273/2

GEOGRAPHY

Paper 2

July /Aug.2022

2½ hours

UGANDA TEACHERS' EDUCATION CONSULT (UTEC)

Uganda Certificate of Education

GEOGRAPHY

Paper 2

2 hours 30 minutes

INSTRUCTIONS TO CANDIDATES:

*This paper consists of **two** sections:*

***Part I** Rest of Africa and **Part II** Studies in Development*

*Answer **two** questions from part **I** and **two** from part **II**.*

*In Part **II** only **One** question should be chosen from any one region.*

Any additional question (s) answered will **not** *be marked.*

PART 1: THE REST OF AFRICA.

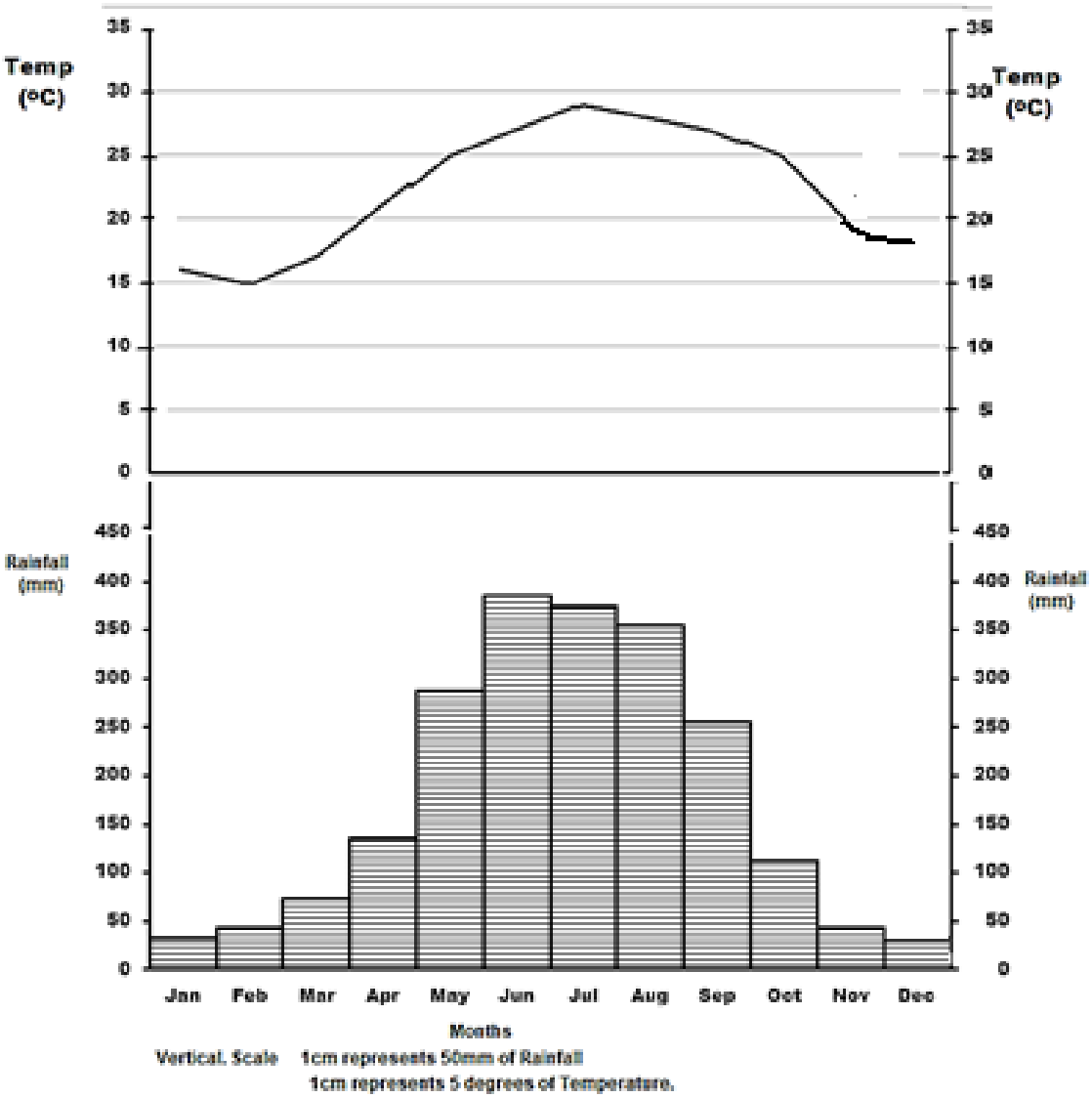
Answer TWO questions in this part.

1. Study the table I below showing the climate of station X and answer the Questions that follow:

Months	J	F	M	A	M	J	J	A	S	O	N	D
Temp ^{o}C	16	15	17	21	25	27	29	28	27	25	20	17
Rainfall (mm)	33	44	73	135	288	386	375	355	255	113	43	30

Adapted: DC money (1989) the land and people.

a) Draw a suitable graph to show the information given in the table. (09 marks)



b) Calculate the,

(i) Mean annual temperate of the station. (01 marks)

$$MAT = \frac{16 + 15 + 17 + 21 + 25 + 27 + 29 + 28 + 27 + 25 + 20 + 17}{12}$$

=22.25°c

(ii) **Mean annual rainfall of the station. (01 marks)**

$$MAR = \frac{33 + 44 + 73 + 135 + 288 + 386 + 375 + 355 + 255 + 113 + 43 + 30}{1}$$

MAR = 2130mm

(iii) Annual temperature range of the station (01 mark)

ATR = Hottest - Coolest

= (29 – 15) °C

= 14°C

c) (i) describe the characteristics of the station. (04 marks)

- The station experience warm temperatures of between 15°c – 17°c in the months of December to March.
- It experiences **a large annual temperature range** of 14°C.
- It experiences **a large mean annual temperature** of 22.25°C.
- The **hottest months** is July with 29°c.
- The station receives heavy rainfall in the months between March and September with amount between 73mm to 386mm
- The wettest month in the year is June with 386 mm of rainfall.
- Experience a high relative humidity above 60% in most months of the year between April and October.
- The station is **dry/ receives little rainfall** in the months of November to February with amount received being between 30mm to 44mm of rainfall.
- The station receives **a large mean annual rainfall** of 2130mm.
- The station experiences **a single maxima or one rainfall peaks** in the period between June and August.
- The area is **wet and dry**.

(ii) identify the hemisphere in which the station is located. (01 mark)

- Northern Hemisphere because temperatures are hot and wet in the May to August with a summer solstice along Tropic of Cancer.

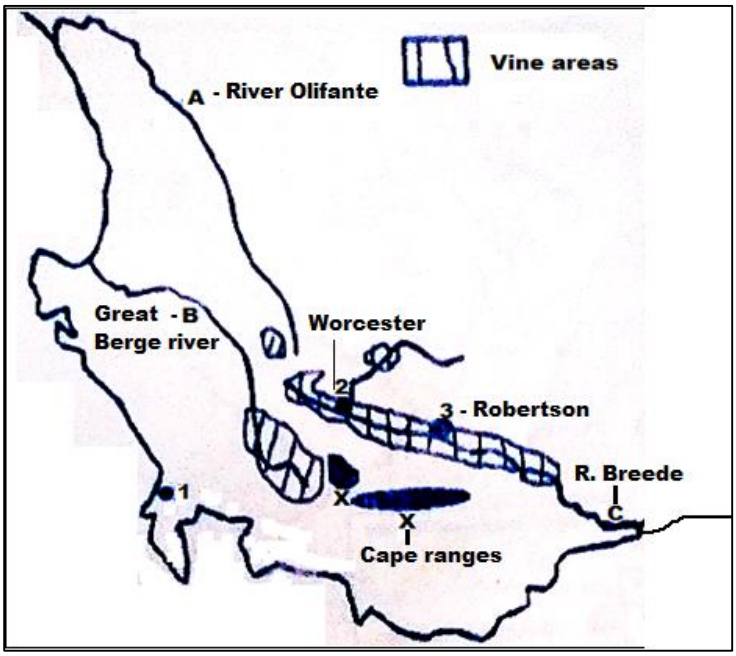
d) (i) Outline the problems faced by people living in the area where this station is found. (04 mark)

- Bush burning during the dry season by the pastoralists and tourists lead to pollution of the air and loss of vegetation cover.
- High rates of breeding of pests like tsetse flies etc. and diseases due to humid conditions in wet seasons from March to September do affect man, his crops and livestock/animals.
- Poaching in the game parks by hunters and pastoralists leads to extinction of some animal species.
- Soil erosion during dry and wet seasons due to primitive methods of farming and other human practices on the environment e.g. clearing of vegetation for farming.
- Soil exhaustion due to monoculture practice by commercial farmers, etc. during growing of perennial crops leads to low yields.
- Land conflicts or struggle for land to cultivate due to increasing population in the area attracted by many months of rainfall necessary for food production.
- Cattle rustling by pastoral communities lead to loss of property.
- Attacks from wild animals which go past the game parks and reserves.

(ii) Suggest any four economic activities that can take place in the area where station X is found. (04 marks).

