**ST. MARY'S COLLEGE LUGAZI (SMACOL)**

GEOGRAPHY SEMINAR 24/06/23

ANSWER GUIDE PAPER 1 AND 2

Study the map extract 1:50000 (UGANDA) BULISA map extract, part of sheet 29/4, Series Y732, and Edition 3-U.S. D and answer the questions that follow:

a) (i) grid reference of the air photo principal North of Kisanya.
   294434
   ii) relief feature found at Grid reference 288454 is
   River confluence/river
b) bearing of Bulisa road junction (Grid reference 233346) from Air photo principal north of Kasenyi (Grid reference 294434)
   225^0 (accept 220^0- 230^0)

1

c) **A cross section along Northing 29 between Eastings 40 and 48 showing Victoria Nile, footpath, motorable truck, county boundary, papyrus swamp.**
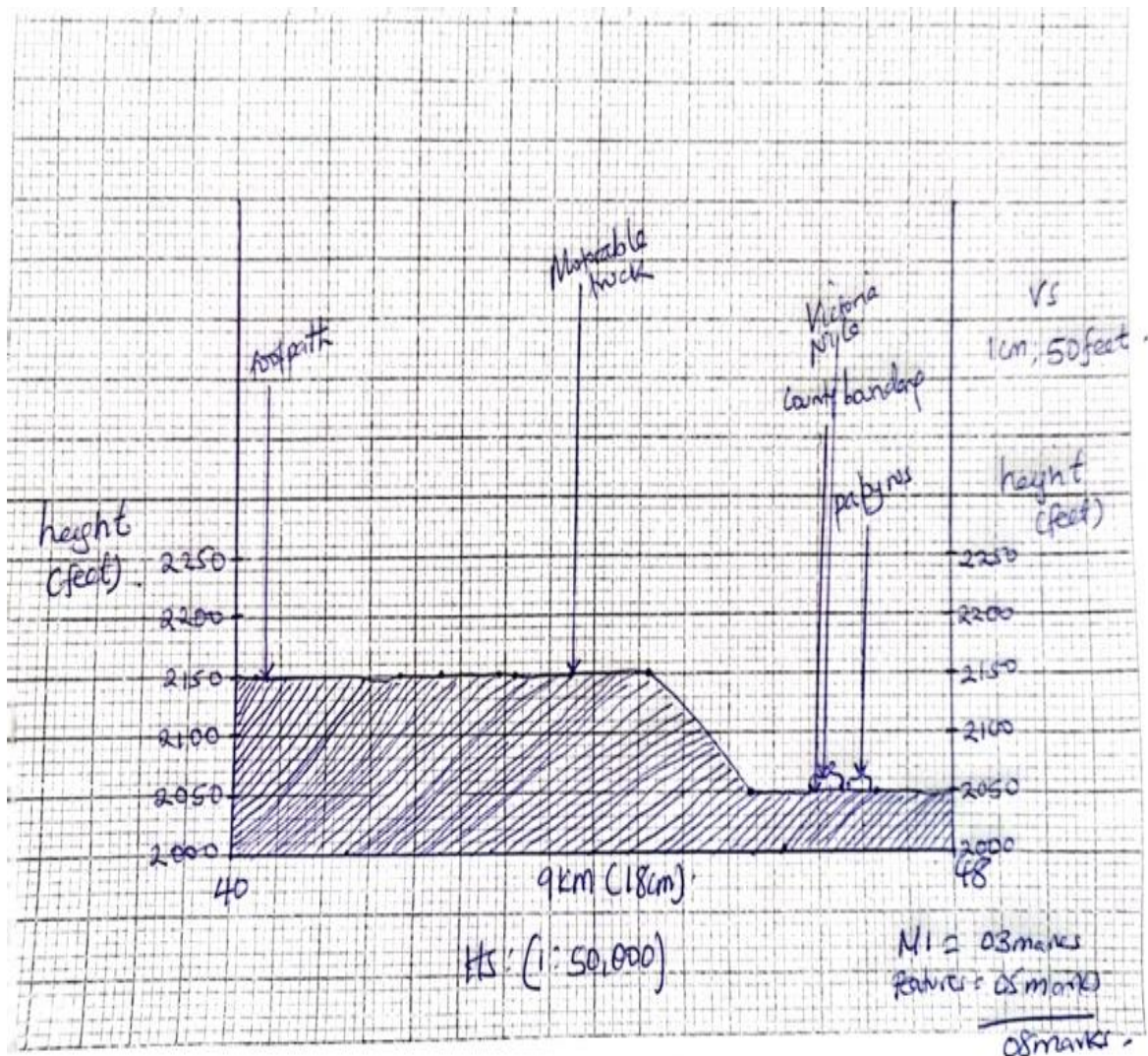
d) *Describe the*

 i) **Relief of the area**
- Area has gentle slopes e.g. at Bulisa
- Area has a lowland e.g. Bulisa, Buitaba, Bulisa-Wanseko etc
- The area has flat areas e.g. in Bulisa
- The western part of lake albert has basin or depression
- The highest elevation/ point is at 2150 feet west of Bukindwa
- The lowest elevation/ point is at 2050 feet west of Ndandamire
- The amplitude of the area is 100 feet

2

- The average height is 2200 feet
- The vertical interval is 50 feet

 ii) ***Relationship between Relief and communication of the area shown on the map***.

- Gentle slopes have loose surface road e.g. at Bulisa
- Gentle slopes at Bulisa have foot paths
- Gentle slopes have straight roads e.g. at Bulisa – para roads
- Loose surface roads are on flatlands e.g. wanseko road, buitaba
- Steamer/ferry in the lowland areas e g at katara cross lake albert
- Ferry cross katara bay between landing sites
- Footpaths are in lowland areas e.g. Ndandamire, kisanga, bulisa,katara
- Straight foot path in flat area e.g. in Bulisa
- Motorable trucks are in lowland areas eg katara- Bulisa – kijangi road.

Study the map extract 1:50000 (UGANDA) BULISA map extract, part of sheet 29/4, Series Y732, and Edition 3-U.S. D and answer the questions that follow:

a) (i) Grid reference of Bore hole in South of Bulisa loose surface road junction is
     235344 / 234353.

  ii) man-made feature found at Grid reference 233376 is

   Church

b) area covered by Lake Albert south of Northing 40.

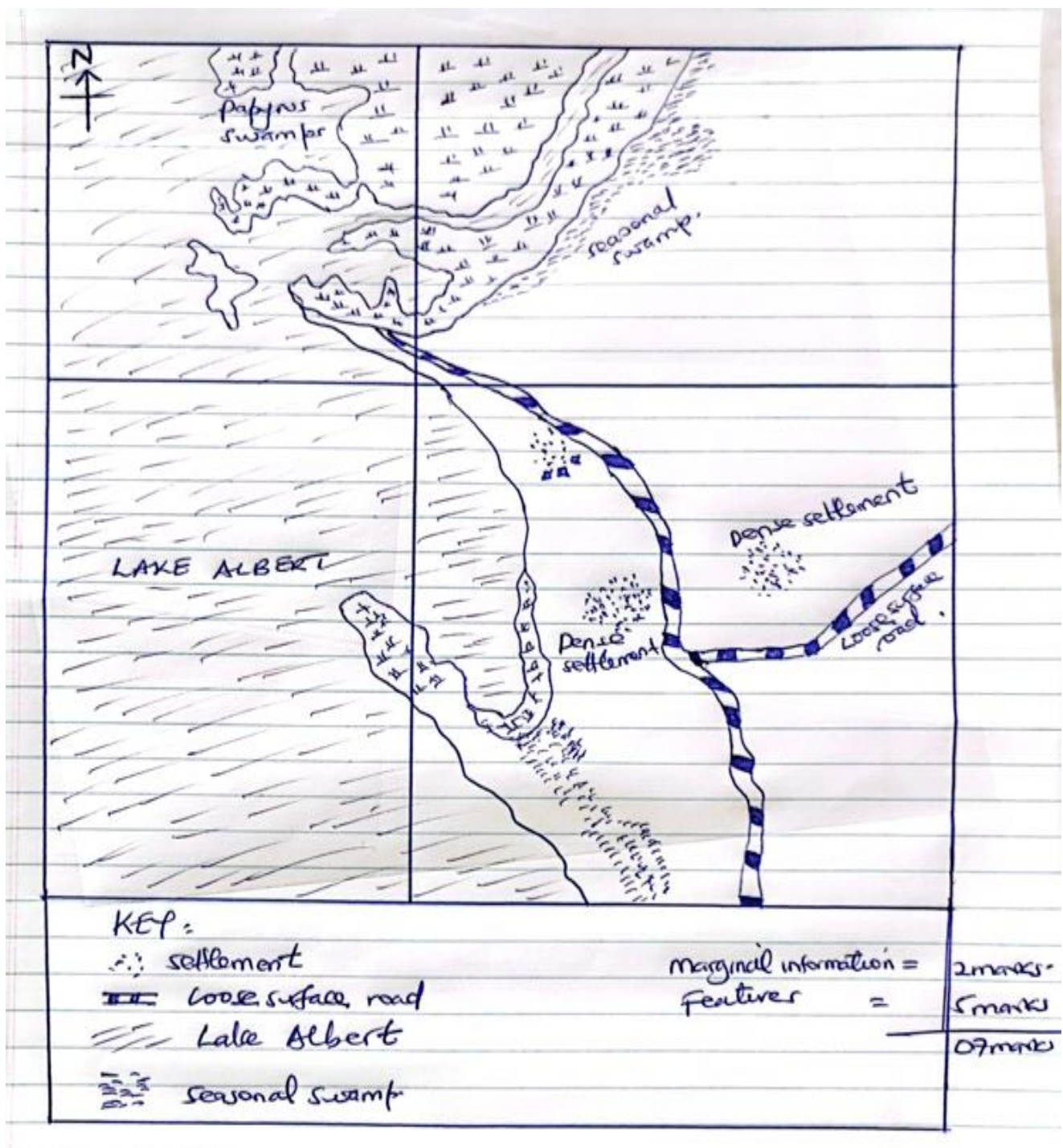$$\text{Full squares} + \frac{\text{Non-full squares}}{2}$$

$$41 + \frac{14}{2}$$

$$41 + 7 = 48 \text{ squares}$$

area of 1sq= km x km = Km^2
area of 48squares = 48 x Km^2

= 48 Km^2

c) **A sketch map of the Bulisa along Northing 45 and between Eastings 16 and 27 South showing Lake Albert, all weather roads, seasonal swamps, Areas covered by papyrus, dense settlement**

SMACOL   *ANSWER GUIDE*

d)   *i) types of settlement patterns*

- Linear settlement pattern along Buitba- Masindi loose surface road, Bulisa
- Grid/ planned Settlement pattern along Buitba- Masindi loose surface road like Bulisa, Ndandamire, Kisansya
- Clustered/ nucleated/ grouped Settlement pattern along Buliisa, kiraama, Ndandamire, Kisansya.

ii) *Problems faced by the people living in this area*

- Accidents especially drowning of people in the lake albert due to settlements along the lake Wanseko.
- Threats from dangerous aquatic animals due to existence of lake Albert.
- Easy spread of waterborne diseases due to existence of lake albert, seasonal swamps along the lake.
- Threats from dangerous wild animals due to existence of Murchison National park.
- Prolonged drought due to the existence of seasonal swamps and rivers, boreholes, scrub in the East, South East.
- Overcrowding due to dense settlements in areas like Buliisa, kiraama, Ndandamire, Kisansya
- Water pirates along Albert lake leading to loss of lives.
- Remoteness due to Lake Albert, papyrus swamps leading to inaccessibility.

Study the map extract 1:50000 (UGANDA) BULISA map extract, part of sheet 29/4, Series Y732, and Edition 3-U.S. D and answer the questions that follow:

a)   (i) State the grid reference of Bore hole in South of Bulisa loose surface road junction.
         235343
    ii) Identify the man-made feature found at Grid reference 233376.
         Church
(b) Calculate the
    Vertical interval= difference between close contours

$$= (2050 - 2000) \text{ feet}$$

$$= \textbf{50 feet}$$

    Amplitude of relief = difference between highest point – lowest point

$$= (2150 - 2050) \text{ feet}$$

$$= \textbf{100 feet}$$
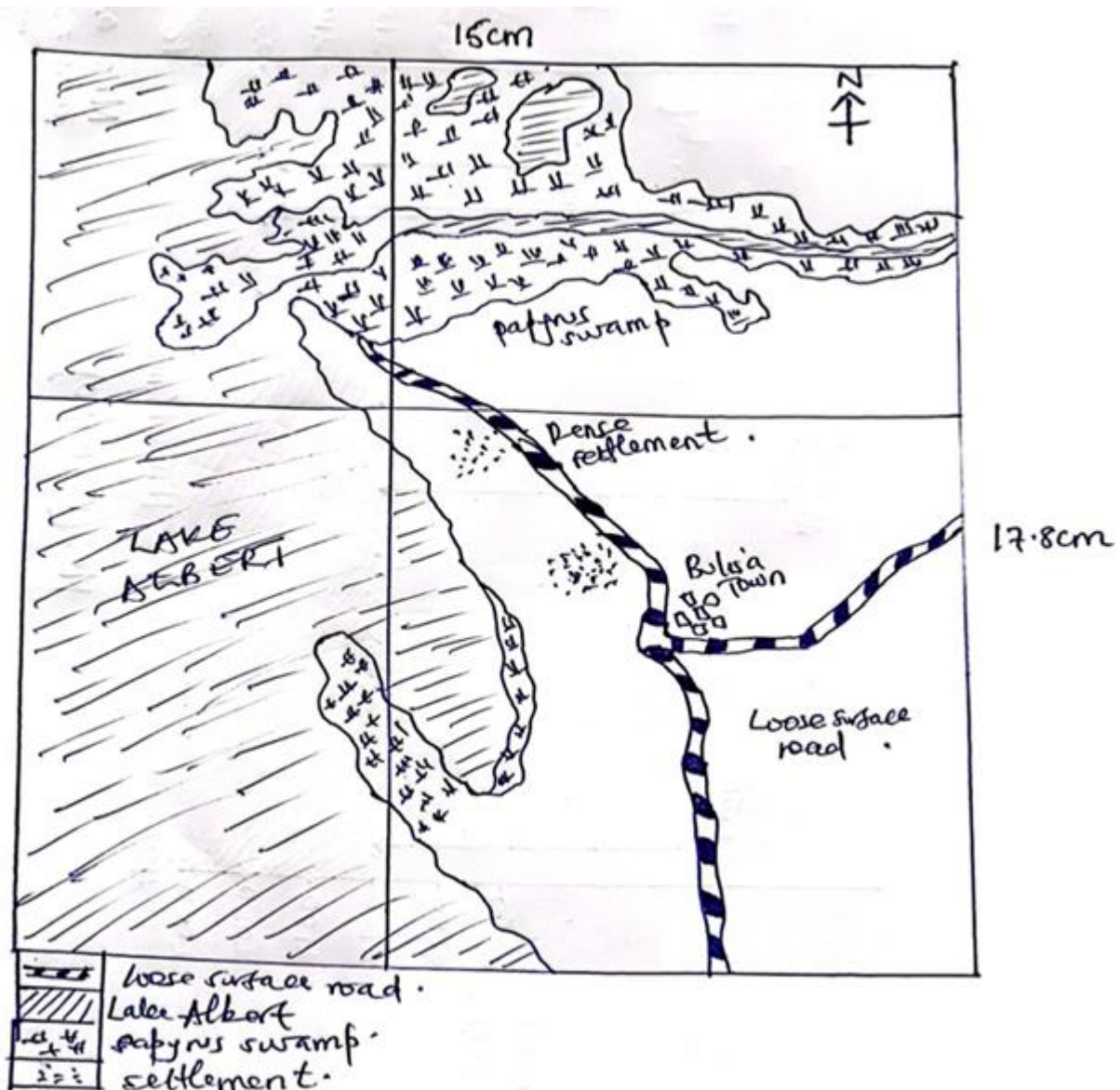
5

Average height = highest point + lowest point

2

$$= \frac{(2150 + 2050) \text{ feet}}{2}$$

= 2100 feet

c) (i) **Reduced the sketch map of Bulisa showing Lake Albert, all weather roads, Bulisa town, Areas covered by papyrus, dense settlement.**

(ii) *Calculate the new scale for reduced map*

New scale = original scale
           Scale factor

$$\frac{1}{50,000} \quad x \quad \frac{1}{2}$$

$$\frac{1}{100,000}$$

New scale = 1:100,000

d) *Giving specific examples from the map extract, Describe the*
   i) Any three economic activities shown on the map extract

- Road transport due to existence of Buitaba-Bulisa road.
- Cotton ginnery due to presence of cotton stores near katara.
- Water transport due to presence of steamer and landing ferry at katara.
- Art and craft industry evidenced by seasonal swamps along the shores of lake albert.
- Tourism due to presence of Victoria Nile and Murchison fall national park.
- Wildlife conservation due to existence of Murchison falls National park.

ii) *Explain any* **three** *factors that have influenced the economic activities in area shown in the map extract.*

- ***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. 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.

8

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.eg roads to aid tourists to the sites

➢ Presence of tourist 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 e.g.

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 programs.

