**S.4 GEOGRAPHY SEMINAR ANSWER GUIDE 2023**

# MAP WORK.

# (i) Grid reference of the road junction at Bulisa is 233345.

(ii) The man made feature found at grid reference 271339 is a **school.**

(iii) The distance of Wanseko to Butiaba and Masindi loose surface road is **10.5kilometers**.

(b) **A Sketch map of Bulisa showing vegetation types, seasonal swamps, Bulisa township, loose surface roads, lake basin and contour lines.**

**((c) Giving evidence from the map extract, describe the problems caused by the presence of Lake Albert.**

* Destructive floods leading to loss of lives.
* Attacks from dangerous wild animals leading to deaths.
* Outbreak of water borne diseases leading to sickness and deaths.
* Accidents due to drowning which leads to loss of life.
* Limits road construction leading to remoteness. **E.T.C..**

# (d) (i)Identify any two settlement patterns in the area shown on the map.

* Linear settlement along the Wanseko-Bulisa-Masindi loose surface road,
* Planned settlements at Ndandamire, Bulisa, Kisansya.
* Scattered settlements at Kitemura, Kisiabi, Bukindwa.

**(ii) Describe the factors that have influenced settlement in the area shown on the map extract.**

* Presence of loose surface roads has encouraged settlement e.g. along Wanseko-Bulisa road for easy transport.
* Absence of transport routes has hindered settlements due to remoteness e.g. at Kasenyi.
* Presence of social services has favoured settlement e.g. at Bulisa near the Post office, school at Kisansya.
* Presence of security/political stability has encouraged settlement e.g. at Bulisa near the Sub-county headquarters.
* Availability of employment opportunities has attracted settlements e.g. at Katara cotton store.

***2.PHOTOGRAPH INTERPRETATION***

(a) (i) It’s a ground photograph/ ground horizontal photograph

**Evidence**

* Features/objects can be seen from one dimension.
* Features and objects in the foreground appear to be clear and bigger than the ones in the background.
* Photograph covers a smaller area.
* The horizon/skyline can clearly be seen in the background of the photograph.

(ii) The economic activity is salt mining

**Evidence**

* Presence of salt pan in the foreground.
* Woman in the middleground is carrying rocksalt/piles in a basin.

(b) Describe) factors that have favoured the economic activity above

* Presence of cheap tools in form of a spade and basin.
* Presence of skilled labour in form of a woman in the salt pan in the fore ground.
* Presence of a large piece of land for salt extraction evidence by the wide area with salt pans.
* Presence of large sums of capital to buy tools e.g. the spade and basin.
* Presence of well developed transport network evidenced by the footpaths/road in the middle ground.

**Note: Points be described using proper adjectives for a candidate to score marks.**

(c) Explain the contributions of the economic activity to the economic development of any **one country** in East Africa.

**N.B: Candidate must choose a country first. Points remain the same.**

* It is a source of employment to the people thus earning income for improving standards of living.
* It is source of rock salt to people for cooking and making edible salt thus, improving people’s health / diet.
* It is a raw material in salt processing thus, development of local industries which provided jobs to the people.
* It is a source of local revenue in form of taxes thus, improving the local infrastructures used by the people.
* Provision of skills to people in mining related activities thus improving on their efficiency.
* It enables growth of local infrastructure like roads, thus, helping local people in terms of easy transport.
* It is a base for study in form of fieldwork thus, helping to improve education in the area.

**Note: Explanations must clearly bring out end value.**

(d)The area suggested should be any part/area in East Africa where salt is mined. **For example,**

* Lake Katwe in Kasese.

**Others**

* Lake Natron in Tanzania.
* Lake Magadi in Kenya

**Evidence**

* Presence of a large salt mining area.
* Presence of salt pans

**3. FIELDWORK**

(a) (i) Candidates should clearly state the topic of study which should be;-Achievable, Clear without ambiguity Stating **WHAT**was studied and **WHERE**the study took place.

(ii) Candidates should come up with clearly stated objectives that must reflect the topic under study. These objectives should; - Not repeat the topic of study, Be measurable and achievable, Be specific and clear and Be independent.

**Note:**

Objectives must be stated using action verbs, like;

To find out ………. To identify ……….

(b) A relief-section/cross-section/line-transect should have the following

* Title. It should clearly be comprehensive clearly specifying WHAT is drawn and WHAT it shows.
* Shading of the profile.
* Direction in form of an arrow pointing to the direction concerned.
* Proper labeling of features i.e. features should be given their local names. Features that stand above the ground are presented in pictorial form while those that appear linear on the ground are indicated using standing vertical lines. Features should touch the base of the cross-section.

b) Candidates should clearly show how the physical features have influenced (favoured or limited) land use activities.

* Physical features in the area may include; hills, steep slopes, gentle slopes, soils, forests, swamps, valleys etc.
* Land use activities may include; transport and communication, settlement, crop cultivation, forestry, etc.

Such relationships can be between; - Relief and settlement.

* Relief and telecommunication.
* Relief and transport.
* Soil and agriculture.
* Vegetation and settlement. - Drainage and transport.

Note: A correct answer must bear physical feature, land use activity and evidence from the area studied.

Physical feature + land use + evidence (local place name).

(c) Practical skills obtained during the study

Candidates should clearly show the skills acquired in the use of the fieldwork methods.

* We obtained observation skills through the use of our naked eyes.
* We obtained question formulation skills through the use of the interviewing method.
* We obtained measurement skills through the use of a tape measure and non-calibrated ways like footsteps and strides.
* We obtained sampling skills through random sampling to obtain soil types.
* We acquired the skill of preparing questionnaires that were served out to the respondents.
* We acquired the skill of orienting maps where a base map was used to see how the features with those on the ground.

**Section B: EAST AFRICA**

5(a) Gill netting

* A gill net is used that is vertically laid in water.
* The net is suspended by weights at the bottom and floats/floaters at the top.
* It is left in water for a long time in terms of hours.
* The fish is trapped by its gills as it swims through the net and get entangled in the meshes of the net.

While;

Lampara method

* Bright lamp(s) are placed on a floating object on water.
* The fish is attracted by the light.
* A scoop net with generally small meshes is used to enclose a shoal of fish.
* The method is used to catch light attracted fish like Dagaa in L. Tanganyika and Silver fish

(b) (i) Any two fresh water fish species

* Tilapia
* Nile perch
* Dagaa (Kapenta) / silver fish
* Bagrus
* Cat fish
* Lung fish
* Clarias
* Haplochromis

(ii) Any two marine fish species

* Sardines
* Tuna
* Marlin
* Queen fish
* Oysters

(c) Explain the factors that have limited marine fishing

* Shortage of capital to purchase modern fishing equipment leading to low fish catch.
* Pollution of the ocean by chemical wastes from industries along the coast e.g. oil refineries at Mombasa, industries at Tanga and Dar-es-Salam, which kill the fish.
* Existence of fish predators that reduces fish stocks other things e.g. chemicals, liver oils, fertilizers, animal feeds etc.
* Stiff competition for market from other fishing countries.
* Existence of rock shores along the coast which tear fish nets.
* Limited fish species leading to low fish output.
* Over fishing leading to exhaustion of fish species.
* Poor storage facilities leading to poor quality fish products.
* Low levels of technology resulting into low output.

**Note: Explanation must bring out effect of the problem.**

(d) Improving the transport sector to enable easy fish transportation.

* Introducing modern preservation methods e.g. deep freezing and refrigeration.
* Restocking the over fished waters (Indian Ocean)
* Scientific research is being intensified on fisheries.
* Fish co-operatives are being encouraged in order to access financial assistance.
* Introducing fish farming especially cage fish farming in the Indian Ocean and ponds.
* Modern facilities are being put around fishing ports e.g. piers, weighing shades, modern kilns for fish smoking etc.
* Regulations against over-fishing are being strengthened to deal with the culprits.
* Patrols on water bodies are being intensified to deal with fish smugglers.

