PAKISTAN STUDIES

IX C

PAPER 2

THE ENVIRONMENT OF PAKISTAN

by Huma Naz Sethi

Contents

INTRODUCTION- THE LAND OF PAKISTAN

Q1. Pakistan is located between which Longitudes and Latitudes?

Latitudes 24 35 N and 37 o5 N
Longitudes 61 E and 78 E

Q2. What is the area of Pakistan?
796,096 square km
1600 km from North to South
885 km from East to West

Q3. What is the location of Pakistan?

North-East	China 585 km border
North-West	Wakhan (narrow strip of Afghanistan) and further Tajikistan
West	Afghanistan 2252 km border known as Durand Line
South-West	Iran
East	India
South	Arabian Sea

Q4. What are the different provinces of Pakistan?
Punjab, Sindh, Khyber Pakhtunkhwa and Balochistan
It also includes Gilgit- Baltistan and Azad Kashmir and FATA

Q5. Where is FATA? What is the full name of that area of Pakistan?
It is Federal Administrated Tribal Area between Balochistan and KPK.

Q6. What is the Geo-strategic importance of Pakistan's location?
Khyber Pass provides a route to Afghanistan
Karakoram Highway makes communication with China
Karachi and Gwadar seaports provide trade and travel facilities to the landlocked areas of north and north-west
Pakistan's coastline at Arabian Sea has a central position for trading by sea to South East Asia, Far East and Middle East in the West
Some of the air routes between west and east pass through Pakistan because of its central position.
Jinnah Terminal Karachi is an international airport as it connects the West with Asia by air.
Easy access to CAS Republics through Afghanistan
Feasibility of natural gas Pipeline Projects from the CAS countries and Iran to India and South East Asian countries after passing through Pakistan

Q7 Q-BOX

HUMAIRA RIZWAN

A: Construction of the Pakistan –Iran pipeline will solve our energy crisis as more gas –fired thermal power plants could be set up that will lead to industrialization and economic prosperity.

B: We should not depend on natural resources of other countries to solve our energy crisis. We can generate power from renewable resources to boast up our economy.

After completing of Iran gas pipeline Pakistan will get 21.5 cubic meters of natural gas and will be able to use it as a fuel (CNG) for vehicles

Use it in thermal power stations to generate electricity

Pakistan has 250-300 sunny days, so with the help of solar energy, we can overcome energy crisis

We can use fast blowing wind and set up wind turbines at coastal areas to generate electricity

We should make Hydel power stations because we have fast flowing rivers and steep slopes in the northern areas. The renewable resources are sustainable and non-pollutant.

UNIT 1: THE NATURAL TOPOGRAPHY_ INCLUDING DRAINAGE

Q1. With reference to relief, drainage and economic importance, explain the difference between the Northern Mountains and the Western Mountains.

	Northern Mountains	Western Mountains
Relief	Parallel ranges run mainly from West to East: Karakoram, Himalayas and Hindu Kush The height increases from South to North 6000 m to 8475 m Deep narrow valleys i.e. Chitral, Baltistan, Kaghan Sharp, snow- capped, steep sided peaks i.e. K-2, Nanga Parbat, Tirich Mir Snow fields/ huge glaciers i.e. Baltoro, Batura, Siachen High passes i.e. Khunjerab, Lawarai, Shandur	Parallel ranges mainly run from South to North i.e. Safed Koh, Wairistan, Sulaiman and Kirthar The height increases from South to North 2000 m to 4712 m Low lying basins and valleys i.e. Kohat valley, Vale of Peshawar, Bannu valley Not very high peaks, only Safed Koh is covered with snow Less snow, few glaciers Historic passes i.e. Khyber, Kurram, Tochi, Gomal, Bolan
Drainage	River Indus and Jhelum, Chenab, Ravi. Sutlej, Beas (eastern tributaries) Swat, Kabul (western tributaries)	River Kurram, Gomal, Tochi, zhob, Hab, Lyari
Economic importance	Snowcapped peaks melt during summer to drain water into river Indus and its tributaries which irrigates vast Indus plain Historic passes connects Pakistan to China and Afghanistan A natural border between China and Central Asian Republics A source of valuable minerals, timber and fruits. Provide raw material for furniture, paper, chipboard, chemicals Protect against the cold winds from Central Asia. Tolerable climate. Scenic beauty promotes tourists resorts, which are a source of income i.e. Murree, Naran, Hunza, Gilgit etc.	Water of the western rivers drain the valleys for the cultivation of wheat, rice and sugar-cane Historic passes connect Pakistan to Afghanistan and Karachi to Sibi Form a rampart between Pakistan and Afghanistan Rich in limestone ridges, sandstone and deposits of clay and boulders Block western depressions from reaching Central Pakistan Important military centers i.e. Bannu, Kohat

Q2. With reference to relief and drainage, explain how the Potwar Plateau is different from the Balochistan Plateau.

	Potwar Plateau	Balochistan Plateau
Relief	Open, undulating land with extensive flat area Height varies from 300-600 m Residual hills ranging till 1000 m i.e. Kala Chitta and Khairi Murat Badland topography which is a landscape of ridges, ravines and troughs The Salt Range comprises parallel ranges from 750- 900 m. Sakesar peak (1527) highest point	Eroded landscape and ridges Barren mountain ranges from 600-3010 m i.e. RasKoh, Hala, Makran Coast, Toba Kakar Number of irregular depressions such as Zhob and Loralai basins Inland drainage basins in western side Lasbela plain marked by gravel and sand dunes A narrow coastal plain i.e. Makran coast
Drainage	River Soan Ravines and small rivers KallarKahar , Khabeki, Uchali lakes in salt range	Rivers Hab, Porali, Hingol and Dasht flow into Arabian Sea Temporary salt lakeshamuns i.e. Hamun-i- Mashkal, Hamun-i- Lora
Economic Activity	Rich in non-metallic minerals- rock salt, gypsum, limestone, marble, clays, dolomite, and soapstone Number of oil and gas fields i.e. Attock Oil Refinery Wheat, maize, barely and gram are cultivated by rain water	Deposits of antimony and gold in Punjgore and kharan are identified Appreciable deposits of crude oil, gas and coal Fruit and vegetable seed industry Livestock and their products Fishing at Gwadar, Pasni and Ormara

Q3. If Balochistan is developed, it can feed the whole of Pakistan, Give reasons in favour or against this statement.