- **Arable farming** e.g. cultivation of crops (subsistence farming) like maize, sorghum, millet, etc. encouraged by moderate rainfall received for many months of the year.
- **Commercial farming** mainly growing of crops like cotton, tobacco, coffee, sisal, fruits, etc. purposely for income encouraged wet and dry conditions.
- **Pastoralism** i.e. rearing of animals like cattle, goats, donkeys by the pastoral groups in Africa, who grazes on the extensive savanna grasslands.
- **Bee keeping** is practiced in the range lands for income, with the help of existing flowering plants for nectar.
- **Lumbering** of large tree trunks from the woodlands mainly trees in the wet savanna lands that encouraged by heavy rainfall in many months of the year.
- **Tourism** in the game Parks, game reserves and sanctuaries mainly found in the tropical climate / savanna range lands.
- **Charcoal burning** in the savanna range lands for sale to urban areas to earn income.
- **Hunting of wild animals** e.g. Antelopes, Buffalo, rats, etc. for bush meat in the savannah woodlands.

2. Study figure I: Map showing areas of vine cultivation in South Africa and answer the questions that follow;



a) Name the:

i) Rivers marked A, B and C. (03 marks)

ii) Towns marked 1,2 and 3. (03 marks)

iii) Highland area marked X. (01 mark)

b) Describe the factors favouring the development of viticulture in South Africa. (07 marks)

- Presence of well drained fertile alluvial soils to support the growth of crops like vines and vegetables.
- Existence Mediterranean climate conditions with reliable and moderate/well distributed rainfall in summer ideal for growth of vines for high yields.
- Plenty of warm sunny conditions in spring and summer support growth and ripening of vines for high yields.
- Existence of ready market for the sale of vines both locally and international European markets especially the European Union.
- Availability of undulating relief at the valley sides' rise gently on the coastal areas is ideal for mechanisation of agriculture like tractors in vineyards for increased output.
- Presence of plenty of water from the Orange and Vaal River for irrigation and processing of the Vines for export.
- Availability of large supply of skilled labour engaged to work both in the fields to grow vines and processing industries.
- Presence of modern / advanced technology (mechanization) is used in planting, processing of vine products for largescale production.
- Existence of developed transport and communication system by railway, air and water to transport vines to market centres in Germany and neighboring countries of European Union and other countries in South and central Africa.

- Availability of large urban population from urban centres like Cape town, Springfield. Durban, Johannesburg, Pretoria, etc. all provide labour and market for Vines products.
- Availability of developed research and use of scientific methods of farming applied since 1950s e.g. intensive use of fertilisers on farmlands and improved seed varieties.
- Existence of favourable government policy that is encouraging Vine growers / farmers through providing support inform of agricultural subsidies) intended to stabilise agricultural markets, improve productivity.
- Presence of organised cooperative societies in South Africa, that plays a role to collect and market farmers' produce.

c) <u>Explain the problems faced under viticulture in south Africa. (06 marks)</u>

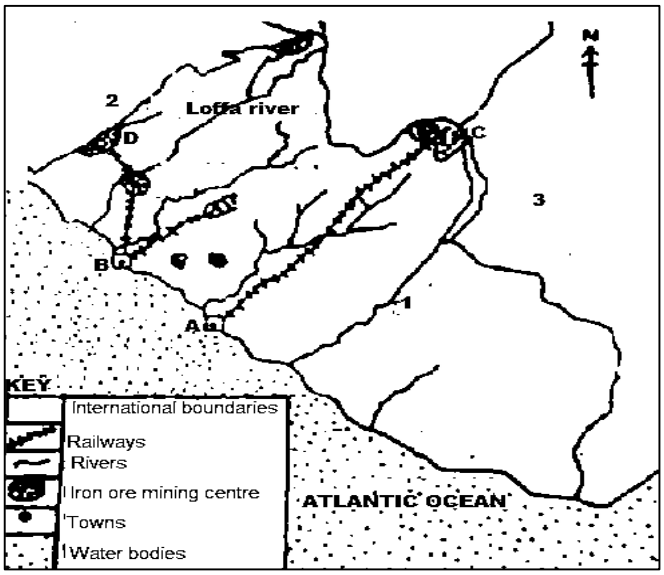
- **Frost** mainly in spring leads to serious destruction of grapes for the whole year.
- **High incidence of diseases** such as Peronaspora attacks vine leaves, Cidium is a fungus disease, calico virus, etc.
- **High incidence of destructive pests** such as worms and Red Spider lead to low yields.
- **Shortage of labour during busy growing** and harvesting season of grapes due to drift of many people to be employed in industries leads to loss and high production cost.
- **Excessive Soil erosion** occurs on steep slopes leads to infertility of soil and low yields.
- Unreliable rainfall during some seasons of the year leads to low yields and high costs of irrigation.
- **Stiff competition for market** with other vine growers due to merger of European Union to farmers from Spain, Britain, Italy who are large producers.
- **Soil exhaustion** due to practice of monoculture leads to low yields.
- Pollution of land and water through excessive use of fertilizers and industrial wastes disposal leads to diseases.
- **Limited land for vine cultivation** due to high competition for land with other economic sectors like industry.
- **High costs of agricultural inputs** like fertilizers, chemicals and equipment for vine growing leads to low income to farmers.
- **Fluctuation of prices for vine products** on the international market means that farmers are unable to be sure to get consistently for their produce.

d) Outline the steps being taken to improve Viticulture in South Africa. (05 marks)

- Use of organic manure from grapes wastes during processing to reduce pollution from artificial fertilizers.
- On site processing to reduce post-harvest losses like perishability and transport costs.
- Emphasis on high quality production to compete favourably at international markets.
- Mechanisation of most agriculture activities where possible to overcome shortage of labour.
- Constructing of canals to ease problems of transport.
- Terracing and contour ploughing of the hilly and steep slopes to overcome soil erosion and increase total land acreage.
- Spraying of vineyards using insecticides and herbicides to reduce / control pests and diseases.
- Building of concrete embankment on the Rhine River to reduce flooding.

- Spraying warm air to raise temperatures during unfavorable winter season to overcome frost or building fires in gardens.
- Use of migrant labour to overcome labour shortage.
- Practice irrigation where possible for perennial cropping.
- Hanging of vines to allow aeration and reception of maximum sunlight to avoid crop losses due to poor weather conditions.

3. Study figure 2: map of Liberia provided below and answer the questions that follow.



a) Name the:

i) River marked 1- **Cestos** river. (01mark)

ii) Countries marked **2 – Sierra Leone, and 3 – Ivory coast.** (02marks)

iii) Iron ore producing areas C- Nimba mountains and D-Bie hills. (02marks)

iv) Ports marked A- **Buchanan** and B – **Monrovia.** (02marks)

b) Describe the conditions which have favoured iron ore mining in Liberia. (06 marks)

- Existence of large deposits of iron ore in the country, in the areas of Yekpa, Bong, Voinjama, Nimba and Wologosi mountains etc. for valuable mining.
- Presence of large sums of capital to invest in iron ore mining provided by companies, e.g. LAMCO high production.
- Presence of adequate supply of skilled labour to work as miners, machine operators etc. in the iron ore mines.
- Presence of adequate power supply in form of hydro-electricity and thermal power used in to run machines in mines and mineral processing.
- Availability of well-developed transport network in form of railway, roads and water for transportation of mineral ores from Nimbi, Wologosi and Bomi hills to mineral processing centres at the coast.
- Proximity to the coast makes exportation of mineral resources easy through Monrovia and Buchanan ports by water transport on Atlantic Ocean to European markets.
- Availability of a large market for iron especially in Europe Union countries and America.

- Availability of advanced/ modern technology inform of excavators, earthmovers, etc. used in the mining of iron ore provided by foreign companies.
- Presence of plenty of water supply from many rivers like; St John River, St Paul river, Mano, Cestos river, etc. for processing of the minerals and use in the mines by miners.
- Availability of favorable government policy of encouraging foreign investment in the mining sector through provision of operation licenses, market research, etc.

c) Explain the advantages of the mining in Liberia. (08marks)