6.(a) (i) Ports:

* + 1. - Mwanza.
    2. - Kigoma
    3. - Tanga
  1. Country D - Zambia
  2. Water bodies
     1. - Lake Rukwa
     2. - Lake Manyara
     3. - Lake Natron
  3. Railway line 4 - Tazara/Tanzam railway

(b) (Explain) benefits of railway line marked 4 (either)

* Generation of employment to people thus earning income for improving standard of living.
* Source of government revenue through taxes used to provide other social services.
* Promotion of co-operation with Zambia leading to improved trade relations.
* It has facilitated trade import and export trade.
* Promoted the growth of towns e.g. Mbeya, Ifakara, Kidatuetc which provide better social and economic services.
* Promoted the exploitation of resources from southern Tanzania leading to economic development.
* Promoted movement of people to various places for trade, education etc.
* It has promoted the growth of tourism in Tanzania thus increasing countries’ foreign exchange.
* It has contributed to economic diversification thus widening on sources of income.

Benefits of the Tanga port (or)

* Source of employment to traders.
* It handles goods going into the interior.
* Source of government revenue in form of taxes.
* It has promoted multi-lateral trade with other countries importing and exporting through it.
* It has promoted and strengthened relationships with other countries.
* It’s a centre for administration helping to keep law and order.
* It has promoted the growth of a number of industries.
* It is a great commercial centre thus promoting trade and commerce.
* It is a centre for social-recreation with great historical sites, beaches and art galleries.

(c) (Explain) factors for transport network distribution

* Flat relief and gentle slopes encourage easy development of transport routes.
* Steep slopes have discouraged easy construction of transport networks.
* Thick forested areas discourage construction of transport routes.
* Savannah grasslands encourage easy construction of transport routes.
* Densely populated areas encourage construction of transport routes.
* Well drained areas encourage easy construction of transport routes.
* Poorly drained areas discourage / hinder construction of transport routes. - Influence of population.
* Government policy.
* Historical factors.

(d) (Outline) problems facing the transport sector in East Africa.

* Occasional rainfall that damages bridges, culverts and making roads very slippery.
* Strong waves and storms on water bodies leading to capsizing of boats.
* Some areas are hilly and rugged that makes transportation and construction very costly.
* Occasional dense mist in morning hours which limits visibility causing accidents.
* Existence of water alls and rapids on rivers / water bodies.
* Fluctuation of water levels that limits navigation.
* Existence of fierce water animals that affects navigation and death of people.
* Breakdown of machinery especially railway engines and wagons which are too expensive to repair.
* Existence of the floating vegetation on water bodies.
* Disruption by highway robbers and pirates.
* Shortage of capital to invest in construction.
* Shortage of skilled technocrats e.g. civil engineers in road mapping.
* Political instability in some areas e.g. terror attacks in Kenya and rebels activities in Uganda.
* Frequent delays due to congestion at transport terminals e.g. Mombasa, Kampala, Nairobi etc.
* Limited supply of petroleum/oil. / High costs of petroleum.
* Existence of dangerous wild animals that limit road construction.
* The unfavourable laws governing land ownership i.e. governments find it costly to compensate for property in case of construction.

7. i) Use a Graph paper

ii) Description of the trend

* Between 2004 and 2005, there was a sharp increase in the number of tourists by 30000 tourists.
* Between 2006 and 2007, there was a slight increase in the number of tourists by 20000 tourists.
* Between 2007 and 2008 there was still a slight increase in the number of tourists by 20000 tourists.

b) Explain the factors which have led to trend above (a steady increase) in the number of tourists.

* Political stability
* Variety of wildlife and other tourist attractions
* Improved transport system
* Improved technology
* Abundant skilled labour
* Adequate capital
* Good international relationships

c) On problems facing the tourists industry

* Political instability
* Poaching
* Arid conditions leading to death of stock
* Un developed roads
* Remoteness of the tourist sites
* Limited market

d) measures being taken to improve the tourist industry

* Rehabilitation of transport
* Subsidization of entry fees at national parks
* There is maintenance of political stability
* Improvement of the accommodation facilities
* Training of more skilled labour tour guides.

END

**GEOGRAPHY 273/2**

**THE REST OF AFRICA**

1. **(a) Draw a sketch map of Africa and on it mark and name:**
2. **Highlands: Cape ranges, Adamawa and Ethiopian**
3. **Plateaus: Bie and Futa Djalon**
4. **Rivers: Zambezi and Niger.**

**(b) Describe the processes which were responsible for the formation of either Cape ranges or Ethiopian highlands.**

Cape ranges

Cape ranges are Fold Mountains which were formed as a result of compressional forces acting on the layers of young sedimentary rocks. Compressional forces push together masses of landscape from either sides, causing the rocks to develop anticlines and synclines. The anticlines form the Fold Mountains while synclines form the valleys separating them.

***Illustration***

***Ethiopian highlands***

These are volcanic mountains which were formed as a result of volcanicity, where molten rocks/ magma from the centre of the earth/ earth’s interior forced its way towards the earth’s surface through the vents or lines of weakness / fault lines. The lines of weakness in the earth’s crust are created by earth movements. On the surface, the magma accumulated and solidified into lava and ash layers to form volcanic highlands.

The composite volcano is built over a long period of time as a result of repeated explosive and calm ejection of materials. An explosive eruption brings out ash while a calm eruption brings out lava. Later explosions may blow off the top of the cone to form a crater. Sometimes molten rock forces its way through the sides of the volcano forming a parasitic cone/ conelet/ subsidiary cone.

***Illustration of volcanic mountain***

**(c) Explain the influence of highlands in Africa on rainfall distribution in the surrounding areas. (05mks)**

The highlands act as barriers to the prevailing winds/moist winds which are forced to rise, cool, condense, form clouds and result in rainfall on the windward side of the highland. The rains are heavy, relief rainfall (orographic rainfall). On the leeward side of the highland, the winds are dry descending winds, making the area to be dry with little rainfall. That side of the highland lies in a rain shadow.

***Illustration***

**(d) Outline the importance of highlands to the people living in the surrounding areas. (5mks)**

* Windward sides of highlands receive heavy rainfall and have fertile soils, which supports farming such as coffee in Ethiopia highlands, dairy farming in the Drakensburg.
* Lee ward sides of highlands are dry, which supports animal rearing where there is short grass for grazing.
* Mountains are sources of rivers which provide water for livestock, irrigation of crops, fishing and for domestic use.
* Highlands promote wildlife conservation since they act as suitable habitats of wildlife (flora and fauna).
* Highlands promote tourism practices such as mountaineering/ mountain climbing and photography due to impressive scenery; and this brings in foreign exchange.
* Due to heavy rainfall many mountain slopes are covered by forests giving rise to forestry and lumbering.
* Promote mining activities since they are important sources of minerals like iron ore, oil and cobalt in the Atlas Mountains, chromium in the Ethiopian highlands, nickel and uranium in the Drakensburg.
* Mountains are used for recreation activities such as mountain climbing and animal viewing in Drakensburg.
* Highlands / mountains contain rocks which are quarried to provide construction materials (stones and gravel).

1. **Study the table below showing the climatic statistics for station X in Africa and answer the questions that follow:**
2. **Draw a suitable graph to show the climate of station X. (09mks)**
3. **Calculate the mean annual:**
4. **temperature** ,

MAT=

= =20.660c (1mk)

1. **rainfall, for the station. (02mks)**

MAR=

= =992mm  ***(1mk)***

1. **Identify the type of climate represented in the table and graph above and give reasons to support your answer. (05mks)**

Tropical climate / tropical continental / Savanna climate

Reasons:

* Summers are hot (with temperatures above 200c)
* Winters are generally warm (with temperatures above 150c).
* The area has wet summers / Rainfall is mainly received in summer
* The area experiences dry winters/ winters receive little rains.
* Humidity is high during the wet season, and low during the dry season.
* The annual temperature range is moderate with 60c.
* The mean annual rainfall is received of 992mm which is moderate.
* The station experiences a single maxima of rainfall / mono-modal pattern of rainfall/ one rainfall peak.