Favour

By utilizing the untapped sources with the employment of experts and consultants. A survey has identified the geological conditions for the existence of antimony and gold.

Generating electricity and fulfilling the fuel requirements by using the large deposits of crude oil, natural gas and coal located here.

By increasing the export of fruit grown here to Gulf States and other countries. The main fruit grown are dates, grapes, apples, almonds, apricots, plums, peaches, melons and pomegranates

By growing more vegetable seeds as climate has the best scope for it.

By raising sheep and goat on the scientific lines. Livestock and its products i.e. wool, goat hair and skinsall have demand in international market.

Using latest technology for Fishing at Gwadar, Pasni and Ormara can increase its export.

By the development of deep Sea Gwadar port, economy of province will flourish'
Western Corridor between China and Gwadar will open the trade facilities and flourish economy.

Against
Dry and extreme climate hinders the working conditions
With lowest population density in Pakistan, there is shortage of work force and skilled labour
With no major source of water, it faces a scarcity of drinking and irrigation water
Shortage of proper infrastructure and absence of link-roads block the movement of transport and people
Limited education cannot provide experts, consultants and required skilled people in different fields
The eroded landscape, ridges and rugged terrain make it difficult to complete any project in limited time.

Q5. What are Doabs? Why are they favoured for a number of human activities?
A doab is the land between two rivers at the confluence. E.g.
Sindh Sagar Doab between river Sindh and Jhelum
Chaj Doab between Jhelum and Chenab
Rachna Doab between Chenab and Ravi
Bari Doab between Ravi and Sutlej

They are favoured because
Flat land and supply of water through canals support agriculture
Construction of urban settlement is easily done
Rail, road and air transport links are developed
Industrial estates and factories are established
Storage of agricultural raw materials are available
Markets and business activities are provided

Q6. Describe natural topographical features of the Indus Plain.
Active Flood Plain: The narrow strip of land on both sides of the river (bet or Khaddar). At the end of rainy season, the land is marked with dry and braided channels rich in alluvium.

Old Flood Plain: Area between the active flood plain and the alluvial terraces. They are only flooded, when there is heavy rainfall. Features found are abandoned channels, meander scars and the remains of ox-bows.

Alluvial Terraces: Areas of higher grounds between rivers formed by erosion of old alluvium. Sandal bar on Rachna Doab, Ganji bar and Nili bar on Bari Doab, Kirana bar on Chaj Doab. They are ideal for agriculture with the help of irrigation facilities. Bahawalpur Plain that has been reclaimed through irrigation is also an alluvial terrace.

Piedmont Plains: located at the foothills of the Sulaiman, Kirthar and Himalayan mountains. They are formed by the deposition of alluvium brought by the rivers and streams in the rainy season at the foot of the mountains.

Tidal Delta: The Indus Delta is located at the south of Thatta. A delta is triangular or fan shaped with the main distributaries branching out from the main river. The Indus Delta has tidal flats with mangrove swamps.

Rolling Sand Plains: A sand dune is a mound or a ridge of sand. Rolling sand dunes are the common feature of desert due the fast blowing wind in the desert which changes the landscape constantly.

Cuestas: These are limestone ridges found in Sindh. They have a steep slope on one side and gentle slope on other. The Rohri cuesta and The GangoTakkar are examples. They provide a firm foundation for the construction of barrages.

Q7. Why/ Which topographical features of Indus plan contribute to a high population density in Doab areas of Pakistan?

As Active flood plain flooded every year, it is ideal for the crops, which require plenty of water i.e. rice, sugar-cane.

Meander and cover flood plains are good for arable farming in fertile areas and for settlements in poor soils.

Well- developed link canal system provide water for irrigation throughout the year.

The bar uplands are safe from flooding, so they are ideal for farming, human settlements, transport links, industrial estates, storage of agricultural raw materials and markets.

Q8. Why Piedmont Plains have a rich soil? Or How they are formed?

Piedmonts plains are formed at the foothills of the Sulaiman, Kirthar and Himalayan Mountains. Most of the rivers and streams coming from these mountains have low water flows. They become active only during rainy season. As they reach the foothills, they become slow and split into narrow channels that fan out on to the slopes. The gravel, sand and alluvium is deposited by these rivers and form alluvial fans or piedmont plains used for agriculture. They are extensive on the eastern sides of Sulaiman and Kirthar and smaller at the foothills of Himalayas. The Sulaiman piedmont plain is also known as Derajat.

Q9. Explain why the Indus Delta has a low density of population.

The land is constantly exposed to the effects of the sea water.

Agriculture is only limited to few areas due to swampy land, saline soil and low annual rainfall.

Infrastructure is not well-developed, so less commercial and industrial activities.

Un- metalled roads are not suitable for heavy transport vehicles.

Tropical cyclones cause damage to farming areas, fishing and the shanty homes of the people.

Q10.Where are the desert areas of Pakistan located? What are the common features of deserts?

The Sindh Sagar Doab or Thal desert is located between River Indus and Jhelum.

The Thar desert is located towards south-eastern Pakistan and is further sub-divided into Cholistan, Nara and Tharparkar (Thar)

The Kharan desert is in western Balochistan.

The common features of deserts are:

Fast winds, scanty rainfall, low water table

Rolling sand dunes, weathering of rocks, lack of vegetation, bare and crackly rocks, sandy undulating plain.

UNIT 2: CLIMATE

Q1. With reference to temperature and rainfall, identify and explain the differences in the Climatic Zones of Pakistan.