COMPULSORY PHOTOGRAPHIC INTERPRETATION QUESTION (15 MARKS)

1. **(a)** *Identifying the economic activity taking place in the photograph*

➢ The economic activity is rock salt or salt mining or mining   (01 mark)

 (b) *Describing the conditions that have favoured the economic activity identified   in (a) above*

➢ Presence of salt rock or salt water or salt pan that is mined in the middle ground.
➢ Extensive land seen in the fore ground and middle ground which gives room for mining.
➢ Hot temperatures or sunny weather or dry conditions which allows evaporation due to bright photo, shadows shown under images and scrub vegetation in the middle ground.
➢ Availability of skilled labour to extract salt evidenced by the four men and two women in the middle ground.
➢ Improved transport and communication to transport the extracted salt evidenced by the heap of salt and sacks of salt in the foreground and back ground
➢ Tight security provided by the six people during mining of salt in the middle and back ground.
➢ Supportive government policy which encourages mining evidenced by the six people, salt pan, sacks of salt, miming activity and the salt pile in the middle ground.
➢ Adequate capital which encourages salt extraction due to presence the salt pan, sacks of salt and pile of salt middle ground.
➢ Ready market for salt evidenced by the man standing near the sack of salt in background.
➢ Improved technology which facilitates mining due to the presence of salt pan in the middle ground.
➢ Presence of trees or grass in the background used to strengthening the salt pan embankment

NB; Candidates should describe the factors and give evidence of the factor from the photograph (**Any 04 x 1marks**)

(i) *Explaining problems faced by the people carrying out the economic activity.*

➢ Inaccessibility because of absence the road in the photography leading to delay on the way.
➢ Accidents or injury due to lack of protective gears like helmets gumboots which may lead to injuries
➢ salt is corrosive and affects people's health adversely
➢ Wild animals for example snakes which may harm or bite the miners because of the bush in the back ground
➢ Pests which may attack the miners because of the bush in the background
➢ Shortage of labour because of the few people in the photograph leading to low output
➢ Scotching sun due to the bright photo which may lead to dehydration or weaken the miners hence to low output there is no shelter

10

➤ Competition for market because of heaps of salt hence low prices
➤ Low levels of technology used because of absence of machines in the photograph
    ETC   (Any 04 x 1marks)

NB: Candidates should explain and give evidence of the problem from the photography

ii)   Explaining the effects of the economic activity on the physical environment in East Africa

➤ Cutting of trees reduces evapo- transpiration this reduces rain fall hence famine
➤ Cutting of vegetation leads to prolonged drought leading famine and shortage of water.
➤ Soil erosion since that land is left bare after cutting the vegetation for mining
➤ Flooding since vegetation is cleared which destroys farmland and property
➤ Creation of depressions / pits/sinkholes or salt pans for mining, these pits are left open when it rains they are filled with water which may lead to drowning of people or breeding grounds for vectors which cause diseases
➤ Destruction of habitat for wild animals. This may lead to increased destruction of farm land or conflict with human beings
➤ Disappearance /reduction of wild animals due to destruction of their habitant They may invade home steads and farm lands which may encourage people to kill them hence loss of wildlife
➤ Salt is hygroscopic and dehydrates the surrounding areas hence aridity
➤ Pollution of air caused by dust from the salt particles leading to contamination and alternation of soil profile, local streams and wetlands due to runoff
➤ Noise pollution due to blasting of rocks with explosives and vibrations of excavators which may lead to displacement of people and causing cracks and destruction of houses near the mines
➤ Pollution of land by heaping the salt on fertile soils hence soil exhaustion
    etc.   (Any 4 x1)

(d) *Naming the area*

➤ Lake Katwe in western Uganda, Kibiro salt mine, lake Magadi in Kenya

    Reasons for the answer;

➤ Salt mining, mining centre, pile of salt, sacks of salt, salt pan, scrub vegetation

2. **(a) (i)** *Naming the type of photography*

➤ It is aerial oblique or aerial photograph

Giving evidences

➤ A wide area is covered

➢ A lot of details are shown that physical and man-made features
➢ The horizon is not visible/seen
➢ The roof top reflect light and appear white
➢ The height and size of the object is greatly reduced (small in size objects) etc

(01mark)

(ii) A SKETCH MAP OF THE AREA SHOWN ON THE PHOTOGRAPH SHOWING DRAINAGE FEATURE, SETTLEMENT, COMMUNICATION ROUTES, FARMLAND AND FOREST VEGETATION.

2(b) *Describing factors that have influenced settlement in the area shown in the photograph.*

➢ Heavy /reliable rainfall has attracted settlement due to the presence of the permanent water body/forested area/ farmland
➢ Presence of fertile; well drained; deep soil has encouraged settlement because of forested area, farmland and water body
➢ Gently sloping land has encouraged settlement in the photography
➢ Existence of extensive / vast land for settlement shown in the photograph
➢ Large water body/permanent has facilitated settlement because water is needed for home use and industrial purposes
➢ Proximity to a large water body for tourism and transport has attracted settlement
➢ Improved/well developed transport network shown in the photography has encouraged settlement
➢ Supportive government policy has encouraged settlement due to planned settlement, various roads and a bridge
➢ High level of technology used in the construction of the communication line has enable settlement due to the presence of the bridge
➢ Large water body has occupied land which could have been used for settlement therefore, discouraging settlement
➢ Thick vegetation has discouraged settlement   (Any 04 x 1 marks)

(d) *The area is planned because of:*

➢ The presence of well-developed transport and communication lines such as the road and the bridge
➢ Settlement is found on the gently sloping land
➢ Settlement is far away from the water body
➢ The planted tree amidst settlement
➢ Part of the land not settled or green belts for recreation purpose
➢ The settlements are constructed along communication routes or in a rectangular or squared pattern   (Any 3 x1 marks)

(a) Naming the area where the photograph could have been.
➢ Jinja, Kiira power project on river Nile. Karuma power project river Nile Mubuku I, Mobuku II and Mobuku III power project river Mobuku, Maziba power projecton on river Maziba, Kitagata power project on river Kagera, Isimba power project on river Nile Seven forks dam project (Kindaruma, Kambura dam, Masinga dam) and Pangani power project (Hale, Nyumba ya Mungu,) etc
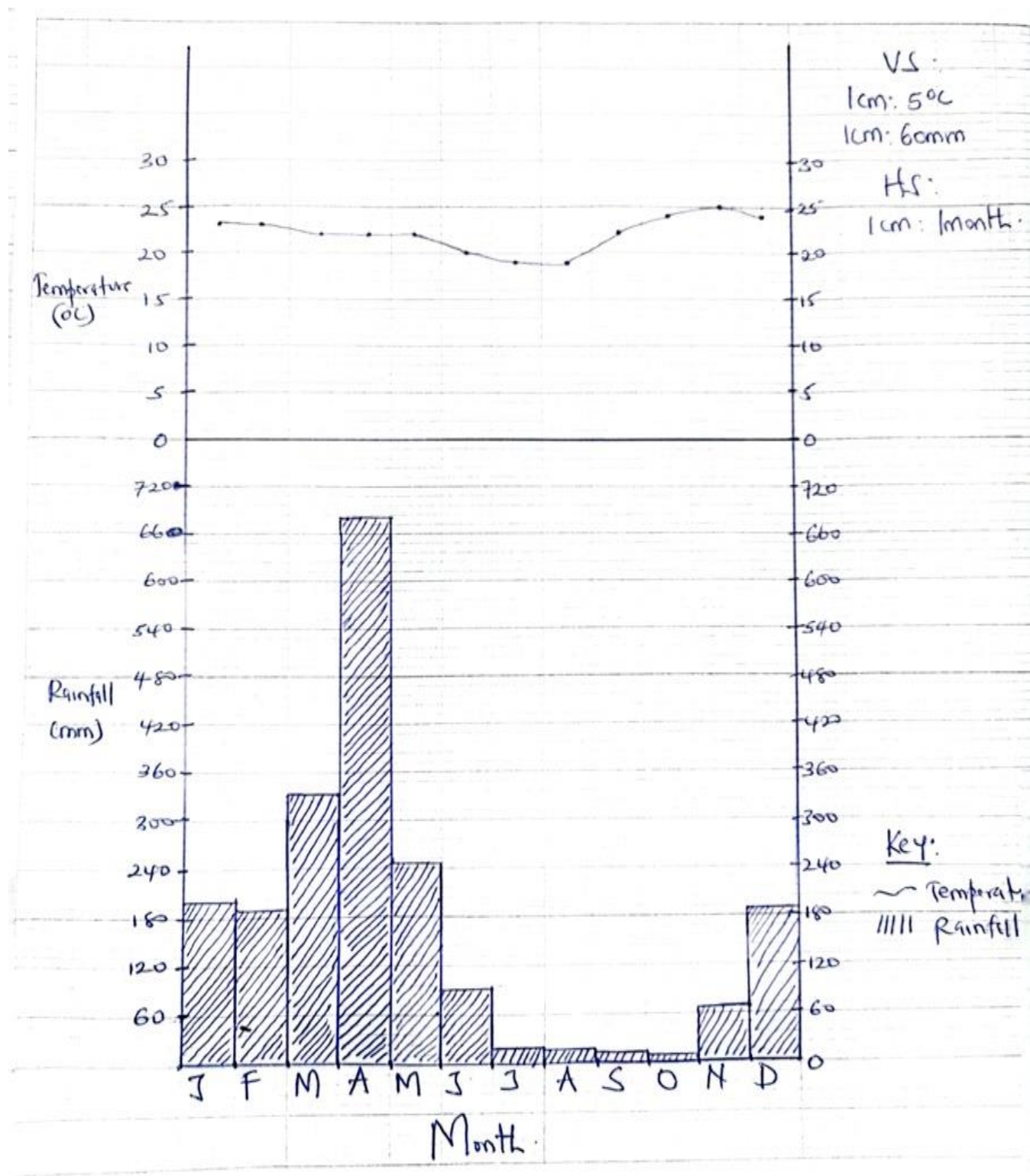
Reasons for the answer

➢ Presence of Permanent River, bridge, power plant, forested area planned settlement etc (0 1 mark)

3. (a) **A combined line and bar graph to show the climate of station Y**

(b)   *Calculate the annual:*

(i)   **Range of temperature =** Hottest month – coolest month

$$= 25 - 19$$

$$= 6^0 \, C \qquad\qquad\qquad\qquad \text{(02 marks)}$$

(ii)   **Rainfall total = sum of rainfall received in all month**
203 +191+356+627+244+109+33+31+28+05+114+190=2132
= 2132mm   (02 marks)

(c) Describing the characteristics of climate at station y
➢ The station receives heavy rainfall, the total annual rainfall is 2132mm.
➢ Mean annual rainfall of 2132mm which is heavy.
➢ The annual temperature range is 6^0c which is small.
➢ The average temperature is 22^0c which is hot.
➢ The station receives heaviest rainfall in April which is 627 mm.
➢ Heavy rainfall is received from January to May.
➢ High humidity levels from January to may because of heavy rainfall.
➢ There is dense cloud cover from January to May.
➢ July, August, September and October are dry months.
➢ Temperature is hot and warm throughout the year.

(d) Giving reasons for your answer:
     (i) Naming the hemisphere
➢ Southern hemisphere

     Reasons for the answer

➢ The sun is overhead in the southern hemisphere from December to March
➢ The long-wet season from November to march
➢ Intense heating or hot temperatures November to may
➢ Heavy rainfall from March to May period when sun is overhead at equator on 21st March
     (02 marks)

(ii)Outlining the economic activities which can be carried out around station Y

➢ Cattle rearing/ diary keeping because of the warm / hot temperature
➢ Forestry because of heavy rainfall which encourages the growth of big and tall trees
➢ Lumbering due existence of tall and big trees Plantation farming due to heavy rainfall and fertile soils
➢ Fiber extraction is done due to various species of trees such as fogira, palm trees, used for making crafts like hats and baskets
➢ Eco tourism due to the presence of tree species in form of forest reserves

➤ Charcoal burning due to the presence of big and tall tree species
➤ Transport and communication due to various economics activates (03marks)

4. **A line graph to show the trend of forest cover destruction in East Africa between 1980 and 2000   (05 marks)**
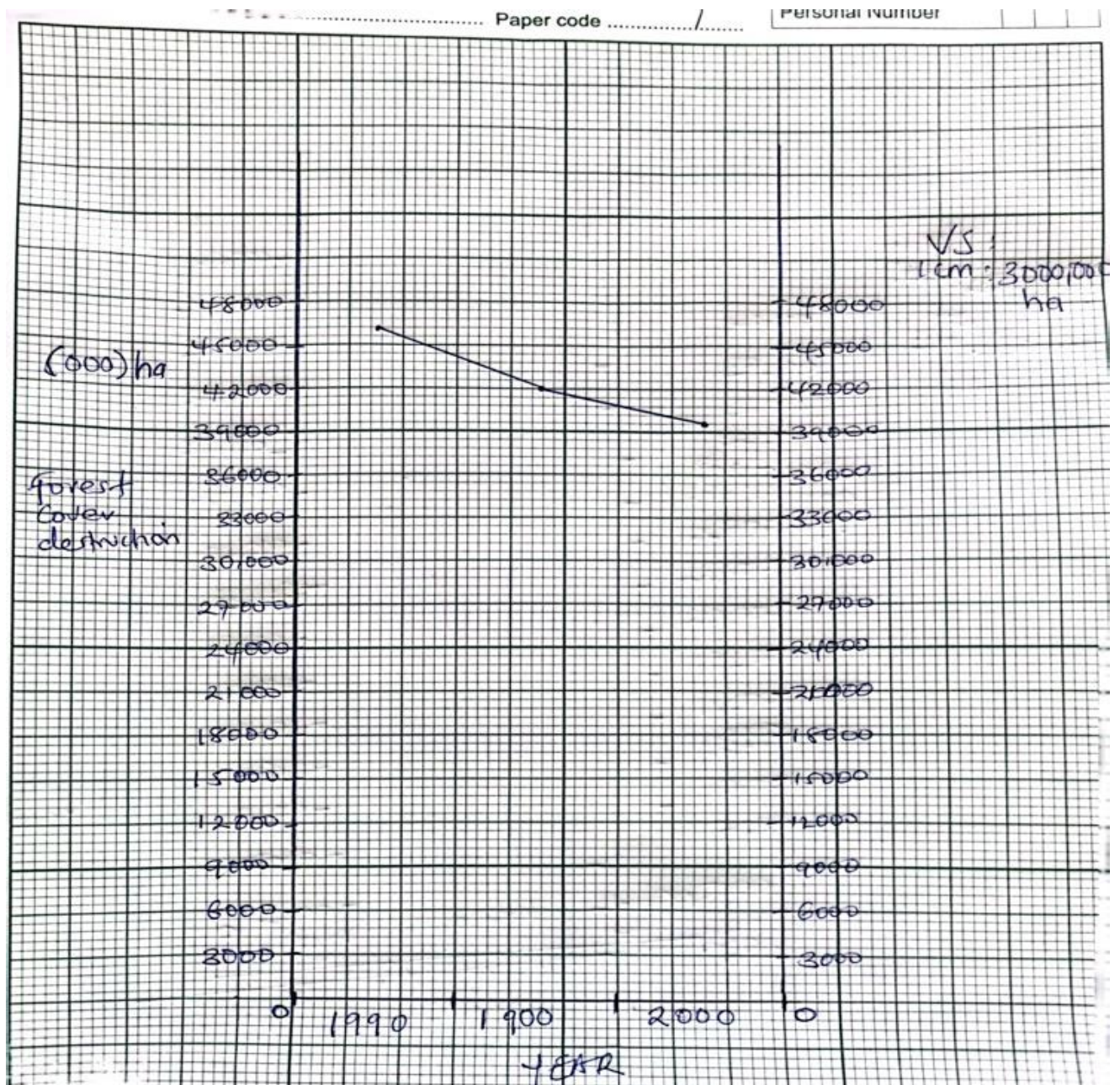
(a) *Calculate the percentage change in the area under forest cover for each country between 1980 and 2000*

$$\frac{New - old}{Old} \times 100$$

Kenya $\frac{1200-1400}{1400} \times 100 = -14.3\%$

Tanzania $\frac{32000-38000}{38000} \times 100 = -15.8\%$

Uganda $\frac{6000-7000}{7000} \times 100 = -14.3\%$

(02marks)

(b) *Explaining the effects of deforestation on the environment in East Africa*
➢ Cutting of trees reduces evapo- transpiration this reduces rain fall hence famine
➢ Cutting of vegetation leads to prolonged drought leading famine and shortage of water.
➢ Loss of vegetation leads to increased temperature or global warming due to increased dust particles and carbon dioxide in the atmosphere
➢ Loss of vegetation cover leads to accelerated soil erosion because of increased run off
➢ Flooding since vegetation is cleared which destroys farmland and property
➢ Silting of lakes and water bodies due to increased runoff which causes death of aquatic life
➢ Loss of habitat for wild animals and insects. This may lead to increased destruction of farm land or conflict with human beings
➢ Loss or reduction of wild animals due to destruction of forests. They may invade home steads and farm lands which may encourage people to kill them hence loss of wildlife
➢ Loss of vegetation leads to lowering of water table hence water crisis
➢ It accelerates landslides since the loss of vegetation hence destruction of life's and property etc. (06 marks)

(c) (i) *If you were the minister of environment, outline the steps you would take to solve the problem of deforestation in East Africa*
➢ Promoting afforestation, planting of trees is being encouraged
➢ Reforestation planting of trees in areas where trees have been cut is being promoted
➢ Agro-forestry; encouraging communities to plant fruit bearing tress and herbs in their gardens
➢ Alternative source of energy would be promoted such as use of electricity, solar, biogas
➢ Collaborative forest management or sustainable management communities living near forests would be encouraged to be involved in the management of forests for future generation
➢ Education and sensitization of masses on how to control deforestation
➢ Setting up strict laws governing the cutting of trees such as getting permits or licenses to cut trees
➢ Gazetting forest reserves

➢ Guarding and protection of forest by the National Forest Authority and Uganda Wildlife Authority   (05x1marks)

   (iii)   Naming any two areas in East Africa suffering from the effects of destruction of forests

➢ Bududa, Manafwa, Bulucheke, Sironko (Mountain Elgon slopes) Kabale, Kasese, Bundibugyo, (mountain Ruwenzori) Kabongo, Kotido (slopes mountain Moroto) mountain Kenya and Kilimanjaro. Etc.

