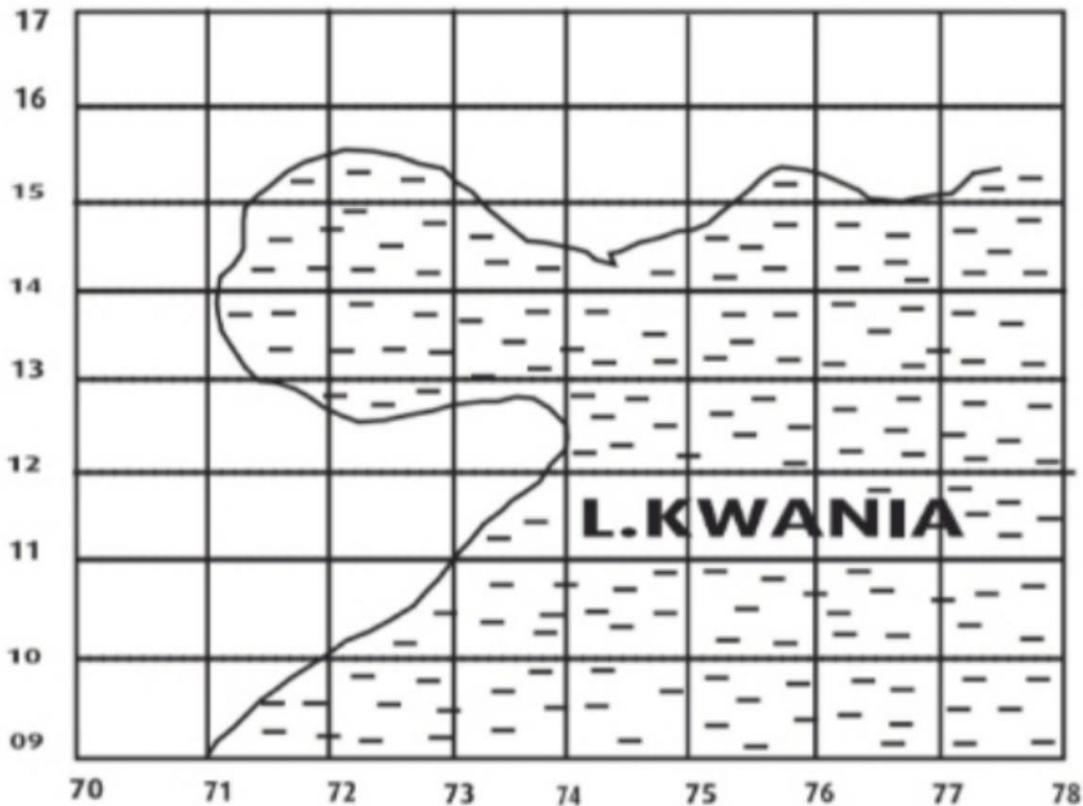
PhotoGrid

Then bearing of point A from B is  $315^0$  North West

## CALCULATING AREA OF IRREGULAR FEATURES ON MAP EXTRACT

Area is the total distance covered or occupied by a feature.

This has a Formula as **Full squares + half squares**  
**2**



PhotoGrid

Count all the fully covered boxes and then count the boxes that are partially covered by the feature.

Full square = 28

Half squares = 17

Then area =  $28 + \frac{17}{2}$

$$= 10 + 8.5$$

$$= \mathbf{18.5 \text{ squares}}$$

But 1 full Square =  $1\text{km}^2$

So,  $18.5 \text{ squares} \times 1\text{km}^2 = 18.5 \text{ squares}$

**Area =  $18.5\text{km}^2$**

## MEASURING DISTANCE OF LINEAR OBJECTS ON A MAP EXTRACT

E.g., A road, railway line, river, boundary etc.

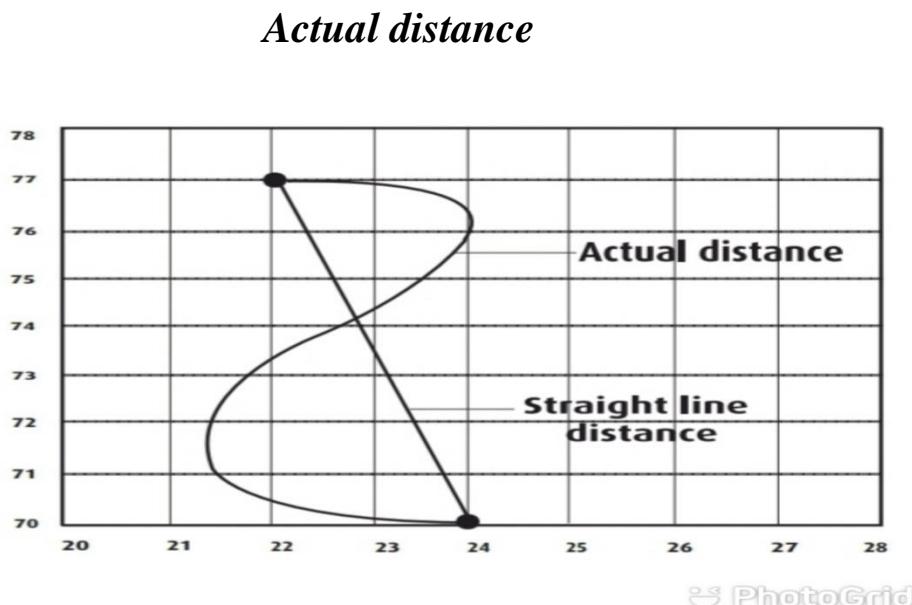
### Approach

- Identify the feature in the question on the map extract.
- The start points and the end point
- Using a straight edged piece of paper, measure a short but straight distance portion of the feature up to the end point.
- Transfer the distance of the feature marked on paper to the linear scale on the map extract starting from zero rightwards to determine the distance in kilometers.
- The remaining distance can be measured in meters using the same scale but from zero leftwards.

E.g., **6km +500 meters =6.5km**

### DE' TOUR INDEX

This has a formula;  $\frac{\text{Actual distance} - \text{straight distance}}{\text{Actual distance}} \times 100$



### Calculate de tour index of a road

#### Approach

Measure the Actual distance e.g., **6.5km**

Then the straight-line distance e.g., **3.5km**.

Then substitute it in the formula above

$$\begin{aligned} &= \frac{6.5\text{km} - 3.5\text{km}}{6.5\text{km}} \times 100 \\ &= 3.0 \times 100 = 46.15\% \end{aligned}$$

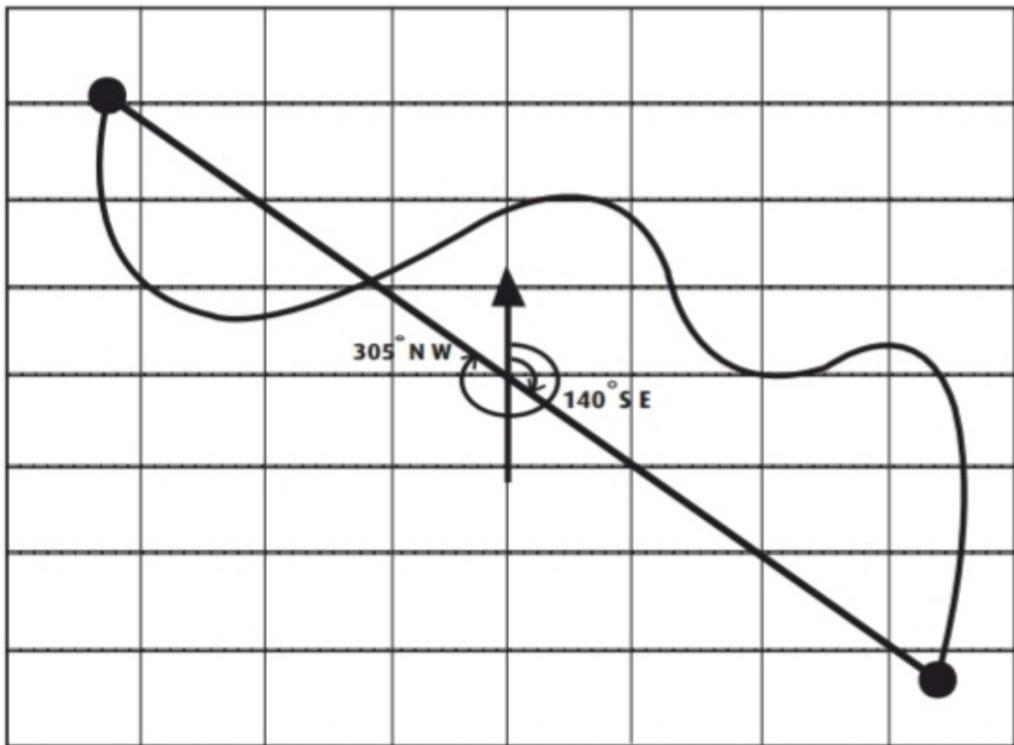
## TREND

This is the degree segments from the point of start to the point of end along a transport route.

### Approach

- Identify the transport route in question and the two points asked.
- Draw a line to join the two points along the transport route.
- Draw a compass direction in the middle of the line.
- Using a protractor, measure from north clockwise up to when the line is met e.g.,  $045^{\circ}$ .
- Measure again from north clockwise up to when the line is met the second time. E.g.,  $225^{\circ}$ .
- It is then recorded as  **$045^{\circ}\text{NE} - 225^{\circ}\text{SW}$**

EXAMPLE: calculate the trend of the road below;



 PhotoGrid

The trend of a road is **140° SE – 305° NW**

### VERTICAL INTERVAL

This is the gap or range between any two successive contours on the map extract.

It is also indicated at the extreme south East of the map extract.

It is calculated by getting the difference between two contours following each other e.g., **3500ft - 3450ft = 50ft**

### AMPLITUDE

This is literally known as range; it is calculated by subtracting the lowest contour from the highest contour on the map extract

**E.g. 4550ft – 3450ft = 1100ft**

## CALCULATING HEIGHT OF THE HILL

Height of hill = last numbered contour + VI × No. of unnumbered contours

$$\begin{aligned} &= 3400 \times 4150 \\ &= 3400 + (50 \times 4) \\ &= 3400 + 200 \\ &= 3600 \text{ ft.} \end{aligned}$$

### (i) Horizontal equivalent

$$\text{Horizontal equivalent} = \frac{\text{Horizontal distance} \times \text{horizontal scale}}{100,000}$$

#### Procedure:

- Locate the curve and mark the two points between which you are asked to calculate the horizontal equivalent.
- Get a thread/straight edge of a paper and place it along the two points
- Establish that distance on a curve by placing it on a ruler in cm.
- Substitute that horizontal distance in the formula
- Horizontal equivalent =  $\frac{(16\text{cm} \times 50,000)}{100,000} \text{ cm}$   
 $= \underline{\underline{8\text{km}}}$

### (ii) Gradient of the slope of the curve

$$\text{Gradient of the slope of the curve} = \frac{\text{Horizontal equivalent} \times 1000}{\text{Amplitude}}$$

#### Procedure:

- Locate the curve whose gradient of the slope you are to calculate.
- Mark the two points.
- Place a thread along the curve between the two points marked
- Transfer the thread on the scale and establish the equivalent (distance in km) and substitute it in the method.
- Then for amplitude get the highest and lowest contours that cross the curve between the two points on the curve, get their difference and substitute in the method, then calculate the gradient of the slope of the curve.

$$\begin{aligned} \text{Gradient of the slope of the curve} &= \frac{\text{Horizontal equivalent} \times 100}{\text{Amplitude}} \\ &= \left( \frac{8\text{km} \times 100}{200 \text{ ft} \times 30} \right) \end{aligned}$$

$$\begin{aligned}
 &= \frac{4}{3} \\
 &= \underline{\underline{1.3}}
 \end{aligned}$$

### (iii) Height of the hill

Height of hill = last numbered contour + VI  $\times$  No. of unnumbered contours

$$\begin{aligned}
 &= 3400 \times 4150 \\
 &= 3400 + (50 \times 4) \\
 &= 3400 + 200 \\
 &= \underline{\underline{3600 \text{ ft}}}
 \end{aligned}$$

## DIRECTION OF FLOW OF RIVERS

In order to determine the direction where the river is flowing to, there are number of factors to consider, but the most important ones are;

1. The gradient along which the river flows; a river flows from a high gradient/altitude to a low gradient/altitude.  
The contour values on the map extract guide one to determine the direction of the flow of a river.
2. The nature and alignment of tributaries as they are joining the main stream.  
Where they point when joining the main stream is where normally a river flows to.

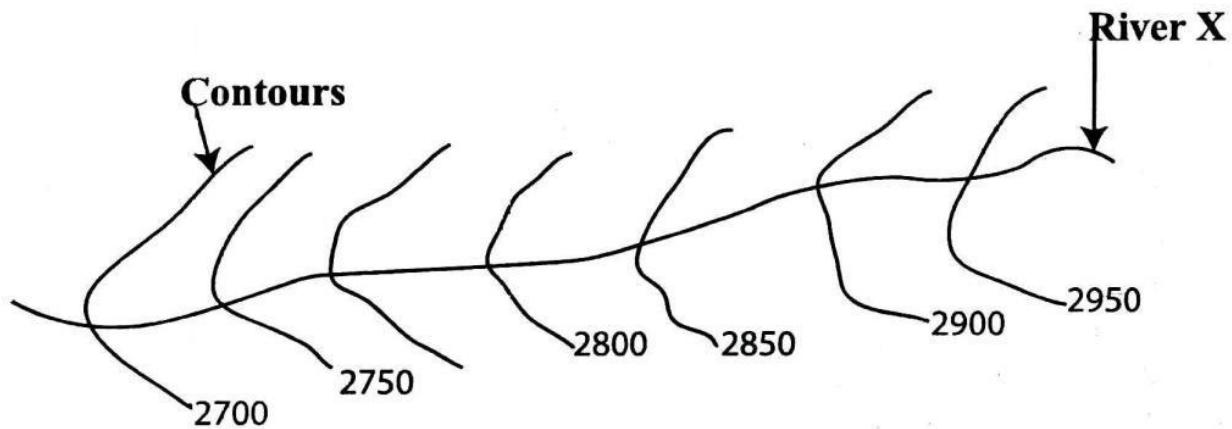
### Approach

- Identify the river in question
- Then by use of contours or tributaries determine the direction of flow showing from..... to..... with evidence contour values

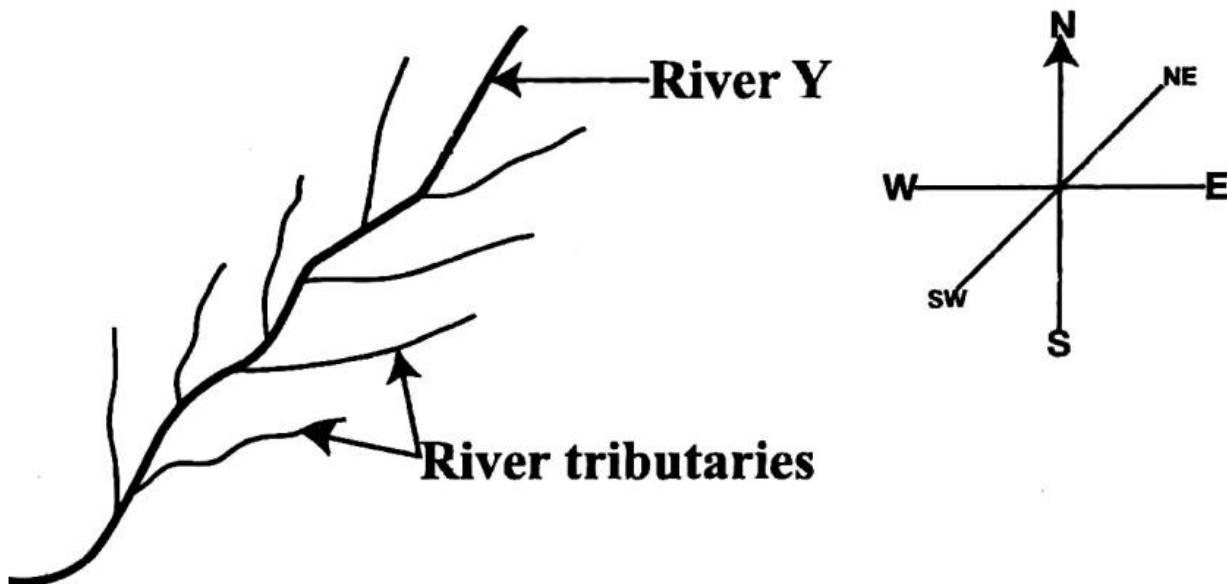
**E.g., from east to west because the east is at high altitude of 5500 ft than west at a low altitude of 4000 feet**

### For example;

- a) Giving a reason for your answer, state the general direction of flow of rivers  
**i) X**



ii) Y



b) With reasons determine the general direction of flow of river **X**.

### Answers

- River **X** flows from **west** to **east** because there is a higher altitude in the east of 2950 feet than the west at a low altitude of 2700feet as rivers flow from high altitude/gradient to low altitude/ gradient
- River **Y** flows from **north east** to **south west** because its tributaries are joining it at an acute angle pointing in a southwestern direction.

### INTER-VISIBILITY

This is the ability of two features or people to see/connect with each other at distance with ease.

Or

Inter-visibility simply means to ability to see or visualize a point/place from another point/place.

It greatly depends on the height of land between the two points.

**For example;** determine whether point **A** is inter-visible with point **B**.

The following

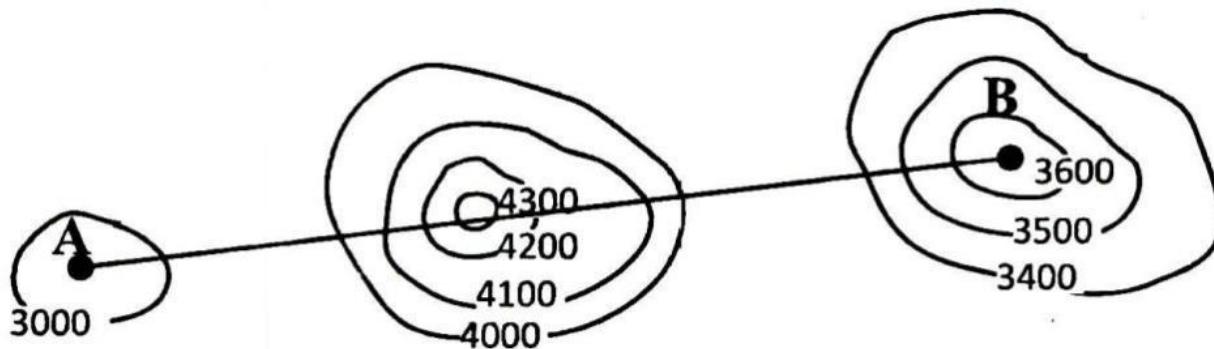
Approach

- Identify the two features (points) in a question
- Join the two points with a straight line
- Determine the height of the two points by looking at the contour values.
- Determine the height between the two points by studying the contour pattern in between.
- If the height (value of contours) between two points is higher than them, then the two places are not inter-visible: and if the height between two places is lower than them, then the two places are inter-visible.

NOTE: We say two points on a map extract are inter-visible when there is no physical feature in between them. The two features are said not to be inter-visible when there is a physical obstacle (**hill**) in between them.

**N.B:** Forests, water bodies, swamps etc. are not obstacles

**For example;** determine whether point **A** is inter-visible with point **B**.



Point A and B are not inter-visible because there is an obstacle of a higher hill (4300ft) between them

## SKETCHING SKILLS

### DRAWING A SKETCH MAP

While drawing a sketch map of an area shown on the map extract, the following procedures should be followed;

- ❖ Identify the area on the map extract to be drawn (area in question) either part or the whole map extract.
- ❖ On a fresh sheet of paper, write the title in full with the name of the map extract and features asked.
- ❖ Draw a frame covering at least three quarters of a page (**Draw the same shape as the original shape of the map extract**) i.e. a square or a rectangle

- ❖ Indicate the thick (darkened) grid lines to help you mark and name features in a fairly accurate manner
- ❖ Enclose the sketch outline with a frame/boundary; include the compass on the left top side and the key below the frame to explain the features.
- ❖ With the help of main (***thick***) grid lines, mark and name the features in as asked in the question.

**Note: features must be indicated in the sketch map using symbols, Avoid using pictures as much as possible.**

**When told to include;**

**Physiographic features** - these include

- Conical hills
- Hills
- Plateaus
- Bays, basins
- Headland
- Ridge
- Col and saddle
- Knolls, knots
- Escarpments

**Physiographic regions** – include

- Steep sloping/ hilly /upland
- Gently sloping
- Low-lying
- They occupy a large space than the physiographic features when drawing.

**Transport routes** – Roads – dry weather/ loose surface road

- Bound surface road
- Foot path
- Motorable tracts
- Railway lines
- Canoe ferry

**Drainage features**

- Narrow river valley
- Broad river valley
- Well drained
- Permanent swamps
- Seasonal Rivers
- Lake basins

**Vegetation**

- Forests
- Woodlands

- Shrubs
- Swampy vegetation
- Thickets

### **Settlement**

- Linear along a line/road
- Nucleated/cluster/grouped.
- Scattered
- Grid/planned.

### **SKETCH MAP REDUCTION**

This involves reducing a map extract or part of it into smaller size

#### **Procedure:**

- Identify the area to be reduced i.e., the whole map or a portion of the extract
- Measure the **length** and the **width** of the area to be reduced with the help of a ruler
- Divide the obtained **length** and **width** with the reduction factor always given or indicated in the question e.g., with a reduction factor of 2  
 $L=35 \div 2 = 17.5\text{cm}$  and  $W=30 \div 2 = 15\text{cm}$
- Draw a new frame using the new obtained **length** and **width**
- Indicate the **darkened (thick)** lines to help you plot features more accurately
- Mark and name the features on the sketch map drawn accurately
- Indicate the marginal information i.e., title with the reduction factor, frame, compass direction and a key

#### **Example:**

#### **CALCULATING A NEW SCALE OF A REDUCED SKETCH MAP**

Formula: original scale  $\times$  a reduction factor

Given that the reduction factor = 2

Original scale = 1:50,000

$$\begin{aligned}\text{New scale; } &= 1:50,000 \times 2 \\ &= 1:50,000 \times 1/2 = 1:100,000\end{aligned}$$

Therefore, the new scale = **1:100,000**

**Note:** whenever we reduce, the resultant scale becomes bigger since the area becomes small while representing many features

### **MAP ENLARGEMENT**

#### **(a) Using an enlargement factor**

- Enlarge the area east of easting 75° and south of northing 42 by 3 times and draw a sketch map and on it mark and name physical and manmade features.
- Locate the given area.
- Measure the length and width of the area.
- Multiply the length and width with the enlargement factor.

- Draw a new frame using the new width obtained.
- Mark and name the features.
- Include the marginal information.
- A title must bear the name of the map extract, an enlargement factor, area to be reduced and features asked in the question.e.g.
- Sketch map of Mpara showing physical and manmade features of area east of easting  $75^{\circ}$  and south of northing 42 by 2 times.

## CALCULATING NEW SCALE FOR ENLARGED SKETCH MAPS.

New scale = original scale  $\div$  reduction factor

Given that the reduction factor = 3

Original scale = 1:50,000

New scale =  $1:50,000 \div 3$

$$\frac{1}{50,000} \div \frac{1}{3} = \frac{1}{16666}$$

Therefore, the new scale = **1: 16666**

**Note:** whenever we enlarge, the resultant scale becomes smaller since the area becomes big while representing the same features

## DRAWING A SKETCHMAP USING A TRACING PAPER

### Procedure:

- Locate the area given on the map.
- Mark the area using stars.
- Place a tracing paper on the area marked.
- Mark the points marked on the map extract on a tracing paper.
- Trace the features asked and name them on the tracing paper.
- Draw a frame on the tracing paper joining the marked points.
- Draw a compass on the tracing paper.
- Number your work accordingly.

**Qn.** Using a tracing paper, draw a sketch map of the area east of easting of 70 and South of northing 47 and on it mark and name relief features, drainage features, communication routes, settlement and vegetation type.

## DRAWING A CROSS SECTION/SKETCH SECTION/TRANSECT/TRANSVERSE/LINE TRASECT

### Procedure:

- Locate the area between which you are being asked to draw a cross-section.

- Mark the area.
- Draw a straight line linking the two points, if the area does not lie along a straight line.
- Place a straight edge of paper on the straight line and mark the area.
- Mark and write the contours that cross the straight edge of paper.
- Mark the features asked on the straight edge of paper.
- Transfer the edge of the paper on a scale and determine the distance of the two points.
- Transfer the straight edge of paper to the graph paper.
- Draw the vertical lines at the points marked.
- Scale the vertical line which should not exceed 6cm.
- Plot the contour values marked on the straight edge of paper.
- Join the dots using a curve with a free hand.
- Shade the area below the curve.
- Plot / Mark and name the features asked / plotted on the straight edge of paper.
- Write a title.
- Number your work.

**E.g.** draw a transverse section along northing 50 between Eastings 70 and 77 and on it mark and name;

- Two geomorphological regions.
- Two drainage features.
- Vegetation type.
- Communication line and boundary

## CALCULATIONS ON A CROSS SECTION

VI               = Difference between two closest points on a cross section.

Amplitude   = Highest Point – Lowest Point on a cross section

$$= 4900\text{ft} - 3800\text{ft}$$

$$= \underline{\underline{1100 \text{ ft}}}$$

Gradient of the slope =  $\frac{\text{Horizontal Equivalent}}{\text{Amplitude}} \times 100$

Horizontal equivalent =  $\frac{\text{Horizontal distance} \times \text{horizontal scale}}{100,000}$

Vertical exaggeration =  $\frac{\text{Vertical scale} \times (300 \text{ or } 100) \text{ depending on its used on the map}}{\text{Horizontal scale}}$

$$= \frac{1}{100 \times 30} \div \frac{1}{50,000}$$

$$\begin{aligned}
 VE &= \frac{1}{3000} \times \frac{50,000}{1} \\
 &= \frac{50}{3} \\
 &= \underline{\underline{16.7 \text{ times}}}
 \end{aligned}$$

## IDENTIFYING AND DESCRIBING ECONOMIC ACTIVITIES ON A MAP EXTRACT

The economic activities/land use types/ human activities are identified according to the existing features that act as evidence on a map extract.