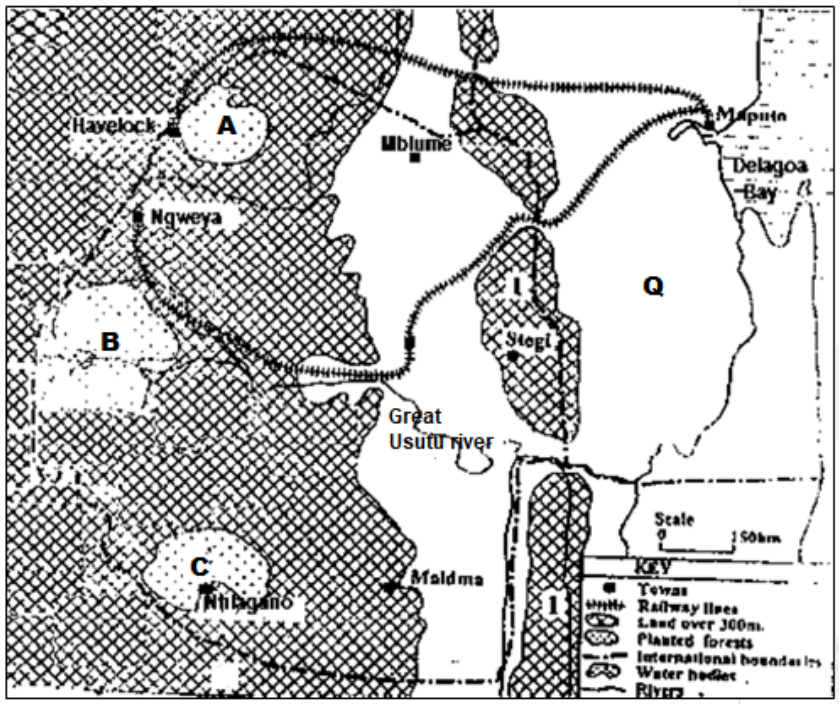
- Source of foreign exchange through export of iron ore for infrastructure development/ importation of goods and services.
- Creation of employment opportunities to many people to earn income that improve their standard of living.
- Source of income to people inform of wages/salaries etc. leading to improved standard of living.
- Has led to diversification of economy of Liberia from other sectors that create alternative sources of revenue/ income to the country.
- Led to generation of revenue for government through taxation to provide social services to people.
- Led to development of infrastructure like roads and railway for transportation of minerals and link people to social services.
- Promoted the development of urban centers and ports like Monrovia and Buchanan to provide various functions such as administrative, recreation, clean water, medical services, etc.
- Promoted international relationships/ friendships with other countries to trade.
- Source of raw materials for iron and steel industries that has developed industrial sector.
- Mining is a tourist attraction that has led to promotion of tourism and earning foreign exchange to the country for imports.
- Has provided market for local products e.g. agricultural products consumed by miners to promote local production.

d) Outline the effects of mining on the physical environment in Liberia. (04marks)

Consider negative effects.

- Leads to loss of vegetation cover during mining leads to global warming.
- Loss of land for agriculture due to dumping of wastes from mining / heaping mass of rock.
- Creates depressions / hollows due to open cast mining (quarrying) that act as breading places for disease vectors to affect miners.
- Pollution of land, water and air during excavation of iron ore leads to diseases.
- Collapse of mines causes accidents and loss of life.
- Stagnant water in hollows are habitats for breeding of pests and diseases affecting miners.
- Occurrence of soil erosion accelerated by use of heavy machinery leads to limited productive land.
- Lead to displacement of people from mining areas, lead to high costs of resettlements.
- Occurrence of landslides due to use of explosives to blast iron ore bearing rocks.
- Occurrence of floods in the mines.

3. Study fig. 1 showing the map of Swaziland and answer the questions that follow.



a) Name the:

i) Forest plantation marked **A** – Piggs peak/ Mondi peak,
B – Sappi Usutu/ Bhunya and
C – Shiselwezi /Nkhlangano,
(03marks)

ii) Country marked Q - Mozambique. **(01 marks)**

b) **Describe the conditions which have led to establishment of forest plantations in Swaziland. (08marks)**

- Existence if a large track of land for establishment of forest plantations e.g. Piggs Peak with 32,000ha; Great Usutu forest with 40,000ha and Nhlangano forest.
- Presence of suitable Tropical to Sub-tropical climate conditions with heavy rainfall received during summer and warm temperatures lead to fast growth of soft wood trees.
- Existence of high altitude found in areas of over 1000 metres above sea level experiencing temperate conditions on slopes of Drakensburg Mountains support the growth luxuriant forest.
- Presences of rugged nature of the landscape with thin soils on mountain slopes cannot support agriculture and settlement, could best be put under forests.
- The massive deforestation of 1940s, in Swaziland exposed large tracks of land to soil erosion prompting government to carry out re-a forestation programs. Presence of quick maturing tree species of less than 30 years.
- Availability of large capital provided by Swazi government and Common Wealth Development Corporation to invest in the forest plantations.
- Existence of cheap skilled and unskilled labour to work in various activities in the forest plantations.
- Availability of favourable government policy of re-a forestation and carefully planned rotational system encouraged expansion of plantation forests.
- Availability of well-developed transport and communication system to transport forest products to processing centers and ports for export markets.

c) **Explain the advantages of forest plantations in the economy of Swaziland. (06marks)**

- Help in controlling soil erosion for restoration of deforested areas and rivers.
- Useful to conservation water catchment areas for rainfall, underground water sources, water in rivers for irrigation farming in lower areas.
- Source of raw materials for saw mill industries, pulp mills, Furniture making industries, etc.
- Source of wood fuel for the population i.e. fire wood, charcoal, etc.
- Source of foreign exchange earnings to the country through export of forests products e.g. timber, timber products, wood, paper, pulp, etc to Japan, Taiwan, South Africa, United Kingdom.
- Provide employment opportunities to the local people to improve their source of income for better standard of living.
- Development of towns / urban centers e.g. Piggs peak, Nhlangano, Bunya, etc provide services to people like administration, trade, accommodation, etc.
- Led to development of infrastructure like roads, railways, to access the forested areas and transport goods and services to people.
- Provide poles, timber for building and construction industries.
- Promotes the crafts industry through making of drums, bows, etc.
- Source of medicinal herbs for local treatments.
- Provide habitats for wild life to promote tourist industry that generate foreign exchange through invisible export.
- Source of revenue to the government through taxation of companies directly involved in forests exploitation to provide services to people.
- Led to establishment of international relationship between Swaziland and other countries that import timber products to trade.
- Act as climate modification through transpiration leading to rainfall formation.
- Diversification of the economy to reduce overdependence on one sector like agriculture.
- Promoted research activities to improve on tree varieties.

d) Outline the problems faced by the forestry sector in Swaziland.

- Swaziland is a landlocked country leads to high costs of transport of forest products for export through ports of Durban and East London.
- Rugged landscape makes wood transportation difficult from the slopes of the mountain.
- Soil erosion usually occurs after extensive forest harvesting.
- Overdependence on foreign companies for felling of trees, processing of forestry products, etc. leads to most of the profits being repatriated.
- Limited land for expansion of the forests as the rest of the land is not ideal for the establishment of forest plantations.
- Fire outbreak during the dry summer seasons, destroy large tracks of plantations.
- Pests and diseases affect trees leading to low quality of forest products.
- Forest exhaustion / depletion caused due to over exploitation.
- Competition for international markets has reduced exports in tons.
- Competition for land with other land use sector of the economy like plantation farming.
- Price fluctuation for timber products in the world market limit exports.
- Limited capital to invest into this sector to expand.

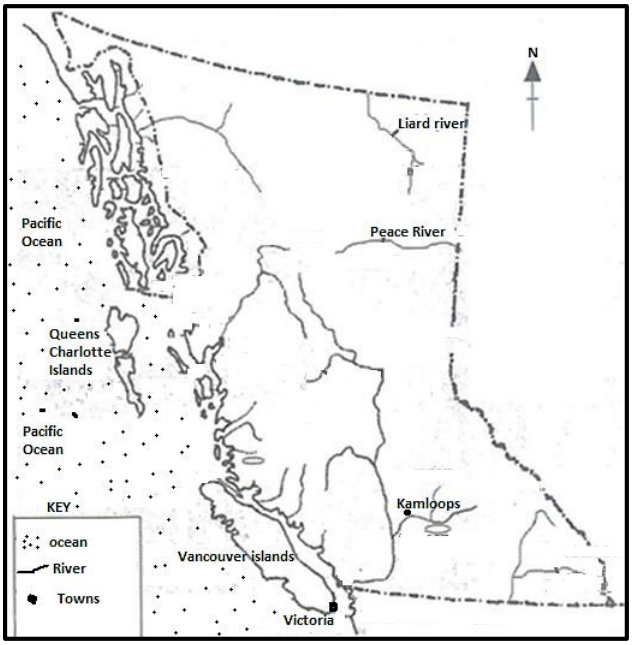
PART II: STUDIES IN DEVELOPMENT

Answer TWO questions from this part.

REGION I: NORTH AMERICA.

5. Draw a sketch map of British Columbia and on it mark and name;
   a) i) Islands: Queens Charlotte and Vancouver.
   ii) Rivers: Peace and Liard.
   iii) Towns: Victoria and Kamloops.
   iv) Pacific Ocean. **(o8marks)**

A SKETCH MAP OF BRITISH COLUMBIA SHOWING ISLANDS, RIVERS, TOWNS AND PACIFIC OCEAN.



b) Describe the conditions which have favoured the development of the industrial sector in any one town in (a) (iii) above. (o8marks)

- Availability of various sources of power for industry such as abundant hydroelectric power, nuclear power, natural gas to run machines in industries.
- Availability of large water supply from rivers like Liard, Peace, Skeena, Fraser etc. for industrial use such as cooling machines and as a raw material in chemical industries and food processing.
- Availability of large /extensive land for establishment / the construction and expansion of various industries like engineering, textiles, chemical industries.
- Strategic geographical position of industries located at the ports along the Pacific coast such as Victoria, Vancouver, Prince Rupert have easy access to imported raw materials and export markets.
- Presence of relatively flat land scape/ gentle relief for easy construction and expansion of industrial facility.
- Availability of abundant / large supply of raw materials such iron ore, oil etc. to feed industries for finished goods / products.