1. **(i) Describe the human activities that can be carried out in the area around the station.**

**Note: Relate human activities to climate**

* Growing of mainly seasonal crops/ annual crops such as millet, maize, beans, cotton, simsim due to the alternate wet and dry seasons.
* Livestock rearing due to the natural vegetation consisting of mainly grasslands supported by the moderate rainfall.
* Lumbering from the woodlands and scattered trees supported by the moderate rainfall and hot temperatures.
* Industrialization due to forest and agricultural raw materials such as maize, milk, cotton supported by the moderate rainfall.
* Charcoal burning in the savanna woodlands and scattered trees supported by the moderate rainfall.
* Hunting of wild animals from the woodlands supported by the moderate rainfall.
* Tourism and wild life conservation since the moderate rainfall supports the growth of savanna woodlands and grasslands that provides a natural habitat for many species of wild life. (Some areas are gazette as national parks or wildlife reserves due to moderate rainfall).
* Bee keeping due to hot temperatures and dry months in the savanna woodlands **(apiculture).**

(ii) **Outline the climate-related problems faced by the people living in the area represented by station X.** (04mks)

* Widespread bush fires during the dry season, leading to soil erosion at the onset of the wet season and this destroys farmlands.
* Soil erosion during the wet season leading to loss of soil fertility.
* Occurrence of pests and diseases especially during the wet season such as tsetse flies causing Nagana to animals / sleeping sickness to man, which discourages settlement and animal rearing.
* Shortage of pasture for livestock rearing during the dry season leading to over grazing and thus soil erosion.
* Shortage of surface water during the prolonged drought/ dry season leading to death of livestock and people moving long distances to look for water.
* Wild animals occur in the savanna grasslands and woodlands supported by moderate rainfall such as hyenas, lions which discourage settlement and destroy farmlands.
* Crop failures after planting due to dry season/ prolonged drought which discourages crop growing). The long periods of drought also limit the range of crops grown.
* Floods occur during the wet season which destroys life and property/ discourage settlement and crop growing.
* Rapid growth of weeds during the wet season, which compete with crops for nutrients / increases the costs of farming.
* Air pollution during the dry season and water pollution during the wet season.
* Leaching during the wet season leading to loss of soil fertility.

1. **Study the table below showing Cameroon’s volume of export crops (2013-2014) in metric tonnes and answer the questions that follow:**
2. **Name the:**

(i) **least—Oil palm**

**(ii) most—Tea**

**dominant export crop from Cameroon in 2013. (02mks)**

1. **Draw a pie chart to show the relative importance of each export crop in 2013. (08mks)**

|  |  |  |
| --- | --- | --- |
| **Type of crop** |  | **Round off values** |
| Coffee | =220 | 220 |
| Oil palm | =2.80 | 30 |
| Tea | =133.70 | 1340 |
| Sugar | =89.70 | 900 |
| Tobacco | =111.70 | 1120 |
| **Total** | **359.90** | * **3610** |

1. **Explain the problems of depending on the exportation of agricultural products.**

**(08mks)**

* Price fluctuation on the world market which greatly affects the economy by leading to uncertain incomes.
* Agricultural products command lows prices on the world market which discourages many farmers.
* Neglect of other sectors of the economy such as diverting labour and funds from mining, industry to agricultural production.
* Competition from other producing countries leading to narrow market. Over dependence on foreign markets leading to price fluctuations and losses.
* Agricultural products are prone to climatic hazards like hailstorms and drought leading to losses.
* Agricultural products are seasonal and hence cannot be relied on for constant supply for export.
* Pests and diseases also attack the crops leading to poor quality and low quantity of output and low foreign exchange earnings.
* Agricultural products are perishable and hence require expensive air transport to foreign countries.
* Agricultural products are bulky and hence difficult to handle/ transport for export.
* Most agricultural areas are inaccessible which limits the delivery of products for exports.

1. **Outline the measures taken by Cameroon to address the problem of over depending on agricultural exports. (04mks)**

* Diversifying the economy such as developing mining and tourism, to reduce the effects of price fluctuations.
* Liberalization of the economy to encourage private investment in various economic activities.
* Developing export promotion industries/ processing factories to add value to agricultural output and hence commanding better prices.
* Promoting exportation of services such as labour, banking, education, to increase revenue.
* Carrying market research and creating new trade partners for agricultural exports.
* Excessive agricultural output is put to other uses such as excess maize used as animal feeds to reduce losses.
* Reviving cooperative societies to improve on the marketing of agricultural products.
* Encouraging crop research to improve the quality of agricultural products to off-set the stiff competition from other countries.
* Improving storage and packaging of perishable products through cooperatives.

1. **(a) (b) Distinguish betweencattle ranching andnomadic pastoralism.(06mks)**

**Note: Use a distinguishing word**

* Ranchers have their primary goal as commercial while the nomadic pastoralists mainly rear animals for subsistence.
* Under ranching there is clear/definite ownership of land (individual, cooperative, state) while under nomadism there is communal ownership of land.
* The ranchers keep improved herds (such as Red Angus, Hereford, Devon) for high quality and quantity of output while the nomadic pastoralists rear traditional indigenous breeds of animals (like long horn, white Fulani) which yield less.
* The carrying capacity of the land is strictly observed by the ranchers to ensure quality and quantity while the nomadic pastoralists ignore carrying capacity of land and they rear large herds of animals (overstocking).
* Under ranching fattening is considered important before slaughtering, hence improved feeds are used while under pastoralism the animals are skinny and it is their large number that matters.
* Under ranching there is controlled grazing and movement using the Paddocking system while the nomadic pastoralists have their movements influenced by seasonal changes with uncontrolled grazing.
* Under ranching, grazing is on permanent farms called ranches while under pastoralism, the animals move from one place to another in search of pastures.
* The ranches have permanently established watering points (such as dams and piped water) while under pastoralism, there is movement from one place to another in search of water.
* Under ranching scientific methods are dominant such as spraying, dipping, de-worming while under nomadic pastoralism no scientific methods are used.
* Under ranching, there is high capital investment to buy machinery, veterinary services, and feed troughs while under pastoralism less or no capital is used in animal rearing.
* Improved pastures are used under ranching (such as alfalfa, hay) which supplement the natural pastures while the nomadic pastoralists depend on natural pastures.
* Under ranching, the pastures are well managed(involving irrigation and scientific drying) while under pastoralism there bush burning during the dry season expecting fresh pastures at the onset of the wet season.
* Under ranching record keeping is very important while under pastoralism record keeping does not exist since herders are mainly illiterate.
* Under ranching there are permanently established settlements (such as labour camps, ranch offices) while under pastoralism there are no permanent settlements, since they are ever on the move in search for pastures and water supply.

**(b)Name any:**

**(i) two countries where pastoralism is practiced.**

Senegal, Mauritania, Mali, Niger, Northern Nigeria, Chad, Cameroon, South Sudan, Sudan, Libya, Somalia, Namibia, Botswana, south Africa.

(**ii) two countries where cattle ranching is practiced.**

Botswana, Zambia, Angola, Zimbabwe, Nigeria, South Africa.

**(c)Describe the conditions which have led to the practice of either pastoralism or cattleranchingin anyone country named in (b) above. (05mks)**

**Choose the system and one country (No choice No mark)**

Pastoralism e.g Nigeria

* **Low / Little and unreliable rainfall** making cultivation of crops very difficult (unless irrigation is practiced) and hence nomadic pastoralism being the best alternative land use.
* **The prolonged drought** leading to shortage of water and pasture, necessitating movement from pace to place.
* **Presence of short savanna grassland**, which favours movement of pastoralists with their animals such as the savanna zones of the Fulani in West Africa.
* **Infertile sandy soils such as sandy soils which** discourage arable farming (growing of crops), making pastoralism the best alternative land use. For example the sandy soils in Botswana and Namibia.
* **Generally flat relief/landscape**; which allows easy movement of pastoralists and their animals over a large area.
* **Sparse population of the pastoral areas** and thus leaving a vast / large area for the pastoralists to keep on shifting from one place to another.
* **Traditional/cultural conservatism of the pastoral communities** --looking at nomadism as the best way of life and are not willing to change their practices away from pastoralism.
* **Dependence on animals as aSource of livelihood** such as milk, meat and blood; clothing in form of hides and skins; and transport (in case of camels).
* **The value attached to the animals** such as a basic payment of bride price, a symbol of wealth, prestige and power in society; making them to keep large herds of animals regardless of the quality.
* **Hostility of the nomads**. The pastoralists resist any foreigners into their areas because they take it as a threat their land and animals. This has also forced many people and organizations to ignore the pastoral areas.
* **Communal ownership of land in the pastoral areas,** which encourages their free/constant movement from place to place with their animals.
* **Remoteness/Poorly developed transport network**, which has prevented them from entering the main stream economy such as selling off animals.
* **Government neglect of the pastoral areas, whereby the** governments have not done much to change the ways of life such as by setting up the required infrastructure

Cattle ranching e.g Botswana

* Little and unreliable rainfall which does not favour crop cultivation and hence favouring animal rearing under ranching.
* Presence of relatively flat landscape which favours easy movement of animals and construction of facilities.
* Availability of extensive land to set up and expand ranches due to the low population density.
* Presence of local breeds of cattle which needed to be improved through modern ranching.
* Limited surface water which caused the establishment of valley dams to support cattle ranching.
* The need to control serious cattle diseases which affected cattle keepers and thus resettlement for efficient veterinary services was necessary.
* The need to teach farmers modern methods of livestock rearing such as Paddocking, using simple dams.
* Supportive/positive government policy towards ranching, intended to improve the production of beef and its management such as mobilizing funds for setting up demonstration ranches.
* Availability of adequate capital required to set up demonstration ranches provided by the government and European Economic Community (now European Union).
* Presence of improved transport routes especially the railway and roads through ranching areas for easy movement of farm inputs and output.
* Availability of a large market both domestic and foreign for beef. Botswana exports to UK and other countries.
* Availability of skilled labour to work on the demonstration farms, initially from Europe, but later trained local people.