Climatic Zone	Temperature	Rainfall
Highland **Northern, north-western and western highland**	Summers are short, mild and wet in NM. Dry and warm in WM. Winters are long, cold and snowy	Northern mountains range from 2000-8000 m receives highest rainfall in highland zone. Western mountains from 1000m-over 4000 m experience less rainfall. From south of Kohat and Waziristan it decreases and occurs during winter. Rain shadow areas of Gilgit and Chitral receive low rainfall.
Lowland **Upper and lower Indus Plain**	Arid and extreme climate with hot summers and cold winters. Spells of very high temperature	Area of summer monsoon rainfall. The foothills of the Mountains are wetter than the Indus plain as receive rainfall from Western Depressions also. Thunderstorms are common. Southern and Lower Indus Plain has less rainfall.
Coastal **Southern coastal strip of Indus Delta, Karachi and Makran Coast**	The maritime influence keeps the daily range of T low. Humidity level is high appx 50%. Mean monthly temp is 32□ c.	Rainfall is scanty. From Karachi to Rann of Kutch rainfall is in monsoon and at Makran coast in winter.
Arid **South western Balochistan and south eastern desert**	Extreme heat, dryness and dust storms. Dusty winds prevail from mid-May to mid-Sep.	Scanty rainfall in south western Balochistan in winter and little summer rainfall in the south-eastern desert.

Q2. Explain the factors that affect Pakistan's climate.

1. **Temperature**

Large spread of latitudes from 24N- 37N. Southern part of Pakistan is closer to equator than Northern part so Indus plain is hotter than Northern Mountains.

Coastal areas have maritime climate, i.e. low temperature range and high level of humidity. Ocean currents and winds from the Arabian Sea keep temp low during summer and high during winter. Makran coast, Karachi, Indus delta up to the Rann of Kutch have moderate effect on temperature.

Central Pakistan suffers extreme winter and summer temperatures due to continental effect. Punjab and interior Sindh have hot summers and cool winters.

There is an average drop of 6.5C in temperature for each 1000 meter increase in altitude. Murree is cooler than Islamabad.

If there is cloud cover, in the day time solar radiation is reflected back, dropping the day temperature. At night the cloud cover traps the outgoing heat so the temperature doesn't drop.

During summer, the northern hemisphere (Pakistan included) is tilted towards the sun and absorbs more heat because of the high angle of the sun and faces the sun for longer time period resulting in longer days and shorter nights. During winter, the northern hemisphere is tilted away from the sun, so due to low angle of the sun the earth absorbs less heat and faces the sun for short duration resulting in shorter days and longer nights.

Rainfall

Relief rainfall in the Northern and Western Mountains due to high altitude. Murree and Kakul receive rainfall in all seasons.

Monsoon winds system brings summer rainfall to the Indus plain and northern areas.

Western Depressions that originates in the Mediterranean Sea bring rainfall to the western areas of Pakistan during winter.

Convectional currents bring rainfall to the northern Punjab and KPK in the months of May and June. Convectional rainfall does not occur in the south of Pakistan due to Temperature inversion layer during summer.

Tropical cyclones from the Arabian Sea occasionally bring destructive, strong winds and heavy rainfall to the coastal areas.

Pressure and Winds

Due to high temperature in central Pakistan in summers, hot air rises up and form a low pressure zone. The oceans and seas have low temperature, so a high pressure zone is formed there. This leads to the movement of monsoon winds from sea to land, bringing heavy rainfall to Upper and lower Indus plains.

Q3. a. i. Describe the characteristics of the winter climate of the Northern Mountains.

Severely cold, long and snowy winters

Temperature falls below freezing point

The growth of trees is retarded and grass is buried under snow

At some places rivers and torrents also freeze

ii. Explain how the winter climate of the Northern Mountains makes it a difficult area in which to live.

Due to severe winter farming is not possible, so people have to store their food before hand

Due to extremely low temperatures, Pathan tribes practice transhumance life style and move to lowlands with their animals in winters and return back to cooler highland in summer.

In the extreme north, many areas are not accessible due to landslides and heavy snowfall hampering transport links.

Job opportunities are also limited in this region and economic activities are difficult to carry out.

It is difficult to go out, so people are involved in indoor activities like carpet weaving, embroidery work, pottery etc.

iii. How the people earn money and Economy flourish in the Northern Mountains?

Primarily subsistence agriculture and cattle breeding is done. Farming is practiced on terraced fields where wheat, rice, barely, maize and vegetables are grown.

During winter many people work in cottage and small- scale industries i.e. carpets, embroidered material, rugs and other handicrafts items.

The major industries include the processing of food grains, making vegetable oil, and refining sugar. Fruit processing is also an important industry i.e. apricot drying.

Some of the towns like Mangora, Murree, Kaghan and Gilgit have regional trade by road with cities like Rawalpindi, Islamabad, Peshawar and Abbotabad.

Tourism is popular and tourists also buy local handicrafts and products.

iv. Why the life is difficult in highland?

Low economic growth rate combined with a high rate of population growth result in a low level of per capita income

Life is difficult due to lack of infrastructure facilities e.g. roads, bridges over the rivers, tunnels

Mineral resources have not been explored yet.

There is major hydro-electric potential, but it requires huge capital investment, not available.

The limited skilled labour and low literacy rate hinders in the management of natural resources.

Most of the people face a shortage of safe drinking water and poor health. Moreover food production has not kept with the population growth so they face malnutrition.

b. i. Describe the characteristics of the summer climate of the Thar Desert.

Climate is one of extremes with low annual rainfall and hot summers. Summers are very hot during day time. Annual rainfall 100 mm and average monthly temperature in summers over 38C.

The region is deficient in moisture and extreme in its temperature which is not ideal for cultivation and habitation.

The irregular rainfall periods are followed by long spells of drought.

The high temperatures result in a high rate of evaporation. More water is evaporated than is supplied by rainfall.

ii. Explain how the summer climate of the Thar Desert affects the way that the area is used.

The majority of the people are nomadic and move with their animals in search of food and water.

Due to scanty rainfall and excessive evapo- transpiration, a unique system of underground irrigation 'Karez' is practiced.

Large areas have been reclaimed for farming through the construction of perennial canals. In those areas rice, wheat, cotton and oilseeds are cultivated.

The people wear thick and rough clothes to protect themselves from the hot winds and also wear turbans.

Water is a scarce commodity in desert areas. Women carry water from long distances to their homes. The small utensils are fully covered to prevent the evaporation losses.

Houses are often built with fixed ventilators on the roof to attract breeze from the south-west into the window-less interior. Mud walls and slanting thatched roofs keep the rooms cool.

Underground water storage tanks are constructed to store rain water through a small hole into the tank underneath. It keeps it cool and pure and used for drinking and cooking.