   (02marks)

5. (**a**) *Calculating the total area (in square km) under crop land for each   country*

  (i)   Uganda   11.2/100x195, 100 = 21851.2 square kilometer   (02 marks)

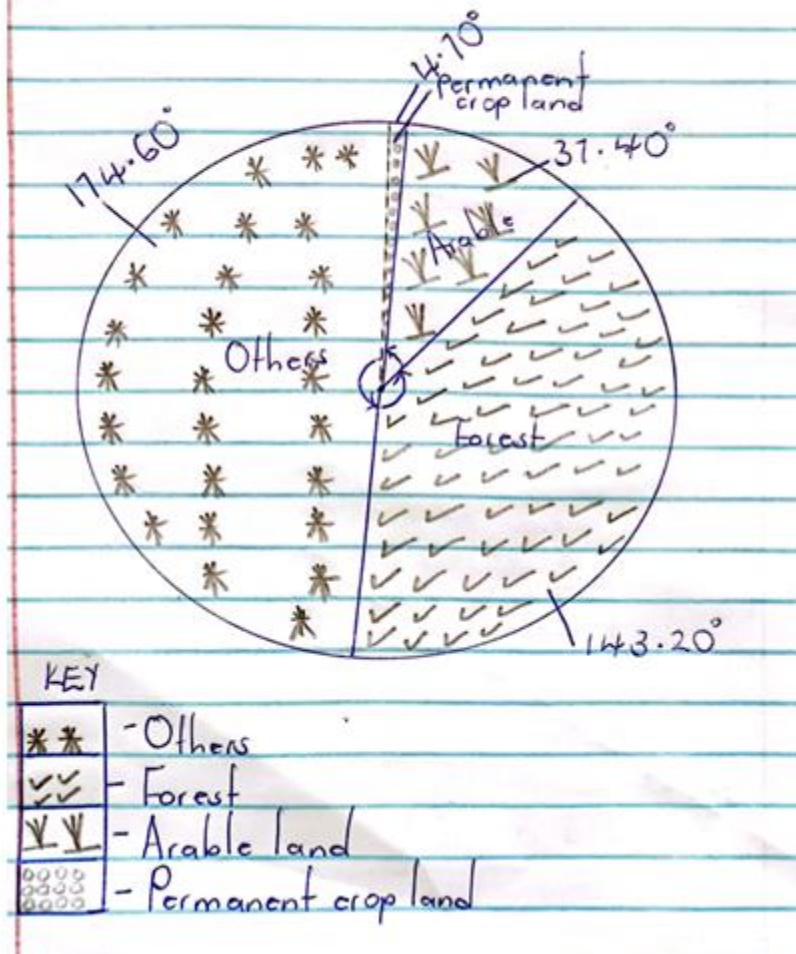 (ii)   Tanzania   1.3/100x 885,800 = 11515.4 Square kilometre.   (02 marks)

(b). *Draw a pie-chart to show the relative importance of the various types of land use in Tanzania*.

Method

Forest	$\frac{39.8}{100}$ X 360	$= 143.2°$
Permanent crop land	$\frac{1.3}{100}$ X 360	$= 4.68°$
Arable land	$\frac{10.4}{100}$ X 360	$= 37'4^0$
Other	$\frac{48.5}{100}$ X 360	$= 174.6^0$

A pie chart showing the relative importance of various types of landuses in Tanzania

Title   01mark
Method   01 mark (maximum)
Accuracy   03 marks

(c). **Describe the factors which have influenced the size of land area under permanent crop land in Uganda.**

➤ Pests and diseases which attack the crops e.g. the army worm this discourages farmers leading to decline of crop land.
➤ Increased population which needs land for settlement therefore reducing land for permanent crop land
➤ Land tenure system
➤ Natural hazards e.g. drought which discourages farms leading to a small area under permanent crop land

➤ Shortage of labour to work on farms because the young people have moved to towns for white color jobs hence small area under permanent crop farm
➤ Shortage of capital
➤ Price fluctuations of agriculture products the decline in prices due to over production discourages farms
➤ Other alternative economic activities e.g trade, industrial development, forestry which reduces land for agriculture hence small area.

   NB: Answers must be well explained   (Any 4x1 marks)

d) (i) Explain the contribution of agricultural sector to the development of East Africa

➤ Creation of employment opportunists for example farm managers' field officers and labourers, these people earn income which is used to improve on their standards of living.
➤ Income earned after sale of agriculture products leading to improved standard of living
➤ Improvement of transport and communication for example roads used to transport products from plantations to processing centre which eases transport in the surrounding areas
➤ Revenue is earned by the government   after taxing agriculture inputs and workers this money is used for development of infrastructure such as roads, schools and health facilities
➤ Foreign exchange is earned through exportation of agricultural products, this is used to construct social infrastructures and   investment in trade
➤ Development of agriculture processing industries leading to increased employment and tax base hence improved standards of living
➤ Development of towns or trading or market centre due to increased social infrastructures and amenities which can work as administrative centre
➤ Diversification of economy due to development of various economic activities such as processing industries, transport and trade leading to increased tax base
➤ International relationship between the country exporting the agriculture products and the importing country hence increase peace and security; development of trade and foreign aid
➤ Increased food production due development of agriculture population free from malnutrition diseases
➤ Agricultural research is carried out involving improved seed varieties, fertilizers and thus increased output
➤ Acquisition of skills since plantations workers are trained on job and gain specialized skills hence increased production

   NB: Final contribution should be brought out (Any 03 x 1 mark)

   (ii) State the measures being taken by the government of Uganda to improve on agriculture

➤ Spraying of crops with insecticide to kill pest and diseases

22

- Research is being carried out on better breed seeds and animals
- Spraying herbicides to control weeds
- Adding of manures and fertilizers to control soil exhaustion
- Mulching and contour ploughing to control soil erosion
- Rehabilitation and construction of feeder roads to ease transport of agricultural products
- Acquisition of loans from financial institutions such as Banks and Micro finances
- Mechanization to solve the problem of labour, tractors have been given to Parish under the Parish Development Model (PDM)
- Diversification of the economy is being encouraged through value addition or proceeding agriculture products before sale maize mills have also been given to farmers under Parish Development Model
- Costs on farm inputs have been reduced such as fertilizers
- Provision of adequate education to farmers for example through radios, televisions and seminars
- Encouraging farmers to forming of co-operative societies for example the Emyooga associations and Parish associations (youth and women associations)
- Encouragement of all gender and age in farming by giving financial assistance and grants for example grants of poultry, goats and sheep and rabbits have been given to women and youth etc. (03 X 1)

6. (a) **A line graph showing the quantity of fish in tonnes** caught on lake Victoria between 2006 and 2010.
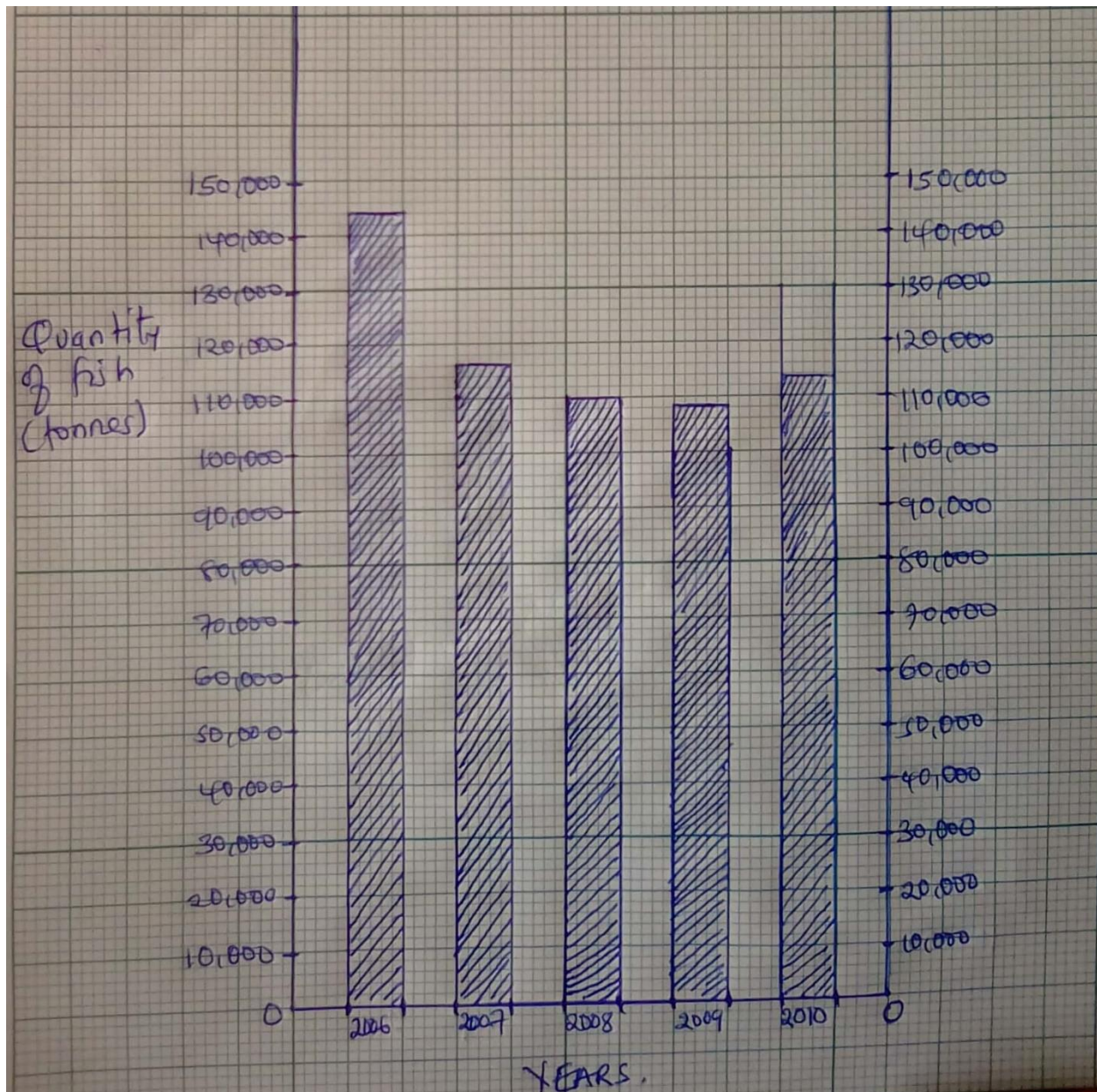
**(b) Describing the trend in fish production on Lake Victoria between 2006 -2010.**

➢ There was a sharp decline in fish catch production from 2006 to 2007 by 27,000 tonnes.

➢ There was a slight decrease in fish catch production on Lake Victoria between 2007 to 2008 by 8000 tonnes.

➢ There was a sharp decline in fish catch production on Lake Victoria between 2008 to 2009 by 2000 tonnes.

24

- Fish catch production on lake victoria between from 2009 to 2010 increased by 4000 tonnes.
- Highest fish catch production on Lake Victoria was 2006 by 144,000 tonnes.
- Lowest fish catch production on Lake Victoria was 2009 that is 109,000.

(c) Describing any two methods of modern fishing used in Uganda

Purse seining

- It is used to catch pelagic fish
- two boats are used one end is tied on a big ship and one on a small boat
- It involves use of the net which is suspended in water by use of t floats at the top and weights at the bottom
- One end of the net is tied onto the boat and is laid in a circle to enclose a shoal of fish
- When a shoal of fish is detected, the small boat moves around in circle the shoal of fish
- The lower rope is pulled to close the bottom of the net, forming a bay or a bowl shape
- The net is pulled out of the water and fish is scooped out
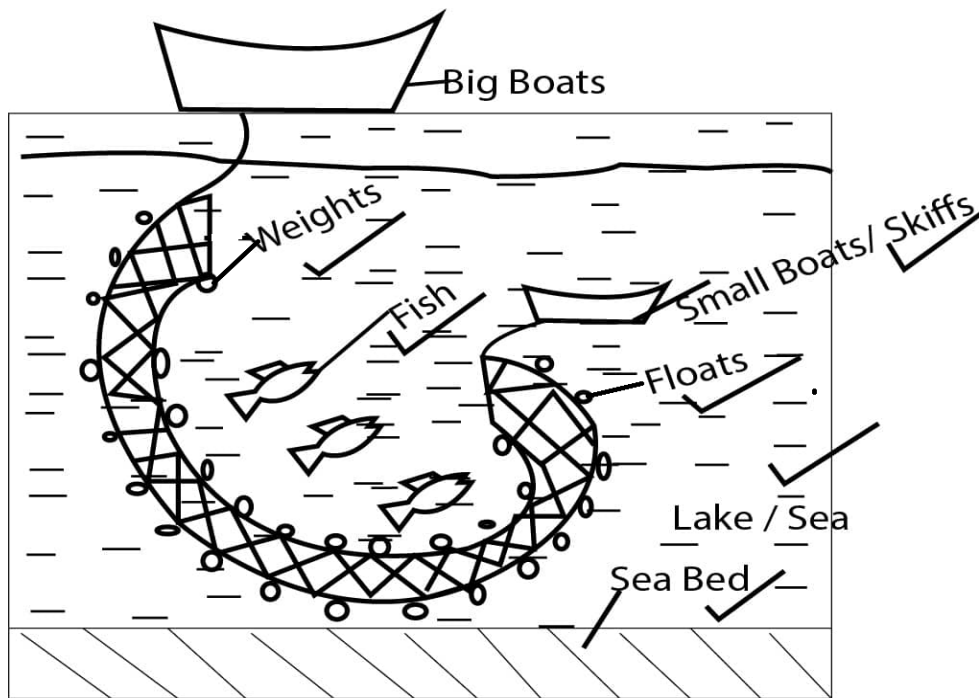
OR

Trawling method

➢ It is used to catch demersal fish in deep water or bottom of the sea cod, hake, Pollock, cask and rose fish (marine fish)
➢ It involves dragging a cone shaped bag called a trawl over the sea bed behid a boat called trawler
➢ The net has floats at the top and weights at the bottom
➢ A big ship with series of sonar waves is used to scare fish shoals
➢ A net with a bag like cone end is put between 100-200 metres (deep-water) in water
➢ The mouth of the net is kept open by otter boards but when it enters it cannot move out
➢ This fish is trapped as the net is dragged along the ocean bed
➢ After getting a lot of fish it is scooped out
➢ It is discouraged because it catches immature mature and other sea animals like snakes and snails
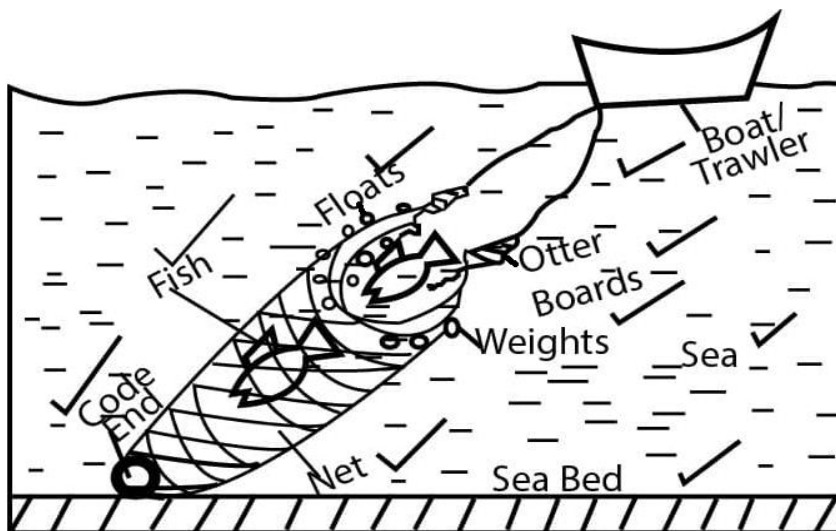
OR

**Gill netting method (drifting method)**

➢ It is used to catch pelagic fish
➢ Large net is hanged or suspended vertically in the water
➢ The net is fitted with floats on the top and weights at the bottom
➢ A net is placed a few metres below the water surface for several hours
➢ A net is pilled by a net called drifter
➢ When the fish tries to swim through the net they are trapped by their gills or fins

OR

Long lining method

➢ Commonly used in catching tilapia and mud fish
➢ It involves the use long lines with 300-400 hooks many hooks
➢ Baits are put on sharp hooked metallic device with a string on it to attract fish
➢ It is cast in water so that fish is to be attracted by the bait
➢ Fish are trapped by the hooks which is later pulled out to get fish
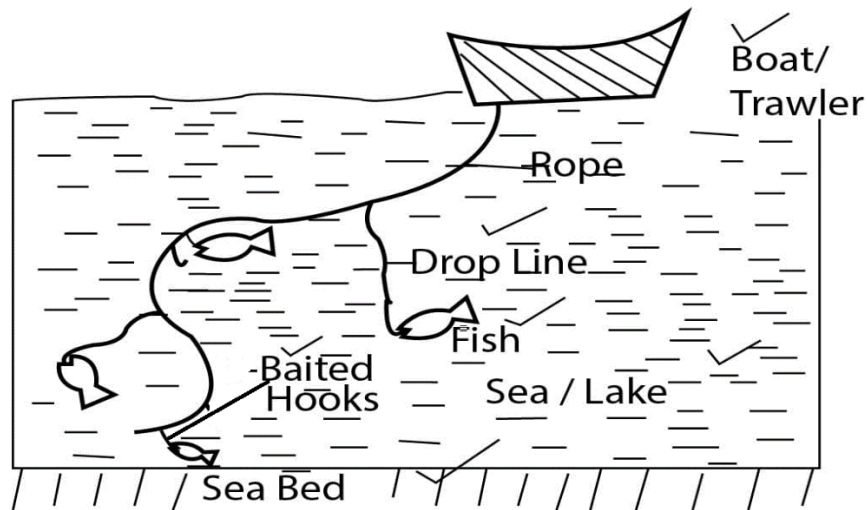
Any two types   (4X 2)   =   08 marks)

(d) Explaining the contribution of fishing industry to the development of East Africa

➢ Creation of employment opportunities for example fishermen and mongers people working in fish processing factories, they earn income in form of wages and salaries hence improving on the standards of living
➢ Foreign exchange is earned after exporting fish and fish products to foreign countries like China which is used to construct infrastructures like roads
➢ Revenue is earned after taxing the fisher men and fish relate activities for example fish nets, industries etc. the money is used to construct infrastructures such as roads health facilities etc.
➢ It has stimulated and strengthen international relationship between east Africa and other countries which import fish such as Belgium and this has created peace and promoted trade
➢ Development of fish processing industries which create employment, income leading to improved standards of living
➢ Source of food which provides proteins to the people of east Africa therefore improving on the diet and keeping population free from diseases

- Diversification of economy many alternative activities such trade; transport, industries etc. this increases on the tax base
- Development of infrastructures such as the roads connecting to the fishing grounds wand market centres this eases transport
- Research and education
- Development of agriculture
- Medicine silver fish cures measles
- Animal feed mainly silver fish when mixed with other ingredient ETC (04x1marks)

PART 1: REST OF AFRICA

1.

a) *Name the*

(i) River marked 1

- ✓ R. Cestos/ Cess

(ii) Countries marked 2 and 3

- ✓ Sierra Leone
- ✓ Ivory coast (cote d'viore)

(iii) Ports marked

- ✓ Buchanan
- ✓ B. Monrovia
- ✓ C. Harper

(iv) Iron ore mining areas marked

- ✓ D. Bong range
- ✓ E. Nimba mountains

b) ***Using relevant examples, explain the conditions which have favoured iron ore mining in Liberia.***

- Presence of large deposits of iron ore for example in the bie hills, Wologosi mtns that are highly marketable
- Existence of well developed transport by railway, roads, e.g. the Yekepa-Buchanan railway used for transportation of iron ore.
- Strategic location of Liberia at the Atlantic Ocean with developed ports like Monrovia for easy exportation
- Supportive government policy for example concessions granted to foreign companies from America, Sweden has ensured constant mining of iron ore.
- Existence of iron ore closer/near to the surface making easy to mine by cheaper open cast method e.g. on the bong range, bomi hills etc
- Presence of skilled and semi-skilled labour to work in the mines from sierra Leone, towns like Buchanan, Robertson.
- Availability of advanced technology used in mining from developed countries like Germany, France, USA, Sweden etc.
- Existence of ready capital from foreign investors from china, USA, to invest in iron ore mining.