- Availability of adequate / large sums of capital to invest in industrial development provided by local and foreign investors to buy modern industrial machinery, carrying out research.
- Availability of large skilled labour supply to work in industries such as mangers, researchers, leading to the production high quality products.
- Availability of Well-developed transport networks such as water transport, railway network and modern air transport for transporting raw materials to industries and finished goods to the market.
- Availability of advanced / modern technology employed in the industries such as automation which has promoted the production of high quantity and quality products.
- Presence of a ready / large market for the manufactured goods, at home and abroad, which encourages industrial production.
- There is a favourable / supportive government policy towards industry that encourages industrial research to discover of new production techniques, encouraging investors, provide low interest loans, etc.
- Developed industrial research leading to high quality output for example many industrialists invest in automation.

c) Explain the benefits of the industrial sector to the development of British Columbia. (06marks)

- Employment opportunities created to earn income e.g. managers, marketers, drivers and cleaners improve their standard of living.
- Outward migration from the South reduced due to the jobs that were created.
- Economic co-operation between the North and South was improved through export and importing states.
- Foreign exchange was earned through export of finished industrial products to Japan which foreign exchange was used to develop other sectors.
- Source of income earned by industrial workers has improved standards of living**.**
- Infrastructure development linking industrial towns to market centers e.g. schools and roads, hospitals to stimulate transportation of goods and services to people.
- More urban development in the South like Dallas, San Antonio, Tampa, etc.
- Dense population in the area increasing market potential for industrial finished goods.
- Source of revenue to government through taxation **on** the industrial investor to provide services to people.
- Improving of international trade relations between USA and other countries through trade.
- Promote natural resource utilization for the improved welfare of the people.

d) Outline the problems faced by the industrial sector in British Columbia. (03marks)

- Pollution of the environment for example air and water pollution through direct emissions of wastes from industries and this reduces the quality of life.
- High crime rates due to unemployment, overcrowding and growth of slums leads to insecurity loss of property and life.
- Traffic congestion during the peak hours leads to delays in delivery of goods and services.

- Population explosion lead to unemployment due to few jobs in the industries, high cost of living.
- Increased unemployment because many industries use capital intensive technology and this leads to high crime rate.
- Over exploitation of natural resources such as minerals, forest resources used as inputs in the industrial sector leading to exhaustion.
- Destruction of natural vegetation cover through deforestation to set up industrial sites / expansion of industries lead to reduced rainfall totals / global warming.
- Global warming through destruction of the ozone layer by emission of dangerous gases such as methane, carbon, smoke, durst etc. into the atmosphere, leading to heat waves on human life on earth.
- Destruction of the natural landscape/ scenic beauty through leveling the landscape, reclaiming of swamps to set up or expand industries leads to loss of natural beauty /bio diversity.
- Displacement of other economic activities / encroachment on land that would be used for other activities like agriculture, forestry and settlement, and this affects economic development.
- Displacement of people to set up and expansion industries, lead to high costs of resettlement.

6. Study table II: showing US Foreign trade freight Gateways by the Value of Shipment (2019) in billions of current dollars.

Gateway	**Exports**	**Imports**	**Total**
New York	42.4	162.3	204.7
Los Angeles	31.0	173.6	204.6
Houston	92.3	63.1	155.4
Baltimore	15.0	43.4	58.4
Tacoma	8.0	40.2	48.2

Source: US Department of Transportation.

a) Draw a pie chart to show the relative importance of each Gateway in handling exports. **(08marks)**

Calculation to determine the angle / sectors.

$New\ York = \frac{42.4}{188.3} \times 360 = 81.06^0$

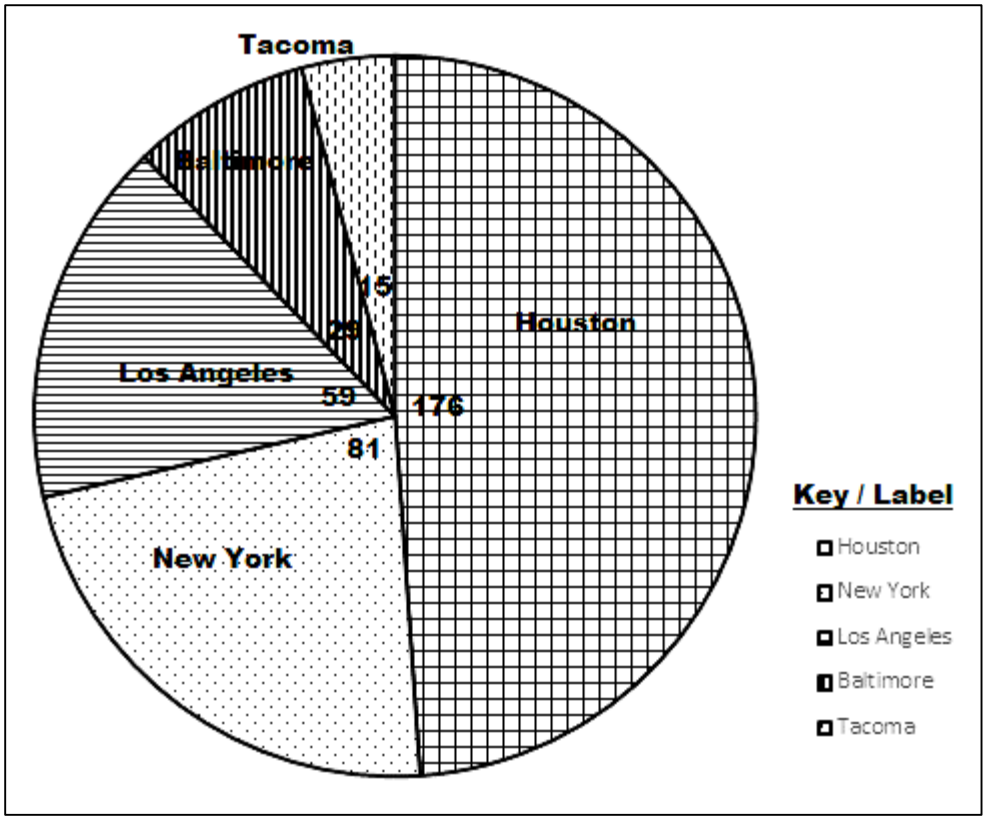
$Los\ Angeles = \frac{31.0}{188.3} \times 360 = 59.27^o$

$Houston = \frac{92.3}{188.3} \times 360 = 176.46^o$

$Baltimore = \frac{15.0}{188.3} \times 360 = 28.68^o$

$Tacoma = \frac{8.0}{188.3} \times 360 = 15.29^o$

A PIE CHART SHOWING THE RELATIVE IMPORTANCE OF EACH GATEWAY IN HANDLING EXPORTS.



b) Identify the
   i) Least - Tacoma
   ii) Most used gateway - Houston **(02marks)**

c) Explain the conditions that have favoured the development of the most used Gateway in (b) (ii) above. **(08 marks)**

Houston on state of Texas in South USA

- Warm tropical climate enable operations at Houston port throughout the year makes it as an alternative port for USA to use in winter
- Strategic geographical location of South USA to Atlantic Ocean through the Gulf of Mexico to eastern seaboard a direct access to European markets, hence handling large volume of cargo for more countries.
- Presence of a rich and productive hinterland with mineral and agricultural resources in the states of south USA such as Utah, Texas, Mississippi, Tennessee etc. provide cargo handled by the port of Houston.
- The presence of modern technology used at the port facilities at Houston enable fast handle large volumes of cargo.
- There is a developed transport system to link the Houston to the large hinterland in The South USA for example roads and railways linking to the interior which has made it to handle more / increased the volume of cargo handled.
- The major port Houston is directly linked to the hinterland by the navigable Mississippi river that carry large volume of cargo handled by South USA.

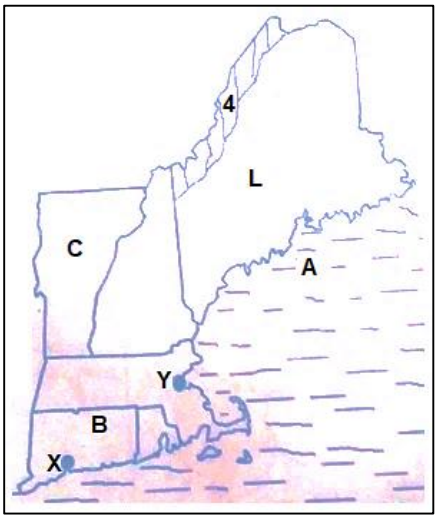
- Availability of large sums of capital invested in the expansion and construction of a modern port facility at Houston to handle large volumes of imports and exports.
- A large skilled labour supply to work during busy hours for fast movement of schedules as engineers, machine operators, ship pilots for easy shipment of large volumes of cargo.
- Large power supply to run machine and other port operations throughout the year.

d) **Outline the benefits of any one Gateway to the development of the USA.**
(07marks)

Houston / New York

- Generation of many employment opportunities to the people to earn income as Traffic wardens, marine engineers, etc. that improve on their standards of living.
- Has stimulated industrial growth and development through the transportation of both raw materials and finished products.
- Led to the development of the agricultural sector to provide food for the large population in ports and urban centres. E.g. cotton growing, oil, iron ore and coal mining, dairy farming etc.
- It has stimulated international trade by handling exports and imports from Germany, France, Switzerland and Netherlands through port Houston / New York into USA.
- The Rhine waterway is a great tourist attraction that earns the Rhine countries foreign exchange from the tourists.
- Led to generation of revenue to government through the taxes export and imported goods to provide services and develop infrastructure.
- Led to the exploitation of natural resources such as coal, iron ore, timber, for industries and economic development.
- Provision of a large market for the ship building industry based at New York / Houston port.