In lower Sindh, the camel is widely used as a mean of transport by the local people because it can retain water for several days.

The desert may have rich mineral deposits, shown by the recent discovery of many oil and gas fields, but are still unexplored.

c. i. What are the Climatic Characteristics of Western Mountains?

Cold and dry climate with winter rains due to western depressions

Temperature increases in both summer and winter

Annual rainfall is 125-250 mm, mainly during winter

ii. What are the effects on the economic activities of people?

Sparsely populated due to harsh physical conditions, the population density is lower than 100 persons per sq. km.

Lack of water discourages human settlements

Crop cultivation is difficult due to harsh climate and terrain and rugged landscap

Canal irrigation is not possible because of mountainous area.

Transportation facilities are limited. Except for few urban centers like Peshawar and Kohat, rest of the area is not connected by air or rail networks. Few areas are connected with metaled roads. Most of the areas are accessible through unmetalled roads.

The cost of supplying infrastructure- water supply, transport facilities, electricity, and telephone lines is much higher than in plains. As a consequence developmental projects, e.g. mining, industries, educational facilities have not been established.

There are abundant mineral resources, but due to the difficulty of extracting them, they are not explored or exploited.

Nomadic life style is common and sheep and goat rearing is the main occupation.

Valleys of high altitude are suitable for the growing of fruits i.e. apples, mangoes, apricots, grapes, peaches and melons.

d. i. What are the Climatic Characteristics of Lowland Zone (Indus Plain)?

Continental or extreme type of climate

Summers are extremely hot, winters are cool to mild

Moderate rainfall

ii. What are the Economic effects on the life of people?

Most productive agricultural region of Pakistan. 80% of the total cultivated area is found in Indus plain.

There is a well-developed canal irrigation system to raise crops like wheat in winter and millet, cotton and sugarcane in summer.

Most densely populated and developed area. Population density varies from 50-400 per sq. km.

Climate, relief and drainage encourage the growth of settlements i.e. Lahore, Faisalabad, Gujranwala, Sukkur, Hyderabad etc.

Infrastructure facilities are easy to provide. The transport network of road, rail and air is dense. Electricity is provided to all the urban centers and many rural areas.

There are number of industries which consume local raw material e.g. cotton textile, sugar mills, chemical industry. The industrial goods have a large domestic and foreign market.

e. i. What is the Economic activity and life style in the Potwar Plateau and Salt Range?

They are rich in non- metallic minerals- limestone, marble, rock salt, clays, dolomite and soapstone- which provide raw materials to the cement, ceramics and chemical industries.

A number of oil and gas fields are also located in this region. Attock oil refinery has been set up to refine the oil from the oilfields of Potwar plateau.

Farming depends on rainfall, as canal irrigation is not possible due to rugged landscape. Wheat, Maize, barley and gram are cultivated.

It is a productive region and accessible by road, rail and air transport.

Many urban settlements like Jhelum, Chakwal, Rawalpindi/ Islamabad have been developed, encouraging a high population density.

Q3. Three types of rain are experienced in Pakistan: Monsoon. Depression, Convection

a. Explain why rising air is needed to produce rain?

With increasing heat, hot air rises up which also contains a high moisture content, when it reaches the higher layers of the atmosphere, condensation takes place. This causes rainfall.

b. Explain how rising air is produced in Pakistan?

Monsoon: The rains begin when summer sun heats up in tropical continents much faster than the oceans around. Rising warm air creates a low pressure, which attracts cool, moist air from the sea. Rain bearing winds are pushed inland causing heavy rainfall. The main monsoon winds blow from the Bay of Bengal and some from Indian Ocean and Arabian sea, after crossing Bangladesh and north India, the tail end of the winds enter Northern Pakistan.

Depression: These are caused by cyclones in Mediterranean Sea, travel across Afghanistan and Iran and strike the north-western and northern Pakistan. They rise and cause rain.

Convection: At the start of the summer, the land becomes very hot so the air becomes hot too and starts rising and cause rain.

c. State the time of year when it usually occurs in Pakistan.

Monsoon – The winds normally start to blow in June and cause heavy rainfall in northern Punjab in July and August.

Depression- They occur during winter season from December to March. Quetta receives rainfall only in winter.

Convection- In early summer from April to early-June in northern and north-western areas of Pakistan.

d. Explain why in Pakistan a small amount of rain is usually experienced?

Monsoon- It occurs when tropical continents are heated by high summer temperature and a low pressure zone is formed. These rains come in Pakistan for a shorter period only from July to August.

Depression- They originate in Mediterranean Sea and bring rains only in winter from December to March.

Convention- They occur in the early summer, when the land started heating up and causing hot air to rise. It brings rain only from April to early-June.

e. In the Indus plain the summer rainfall is not always reliable. What problems are caused for agriculture,

i. If the rainfall arrives early

Crop planning is very difficult if the amount and timings of rainfall have above normal fluctuations. The fields are not ready, seed sowing is not completed, so it is useless.

ii. If the rainfall arrives late

High temperature conditions occur from June to September in Indus plain. This leads to great degree of evapotranspiration. Crop cultivation can't be done without water. So farmers don't depend on monsoon rainfall.

iii. If the amount of rainfall varies from one year to another?

Most of the crops require a certain amount of water so if it is not provided the seeds die. Monsoon rainfall comes in heavy showers, which is not useful for crops.

f. How may the problems you have given in be overcome?

Reservoirs of the dams on River Indus and its tributaries help to store extra water during the season, so more dams and reservoirs should be made so monsoon rainwater shouldn't be wasted in floods and can be used in dry season for irrigation.

Q5 Study the map in Fig 2-A.

i. In which season does area A receive rainfall?

Its Western Mountains which receive rainfall In winter

ii. Explain why area has most of its rainfall in that season?

Due to western depressions

iii. Explain why Peshawar receives a higher rainfall than Quetta?

Western depressions which originate from the Mediterranean Sea, cross Afghanistan and Iran and strike the north-western and northern Pakistan. These areas receive winter rainfall first like Peshawar. Afterwards they move towards western and south- western parts. When they reach south- western Balochistan, they are robbed of their moisture. That is why Quetta receives less rainfall than Peshawar.