- Availability of intensive and extensive research by researchers from USA, japan enabling the mining of iron ore and discovery of new mines.

c) **What are effects of iron ore mining on the environment in Liberia?**
   *Positive effects*

- Diversification of Liberia's economy as a shift from over dependence on the exportation of rubber and its products.
- It has led to the development of industries with minerals as a raw material hence creating employment opportunities.
- It has led to the provision of many employment opportunities hence earning income to the people.
- Promotion of international relationships through concessions given to foreigners hence promoting unity.
- Earning of foreign exchange from exports which is used to develop infrastructures like roads.
- Earning of revenue to the government from taxes which is used to develop infrastructures like roads.
- Led to development of infrastructures like roads connecting mining centres like bong range, Yekepa.
- It has led to urbanization with positive effects like employment, provision of social services to the people
- Improved peoples/income/standard of living through working in the mines
- Provision of market for others i.e. the industrial sector hence stimulating development of other sectors.
- Provision of raw materials to industries used in the manufacture of goods.

Negative effects

- Has led to various cases of pollution of air, land and water leading to high cost of treatment
- Destruction of top soil structure and soil erosion
- Development of hollows/open pits which are breeding places for pests and diseases
- Landslides as a result of mining leading to destruction of property
- Displacement of people in the affected areas leading to disruption of social life.
- Deforestation in some areas where minerals are discovered leading to loss diversity
- Mining has led to lowering of the water table through digging deep pits and hollows.

What steps are being taken to improve the mining sector in Liberia?

- Market research through advertisements to create more market for minerals.
- Importation/recruitment of highly skilled labour from neighbouring countries to solve the problem labour shortage.
- Intensifying of mineral exploration is being done to open up new mining fields.
- Encouragement of foreign investors in order to increase mineral exploration.
- Improving the conditions through strengthening trade unions to advocate for better working conditions.
- Training of local workers to increase to productivity through job training.

2. (a) A sketch map of Gabon showing saw milling centres; Booue, Libreville, port Gentil Equatorial Guinea and Congo Brazzaville, the virgin forests, river Ogooue.
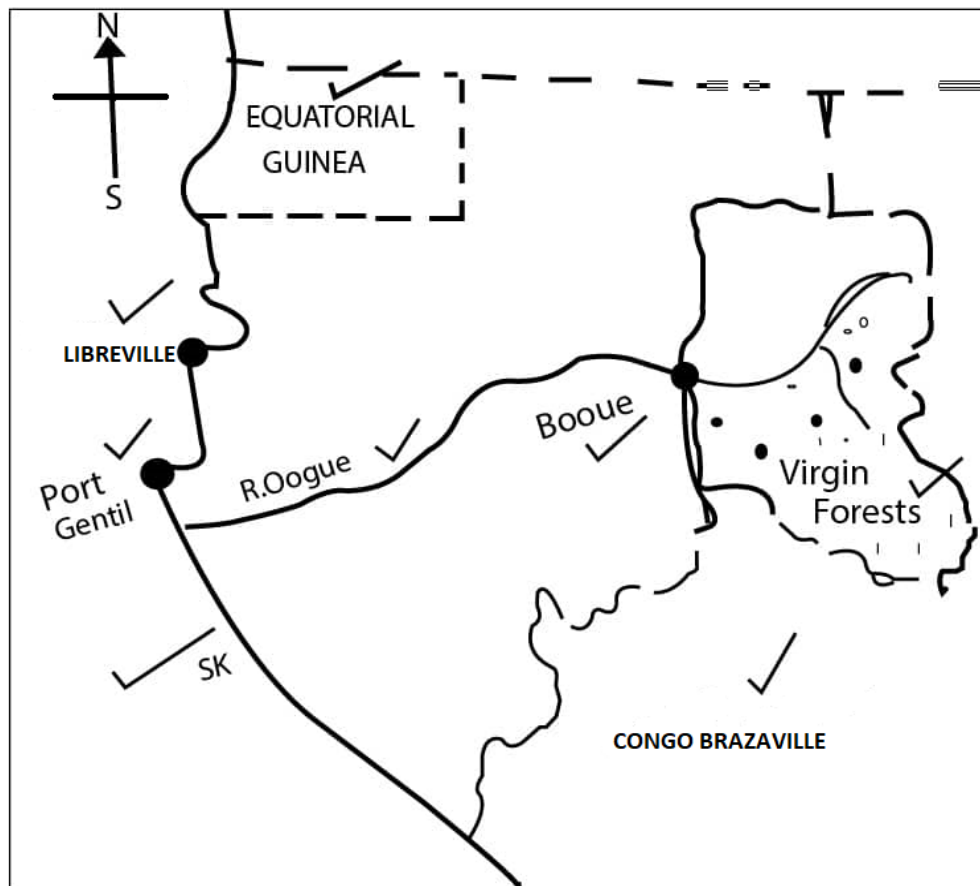
b) Describe the factors which have favoured the development of forestry industry in Gabon

- Presence of heavy rainfall of over 1500mm well distributed throughout the year that favour the growth of luxuriant forests

31

- Presence of hot temperatures between 260c and 30^{0}c facilitate the growth of thick forests
- High humidity levels (80%) in the year facilitate growth of thick forests.
- Existence of large /wide piece of land where trees are grown.
- Presence of many valuable tree species which provides valuable plywood, timber for production and highly needed on international markets.
- Presence of various navigable rivers like Ogooue for transportation of logs of processing centres.
- Presence of deep fertile soils which have supported the growth of various tree species/forests.
- Availability of adequate hydro-electric power supply generated from the rivers which helps to run machines in the saw mills and other factories.
- Availability of large sums of capital from both local and foreign investor to invest in forestry activities.
- Limited economic activities in the area hence focus on forestry activities.
- Availability of improved technology used in the forest sector like using powered saws for feeling trees.
- Availability of skilled labour /highly skilled and specialized manpower especially the French plus local people to work in timber sector.
- Availability of well-developed and improved transport network such as roads connecting the forested areas to the processing centres
- Availability of a large market for the forest products both local and foreign.
- Favourable/supportive government policy towards the forest sector through constructing transport infrastructure like the railway lines connecting lumbering areas and sawmills
- The development of forest-based industries such as at port Gentil, Libreville has added value to forest output and hence provide immediate market.

c) *Explain the importance of the forestry sector to Gabon.*
- It generates government revenue through licenses and taxes imposed on the forest exploitation companies
- Source of foreign exchange to the government through the exportation of forest products used to provide social services
- It has promoted development of urban centres and with associated infrastructures such as roads, schools, banking, and recreation.
- Facilitates development of infrastructures like roads linking forest areas to markets
- Creates many employment opportunities to the people hence enabling them to earn incomes which they use to improve their standards of living.

- It has led to diversification of the economy hence reducing over depending on a few sectors like mining, agriculture.
- Promoted international cooperation with other countries where timber products are exported hence promoting peace and stability
- Provides industrial raw materials hence promoting industrial development.
- Provision/source of medicine/herbal for certain diseases
- Forests provide food and fruits collected from the tropical rain forests
- Forests help in modification of climate through the evapo-transpiration process to form rainfall that supports economic activities such as farming in the surrounding areas.
- Promotes soil conservation since the forests reduce soil erosion frequency and intensity by facilitating infiltration/ percolation of rain water into the soil and therefore reduced runoff.
- Forests act habitat for wild life in form of flora and fauna species hence promoting wild life conservation.

d) ***Outline the factors which have led to high rate of forest destruction in any one African country.***
- Increased demand for the timber leading to increased lumbering activities
- Need for wood fuel for domestic and industrial purposes leading to cutting of many trees.
- Increased demand for forest products for exports hence leading to high deforestation rate.
- Expansion of infrastructures like roads, schools and railways leading to cutting down of trees.
- Increased population leading for forest destruction for settlement.
- Need of land for agricultural purpose through mechanization leads to cutting of trees.
- Advanced technology in wood harvesting leading to extensive clearance of forests
- Urbanization and extension of ports into areas gazetted for forests.
- Pests and diseases that destroy large expanse of forested areas
- Wild fires leading to mass destruction of forests
- Wild animals like elephants that destroy forested areas.

3.
a) *Name the*
   (i) **towns marked**
   ✓ Dakar
   ✓ 2. Port Harcourt
   (ii) **Countries marked;**
   ✓ A. Nigeria
   ✓ B. Senegal

✓ C. Mali
   (iii) **Water body marked.**

✓ 3. Atlantic Ocean
✓ Lake Chad
   (iv) **river marked;**
✓ D. river Niger

(b)(i) ***Name any two tribes practicing nomadic pastoralism apart from the Fulani in the Sahel region of Africa.***

- Berbers
- Nuers
- Dinkas
- Somalis
- Tuaregs

(ii) ***Explain the conditions which have encouraged the practice nomadic pastoralism in any one African country named in (b)(i) above***.

- The search for pastures and water for their animals
- Accidental outbreak of fire in the dry season that cause damage
- To avoid contact with disease animals
- Movement away from the great heat of the north which leads to massive weight loss of animals
- Traditionally the Fulani are cattle keepers which make them keep large herds of animals
- The short savannah grassland that provides natural pasture for the animals to feed on
- The flat relief which allows easy movement of animals
- Limited surface water for animals to drink hence their movement
- The value attached to animals traditionally i.e. source of wealth and prestige
- Dependence on animals as source of livelihood
- Sparse population in the pastoral areas living large piece of land free hence their movement
- Government neglect of pastoral areas with limited economic activities
- Remoteness of the nomadic areas hence providing space for nomadism.

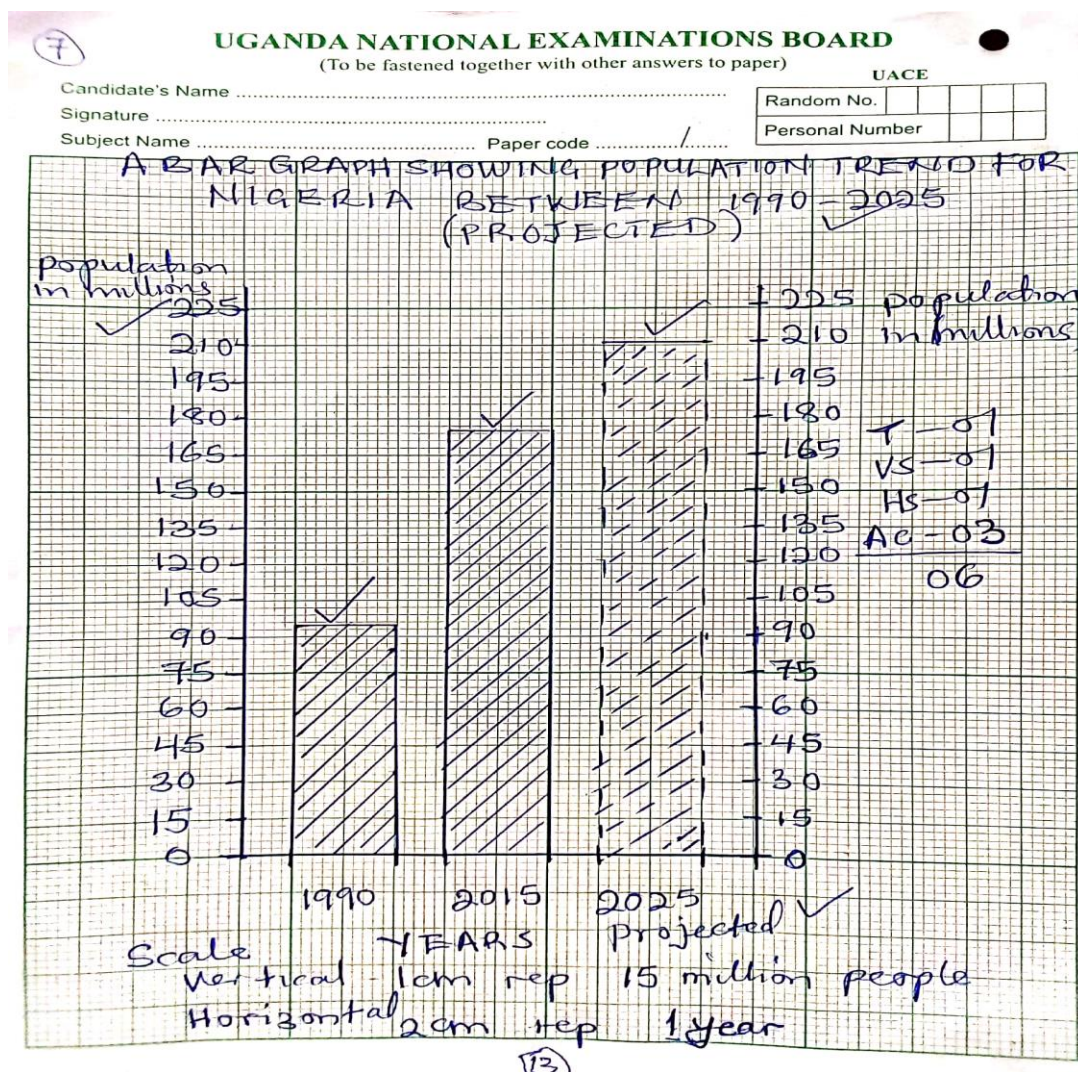c) ***What are the effects of practice of nomadic pastoralism on the physical environment in West Africa?***
- Soil erosion especially on water points which affects agriculture
- Overstocking leading to overgrazing
- Soil compaction due to mass movements of animals

34

- Vegetation destruction as they clear trees for settlement
- Spread of diseases and pests due to constant movements
- It has led to killing of other animals in the cause of movements like lions.
- Leads to practice of bush burning which destroys valuable tree species
- Leads to spread of desert conditions/ desertification due to overgrazing
- A lot of pollution in the region as a result of bush burning dust.

d) *Outline the steps being taken to improve the livestock industry in country marked A.*

- Education and awareness programs are being introduced for nomadic pastoralists to settle down
- Introduction of ranches/paddocking in order to improve on the quality of animals
- Encouraging pastoralists to settle in specific places through introduction of social services like hospitals
- Provision of water is being done by 3constructing valleys dam, boreholes, ponds to solve the problem of water shortage
- Provision of organized markets for the animal products is also being encouraged
- Control of pests and diseases is being done through quarantines to minimize of livestock diseases.
- Selective breeding/artificial insemination/cross breeding is being encouraged
- Agricultural extension services to help change the farmers attitude
- Formation of cooperative societies is being done for easy marketing of products
- Setting up of processing industries to process animal products/ value addition
- Introduction of exotic breeds/ species of pasture with a higher carrying capacity of productivity
- Use of supplementary feeds to supplement the poor pastures
- Setting up demonstration farms to teach farmers better methods of livestock farming

4.

UGANDA NATIONAL EXAMINATIONS BOARD
(To be fastened together with other answers to paper)
UACE
Candidate's Name ....
Signature ....
Subject Name .... Paper code ..../........
Random No.
Personal Number

A BAR GRAPH SHOWING POPULATION TREND FOR NIGERIA BETWEEN 1990 - 2025 (PROJECTED)

population in millions

T - 01
VS - 01
HS - 01
Ac - 03
06

1990   2015   2025 Projected

YEARS

Scale
Vertical 1cm rep 15 million people
Horizontal 2cm rep 1 year

(a) (i) **Percentage population change between 1990 and 2015 for the selected countries shown in the table.**

New - Old x 100
   Old

Zambia

(13,800,000 - 8,100,0000)   x100
     8,100,000

= 70.3%

Sudan

(45.6 – 25.9)   x100
     25.9

= 76.0%

36

Nigeria

$\frac{(175.6 - 94.5)}{94.5} \times 100$

= 85.8%

Algeria

$\frac{(38.0 - 25.3)}{25.3} \times 100$

= 50.1%

Cote d'viore

$\frac{(22.3 - 12.8)}{12.8} \times 100$

= 74.2%

(ii) **Identify the country with the**

-Highest   -   Nigeria
-Lowest   -   Algeria

(b) The factors that led to a large population size in Nigeria.
- High birth rates in Nigeria leading to production of many children per each woman.
- Reduced death rates due to improvement in medical services.
- Early marriages among the youth leading to long production period through which a number of children a born.
- High fertility rate among women and men leading to more children born.
- Polygamous marriages leading to more children per man.
- Some religious beliefs which do not favour family planning control hence leading to bearing of many children.
- Improved nutrition/food production to feed the increasing population.
- Increased incomes that improved the living standards of people enabling people to afford better health services.