**Must Show WHAT (economic activity) + EVIDENCE and WHERE (place name and direction)**

E.g. there is mining due to presence of mineral deposit north of Kalugutu

The table below shows the economic activities and their evidences:

No	Economic/land use type	Evidence/indicator on a map extract
1.	<b>Arable farming/Crop growing/farming/plantation</b>	Crop farm/ estate/plantations/crop store/crop market/crop factory like ginnery for cotton, hullery for coffee jaggery for sugar cane /agricultural department
2.	<b>livestock farming Animal rearing/pastoralism</b>	Animal farm/Ranch/agricultural department/ animal market/abattoir/Bore holes/ water holes/water tanks/water reservoirs/valley dams, cattle Dips/veterinary offices/kraal/cattle quarantine etc.
3.	<b>Mining /quarrying</b>	Mineral pit/mineral quarry (workings)/ mineral factory Mineral deposit etc.
4.	<b>Industrialization (manufacturing/processing industries)</b>	Industry/factory e.g. ginnery, Hullery, jaggery, saw mills and processing plants
5.	<b>Forestry/agro-forestry (economic activity and land use)</b>	Forest reserve(FR)/forest department/forest Plantation/forest guard posts/ tree stations etc.
6	<b>Lumbering</b>	Saw mill/timber factory/carpentry

		workshop/transport(Motorable trucks) Route ending in forest or at forest, lumbering pit etc. <b><i>N.B: Forest alone does not symbolize Lumbering</i></b>
7	<b>Wild life conservation</b>	Gazatted area/forest reserve/game reserve/national parks/zoo/sanctuary/conservation areas
8	<b>Fishing</b>	Fish pond/fish farm/fish landing site/fish port/fish market/fish factory/fishing village, transport route ending at a lake shore or river banks, fish trap, settlements along a lake, fish traps, ferry route, pier etc.
9	<b>Recreation</b>	Recreational centres and posts, golf course
10	<b>Transportation and communication</b>	Transport routes/ports/landing sites/transport stations or terminals/air fields and fields stripes/telephone Line/communication masts, canoes, ferry etc.
11	<b>Tourism</b>	Gazatted area/tourist attractions/rest houses/lodges/hotels/motels/inns/guesthouses/camping Sites/game department/antiquity, Ranger post national parks, museum, zoo, rest house (RH) etc.
12	<b>Trading/trade and commerce</b>	Market (mkt) trading Centre (TC)/transport junction/transport station towns/linear settlement along transport route
13	<b>art and craft</b>	Papyrus swamps/ Hand craft yard/brick yard/pot yard etc.
14	<b>Hunting</b>	Hunting area (usually written on the map extract)/hunting tools/hunting posts, Ranger post
15	<b>Settlement (land use)</b>	Built up areas/villages/huts/rest

	houses/hotels/lodges
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**N.B:** please endeavor to show; **WHAT** (Economic activity), **EVIDENCE** (Indicator) and **WHERE** (location) **on the map extract**

Using direction grid box or local place name

### **FACTORS FAVOURING ECONOMIC ACTIVITIES**

Describe the factors/conditions for the economic activity.

- The question is testing on TENSE, ADJECTIVE, FACTOR/ REASON FOR THE factor, Evidence and location.
- Be precise and concise when stating factors.
- Begin with the economic activity or the tense.
- The tense is either presence or Availability of .....

#### **Farming-**

- Presence of deep well drained fertile soils for crop growing e.g.....
- Presence of gentle slopes for easy cultivation and mechanization.
- Presence of accessible roads to transport inputs and outputs.
- Presence of dense settlements to provide skilled and semi-skilled labor on farms.
- Presence of adequate reliable rainfall needed in crop growth.
- Presence of factories e.g. Hullery, ginnery to process farm products.

#### **Fishing**

- Availability of large renowned fishing grounds e.g. ponds, lakes.
- Well-developed accessible road network to the landing site.
- Presence of fishing plants/industry to process the fish.
- Dense settlements for marketing and provision of labour needed in fishing.
- Sufficient capital to construct roads, factory etc.

#### **Forestry/agro forestry**

- Supportive government policy for gazetting land as forest reserves.
- Sparse population providing adequate land for forests.
- Reliable and adequate rainfall for forests growth.
- Vast land for expansion of forest reserves.
- Well drained soils for forest growth.

#### **Lumbering –**

- Presence of thick forests to provide raw materials.
- Accessible and developed road transport for transporting logs.
- Presence of saw mills to process the forest products.
- Dense settlement to provide skilled and unskilled labour for forest product processing.

### **Tourism**

- Presence of various tourist attraction e.g. National parks, game reserves etc.
- Presence of accessible and developed transport network.e.g roads to aid tourists to the sites
- Presence of tourists facilities e.g. Rest house, lodges to accommodate tourists.
- Supportive government policy to gazette N.P, Game reserves and provide capital in form of road construction and advertising.

### **Trade –**

- Sufficient capital to construct stores to keep trade items e.g. ginnery cotton buying post, hullery.
- Well-developed road transport network to create accessibility and marketability of products.
- Presence of trade items e.g. farm products as raw materials.
- Dense settlements to provide market for the trade items.

### **Mining and quarrying-**

- Presence of large and variety of minerals e.g. rook outcrop.
- Accessible road transport to ease movement of minerals.
- Dense nucleated/linear settlement to provide skills and semi-skilled labour needed in the quarrying.
- Dense settlement also provides market for the minerals eg lime stone for cement used in the construction of houses and roads.

### **Transport –**

- Presence of gentle and lowland slopes for easy construction of roads.
- Supportive government policy of setting up roads, railways to .....
- Sufficient capital to invest in the transport sector so as.....

### **Manufacturing and industry. –**

- Presence of vast land for establishment.
- Presence of variety raw-material e.g.....
- Sparse population providing land for industrial expansion.
- Dense population providing ready market for the produced output.
- Presence of accessible and developed transport network e.g. roads for transporting products.
- Supportive government policies on decentralization and value addiction programmes.

## **IDENTIFICATION AND DESCRIBING PROBLEMS IN THE AREA ON A MAP EXTRACT**

The problems faced by areas/people living in the area shown on the map extract can be physical or human as seen in the table below.

Must have **WHAT** (problem) **INDICATOR** (feature) + **WHERE** (location)

E.g., using a map extract of Nabyeso.

There is flooding due to presence of a seasonal swamp at Kadomato in the south of Nabyeso

<b>s/n</b>	<b>Indicator/ feature</b>	<b>Challenge/problems</b>
1.	<b>Steep slopes/ hilly areas/mountainous areas highland areas</b>	-Severe soil erosion/ limited mechanized agriculture/ -limited land for settlement/remoteness/poor transport facilities/inaccessibility
2.	<b>Broad and narrow valleys (Rivers)</b>	-Poor transport facilities/frequent or seasonal flooding/seasonal silting / inaccessibility/ remoteness
3.	<b>Seasonal and permanent swamps</b>	-seasonal flooding/attack from dangerous wild animals/ attack from harmful pests and diseases/ seasonal silting / inaccessibility/ remoteness
4.	<b>Forests</b>	-Attack by dangerous wild animals/harmful pests and diseases/ -remoteness/inaccessibility/insecurity/limited transport facilities
5.	<b>Transport routes/industries/towns/trading centres markets</b>	-Frequent air, noise, water or dust pollution accordingly, accidents
6.	<b>Sparse settlement</b>	-Limited social services/remoteness
7.	<b>Dense population</b>	-Easy spread of diseases /congestion /Frequent environmental pollution/shortage of land /land fragmentation/high crime rate
8.	<b>Bore holes/valley dams/water tanks/seasonal swamps/water reservoirs/wells</b>	-Drought/ shortage of water/famine

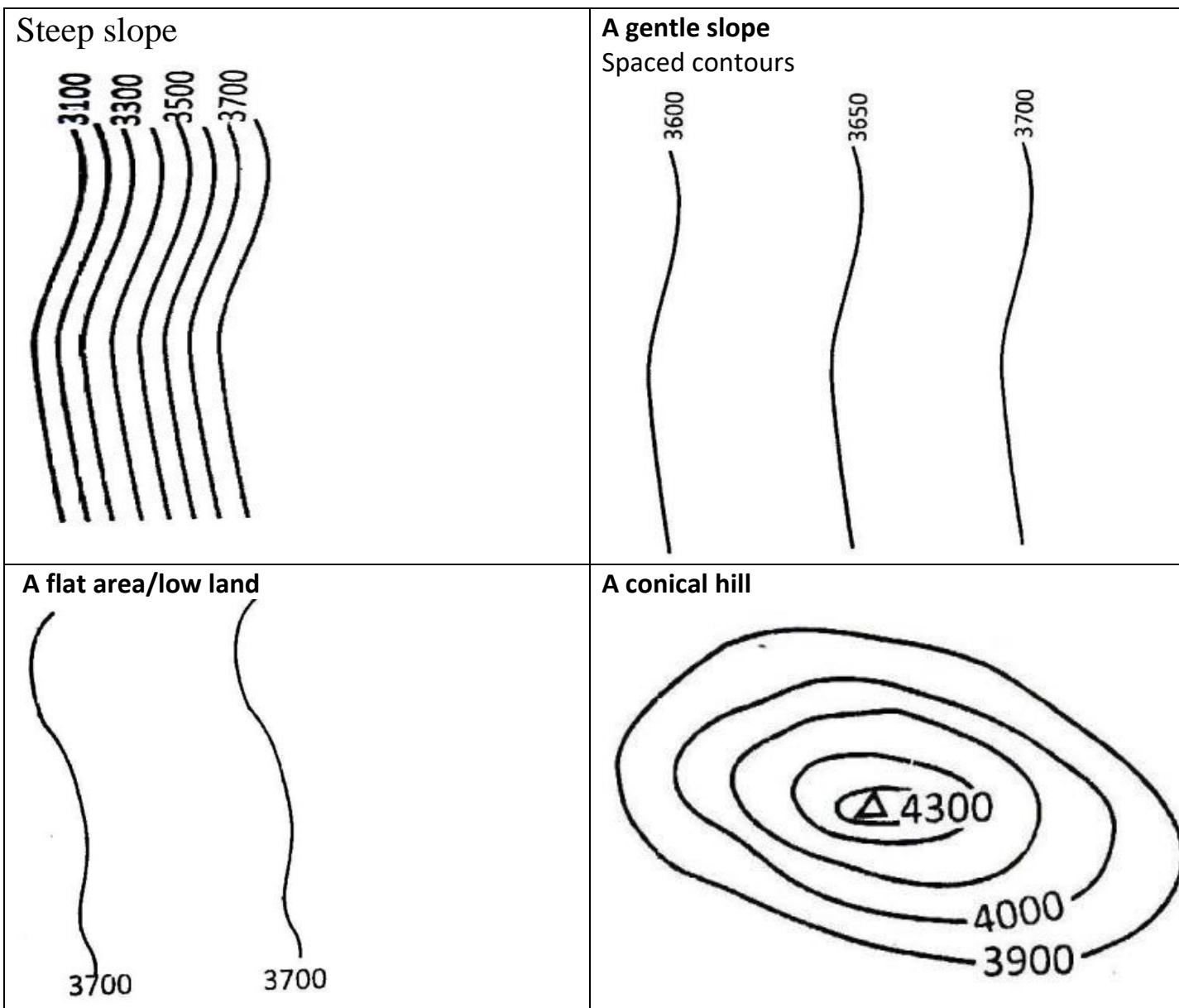
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## DESCRIPTION SKILLS

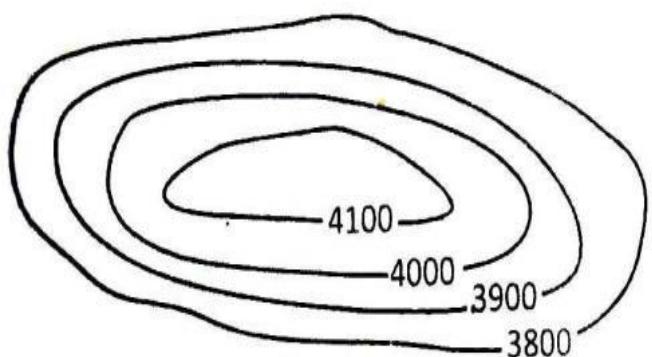
### IDENTIFYING AND DESCRIBING RELIEF ON MAP EXTRACT

Relief in simple terms means the general appearance of the landscape.

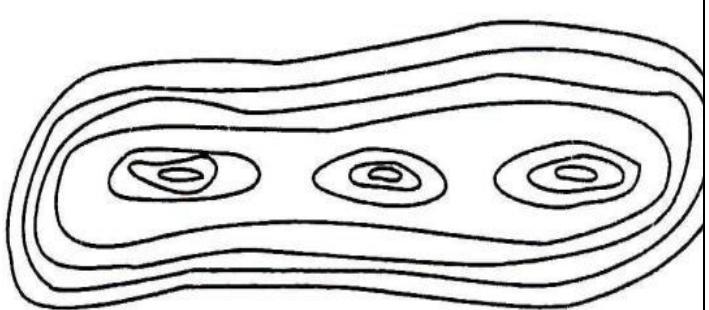
On the map extract contour values and their appearance/alignment reveal the nature of the landscape i.e. the way contours are shaped reflects a nature of relief features. This can be diagrammatically illustrated as follows;



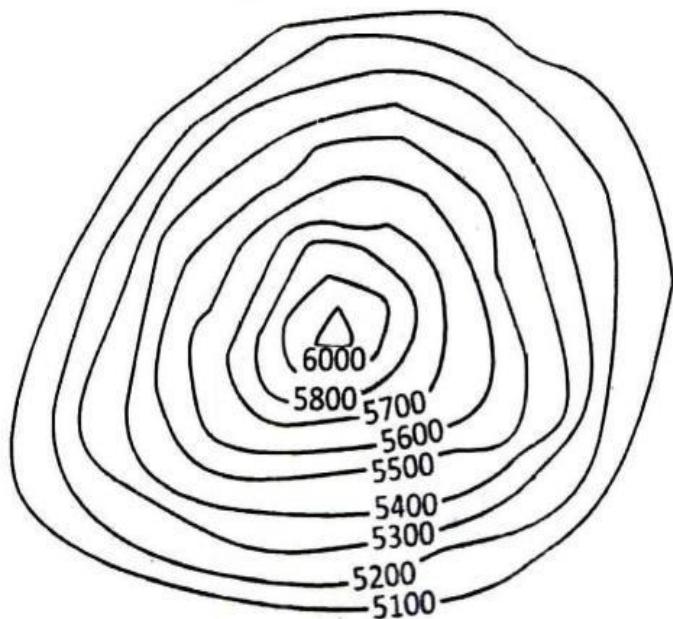
**A flat-topped hill**



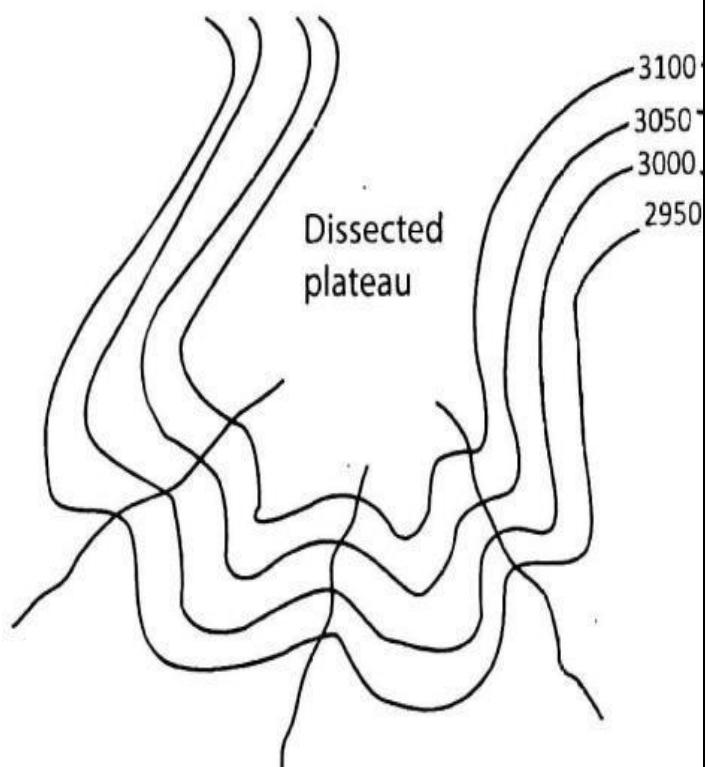
**A ridge**



**Mountain/highland**



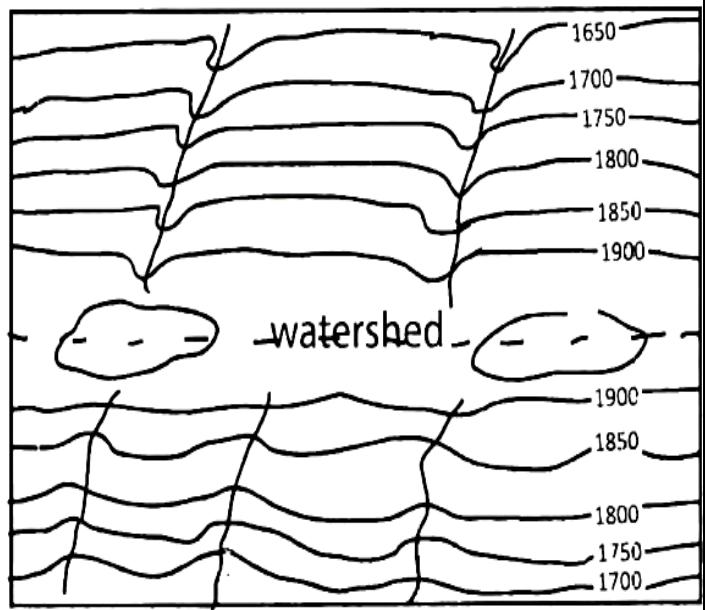
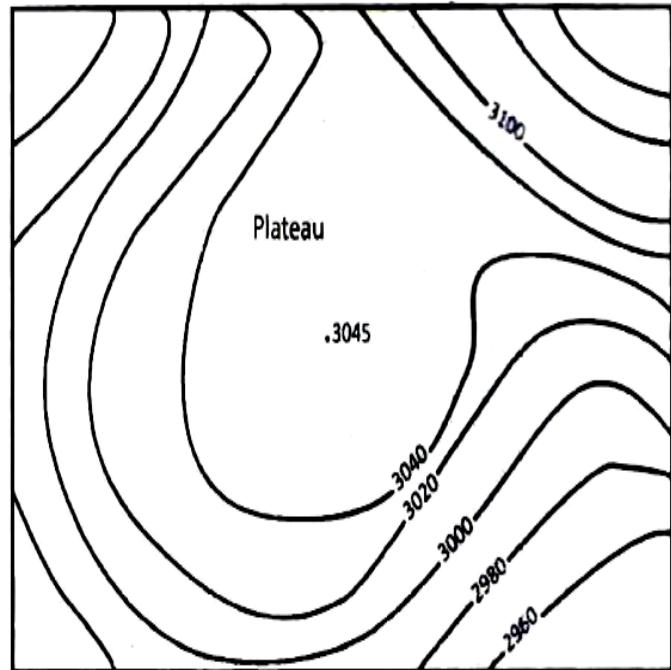
**A Dissected plateau**



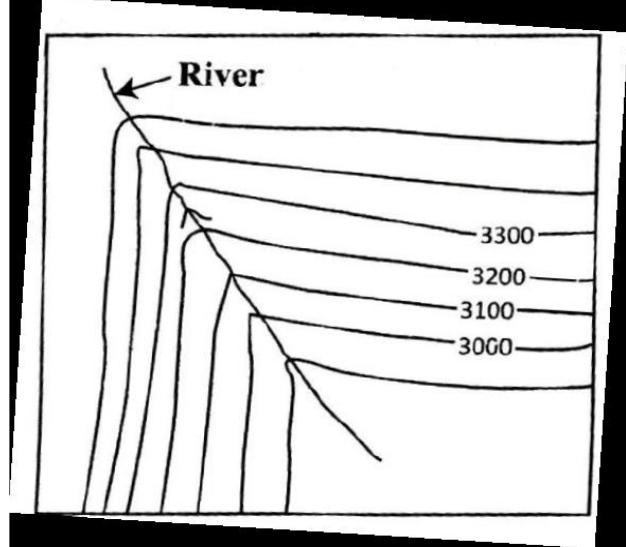
**Note:** For a mountain, the contour values should be ranging between 5500 – 6000feet or 3000 – 3500metres

**A plateau**

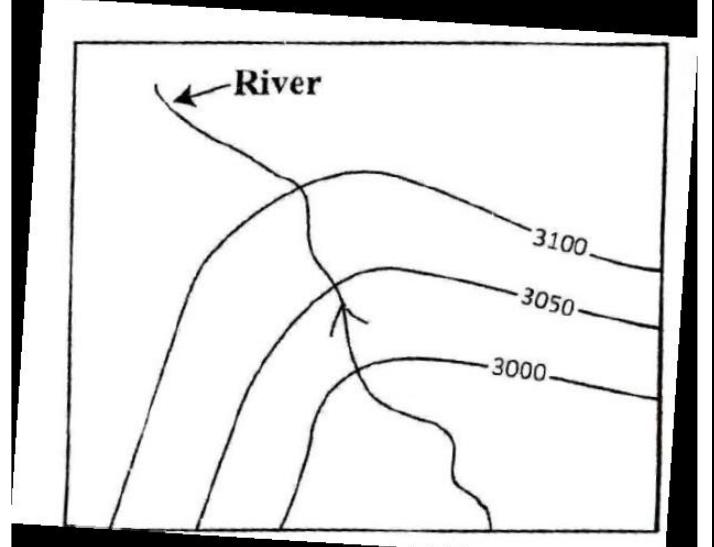
**A watershed (shed)**



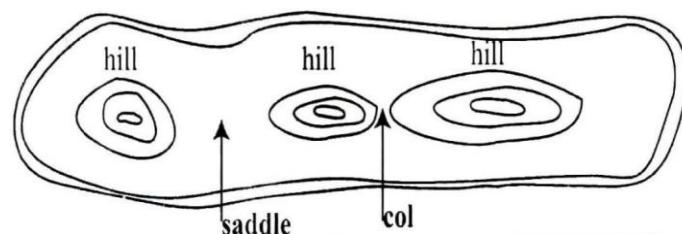
**A narrow/V-shaped valley**



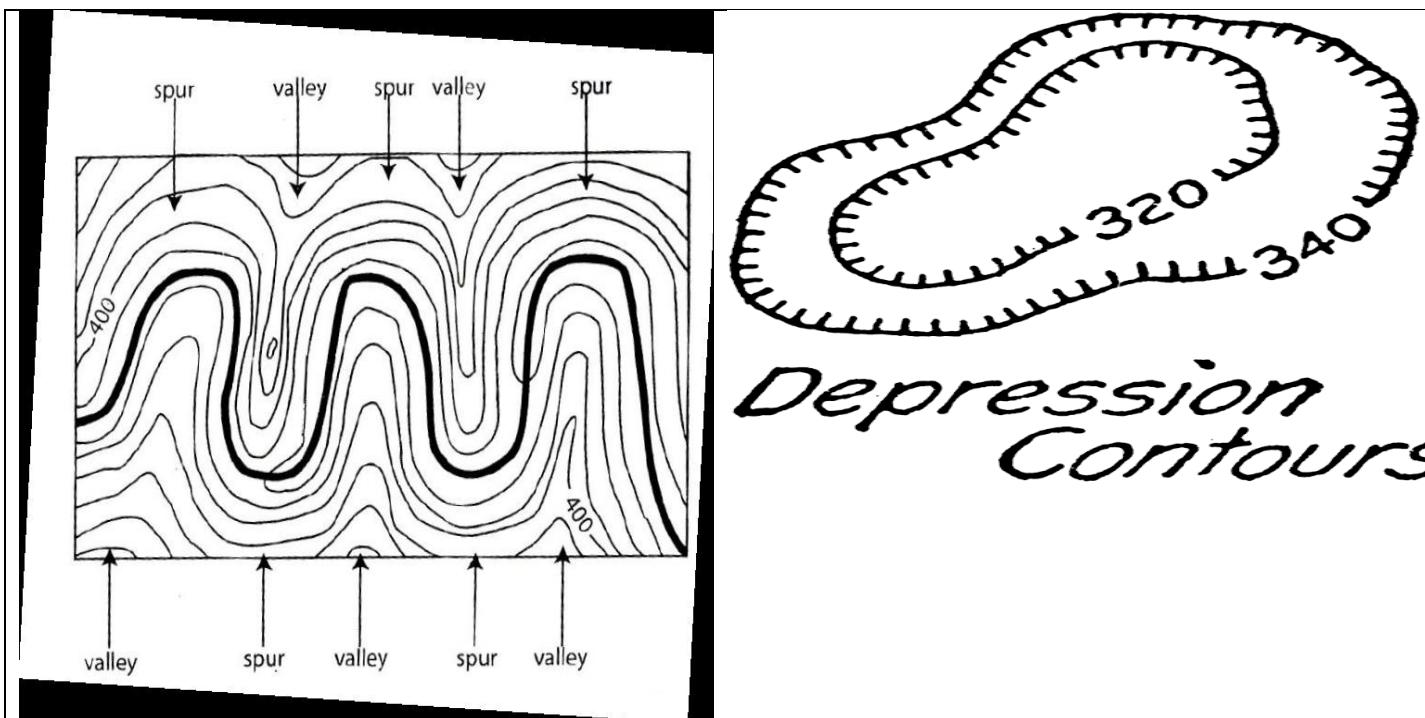
**A broad/U-shaped valley**



**A saddle and Col**



**Knoll is a remnant hill after erosion.**



## DESCRIBING RELIEF

Describe Relief features like;

- Hilly area (when contours area compacted)
- Hills (Conical and Flat-topped hills)
- Ridge (elongated hill)
- Saddle and col (gap between hills)
- Flat topped hill (table like hill)
- Broad and narrow valley
- Basin
- Gentle slopes
- Steep slopes/escarpment
- Low land
- Spurs (interlocking spurs)
- Knolls
- Dissected plateaus
- The highest elevation/point of..... is ...above sea level at (location) The lowest elevation /point of.....is.....above sea level at(location)

- The amplitude of..... is ...feet/meters (highest – lowest contours) The Average height of...is... Feet/meters (highest + lowest point divide by two)
- The vertical interval of .....is..... feet/meters

## **APPROACH**

- ❖ Show **WHAT** (feature) + **LOCAL PLACE NAME** + **WHERE**

**Example** Using Kisoro map extract, describe the relief of the area.

### **Answers**

- There are highlands/mountainous/upland in the south of Kisoro map.
- There is a plateau in the area to the North East.
- There is a ridge in the South East.
- There are steep slopes around the mountainous areas e.g., South of Kisoro map extract.
- There are several craters like Gisosi, Bitare etc.
- There is conical hill at Bitare.
- There is a gentle slope in the North West.
- There are saddles and cols e.g., around Gihondo.
- The highest elevation on map is 11300ft.
- The lowest elevation on map is 6200ft at Bihanga North East.
- The amplitude is 5100 ft.
- There is a river valley in the central.