Q6.

i. Why do so many rivers flood in July? What are the reasons of floods?

Due to monsoon rainfalls, melting of glaciers, Failure to heighten embankments, less dam capacity to store water, cutting of trees at the foothills.

ii. State advantages, when river floods.

Return Nutrients to the land
Distribute rich sediments and spread a layer of Alluvium,
Increases high level of fish production
Recharge ground water supply

iii. How may a cotton factory in Karachi be affected by July floods in Punjab?

Cotton crop which is a summer crop could be destroyed
Roads are destructed due to floods
Dry port at Lahore is unable to operate

iv. How and why may the economy of the area be affected by flooding?

Destructions of crops
Loss of food supplies,
Spread of water borne diseases

Damage to the roads and railway tracks

Destruction of houses

v. State how to minimize the harmful effects of floods.

Planting trees on the foothills

Building embankments

Building reservoirs

Preventing making buildings in flooding areas

Publicizing flood warnings

Q7. How may storms cause problems for people of Pakistan?

Thunderstorms,stormy rainfalls and hail in Northern and western mountains cause the destruction of apples, pears and other crops.

Dust storms in Balochistan and Indus plain damage crops and orchards, affects the roofs of the houses. Electricity and the communication system get disturbed.

Tropical cyclones cause wide-spread damage to the people and their belongings at coastal area.

Q8. What are the causes and effects of droughts? How they should be managed?

CAUSES

Unreliability of Monsoon rainfall

Dry and hot winds reduce the moisture of sandy soil

Change in the global climate

Deforestation at the foothills increases soil erosion

Mismanagement of water resources through seepage

Overgrazing of land

EFFECTS

Desertification

Drying up of rivers, lakes and streams

Drop in water table

Widespread of famine leading to starvation

Loss of life

Nomadic lifestyle

Crop failure

Death of livestock

DROUGHT MANAGEMENT

Building reservoirs and more storage tanks

Irrigations canals to grow crops

Afforestation

Reclaiming waste water and turning into clean water

Using drought resistant varieties of crops

Setting priorities in allocation of water

Q10. Q- BOX **Irrigation in** Thar Desert/ Power plants

With the supply of water, quantity and quality of food and cash crops can be increased. Thar Desert has the potential of growing millet, mung, kidney bean, sesame, onion, garlic

If more water is supplied, fodder for animals will increase, resulting in the increase of live-stock.

If coal- fired power plant is set up, Thar economy will increase, as the local population will be able to get jobs there.

With the setting of power plant, the local locality will be able to get electricity, which will solve many of their problems.

I support statement A becausewith the construction of a seasonal canal from the Sukkur Barrage to bring flood water will help people to grow ample food to survive drought.

More drinking water for humans and animals will be available and an increase in the grass and greenery in the desert might also attract some tourists.

Supply of water means, boasting Thar economy by more food, feed and fuel for local population.

UNIT 3 NATURAL RESOURCES- AN ISSUE OF SUSTAINABILITY WATER

Q1. How is water a renewable resource?

Water as a natural resource reaches the ground from the atmosphere falls in various ways such as rain, snow and hail known as precipitation. Some of the water runs directly off the Earths, surface as rivers, streams, draining into lakes and the sea. The rest is either utilized by plants or soaks into the ground. Water is returned to the atmosphere as water vapour through evaporation from the surface and by transpiration from plants. Rising into the atmosphere the water vapour cools to form water droplets and this system is called condensation. The cycle is called hydrological cycle.

Q2. Explain the importance of the Indus River System to Pakistan.

The largest river of Pakistan, Indus is watered by the glaciers of the Karakoram and Hindu Kush. Enters Baltistan from Tibet and Kashmir, crosses Gilgit District and flows into plains of Punjab and Sindh at Kalabagh. Its basin covers an area of about one million square kilometer.

Its eastern tributaries, Sutlej, Ravi, Chenab and Jhelum after joining each other, become River Panjnad at Panjnad and joins River Indus near Mithankot. More than hundred and fifty million people live in its basin defined by the 3180 km long Indus and its tributaries.

The system irrigates 60% of Pakistan's 20 million hectares of cultivable land.

The Indus shows the highest discharge during the Monsoon season. The Dams and barrages on the river regulate the flow of water to protect the areas against flood and to reduce water loss to the sea. Tarbela Dam on River Indus and Mangla Dam on Jhelum are the biggest dams of Pakistan producing hydroelectricity.

Q3. Describe and account for the differences between the drainage patterns of the Indus System and that of the Balochistan Plateau.

Indus System	Balochistan Plateau
River basin is defined by the 3180 km long Indus and its tributaries. The Indus system shows the highest discharge during the Monsoon season. The system irrigates 60% of Pakistan's 20 million hectares of cultivable land. More than hundred and fifty million people live in its basin in big settlements like Lahore, Rawalpindi, Gujrat, Jhelum etc. Rivers Jhelum, Chenab, Ravi and Sutlej are the main eastern tributaries of Indus. Rivers Swat, Kabul, Tochi, Kurram and Gomal are the western tributaries with more water in summer season. No river flows into Arabian sea.	Rivers in Balochistan are much smaller than in the Indus system. They normally flow only during the Monsoon season and have little value as sources for irrigation. Quetta, being a high altitude region has the central position. Rivers Zhob, Khandar and Kalachi drain into River Indus as they flow eastwards. Many small rivers flow westward and drain into shallow depressions called hamuns. Rivers Hab, porali, Hingol and Mashkel drain

No river is absorbed by the plains. Canals are taken out from the rivers for irrigation purposes.	into the Arabian sea. Rivers Loralai, Chakar, Bolan and Mula are absorbed into the Kachi Sibi Plain.

Q4. Why ground water is important?

Ground water is obtainable through shallow wells, tube wells and karez system.
The water table is higher at the foothills of mountains and very low in the desert area.
It is extremely useful in areas were canal irrigation is not possible and rainfall is variable i.e. Balocistan
In big cities like Karachi, ground water is used to meet the domestic needs.
It is sweet near the sources of recharge and saline far away.
In industrial cities it is not fit for human consumption due to seepage of toxic chemicals, sewage or sea-water into the ground.

Q5. What are the industrial uses of water?