**(d)(i)Outline the problems faced by traditional livestock farmers in any one country in**

**Africa.**

* **Shortage of water** for their animals due to low and unreliable rainfall hence losing a large number of animals.
* Poor quality natural pastures, dominated by coarse grasses which cannot support large of herds of cattle and therefore even poor products are realized. (**shortage of pasture**)
* **Diseases** which affect the animals such as Nagana (trypanosomiasis) caused by tsetse flies, leading to loss of large numbers of animals/ poor quality animals.
* Periodic **invasion of locusts** in the pastoral areas, which destroy pastures and hence loss of livestock.
* **Poor quality native breeds** of cattle reared taking long to mature and producing poor quality meat and low milk yields.
* **Long distances** moved by the pastoralists with their animals, in search of water and pasture, making the animals lose weight.
* Occurrence of **wild animals** (predators) especially in the savanna zones such as hyenas, lions, wild dogs, which attack the pastoralists and their animals especially as they migrate.
* **Persistent famine** among the pastoralists due to prolonged drought conditions and failure of the nomads to grow food crops/ hence frequent food shortages.
* **Over stocking** resulting into over grazing, vegetation destruction and soil erosion.
* The practice of **burning grass during the dry season** among the pastoralists and leaves the soils bare, exposing it to soil erosion and leads to the growth of resistant/ less -less nutritious pastures.
* **Conflicts between the nomads and other people** especially cultivators over land since nomads do not respect boundaries or other people in their search for pasture and water supply.
* **Hostile attitudes of other people** towards the nomadic pastoralists which has made the nomads fail to change to modernity since they look isolated as a group.
* **Illiteracy/lack of education** among the livestock farmers because education services have not been effectively extended to them.
* **Remoteness** / poor infrastructure which discourages the transportation of output to the market.
* **Inadequate/limited capital** which discourages improvements in their animal rearing such as constructing bore holes for water supply and buying drugs, dipping, vaccination- hence low quality output.
* **Rapidly growing population** hence need for settlement land, which increases pressure on animal rearing areas and hence hindering their movement from place to place.
* **Political instabilities** are rampant in many areas of traditional livestock rearing, resulting into loss of animals and constant movement looking for safer areas**.**

**(ii) Using specific examples, explain the measures being taken to improve the livestock industryinAfrica.**

**Consider the use of examples in the points raised ( NO EXAMPLE NO MARK)**

* Carrying out intensive research in ranching for example onpests and disease control, animal breeds, pasture varieties in Nigeria and Botswana.
* Promoting cross breeding local breeds with exotic breeds to get hybrid animals which can withstand the local environment such as in Zambia and Botswana.
* Encouraging formation of cooperatives among the farmers to boost production, processing and marketing of the beef and other animal products for example in Zambia.
* Encouraging scientific methods of livestock husbandry such as pest control, paddocking for rotational grazing, pasture management.
* Constructing more permanent water points such as boreholes, valley dams, and underground tanks to minimize the problem of water shortage.
* Government extending transport routes to various areas where ranches are located such as northern Nigeria for easy access to extension services and markets.
* Improving storage and preservation processes and facilities for beef and beef products such as using refrigeration.
* Carrying out spraying and dipping to control pests and diseases such as nagana in Nigeria.
* Planting more improved pastures such as fodder crops which are drought resistant to support the ranches.
* Providing of irrigation facilities for pasture during drought periods.
* Promoting extension services in various areas such as providing veterinary doctors, provision of mobile animal clinics. (training more extension officers).
* Providing constant water supply through sinking bore holes, extending piped water, construction of valley dams.
* Providing supplementary feeds for quick maturity and fattening of the beef animals such as maize and oat meals.
* Carrying out more market research in other countries to minimize the problem of limited domestic market.
* Promoting regional cooperation to also widen market for beef and beef products such as SADCC, COMESA.
* Government establishing more demonstration farms / ranching schemes to support the livestock industry by extending services to farmers such as in Botswana.
* Extending loans / credit facilities to farmers to boost production such as purchasing of drugs, improving animal breeds, paddocking, constructing dips.
* Emphasizing continued education programs to the farmers about modern cattle rearing to improve quality of output (mass education and awareness) such as in schools, famers’ cooperatives.

5. **(a) Draw a sketch map of Egypt and on it mark and name the:**

**(i) Towns: Alexandria, Cairo and Idfu**

**(ii) Aswan high dam**

**(iii) Lake Nasser**

**(iv)Areas where petroleum, phosphates and manganese are obtained. (09mks)**

**(b) Describe the conditions which have encouraged the concentration of industries in either Cairo orAlexandria.**

**Choose one town and the factors are more or less the same (No town chosen No mark)**

* Ready /large supply of raw materials which are transformed into finished goods such as cotton in the Nile delta for textiles, oil for refinery at Cairo and Alexandria.
* Availability of large quantities of power to run the machines in industries for example hydroelectric power at Aswan and oil refining at Alexandria.
* Presence of ready/steady water supply to use as a raw material or for cooling machines. For example water from the Nile River is used in the Delta region and along the Mediterranean coast.
* Presence of abundant skilled to work in the industries for example Cairo and Alexandria which are highly populated.
* Availability of developed / efficient transport network to transport raw materials to industries and finished goods to markets such as road and railway in the Nile delta region.
* Presence of a large market in the highly populated such as Cairo, Alexandria has attracted industries/ encourages many industrial investors.
* Availability of adequate capital for industrial investment such as constructing industries and purchasing raw materials.
* Industrial inertia—involving the concentration of many primary and secondary industries in a given area for a very long period of time.
* Political stabilityof the area hence increasing the confidence of industrial investors such as in Cairo.
* Availability of large / extensive/ vast land to set up and expand industries.
* Supportive government policy towards industrial development such as setting aside several industrial sites in Cairo and Alexandria.

**(c)Explain the role of the industrial sector to the development of Egypt.**

* **Generation of foreign exchange** through the exportation of the industrial goods such as textiles, chemicals to other countries like in Britain, Japan, and foreign currency used to import foreign goods.
* **Generation of many employment opportunities**directly and indirectly such as the supply of industrial raw materials, industrial processing, grading and packing which has promoted the standards of living of the people.
* **Promoted development of urban centres** for example Cairo, Port Said hence expansion of associated facilities such as banking, insurance, education, hospitals, recreation, entertainment.
* **Facilitates capital accumulation** from the sale of the industrial goods which promotes investment in various sectors of the economy like mining, farming and tourism.
* **Generation of government revenue** from the taxation of the industrial companies, the incomes of employees; which is invested in various sectors like fisheries, education sector, health sector.
* **Industry has promoted international relationship/cooperation with other countries** such as Japan, Netherlands and Britain which import the industrial products; which in turn has increased trade and economic contacts / capital inflow.
* **Development of transport infrastructure** for example roads and railways in Cairo to transport raw materials and finished goods.
* **Promoted diversification of the economy** by supplementing on income from other economic activities. (It has reduced over dependence on few sectors like agriculture) for income and taxes).
* **Facilitates technological development and research** through adopting and transferring modern machines from other countries to improve the quality of products such as automation.
* **Provision of market for other sectors** like agriculture, trade and commerce, tourism due to the linkages which in turn increases employment generation, government revenue and national income.
* **Improves balance of payment position**through adding value to increase export earnings and by reducing expenditure on imports by substituting them with locally produced goods.
* **Promotes self-sufficiency in the production of manufactured goods** which in turn reduces economic dependence on other countries.
* **Promotes efficient utilization of natural resources** such as mineral resources, forestry resources, water resources, and agricultural resources which are used as raw materials and sources of energy.