**Note:** Learners should identify features on the map extract by giving evidence in form of direction or place names (where they exist). Other relief features on the map extract may include: cliffs, rock outcrops, crater, basins, escarpments etc. These can be shown with reference to the key on the map extract.

### **1.11. DESCRIPTION OF VEGETATION ON A MAP EXTRACT**

### **IDENTIFYING AND DESCRIBING DRAINAGE FEATURES**

Drainage is the water surface coverage of a given area

Drainage features on a map my include; rivers, swamps, lakes e.t.c

Show **WHAT** (drainage feature) + **LOCAL NAME** + **WHERE**  
**(direction)**

### **CONSIDER THE FOLLOWING FEATURES ON THE MAP EXTRACT**

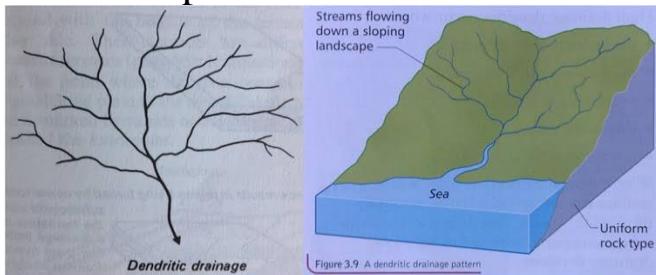
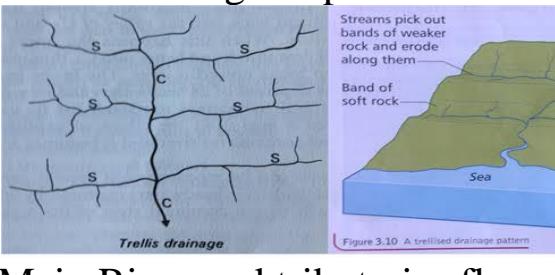
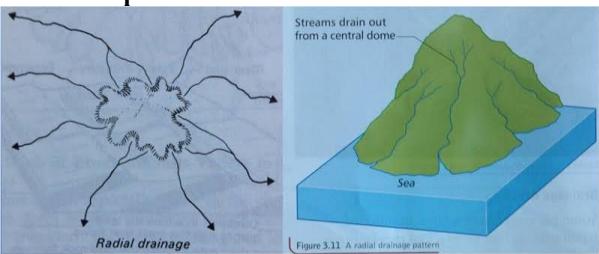
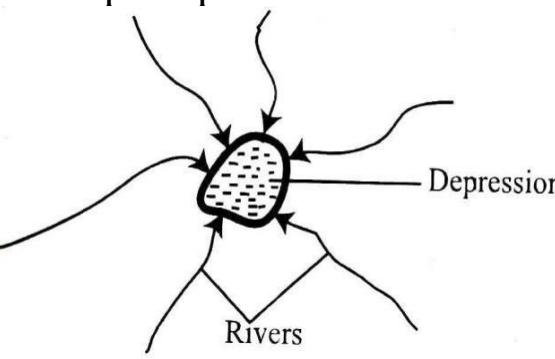
- Lakes with their local name

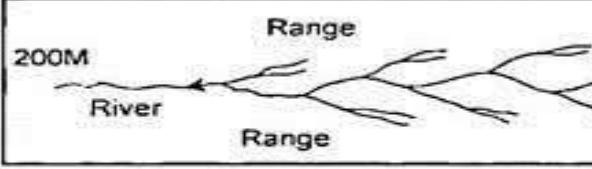
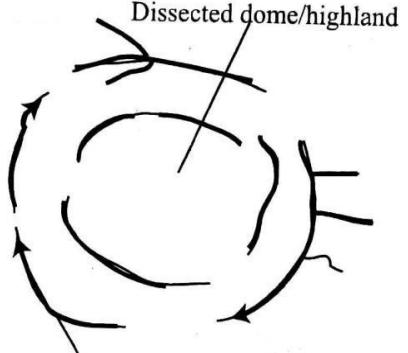
- Rivers (permanent and seasonal) with their local name + location
- Patterns displayed by rivers (Dendritic, Centripetal, Trellis, radial )
- Swamps (seasonal and permanent) with their local name + location
- Papyrus swamps local name + location
- Mangrove swamp local name + location
- Well drained area local name + location
- Poorly drained area local name + location

## IDENTIFYING AND DESCRIBING DRAINAGE PATTERNS

Drainage pattern refers to the physical layout of a river and its tributaries on the earth's surface

### Types of drainage pattern on a map extract

<p><b>Dendritic pattern</b></p>  <p><i>Dendritic drainage</i></p> <p><i>Streams flowing down a sloping landscape</i></p> <p><i>Sea</i></p> <p><i>Uniform rock type</i></p> <p>Figure 3.9 A dendritic drainage pattern</p> <p>(tree like river with its branches) Is the one whose structure is shaped like a tree trunk and the branches of the tree or the structure of a leaf and its veins?</p>	<p><b>Trellis/rectangular pattern</b></p>  <p><i>Trellis drainage</i></p> <p><i>Streams pick out bands of weaker rock and erode along them</i></p> <p><i>Band of soft rock</i></p> <p><i>Sea</i></p> <p>Figure 3.10 A trellised drainage pattern</p> <p>Main River and tributaries flow along Faulted areas</p>
<p><b>Radial pattern</b></p>  <p><i>Radial drainage</i></p> <p><i>Streams drain out from a central dome</i></p> <p><i>Sea</i></p> <p>Figure 3.11 A radial drainage pattern</p> <p>cycle wheel like rivers from a dome to different</p>	<p><b>Centripetal pattern</b></p>  <p><i>Depression</i></p> <p><i>Rivers</i></p> <p>(rivers pouring in to one basin)</p>

<p><b>Directions</b>  This one develops on a dome or volcanic cone. The rivers flow outwards forming a pattern like the spokes of a wheel</p>	<p>This is a pattern characterized by a large number of rivers from different directions converging into a common point.</p>
<p><b>Pinnate pattern</b></p>  <p><i>Fig. 17.14 : Example of pinnate drainage pattern</i>  feather like river as tributaries flow from one direction to the main river</p>	<p><b>ANNULAR DRAINAGE PATTERN</b></p>  <p>Dissected dome/highland  River flowing around the dome in concentric circles</p> <p>It develops where tributaries join the main stream at sharp angles but in a series of curves.</p>
<p><b>PARALLEL DRAINAGE PATTERN</b>  This is a pattern where streams and their tributaries flow parallel to one another on side by side down slopes.</p>	

N.B: Show **WHAT** (drainage pattern) + **LOCAL RIVER NAME** + **WHERE**

As illustrated below;

There is a trellised drainage pattern displayed by river Nyamweru

#### **ACCOUNT FOR THE DRAINAGE PATTERN**

##### **1. Dendritic**

- Heavy rainfall to supply water
- Gently sloping landscape enable development of dendritic pattern
- Homogeneous rock enabling uniform erosion

## **2. Trellis drainage**

- Heavy rainfall
- Steep / gentle slopes
- Heterogeneous rocks
- Earth movement i.e. faulting.

## **3. Radial**

- Heavy rainfall
- Steep slopes/ done enabling flow of water from different direction.
- Earth movement of creating a dome

## **4. Annular**

- Alternating hard and soft rock
- Heavy rainfall
- Earth movement to create a dome
- Geological history

**NB:** In each pattern, paragraph each factor and show evidence by locating or giving

## **IDENTIFICATION AND DESCRIPTION OF VEGETATION**

Vegetation is the plant cover on the earth's surface. These can be;

- Forest,
- Thicket,
- Bamboo,
- Woodland,
- Scrub,
- Scattered trees Palms,
- Mangrove swamps,
- Tree swamps,
- Papyrus/marsh/bog swamps

N.B: Show **WHAT** (vegetation type) + **LOCAL NAME** + **WHERE**

(Location)

## **IDENTIFICATION AND DESCRIBING OF SETTLEMENT**

Settlement is the way how people live in a particular area

It can be described as;

- Dense
- Moderate
- Sparse
- Limited

N.B: Show **WHAT** (settlement) + **WHERE** (location)

E.g. describe the vegetation of Mpara.

Presence of forests vegetation evidenced by forests in the north, central, south west of Mpara and south east of Mpara.

There is swampy vegetation evidenced by the papyrus swamps, marshes and bags in the north east, north, west and south east of Mpara around Kyegegwa boundary, east of Katonga hunting area.

There is thicket in the north and south east of Mpara as evidence

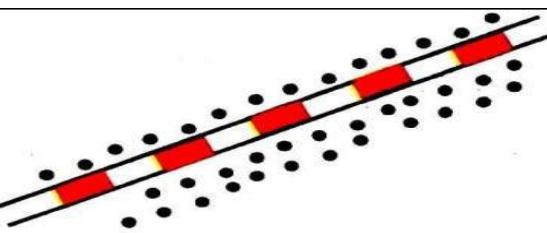
## **IDENTIFICATION AND DESCRIBING OF SETTLEMENT PATTERNS/TYPES**

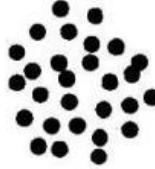
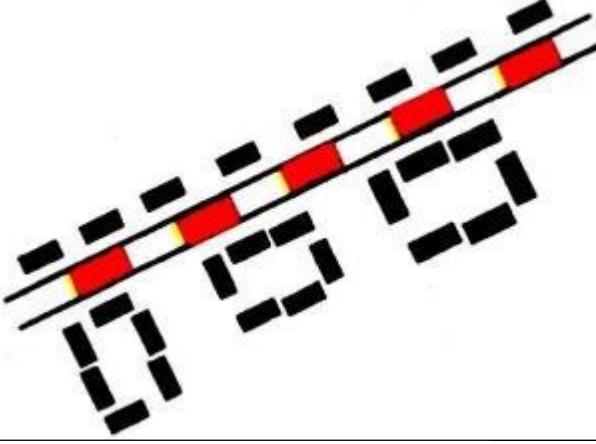
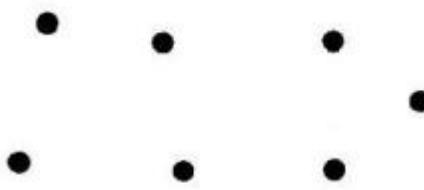
### **DESCRIBING SETTLEMENT PATTERNS ON A MAP EXTRACT**

Settlement on a map extract is illustrated by symbols of either huts or built-up areas (Refer to the key of the map extract). A settlement pattern is a plan or a layout of settlement on a particular landscape.

There are different settlements patterns like;

- Linear
- Nucleated
- Planned
- Scattered

<b>SETTLEMENT PATTERN</b>	<b>ILLUSTRATION</b>
Linear settlement pattern where settlements are found along road sides, river banks / sides.	

<p><b>. Clustered / grouped settlement pattern</b></p> <p>These are isolated but connected by foot path.</p>	 
<p><b>Grid / planned settlement pattern</b></p> <p>This is settlement where are centrally planned near developed transport routes health centres, education. It is common in urban centres, plantations and prisons.</p>	
<p><b>Scattered / dispersed settlement pattern</b></p> <p>This is a settlement pattern where settlements are widely spread. It is common in rural areas.</p>	

N.B: Show **WHAT** (settlement pattern) + **WHERE** (location)

E.g. there is linear settlement pattern along the dry weather road from Arwotcek road junction to Aputi road junction in the south east

**Example (*Kisoro map extract*)**

a) With reference to Kisoro map extract, describe the settlement patterns in the area.

**Answers SETTLEMENT PATTERN OF KISORO**

- There is linear settlement in the North West.
- Settlement is dispersed in the East of Nkanda.
- Settlement is nucleated in the Northern part of the map extract.

**Note:** Learners should locate a pattern by giving place names and direction on the map extract.

**FACTORS INFLUENCING SETTLEMENT ON A MAP.**

**Note:** Please use either **attracted** or **encouraged not favored/influenced**.

- Attach either the pattern or type on each factor.
- Support with evidence the location of the pattern on the map.

**General factors may include**

- Gentle slopes attract dense settlements or linear settlement because it's easy to construct.
  - Well drained areas are heavily settled or encourage nucleated settlement.
  - Well-developed transport routes e.g. roads (specify type) railways attract easy accessibility
- b) Giving specific examples, explain the factors which have influenced settlement in the area shown on the map extract.
- The presence of gentle slopes for easy construction of houses has led to nucleated settlement in North of the map.
  - The presence of swamps in the South East has discouraged settlement because they are water logged.
  - Forest cover in the South West has discouraged settlement.
  - The government policy of allocating national park in South has discouraged settlement because wild animals scare man.
  - The presence of social services like prison, hospital school at Kisoro has attracted population settlement because they make life easy.

## **IDENTIFYING AND DESCRIBING TRANSPORT AND COMMUNICATION ON A MAP EXTRACT**

This is the mode/way through which goods and passengers are moved from one place to another by land, air or water. These include;

- Roads
- Railway
- Airfields
- Water Routes

***Check on the key of the map extracts for the symbols of these routes.***

**N.B:** Show **WHAT** (transport route) + **EVIDENCE** (local name)

**WHERE** (location)

## **IDENTIFICATION AND DESCRIPTION OF RELATIONSHIPS BETWEEN FEATURES ON THE MAP EXTRACT**

Relationship simply brings out how geographical phenomena are interrelated on a map extract.

Or

This is the way how two features connect to each other

This is a quite interesting and simple part of map reading by using Connecting words like;

- Favour   • Encourage   • Occupy   • Attract   • Cover   • Occupy

- Ease      • Discourage      • Limited    • E.t.c

- ✓ Relief and Drainage
- ✓ Relief and Transport
- ✓ Relief and communication
- ✓ Vegetation and settlement
- ✓ Communication and settlement
- ✓ Drainage and Settlement e.g.

Relationship between;

### **RELIEF AND DRAINAGE**

- Rivers flow through narrow valleys in the highland areas/steep slopes.
- Rivers flow through broad valleys in low lying areas.
- Rivers originate from highlands and flow out to low lying areas.
- Rivers tend to have straight courses in highland areas.
- Highlands form water shade.
- Swamps occupy broad valleys
- Gentle slopes are well drained
- Lowlands are poorly drained.
- Lakes occupy basin like Lake Mutanda.
- Swamps occupy low lands/broad valley.
- Rivers originate from highland or mountainous areas of Muhavura, Gahinga and Sabino.
- Radial drainage pattern is shown by rivers on Gahinga and Muhavura.
- There are highland swamps in the saddle between Gahinga and Sabino.

### b) **RELIEF AND VEGETATION**

- There is papyrus vegetation on broad valleys/low lying areas.
- Woodland vegetation dominates low lying areas.
- Plantations exist along gentle slopes.
- Forests exist along gentle slopes/broad valleys and sometimes highlands areas.
- Scrub vegetation dominates low lying areas.

### c) **Relief and transport/communication**

- Roads pass through gentle slopes and foothills have foot path
- Footpaths and Motorable tracks dominate the highland areas.
- Airstrips/airfields are usually in lowland areas/flat areas
- Railway lines are usually in lowland areas
- Roads and railway lines tend to be straight in low lying/flat areas.

- Roads curve in hilly areas.
- Steep slopes are devoid of communication lines.

**d) Drainage and settlement**

- Well drained areas encourage settlement
- Poorly drained areas with seasonal and papyrus swamps discourage settlements.
- Broad river valleys discourage settlement
- Narrow river valleys discourage settlement
- Shores of lakes attract settlement

**e) Drainage and vegetation**

- Swamps have papyrus vegetation
- Woodlands are in well drained areas
- Forests are along rivers
- Forests are in well drained areas

**f) Relief and land use**

- Transport and communication routes like roads are found in gentle slopes and lower slopes of hilly areas.
- Crop growing is mainly done in gentle slopes.
- Settlements are mainly done in gentle slopes and lower slopes of hilly areas.
- Forestry is carried out in the highlands along the steep slopes.
- Mining and quarrying are mainly done in highland areas.
- Fish farming is mainly done in low lying areas.

**g) Drainage and transport /communication**

- Roads cross river valleys at culverts and bridges.
- There is water transport on lakes evidences by ferries/ ferry lines, piers and landing sites.
- Roads are devoid of swamps.
- Roads cross papyrus swamps at bridge.
- Footpaths cross river valleys at culverts
- Footpaths cross swamps

**Example 1.10: (*Kisoro map extract*)** Giving evidence from Kisoro map extract, describe the relationship between;

- i) Relief and drainage
- ii) Relief and transport

**Answers**

- i) Relief and drainage

- Lakes occupy basin like Lake Mutanda.
- Swamps like around cyot sea bay occupy broad valley.
- Rivers originate from highland or mountainous areas of Muhavura, Mgahinga and Sabrino.
- Radial drainage pattern is shown by rivers in Mgahinga and Muhavura.
- There are highland swamps in the saddle between Mgahinga and Sabrino.
- In steep slopes to the South Rivers flow through narrow valleys.

ii) Relief and transport

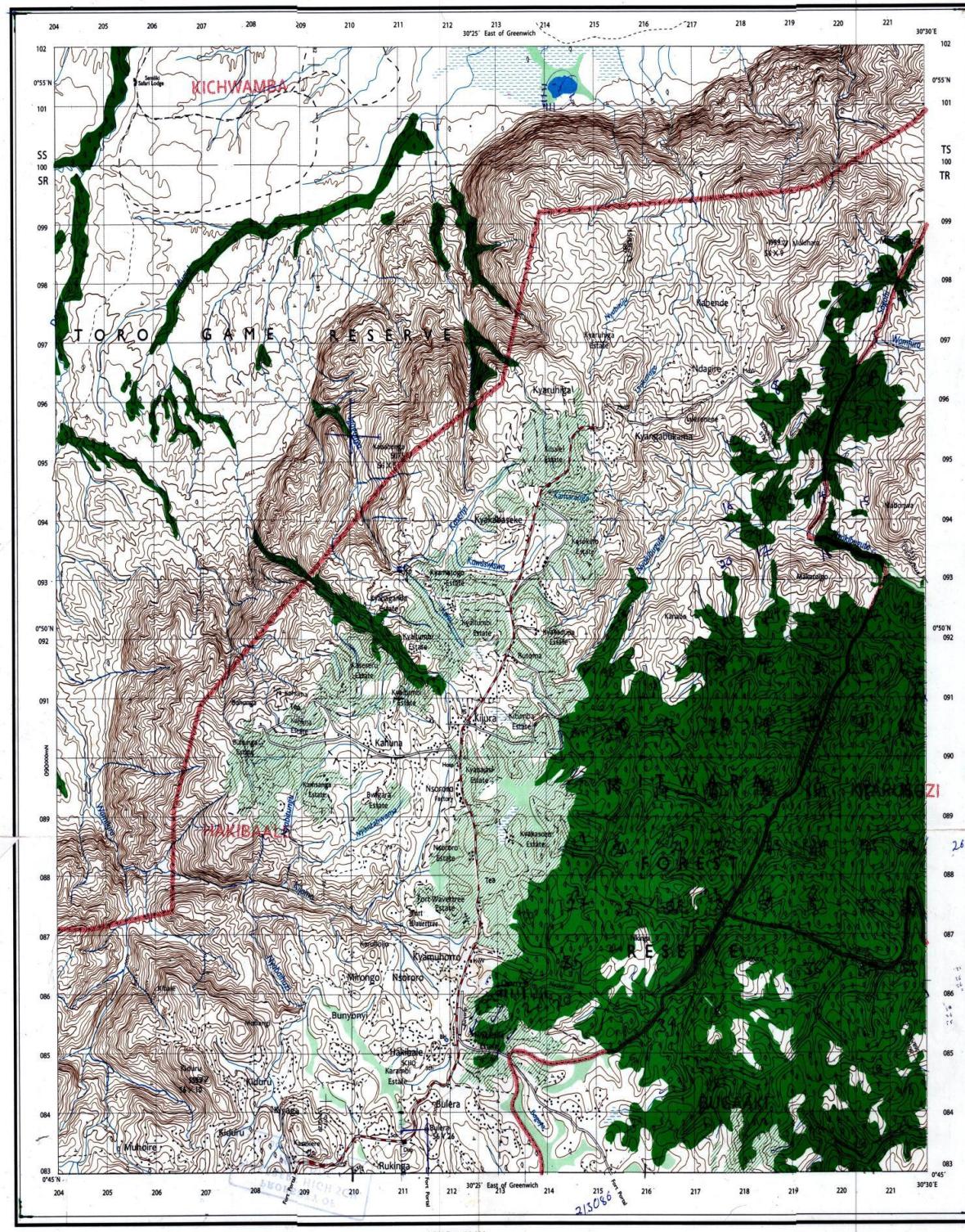
- Foot path go through valleys between hills (Saddle) e.g., south of map between Sabino and Mgahinga.
- Roads are devoid of highlands e.g., South of the map.
- Low lands/flat land is crossed by foot path e.g., West of map.
- Roads are in gentle slopes e.g., North of map.

**Note:** Learners should give relevant examples of place names and directions when describing relationships on the map extract.

### Trial questions

1. ***Study the map extract 1:50,000 (UGANDA) KIJURA and answer the questions which follows.***

Refer to this map as:	Series Sheet Edition	Y732 56/2 3-USD
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**SET A**

- a) i) State the grid reference of the trigonometric station at Mukhara.
- ii) Identify the drainage feature found at grid reference 144013
- b) Calculate the area covered by Itwara forest reserve.
- c) Draw a sketch map of the area shown on the map and on it mark and name;
  - i) Any two physiographic regions
  - ii) All weather loose surface and dry weather roads
  - iii) Water shade
  - iv) Tea plantations
  - v) Air strip
- d) Describe the;
  - i) Relief of the area
  - ii) Relationship between relief and drainage in the area shown on map extract.

**SET B**

- a) Name the physical feature found at the following grid references.
  - i) 189987
  - ii) 152019
- b) Measure and state in kilometers the distance covered by the weather loose surface road from grid reference 130910 to 150955.
- c) Draw a reduced sketch map of Kijura by 2 and on it, Mark and name;
  - i) 2 physiographic regions
  - ii) 2 vegetation types
  - iii) 2 communication routes
  - iv) 2 drainage features
  - v) Calculate new scale

***Study the map extract 1:50,000 (UGANDA) KIJURA and answer the questions that follow;***

- a) i) State the drainage feature at grid reference 143014.

- ii) State the hemisphere in which Kijura is located giving reason for your answer.
- b) i) Calculate the detour index of all weather loose surface from grid reference 130915 to 150956.
- ii) Calculate area covered by Itwara forest reserve.
- iii) Calculate the bearing of secondary trigonometric station at Mukihara from Kyaruhiiga estate (150970).
- c) Reduce the area shown on map by 3 on it mark and name;
  - i) 2 physiographic region
  - ii) 2 drainage features
  - iii) 2 communication routes
  - iv) Settlements and plantations
  - v) Itwara forest reserve
- d) i) Calculate the new scale

**3. *Study the map extract 1:50,000 (UGANDA) NAAM OKORA and answer the questions which follows;***

**SET A**

- a) State the grid reference of the;
  - i) Dam east of Onyala hill
  - ii) Culvert on river Wangali
- b) i) Describe the drainage pattern of river pager and its tributaries
- c) Reduce the area shown on a map extract between Easting 28 and 36 and northing 60 and 72 by 2. Draw its sketch map and on it mark and label;
  - i) Onyala hill
  - ii) River pager and its tributaries
  - iii) Seasonal swamps
  - iv) Any one dam
  - v) Major communication lines
  - vi) One area with nucleated settlement

- d) Explain the relationship between;
  - i) Relief and transport
  - ii) Transport and settlement

**SET B**

- a) State the grid reference of the;
  - i) Air photo principal point at Boroboro
  - ii) Culvert North of LAPANA
- b) Calculate the;
  - i) Vertical interval
  - ii) Amplitude on the map
- c) Calculate the detour index of all weather loose surface road from grid 280645 to grid reference 360697.

**2. Study the map extract 1:50,000 (UGANDA) NAAM OKORA and answer the questions which follows;**

**SET A**

- a) State the grid reference of the;
  - i) Dam east of Onyala hill
  - ii) Culvert on river Wangali
- b) i) Describe the drainage pattern of river pager and its tributaries draw a sketch map of Naam okora extract between Easting 28 and 36 and northing 60 and 72 and on it mark and name
  - i) Onyala hill
  - ii) River pager and its tributaries
  - iii) Seasonal swamps
  - iv) Any one dam
  - v) Major communication lines
  - vi) One area with nucleated settlement
- d) Explain the relationship between;
  - i) Relief and transport
  - ii) Transport and settlement

**3. Study the map extract 1:50,000 E.A. (UGANDA) KATUNGULU and answer the questions which follows.**

**SET A**

- a) State the;
- i) Man made feature found at grid 801812
  - ii) Bearing of Lake Kyaminga (grid reference) 820800 from Lake Bagusa and reference 837837.
- b) Draw a cross section along northing 76 from Easting 81 to easting 87 and on it mark and label;
- i) Any three land form features
  - ii) Any two drainage features
  - iii) Calculate vertical exaggeration
- c) Describe the;
- i) Relief of the area shown on the map
  - ii) Relationship between relief and drainage
- d) Explain the value of the craters on the national economy.