7. Study figure 4: Map of the New England and answer the questions that follow.



a) Name the:

i) Mountains marked 4 – Appalachian mountains.

ii) Gulf marked A – Gulf of Maine.

iii) Towns: X – Newhaven and Y – Boston.

iv) States B – Connecticut, L – Maine and C - Vermont. **(07marks)**

b) **Describe the factors which have favoured the development of fishing sector in New England. (08marks)**

- Presence of a wide and shallow continental shelf which allows sunlight to easily reach the seabed and this supports the growth of planktons which act as fish food.
- The meeting/mixing of the warm and cold ocean favours plankton growth which act as fish food.
- Presence of a highly indented coastline for fish breeding and development of fish landing ports such as Boston.
- Thin infertile soils and the rugged /mountainous terrain of Appalachian, limits crop farming and in turn has driven many people to the coast to engage in fishing.
- Presence of large forests to support fishing for example providing the required timber for construction of fishing vessels and construction of ports.
- Presence of a variety of valuable fish species and in large quantities such as salmon, sardines, mackerel, herrings, cod, and tuna leading to increased production.
- The warm temperate climate which ensures warm waters of Atlantic Ocean for the growth of abundant planktons and survival of various fish species.
- Presence of large marine fishing grounds particularly the Atlantic ocean waters many fish species such as tuna, salmon and mackerel for commercial fishing.
- Presence of a smooth ocean floor which promotes the use of modern fishing methods like trawling, and long lining.
- Availability of large sums of capital to invest in the fishing industry such as the purchase of modern vessels, the construction of ports, and carrying out fisheries research.
- Large supply of skilled labour to work in the fishing industry such as fish extraction, fish processing, transportation and marketing.
- Presence of a large market for fish and fish products both domestic and foreign which has encouraged the fishing industry.
- Availability of modern technology employed in fishing such as the use of modern fishing methods (trawling, drifting) and modern preservation leading to high quality production.
- Intensive/ Continuous research in the fishing industry into breeding habits, feeding and maturation of various fish species (leading to high quality and quantity of production).
- Availability of efficient/developed transport system involving developed ports, roads and railways; which promotes fishing, distribution and marketing of fish.
- Political stability of the region which increases the confidence of investors and workers in the fishing sector.
- Supportive / positive government policy towards the fishing industry such as encouraging investment by large companies and financing fisheries research.
- Long experience in fishing activities like extraction and processing which has also ensured high quality and quantity of output.

c) **Explain the problems faced by the fishing sector in New England (06marks)**

- International restrictions in the fishing grounds due to imaginary boundaries with other countries limits the fishing area.
- Over fishing due to advanced methods of catching fish lead to threatening and extinction of some fish species.
- Indiscriminate fishing in some areas involving the use of methods harvest young fish threatening future production.
- Water pollution due to discharge of toxic substances/industrial wastes from industries are along the coast lead to suffocate fish to death.
- Competition from other major fishing nations such as Japan, Norway, Peru, china, leading to a narrow market.
- Shortage of labour for fishing sector due to the fact that people are employed by other sectors leads to low fish catch.
- Accidents from strong winds lead to capsizing of boats death and loss of property.
- Freezing of some rivers during winter which negatively affects fishing activities such as limiting the movement of fish to the breeding grounds.
- Price fluctuations of fish in the world market leads to unstable incomes / losses to the fishing sector.
- Sea piracy leads to stealing of fish, fishing equipment, discouraging fishing activities.
- Attacks from fish predator like dangerous / big marine animals, sharks, birds which eat the fish and threaten the lives of the fishermen.
- Invasion by illegal foreign fishing fleets into the fishing grounds lead to reduction in marine fish stocks.
- Profit repatriation by foreign owned fishing companies and this discourages further investment in the fishing sector.

d) Outline the steps that are being taken to improve the fishing in New England.

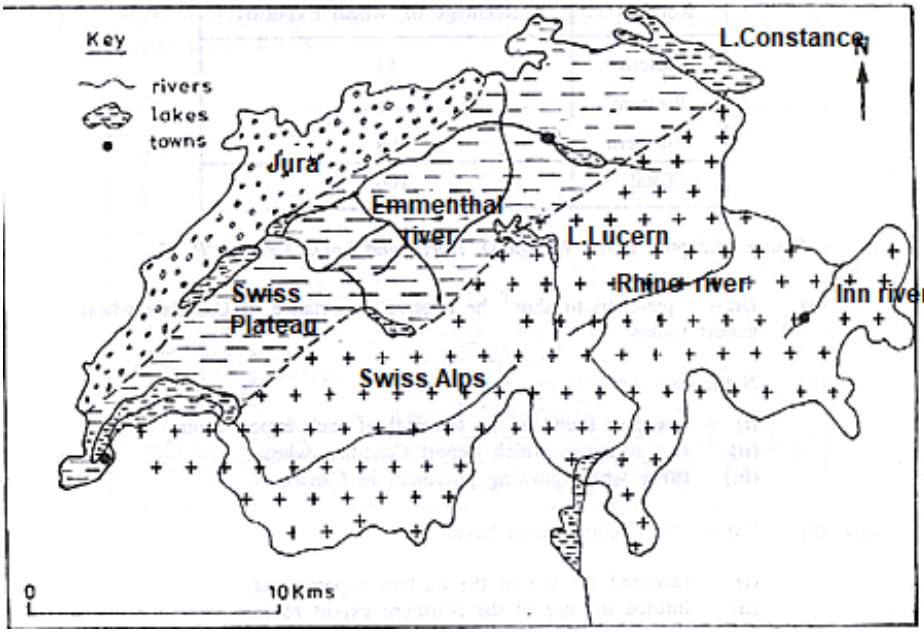
(04marks)

- Legalization / enacting laws and licensing / impose fines on fishermen to regulate amount of fish to be caught in a way also control over fishing.
- Establishing fish hatcheries for salmon fish by the fisheries research department.
- Signing of international agreements to recognize fishing rights and grounds.
- Treating industrial wastes before dumping in water to mininse pollution of fishing grounds.
- Patrolling marine waters to fight over-fishing and control encroachment by foreign fishermen.
- Promoting market research for fish export abroad to widen markets.
- Identifying and demarcating international boundaries / territorial waters to reduce/ protect the encroachment areas.
- Promoting high quality standards through intensified research in the fishing industry.
- Restocking overfished waters to increase fish stock in the marine fishing grounds.
- Regular patrols by marine police of fishing grounds to reduce overfishing by use of illegal methods.

REGION II: THE RHINELANDS.

Answer one question from this part.

a) Draw a sketch map of Switzerland and on it mark and name:
   i) Physical regions: Jura, Plateau and Alps.
   ii) Rivers: Rhine, Inn and Emmenthal.
   iii) Lakes: Constance and Lucern. (09marks)



b) (i) Define a landlocked country. (01marks)

– Is a country surrounded by other countries and does not have a sea port.

(ii) Explain how Switzerland has tried to solve the problem of being put to use. (06 marks)

– Exportation of high value goods with light weight e.g. precision instruments and watches, cheese, powdered milk, etc.
– Developing regional cooperation e.g. joined the rest of the Rhineland to develop the Rhine waterway which has formed the main outlet to the North Sea.
– Maintain the policy of neutrality of improved neighbourliness i.e. Switzerland has headquarters of the Red cross society, UNHCR and ILO, FIFA, doctors without borders / Frontiers.
– Promotion of tourism industry to generate more foreign exchange from invisible exports.
– Development of modes of transport / diversify the transport sector inform of Air, water, electrified railway, roads to ease transportation of raw materials.
– Establishment of import substitution strategy to reduce on importation of goods.
– Use of raw material saving technology to reduce the high costs of importation of raw materials.
– Recycling of wastes for re-use as raw materials.

- Maintaining multi-lingual culture to easy communication and trade with neighbouring countries.