**(d) Outline the environmental problems created by the industrial sector in Egypt.**

* Pollution of the environment for example air pollution through emissions of wastes from industries and this reduces the quality of life.
* Results into high crime rates due to unemployment, overcrowding and growth of slums.
* Traffic congestion during the peak hours, causing delays in delivery of goods and services in areas.
* Population explosion leading overcrowding in public places hence straining public utilities, high cost of living / easy spread of diseases in areas.
* High cost of living due to high demand for goods and services especially in urban industrial areas.
* Increased unemployment because many industries use capital intensive technology and this leads to high crime rate.
* Growth of slums especially on the outskirts of the industrial cities where causal workers reside leading to poor sanitation and easy spread of diseases.
* High government expenditure on the provision of social services such as water, medical care, education due to high population the highly industrialized towns, and this strains the government budget.
* Over exploitation of natural resources such as minerals, forest resources used as inputs in industrial sector leading to quick resource exhaustion.
* Destruction of natural vegetation cover through deforestation to set up industrial sites or expand the industries; hence reduced rainfall totals/ drought / increased pollution levels in areas.
* Contributes to global warming through destruction of the ozone layer by emission of dangerous gases to the atmosphere from industries, and hence worsening conditions of life on earth / leading to unpredictable weather patterns.
* Destruction of the natural landscape such as through leveling the landscape / tarmacking of the soil surface / reclaiming of swamps to set up or expand industries, hence loss of natural beauty / loss of bio diversity/ causing flooding in areas.
* Shortage of land for urban expansion due to many activities such as industrialization, settlement, trade and commerce, recreation in areas
* Displacement of many people to set up and expand industries in areas, resulting into expensive resettlement/ relocation of people / poor living conditions in the new settlement zones.

1. **Study table below showing the value of mineral sales in the Republic of South Africa (million Rand) in 2021 and answer the questions that follow:**

**(a) Draw a line graph to represent the information in the table above.**

**(b) Describe the method of extracting minerals that lie deep underground in the Rep. of South Africa.**

**Shaft/ underground mining**

This is used when the mineral ores lie deep below the surface*.*Vertical shafts are dug into the ground to appropriate levels. From these, horizontal tunnels leading to the ore body. Supportersand ventilation are provided from the roof to the floor of the tunnels. The ore is then blasted using explosives causing shattering. The ores are crushed and loaded on small wagons and taken to the vertical shaft, and lifted to the surface, using a winding gear and taken to processing plants.

**Illustration of underground / shaft mining**

**(c)Explain the importance of the mining sector in the development of Rep. of South Africa.**

* **Generation of foreign exchange** through exporting minerals like gold, platinum, coal foreign currency generated helps to import foreign goods not produced locally, and foreign technology.
* **Promoted industrial development such as** gold refining and diamond cutting industries insprings and Johannesburg, iron and steel industries in Pretoria by providing raw materials.
* **Generated employment opportunities**such as mineral extraction, processing, refining, transportation, hence improving the standards of living
* **Provide a large source of power/ energy** such as coal and uranium in the Rand has enabled the supply of power for domestic and industrial use.
* **Promoted development of urban centres**such as Johannesburg, Pretoria, Germiston, springs, Benoni, Witbank, and Kimberley hence expansion of functions such as banking, insurance, education, hospitals, recreation, entertainment, and research facilities.
* **Facilitates capital accumulation** such as from the sale of gold and diamond mining which is used to invest in various sectors of the economy like industry, sugarcane growing and tourism.
* **Generation of government revenue**from the taxation of mining companies and workers’ incomes and this is used to develop infrastructure.
* **Promoted international relationship between South Africaand other countries**where the mining companies originate, countries importing the minerals such as UK, USA, Japan, Canada which has increased trade and economic contacts and international peace.
* **Encourages the inflow of investors** to invest in not only the mining sector, but also other sectors such as industry, and the service sector which in turn boosts the national income.
* **Promoted development of transport infrastructure** for example advanced road and railway to transport minerals to processing centres and export ports.
* **Diversification of the economy by** supplementing on income from other economic activities like agriculture; thereby expanding the tax revenue, employment.
* **Promoted technological development and research** through the use of modern mining and processing methods leading to quality production.
* **Provision of market for other sectors of the economy** like agriculture, trade and commerce, tourism—given the linkage with such sectors. For example, agriculture supplies food for industrial workers.

**(d)Outline the challenges facing the mining sector in Rep. of South Africa.**

* Shortage of labour in mines and related industries due to better paying jobs in other sectors and this undermines production.
* Shortage of water needed in processing of minerals especially in the Rand discouraging production.
* Price fluctuations of minerals on the world market leading to unstable incomes / reduces the profit margins; discouraging production.
* Competition with other mineral producing countries like Ghana, DRC producing gold which reduces the available foreign market
* Long routes to the coast which increases the transport costs and lowers the profit margin.
* Labour unrest / strikes due to demand for better working conditions and fight against racial segregation, and this discourages production.
* Accidents during mining such as falling rocks leading to loss of life and thus discouraging potential workers.
* Suffocation due to limited fresh air and flooding of the mines which scares away many potential workers and thus discouraging production.
* High costs of mining due to increasing depth of the mines and this lowers the profit margin.
* Over exploitation of minerals leading to exhaustion of some high grade mineral deposits and thus threatening/ discouraging future production.
* The closure of exhausted mines leads to unemployment and the emergency of ghost towns.

**STUDIES IN DEVELOPMENT**

**REGION I: NORTH AMERICA**

1. **(a)Draw a sketch map of Canada and on it mark and name:**

**(i) the Canadian prairies**

**(ii) states: Alberta , Saskatchewan and Manitoba**

**(iii) two wheat export routes**

**(iv) two wheat export ports.**

**(b) Explain the physical conditions that have favoured extensive wheat growing in the Canadian Prairies.**

* Presence of well-drained and deep fertile soils (with high content of phosphorus and potassium) which support proper wheat growing.
* The warm summer temperatures of about 220c which is necessary for ripening and harvesting.
* The gently sloping/ generally flat landscape which allows easy mechanization and construction of transport routes.
* Availability of large/ extensive land for growing of wheat on large scale.
* Moderate / average rainfall of about 500mm per year which supports healthy wheat growing.
* The frost-free growing season which leads to proper growing and maturing of wheat, hence high quantity of production.

**(c)(i)State any three uses of wheat.**

* Making of confectionaries such as bread and snack foods.
* For brewing of beer
* Making of animal feeds from residues
* Residues are used for mulching

**(ii)What are the challenges facing wheat exportation in Canada?**

* Price fluctuations on the world market which leads to unstable incomes, discouraging farmers
* Over production of wheat which makes marketing of output difficult , fall in prices, hence losses
* Competition with other wheat producing countries especially USA which reduces the market for Canadian wheat, and thus discouraging production.
* Competition for port facilities along the export routes leading to delays in exportation.
* Long distance to the coast which increases the transport costs for example the western route.
* Prolonged Winter freezing which disrupts the export routes such as Hudson bay is frozen most of the year.
* Presence of few port handling facilities such as the northern route has only one port, resulting into port congestion.

**(d) Outline the measures being taken to control the problems in(c) (ii) above.**

* Diversifying the crop growing such as the growing of barley and maize; to reduce the effects of price fluctuations.
* Encouraging mixed farming to reduce the effects of over dependence on wheat.
* Using excessive wheat are used as animal feeds to reduce losses.
* Carrying out more research to produce high quality wheat to off-set stiff competition from other countries
* Importing of food especially maize in order to supplement the available food supply.
* Storing of wheat in elevators during over production and selling it when production reduces.
* Setting up more processing factories to add value to wheat and hence easy storage.
* Increasing research into new varieties of wheat which are disease resistant and fast maturing / to ensure quality production to compete favourably in the international markets.
* Providing of better and bigger storage facilities for wheat during over production to stabilize prices.
* Using of the quota system to pre-determine production and control over production.
* Constructing of more port facilities to reduce port congestion.

8. **(a) Name any two:**

**(i) States in New England,**

* Massachusetts
* Rhode Island
* Vermont
* New Hampshire
* Maine
* Connecticut

**(ii) Traditional industries in New England,**

* Textile
* Ship building and boat making
* Iron and steel industries
* Saw milling
* Fish processing
* Printing
* Leather tanning and footwear.