(c) Explain the effects of rapid population increase on the physical environment.

- Shortage of land leading to land fragmentation thus reduced food production.
- Land exhaustion/degradation due to over exploitation by large population.
- Deforestation leading to reduced rainfall, soil erosion.
- It results into various cases of pollution due to poor disposal of domestic and urban wastes.

5. (a) **A sketch map of the Arab of Republic of Egypt showing industrial centres; port Alexandria, Cairo and El-Kharga, L. Nasser and the Mediterranean Sea, river Nile and Nile** delta.
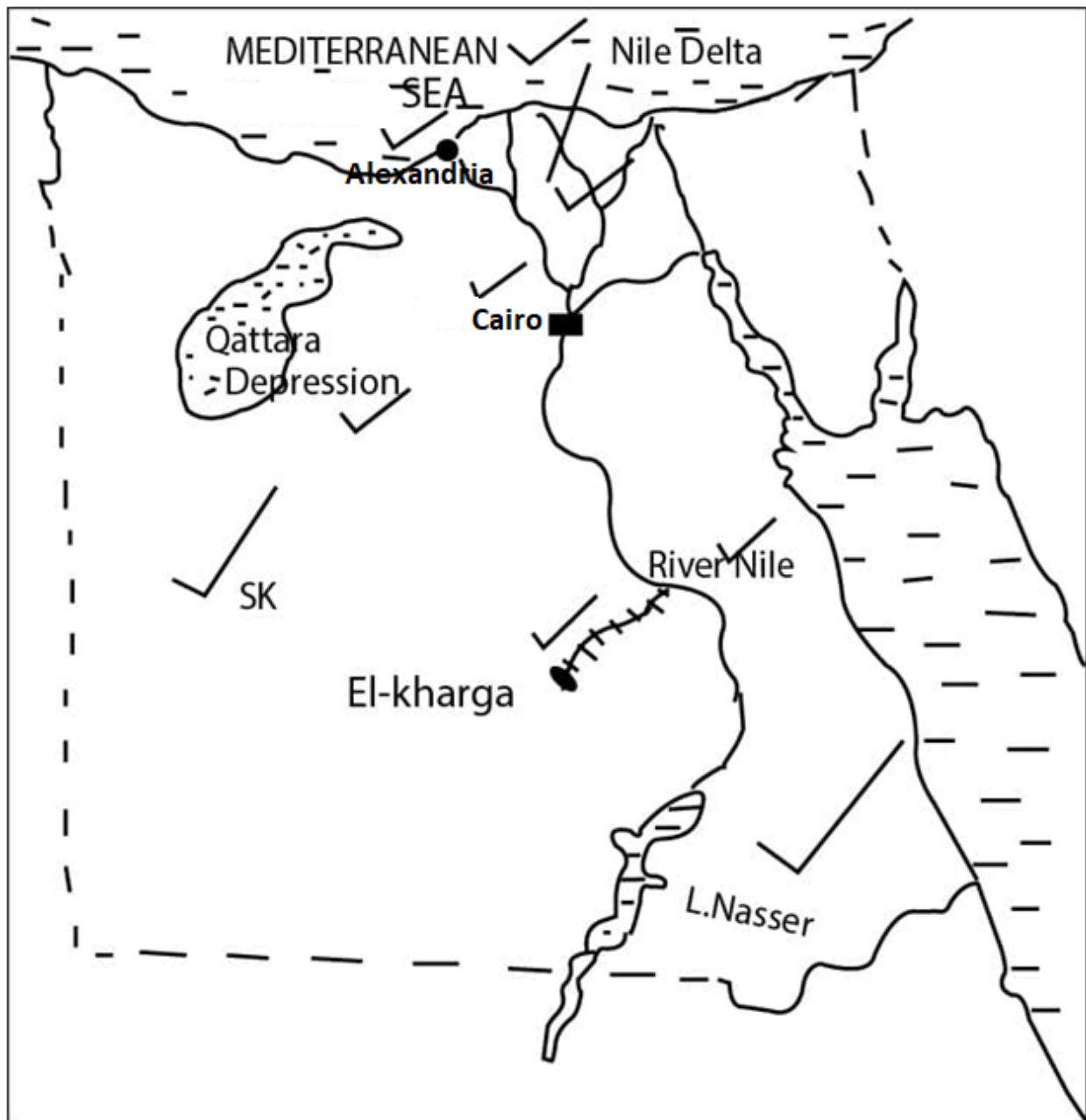
b) *Using examples, describe the conditions which have influenced the location of industrial centres in the Arab republic of Egypt.*

- Abundant raw materials i.e. oil from the red sea, agricultural produce along the Nile valley for industrial production.
- Strategic location to the Mediterranean Sea, red sea, Saudi Arabia for selling of industrial goods.
- Supportive government policy i.e. giving tax holidays to foreigners from japan, china, Italy and France.
- Large water bodies i.e. river Nile that provide water for cooling of machines
- Relatively flat land i.e. in the Nile delta for industrial establishment
- Presence of well-developed transport network in cities like Cairo, Suez Canal etc. for transportation of industrial goods
- Ready market in towns like Cairo, Aswan, and other countries like South Africa where industrial goods are sold.

c) *What are the effects of industrial establishment on the environment in the Arab republic of Egypt.*
Positive effects

- It has led to international relationships with other countries through exportation of industrial goods hence promoting peace.
- It has promoted infrastructural development i.e. roads that link industrial centres to market.
- Earned foreign exchange through exportation of industrial goods to other countries and the money is used to provide social services.
- Promoted diversification of the economy with industrialization alongside mining, fishing hence reducing over reliance on other sectors.
- It has provided revenue to the government through selling of industrial goods and the money is used to provide social services.
- Source of many employment opportunities to the people working in the industries such as engineers hence improving on standard of living

Negative effects

- Development of slums due to poor housing conditions leading to poor sanitation.
- Over crowding leading to easy spread of diseases.
- Deforestation in order to create room for industrial establishment leading to loss of biodiversity.
- Rapid spread of diseases especially water borne diseases leading to high cost of treatment

- Shortage of land due to competing land uses in industrial areas hence making land expensive.
- Over exploitation of mineral resources to provide raw material leading to depletion.
- Traffic congestion leading to accidents and delays on the roads.

d) **Outline the changes are being introduced by the government of Arab republic of Egypt to develop industrial sector.**

- Training of skilled labour i.e. engineers so as to get skilled labour/ Automation.
- Formation of regional trade blocks to increase market.
- Importation of labour from other countries to the solver the problem of labour shortage.
- Development of various sources of energy to solve scarcity of energy.
- Importation of modern technology so as to increase efficiency.
- Attraction of foreign investors to invest more in industrial development.
- Protection of infant industries by burning or over taxing imported goods.
- Market research is being done to manufacture high quality goods that compete on world markets.
- Importation of raw materials from other countries to supplement those internally produced e.g. minerals.

6. (a) *Name any two*

(i) type of marine fish

- tuna
- mackerel
- oysters
- hake
- sardines
- cod
- prawns
- shrimps
- herrings

(ii) major fish producing countries

- South Africa
- Angola
- Nigeria
- Namibia
- Ghana

- Senegal
- Morocco
- Algeria
- Egypt

(b) Describe any one

(i) Deep sea fishing method.

Purse seining. This method is also used to catch <u>pelagic fish</u> living near the water surface. A purse seine net is laid out in a <u>circular form</u> below the water to trap a shoal of fish. The fish shoals are located using an <u>eco-sounder</u>. At the bottom of the net a ring exists through which <u>a rope attached to a small boat</u> pass. The small boat is used to lay the net, which net is suspended by <u>floats at the top and weights at the bottom</u>. The net has a close mesh where fish are caught by gills. After the circle has been made, <u>the rope is pulled to close the bottom</u> of the net thereby <u>engulfing/ trapping the fish</u>. The net is lifted onto the boat/ seiner.

**Illustration of purse seining.**
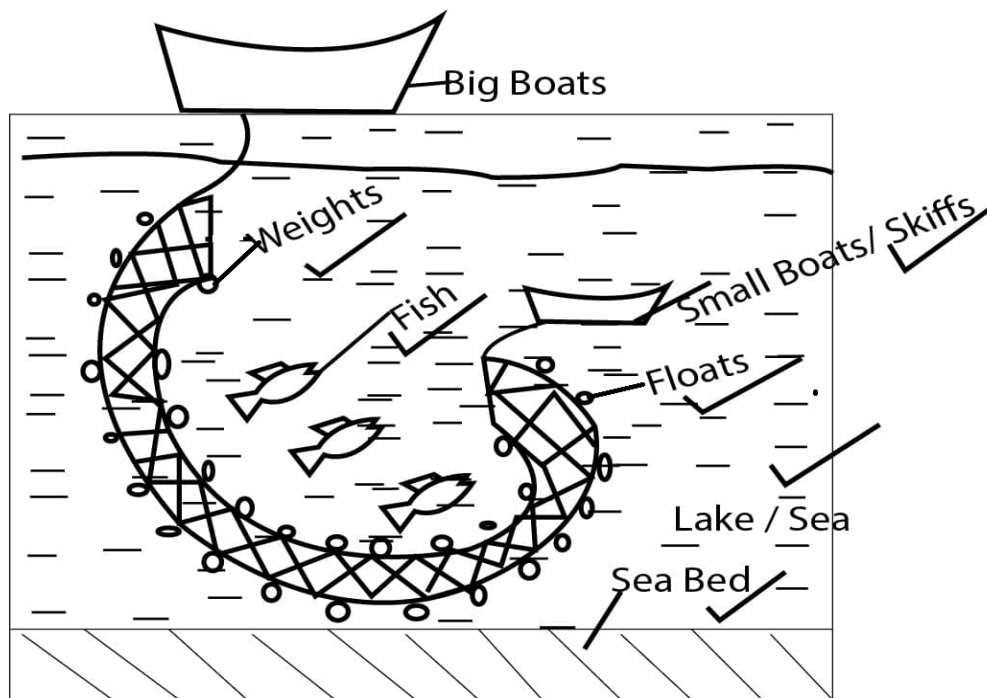
Long lining. This method is used to catch <u>demersal fish</u> found in deep water. It involves the use of a long <u>main line</u> with attached <u>drop lines</u> which have <u>hooks with baits</u>. The main line / main rope can stretch for several kilometers with about 200 drop lines. The fish are caught <u>as they try to eat the baits</u>. When enough fish has been caught, the line is pulled out of water onto the ship and fish removed for processing.

Illustration of the long lining method
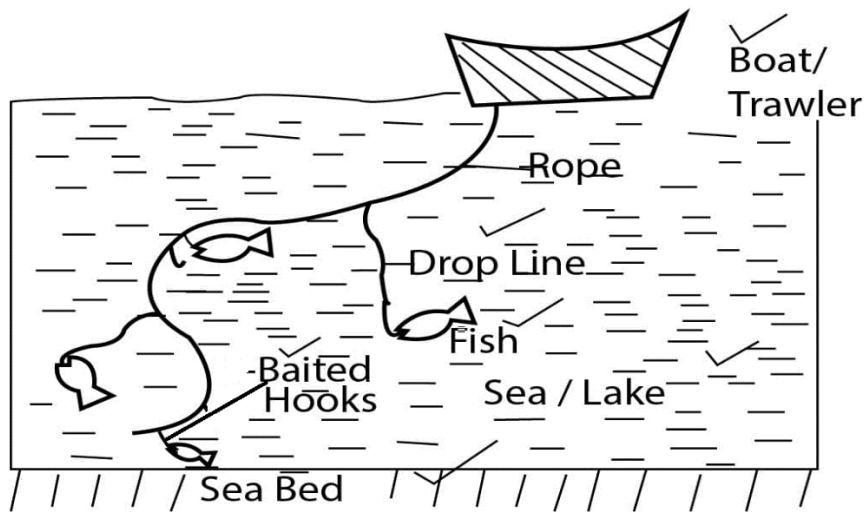
Trawling. This method is used to catch <u>demersal fish</u> living in deep waters. A <u>cone-shaped net</u> is dragged behind a ship/ boat called a trawler. A trawl net is a bag-shaped net whose <u>mouth is kept open by otter boards</u> (either wooden or metal) and has weights at the bottom and <u>a slim cod end</u>. Any fish that enters the net is <u>trapped at the cod end</u> and after the trawl net is pulled out of water and emptied onto the ship for processing. The process is repeated.

Illustration of trawling method
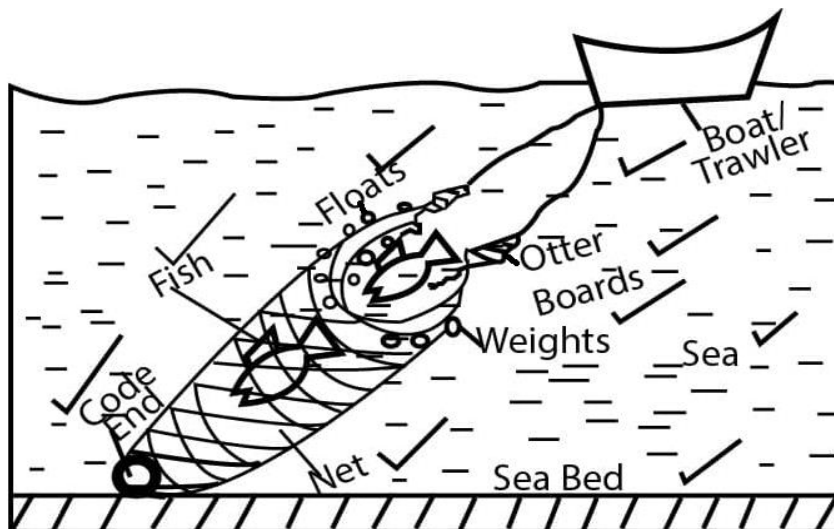
i.   ***Fish preservation method.***

➢ **Smoking (most common);** here fish is cut open and cleaned, then put on a wire mash platform or over a network of sticks and fire is lit in a kaolin beneath to smoke fish under regulated heat.

42

- ➤ **Sun drying;** here fish is cut and cleaned or just cleaned and then put on a raised platform / carpets under the sun to dry. Sometimes the dried fish is turned onto floor.
- ➤ **Salting;** here fish is split open and cleaned, then salt is applied in the openings and finally exposed to direct sunshine.
- ➤ **Frying;** here fish is split open and cleaned (prepared) and then dipped in boiling edible cooking oil.
- ➤ **Cooking;** here fish is split open and cleaned (prepared) and then placed into boiling water with ingredients.
- ➤ **Refrigeration/ freezing (icing);** here fish caught is put in containers with ice blocks or refrigerated containers / trucks below 0°C.
- ➤ **Canning/ tinning;** here fish is split, cleaned, then prepared / chopped into fish fillets and then packed in cans / tins and kept in freezers for export mainly.

c) **Giving specific examples, explain the problems faced by fishing industry in Africa**.
- Smooth coastline such as south west, North West African coast limit development of landing sites and breeding places for fish.
- Limited commercially valuable fish species such as halibut, herrings compared to Europe and America.
- Prolonged drought, hot temperatures, floods, from Eli-Nino have changed water levels for example on Lake Chad hence disrupting fishing activities.
- Indiscriminative fishing leads to over fishing and depletion of valuable fish species e.g. on the Moroccan coast.
- Predators such as scavenger birds on the coast of Angola, Namibia attack fishermen and eat fish.

d) *Physical factors that led to the development of fishing industry in Africa.*
- Presence of large fishing ground rich in fisheries resources.
- Extensive continental shelf where a variety of fish is caught and allows the growth of planktons.
- Presence of numerous rivers used for fishing.
- Existence of valuable commercial fish species that are highly demanded and marketable
- Existence of abundant planktons for fish to feed on.
- Presence of smooth ocean floor which allows the use modern fishing methods.
- Presence of indented coastline providing deep natural harbours for port development.
- The meeting of the warm and cold ocean currents leading to upwelling of water hence ideal conditions for fishing.

7. (a) *Define the term vegetation with reference to Africa.*

- Natural vegetation refers to any plant cover which has grown without any intervention from mankind.
- In Africa natural vegetation includes savannah vegetation, equatorial rainforests, Mediterranean vegetation, semi desert vegetation among others.
- Equatorial rainforests with a variety of hard wood, broad leaves, dense canopies etc. in areas of Congo basin and Gabon (west Africa)
- Savanah vegetation is wide spread and divided into savannah grassland, woodland and dry bush in Zambia, Angola etc. It is characterized by trees that shade off their leaves in the dry season, trees that are generally umbrella shaped.
- Mediterranean vegetation is found in northern parts of Africa in Morocco, Tunisia, Algeria, South Africa around Cape Town. It is characterized by sweet smell(scent) at night to attract pollination agents, scrubs/trees are widely spaced to reduce competition for water.
- Natural vegetation has different tree species i.e. mahogany, mvule, musizi, boabab, rosemary, eucalyptus, pine etc.