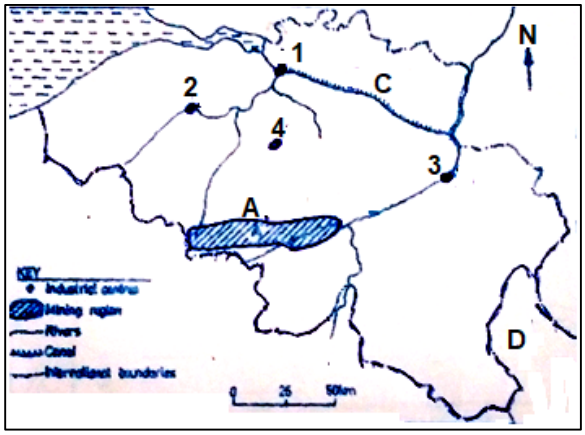
c) Describe the ways in which uncultivated land in Switzerland. (05marks)

- Tourism due to magnificent scenery with beautiful mountains which are snow-capped and attract tourists.
- Industrialization using water from the mountains to the rivers e.g. Rhine, Rhone etc.
- Generation of hydro-electric power for domestic and industrial use from rivers that originate from the snow-capped Alps mountain tops.
- Lumbering activities on some mountain tops that have coniferous forests.
- Animal rearing particularly cattle grazing and transhumance is practiced on middle and lower slopes and valley bottoms of Alps and Jura.
- The snow on mountains is used for winter games and recreation encouraging leisure activities.
- Mining e.g. Salt, anthracite coal, etc. mining due to large mineral deposits of salt for chemical industry.

d) Outline the problems faced by the industrial sector in Switzerland. (05marks)

- Switzerland is a landlocked country which makes transportation of both raw materials and finished products very expensive.
- Limited local supply of mineral raw materials has led to reliance on imported raw material leads to high costs of production.
- Limited internal market due to small population of 7million people for the increasing volume of industrial products the country produces has led to reliance on export market e.g. 62% of the goods are sold to European Union, Germany imports 20% USA 9% of the Swiss products.
- Shortage of labour due to a small population of 7million that result in hiring expensive migrant labour/ guest workers
- The rugged terrain especially in the alpine region restricts the establishment of large scale industrial centres, resorting to cottage industries.
- Stiff competition with other countries producing similar products due to the fact that the Swiss industrial products are expensive, durable and therefore face threat from cheaper substitutes from; china, Malaysia and Japan.
- Competition for land among the different land uses especially in the Swiss central plateau (Mittelland) lead to limited space for industries to expand.
- Shortage of labour in some industries during the period when world trade is booming to meet the growing demand for goods.
- Congestion and delays at the international ports during export and import of raw materials affect the sector lead to increased costs and damages.

9. Study the map of Belgium showing industrial centres and answer questions that follow:



a) Name the:

i) Industrial centres marked 1 – **Antwerp**

2 – Ghent

3 – Liege

4 - Brussels city.

ii) Mining regions marked A - **Mons**

iii) Canals marked C- **Albert canal**

iv) Country marked **D – Luxembourg.** (07marks)

b) (i) Identify any one industry found in each of the industrial centres named in (a)(i) above. (04marks)

- Engineering and metal products, ***Mons, Liege, Charleroi, Antwerp, Ghent Brussels.***
- Motor vehicle assembly at ***Antwerp, Ghent.***
- Transportation equipment,
- Scientific instruments,
- Processed food and beverages mainly at ***Brussels province of Brabant.***
- Chemicals, **at Antwerp**
- Iron and steel, **Mons, Charleroi and Liege**
- Textiles **at Ghent**
- Glass at Mon, Chelaroi, Liege.
- Petroleum **at Antwerp**
- Oil Refining **at Antwerp**
- Printing and publishing
- Ship building

(ii) Describe the factors which have favoured which have favoured the development of industries in Belgium. (05marks)

- Presence of abundant supply of high grade coal used as energy to run industries from coal fields like Sambre-Meuse.

- Presence of adequate supply of skilled and semi-skilled from the Belgian population to work in industries.
- Availability of large sums of capital from rich Belgian population to invest in manufacturing industries.
- Existence of a modern transport and communication systems to transport raw materials and manufactured goods to market centers by railways and roads.
- Availability of a favorable government policy towards supporting industrial development by negotiating for low interest loans on behalf of manufacturers.
- Presence of plenty of water supply from rivers Scheldt and Meuse for industrial use and cooling industrial machines.
- Existence of adequate supply of raw materials both agricultural and mineral resources to feed industrial machines for manufacture of quality products.
- The central location of Belgium in the Western Europe richest region with large population close to the iron ore mines near foreign market centers for sell of goods to neighbours in Europe.
- Presence of adequate imported raw materials like iron ore France, Luxembourg and Sweden.
- Presence of Rhine river as waterway through R. Scheldt and R. Sambre has linked to canal offer accessibility of Belgium to large markets in Europe.
- Availability of high levels of technology to harness nuclear energy, development of petro-chemical industries with high range of products like polythene, ethylene, benzene, plastics to maintain Belgium competitive goods on the market.
- Existence of a long history manufacturing reputation especially the iron and steel industry, Belgian woolen and linen cloth and Lace make Belgian goods highly competitive.
- Availability of abundant resources invested into high levels of research and innovations to produce goods reputable in Europe.

c) Explain the contribution of the industrial sector to Belgium. (05marks)

- The industries have created different employment opportunities related to industrial activities to many people which have improved their standard of living.
- Source of government revenue through the taxes collected to facilitate the provision of social services to people.
- Industries earn the country foreign exchange to Belgium through the exportation of industrial products to enable provision of various goods and services to people
- Industries have led to improvement of international relations between Belgium and the countries through exports and imports to trade in industrial products.
- Industrialization leads to economic diversification to reduce dependence on one sector like agriculture for revenue.
- Industries provided market for the agricultural produce bought as raw materials for the agro – industries.

d) Outline the steps to being taken to improve the industrial sector in Belgium. (04marks)

- Importation of high grade iron ore from Brazil and Mauritania to feed industries.
- Migration of some industries like the Iron and steel to the coastal areas to reduce transport costs.
- Use of raw materials saving techniques i.e. production of precision goods that are raw material saving. to reduce the costs of production.
- Production of high quality products to minimize competitions.
- Reduction of taxes in order to reduce on the cost of production.
- Diversification of the manufacturing industries to include agro-processing industries.
- Treating industrial discharges before emission to minimize the danger of environmental pollution.
- Emphasis regional cooperation like European Union to widen the market size for manufactured goods.
- Use of raw material saving technology that involves automation of various industrial activities.
- Reclamation of land for expansion of industries pulverization e.g. the Flanders.
- Recycling of industrial scrap for re-use e.g. iron scrap.

10. Study table III: below showing the quantities of vegetables produced in Luxembourg under market gardening between 2018 and 2023 and answer questions that follow:

Luxembourg: Total harvest in tons.

Vegetables	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**
White cabbage	41	28	41	57	99	136
Lettuce	179	164	124	134	239	427
Tomatoes	85	83	75	71	104	123
Carrots	203	310	409	478	935	1000
Onions	92	66	81	40	138	

a) (i) Calculate the percentage change for each vegetable between 2018 and 2022. (05marks)

$$\textbf{Percentage change} = \frac{\textbf{New} - \textbf{Old}}{\boldsymbol{Old}} \times \mathbf{100}\%$$

White Cabbage $= \frac{99-43}{43} \times 100\%$ **= 130%**

Lettuce $= \frac{239-179}{179} \times 100\%$ **= 33.52%**

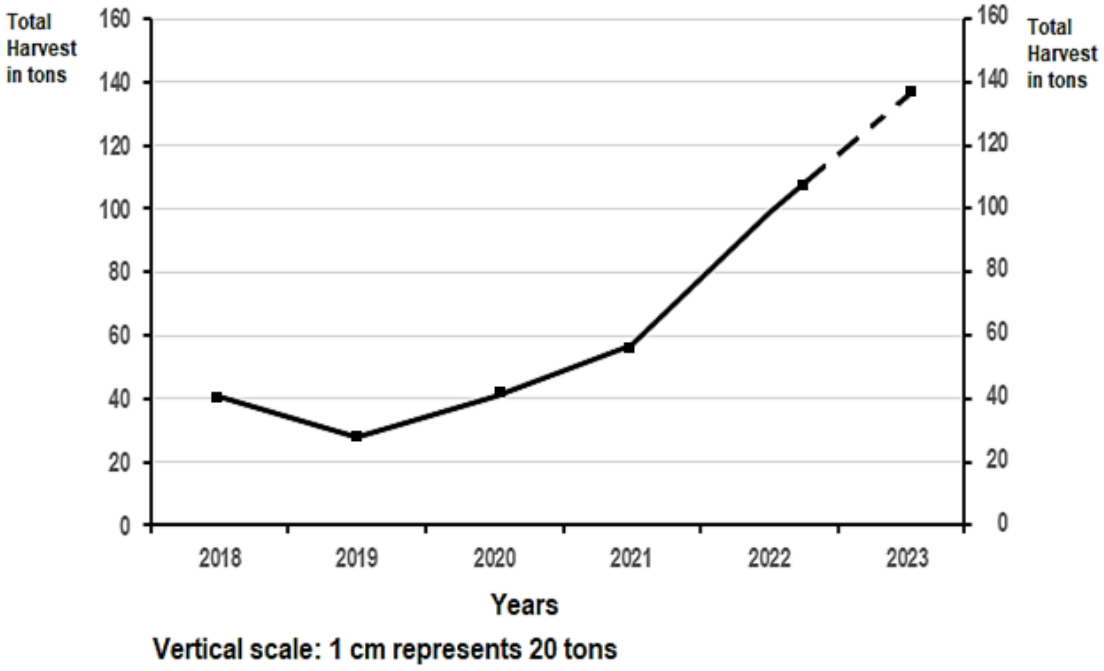
Tomatoes $= \frac{104-85}{85} \times 100\%$ **= 22. 35%**

Carrots $= \frac{935-203}{203} \times 100\%$ **= 360%**

Onions $= \frac{132-92}{92} \times 100\%$ **= 43.48%**

(ii) Draw a line graph to show the harvest for white cabbage between 2018 and 2023 (Projected). (08 marks)

A line graph showing the harvest for white cabbage between 2018 and 2023 (Projected).



b) Describe the conditions which have favoured market gardening in Luxembourg. (05marks)

- Existence of a mild maritime climate with relatively warm temperatures to support the growth and ripening of the horticulture products.
- Availability of fertile alluvial soil from the polders and delta regions support the growth of luxuriant growth of horticulture plants for high yields.
- Presence of highly trained skilled farmers to work in the growing horticultural fields.
- Existence of credit facilities extended to the farmers through the cooperatives to boost their capital requirements.
- Availability of advanced research and advisory boards for farmers to consult and provide assistance on management of horticulture fields and marketing.
- Dutch farmers possess along experience in farming provide extra skills in horticulture practice.
- Availability of a ready market for horticulture products both in The Netherlands and abroad in the neighbouring countries.