**(iii)New industries in New England.**

* Electrical engineering/ machinery
* Transport equipment
* Clocks and watches
* Plastics
* Aircraft manufacture/ aero-space industry
* Fire arms/ armaments
* Computers
* Chemical industries
* Transport equipment manufacture
* Food processing

**(b) State the reasons for the decline of the old/ traditional industries in New England.**

* Shortage / Exhaustion of raw materials in the region such as depleted forests, shortage of cotton and thus the need to for new sources of raw materials.
* The poor working conditions in the old industrial region such as low wages which led to shortage of labour to be used in industries, and this also led to the decline of old industries and workers moved to the new industrial region searching for better wages.
* Most of the workers joined trade unions which demanded for better working conditions and higher pay for the members leading to high costs of labour and many industries could not be profitable.
* Industrial owners moved elsewhere to search for better conditions and higher profits and hence decline in industrial production.
* The need to move closer to new markets after the shift of a large population to the new industrial areas (change in the centre of gravity), since the old industrial region had been left in the periphery.
* The search for new sources of energy for example hydroelectricity after the depletion / exhaustion of coal and oil in the old industrial region.
* Competition from the emerging industries in the new region producing similar goods using synthetic fibres and cheaper technology, which reduced the profitability of industries in the old industrial region.
* The industrial machinery became outdated and less efficient, hence discouraging production (outdated technology leading to the production of lower quality and quantity of output).
* The industrial buildings had become too old and thus abandoned by industrialists who sifted to the new industrial region.
* High costs of transport because most of the raw materials in the old industrial region had to be imported which was becoming expensive, hence it was better to shift the industries.

**(c) Describe the factors that have favoured the development of the new industries in New England.**

* The need by the government to develop new industries as the old ones were declining. For example the government gave subsidies and tax exemptions to industries.
* Large quantities of power such as hydroelectric power, coal to run machines in industries.
* There was a decline in agricultural production and accordingly emphasis was put on development of industries.
* Availability of highly skilled force to work in industries and producing high value goods. Better working conditions were put in the new industries to attract more skilled labour to the industries.
* Availability of abundant water supply from the rivers in New England for use in the industries such as a raw material and cooling machines.
* Availability of large domestic and foreign market for the manufactured goods, which promotes production.
* Availability of adequate capital to invest in industrial development provided by the government and private investors.
* Availability of extensive/ large land to set up and expand industries.
* Availability of well-developed transport system by road, rail, water and air to transport raw materials and finished goods.
* Increased / intensive research in industry on new production methods and new products which expands production.
* Proximity of New England to the coast which has made the importation of raw materials and exportation of finished goods easy.

**(d) Explain the challenges faced in the development of industries in New England.**

* Shortage of raw materials such as due to exhaustion of forests and minerals; discouraging production.
* Over dependence on some imported raw materials which increases the costs of production.
* Competition with other industrial regions or countries producing similar goods, which discourages the available market.
* Price fluctuations on the world market, leading to unstable incomes to the producers, discouraging further investment in industry.
* Congestion at the ports such as Boston and New Bedford, hence delays in delivery of raw materials and finished goods.
* Difficult transport in the steep slopes of the Appalachian Mountains.
* Shortage of labour due to better paying jobs elsewhere such as the Great Lakes region, hence discouraging industrial production.
* High costs of labour leading to high costs of production, hence discouraging industrial expansion.
* Shortage of land in the major centres discouraging industrial expansion.
* Pollution of the environment leading to high costs of operation such as purifying polluted water.

1. **(a)Draw a sketch map of Great lakes and St. Lawrence seaway , and on it mark and name the following:**
2. **Lakes: Superior, Huron and Ontario**
3. **Rivers: St. Lawrence and Ottawa**
4. **Canals: Sault Ste Marie and Welland**
5. **Gulf of St. Lawrence**

**(b) Explain why the St. Lawrence seaway was undertaken.**

* To create deep waters for navigation, to allow large ocean-going vessels to sail through.
* To connect the rich interior lands with the Atlantic seaboard, and thus facilitate movement of imports and exports.
* To generate hydroelectric power on the various waterfalls for both USA and Canada due to increasing demand.
* To control flooding which used to disturb the river valley and hence improve the living conditions.
* To facilitate the exploitation of minerals to be transported for smelting centres cheaply such as iron ore from Labrador.
* To industrialize and develop the region, through easy movement of raw materials and finished goods.

**(c)What steps were taken in the construction of the seaway?**

* Construction of canals around waterfalls and rapids such as the Welland canal and Soo canal (canals to by-pass rapids and waterfalls) to improve navigation.
* Dams were constructed to control floods (by containing excess water) i.e. to raise the water levels and submerge the rapids to enable easy sailing of vessels.
* Locks were constructed to regulate the water level and enable sailing of ships. Some are single locks and others are double locks.
* Blasting (using explosives / dynamite) was done to remove rocks and shatter islands using explosives, to make the river deep for navigation.
* Constant dredging to maintain the depth to allow large vessels to sail into the Great Lakes (especially between Kingston and Montreal).
* Special ships called ice breakers were introduced to break ice and allow navigation to take place during winter (they clear the way for other ships).
* Widening and deepening of the river channel and canals to allow large ocean vessels.
* Use of strong lights and radar system in times of fog for clear visibility while navigating.
* Cooperation between USA and Canada governments to meet the costs of constructing and maintaining the seaway.

**(d)State the benefits of the St. Lawrence Seaway to the people Canada and USA.**

* Flooding has been controlled by dams and they created water reservoirs to act as fishing grounds.
* The Seaway provides one of the easiest means of transport to the Great Lakes region and allows ocean-going vessels to sail straight.
* The Seaway has promoted the transport of heavy and bulky goods such as iron ore, manufactured goods, hence promoting industrial investment.
* Facilitates the exploitation of minerals in the Great Lakes region such as iron ore from Labrador, iron ore from the Mesabi Range, coal from Pittsburgh due to easy accessibility.
* Promotes agricultural development within the Great Lakes region such as dairy farming at Michigan, wheat growing in Prairies, market gardening due to easy accessibility.
* Promotes industrial development such as pulp and paper, chemical, textiles, automobile due to easy movement of raw materials and finished goods.
* It has promoted the development of ports and towns such as buffalo, Chicago, Cleveland, Duluth, and Toronto; with increased population and better facilities like banking, schools and hospitals.
* Generated employment opportunities to the people of USA and Canada, and this improving the standards of living.
* Enhanced tourism development by opening up the tourist potentials of the Great Lakes region canals, waterfalls, dams, industries ; hence generating foreign exchange.
* The Seaway has created political harmony between USA and Canada as it is shared, which is a basis of diplomatic and business relations.
* Generates government revenue through the taxes imposed on shipping companies, and workers along the Seaway; and this revenue is used in the provision of social services.
* Improvement in other transport infrastructure such as roads, railway, canals linking the Seaway to others areas.
* Generation of hydroelectricity along the seaway from the various dams such as Niagara dam and Beauharnois dam; hence supporting various economic and social activities.

**REGIONN II: RHINELANDS**

1. (a) **Draw a sketch map of the Rhine Rift Valley and on it mark and name:**

**(i) rivers: Rhine, and Main**

**(ii) Rhine Rift Valley and the Rhine gorge**

**(iii) towns: Manheim and Ludwigshafen**

**(iv) Vine growing areas.**

**(b) Describe the process which was responsible for the formation of the Rhine Rift Valley.**

The Rhine Rift Valley was formed as a result of faulting. Tensional forces pull apart the land mass in two different directions; leading to the formation of multiple normal faults in the sedimentary rock strata (rock layers). As tensional forces continue, the fault lines widen and the middle block sinks/subsides to form a rift valley. The side blocks were left standing thus forming Block Mountains (Vosges on the west), Black forest on the east). The rift valley was further shaped by weathering and erosion.