(b) *Draw a sketch map of Africa showing savanna, equatorial and Mediterranean vegetation.*
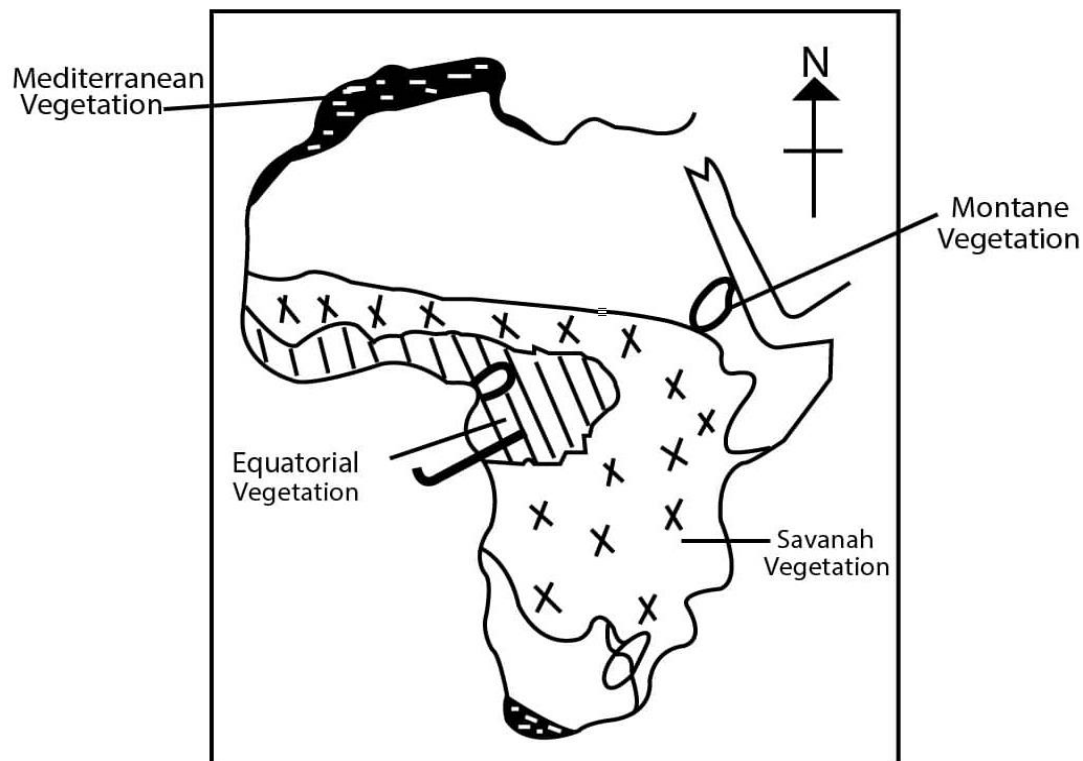
(c) Explain the conditions which have led to the growth of vegetation in Africa.

- Soils which are fertile facilitate the growth of luxuriant vegetation.
- Heavy rainfall amounts enable the growth of equatorial vegetation.
- Hot temperatures encourage faster growth of different vegetation i.e. equatorial vegetation.
- Altitude enables the growth of montane vegetation on the higher altitude and savanna on the lower altitude due to differences temperature.
- Human activities like bush burning, deforestation leads to existence of secondary vegetation i.e. modified equatorial.
- Government policy which is favourable like creation of forest reserves leads to existence equatorial vegetation.

(d) Outline the benefits of the natural vegetation to the people of Africa.

- Source of wood fuel for domestic and industrial use
- Helps in the modification of climate leading to heavy rainfall
- Natural vegetation helps in soil conservation hence enabling high yields.
- Used as medicine/herbal to treat minor diseases.
- Source of food/nuts/fruits i.e. jack fruits, mangoes leading to a balanced diet.
- Vegetation provide recreational grounds for relaxation of minds.
- Promote educational/ research in schools hence equipping people with knowledge.
- Catchment area for many rivers hence leading to reliable supply of water for domestic use.
- Natural vegetation helps in the clearing of the environment /purification of natural environment.

PART 11: STUDIES IN DEVELOPMENT

REGION1: NORTH AMERICA.

(a) Name the

*(i) **River marked A***
   - ✓ R. Merrimack

*(ii) **old industrial towns marked***
   - ✓ 3. Boston
   - ✓ 4. Bridge port

*(iii)**New industrial town marked***
   - ✓ 5. Manchester

*(iv)**waterbodies marked***
   - ✓ Atlantic Ocean

✓ 2 Cape cod bay
  (v) **states marked**
        ✓ C. Maine
        ✓ D. Rhode Island

b) ***Factors for the shift of industries from the Old to New industrial region.***
- Decline in the cotton product which was the main raw material for the textile industry.
- Competition from the new industries for highly skilled labour in the new industrial belt using raw material saving technology.
- Introduction of new energy sources in the new industrial belt after the depletion of coal.
- Shift of market from old industrial belt due to increased population in the new industrial belt.
- High labour costs in the old industrial region hence increased costs of production.
- Better working conditions in the new industrial belt led to migration of labour.
- The need to have new industries since the traditional ones had been phased out.
- Industrial buildings had become too old and so they had to be abandoned.
- Exhaustion of industrial raw materials such as forests for the ship building and saw mills.
- Old outdated technology in the old industrial belt was out competed by advanced technology in the new industrial belt.

c) ***Benefits of industries to the states of New England.***

- Diversification of economy reducing over dependence on a few other sector of the economy.
- Provision of many employment opportunities to the population hence earning income to the people leading to improved standards of living.
- Promotion of international relationships through concessions given to foreigners hence promoting unity.
- Earning of foreign exchange from exportation of industrial products which money is used to develop infrastructures like roads
- Earning of revenue to the government from taxes imposed on industrial goods which money is used to develop infrastructures like roads.
- Led to development of infrastructures like roads, railways, water transport connecting to industrial centres.
- It has led to growth of towns and industrial centres like Boston, New Haven with positive effects like employment, provision of social services to the people.

- Source of incomes to people leading to improved standard of living through working in the industries.
- Provision of ready market for minerals, agricultural products hence stimulating the development of other sectors.
- Acquisition of skills by workers through in-service training.

d) ***Environmental problems which have resulted from the establishment of industries in New England.***
- Loss of vegetation cover in favour of industrial construction leading to loss of biodiversity.
- Accumulation of greenhouse gases leading to global warming.
- Pollution of land, air, water by industrial wastes causing health related problems.
- High costs of water purification for domestic and industrial use.
- Poor visibility due to smog hence causing accidents.
- Migration of labour leading to disruption of the social set up of people.
- Overcrowding leading to easy spread of diseases and poor sanitation.
- Exhaustion of raw materials such as minerals leading to closure of some minerals.
- Shortage of land due to competing land uses in industrial areas.
- Over exploitation of mineral resources to provide raw material leading to depletion.
- Traffic congestion leading to accidents and delays on the roads.

8. *Study the table 11 below showing the climate of Calgary on the Canadian prairies and answer the questions that follow.*

Table 11: Calgary-Canada- Altitude 1048m

Months	J	F	M	A	M	J	J	A	S	O	N	D
Temp ^{o}c	-8.0	-7.4	-2.7	3.1	9.0	13.2	16.8	15.8	10.6	3.8	-3.0	-8.1
Rainfall (mm)	22	20	24	34	60	90	70	60	40	25	20	19

Source: Climate – Data.org (Calgary-Canadian)

a) *Draw a suitable graph to show the information given in the table.*

(To be fastened together with other answers to paper)   UACE

Candidate's Name ....

Signature ....

Subject Name ....   Paper code ....

| Random No. | | | | |
| Personal Number | | | | |

9(a)

A BAR-LINE GRAPH SHOWING THE CLIMATE OF CALGARY ON THE CANADIAN PRAIRIES
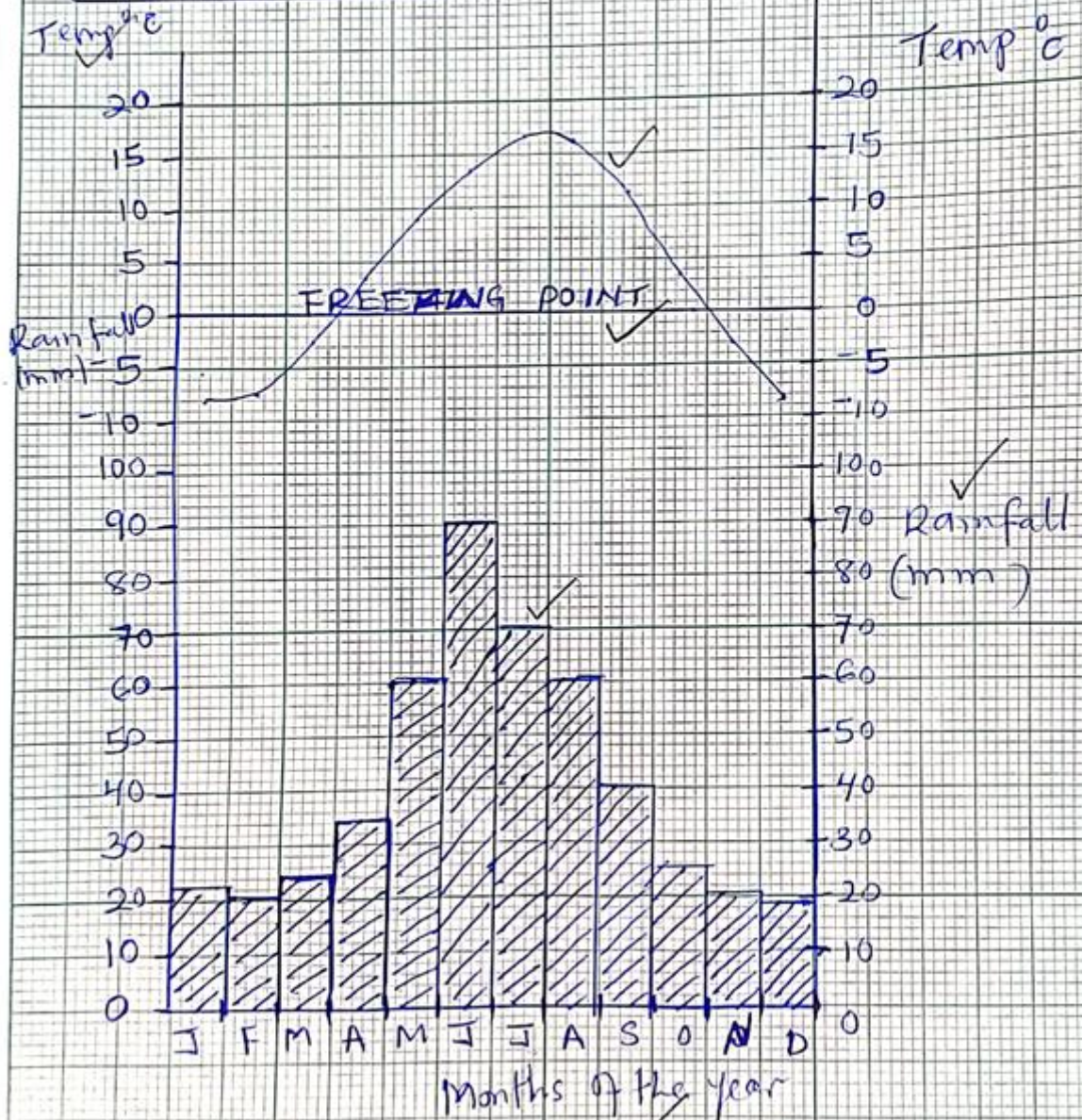
b) *Characteristics of the climate of Calgary.*

- The mean annual rainfall is 484mm which is <u>low.</u>
- The annual temperature range is 25.2 $^{\circ}$c which is <u>very large</u>.
- The <u>coolest</u> month is December with -8.4^{0}c.
- The <u>hottest</u> month is July with 16.8^{0}c
- The <u>driest</u> month for the station is December with 19mm.
- The <u>wettest</u> month for the station is June with 90mm.
- A <u>long</u> a winter season from November to march.
- <u>Low</u> atmospheric pressure during summer season from June to august.
- Relatively <u>high</u> humidity during summer season from June to august.

c) (i) *identify the*

   -**Coolest**   December with -8.4^{0}c

   -**wettest**   June with 90mm

  (ii) *Calculate the*

       -mean annual rainfall

$$= \frac{\text{Total rainfall received}}{1}$$

$$= \frac{22+20+24+34+60+90+70+60+40+25+20+19}{1}$$

$$= \frac{484}{1}$$

$$= 484mm$$

     -mean annual temperature range for Calgary.

      = hottest month – coolest month

      = 16.8 – -8.4

      = 25.2 $^{\circ}$c

d) *Influence of climate on farmers activities where the station id found*.

   Winter season from November to march has encouraged/enabled the following activities

- Book keeping
- Planning for next year's activities
- Planting of winter wheat
- Preparing machines

Spring season from April- May has encouraged/enabled the following activities

- Ploughing
- Planting/sowing
- Outdoor grazing
- Weeding
- Spraying
- Storing
- Marketing
- Harvesting winter wheat
- Spreading fertilizers

Summer season from June – August has encouraged/enabled the following activities

- Harvesting
- Drying of crops
- Storing
- Marketing
- Outdoor grazing
- Grading
- Packing
- Processing

Autumn season from September – October has encouraged/enabled the following activities

- Harvesting
- Ploughing (dry farming)
- Processing
- Grading
- Packing
- Storing
- Marketing

9. (a) *Draw a sketch map of California and on it, mark and name the*
   (i) any two irrigated areas
   (ii) Sierra Nevada ranges
   (iii)rivers; san Joaquin and Colorado
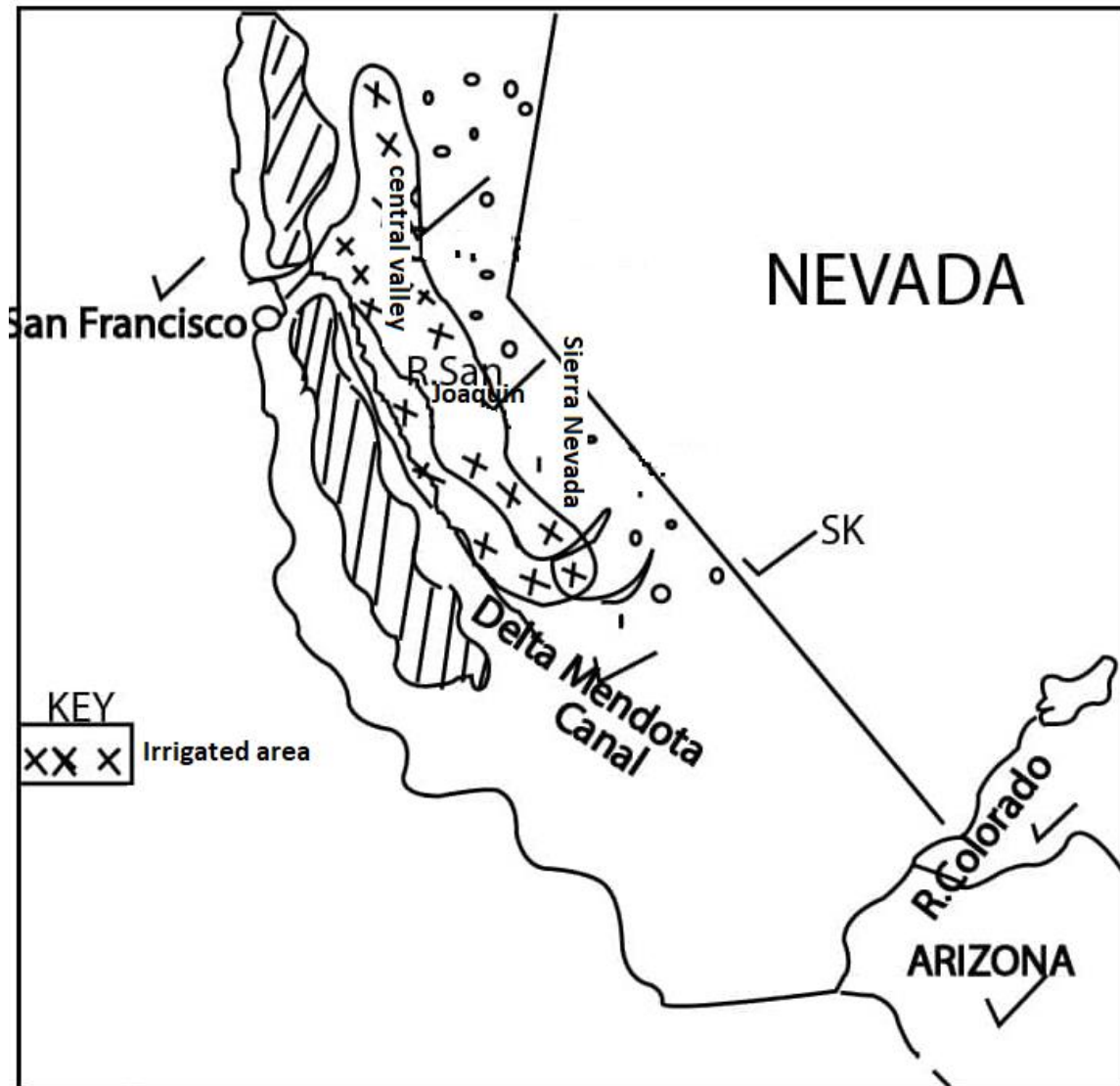   *(iv)delta Mendota canal*
   (v) neighboring state; Arizona
   (vi)san Francisco   (09marks)

50

A sketch map of California showing irrigated areas, Sierra Nevada ranges, river San Joaquin and Colorado, Delta Mendota canal, states Nevada and Arizona and the town of San Francisco.

b) *Giving examples, explain the conditions which have favoured irrigation farming in areas marked in a(i) above.*

- Arid areas e.g. in the central valley with low rainfall totals has encouraged irrigation to promote crop growing.
- Low incidences of pests and diseases e.g. in san Joaquin valley for easy growth of crops.
- Presence of vast piece of land in the central valley for the growth of crops.
- The low-lying and gently sloping areas in central valley which allow the use of machines.
- Presence of numerous rivers like R. Sacramento, R. san Joaquin which constantly supply water for irrigation.