In HEP stations, used to run the turbines for generation of electricity
In pharmaceutical industries for injections, syrups and drips
In iron and steel industries for cooling the furnaces
In tanning industries for washing and dyeing

Q6. What is irrigation? Why do we need it?

Irrigation is the artificial supply of water to land to encourage plant growth.
We need irrigation because most of the areas of Pakistan experience arid or semi- arid conditions.
Rainfall in Pakistan is ineffective in many ways
Spells of high temperature increases the rate of evapo-transpiration
Monsoon winds are variable in timings and distribution

Q7. What are the advantages of using new methods / modern systems of irrigation over the conventional methods?

Water through perennial canals is provided throughout the year and irrigate a vast area.
Tube-wells have diesel or electrically operated pumps that can raise water from great depth
Tube-wells help to lower the water table, protecting the land from waterlogging and salinity.
Sprinkler use the water much more efficiently with less water wastage.

Conventional methods irrigate limited areas of land as only small amount of water can be obtained i.e. Charsa
Require manual labour or animals and are more time consuming i.e. Persian wheel
Are difficult to build, maintain and use e.g. Karez
Inundation canals only flow during rainy season or when there is melting of snow.

Q8a. In which year was the Indus water Treaty signed?

1960

b. Why was the IWT necessary for Pakistan?

After the partition, the head-works of the canals of Ravi and Sutlej were in India. In 1948 India threatened to stop the water from these head-works. The prosperity of the Indus plain was in danger because the area was drained by the water of these canals. The Indus Water Treaty was necessary for Pakistan to solve this problem. In 1960, through the World Bank, it was decided that Pakistan has the right of water of the rivers Indus, Jhelum and Chenab and India will control the water of Rivers Ravi, Beas and Sutlej.

c. How did India violate the Indus Water Treaty?

India constructed many dams on the Indus and other rivers which were given to Pakistan i.e. Kishanaganga project, Baglihar Dam, Neelum Jhelum project
These projects not only release less water to Pakistan but also reduce the generation of hydro-electric power
Timings of the release of water into the rivers by India is also an issue
If extra water is released during flood season, it causes massive scale devastation all over the Indus plain
India held back water in the dry season creating severe water shortages in Pakistan.

Q9a. What is Silting?

Fine particles of soil carried or deposited by water

b. Why there is silting in Pakistan? (causes)

Abundance of silt eroded from the Karakoram, Hindu Kush and Himalayan mountains
Deforestation- ruthless cutting of trees for fuel and timber

c. What is silting and how it is caused?

When the rivers leave the foothills of the Himalayas, they carry a large amount of silt (fine particles of soil) as a result of deep erosion in the mountain areas. When the water of the river is stored in the reservoir of the dam, it is deposited there destroying the purpose of dams and barrages i.e. irrigation and generation of Hydroelectric power, by filling the reservoir with silt.

d. Why is silting a problem? (effects)

Blocking of canals because silt accumulates
Weakens the foundations of dams
Reduced capacity of reservoirs affects the generation of hydro-electric power
Availability of less water for irrigation purposes
Flow of flood water is hampered which may cause heavy damage to dam

e. How to control silting? (solution)

Large-scale afforestation
Cemented embankments of canals
Installation of silt trap
Regulating the flow of water for sluicing sediments from the reservoirs
Raising height of the dam to increase the capacity of the reservoir

Q10a. What is water logging and salinity?

With the introduction of perennial canals, water was available throughout the year resulting in the rise of water table. Salts in the soil also rise to the surface. The water on reaching the surface evaporates and salts are deposited on the surface, rendering the land unsuitable for farming. The rise of the water table to the surface is water logging and the appearance of salty patches is called salinity.

b. How to solve the problem of water logging and salinity?

Lining of canals to control seepage of water
Canal closure on temporary basis
Installing tube-wells to lower the water table
Planting Eucalyptus trees as their roots go deep and absorb water from water table

Q11. Explain some of the causes of surface water pollution.

Dumping of agricultural and industrial waste
Inadequate sewage disposal water system
Untreated raw industrial waste is directed to river Ravi in Lahore
Oil seepage from the ships at Karachi harbor
Increased use of chemical fertilizers for agriculture

Q12. Name large dams, barrages and link canals.

Mangla dam, Tarbela dam
Chasma, Rasul, Marala, Qadirabad Barrage
Marala-Ravi, Rasul- Qadirabad, Chashma-Jhelum link canals

Q13. What are the issues of provinces on the construction of Kalabagh?

KPK fears that most of the water in the reservoir may be diverted to Punjab through link-canals
KPK thinks as electricity generated will be controlled by NGS, it will not get any extra electricity
The project will result in large scale evacuation of people, estimated about 30,000 people from KPK
Large areas of Nowshera district would be submerged by the reservoir and affected by water-logging and salinity

Sindh complained of receiving a smaller share of water from Punjab for its Rabi crop
The water availability for Sindh will further reduced, as reservoir would be used to irrigate farmland of Punjab and KPK
With shortage of water in river Sindh, te sea- water intruding will decrease, resulting destruction of coastal mangroves and fish production and turning vast area of coast into an arid saline desert.
Reduce the flow of water downstream at Kotri Barrage causing problems in canal irrigation.
Reduction of water supply to Manchar and Haleji lakes

Q14. What are the water disputes among users?

As agriculture consumes the bulk of water, it is reduced for other users
Halejilake supplies water to Pakistan Steel Mills, so the supply to domestic users of Karachi is reduced creating water shortage
Less water is available to irrigated forests of the Indus plain due to excessive use of water in agriculture

UNIT 4 FORESTS PAGE 71

Q1. What is the difference between productive and protection forests?

PRODUCTIVE FORESTS

Natural Forests
High Tree density Closed forest canopy
Great commercial value
Provide Timber and other products

PROTECTION FORESTS

Planted by people
Linear, planted along roads, railway lines, in parks
Have little commercial value
Protect the soil from eroding
Keep the environment pleasant

Q2. What is the IMPORTANCE OF FORESTS?

Prevent soil erosion
Check pollution and clean the environment
Natural habitat for wild life
Reduce floods
Formation of humus
Timber for construction and transport
Raw material for industries
For medicine
Food and fruit

Q3. What are the different types of forests in different areas?