***Illustration of the tensional force theory***

**(c)Explain the conditions that have favoured vine growing in the Rhine Rift Valley.**

* Presence of fertile alluvial soils deposited by the Rhine River floods which support the healthy growing of vines.
* Presence of the steady supply of water for irrigation from the Rhine River during the dry period for proper vine growing.
* Moderate /Ample summer rainfall which enables the fruits to grow and mature properly.
* The south facing slopes which are warmer as they receive maximum sunshine that favours luxuriant vine growing.
* The gently sloping /generally flat nature of the valley especially on the western parts of the rift valley which facilitates mechanization of farming.
* Warm sunny summers which often can go above 250c which assists in the ripening of the fruits.
* The valley is well sheltered from strong winds (from the strong cold east winds) by the mountain ranges which enables proper vine growing to be carried out/ no breaking of young stems.
* Presence of a large market such as large urban centres and European countries, which encourages the expansion of vienyards.
* Availability of skilled labour force in modern farming such as mechanization, harvesting, irrigation.
* Modern technology employed in farming such as irrigation systems, use of machines in spraying, hence high quality output.
* Availability of adequate capital to invest in vine growing such as buying machines, fertilizers and irrigation facilities.
* The formation of cooperatives which help in acquiring of loans, collective buying of farm inputs and collective selling of farm produce.
* Intensive/ developed research in vine growing such as application of fertilizers and discovering new varieties which quick maturing and high yielding.
* The development of many processing factories in the region which provide a ready market for the grapes.

**(d) Outline the problems faced by the vine growers in the Rhine valley.**

* Pests like moths, red spider, warms which damage the vine plants
* Diseases for example Peronospera disease, Oidium which destroy the vines
* The steep slopes also limit the area for cultivation/ the use of machines and hinder the transportation of grapes.
* Frost especially during winter and part of spring during the flowering period; and this means reduced yields/ limits flowering of vines.
* Seasonal flooding of the Rhine River also leads to the destruction of farmlands and thus losses.
* Soil erosion due to the steep slopes which reduces the fertility of soils leading to poor yields.
* Soil exhaustion due to intensive cultivation and thus reduced yields.
* Occasional drought during the growing period, which in turns reduces the output.
* Shortage of labour especially during the very busy periods of harvesting because skilled labour is attracted to better paying industry instead of working on vineyards.
* High costs of production are incurred such as expensive fertilizers and pesticides plus spraying facilities.
* Limited land for farming since there are many activities taking place in the area and this discourages farm expansion.
* Pollution of the land and water through the use fertilizers and wastes from the industries, which discourages production.
* Competition for market with other vine producing nations such as south Africa which reduces the profit margin.
* The growth of weeds which compete with crops for nutrients leading to low output.

1. **Draw a line graph to show the information given in the table.**
2. **Describe the:**

**(i)trend in the value of dairy products between 2016 and 2022.**

* Between 2016-17 and 2017-18 there was a slight increase in dairy products by 0.75 (£ billion)
* Between 2017-18 and 2018-19 there was a slight decline / fall in dairy products by 0.02 (£ billion)
* Between 2018-19 and 2019-20 there was a rapid increase in dairy products by 1.57 (£ billion)
* Between 2016 and 2021 there was a general fluctuation in the value of dairy products.

**(ii)conditions which have caused the trend in (b) (i) in Belgium.**

**The increase in the value of dairy products was due to***: (from positive factors)*

* Expansion of land area devoted to animal rearing, hence increased production.
* Increased variety of fodder crops such as hay, oats, and rye used to feed the animals.
* Increased capital invested in dairy farming such as construction of shelters for in-door grazing and carrying out research.
* Expansion of market both domestic and foreign for the animal products, which encouraged more production.
* Modernization of transport network to transport farm inputs and farm produce.
* Modernization of technology such as the use of electric milking machines leading to high quality and quantity of output.
* Increased research in animal rearing such as on the growing of fodder crops and artificial insemination to better animal breeds.
* The development of processing industries to handle dairy products which also expands the market.
* The formation of more cooperatives which help in buying of farm inputs, selling of farm output and carrying out research.

**The decrease was due to:** *(from the challenges)*

* Stiff competition from other European countries, which has reduced the market available for the animal products.
* The EU requirement to liberalize the economy has reduced the country’s subsidies to the local farmers.
* Diseases which affect livestock and thus reducing the quality and quantity of output.
* Falling prices of farm products affecting Europe in general, making livestock production less profitable since many farmers fail to meet production costs.
* Price fluctuation of milk on the world market which discourages farmers/ leads to unstable incomes.
* Increasing costs of production such as artificial insemination and this reduces the profit margin.
* Decline / Shortage of labour to work on the dairy farms due to the small population.

1. **Explain the benefits of dairy farming to the people of Belgium.**

(Refer to other questions)

1. **Name any two dairy cattle breeds in Belgium.**

Ayrshire, Guernsey, Alderney, Jersey, Friesian Red, Friesian White, Friesian Black, Swiss Brown, Fries Hollandse, Fleckvieh, Blaarkop.

1. (a) **Draw a sketch map showing the Zuider Zee polders and on it mark and Name:**

**(i) North Sea**

**(ii) North Sea canal**

**(iii) River Yssel**

**(iv) North West polder, East polder and South polder**

**(b) Describe the process of land reclamation in the Netherlands.**

* Survey / exploration is done to determine the nature of soil of the land under the sea
* Ring dykes are constructed to surround the area to be reclaimed (made of concrete, clay and sand blocks).
* The seawater is pumped out of the enclosed area into the open sea using diesel engines / pumps.
* Ditches or trenches are dug within the polder to drain out all the trapped water in the enclosed area.
* Main canals are also constructed to take out the water from the drained area.
* De-salination is done using fresh water. (Rainwater or river water is allowed to fall into the enclosed area to dissolve all the salts from the polder and this takes about 4 years. (Lime is also used to de-salinate the land).
* Bamboo shoots and reeds are fixed into the enclosed area to help in the absorbing/ draining the salty water.
* Fertilizers and sand are added to the reclaimed land.
* The land is deep ploughed to prepare for planting.
* Pasture is planted in the reclaimed land for a few years.
* Polders are later used for food production, animal rearing, settlement, industrialization.

***Structure of a polder***

**(c) Explain the environmental problems which resulted from land reclamation in the Netherlands.**

* Salination of the soil due to underground seepage of sea water hence reduced the productivity of the land for agriculture.
* Sea incursions / Flooding resulting from damage of dykes and snow melting leading to increased water volume, destroying life and property.
* Unstable sinking land making some parts of the polders very risky for settlement, transport and other activities.
* Presence of infertile soils in many parts of the polders due to wave deposition which discourages farming
* Excessive water logging especially on polders where a lot of rainwater is received, discouraging economic activities.
* High costs of renting / leasing / hiring the land on the polders due to the high costs of land reclamation and maintenance of polders
* Shortage of fresh water especially in periods of prolonged drought.
* High prevalence of pests and diseases due to damp conditions/ water logged conditions.
* Silting of canals leading to flooding, hence destruction of farmlands.
* Expensive / High costs of constant maintenance of polders such as dyke construction and dredging, hence high costs of production.
* Pollution of land, air and water due to use of fertilizers and other agro-chemicals.
* Growth of weeds which compete with crops and pastures for soil nutrients.
* Population pressure/ high population density on land due to increased economic activity in the area leading to problems like shortage of land.
* Soil exhaustion as a result of over cultivation of the limited reclaimed land.
* Urban related problems such as overcrowding, high crime rate and easy spread of diseases.

**(d) Outline the measures that were taken to combat the problems in 8 (c) above.**

* Construction of dam projects to control flooding such as in the Zuider Zee scheme.
* The salt content is dissolved in rain water and constantly pumped out of the polders to create better land for farming.
* Use of fertilizers and manure where the soils are infertile or exhausted.
* Pumping excess water out of the polders using windmills and diesel engines to reduce water logging.
* Growing of high value crops to off-set the high costs of utilizing the polders.
* Construction of manmade lakes to provide fresh water and act as reservoir such as lake ljssel/ Yssel
* Construction of stronger dykes to control flooding
* Government has set up a body called Delta plan tom be in charge of maintaining the polders.
* Strengthening urban authorities to combat urban related problems such as high crime rate.