- Existence of developed transport and communication systems to transport horticultural products to market centres by the Rhine waterways, air transport, and roads.
- Existence of high levels of advertisements used through various media platforms like journals, magazines, televisions, documentary, etc.

c) Explain the problems faced under market gardening in Luxembourg. (04marks)

- Frequent frost which restrict the growing periods of horticulture crops in glass houses is expensive.
- Horticulture is capital intensive which is sometimes limited for easy maintenance.
- Shortage of land for expansion of the farms which restrict production on small plots.
- Stiff competition from other horticultural producers limits the markets and profit margins of the farmers.
- Price fluctuations of horticulture products affect the farmers' income.
- Horticulture products are highly perishable leading to post harvest losses to farmers.
- Cold winter conditions and freezing affect the horticulture crops and limit the period for growing.
- Sometimes there are marshy and water logged conditions disturb the horticulture farmers.
- Flooding of the polders affect output.
- Overdependence on foreign markets like E.E.C countries exposes farmers to high risks of stiff competition and costs like taxation.
- Soil exhaustion due to intensive farming lead to high costs of application of fertilisers to improve yields
- High Salinity of soils due to sea incursions and excessive application of fertilizers.
- High incidence of pests and diseases lead to high costs of continuous spraying of chemicals to maintain quality.
- Sinking of land under polders.
- High costs of land rent fee limit increase costs of production.

d) Outline the measures being taken to improve market gardening in Luxembourg. (03marks)

- Practice of intensive farming to minimise shortage of land for production.
- Building of strong embankments to minimise flooding from river Rhine, Meuse and canals.
- Diversification of crops is being taken seriously to get crops suitable to climate conditions e.g. cucumber; tomatoes, water melon etc. are introduced.
- Spray crops using chemicals to kill pests and diseases.
- Application of manures and fertilisers to improve soil fertility for high yields.
- Intensive research is being carried out to improve glass house technology and crop maintenance.
- Containerizations in refrigerated trucks and railway wagons or airplanes for easy transport of horticulture products.
- Refrigeration of transport trucks for perishable horticulture products to address post-harvest losses.

- Glass houses are introduced for growing horticulture crops during long cool winter periods.
- Importation of improved seeds by the cooperatives for farmers to buy at subsidised costs.

REGION III: CHINA.

Attempt one question from this region.

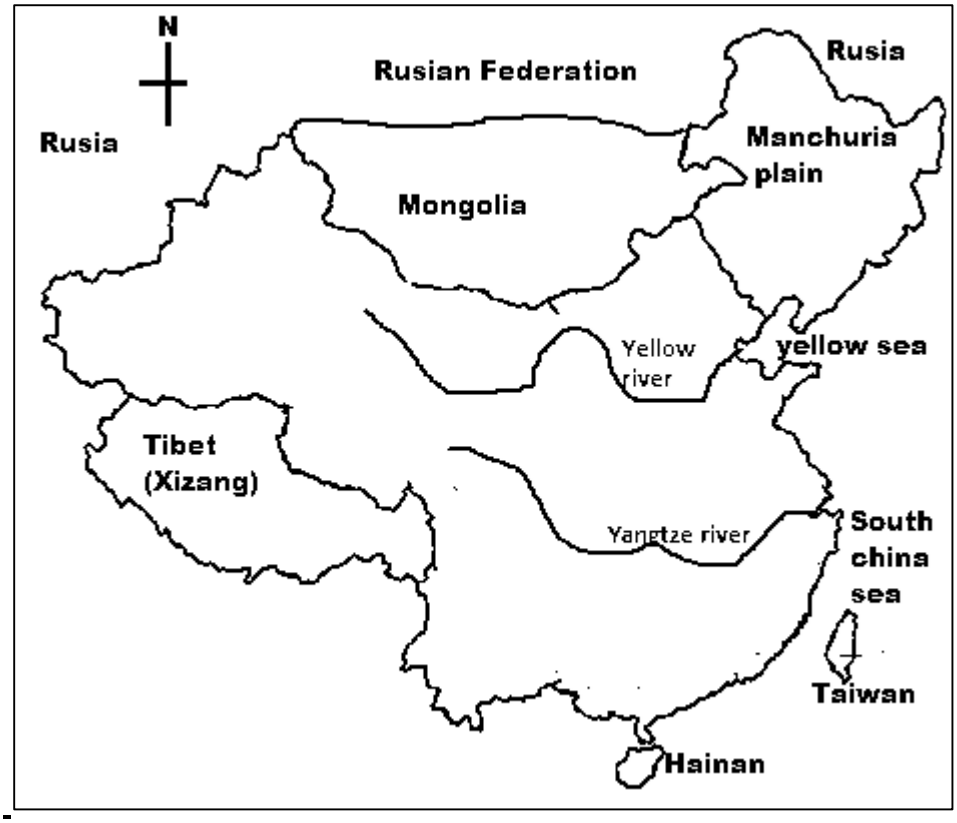
11. Draw a sketch map of China and on it mark and name the:

a) (i) Region: Manchuria and Xizang (Tibet).

(ii) Neighboring countries: Russia and Mongolia.

(iii) Islands: Hainan and Taiwan. (07marks)

A sketch map of China showing region of Manchuria and Tibet, neighboring countries and islands of Hainan and Taiwan.



b) Explain the problems faced by the people living in the Tibet region of China. (08marks)

- The steep / rugged terrain restricts / discourage settlement and crop farming especially mechanized farming.
- High costs of constructing transport and communication routes such as roads have to wind to avoid very steep gradients covering much longer distances.

- Glaciers lead to the formation of a rugged and steep landscape which hinders the development of transport routes
- Glacial erosion erodes away the top soils and makes the slopes very steep which limits crop growing
- Some outwash plains contain infertile soils (sand and boulder rocks) leading to wastelands/ limits crop farming.
- Glaciation leads to landslides /Avalanches (downward movement of massive snow) which destroy life and property.
- The deposited material in river valley results into flooding by increasing the volume of water in the rivers, hence destroying life and property.
- Glaciated regions are too cold and rugged hence not conducive for settlement.
- Drought conditions (little rainfall) on the leeward side of the highlands, which limits crop farming activities.
- Very cold temperatures are experienced in the high altitude areas and this discourages settlements and other land uses.
- Some mountains harbor wild animals which are a threat to human life and destroy food crops.
- Some mountains act as hideouts for criminals who destabilize peace and hence leading to displacement of people.

c) Suggest the measures to the problems in (b) above. (07marks).

- Practicing irrigation farming on the leeward side to increase crop farming.
- Constructing roads to follow contour or on low slopes of the mountain regions to increase accessibility.
- Advising people to avoid settling in areas which suffer from earthquakes, volcanic eruptions and landslides.
- Discouraging settlement and cultivation on steep slopes to reduce the danger of erosion and landslides.
- Building terraces, practicing contour ploughing, afforestation and reforestation to reduce soil erosion and landslides.
- Constructing of tunnels through the mountains/ highlands to shorten distances, hence improving accessibility.
- Resettling of people in safe areas to avoid steep slopes and hence reduce dangers of flooding and landslides.

d) Mention any two economic activities carried out in the Tibet region of China. (02marks)

- Tourism encouraged by permanently snow-capped on Himalayas mountains and related features act as tourist attractions.
- Generation of Hydro-electricity power from rivers on lower slopes for domestic and industrial uses.
- Irrigation farming supported by rivers from the Himalayas mountains.

- Livestock rearing / pastoralism encouraged by plenty of pasture on lower and mid slopes of highlands for grazing.
- The foothills of Himalayas are rich in minerals leading to mining.
- The mountain slopes have dense forest cover to promote lumbering.
- Agriculture supported heavy relief rainfall on the windward sides of the mountain.
- Have well drained fertile soils at foothills ideal for agriculture therefore attract dense settlement.