- High level of technology e.g. cloud seeding in the Coachella, central valley, Death Valley to bring artificial rain.
- Well developed transport network by rail, water, roads in san Francisco, Sacramento, san Diego on the Pacific Ocean for the transportation of commodities.
- Presence of large market in cities like Los Angeles, Sacramento, countries like Canada to buy agricultural products like cotton.
- Supportive government policy to extend cotton growing through state federal bureau of reclamation on the central valley.
- Presence of large supply of migrant and skilled labour from Mexico, Philippines to work on the cotton farms.
- Availability of large amounts of capital from Canadian investors, china etc. to invest in the cotton farms.
- The sunny conditions which allows the ripening of cotton and harvesting on the central valley, Death Valley, Coachella valley.
- Improved research which leads to improved cotton production from san Francisco, Sacramento town, baker's field.

c) *Contributions of the agricultural sector to the development of California.*
- Source of employment for the population leading to generation of income.
- It has led to reclamation of formerly arid landscape to increase the arable land waters for irrigation on the plantations
- Flood control through the use of river waters for irrigation on the plantations
- Source of revenue which is used for the development of infrastructure
- Source of raw materials for the industrial sector such as textiles, animal feeds used for industrial development.
- Led to development of infrastructures e.g. roads, railways, canals for the transportation of agricultural products.
- Growth of towns with its related advantages like improved infrastructures, improved health etc.
- Provision of large markets for agro based industries like textiles that provide employment to people.
- Generation of income resulting in improved standard of living.
- Led to diversification of agriculture to create a variety of products.
- Source of foreign exchange from imports to develop local infrastructures.
- Led to development of agro-based industries that process agro based products.

- Has led to international trade leading to international relations with countries that import agricultural products from California.

*d) **Problems facing the agricultural sector in California.***
- Over production leading to losses after harvest.
- Monoculture leading to soil exhaustion calling for use of artificial fertilizers.
- Frost conditions experienced destroy the crops leading to losses.
- Stiff competition for markets with other countries leading to losses.
- Prevalence of pests and diseases which attack and destroy the crops leading to loses.
- Shortage of labour during harvesting periods leading to losses.
- Stiff competition of land with other sectors of the economy leading to reduced output.
- Various cases of pollution like land, air, water due to industrial deposits.
- Price fluctuations on the world markets leading to losses on the part of farmers.
- Soil exhaustion due to over use of fertilizers on the agricultural farmers leading to losses.

REGION 11: RHINELANDS

10. (a) **A sketch map of Switzerland showing ski resorts Zermatt, Davos and St. Moritz, lakes Geneva and Neuchatel, physical regions.**
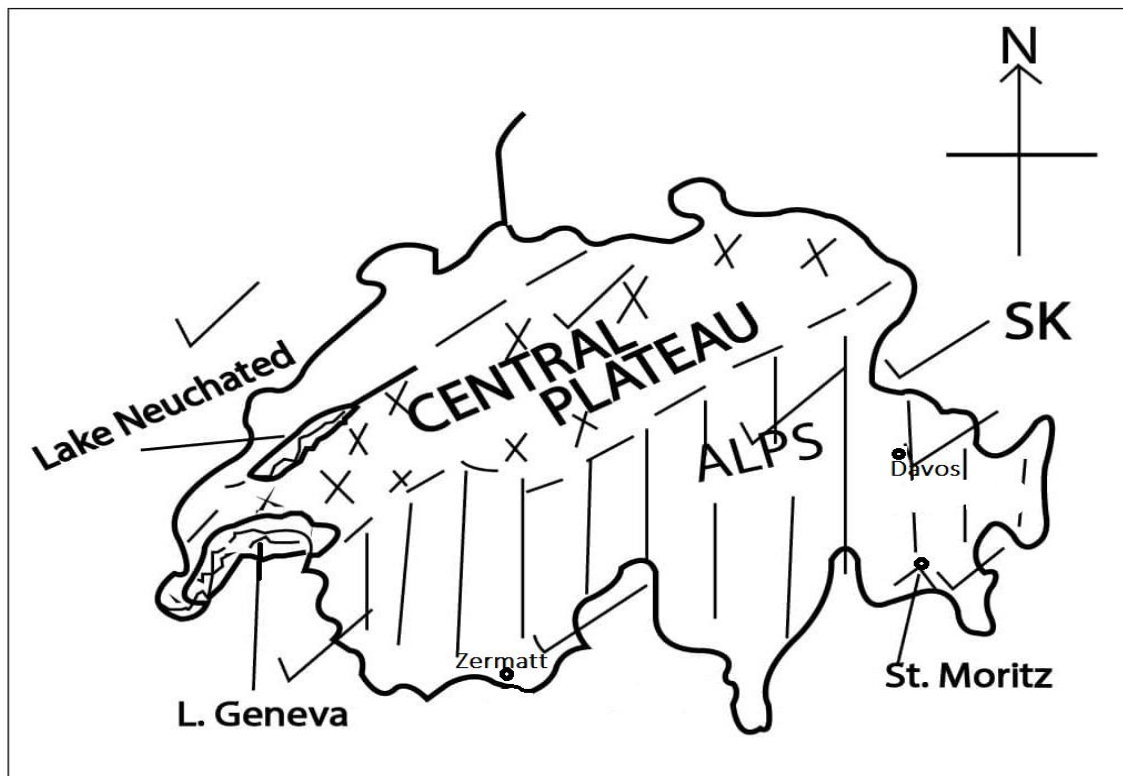
b) (i) *Define the term skiing as used in tourism.*
- Skiing is the use of skis to <u>glide</u> on snow/ A process of moving over snow on skis.

(ii) Tourist activities taking place in Switzerland during winter.
- Ice skating.
- Skiing.
- Watching of snowcapped mountain.

c) ***Conditions which have favoured the development of the tourism sector in Switzerland.***
- Presence of numerous lakes ideal for fishing, swimming and rafting.
- Existence of gently sloping relief and thus easily accessible for the establishment of tourist centres.
- Availability of adequate capital to invest in tourist activities.
- Presence of moderate climatic conditions with relatively less severe winters than the alpine.
- Existence of modern accommodation facilities like hotels, attracting many tourists.
- Relatively political stability which encourages tourists to visit.
- Availability of skilled labour to work in hotels, as tour guides, managers.
- Diversify of many international languages for easy communication.
- Central location of Switzerland which offers easy access from the rich European countries.
- High degree of advertisement through electronic and media print like internet, magazines, brochures and radio to attract tourists.
- Hospitality of the Swiss people who welcome people from different parts of the world.
- Neutrality policy of Switzerland promises friendly relation with many countries hence attracting tourists.
- Efficient banking services that enable tourist to access their money while abroad.
- Supportive government policy of subsidizing tourist related activities.
- Availability of advanced technology e.g. use of cable cars, computers to reach all tourist destinations.
- Availability of organized package tour which make it cheaper for tourists to visit many places.

d) ***Challenges facing the tourism sector in Switzerland***
- Accidents especially during winter sports like skating/mountaineering.
- Avalanches/moving ice which destroys life and property.
- Competition both other European countries as tourist destinations hence reducing the number of tourists in the country.
- Stiff competition for land with other land uses especially in Jura versus agriculture, industry.
- Inadequate labour/stiff competition for labour with other economic activities.

54

- Various cases of pollution and acid rains in areas with industrial development affecting the life of tourists.
- Rugged terrain in the alpine limits movements to some areas.
- Severe cold winters at times discourage tourists especially in the swiss alps.
- Global economic recession has led to recession of glaciers reducing areas for worker sports.

11. (a) **A pie chart showing relative importance of cereal production in Luxembourg in 00s in 2013**

$= \dfrac{7,500}{171,700} \times 360$

$= \mathbf{15.7^0}$

Wheat

$= \dfrac{91,000}{171,700} \times 360$

$= \mathbf{190.7^0}$

Rye

$= \dfrac{5,000}{171,700} \times 360$

$= \mathbf{10.4^0}$

Barley

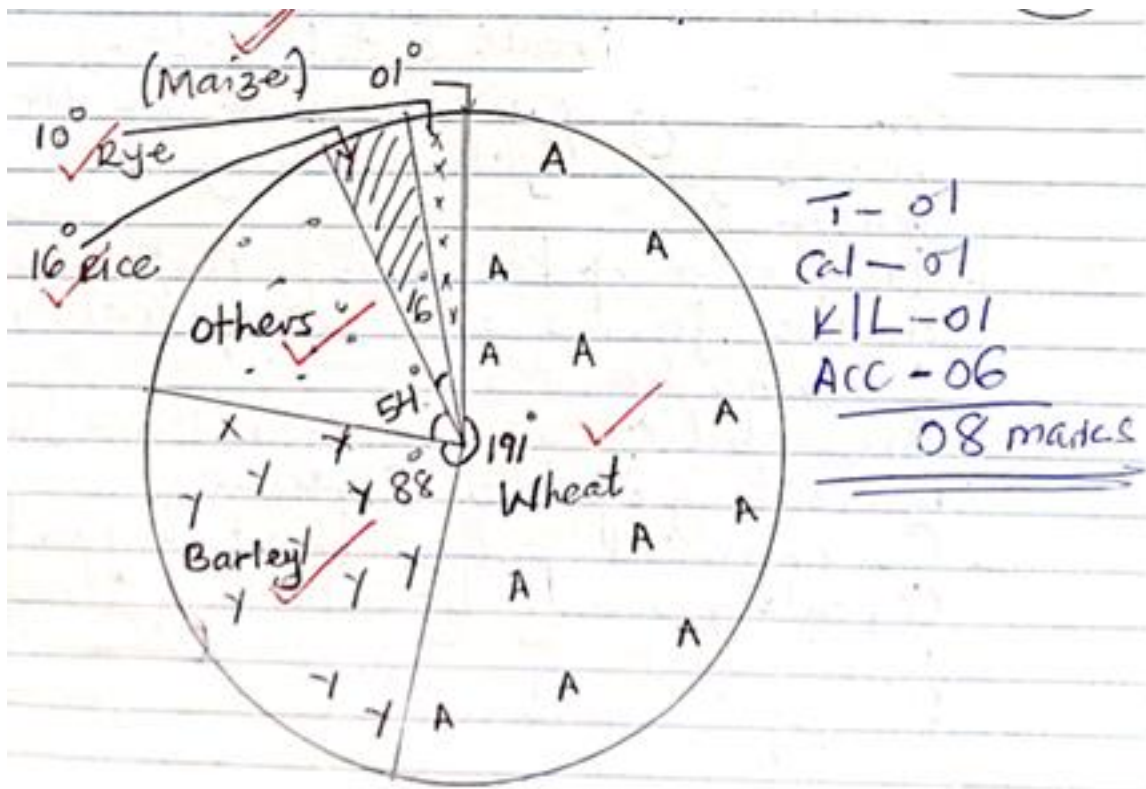$= \dfrac{42,000}{171,700} \times 360$

$= \mathbf{88.0^0}$

Maize

$= \dfrac{200}{171,700} \times 360$

$= \mathbf{0.4^0}$

Others

$= \dfrac{26,000}{171,700} \times 360$

$= \mathbf{54.5^0}$

b) (i) Relative importance of wheat production to the total production in Luxembourg

Wheat is the leading cereal produced in Luxembourg

$$= \frac{190.7}{360} \times 100$$

= **52.9%**

(ii) *Conditions which have favoured cereal production in Luxembourg.*

- Presence of hot temperatures which favours ripening and growth of cereals.
- Presence of extensive land on which the grains are grown on large scale.
- Presence of high level of technology that eases work on the farms e.g. use of tractors, combined tractors.
- Presence of chernozem soils that support growing of a variety of grain crops.
- Availability of large sums of capital to purchase seeds used in grain growing.
- Availability of water from the numerous rivers for irrigation during the dry season.
- Warm summers which support the ripening of cereals and harvesting.
- Availability of cooperatives for timely marketing of cereals.
- Presence of moderate rainfall which also makes grain growing and maturing possible.
- Availability of ready / regular water provided by rivers for irrigation during the dry season.

- The generally flat landscape of the which promotes mechanization (such use of tractors) and also favours the development of infrastructure.
- Presence of abundant cheap and skilled labour to work on the farms from the population such as planting, weeding, harvesting.
- Availability of a large/ ready market for cereals, both domestic and abroad.
- Presence of developed transport facilities in the area, especially the railways and roads which enable the transportation of agricultural products and inputs.
- Increased research to develop better varieties of cereals; which are quick maturing, high yielding and disease resistant.
- Supportive government policy of encouraging cereal growing by extending credit facilities, reducing taxes on machinery used and fertilizers, availing loans for cereal growers, carries out market research.

c) *Benefits of the agricultural sector in Luxembourg.*
- Promotion of infrastructural development especially transport routes (roads and railway) intended for easy movement of agricultural produce and inputs.
- Generation of foreign exchange through the exportation of agricultural products to other countries, which supports the importation of foreign technology and consumer goods.
- Generation of employment opportunities to the people which improves their standards of living.
- Promotion of industrial development by providing raw materials to processing plants and secondary industries.
- Generation of government revenue through taxation on workers' incomes, and hence provision of social services.
- Facilitated diversification of the economy hence avoiding over dependence on a few sectors.
- Strengthened international relations between Luxembourg and other countries which import its agricultural products hence promoting unity.
- Promoted growth of urban centres and associated with various facilities such as recreation, hospitals, and educational facilities.
- Promotion of crop research which develops new varieties of canes, experiments with pests and disease control, sol improvement and fertilizer application techniques.
- Promotion of tourism development which brings in foreign currency to the country.

d) *Steps being taken to improve the agricultural sector in Luxembourg.*
- Mechanization is being adopted to minimize the problem of labour shortage.
- Promotion of on-site processing to reduce post-harvest losses

- Selective breeding is being done to increase productivity in dairy and beef production
- Continued research and development by universities is being done to increase yields
- specialization in the production of high yielding crops to increase production
- Use of green house technology is being taken to produce the crops all year
- Use of chemicals to control pests and diseases is being done.
- Market research is being done/ started to expand the export market foe sugar.
- Use of fertilizers and manure is being done to restore/maintain soil fertility.
- Irrigation is being adopted where rainfall is inadequate.
- Regular patrols being done to control outbreak and spread of fires.
- Contour ploughing is being done to control soil erosion.

12. (a) A line graph showing the trend of agricultural exports from the polders in Netherlands in billions of euros for the period between 2019/2020 to 2023/2024 (projected)

A line graph showing the trend of agricultural exports in Netherlands from the Dutch polders between 2019/2020 to 2023/2024 (projected)

VS 1cm represents 10 billion Euros
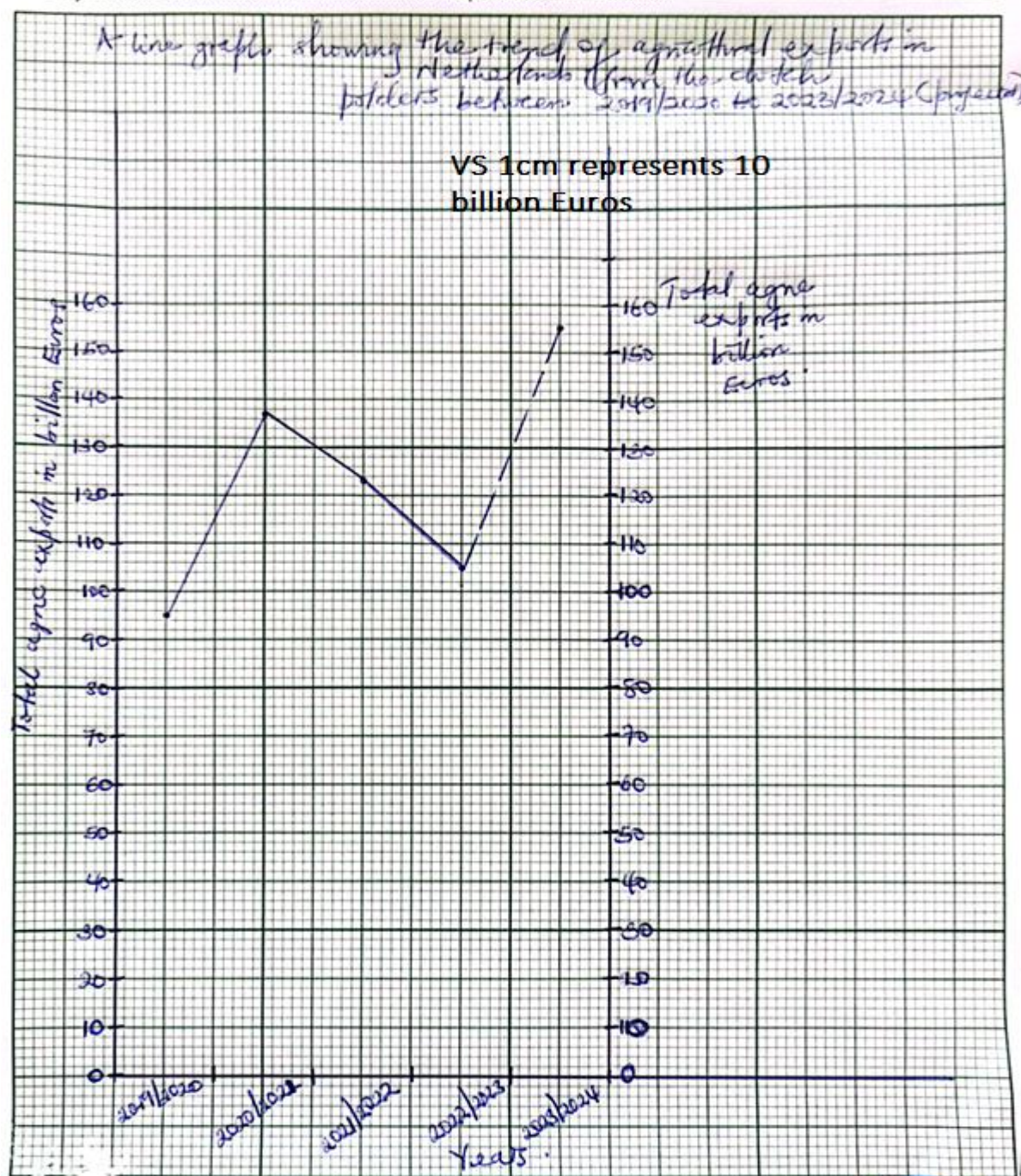
b) (i) **Trend in agricultural exports in Netherlands between 2019/2020 and 2023/2024.**

- From 2019/2020 to 2020/2021 the total agricultural exports increased by 42.8 billion euros.
- From 2020/21 to 2022/23, the total agricultural exports decreased by 34.167 billion euros.
- From 2022/23 to 2023/24, there was rapid increase in total agricultural exports by 50.36 billion euros.
- The exports from the Dutch polders from 2019/2020 to 2023/24 were fluctuating.