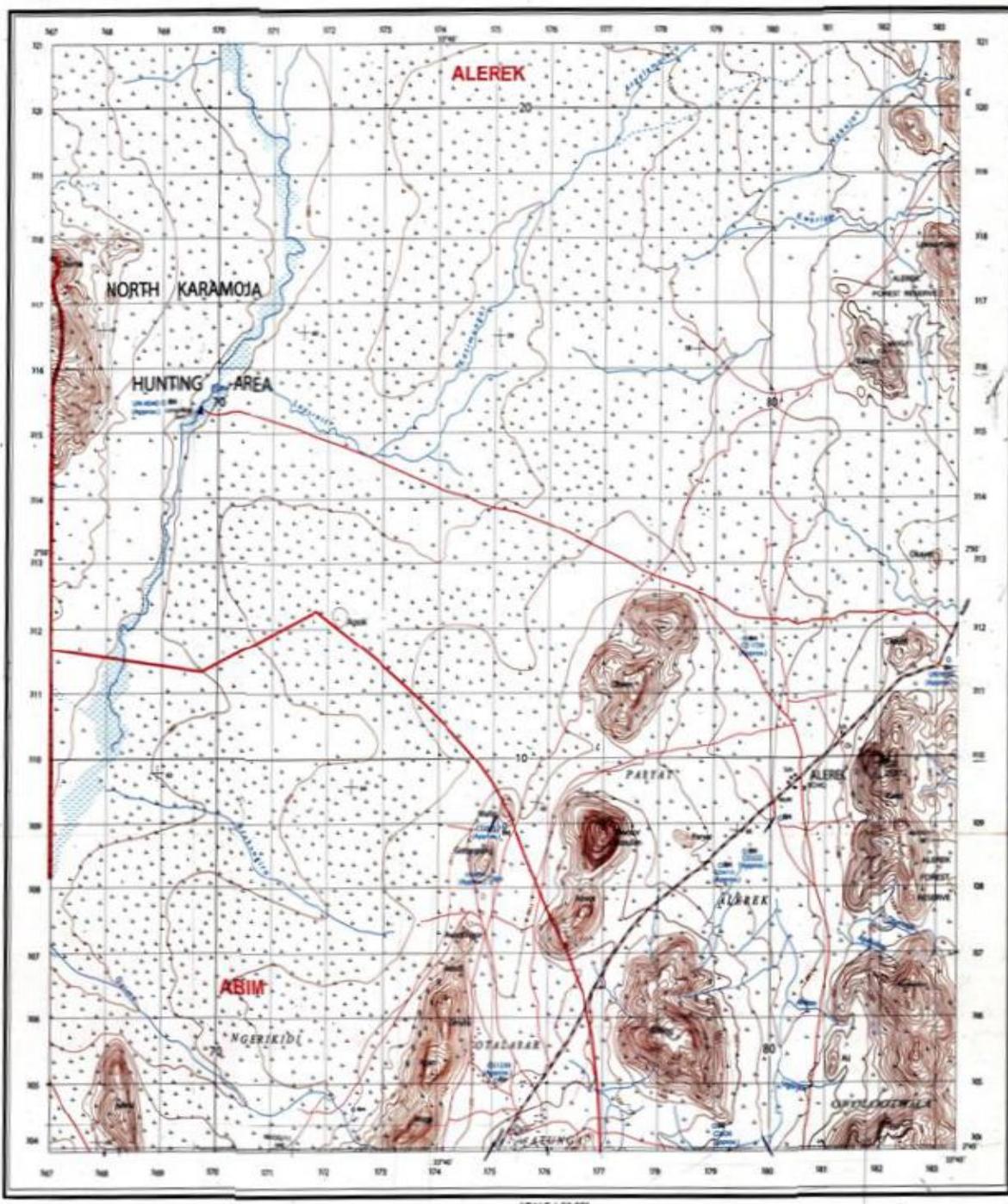
**SET B**

- a) Name features at the following grid references;
- i) 835752
  - ii) 834778
- b) Describe the;
- i) Location
  - ii) Hemisphere of the map extract
- c) Draw a sketch map of *katungulu* on it mark and name;
- i) River Katerera
  - ii) Highlands & lowlands
  - iii) Vegetation types
  - iv) Chambura Game reserve
  - v) County boundary
- d) Describe the relationship between;
- i) Drainage & vegetation
  - ii) Relief and drainage

**4. Study the map extract 1:50,000 (UGANDA) ALEREK and answer the questions that follow.**

EAST AFRICA 1:50,000 (UGANDA)

ALEREK



**SET A**

- a) i) Name the drainage feature at Grid reference 796117

- ii) Name the relief feature at Grid reference 816156
- b) Determine the inter-visibility of Abiting hill from a hill at 753092.
- c) Draw a sketch map of the area shown on map on it mark and name;
- i) 2 physiographic regions
- ii) 2 drainage features
- iii) 2 roads
- iv) 2 sub-county boundaries
- d) Describe the relief of the area shown on map.
- e) Account for the formation of a feature at grid reference 816156.

### **SET B**

- a)
  - i. Identify a feature at grid **812053**
  - ii. State the grid reference of a church at Alerek.
- b)
  - i) Measure and state in kilometer of All-weather loose surface road from grid reference **751040** to **830114**.
  - ii) Describe the location of Alerek map extract.
  - c) Draw a cross section along Northing 06 from Easting 76 to Easting 83 on it mark and name;
    - i) Hills
    - ii) Rivers
    - iii) Saddle
    - iv) Roads
    - v) County boundary
    - vi) Vegetation
    - vii) Calculate the vertical exaggeration.
  - d) Describe the;
    - i) Relief of the area
    - ii) Drainage pattern shown on Abiting hill
    - iii) Account for the drainage
  - e) Describe relationship between relief and vegetation.

### **SET C**

- A. Identify the feature at  
 697155  
 790044

- State the grid reference of Church at Atunga Hill peak at Okayet
- B. Determine the Inter-visibility between Atuga and Awodongor hills south of ALEREK Extract
- C. Describe the drainage patterns
- D. Explain the factors for the drainage patterns
- E. Describe the nature of landscape as shown on the extract
- H. Describe the relationship between Relief and Drainage.
- I. Reduce the area on the map by 2 times on it mark and name
- River Loyoroit, Oyima and Alukungiro
  - Boundaries
  - Loose surface road
  - physiographic regions
  - Conical hill
  - Ridge
  - Col and saddle
- Calculate the new scale of the reduced sketch map?

**6. Study the map extract 1:50,000 (UGANDA) KISORO and answer the questions which follow;**

- a) State the;
  - i) Grid reference of Gisosi hill top
  - ii) River confluence at Nkanda
- b) Give the bearing of Gahinga peak (grid reference 945470) from Ntebe trigonometric station (grid reference 943505).
- c) State the trend of the all-weather loose surface road north of the map.
- d) Draw a sketch map of Kisoro map extract on it mark and name;
  - i) 2 physiographic features
  - ii) Rivers and a permanent swamp
  - iii) Nyarusiza county boundary
  - iv) Forest reserve
  - v) Road
- e) Giving evidence on map extract, state the economic activities taking place on the map.

f) Give the problems faced by the people living in the area.

**Study the map extract 1:50,000 (UGANDA) LAKE NAKIVALI and answer the questions that follow;**

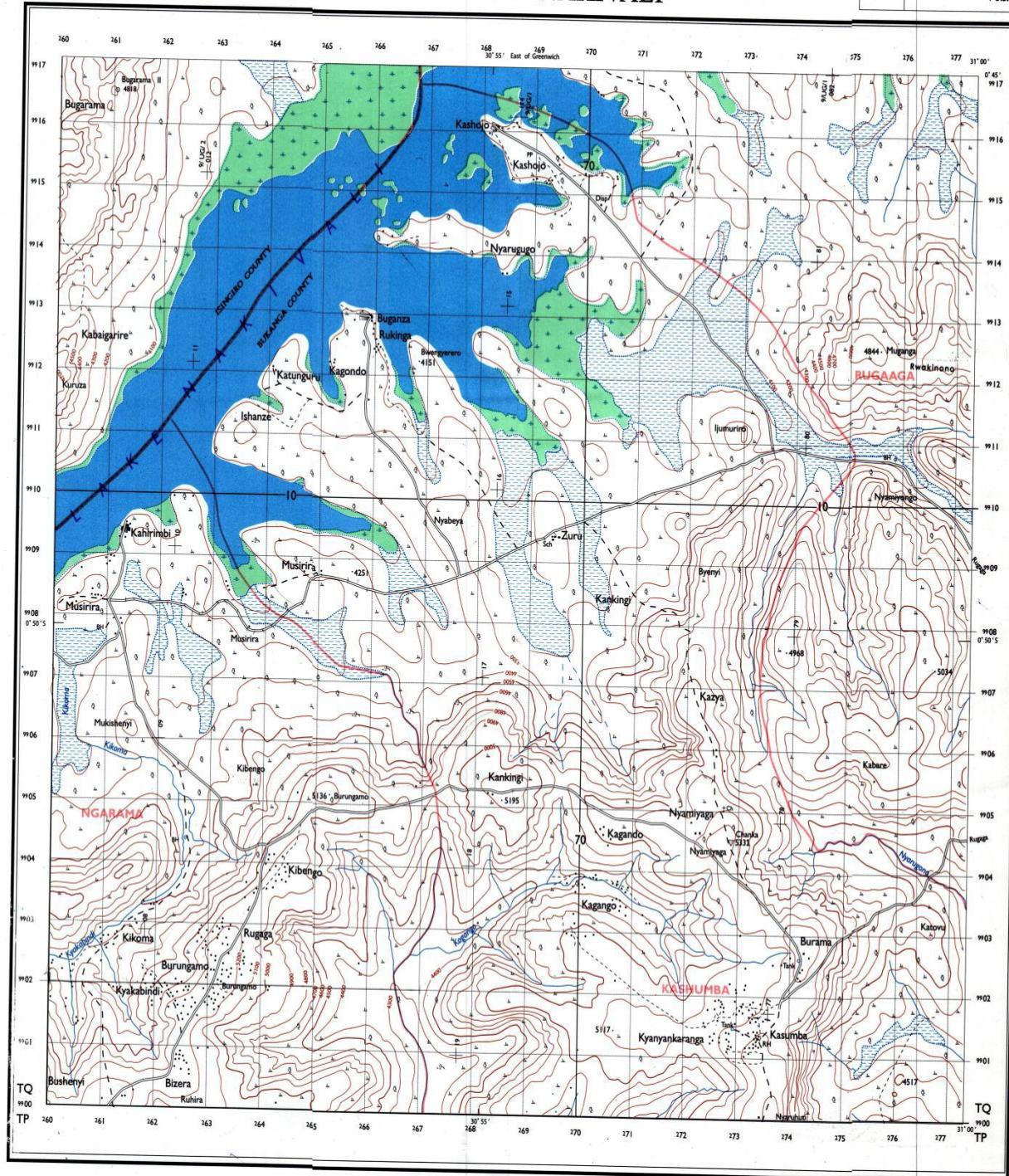
EAST AFRICA 1:50,000 (UGANDA)

LAKE NAKIVALI

Sheet 86/4

this map  
as:  
JRC/C2  
Sheet  
Edition

Y732  
86/4  
4-U.S.D



**SET A**

a)

- i) Give the physical feature at grid reference 611165
- ii) State the grid reference of Musirira road junction.

b) Calculate the;

- i) Area covered by Lake Nakivali
- ii) Vertical interval
- iii) Average height
- iv) Amplitude on the map

c) Draw a relief section along Easting 68 from Northing 04 to 12 on it mark and name;

- i) Hill
- ii) Depression
- iii) Swamp
- iv) Roads
- v) Vegetation

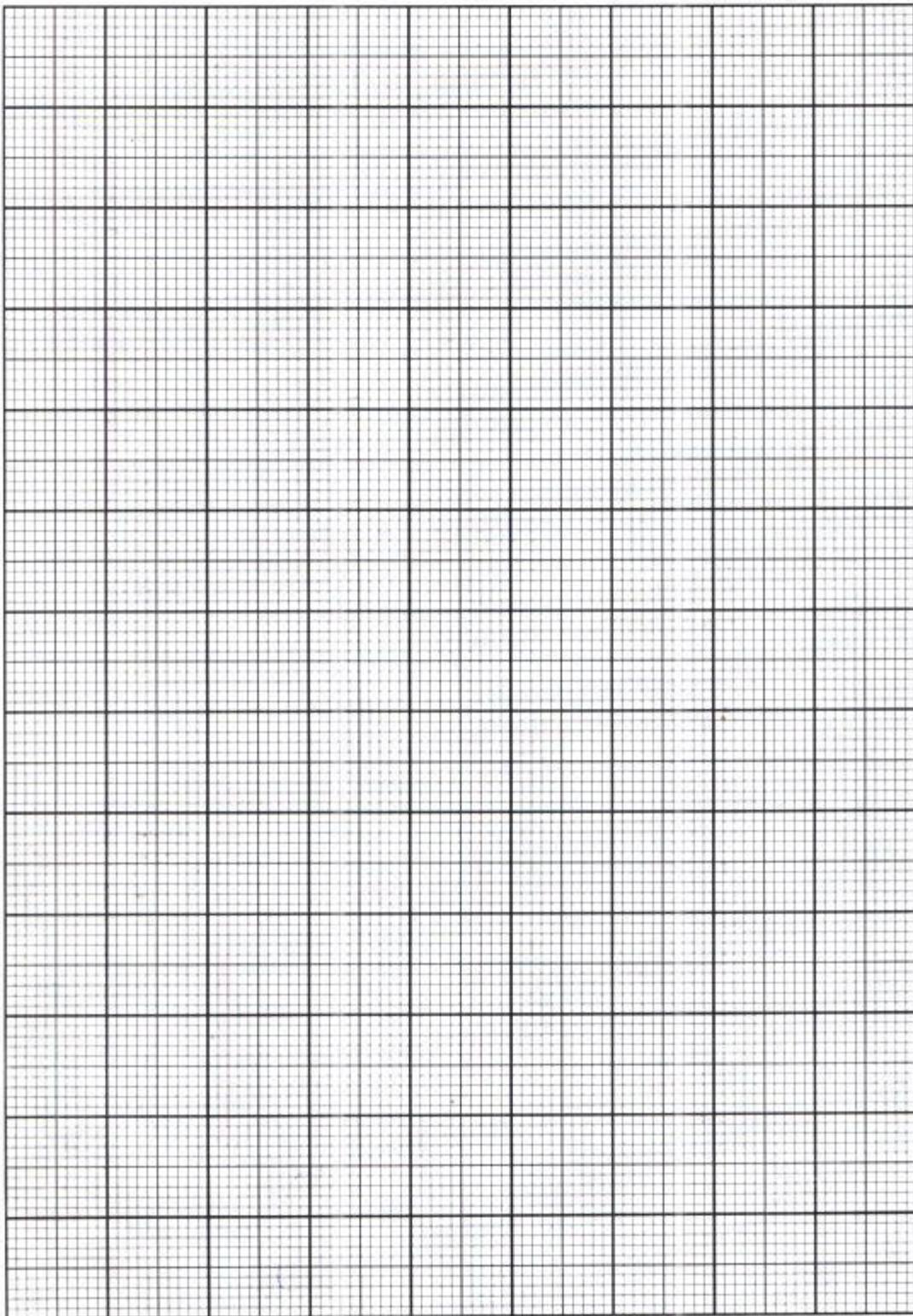
d) Calculate the;

- i) Vertical exaggeration
- ii) Horizontal equivalent

e) Describe the relationship between;

- i) Relief and drainage

ii) Drainage and communication



**SET B**

State the grid reference of the Tank south of Buruma.....  
Chank trigonometrical station secondary.....  
Borehole North of Kikoma.....  
11 Identify the features found at  
614095.....  
715125.....

B calculate the Area occupied by lake Nakivali excluding swamps.....

C. Measure and state in kilometers the distance of the dry weather road from Musirira road junction [610083] to road junction at [735108]

D. What is the direction and bearing of Chank trigonometrical secondary from Zuru school

E. Determine the Detour index of the dry weather road from 641043 to 738019

F. Determine the Trend of the dry weather road from Nyabeya road junction to Buganza

G. Describe the relief of the area

Describe the relationship between relief and communication

I. Describe the relationship between Drainage and settlement

J. Giving evidence for your answer, identify the hemisphere from which the map extract was taken

H. Draw a cross section of the area along Northing 02 between Easting 60 and 68 on it mark and name

-Roads

-Rivers

-Gentle slope

-Settlement

-Boundary

-Col/saddle

-Spur

Calculate the Vertical interval used on the map

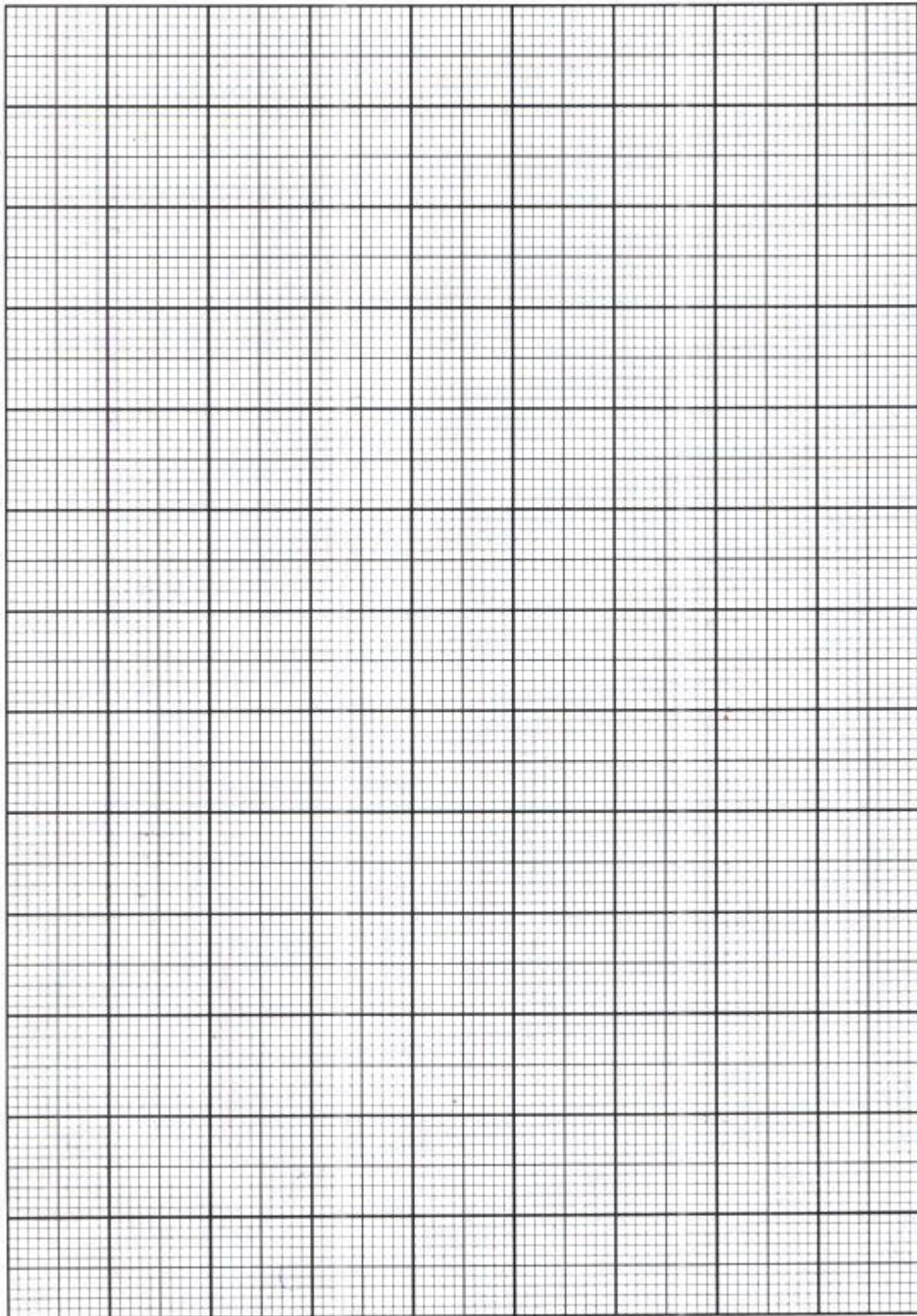
Amplitude of the cross section

New scale of the cross section

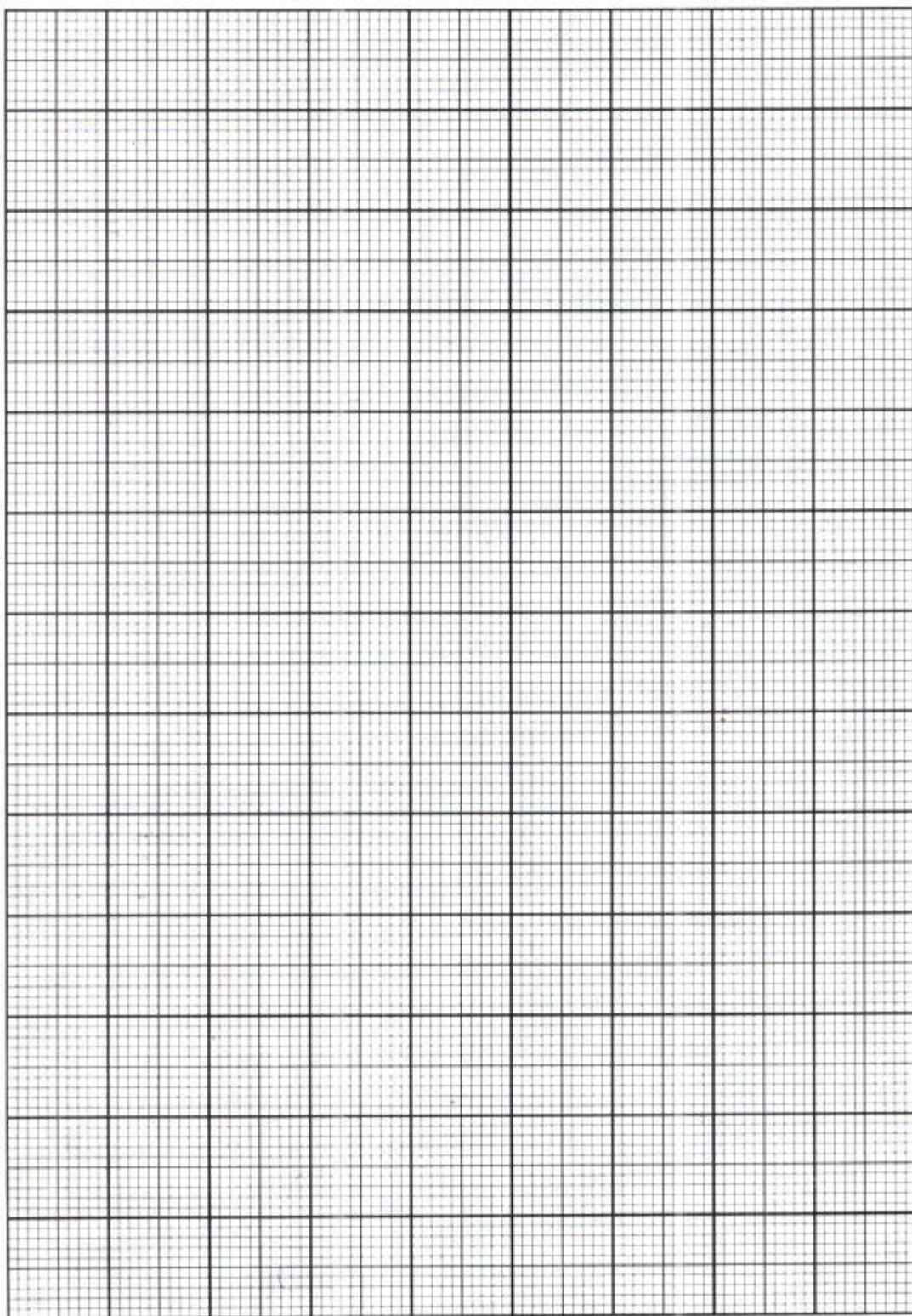
Vertical scale of the cross section

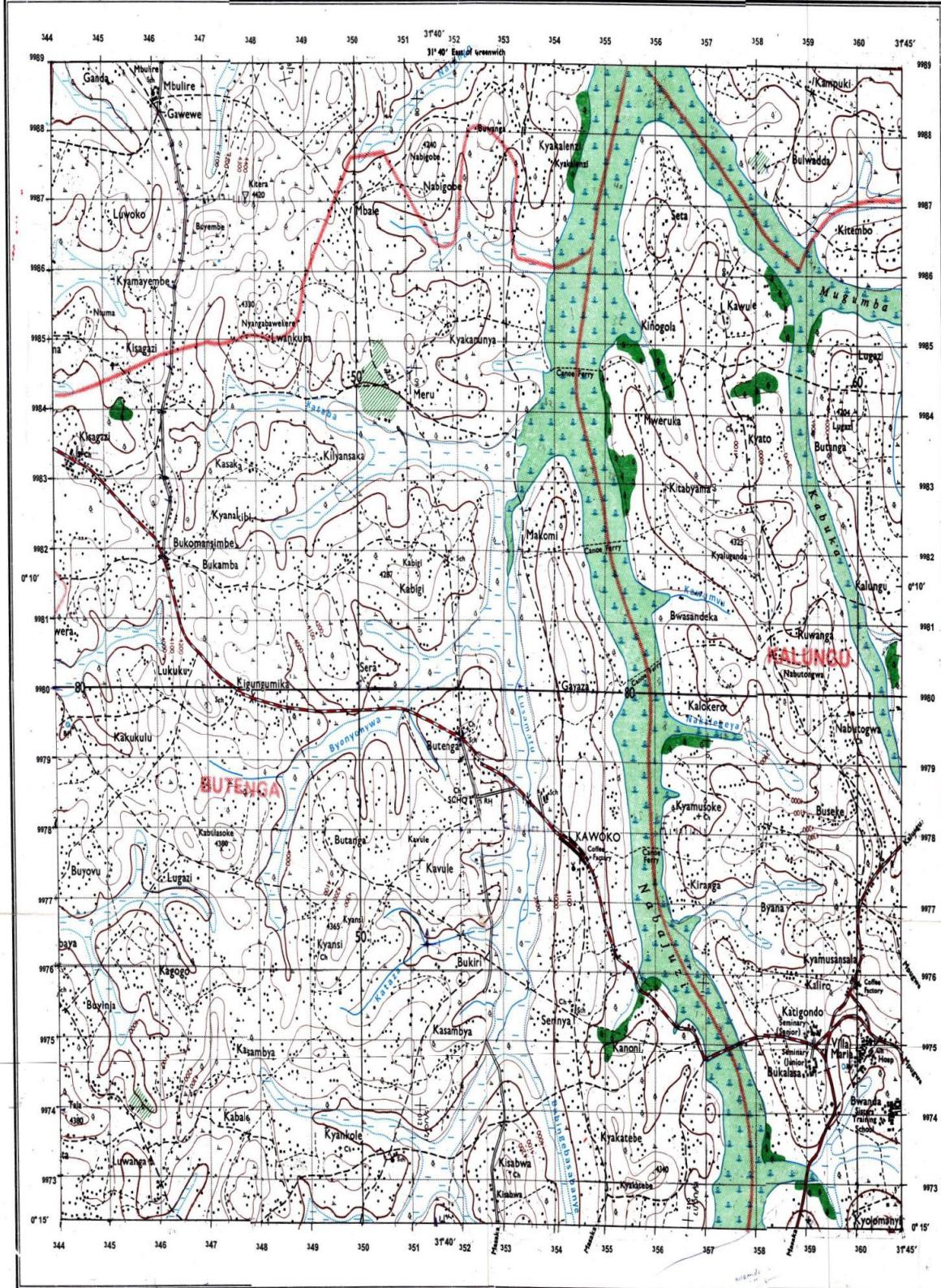
Vertical Exaggeration

Horizontal Equivalent of the cross section



Study the 1:50000 **KAWOKO** sheet 79/1 and answer the questions





A] Identify the feature at  
455740.....