12. Study table IV below showing China's population between 1980 to 2030 and answer questions that follow.

Year	Population in Millions
1980	583
1990	694
2000	1008
2010	1,134
2020	1,266
2030	1,340(projected)

Adapted: Demographic statistics of China, http//en. Wikipedia, org/wiki/demographics of china, retrieved on 7/24/2014 11:18am.

a) Calculate the percentage change in population of china between;
   i) 1980 and 2010

$$\textbf{percentage change} = \frac{\textbf{New}-\textbf{Old}}{\textbf{Old}} \times 100\%$$

$$\textbf{Percentage change} = \frac{(1134-583)\,millions}{583\,millions} \times 100\%$$

$$= 94.5\%$$

   ii) 2010 and 2030.

$$\textbf{Percentage change} = \frac{(1340-1134)\,millions}{1134\,millions} \times 100\%$$

$$= 18.17\%$$

b) Draw a line graph to show china's population between 1980 and 2030.

c) **<u>Explain the factors which led to the trend the population trend shown in (b) above.</u>**

- Improved medical facilities which have remarkably reduced death rates and improved life expectancy.
- High fertility rates which gave rise to a high population growth.
- Increased general standard of living with minor rural urban disparities in standard of living.
- Delayed attempts in adoption of family planning measures led to many children to be produced.
- Early marriages among the Chinese leading to a long child fertility period.
- Natural increase of population overtime led to high population increase e.g. from 2000 to 2015 the population rose from 1,283,198,870 to 1,397,028,553
- Plenty of land in the west to produce more food for the growing population.
- Government policy of uplifting the one child policy of 1979 of chairman Mao has seen rapid increase in population between 2015 and 2020 projected.

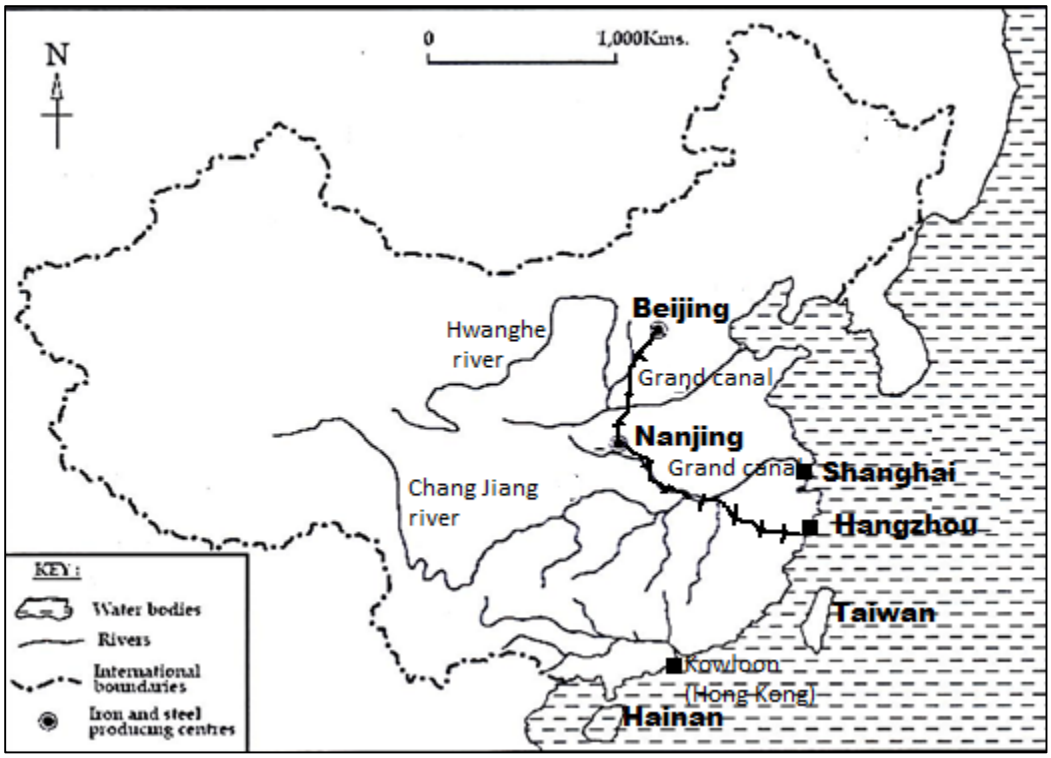
d) **Outline the population problems facing China.**

- It leads to heavy dependence burden due to a large number of the young and the elderly who are not productive promoting low savings, low investment, low capital accumulation and retards economic growth and development of the country.
- It causes much pressure on land and social service at centres such as; schools, hospitals, roads as well as over – exploitation and depletion of natural resources like forests, minerals, land, etc.
- Leads to high cost of living for essential commodities such as; accommodation, education, health care, feeding, etc. in Shanghai, Beijing, etc. forcing the Chinese to migrate to other countries particularly United Kingdom, Canada, USA and Africa.
- It has resulted into an increase in crime rate such as human trafficking, drug abuse, theft, piracy looking for survival in big cities due to high rates of unemployment.
- It has resulted into overcrowding and development of slums in the outskirts of large towns and cities such as; Beijing, Shanghai, Shenyang, etc. which results into development of slums with related evils like prostitution.
- It has led to development of towns Shanghai, Beijing, Guangzhou, etc. and their associated evils such as congestion on roads, air and water pollution as well as land degradation due to improper urban waste disposal.
- The large Chinese population has led to land shortages particularly in large cities and towns such as Beijing, Shanghai, Guangzhou, etc. which results into land fragmentation.
- It has led to increased government expenditure in an attempt to look after the increasing population in terms of purchasing drugs, maintain schools, hospitals, establish roads railways, providing safe drinking water etc. for the people.
- High rates of unemployment leading to idleness and high crime rates.
- Food shortage leading to malnutrition/ starvation.
- Flooding of lowlands areas because of land degradation.
- Easy spread of diseases caused by congestion and environmental degradation leading to death.

13. (a) Draw a sketch map of, on it mark and name:

i) Rivers: Hwange ho and R. Chang jiang.
ii) Grand canal .
iii) ports Shangai and Kowloon. (06marks)

A SKETCH MAP OF CHINA SHOWING RIVERS, GRAND CANAL, AND PORTS.



b) Describe the:

(i) **Problems facing inland water transport. (05 marks)**

- Rivers freeze during the long winters and are not navigable during this period.
- Some rivers have steep gradients and flow very fast especially in the upper course of river Yangtse vending not navigable.
- Some rivers are narrow and cannot be used by small boats which are not economical.
- Fluctuation of water levels in some rivers making them un safe to use.
- Siltation of rivers such as silt deposit that buildup by Yellow river makes the section between Jining and Beijing not available for transport during the rainy season at lower course makes them shallow to use.
- Periodic flooding of rivers such as Yellow river in the rainy lead to constant dredging to allow navigation makes them unsafe for use.
- High cost of maintenance of the waterways like the Grand Canal and rivers linked to it.
- Pollution in the canal had reached the point where boat and barge crews could tell when they were nearing Hangzhou by the stench of the visibly black water.
- Congestion at ports that leads to delays of goods and raw materials for export and import.

ii) the steps being taken to improve inland waterways. (05marks)

- Construction of canals to by-pass areas with steep gradients such as The Grand canal as alternative route.
- Construction of strong river embankments to control flooding of rivers past their banks.

- Regular dredging and clearing of the waterways to allow fast movement of vessels.
- Widening of waterways where rivers are narrow to accommodate large vessels.
- Double slipways were installed to haul boats over when the difference in water levels were too great for the flash lock to operate
- Construction of four large reservoirs in Shandong to regulate water levels, which allowed them to avoid pumping water from local sources and built new channels, embankments and canal locks.
- Containerization to help improve loading and offloading of goods.
- Strict adherence to time tabling of voyage / vessels on shipment.
- Enforcement of anti-pollution laws to maintain air, water quality to international WHO standards.
- Use of flood lights/ strong lights and radar system to improve visibility along the waterway due to smog.

c) Contributions of inland waterways to the development of china. (05marks)

- Helps to transport imports in form of raw materials for industries and agricultural sector and finished products to markets.
- Facilitated the development of industries in China for creation of employment and provision of cheap goods.
- Provision of employment opportunities to the population of China who earn income to improve their standard of living.
- Has facilitated development of the mining of minerals such as iron ore at Manchuria, Coal in Sichuan basin etc. and Tibetan plateau for industrial raw materials and exports to earn foreign exchange for imports.
- Development of urban centres / ports like Beijing, Tianjin, Guangzhou, Shanghai etc. to provide various functions like trade and commerce, administration, accommodation, etc.
- The Grand canal and High Speed Railway (HSR) act as tourist attraction that has helped to promote of tourism in China to earn foreign exchange for infrastructure development.
- Helped to promote the development of agricultural sector through provision of accessibility to transport agricultural products to markets centres in the coastal ports and cities in China.
- Provision of foreign exchange through handling of exports / international trade for importation of important capital goods.
- Source of revenue to the government of China through taxation on various transport and trade companies to develop public infrastructure and various services to people.
- Form of economic diversification to reduce overdependence on few sectors to widen sources of revenue / tax-base.
- Facilitated the development of infrastructure like roads, railways and canals to increase trade.

– Provision of income to the people of China through wages, trade, salaries etc. that has helped to improve their standard of living.

d) Name the:

i) two exports handled by ports in china.

ii) two imports handled by ports in china.