Alpine forests in Northern Mountains, Chitral, Dir, Kohistan 4000 m to snow-line
Coniferous (evergreen) Due to high precipitation, in Northern Mountains, Islamabad, Murree, Quetta, Abbotabad From 1000- 4000 m,
Tropical Thorn Forests in Punjab and Sindh plains, and Balochistan, due toEdaphic factors (type of soil)below 1000 m
Sub- Tropical Scrub, Due to aridity in Balochistan and southern Indus plain
Riverian or Bela forests on banks of river Indus and tributaries
Mangroves due to deposition of alluvium in Deltaic region of coastal areas of Sindh and Balochistan

Irrigated forests, Changa Manga. Chichawatni

Q4. What are the determinants/ factors of different types of forests?
Different altitudes have different types of forests. At high altitudes Alpine and Conifers
Aridity prevailing in Balochistan and southern Indus plain results in thorny bushes and scrub
Higher precipitation in the Northern Mountains encourages growth of Coniferous
Deposition of alluvium in the deltas encourage growth of Mangroves
Edaphic factors (type of soil) determine the type and density of forests.

Q5. How do coniferous survive in the cold climate?
Long spreading roots anchor against strong winds
Compact conical shape helps stability in the wind
Downward sloping branches allow snow to slide off
Cones protect the seeds during long winters

Q6. How do MangroveTrees survive in Salt Water?
Trees internal tissues exhibit a high tolerance to salt
Roots function as filters, straining most of the salt out of the water they absorb
Excess salt is carried to the leaves and excreted onto their surface

Q7. Which factors contribute to the vanishing of Mangroves?
The cutting of mangroves for fodder and firewood
Sea- water pollution
The removal of sand from the beaches
The reclamation of beaches for construction of buildings and roads

Q8. What are the threats to coasts without Mangroves?
Growth and health of marine resources is vanishing
Tropical cyclones destroy coastal areas
Threat to the nursery for shrimps, crabs and fish
Beautiful habitat in estuaries are damaging
Avicenna marina species produce honey which is reducing

Q9. What are FORESTS PRODUCTS?
Timber for making buildings, furniture, agricultural implements and boxes
Fuel wood
Resin for making varnishes
Mazri for making mats, baskets, packing
Ephedra for pharmaceutical factories

Q10. What are the causes of Deforestation?
Urbanization
Timber for industries

P2 ENVIRONMENT OF PAKISTAN
Clearing of land for farming
Fuel wood
Building of roads
Over grazing of land
Mining

Q11. What are the EFFECTS OF DEFORESTATION?
Soil erosion by wind and water
Large surface run- off carrying silt and sand
Heavy floods
Siltation in reservoirs disrupts the generation of electricity
Harms fisheries and blocks irrigation canals
Reduction of crops and food production
Destruction of natural habitat
Extinction of species
Climate change leading to less rainfall
Lower crop yield

Q12.DESCRIBE THE SOLUTIONS TO THE PROBLEMS CAUSED BY DEFORESTATION
Supplying irrigation facilities
Planting trees which grow rapidly
Reserving land for fuel wood plantation
Creating awareness
Availability of natural gas especially in northern areas
Improving the techniques of raising nurseries and planting trees
Strict enforcement of foreign laws
Terracing
Strip farming
Contour ploughing

Q13. How theAFFORESTATION PROJECTS ARE CARRIED OUT IN PAKISTAN?

The selection of areas to be afforested
The management of plantation
The development of ways of using forests products
PROJECTS
Terbela/ Mangla watershed Management project
Soil conservation, establishment of orchards, sustainable agriculture systems
Rachna Doab Afforestation Project
Afforestation campaign in Baltistan

Q14. What is Sustainable Forestry?

Trees must not be cut down at a faster rate than they can be replaced

Every tree cut down must be replaced with a sapling from nursery

Wen areas of forests are cut down for essential human requirements, new areas of forests must be planted to replace them

UNIT 5 MINERAL RESOURCES PAGE 84

Minerals are inorganic natural substances

Q1. How are Minerals formed?

From hot Magma, when heat and pressure transform one form of the rock into another. When Magma cools, crystals of minerals appear.

When mineral rich fluids, such as silica-bearing water evaporate or when the volcanic rocks are broken down by action of wind and water.

Many minerals form crystals, if crystals form slowly, they become gemstones.

Q2. Describe mining processes.

OPEN CAST MINING

Minerals like coal or iron which are near the surface are taken out through giant excavators and power shovels

UNDERGROUND MINING

ADIT MINING

In hilly district, where a seam is exposed on a hillside. The miners create a passage as they go deeper into the hill to dig out more coal. The passage may be horizontal or may slope up and down depending on the angle of mineral seam. E.g. Sor coalfield near Quetta.

SHAFT MINING

Vertical shafts are dug down to the minerals, especially for coal. Tunnels are then dug horizontally to the seams of the mineral, which is then removed from the tunnels.

Q3. What are the different problems faced by miners?

Ventilation

Underground transport

Dangerous gases

Poisoning and explosions

Collapsing of tunnel roofs

Flooding

Q4. Describe two TYPES of MINERALS.

METALLIC

Made up of metal compound e.g. iron ore, copper, gold, silver tin

Metallic ores are cut or blasted from surrounding rock

The pure metal is separated by heating

Non-METALLIC
Coal, sulphur, rock salt, marble

Q5. WHAT ARE THE ECONOMIC BENEFITS OF MINERALS?

INDUSTRIAL USES
Limestone, gypsum, clays are used in construction industry
Boosts up infrastructure development
Metallic minerals as raw materials in high value industries
AGRICULTURAL USES
Cement is used for lining of canals, making dykes, building of reservoirs
Metallic minerals are used for making agriculture implements, tractors, gates of barrages

IMPROVING BALANCE OF PAYMENT
Export of metallic minerals and their products increase foreign exchange earnings
Import of minerals causes a negative balance of payment e.g. oil
EMPLOYMENT
Employment opportunities in mining industries
GENERATION OF electricity
Coal, oil and natural gas are used to produce thermal electricity. If Thar coal fields are fully utilized, electricity problem can be solved.
DEVELOPMENT OF REMOTE AREAS
Promotes economic development of remote areas such as the Balochistan plateau and the Western mountains
INCREASE IN GDP
Increase domestic income and improve financial position

Q6. Describe the problems related to mining industry.