532732.....

535785.....

B] Calculate the area occupied by Nabajjuzi—Mugumba-Kabuka swamp  
.....  
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.....

C] Draw a cross section a long Northing 78 between Easting 51 and 57 on it mark and name Ridge, swamps, Roads, Settlement, River Lusamatu.

E] Identify the economic activities on the map extract

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F] .Describe the problems faced by the people in the area.

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G.] Suggest the possible measures to the problems faced by the people.

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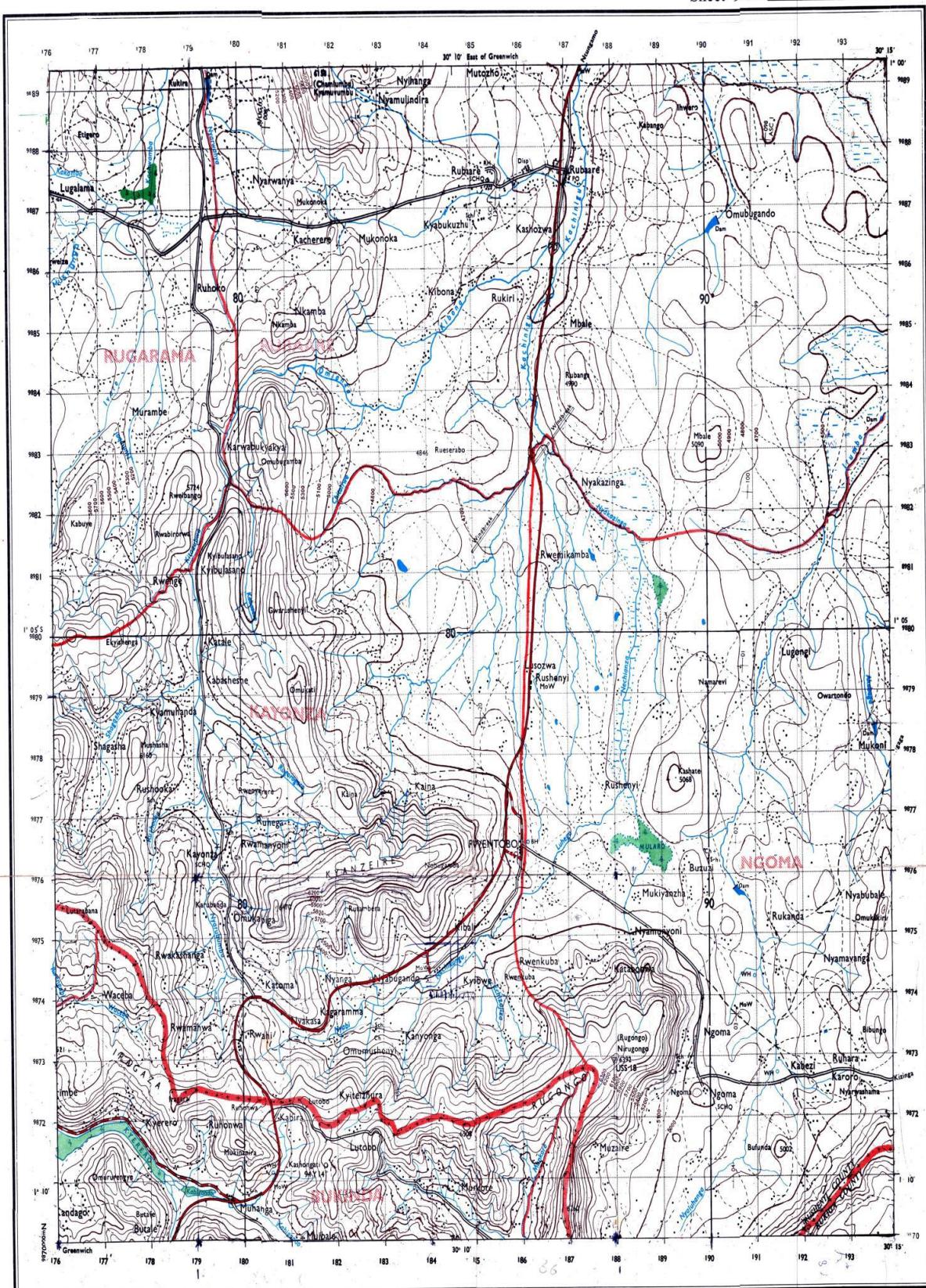
H. Describe the relationship between Relief and Settlement

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Drainage and communication

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QTN. Study the 1:50000 **MPALO** map extract sheet 94/1 and the questions



A]. Identify the feature at the following grid references  
902866.....  
783854.....

B]. Determine the trend of the boundary from 798824 to 863829  
C] Calculate the Detour index of the dry weather road from Rwentobo road junction [860765] to [898726] .....

D]. calculate the Average Height of Mbale conical hill.....

E]. Draw a sketch map of the area on it mark and name

- physiographic regions
- conical hill
- water shed
- swamps
- dry weather road

F]. Describe the  
Relief of the area

Drainage patterns

Settlement patterns

G]. Describe the relationship between  
Relief and Transport

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Relief and Drainage

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H].[i] Draw across section along Northing 78 between Easting 77 to 83 on it mark and label  
;Ridge, road, drainage features, col and saddle

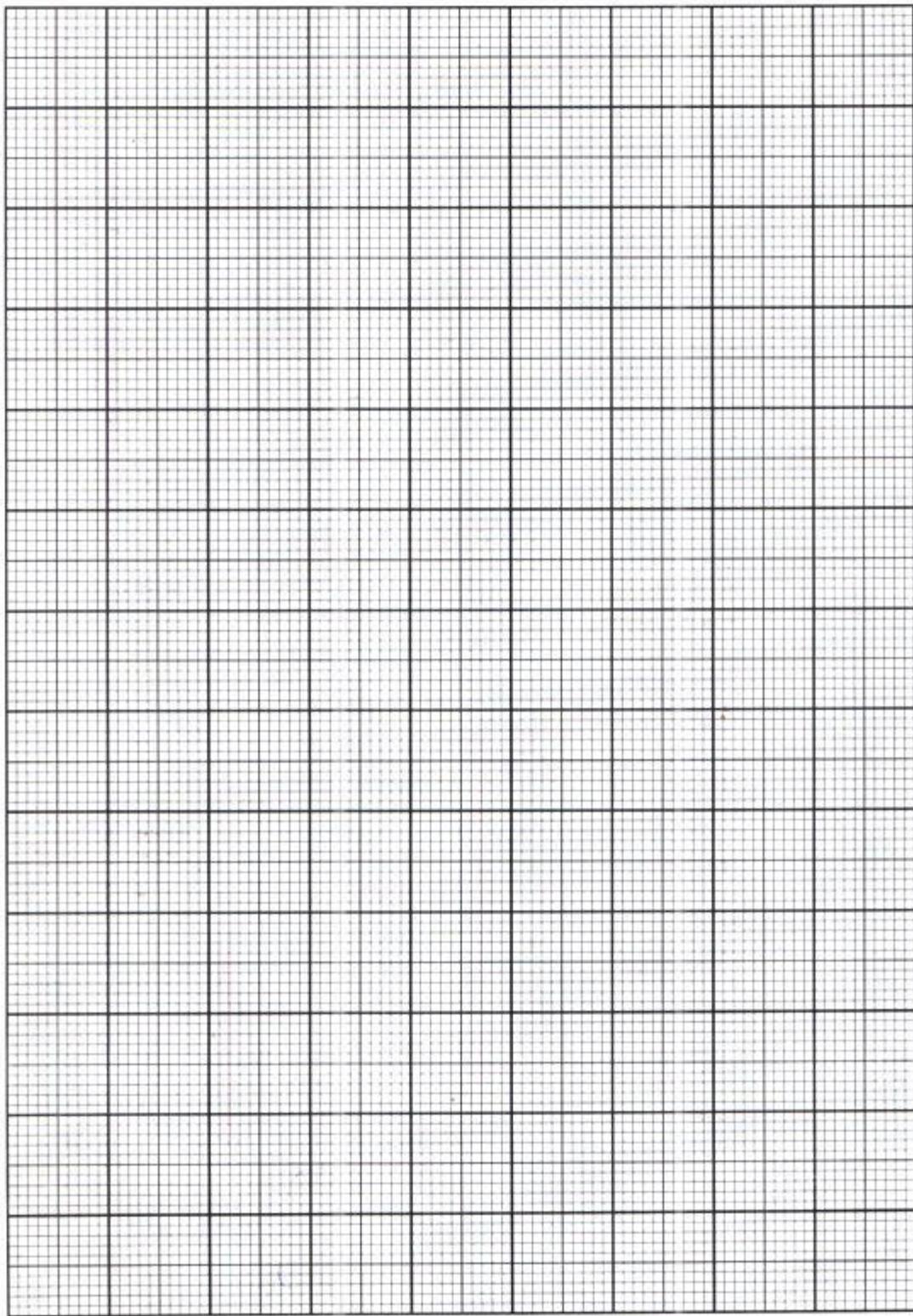
Ii] calculate the

-vertical interval

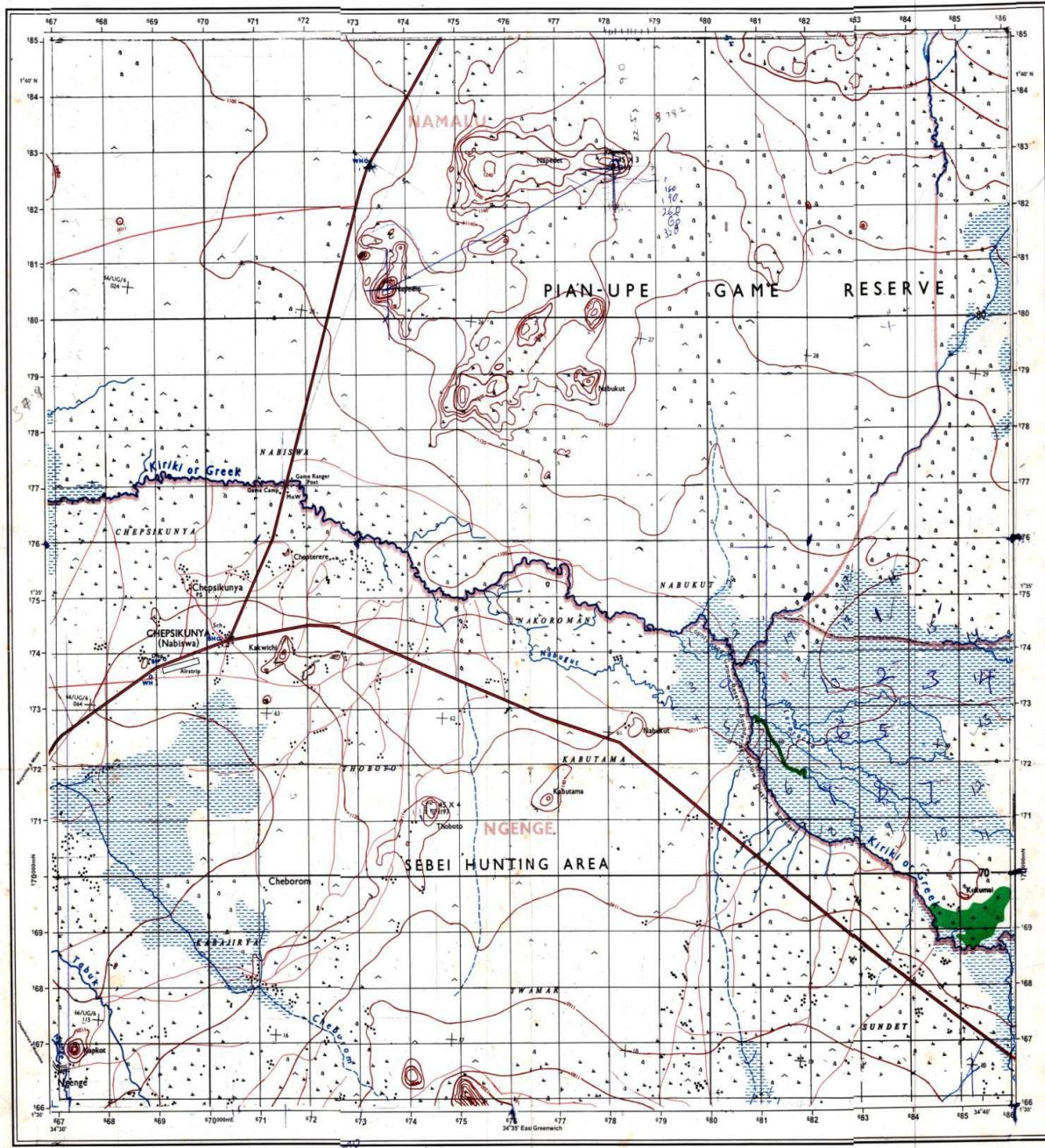
-amplitude

-New scale

-Vertical exaggeration.



Study the 1:50000 map extract UGANDA [**CHEPSIKUNYA**] and answer the questions which follow:



A[1]state the grid reference of  
Thoboto trigonometrically station secondary

.....  
Chepsikunya bore hole

.....  
Air photo principle South West of Sundet

B. Identify the feature at  
670666

.....  
740664

.....  
804738

C. Giving evidence for your answer state the general direction of flow of river Kiriki/Greek

D. State the direction and Bearing of Kapkot hill peak from Kabatuma hill peak

E. calculate the

Vertical interval used on the map .....

Amplitude of the relief

F. Identify the economic activities being carried out in the area

G. Describe the problems being faced by the people in the area

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H. Suggest the possible solutions the problems faced by the people in the area

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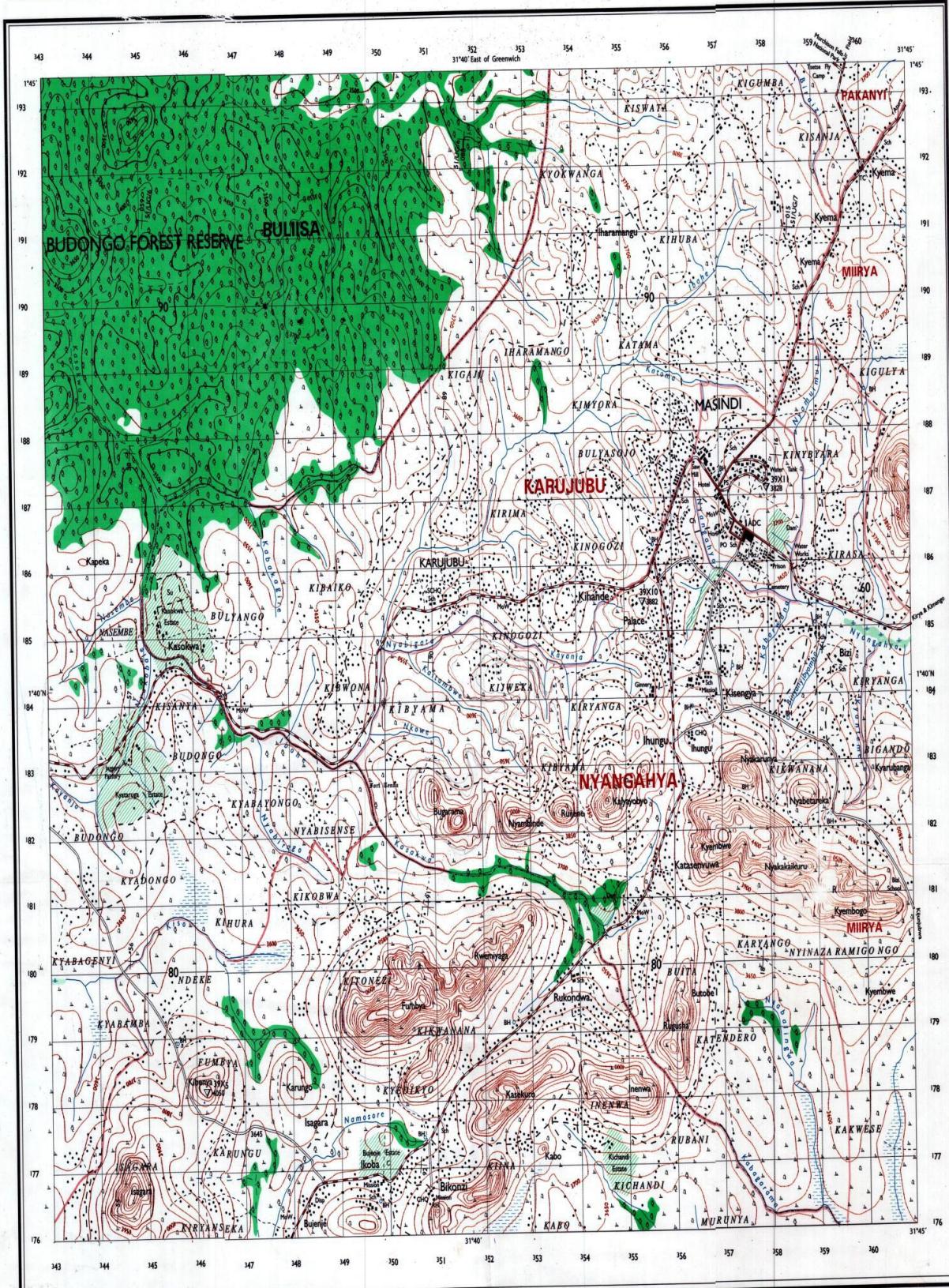
I. What evidence is shown on the map to prove that North West is flat

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J. Draw a sketch map of the area shown on the map extract and on it mark and name

- drainage features
- vegetation types
- transport routes
- relief features
- settlement patterns.

Study the 1:50000 UGANDA **MASINDI** sheet 39/3 and answer the questions



A. Identify the man-made feature found at  
-462782

-584864.....

-455905.....

B. Determine the bearing of 554855 from 570871 road junction

C. Draw a sketch map of the area between Eastings 52 to 59 and Northings 85 to 91 .on it mark and name

-forest vegetation

-roads

-River katoma and ibohe

-nucleated settlements

D. Describe the settlement patterns on the map.

E. Describe the factors that have influenced the settlement patterns

F. [i] Draw a cross section along Northing 78 between Easting 43 and 52 on it mark and name

-River valley

-Gentle slopes

-hill

-saddle

-Roads

-Settlement

[11] Calculate the vertical scale, Vertical scale, new scale, Vertical exaggeration, and Horizontal Equivalence of the cross section.

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V.S.....

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N.S.....

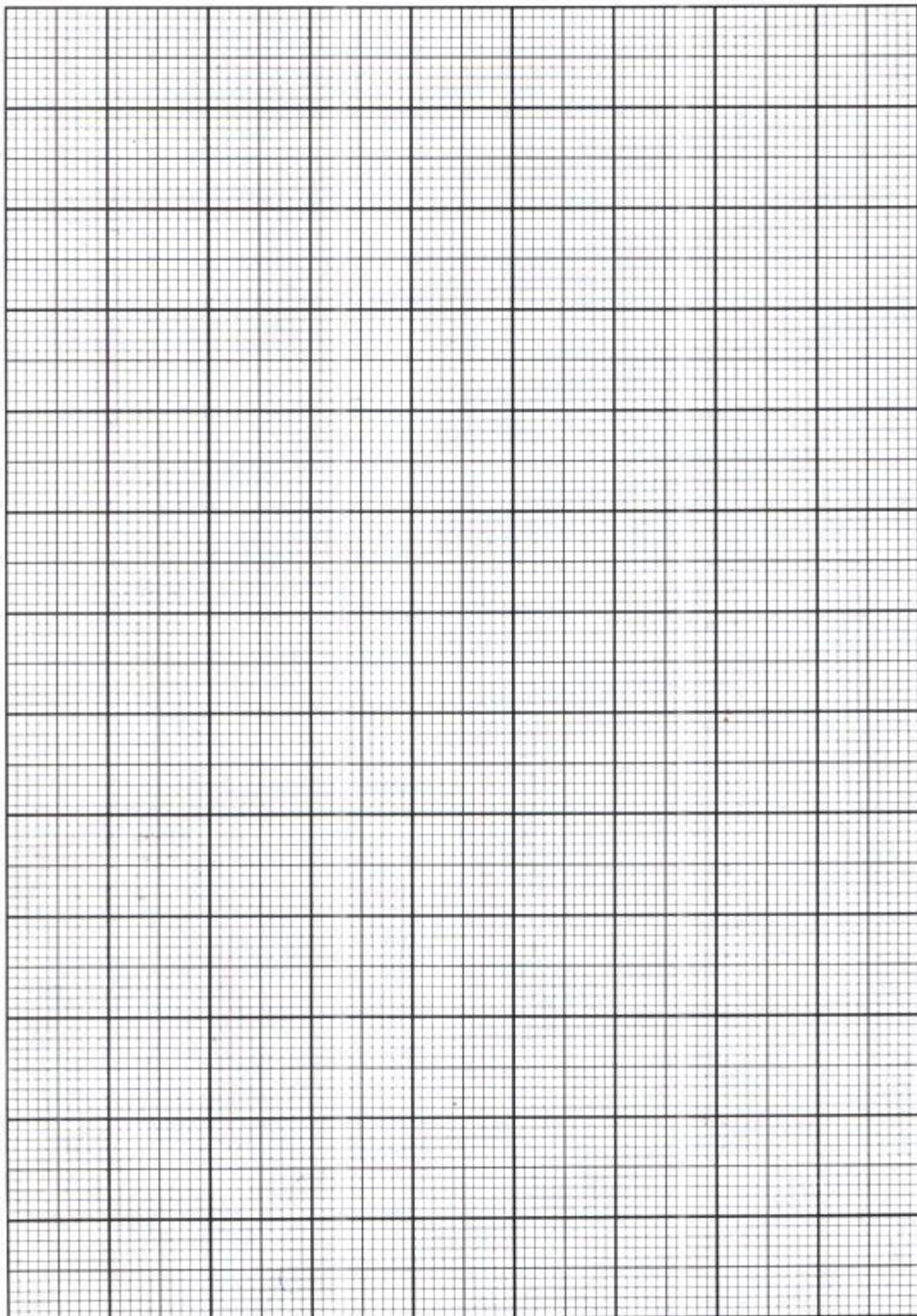
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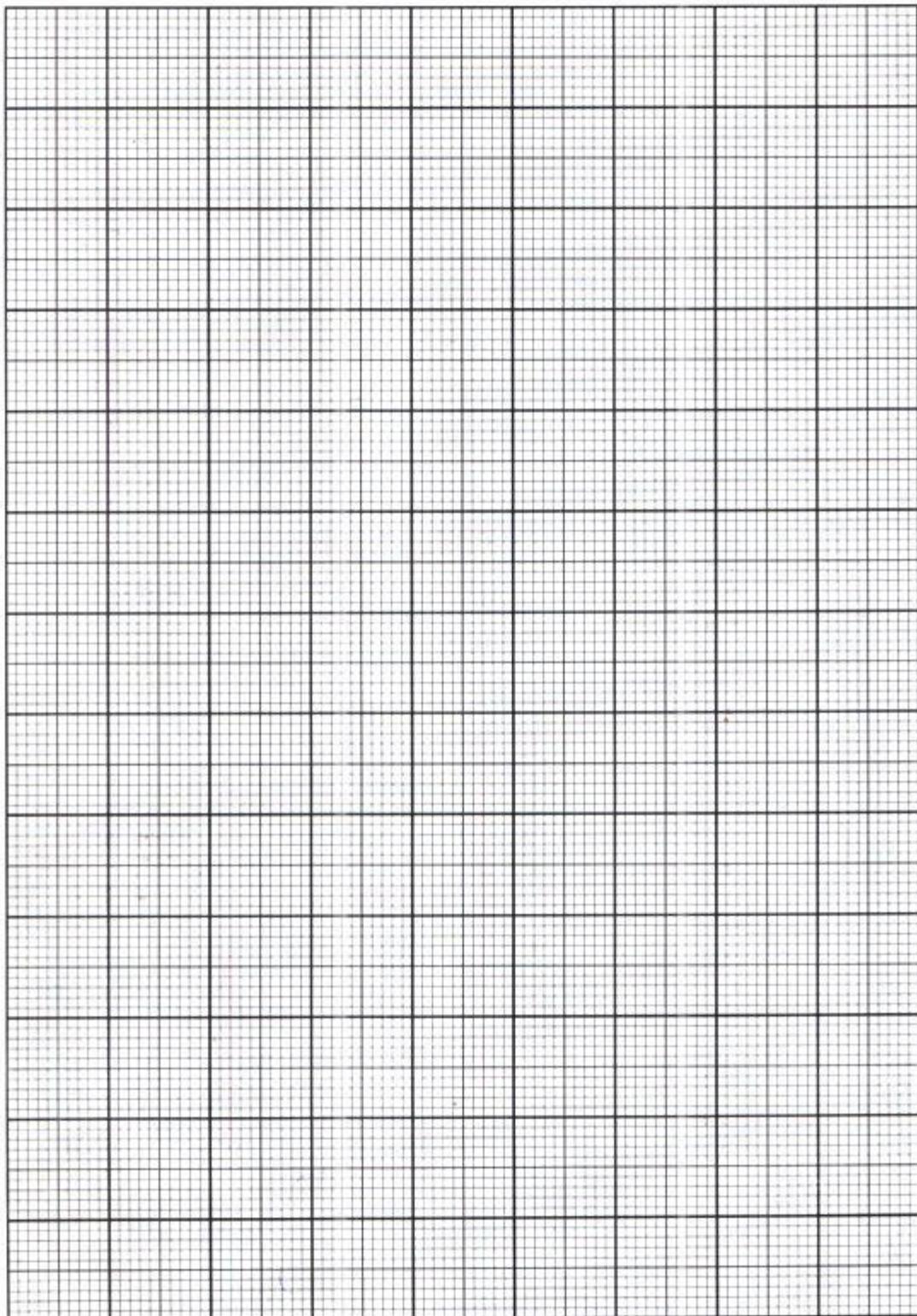
V.E.....