(ii) **Polders in Netherlands where the agricultural crops are produced and exported**

- North West polder.
- North East polder.
- East polder.
- South polder.
- South West polder.

b) *How is the polder formed in Netherlands?*

A polder is made through the following steps,

- Survey/exploration is done to establish the nature of soils on the land to be reclaimed
- Ring dykes are constructed around the area to be drained using clay, sand and concrete blocks
- Engine pumps are installed to pump water from the enclosed area
- Canals/ ditches are constructed to drain water out of the enclosed area
- Desalination is done by use of fresh water to flush the salts from the reclaimed land /Planting of reeds//application of lime
- Soils are deep ploughed to prepare it for planting
- Pasture is planted in the fields for a few years
- Polders are later used for agriculture/food production.

Illustration.

(wind mills) for continuous pumping of water from the reclaimed land
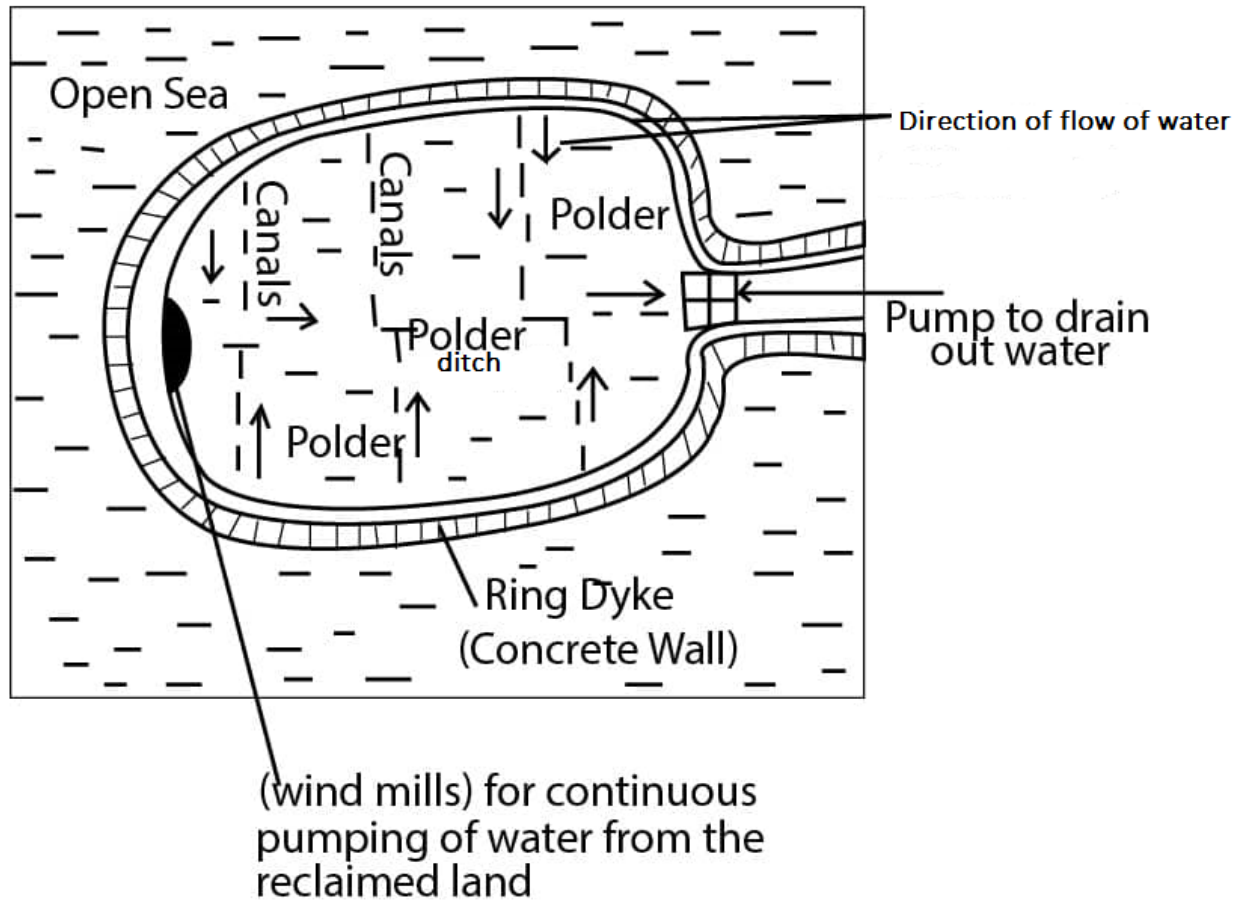
b) *Factors that have favoured the exportation of agricultural products in the Netherlands.*

- There was an increasing demand to provide fresh water for domestic and industrial use as the sea water is salty.
- Availability of high level of technology to support the growth of crops that are later exported
- Presence of strong cooperative for timely marketing of agricultural produce.
- Supportive government policy that supports agriculture by extending subsidizes, capital which promotes exportation.
- Availability of skilled labour from large population used on farms, transportation and exportation of produces.
- Availability of wide market for the agricultural products from European union countries to buy products.
- Availability of efficient transport network and communication systems for delivery agricultural products hence large-scale exportation.

- Presence of numerous ports for loading of agricultural goods ready for exports ie Rotterdam

c) *Uses of the reclaimed land or polders*

- The polders are used for farming i.e. the growing of crops and the rearing of animals
- The polders are used for settlement i.e. the newly created land has been used for building residential houses, schools, hospitals and cities like Lelystad have developed.
- The coastal beaches in some of the polders are used for recreational purposes and this has boosted tourism.
- Some of the polders are used for the development of industries.
- The polders are also used for the development of transport network especially in terms of roads and railway lines.
- Some of the polders have been used for the development of forestry so as to boost lumbering activities.
- Fresh water lakes have been created like Lake Yssel which provides ware for industrial and domestic use.

d) *Problems facing proper use of the polders*

- There is sometimes the outwash of flooding which comes as a result of breaking of the dykes. This problem is managed by the construction and reconstruction of the dykes.
- The soils in the polders are affected by salination this affects the productivity of the soil for crop growing.
- The polder land is infertile due to the fact that it is sandy. The farmers have to spend a lot in fertilizer application.
- There is a problem of shortage of fresh water for domestic use. This has been managed by the creation of man-made lakes like Lake Yssel.
- In most cases there is excessive water logging on the polders as they are at sea level. This is being managed by pumping excess water out of the polders with the help of wind mills.
- There is increase in salinity of the soil due to seepage of the salty water, which reduces the productivity of the land. Fertilizers are used all the time to increase the fertility of the soil.
- There is a problem of pollution as a result of many industries here. This is managed by encouraging proper ways of waste disposal and recycling the waste.
- There is a problem high land rent for the polder land due to high costs of reclaiming the land.
- There is a problem of silting of the canals in the polders. This is being managed by dredging of the canals periodically.
- There are problems of pests and diseases for the crops grown on the polders. This is managed by spraying with chemicals.
-

13. (a) **A sketch map showing the location Beijing (Peking) city and surroundings the great canal, the great wall of china, river Huang Ho and Hai he , the gulf of Bo Hai (Po-hai), cities; Tianjin and Beijing.**
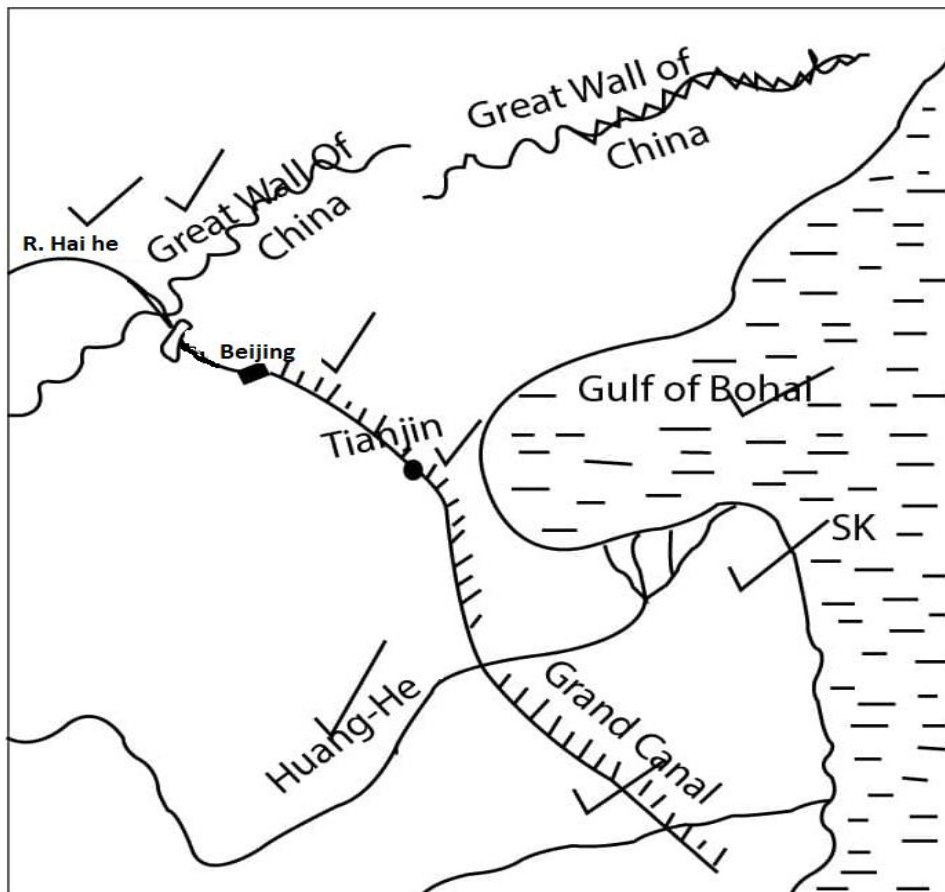
b) *Factors that led to the development of Beijing as an urban centre.*

- Nearness to the east coast of china for easy access to the international routes
- Presence of large capital from rich investors to invest in the construction of high-rise buildings (sky scrapers).
- Availability of skilled labour to construct urban infrastructure
- Existence of extensive land for the development of urban centres
- Presence of large population leading to construction of infrastructures
- A rich productive hinterland and industrial areas where raw materials are got from
- Stable power supply for domestic and industrial use
- Well-developed transport and communication system like railways, roads, air, water that ease transport.

- Presence of fresh water for industrial and domestic use from yellow river
- Supportive government policy of developing Beijing as a capital city through funding infrastructure development.
- Gentle relief of Beijing that makes it easy to construct sky scrapers /high rise buildings

c) *Importance of Beijing to the people of china.*

- Created many employment opportunities leading to improved standard of living.
- Provided revenue to the government through taxation of different sectors
- It has led to diversification of the economy from agriculture, mining hence reducing over reliance on other sectors.
- Has led to infrastructural developments like fly overs, railways used in the development.
- Provided foreign exchange through exportation of industrial goods from Beijing.
- Beijing is source of income to the people through working in the different sectors in the city
- Provision of market for the sectors like agriculture, industrialization leading improved standard of living.
- Promotion of tourism leading to increased foreign exchange.
- Has led to international cooperation through trade in the manufactured goods and raw materials.

d) *Steps taken to solve the problems facing Beijing city*.

- Containerization to quicken loading and off-loading of goods.
- Time tabling of ships to reduce delays on the grand canal.
- Treatment of industrial wastes before disposal to solve the problem of pollution.
- Carrying out anti-pollution laws/Acts like clear air law to reduce the pollution.
- Construction of sky scrapers to ease on land shortage.
- Putting in place stringent migration laws to curb the problem of immigrants.
- Government policy of expanding Beijing as the capital city hence allowing in more people to settle in.
- Construction of underground railway systems to decongest Beijing.

14. (a) *What is an agricultural commune?*

An agricultural commune is a well-organized system of farming where farmers are organized into families to form production teams which turn to form production brigades.

b) (i) *Agricultural communes in China include.*
- Red light commune.
- Chamshan people's commune.
- Yangtan commune.
- Twan ting people's commune.
- Honan commune.
- West china commune.
- Danzhai commune

(ii) *Features of agricultural communes in China.*
- Agricultural communes are varying sizes depending on the available land
- The population size has an influence on activities a commune will have
- They are state owned and controlled.
- Communes are collectively organized.
- Communes are organized/ structured.
- The production, marketing and consumption patterns on the commune are centrally organized.
- Communes provide social services to members such as schools, health facilities, banks, roads.
- There is the use of scientific methods of production which include use of machinery, fertilizers, and herbicides.
- Training of workers to use modern machines.
- Small plots are allocated to individual farmers for growing vegetables and other land uses.
- Procurement and distribution of agro-based inputs are responsibility of the state.
- There is a lot of research carried out to increase production on the communes.
- There is diversified agricultural and industrial activities on the communes.

c) *Organization of agricultural communes in China.*
- 5 families make up one production team.
- 10 production teams make up one brigade.
- Each commune is expected to produce one commodity in a given period of time in specific quantities.
- Leadership is periodically elected to organize the communes' daily activities.

65

- Individuals are expected to work for six days in a week.
- Workers are paid wages depending on the profits occurring to a commune.

d) Outline the

   (i)   **the problems faced by farmers on the agricultural communes in China.**
- There is no independence in decision making which affects creativity and innovation.
- There is a lot of red tape/ bureaucracy in the farm operations.
- There are high levels of crop failure.
- Poor planning leading to misallocation of resources like land, labour.
- Hostile attitude of the people due to the harsh working environment.
- No individual land ownership leading to initiative to invest in land.
- Pests and diseases leading to losses.
- Soil exhaustion leading to low output.

   (ii)   **What changes have been taken to improve communal farming in china?**

- Introduction of new crops through research has been introduced like modified sugar beet.
- Spraying of pests and diseases has been taken to control pests and diseases.
- Construction of embankments/artificial levees to control flooding.
- Putting in place anti- pollution to control pollution on the communes.
- Application of fertilizers/use of organic manure to improve soil fertility.
- Extension of credit/loan facilities has been taken to increase capital.
- Establishment of agro based and other light industries to diversify the economy.
- Establishment of demonstration farms to increase efficiency.
- Improved irrigation through use of underground irrigation channels.

15.

(a) Name the

   (i) **rainfall regions marked**
      1. low rainfall
      2. heavy rainfall
      3. moderate rainfall

   (ii) **latitude marked**
      4. tropic of cancer

   (iii) **cities marked**
      A. Urumqi
      B. Haikou

(iv) **country marked**

    C. Mongolia

(v) **water body marked**

    X. South China Sea

(b) *Factors which have influenced rainfall distribution in China*.

- Migration of the monsoon winds across china, hence difference in the rain seasons between the northern and southern china.
- Positive precipitation anomalies in post El-Nino summers hence more rainfall in East china
- The prevailing winds i.e. on shore south east trade winds bring a lot of rainfall to the coastal area in may- October
- Location in relation to the coast i.e. areas located adjacent/near to the China sea such as South Eastern China have heavy rainfall while areas Located in the interior of China like Xinjiang and Qinghai very far from the rain bearing winds at the coast receive low and unreliable rainfall.
- Influence of ocean currents whereby; the warm Kuro-Siwo current during summer leads to very heavy rainfall.
- Latitudinal location whereby: places located near the tropic of cancer have an effect of the overhead sun that leads to hot temperature and heavy rainfall while places away from the tropic of cancer experience dry conditions with low and unreliable rainfall.
- Influence of vegetation cover; dense vegetation cover in the north of Hong Kong, Yangtze delta and Huang Ho delta lead to formation of heavy rainfall while limited. Vegetation cover in the Tengger, Ordos desert, inner Mongolia and Xinjiang region leads to low and unreliable rainfall.
- Altitudinal Location whereby; areas that are low-lying like at the coast experience hot temperature and low pressure while the mountainous areas in the Tibetan plateau experience cold temperature and high pressure because of high elevation.
- Rain shadow effect whereby; areas on the leeward side of the Himalayas like Xinjiang province and Qinghai have low rain fall while those on the windward side like Guangdong and Guangxi provinces receive heavy rainfall.

(c) *Land use activities taking place in region marked 2.*
- Large scale arable i.e. growing of wheat, rice etc.
- Existence basin irrigation due to availability of abundant water sources.
- Large scale tourism due to abundant flora and fauna.
- Extensive industrial development due to abundant agricultural products.
- Dense settlements due to relatively flat landscape.

- Modern trade in agricultural products leading to economic growth and development.
- Large scale hydroelectric power generation leading to easy running of machines in industries.
- Improved/modern transport that eases the transportation of goods and services.

(d) Challenges faced by the people in region marked 2.

- Flooding due to heavy rainfall in summer.
- Waterlogging due to heavy rainfall.
- Pests and diseases due to humid conditions.
- Attacks from wild animals that hide in dense forests due to heavy rainfall.
- Avalanches/landslides due to the heavy rainfall on the Himalayas slopes.
- Severe winter conditions leading to coldness.

Preparation Allows You to Relax, Be Confident and Thrive.