**CHINA**

1. **Study the table below showing the climate statistics of Hegang in Southern Heilongjiang and answer the questions that follow:**

(a) **Draw a suitable graph to show the climatic data in the table.**

**(b) Calculate the:**

**(i) Annual range of temperature**

ART= Hottest –coolest (highest temperature –lowest temperature

=20- -18 =**380c.**

**(ii)Total annual rainfall, for the station**

9+12+18+26+48+81+110+88+55+20+10+8 =**503 mm.**

**(c) Describe the economic activities taking place in the area where the station is found.**

* The moderate rainfall supports crops growingsuch as wheat, oats, barley; fruits such as citrus fruits, lemons, grapes, apples
* The moderate rainfall supports growing of pastures which promotes livestock rearing such as sheep and goats.
* The moderate rainfall favours the growthof coniferous forests which promotes forestry and lumbering.
* The moderate rainfall leads to the growth of forests and grasslands which act as habitats for wild animals and birds; hence promote tourism and wildlife conservation.
* The warm summers favour recreation activities / sports industry such as swimming and sun bathing while the cold winters encourage winter activities like ice skiing, ice skating, snowboarding, ice hockey.
* The moderate rainfall supports forests and crops which act as raw materials in industrialization.
* Moderate rainfall encourages growth of forests and agricultural activities which act as items for trade and commerce.
* The cold winters encourage greenhouse farming.

**(d) (i)Explain the environmental problems likely to be faced by the people living in the area around Hegang.**

* The rainy / wet season leads to flooding that destroys life and property like roads.
* The wet summer/ rainy season causes soil erosion leading to loss of soil fertility.
* Extreme cold conditions during winter which limits the growing season and types of crops grown. Also winter frost destroys crops in the fields.
* The extreme winter leads to frozen water bodies which restricts the water transportation of farmers and their farm products.
* The winter season leads to blockage of roads and railway lines, hence disrupting transport, trade and commerce.
* Winter freezing hinders outdoor grazing, hence giving way to expensive in-door grazing.
* During the short growing season, there is shortage of labour due to many field activities.
* Rapid growth of weeds during the wet summers and these compete with crops for nutrients.

**(ii)Suggest ways of improving the conditions of living in the area around Hegang.**

* Carry out intensive research to discover more winter resistant and fast maturing crop varieties.
* Concentrate on in-door feeding during severe winters (stall feeding).
* Use of large stores/ grain elevators / silos to store grain crop output to be sold in winter.
* Diversification of crop varieties by introducing other crops like oats, barley, soya beans to avoid over dependence on a few crops.
* Promote the use of greenhouses especially for flowers and vegetables during winter.
* Promote warming facilities in-doors during winter.
* Early warning / weather forecasts using satellite updates to speed up harvests / to control crop loss.
* Halting / pausing farm activities during winter and carry out activities like buying and repairing farm tools, updating records.

1. **Study the table below showing China’s imports by value in 2014 and answer the questions that follow:**
2. **Draw a pie chart to show the importance of each import commodity.**

|  |  |  |
| --- | --- | --- |
| **Commodity** |  | **Round off values** |
| Food | =10.80 | 110 |
| Agricultural raw materials | 14.40 | 140 |
| Fuels | 43.20 | 430 |
| Ores and metals | 32.40 | 320 |
| Manufactured goods | 255.60 | 2560 |
| Others | 3.60 | 40 |
| **Total** | **3600** | **3600** |

1. **Calculate the value spent by China on the importation of :**
2. **ores and metals**

791,461 **(**million **US) = 71,231.49 ((**million **US)**

**(ii) food**

791,461 **(**million **US) = 23,743.83(**million **US)**

1. **Explain the ways through which import trade has developed the economy of China.**

* Import trade has enabled china to get goods which they cannot produce but produced elsewhere, hence controlling scarcity.
* Import trade has availed a variety of goods and services to population of china, which widens their choice and hence improved standards of living.
* Importtrade has promotedcompetition with local producers which in turn leads to efficiency in production (better quality and well-priced products).
* Promoted understanding / cooperation between china and other countries which in turn strengthens social, economic and political ties.
* Widened the extent of market for China’s products due to market research in various countries as they trade with them.
* Importtrade has created employment opportunities such as customs offciers, merchants which increases incomes and standards of living.
* Has led to the introduction and dissemination of new ideas from other countries such as on new technologies, skills and entrepreneurship since it involves the movement of people to other countries.
* Generated government revenue through import duties, and the revenue is used in the development of various sectors in the country.
* Promoted the development of infrastructure such as roads, railways, marine ports and airports for easy moving the goods from other countries.
* Has enabled people to supplement/ get supplies of goods in times of emergencies / catastrophes like prolonged drought, floods, typhoons; thereby overcoming shortages.
* Promoted capital inflow by attracting foreign investors into the country who bring in resources to produce various goods within china in the long run.

1. (i) **Name any one port through which China imports agricultural raw materials and manufactured goods.**

* Shanghai
* Guangzhou
* Hong Kong
* Tianjin
* Qingdao
* Shenzhen

**(ii)Outline the challenges facing China’s import trade. (06mks)**

* High tariffs on imported goods by the government which discourages importation.
* Stringent quality standards required about imports by the government which also restricts the goods imported into china.
* Long procedures are involved in the clearing of imports (bureaucracy and documentation) hence causing delays at border points before clearance.
* Stiff competition from cheaper locally produced goods which makes some imports less competitive in the Chinese market.
* Congestion of vessels at the harbors due to the increased number of vesselshandled at the port and thus delays.
* Seasonal flooding at the import ports for example shanghai situated at the mouth of the Yangtze River, thus risk of damage of imported goods.
* Stiff competition with other industrial countries for particular imported raw materials and intermediate goods, leading increased prices.
* Bad weather conditions especially seasonal typhoons that cause turbulence of water and fog that impedes visibility in the harbors especially at Hong Kong.
* Political conflicts due to wrangles between mainland China and Hong Kong port which was formerly under the British which hinders smooth import trade.

38. **(a) Draw a sketch map of china and on it mark and name:**

**(i) Towns: Beijing, Guangzhou and Tianjin**

**(ii) East China Sea**

**(iii)Rivers: Xi-Jiang, Chang Jiang and Huang He.**

1. **Describe the steps taken by china to develop the Yangtse Kiang River Basin.**

* Construction of numerous canals to help control the flow of waters for use during irrigation
* Establishment of various dams to provide hydroelectric power
* Development of strong embankments and barrages to control periodic floods
* Construction of strong dykes to cut off the sea incursions
* Building of several bridges and culverts to enable movement of traffic
* Construction of modern roads and railways to connect the river basin to the rest of China
* Constant dredging of sections of the river to allow the fast flow of the river and its tributaries
* Development of various industries such as food processing and chemical industries.
* Developing different farming practices in the basin such as piggery, irrigation farming.
* Etc ………………………

1. **Explain the value of the Yangtse Kiang River Basin to the people living in the surrounding areas.**

* The fertile soils in the region have attracted farming and hence increased food production.
* Provision of hydroelectricity for industrial and domestic use.
* Perennial irrigation is now possible leading to the growth of food and cash crops throughout the year/ increased food supply.
* Improvement in navigation on the river hence facilitating easy movement, trade and commerce.
* Promotion of industrial development due to many raw materials provided by the various activities and HEP hence increasing employment.
* Promotion of urban development such as Chongqing, Wuhan, Yichang, Nanjing; with related advantages such as trade and commerce, employment, banking, entertainment.
* Promotion of tourism development since it is a tourist attraction, hence generating foreign exchange.
* Provision of employment opportunities to many people such as engineers, hydrologists, farmers, industrial workers hence improving the standards of living.
* Generating of government revenue by taxing various activities and workers’ incomes/ the revenue is used to develop various sectors such health, education.
* Diversification of the economy by developing many sources of income / various activities such as mining, agriculture, service sectors, hence reducing over depdendence.
* Promoted the development of infrastructure like canals and railway lines linking to various areas, making transport easy.

**(d)Outline the problems that resulted from the development of the Yangtse Kiang River Basin.**

* Siltation of rivers which results into constant dredging which is expensive.
* Loss of fertile soils from the flood waters which reduces soil fertility, hence need to apply artificial fertilizers.
* Maintenance of the urban centres is extremely expensive such as water supply, sewage disposal, law and order.
* Pollution of the environment especially due to toxic gases and wastes from industries, hence spread of diseases.
* The growth of urban centres is associated with many problems such as slum growth, prostitution and high crime rate.
* Unemployment problems due to high rural urban migration and high population leading to social evils like theft and robbery.
* Shortage of land/ Overcrowding of people leading to poor sanitation and easy spread of diseases.
* Prevalence of water borne diseases leading to low labour productivity.
* Floods are common in the region leading to loss of life and property.

**END**