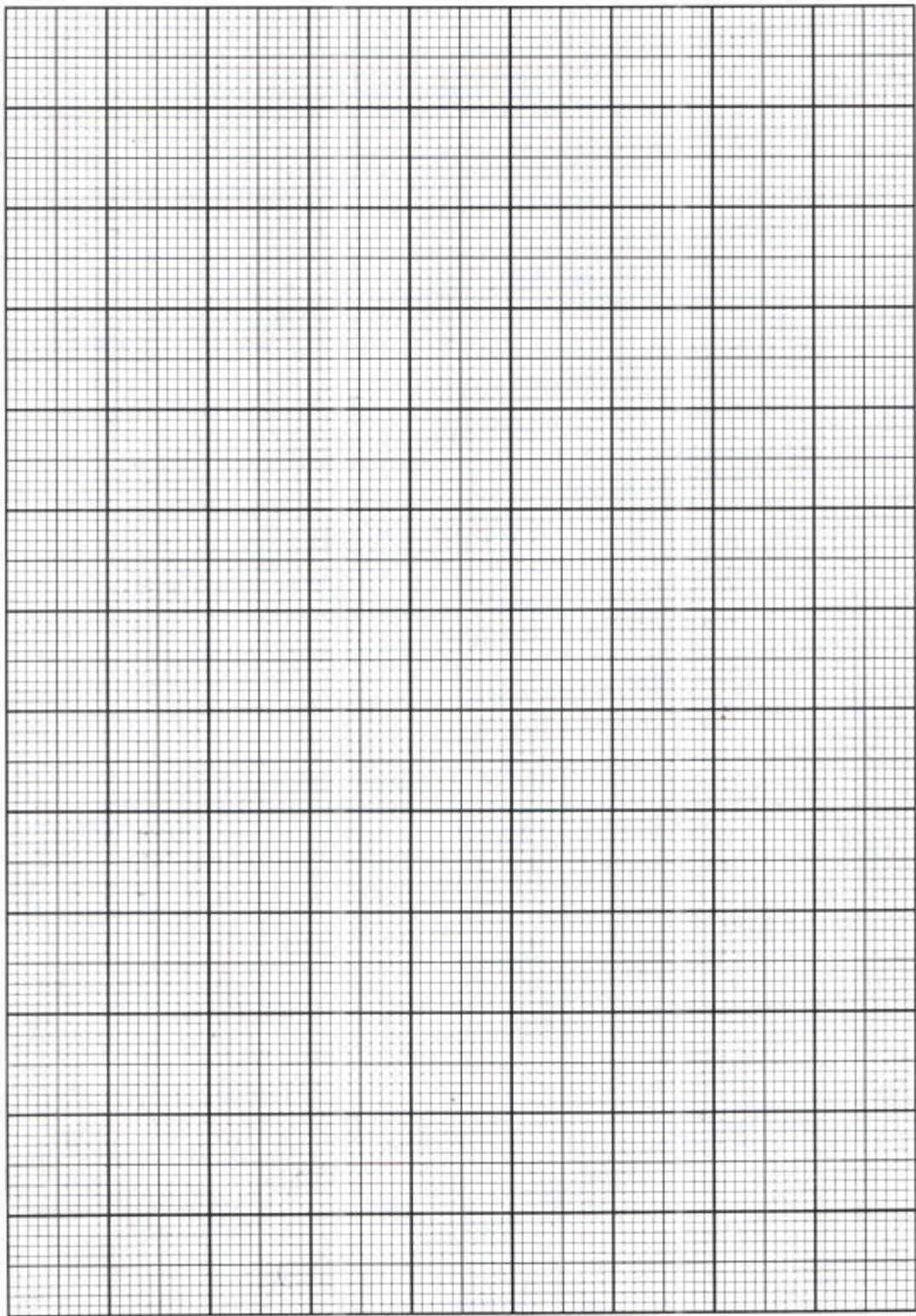
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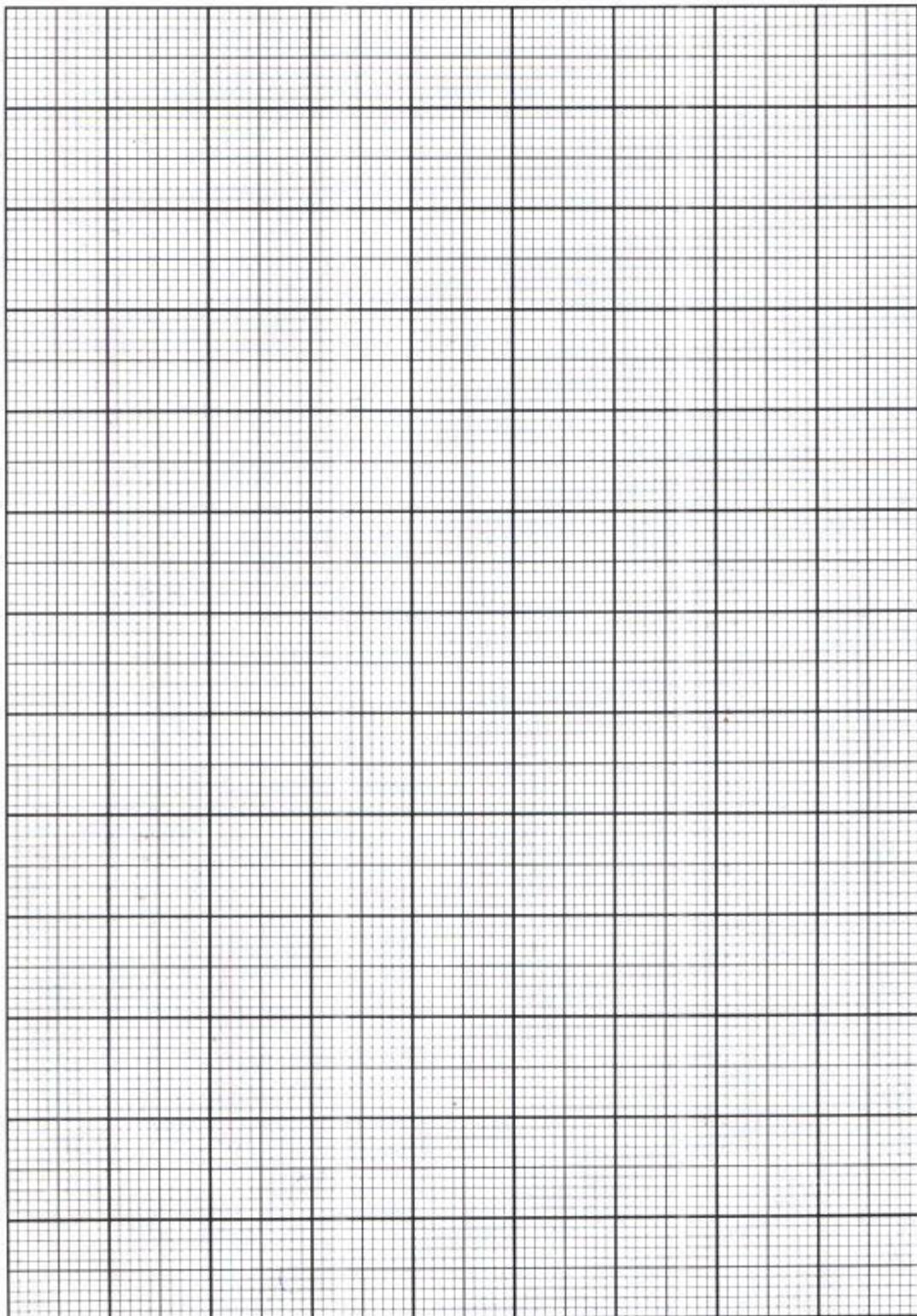
H.E.....

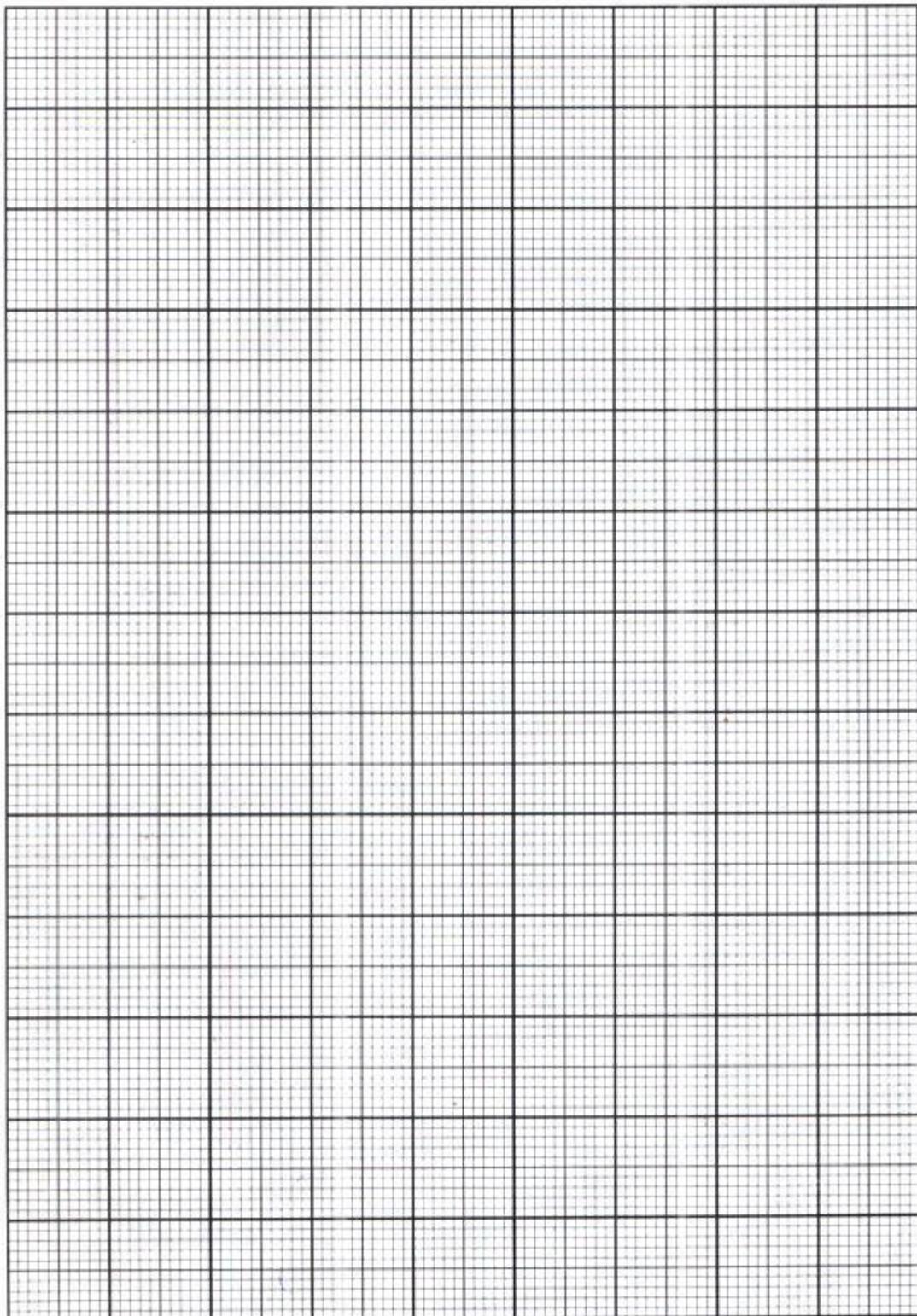
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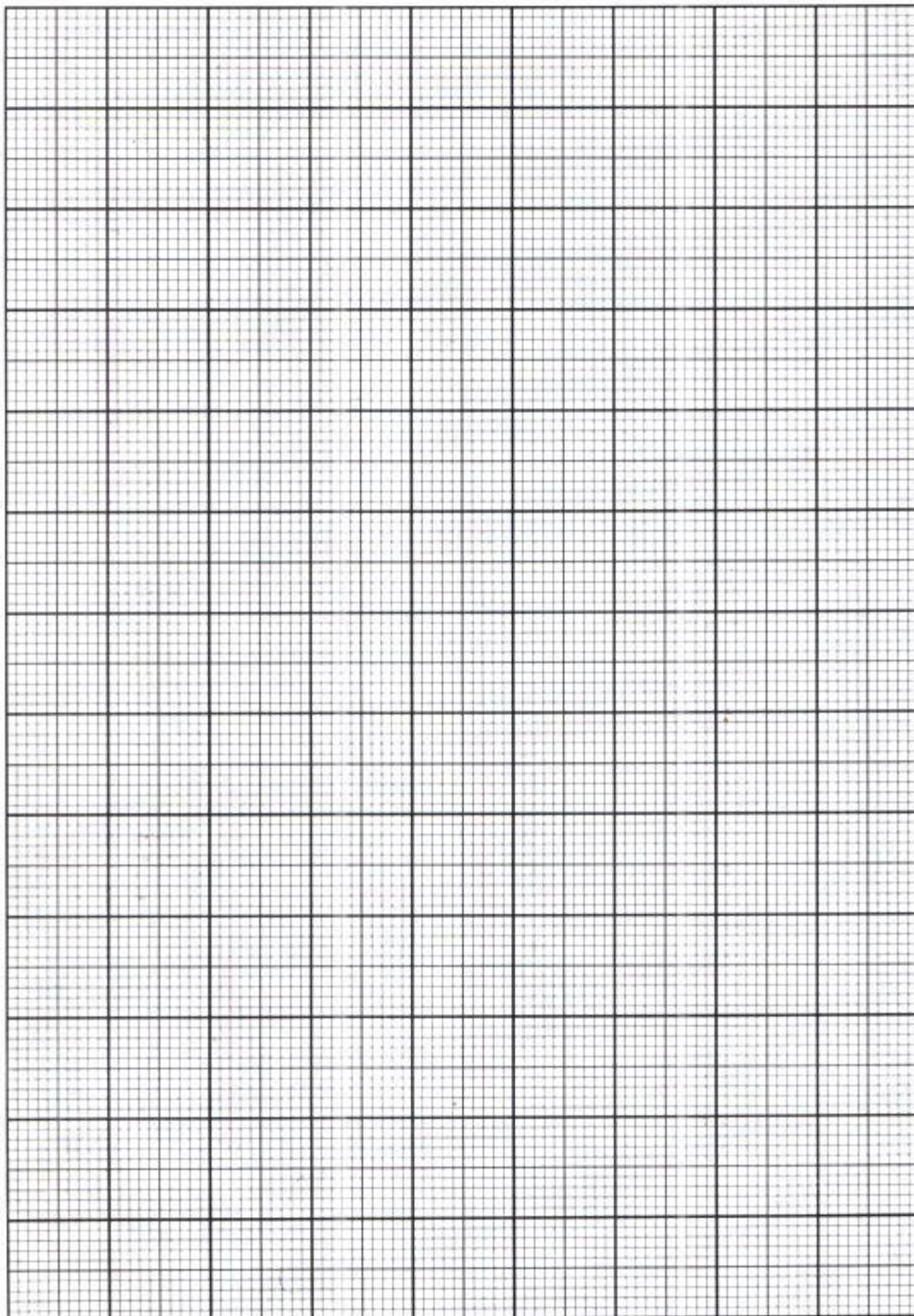












## **PHOTOGRAPHIC INTERPRETATION**

### **TYPES OF PHOTOGRAPHS**

There are **two** types of photographs namely;

(a) Ground photographs,

(b) Aerial photographs

## **GROUND PHOTOGRAPHS**

These are photographs taken with a ground dash camera. Ground photographs can be divided into two namely;

- Ground horizontal photographs,

- Ground oblique photographs.

Ground horizontal photograph are taken when the camera man stands directly in front of the feature



Ground oblique photographs are taken when a camera man stands on a raised ground e.g., cliff, tree, in front of it and photographs it.

## **GENERAL CHARACTERISTICS OF GROUND PHOTOGRAPH**

- The skyline/horizon is visible.

- The features in the fore ground are bigger than those in the background.

- Cover a smaller area.

- Features are clearer.

## **AERIAL PHOTOGRAPHS**

These are photographs taken when the camera man is in an aero plane / from above.

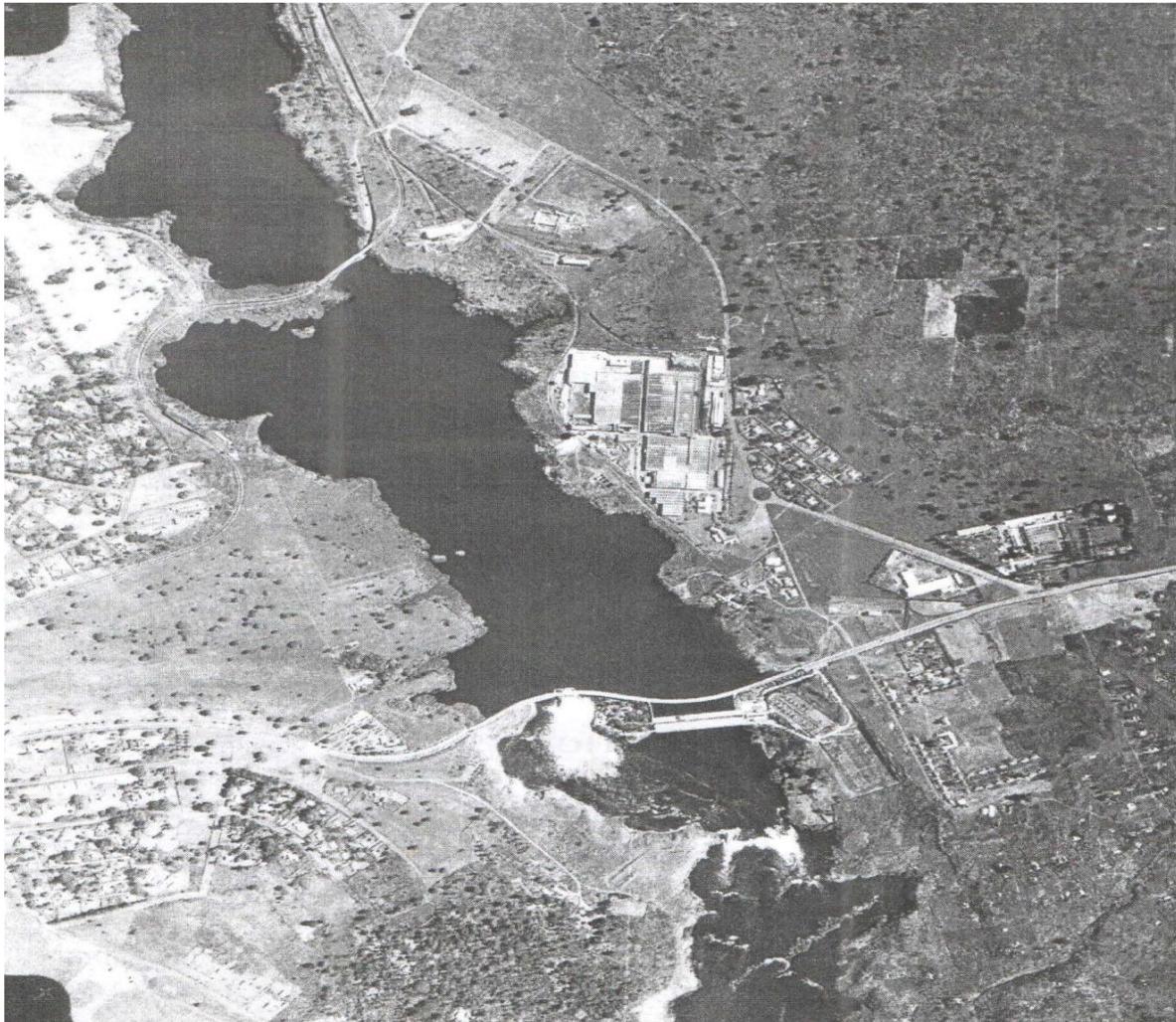
They are categorized into two namely;

-Aerial vertical photograph

- Aerial oblique photograph

**Aerial vertical photographs** are photos taken directly above the feature,  
When the camera is held at right angle.i.e.,  $90^0$   
Only tops of the features are visible, no horizon is visible.

### ILLUSTRATION



### Aerial oblique

These are photographs taken when the plane approaches the features and the camera man holds it at an acute angle.

The feature may show more than one dimension and sky line may sometime be visible.



## **GENERAL CHARACTERISTICS OF AERIAL PHOTOGRAPH**

- Generally, cover a wider area.
- Features are not clear.
- Features are not easy to interpret.
- Show only one dimension.

## **DIVISIONS OF PHOTOGRAPHS**

All ground photographs are divided into three major grounds that is foreground, middle ground and background. These are further subdivided into nine subdivisions as illustrated below:

<b>LEFT BACKGROUND</b>	<b>MIDDLE BACK GROUND</b>	<b>RIGHT BACK GROUND</b>
<b>LEFT MIDDLE GROUND</b>	<b>CENTRAL MIDDLE GROUND</b>	<b>RIGHT MIDDLE GROUND</b>
<b>LEFT FOREGROUND</b>	<b>MIDDLE FORE GROUND</b>	<b>RIGHT FORE GROUND</b>

Note: - it's important to note that in photographic interpretation, we use grounds in locating physical and human activities/land use types.  
 -Avoid using direction as much as possible

## **IDENTIFICATION OF ECONOMIC ACTIVITIES/LAND USE TYPES ON A PHOTOGRAPH**

## **Approach**

- Identify the economic activity
- Give evidence from the photograph
- Then the ground

E.g., there is transport and communication due to the presence of a road in the left back ground of the photograph.

<b>NO</b>	<b>ECONOMIC/LAND USE TYPE</b>	<b>EVIDENCE/INDICATOR ON THE PHOTOGRAPH</b>
1.	<b>Arable farming/Crop growing/farming/plantation</b>	Crop farm/ estate/plantations/ farmers using tools like slathers, pangas, hoes harvester of crops like tea plucking Crop market/crop factory like ginnery, hullery jaggery
2.	<b>livestock farming Animal rearing/pastoralism</b>	Herds of animals like cattle, goat sheep, Animal farm/Ranch/ animal market/abattoir/ valley dams, cattle dips/kraal/cattle quarantine, paddocks, milking parlor.
3.	<b>Mining /quarrying</b>	Open cast mines, shafts/drillers for Adit mining, excavators, people carrying out mining with hammers, rock/ minerals, vehicles loading minerals (workings)/ mineral factory mineral deposit e.t.c
4.	<b>Industrialization</b>	Industry/factory, tall buildings with chimney, planned
6	<b>Lumbering</b>	Logs piled, logs on truck, people splitting logs, many standing tree stumps, saw mill/timber factory/carpentry workshop, lumbering pit e.t.c
7	<b>Wild life conservation</b>	Gazatted area/forest reserve/game reserve/national parks/zoo/sanctuary/conservation areas
8	<b>Fishing</b>	Fishermen with nets, Fish Pond/fish farm/ boats and baskets on a lake, boat with fish and fishermen
9	<b>Recreation</b>	Recreational centres and posts, golf course
10	<b>Transportation and communication</b>	Transport routes/ports/landing sites/transport stations or terminals/air fields and fields stripes/telephone line/communication masts, canoes, ferry e.t.c
11	<b>Tourism</b>	tourist attractions like flora and fauna, magnificent sceneries like mountains, waterfalls, lakes and rivers camping, sites,
12.	<b>Trading/trade and commerce</b>	Market places, trading centre, hawkers with goods, containers used in selling, buyers etc
13.	<b>art and craft/ papyrus harvesting</b>	Papyrus reeds, cutters of the reeds, pangas and other tools/
15	<b>Settlement (land use)</b>	Built up areas/villages/huts/etc

## **DESCRIBING VEGETATION ON A PHOTOGRAPH**

This is identified as; **trees, grass, crop plants, shrubs** etc

**Note:** avoid naming them as equatorial forests, savannah vegetation etc in as much as we may believe so. Use simple and realistic words like trees or grass

### **RELIEF FEATURES OR LAND FORMS ON THE PHOTOGRAPH**

These include: hills or highlands or steep slopes, gentle slopes, lowland areas, valleys

### **DETERMINING THE TIME WHEN THE PHOTOGRAPH WAS TAKEN**

This can be determined depending on the size and position of shadows i.e;

- photos taken during morning hours have long shadows extending towards western side of the photograph

- photos taken during mid-day have no shadows

- Photos taken during evening hours have long shadows extending towards eastern side of the photograph

### **DRAWING LANDSCAPE SKETCH OF THE PHOTOGRAPH/PHOTO SKETCH / PANORAMIC VIEW OF A PHOTOGRAPH.**

#### **Procedure: -**

- Draw a frame of the same size or shape.
- Divide the photographs into grounds i.e., fore, middle and back ground and then divide them into sub-grounds.
- Draw the features in pictorial form only.
- Label the features on the sketch drawing only.
- Never include a compass and a key because it's not a sketch map.

### **DESCRIBING FORMATION OF LAND FORMS/ FEATURES ON A PHOTOGRAPH**

#### **Approach:**

- Identify the feature/land form
- Identify the process of formation
- Explain how it was formed
- Examples in east Africa
- Illustration

### **DESCRIBING FACTORS FOR GROWTH AND DEVELOPMENT OF A PARTICULAR IVITY OR LAND USE TYPE ON A PHOTOGRAPH**

#### **APPROACH:**

**Starter + Adjective + factor + use of the factor + evidence + ground**

#### **COMMON FACTORS ON A PHOTOGRAPH AND THE EVIDENCE**

FACTOR	EVIDENCE OF A PHOTOGRAPH
capital	People carrying out economic activity, tools, machines etc

<b>Market</b>	Settlements, people in the photographs etc.
<b>Labour</b>	People carrying out the economic activity, drivers etc.
<b>Transport</b>	Roads
<b>Government policy</b>	Vastness of the activity
<b>Fertile Soils</b>	Luxuriant growth of crops/ trees
<b>drainage</b>	Lakes rivers, swamps and their impacts
<b>vegetation</b>	Trees
<b>Relief</b>	Hilly, highlands, gentle slopes, lowlands etc.
<b>Land</b>	Vastness, abundance
<b>Climate (rainfall and temperature)</b>	Luxuriant growth of crops, trees etc.

### COMMON STARTERS AND ADJECTIVES

Starters	Adjectives
-Presence	-Adequate      -cheap
-Availability	-Appropriate      -wide variety
-existence	-Supportive      -limited
	-Reliable      -inadequate
	-Positive      -unreliable
	-ready      -inefficient
	Extensive      - etc
	Vast
	Abundant

E.g. The presence of vast land used for tea growing evidenced by the extensive cultivation of tea in the left middle ground.

### PROBLEMS FACED ON THE PHOTOGRAPH

Approach:

- identify the problem
- give evidence
- give the ground
- Impact of the problem i.e., explaining the problem of the problem

I.e., Problem +Evidence +Ground + Impact

E.g., there is **severe soil erosion** due to **steep slopes** in the **right middle ground** leading to **soil infertility**

### COMMON GEOGRAPHICAL PROBLEMS IN PHOTOGRAPHIC INTERPRETATION

PROBLEM	INDICATORS/EVIDENCE
<b>highlands/hilly area/steep slopes</b>	-severe soil erosion

	<ul style="list-style-type: none"> <li>-landslides</li> <li>-remoteness</li> <li>-limited land for mechanized agriculture</li> <li>-limited land for settlement etc.</li> </ul>
<b>Low lands/valleys/swamps</b>	<ul style="list-style-type: none"> <li>-difficulty in construction of transport routes</li> <li>-flooding</li> <li>-Spread of pests and disease</li> </ul>
<b>Lakes and rivers</b>	<ul style="list-style-type: none"> <li>-flooding</li> <li>-attack by aquatic wild animals</li> <li>-difficulty in construction of transport routes</li> <li>-attack by water pirates</li> <li>-occupy large area</li> </ul>
<b>Forests</b>	<ul style="list-style-type: none"> <li>-difficulty in construction of transport routes</li> <li>-harbors disease causing vectors</li> <li>-limited land for agriculture</li> </ul>
<b>Trading Centre/urbanization</b>	<ul style="list-style-type: none"> <li>-high crime rates</li> <li>-slum development</li> <li>-encroachment on marginal land etc.</li> </ul>
<b>Quarries/mines</b>	<ul style="list-style-type: none"> <li>-accidents</li> <li>-ditches are breeding grounds for diseases causing vector</li> <li>-pollution of the environment</li> <li>-deforestation</li> <li>-land disfiguration</li> <li>-urbanization with its evils etc.</li> </ul>
<b>Wild life conservation</b>	<ul style="list-style-type: none"> <li>-attack by dangerous wild animal</li> <li>-conflicts with other land use types</li> </ul>

#### **AREA WHERE THE PHOTOGRAPH WAS TAKEN FROM;**

- Area depends on the main theme shown on the photograph.
- Give the smallest unit / area possible.
- Avoid giving districts and region

#### **TRIAL QUESTIONS**

**Study the photograph provided below and answer the questions that follow.**



- a) Draw a landscape sketch of the photograph shown below and on it mark and name;
- i) Relief regions
  - ii) Vegetation types
  - iii) Settlements
  - iv) Water body

b) Describe the relief of the area on the photograph

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c) Giving specific examples, describe the relationship between relief and land use in the area shown on the photograph.

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d) Giving a reason for your answer;

- i. Name the type of photograph provided above

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- ii. state the major economic activity in the foreground of the photograph

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- iii. Suggest one area where the photograph could have been taken.

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***Study the photograph provided below and answer the questions that follow.***



a). Giving a reason for your answer;

- i. Name the type of photograph provided above

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- ii. state the major economic activity in the foreground of the photograph

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b). explain the factors favoring the economic activity identified above.....

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c). what is the benefit of the identified economic activity to the surrounding environment?

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d). Suggest one area where the photograph could have been taken.

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**Study the photograph provided below and answer the questions that follow.**



- a) giving reason for your answer identify the major land use type in the photograph  
explain the factors which have favored the activity identified above

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b) suggest any one area in east Africa where the photograph was taken

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***Study the photograph provided below and answer the questions that follow.***

a). Giving a reason for your answer;

i. Name the type of photograph provided above

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ii. state the major economic activity in the foreground of the photograph

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b). explain the impact of the identified activity on the environment

Suggest one area where the photograph could have been taken.

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**Study the photograph provided below and answer the questions that follow.**



a). (i) Identify the type of crop above

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(ii) Two areas where the identified crop is grown

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b). state the uses of the identified crop

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**Study the photograph provided below and answer the questions that follow.**



- a). giving evidence for your answer;  
i. identify the type of photograph

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Two land use type

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- b). explain the benefit of the land use type identified in the fore ground

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c). explain the problems faced by the environment in the photograph

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d). suggest any one area in east Africa where the photograph was taken

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***Study the photograph provided below and answers the questions that follow.***



a) Draw a landscape sketch of the area shown in the photograph and on it, mark and label any two:

- (i) Physiographic regions
- (ii) Drainage landforms
- (iii) Vegetation types

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- c) Describe the processes which led to the formation of any one drainage landform shown in the middle ground of the photograph.

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- d) Explain the economic importance of the drainage landforms in the photograph.

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- e) Giving reasons for your answer, suggest an area in East Africa where the photograph could have been taken.

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A] Draw a landscape of the area in the photograph, on it mark and name:

- i. Stalactite
- ii. Stalagmite
- iii. Pillar
- iv. Underground cave.

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B] Describe the processes that led to the formation of each feature in a above.

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C] Explain the importance of the features to the people in the surrounding area.

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D] Suggest an area in East Africa where the photograph was taken.

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**Study the photograph provided below and answers the questions that follow:**



(a) (i) Identify with evidence the type of photograph shown above.

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(ii) State the economic activities carried out in the area shown in the photograph.

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b). Describe the factors which have favored the economic activity identified in (a) (ii) above.

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c) Explain the problems created by this activity to the surrounding areas in the photograph.

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(d) Suggest any **one** area in East Africa where the photograph could have been taken from.

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1. Study the photograph provided below and answers the questions that follow:



- (a) (i) Draw a landscape sketch of the area shown on the photograph and on it mark and name  
(i) settlements  
(ii) transport route  
(iii) Physical feature.

(b) Describe the process of formation of the relief feature shown in the background of the photograph.

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(c) Outline the:

- (i) benefits
- (ii) Disadvantages/problems of the above relief feature to the people living around this area.

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ii) .....

(d) Giving reason (s) for your answer, suggest any **one** area in East Africa where the photograph could have been taken from.

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**Study the photograph provided below and answers the questions that follow:**



(a) Draw a sketch of the area shown on the photograph and on it, mark and name:

- i. Highland
- ii. Road
- iii. valley
- iv. crop land
- v. road
- vi. settlements

(b) Explain the factors that have favored the growth of the type of crop shown in the photograph.

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- (c) Explain the benefits of the growth of the crop shown in the photograph to the people living in this area.

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- (d) Giving reasons for your answer, suggest **one** area in East Africa where this photograph could have been taken.

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**Study the photograph provided and answers the questions that follow:**



(a). i) State the major economic activity taking place in the photograph.

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ii). the type of photograph

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(b) Describe the factors which have favoured the economic activity identified in (a) above.

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- (d) (i) Explain the benefits of the economic activity named in (a) above, to the people living around this area.

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- (iii) Outline the effects of this economic activity on the environment of this area.

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(e) Suggest an area in East Africa where the photograph could have been taken.  
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**Study the photograph provided below and answers questions that follow;**



(a) (i) State the activity taking place in the area shown in the photograph  
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(ii) What evidence is there to show that the activity stated in (a) (i) above is planned?  
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(b) Describe the factors which have favored the establishment of the activity stated in (a)(i) above  
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(c) Explain the benefit of the activity to the people living in the area.

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(d) Giving reasons for your answer, suggest an area in East Africa where this photograph could have been taken.

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**Study the photograph provided below and answers questions that follow;**



a). identify the type of farming shown in the photograph

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a) What factors favoring the type of farming identified in (a) above

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c). explain the benefits of the above type of farming in East Africa

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d). giving reason for your answer, give any one area in east Africa where the photograph could have been taken

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**Study the photograph provided below and answers questions that follow;**



a) i Giving a reason for your answer, identify the type of photograph

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ii Major Economic activity carried out in the photograph

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- b) Identify any three tribes in east Africa practicing the economic activity identified in a) (ii) above
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- c). explain the causes of the major economic identified activity above
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- d). what problems are faced by the people carrying out the above identified activity
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e). Giving reason for your answer, give any one area in east Africa where the photograph could have been taken

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1. a) Draw a landscape sketch of the area shown on photograph, on it mark and name;
  - i) Physiographic regions
  - ii) Vegetation types
  - iii) Land use activities

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- c) Describe the processes for the formation of the features shown on the background of the photograph.

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- d) Describe the relationship between relief and land use on the area shown on the photograph.

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- e) Describe the problem faced in the area shown on the photograph.

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- f) Suggest one area in East Africa where the photograph was taken from giving reasons for your answer.

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## TOBACCO CULTIVATION



## PALM OIL PLANTATION



## BEE KEEPING



## OX- PLOUGH CULTIVATION









Eco tourism/wild life conservation



# FIELD WORK

## Introduction

This is the practical part of geography that is done outside the classroom.

It involves observation, recording, analysis and interpretation of geographical data collected from the field.

It can also be understood as the science of collecting, evaluating, and reporting of geographical phenomena of a particular area. The geographical phenomena may be natural e.g. climate, soil, natural vegetation, drainage systems etc. it can also be human or man-made like agriculture, transport, fishing, mining etc.

## REASONS FOR CARRYING OUT FIELD WORK

- To acquire information that help to make a strong basis for important decisions making.
- It is carried out in order to update the already existing information since geographical phenomena keep on changing.
- To relate what is studied in class with the real environment in the field.
- Field work research is carried out to acquire new information about geographical phenomena.
- To expose oneself to a variety of a variety of environment and socio-economic aspects so as to broaden the scope of knowledge.
- To acquire information so as to find solutions to existing societal problems.
- To get first-hand information which may not be distorted in any way?
- To create some form of relaxation to break the routine class room monotony of study.

## STAGES OF CARRYING OUT FIELD WORK

There are basically three stages of conducting fieldwork and these include;

### A. PREFIELD WORK STAGE/PREPARATORY STAGE.

This is the very first stage which involves all activities done before going out for the real field work excursion and involves the following steps;

1. **Pilot study.** It refers to the first visit to the intended area of study before the real field work is conducted in the field. Its purpose is to ascertain the feasibility of the intended study, seek permission from the relevant local authorities, make necessary bookings, evaluate the time required for the actual field work excursion etc.

2. **Formulation of the topic of study.** This is the second step after the pilot study and the topic of study is formulated basing on the information got from the pilot study [after ascertaining that it is feasible to conduct the intended research in that

Particular area]. The topic should clearly WHAT is to be studied, WHERE the study is to be conducted and it should also show a geographical relationship.

E.g., *The growth and development of Nakigalala tea plantation, Kajjansi town council, Wakiso district.*

**3. Formulation and stating of objectives.** These are formulated basing on the topic of study already stated and should be specific, measurable, achievable, realistic and should be related to the topic of study.

The following phrases may be used while stating the objectives;

- To find out.....,
- To discover....,
- To asses....,
- To identify....

Avoid phrases like:

- To know
- To see
- To enjoy
- To tour etc

Examples of stated objectives may include;

- *To find out the location of Nakigalala tea plantation.*
- *To find out the nature of relief at Nakigalala tea plantation.*
- *To assess the effects of Nakigalala tea plantation on the environment.*

**4. Selection of data collection methods/techniques.** These are used as means of gathering data in the field of study. They are selected basing on the topic of study and the objectives that have already been formulated and stated. These include the following; observation, recording, interviewing, sampling, questionnaire, measurement, pacing, map orientation, documentary

5. Identification and collection of tools/instruments to be used in the field. Tools are help while using the different methods in the field of study to gather data and these may include the following; stationery [note books, pens, pencils etc.], tape measure, hand hoes, spades, tins, strings, cameras, audio recorders, compasses, binoculars, base maps etc.

6. Seeking permission. This step involves seeking permission from the different relevant stakeholders for instance in a school setting permission must be got from the school administration to allow students move out of school to conduct field work, the parents also must permit their children to go away from school to carry out field work. 7. Formation of groups. This will apply when field work is to be conducted as a group like a class at school. Here different groups are made and given different names like A, B, C and different tasks are assigned to each group. This is basically done for easy management and collection of data while in the field of study. 8. This is the very last step at this stage [preparatory stage]. At this moment the researcher moves out to go and interact with the environment in the area of study.

#### **ACTUAL FIELD WORK/REAL FIELD WORK EXCURSION/ DATA COLECTING STAGE.**

This is the main stage of carrying out field work and the main activity is data collection.

Only data related to the topic of study and objectives should be collected and at this stage the methods of data collection are applied.

#### **METHODS OF DATA COLLECTION**

These can also be referred to as **techniques** of data collection. They are used while in the field of study to gather and record data, however they have got advantages and disadvantages as explained below.

#### **OBSERVATION METHOD**

This is the use of senses of sight (naked eyes) to see and sort out geographical phenomenon in the field of study.

It is normally used together with other senses like smell, feel etc.

#### **Advantages of using observation method**

- It gives first-hand information of what exactly is happening in the field and this helps to reduce on the bias about the different geographical phenomena.
- Learning takes place much faster because there is instant physical seeing of the geographical phenomena.
- There is high level of accuracy since the observer physically interacts with the environment thus minimizing gathering of false information.
- It saves time since a large field can be studied in a short period of time.
- It supplements other methods since most methods depend on observation.
- It is relatively a cheap method of data collection since it involves limited costs.

#### **Disadvantages of using observation method**

- The observer is exposed to environmental dangers and accidents e.g., wild animals since it requires going to the field of study.
- It is limited by obstruction from tall trees, fog, smog, hills and buildings thus affecting coverage.
- Sometimes it is expensive where the field is distant and it requires the researcher to travel.
- It is limited by inaccessibility of some places like extensive swamps, forests etc.
- It is liable to misinterpretation of geographical phenomena where one might omit some information especially when the researcher lacks observation skills.
- It is limited by conducive weather like heavy rains, scorching sun shine that may affect clear views.
- It is not a very good method of gathering historical information e.g., historical backgrounds.

### **INTERVIEWING METHOD**

It involves physical interaction between the interviewer [researcher] and the interviewee [respondent] in the field where the interviewer asks verbal questions to the interviewee who also gives verbal answers.

#### **Advantages of interviewing method**

- First-hand information is got from the source [interviewee]
- It is a very flexible method because if the desired response is not got the question can be rephrased.
- The information collected can be corrected on spot together with the interviewee.
- It is a fast method of collecting data since the information is got on spot.
- Sufficient information is got because supplementary answers can be got from the interviewee on spot.
- Up to date information is got since the data is collected on spot.
- It allows for clarification and evaluating the validity of the data given there and then.

#### **Disadvantages of interviewing method**

- It is limited by language barrier especially where the interviewee may not understand the language used by the interviewer and vice versa.
- It is limited by hostile respondents who may stubbornly refuse to give information.
- It is liable to exaggeration and bias especially from some respondents.

- It is also liable to hoarding of information where some respondents deliberately refuse to give some information due suspicion.
- It is time consuming where a number of respondents have to be interviewed resulting to limited coverage.
- It is limited by inaccessibility where respondents can be reached.

### **RECORDING METHOD**

This involves the use of stationery like note books, pens, pencils to jot down the collected data in the field.

It can be supplemented by other tools like cameras, audio recorders to capture data.

The data captured may be in form of notes, sketches and diagrams, tables, videos and still photos etc.

#### **Advantages of recording method**

- It is flexible and convenient because it can be done in different ways.
- It ensures permanent records about the field study for future purposes.

#### **Disadvantages of recording method**

- It is time consuming since the researcher has to take notes in the field.
- Sometimes it is difficult to record if the researcher has no skills of recording.
- Some information may be skipped if the respondent is very first and the researcher is slow in taking notes.

### **SAMPLING METHOD**

This involves selecting part of a whole to represent a whole (the rest).

The selected portion is studied and its characteristics are taken to represent those of the other with similar characteristics.

Sampling may involve choosing few people from a group who the interviewed.

Sampling may also be through random picking of soil samples from the field of study that are then studied to represent the entire area.

#### **Advantages of sampling method**

- It is time saving because a portion is selected to represent the rest.
- First-hand information is got since information is got on spot.
- It is accurate if carefully conducted.
- It provides a representative sample that enables the study of a large area.
- It gives unbiased information because the researcher comes into direct contact with the phenomena.
- It yields a lot of information because the sample is studied in details.

#### **Disadvantages of sampling method**

- It tends to generalize too much and some of the unique characteristics of geographical phenomena are left out.
- Effective designs of a sample can be difficult and sometimes expensive.

### **MEASURING METHOD**

This involves the use of calibrated tools e.g., tape measure and non calibrated tools e.g., a string, a tin to establish the length, size, height, weight etc. of a geographical phenomenon in the field.

#### **Advantages of measuring method**

- It is very accurate if calibrated tools are used.
- It is an efficient way of obtaining information.

- It enables the researcher to get quantitative information about a geographical phenomenon.
- It is very flexible because different tools and techniques can be used.

#### **Disadvantages of measuring method**

- It faces a problem of inaccuracy where none calibrated tools are used.
- It is limited by inaccessibility e.g., presence of flooded swamps, hills that make measuring difficult.

#### **PACING METHOD**

This is a form of measurement where distance of geographical phenomenon is established using relatively calculated strides/paces

This is specifically used to determine distances.

#### **Advantages of pacing method**

- It is a very quick method of establishing distance.
- It is very cheap since it does not require buying measuring tools.
- It is time saving since one just needs to take strides, she/he counts while counting.

#### **Disadvantages of pacing method**

- It lacks accuracy since it is not calibrated and each individual may have varying length of their strides.
- Presence of physical features e.g., swamps, forests may make pacing difficult.

#### **QUESTIONNAIRE METHOD**

This is a method of data collection where predetermined questions are used to collect data about a geographical phenomenon. The questions are written down on a piece of papers (questionnaires) that are then mailed/posted/delivered to the respondent who answers in writing and then sends them back to the researcher.

#### **Advantages of questionnaire method**

- It helps a researcher to get information from remote areas like flooded areas, areas with poor transport networks etc.
- It is cheap because it eliminates transport costs for the researchers.
- There is minimized bias because there is no direct contact between the researcher and the respondent.
- It is time saving because it can be used to cover a larger area in a short period of time.
- Much information is obtained since the respondent is given ample time to give data.

#### **Disadvantages of questionnaire method**

- It might be time consuming if the respondents delay to send back the answered questionnaire.
- It can only be used where the respondents are literates because it involves reading and writing.
- Data might be lost because of high chances of getting lost in delivery process.
- Respondents may deliberately refuse to give information therefore hide the questionnaires.

#### **MAP ORIENTATION METHOD**

This is a method of data collection which involves turning or rotating a base map/survey map of the area being studied until the features on the base map tally with the features on the actual ground.

#### **Advantages of map orientation method**

- It enables a researcher to get information about location and position of features in the field.
- It saves time because it does not require moving a lot around the field in order to get data.

- It enables a researcher to get data about local names of geographical features in the field.

#### **Disadvantages of map orientation method**

- It is limited by lack of a survey map/ base map of the area of study.
- It is quite difficult to use if the researcher lacks skills of map reading.

#### **LITERATURE REVIEW/DOCUMENTARY ANALYSIS METHOD**

This is a method of data collection in which reference is made to already existing information about the field of study in text books, journals, photographs etc.

it involves comparing primary information (information the researcher has gathered from the field) with secondary information (information already published in books).

#### **Advantages of literature review method**

- It helps in getting background/historical information about the area of study.
- The information given has high levels of accuracy because it is got from first source.
- It enables one to compare information with the findings of earlier researchers.
- It is time saving because the information is got from already published records.

#### **Disadvantages of literature review method**

- It is limited by lack of recorded information about the geographical phenomena.
- It might be expensive because it may involve buying the recorded information like text books etc.

#### **FIELD SKETCHING**

Field sketching is a form of data recording where data is recorded in books in form of sketches where representations of both physical and man-made features of the environment of the field of study are drawn. Such features may include transport networks, buildings, gardens, vegetation, hills, rivers, swamps etc.

There are three types of sketches which include;

##### **1. Sketch maps**

This is **the layout** of the field of study, it is drawn to show location/position of physical and man-made features studied in the field. Sketch a map should bear a key, title, frame, and compass direction. Symbols are used to represent features shown on the sketch map.

##### **2. Cross section**

It can also be called a **transverse section/relief section/transect**. Here features of the field are represented along a line drawn from one point (direction) to another of the field of study. It should bear a title, beginning and end point e.g., East to West.

##### **3. Panorama**

This can also be called a **landscape sketch or panoramic view**; this is a sketch showing geographical features as drawn from point of view (normally from a raised ground) and pictures are used to represent features as they are seen in the field of study. It should bear a title, boundary and view point.

#### **SKILLS THAT ARE ACQUIRED FROM FIELD WORK STUDY**

- A researcher gets a skill of critical observation through the use of the observation technique.
- A researcher gets a skill of interviewing through the use of interview method.
- A skill of recording information is acquired through the use of recording method.
- A skill of developing a questionnaire is acquired through application of the questionnaire method.
- A researcher gets a skill of making measurements through the use of measurement method.

- A skill of researching is acquired through the use of literature review method.
- A skill of report writing through making the report of the findings of the study.
- A skill of analyzing data is acquired through analyzing data collected to get valid information.
- A skill of sampling is acquired through application of sampling method.
- Skill of map reading is developed through the use of a base map in the map orientation method.
- A skill of map drawing is acquired through use of sketching technique.

#### **FOLLOW UP STAGE/ POST FIELD WORK STAGE.**

This is the last stage of carrying out field work. The different steps/activities conducted at this stage are done to organize the findings of the study so as meaningful conclusions can be made out the field work study.

The following are the steps/activities that are conducted at this stage;

1. **Presentation of data** from different individual researchers/groups.
2. **Discussion and organization** of data presented.
3. **Analysis and interpretation** of data collected.
4. **Finishing and polishing** of sketches/ diagrams drowned in the field.
5. Making of **geographical conclusions** about the fieldwork.
6. Making **recommendations** about the findings of the study.
7. **Compiling and writing** of the **report** of findings about the field work study.
8. **Dissemination** of the **report** of findings to different stake holders.

#### **Assignment**

**NB.** The questions must be attempted after the follow up stage, meaning that the researchers/students have gone through all the three stages of conducting field.

##### **1. For any field work you have carried out;**

- a) State;
  - i. the of topic of study
  - ii. Objectives of the study.
- b) Explain how you used any three of the methods of collecting information in the field.
- c) Outline the problems of using the methods explained in (b) above.
- d) Explain the findings of your study.
- e) Outline the follow up stage of your field work study.

##### **2. For any field work study you have conducted as a group or individual;**

- a) State;
  - i. Topic,
  - ii. Objectives of study.
- b) Explain the pre-field work stage of the study.
- c) Draw a sketch map of the area studied and on it mark and name the physical features and land use types.
- d) Explain the relationship between the physical environment and land use types.
- e) Outline the recommendations of your study.

**3. For any field work study you have carried on a farm;**

a) State;

i. Topic of study

ii. Objectives of study

b) Describe how you any three of the following techniques of data collection.

i. Questionnaire ii. Sampling iii. Measurement iv. Interview

c) Outline the advantages of using the techniques described in (b) above.

d) Explain the impact of the farm on the surrounding environment.

**4. For any field work you have carried about fishing;**

a) State;

i. The topic of study

ii. Objectives of study

b) Draw either a panorama or cross-section of the area studied and it show physical and human features.

c) Explain the relationship between relief and land use types in the area of study.

d) Outline the skills you acquired from the field work study.

## GUIDING APPROACH ON HOW TO ANSWER FIELD WORK

### **FIELDWORK ON AT KASENYI FISH LANDING SITE**

#### **For any one fieldwork study you have conducted on a fish landing site**

**1. State the topic of study.**

**Approach**

A topic must have:

- What was studied (geographical relationship?)
- Where the study took place (location)

e.g.

***“The Growth and Development of Kasenyi fish landing site on the northern shore of Lake Victoria, in Wakiso District”.***

NB: state the topic of any field work study you have ever conducted or carried out unless if it's specified in a question e.g., on a landing site, trading centre, plantation e.tc

**2. Outline the objectives of study.**

- To find out the location of Kasenyi fish landing site.
- To find out the historical background of Kasenyi fish landing site
- To find out the factors for the location and growth of Kasenyi fish landing site
- To find out the physical features around Kasenyi fish landing site
- To find out the land use activities around Kasenyi fish landing site
- To find out the influence of Kasenyi fish landing site on the surrounding areas
- To find out the fish species landed at Kasenyi fish landing site
- To find out the problems facing Kasenyi fish landing site
- To find out the solutions to the problems facing Kasenyi fish landing site
- To find out the future prospects of Kasenyi fish landing site.

**3. Methods of data collection**

- **Observation**
- **Interview**
- **Recording**
- **Sketching**
- **Literature review**
- **Map orientation**
- **Measurement**
- **Pacing**
- **Questionnaire**

#### **4. Tools needed**

- **Hoe**
- **Meter ruler**
- **Pens**
- **Pencils**
- **Voice recorder**
- **Video recorder**
- **Camera**

#### **5. Explain the preparations you made before going for fieldwork**

**OR, explain the steps you took before going for fieldwork**

**OR, explain the pre-field activities carried out before going for fieldwork.**

**OR, describe the activities you carried out before going for fieldwork.**

**OR, describe how you organized your fieldwork study.**

##### **Approach**

- The first four must be in order
- Follow the formula PTOM whereby;
  - P-** Pilot study
  - T-** Topic of study
  - O-** Objectives
  - M-** Methods of study

**NB. Use past tense because the question requires for any field work study you have ever conducted**

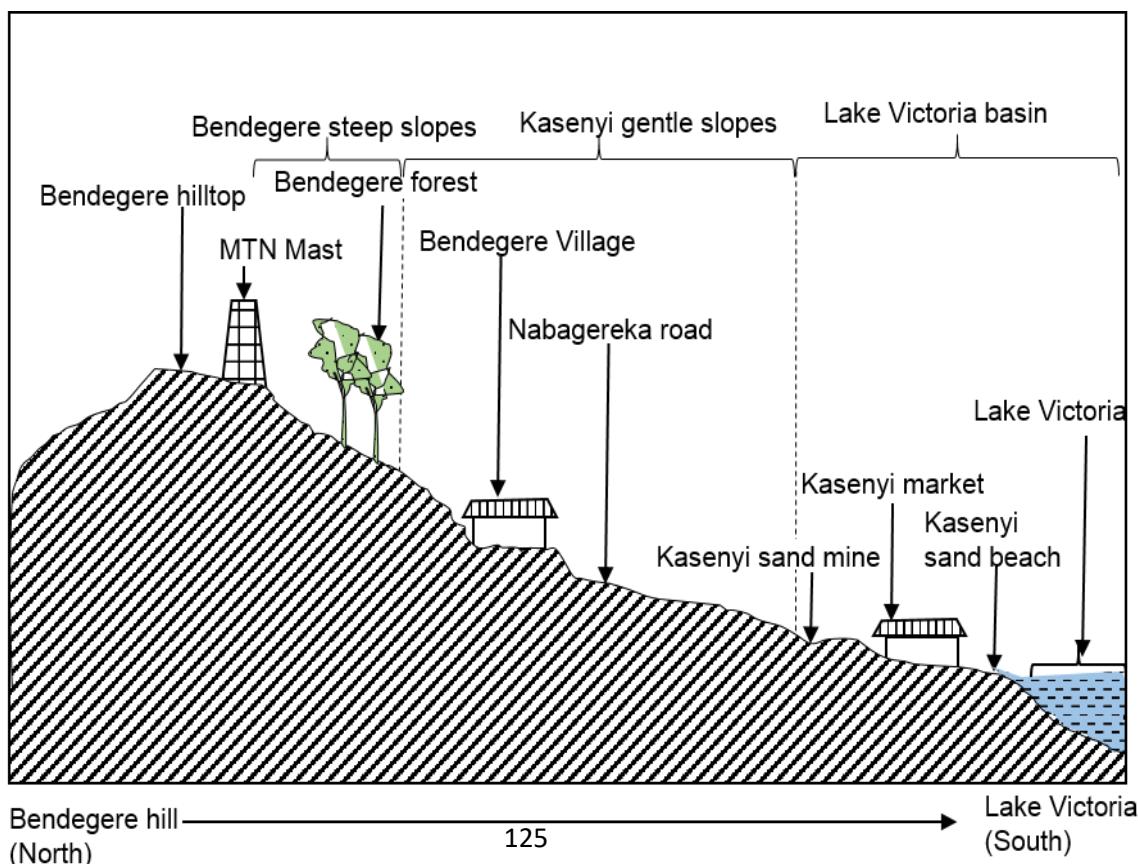
- Our teacher identified the area of study and went for a **pilot study** at Kasenyi fish landing site to find out whether it would be possible to carry out fieldwork and get permission from the management of Kasenyi fish landing site.
- We chose the **topic of study** and it was 'The Growth and Development of Kasenyi fish landing site on the northern shore of Lake Victoria, in Wakiso District'.
- We formulated the **objectives of study** and they included; To find out the location of Kasenyi fish landing site, to find out the historical background of Kasenyi fish landing site.
- We selected the **methods** to be used during fieldwork and this included observation, interviewing and measurement.
- We selected the **tools** to be used during fieldwork and these included pens, pencils, books, measuring tape and base map.

- We **sought permission** from the school administration to allow us carry out fieldwork.
  - We **organized** for the means of **transport** and Kasenyi landing site being far from the school we agreed to travel by the school bus.
  - Our teacher **organized** us in **groups** of five students to ensure group study.
  - We were **briefed** by the department of geography on the does and don'ts while collecting data in the field.
  - We finally **departed** to Kasenyi fish landing site at exactly 8:00am
- 4. Draw a transect/transverse/relief section/cross-section of the area studied and on it mark and name physical features and land use activities.**

#### **Approach**

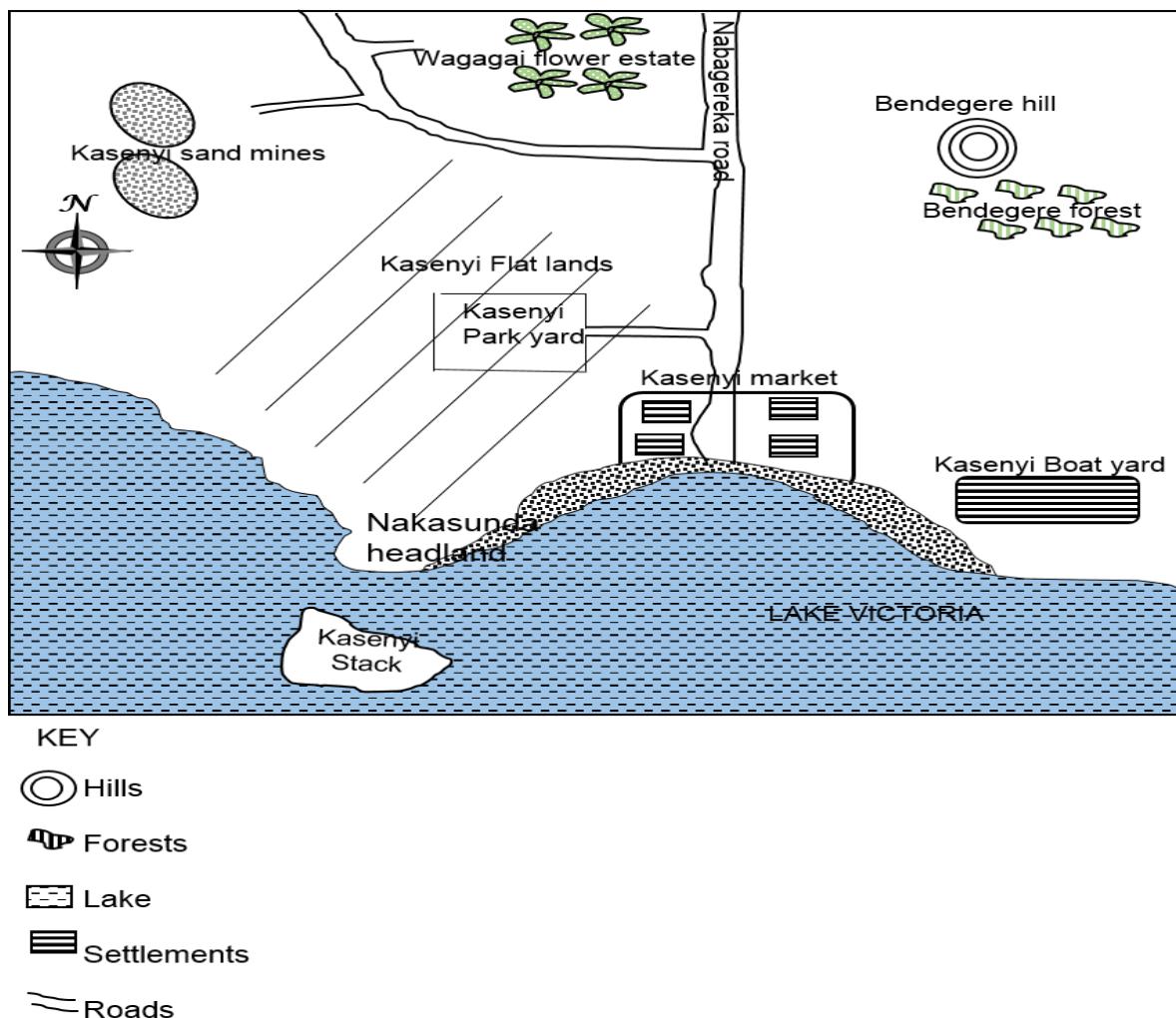
- Must have a title
- The beginning and the end point
- At least three physical and manmade features
- Mark and name feature with their local names e.g., Bendegere hill top but not hill top
- Use arrows to point where the feature is and write horizontally
- Features standing off ground e.g. buildings, forests (trees) e.t.c draw them standing and use curl bracket while the linear feature like roads, rivers, railway etc use a straight arrow pointing at the curve where the future is but don't draw roads rivers, railway lines in a shaded region
- Shade the cross section

#### **A TRANSECT ACROSS KASENYI LANDING SITE FROM BENDEGERE HILL TO LAKE VICTORIA SHOWING PHYSICAL FEATURES AND LANDUSE ACTIVITIES**



5. Draw a sketch map of the area studied and on it mark and name physical features and land use activities.

A SKETCHMAP OF KASENYI FISH LANDING SITE AND THE SURROUNDING AREAS SHOWING PHYSICAL FEATURES AND LANDUSE ACTVITIES



6. Draw a panoramic view of the area studied and on it mark and name physical features and land use activities.

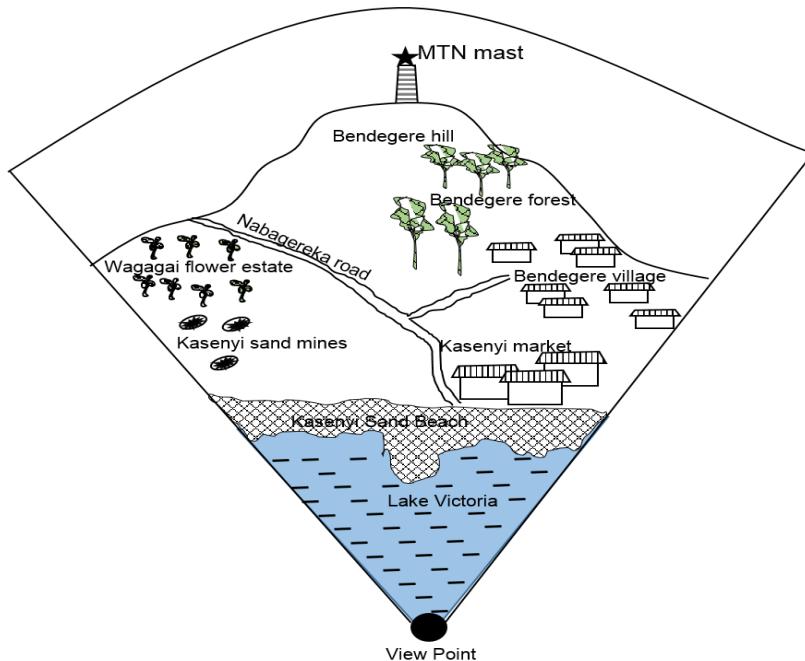
#### Approach

Also known as a landscape sketch

- Write the title
- Indicate the view point
- Draw pictures but not symbols

- Mark and name features with their local names e.g. Nabagereka road but not a road
- Write the features horizontally. Don't write climbing up as if your heading to heaven
- Indicate a frame

A PANORAMIC VIEW OF THE AREA AROUND KASENYI FISH LANDING SITE DRAWN FROM NAKASUNDA HEADLAND SHOWING PHYSICAL FEATURES AND LANDUSE ACTIVITIES



## METHODS OF DATA COLLECTION

### Approach

- Identify and define the method
- Explain how you employed/used the method while specifying the tools used
- Give information/ data collected while using the method
- Use past tense in defining, explaining and examples

### SAMPLE QUESTIONS

#### 7. Describe the steps you took to collect information from the field

Or, describe the activities you carried out during fieldwork

Or, explain the techniques you used during fieldwork

Or, describe the methods you used to collect the information in the field.

- I/we used observation method. This involved using eyes with the help of other senses to see geographical phenomena in the field and sort out information about them.

Using **eyes**, I saw physical features like Bendegere hill in the north of Kasenyi fish landing site.

- **I/we used interviewing method.** It involved a face-face interaction between the researchers and respondents in the field whereby the researcher asked oral questions and the respondents gave oral answers.

Using the **interview guide**, I asked Mr. Muyanja Peter the fieldwork guide the problems facing Kasenyi fish landing site and he told me that there is a problem of dangerous aquatic animals like crocodiles that claim the lives of fishermen.

- **I/We used Questionnaire method.** This involved use of predetermined questions to collect information about geographical phenomena where the researcher sends written questions for a respondent to give written answers.

I wrote and sent the following questions to Mr. Muyanja Peter the fieldwork manager and he gave us answers in written form.

Question: Where is Kasenyi fish landing site located?

Answer: It is located in southeast of Abaita Ababiri a nearest trading centre. It is in Bendegere L.C.I, Nkumba parish, Katabi Sub County, Busiro county of Wakiso district.

- **I/we used measurement/measuring.** This involved the use of calibrated and non-calibrated instruments to establish/investigate size, weight, area etc. of geographical features in the field.

- I/we stretched **a tape measure** and found the distance from Kasenyi market to Kasenyi Pier which was 100 meters.

- **I/we used Pacing.** This involved the use of strides to estimate distance of the geographical features.

- Using **strides**, I estimated the distance from Kasenyi market to Kasenyi pier, which were 120 strides.

- **I/we used sampling.** This involved taking part of the whole population to represent the whole/rest. Using a hoe and spade, Using a **spade**, I picked part of the soil from Kasenyi sand beach and found out that it was sandy soil.

- **I/we used recording.** This involved writing/jotting/noting down of information got in the field.

Using **a pen and paper**, I wrote down the problems facing fishermen at Kasenyi fish landing site which included dangerous aquatic animals, shortage of accommodation and food.

- **I/We used field sketching.** This is the technique of obtaining information from the field by drawing sketch maps, transects and panoramas.

I/we used a **pencil and book** and drew the sketch map of the area around Kasenyi fish landing site showing physical features and land use activities as seen below (draw and show some few features like the one above).

- I/We used map orientation. This involved alignment/rotating/turning the survey map/base map so that the features on the base map tally/match with features on the ground.

We turned **the base map of Entebbe** while standing at **Nakasunda headland** until Kasenyi landing site on the base map was matching with that on the ground and found out that Kasenyi is in north of Lake Victoria.

- I/We used analysis of existing information/library research/documentary review/literature review/documentation. This is a method of data collection

whereby the researcher gets information from existing records/secondary sources and compares it with what is in the field at the time of study.

I/We used **a text book/internet** and read about historical background of Kasenyi fish landing site in the research report by Matovu Francis and found out that the name Kasenyi was a result of the eroded fine sand along the shoreline and it has been used since the early 1960s.

## **8. HOW TO EXPLAIN THE MERITES/ ADVANTAGE OF THE METHOD USED**

### **APPROACH**

- identify the method
- tie a merit on a method
- add some explanation on how the method was advantageous while collecting data

NB. Use past tense.

### **Explain the merits of using the above methods**

#### **Observation method**

- Using observation method, I got firsthand information since geographical features were seen directly
- Observation was time saving since a large field was covered in a short time.
- Observation was cheap because it did not involve expenditure.

#### **Interviewing method**

- Interviewing enabled me getting the required data on the spot.
- Interviewing enabled me to obtain invisible information like historical background.
- Interviewing was very flexible because questions were modified during the interview.

#### **Questionnaire method**

- Questionnaire method was time saving as many respondents were reached in a short time.
- Reliable data was got while using questionnaire method since respondents answered independently.
- Questionnaire method was easy to administer since it reached respondents in different ways.

#### **Measuring method**

- Measurement was flexible since different tools and techniques were used.
- Measurement enabled making predictions about the phenomena investigated.
- Firsthand information was obtained using measurement since tools were used.

#### **Sampling method**

- Sampling was time saving since few entities/items were chosen to represent the rest.
- Unbiased data was got using sampling because I came into contact with the phenomena.
- Sampling allowed generalization to be made about other similar phenomena.

#### **Literature review/documentary**

- Using documentary review, information was provided in a short period of time.
- Accurate information based on research was obtained using documentary review/documentation
  - Documentary review helped in getting the background information about the topic of study

## **9. PROBLEMS/ CHALLENGE/LIMITATION OF THE METHOD**

Explain the demerits of using the above methods.

OR, explain the problems/challenges you encountered while using the above methods during fieldwork

OR, explain the limitations of using the above methods during fieldwork study.

OR

Explain the problems/challenges you encountered during fieldwork

OR, explain the limitations of your fieldwork study.

### **Approach**

- Identify the method
- Explain how you failed to collect data because of the method
- Give information you failed to collect because of the method.
- ❖ **Note:** the problems arise from the methods. Illustrate the problem by specifying the information you never collected or else don't expect any mark
- ❖ The problems should be geographical by nature and not personal problems like hunger, little food served, fatigue, poverty, long distance, stinking areas, dusty roads, high transport costs
- ❖ Hot temperatures/ sunshine is not considered as a problem because it is expected as it's always expected due to our location astride equator

### **Sample answers**

- I faced the problems of **language barrier** while using **interviewing** since my respondents the fishermen only knew Luganda and therefore, I failed to get the problems facing fishermen at Kasenyi fish landing site.
- We faced the problem of **uncooperative respondents** while using interviewing at Kasenyi market and therefore, we **failed** to get the historical background of Kasenyi market.
- We faced a problem of **loss of questionnaires** while using **questionnaire method** due to disappearance of respondents and therefore we failed to get information on the historical background of Kasenyi fish landing site.
- We faced the problem of **physical obstruction** by Bendegere forest while using **observation method** and therefore we failed to identify the land use types in Bendegere village.
- We faced the problem of **inaccessibility** due to the presence of Kasenyi forest while using **observation** method due to the presence of Bendegere forest and therefore we failed to see the land use activities in Bendegere village
- We faced the problem of **noise pollution** by Kasenyi boat factory while using **interviewing/recording** and therefore, we failed to hear/note down the problems facing Kasenyi boat factory.
- We faced the problem of **sudden weather changes** due to heavy downpour while using **recording**, which destroyed our writing materials and therefore we failed to write down the future prospects of Kasenyi fish landing site

## **10. Explain the skills you obtained from your fieldwork study.**

### **approach**

**NB.** Skills are obtained from the methods used.

- I gained the skill of observation by using my eyes to see physical features for example Bendegere hill north east of Kasenyi fish landing site.
- We gained the skill of interviewing by asking respondents oral questions and they gave us oral answers for example we asked Mr. Mubiru the location of Bendegere hill and he told me that it is found in Nkumba Parish, Wakiso District.
- We gained the skill of measuring by stretching the tape measure to find the distance from Kasenyi market to the pier which was 50 meters.
- We gained the skill of sampling by using a hoe to pick part of the soil from Kasenyi beach which we found out that it was mainly sandy soil.
- I gained the skill of recording by using a pen and paper to write down information in the field for example I wrote down physical features around Kasenyi fish landing site like Bendegere hill north east of Kasenyi fish landing site
- I gained the skill of field sketching by drawing the sketch map of the area around Kasenyi fish landing site showing physical features and land use activities as seen below (draw it and show some features).

**11. Describe the follow up activities carried out after fieldwork**  
**Or, what were the post-field activities carried out during the study**  
**Or, explain how you processed data during the study.**

- We **presented our data** collected by the different groups for example group 1 presented the location of Kasenyi fish landing site i.e., Katabi Sub- County, Wakiso District.
- We **compared data collected** by the various groups for example concerning the distance from Kasenyi market to Kasenyi pier and we finally concluded that it was 100metres.
- We **reorganized data** collected only included the required information to be compiled following our topic and objectives of study.
- We **polished our field sketches** by redrawing the sketch map around Kasenyi fish landing site and included Nakasunda headland which was missing.
- We **wrote a fieldwork report** concerning what we studied at Kasenyi fish landing site, how we studied it and the results obtained from the study.
- We **drew conclusions** from the field by giving geographical relationships. For example, we concluded that the presence of Bendegere hilltop has encouraged the establishment of MTN telecommunication masts due to high altitude which ensures easy transmission of signals.
- We **made recommendations** to the people of Kasenyi fish landing sites for example we advised farmers on Bendegere hill to carry out terracing so as to control soil erosion.
- We **disseminated the findings** of the study to the relevant authorities for example one of our fieldwork reports was handed over to the manager of Kasenyi fish landing site

**12. Explain the conclusions you made after fieldwork study**  
**OR, explain the significance of the fieldwork study**  
**OR, to what extent was the fieldwork study geographical**  
**OR, what was the geographical significance of the fieldwork study?**  
**OR, what were the outcomes/results of the fieldwork study?**

**OR, how did the fieldwork study help you to understand the geography of the area?**

**OR, how was the fieldwork study a sample of the environment?**

#### **Physical- physical relationships**

- The presence Bendegere hill in the north of Kasenyi landing site has encouraged the growth of Bendegere natural forest because of the presence of deep fertile soils.
- The presence of Lake Victoria in the south of Kasenyi fish landing site has favoured the growth of Kasenyi papyrus vegetation due to water logging conditions.

#### **Physical-human relationships**

- The presence of gentle slopes of Bendegere hill in the north of Lake Victoria has encouraged settlement at Bendegere village due to easy construction of houses
- The presence of Lake Victoria in the South of Kasenyi fish landing site has encouraged water transport due to the presence of water.
- The presence of Bendegere forest in the north of Kasenyi fish landing site has encouraged the growth of Kasenyi boat making factory due to the presence of commercial tree species like Mvule.

#### **Human-human relationships**

- The presence of Nabagereka road in the north of Kasenyi fish landing site has encouraged settlement at Kasenyi due to easy accessibility.
- The presence of Kasenyi boat making factory in the north of Kasenyi fish landing site has attracted dense settlement at Kasenyi due to provision of employment opportunities.
- The presence of dense settlement at Kasenyi has encouraged the growth of Kasenyi market because of provision of ready market for goods

#### **13. Explain the relationship between the physical environment and land use activities in the area studied**

- The presence of gentle slopes of Bendegere hill in the north of Kasenyi fish landing site has encouraged settlement at Bendegere due to easy construction of houses
- The presence of Lake Victoria in the south of Kasenyi fish landing site has encouraged water transport due to the presence of water.
- The presence of fertile soils of Bendegere hill in the north of Kasenyi fish landing site has encouraged the growth of coffee and bananas in Bendegere village since these crops require deep fertile soils to grow well.
- The presence of Bendegere forest in the north of Kasenyi fish landing site has encouraged lumbering due to the presence of valuable tree species like Mahogany.

#### **14. Explain the relationship between physical features and land use activities in the area studied.**

- The presence of gentle slopes of Bendegere hill in the east of Kasenyi fish landing site has encouraged settlement at Bendegere village due to easy construction of houses.
- The presence of Lake Victoria in the South of Kasenyi fish landing site has encouraged water transport due to the presence of water.

- The presence of Bendegere forest in the north of Kasenyi fish landing site has encouraged lumbering due to the presence of valuable tree species like Mahogany.

**15. Explain the relationship between relief and land use activities in the area studied.**

- The presence of gentle slopes of Bendegere hill in the north of Kasenyi fish landing site has encouraged settlement at Bendegere due to easy construction of houses
- The presence of Bendegere hilltop has encouraged the establishment of MTN telecommunication masts due to high altitude which ensures easy transmission of signals.
- The presence of Lake Victoria basin in the south has encouraged water transport due to the presence of water.
- The presence of steep slopes of Bendegere hill in the north of Kasenyi fish landing site has encouraged stone quarrying due to the presence of outcrop rocks
- The presence of flat lands of Kasenyi in the north of Kasenyi fish landing site has encouraged the construction of Nabagereka road due to low cost of construction.

**16. Assess the impact of the fish landing site on the environment**

**OR, Assess the impact of the fish landing site on the development of the surrounding areas.**

**NB.** Give both **positive** and **negative** effects giving an example in terms of place name/direction.

**Positive impacts include;**

- It has encouraged growth and development of Kasenyi trading centre in the north of Kasenyi fish landing site because of increased population.
- It has facilitated the development of infrastructure like Nabagereka road in the north of Kasenyi fish landing site.
- It has provided market for goods sold in Kasenyi market for example agricultural products like potatoes and domestic items.
- It has provided employment opportunities to the people for example fishermen in Lake Victoria in the South of Kasenyi fish landing and shop attendants in Kasenyi market in the north of Kasenyi fish landing site
- It has encouraged the development of industries for example Kasenyi boat making factory in the north of Kasenyi fish landing site.
- It is a source of government revenue through taxing people employed for example as fishermen in Lake Victoria south of Kasenyi fish landing site and business men in Kasenyi market in the North of Kasenyi fish landing site.

**Negative effects include;**

- It has led to pollution of water, land and air from industries for example Kasenyi boat factory in the north of Kasenyi fish landing site.
- It has led to urban related problems like prostitution and robbery in Kasenyi trading centre due to increased population
- It has led to deforestation due to infrastructural development for example Kasenyi forests were destroyed to establish Kasenyi market.
- It has led to competition for labour with other sectors like agriculture in Nkumba and Bendegere village living these sectors underdeveloped.
- It has led to increased school drop out to join fishing activities for example from Bendegere village and Nkumba.

- It has led to rural-urban migration with its negative effects for example from Nkumba to Kasenyi fish landing site

**17. Explain the impacts of the growth of the landing site on the physical environment.**

NB. Give **both positive** and **negative effects** giving an example in terms of place name/direction on every point

**Positive effects include;**

- Afforestation on Bendegere hill north of Kasenyi fish landing site has promoted the modification of the local temperatures through releasing moisture to the atmosphere.
- Application of manure in Bendegere village north of Kasenyi fish landing site has helped to improve soil fertility.
- Contour ploughing on Bendegere hill has helped in controlling soil erosion.
- Afforestation in Bendegere hill has helped in increasing the green vegetation cover.

**Negative effects include**

- Lumbering in Bendegere forest north of Kasenyi fish landing site has led to destruction of vegetation cover
- Industrialization at Kasenyi boat factory north of Kasenyi fish landing site has led to environmental pollution from the wood dust which has affected human health.
- Settlement on Bendegere hill north of Kasenyi fish landing site has led to destruction of Bendegere forest leading to loss of vegetation cover
- The construction of Nabagereka road in the north of Kasenyi fish landing site has led to destruction of Kasenyi forest leading to destruction of vegetation cover.
- Stone quarrying on Bendegere hill north of Kasenyi fish landing site has led to destruction of landscape by creating depressions.

**18. Explain the problems faced by the people using the fish landing site.**

**NB.** Explain how **a problem** leads to **a problem**.

- **Poor sanitation** leading to diseases like cholera and dysentery which have affected human life.
- **Remoteness** of the area of Kasenyi landing site with poorly developed roads has discouraged movement of goods by Kasenyi traders to the landing site.
- **Limited fish stock** as a result of overfishing in Lake Victoria has led to low fish catch leading to low levels of income.
- **Perishability of the fish** due to traditional fish preservation methods like smoking which lead to losses.
- **Price fluctuation** due to over production has discouraged fishermen in Lake Victoria to produce more fish.
- **Low incomes among** fishermen in Lake Victoria leading to use of poor methods of fishing which are highly inefficient leading to low output.
- **Limited research** conducted by the fishermen in Lake Victoria has led to low fish catch
- **Rugged terrain** for example due to Bendegere hill has discouraged the construction of roads to deliver fish to the market centres.
- **Siltation of Lake Victoria** has led to reduction in breeding grounds for fish leading to low fish catch.

- **Insecurity** due to pirates in Lake Victoria and robbers in Kasenyi Trading centre who destabilize peace.
- **Changes in water levels** leading to fluctuation in fish catch hence leading to fluctuation in incomes.

**19. Describe the recommendations you made to the people using the fish landing site.**

**NB.** Give **solutions** to showing problem and solution

- We advised the fishermen at Kasenyi fish landing site to carry out market research to expand the market for fish.
- We advised the police force at Kasenyi police station to carry out more operations to promote security in Kasenyi trading centre.
- We advised fishermen at Kasenyi landing site to improve on fishing methods to increase fish catch and increase on their income.
- We advised fishermen at Kasenyi fish landing site to improve on fish preservation methods to reduce losses.
- We advised traders at Kasenyi market to ensure proper disposal of garbage to solve the problems resulting from poor sanitation.
- We advised the residents of Kasenyi market to boil water to prevent waterborne diseases like Cholera.