LACK OF FINANCIAL RESOURCES
Less money to invest in the exploration of minerals
LACK OF TECHNICAL EXPERTS
Requires high-tech experts with in-depth theoretical and practical knowledge of geology. Computerized mining operations, specialized mining machinery. Have to hire experts from other countries.
INACCESSSIBLE MINERAL DEPOSITS
Coal, copper. Sulphur, gas are found in Balochistan where we have poor infrastructure and low population density.
SECURITY
Terrorists' activities in Pakistan restrict foreign companies to work here.
LOW PRIORITY GIVEN TO MINERAL EXCAVATION
Pakistan pays more attention to agriculture. Mining sector is costly which requires infrastructure, high cost machinery. Hi- tech knowledge, a large industrial market, training of miners.
INSTITUTIONAL MISMANAGEMENT
Victims of corruption and low standard of work

Q7. What are the effects of mining on environment?

Vegetation cut down resulting in soil exposure
Natural landscape deformed due to construction of roads and miner's houses
Noise pollution and ground vibration from blasting
Land pollution due to mining waste
Water supply polluted through mineral waste
Rock blasting or digging of earth

Q8. How sustainable mining should be develop?

Government should make sustainable policies which affect the minerals and metals industry
The application of science and technology to enhance environmental protection
The discharge of toxic substances and the release of heat should be strictly checked

UNIT 6 FISHING INDUSTRY PAGE 97

Q1. Describe different type of fishing in Pakistan.

Marine Fishing
Fishing of sea fish e.g. Sharks, Drums, Skates, Cat fish
Sindh coast is 30% of coast line, Karachi is main fishing centre
Makran coast is 70%, Gwadar, Ormara, Pasni, Jiwani, Sonmiani
Mangroves at Indus and Hub deltas are breeding grounds for fish and shrimps

INLAND FISHING (Fresh water)
All rivers and lakes, reservoirs behind dams, abandoned river or irrigation channels e.g. Palla, Thalla Rahu, Trout
River Indus at Sukkur, Kotri and Thatta
Manchar, Kairi, Haleji lakes
Reservoirs of Mangla and Tarbela dams

FISH FARMS or AQUACULTURE
Rectangular man-made ponds for breeding of fish
Concrete or cemented impervious base to prevent water loss
The side of the farm is edged with solidified mud
Trees are planted for oxygen, minimizing water losses through evaporation and keep the water body cool
Food, medicine and breeding requirements should be cared
Fish farming can be combined with livestock or poultry farming
Animal waste and poultry droppings are excellent fertilizers for fish ponds, promote the growth of plankton, natural food for fish
Fish waste is used for making poultry feed

Q2. Describe thetraditional fishing methods andtypes of fish caught.

Subsistence fishing
Fisherman and his family consume the fish
Uses conventional techniques
Traditional net and a small wooden boat
Does not travel far out/ can go only up to 5 km
Nominal catch
Sharks, Croakers, Skates, Drums, Cat fish, Rays

Q3. Describe thedevelopments in fishing/ Commercial Fishing.

The fish is sold in the market
With conventional methods,new techniques of fishing are also used
The gill- netters and mechanized boats
In deep sea water/ 50-60 km off the shore
At korangi fish harbor, storage and packing facilities are available
Preservation and fish canning at Karachi

Q4. What are the uses of fish?

A delicious, nutritious white meat. Preferred as a low cholesterol diet
Fish waste is used to make fertilizers and poultry feed
Oil extracted from fish provides a source of nutrition, contains vitamin A and D

Q5. Describe the fishing industry of the Makran coast.

The fishing equipment consists of nets, nylon ropes, floats and winches
Improved facilities at Makran coast e.g. docking of sail boats, handling of the catch, preservation and storage,
Infrastructure facilities at Gwadar, Pisni and Ormara
For preserving fish 16 ice factories at Makran coast
Exported to Sri Lanka, China and Korea

Q6. Name fishes of different coasts.

i. Crab, lobster, prawns, sardines, shark at Indus delta Sindh coast
ii. Hilla, maahseer, palla, trout at Inland fisheries (fresh water)
Herring, mackerel, sardines, shark at Makran coast

Q7. How is fishing developed at Sindh coast / Mangroves?

Numerous creeks, sheltered harbours and a wide shallow sea
Wider continental shelf
Rich in fish food brought by river Indus
Better export and processing facilities

Breeding ground of the fish and shrimps
Rich in fish food brought by Indus river
The fallen leaves and twigs of mangroves give rise to fertile habitat in the estuaries for fish and shrimps nurseries

Q7. What harms the fishing industry in Pakistan?

1. Water pollution
Spillage of oil from the ships
Domestic and industrial waste
Numerous chemicals, toxic materials and metals found in marine life
. Over fishing

Over fishing of shrimps, throughout the year, even in the breeding season
c. Threat to mangrove
Mangrove the breeding ground of fish can't grow in polluted water
d. Lack of financial resources
Not enough capital to develop the fishing industry on modern line

Q8. Suggest measures to protect and develop the fishing industry.
Not allow foreign deep-sea trawlers
Ban use of illegal nets
Control over fishing/ catching baby fish
Enforce laws about cutting of mangroves
Control water pollution by industries and home waste

Q9. Explain the advantages and disadvantages of developing the fishing industry in Pakistan. [6]
NB: This can include fish farming / freshwater fishing
Advantages
More food
Healthier food / more protein etc.
More employment / more income/ less unemployment
Exports to – or of – (e.g. shrimps to Japan, dried fish to Middle East, to Sri Lanka)
Better communications with – (e.g. better roads, telecommunications in Balochistan)
More education by teaching skills
More technology – introduction of engines, machines, radar, satellite navigation
Growth of other industries e.g. Processing, boat building
Sustainability as fish are 'free', should not 'run out'

Disadvantages
Education – lack of skilled labour
Technology – costs money, imported
Water pollution – kills, damages fish, Pakistan's rivers are polluted, mangroves polluted
Restrictions – marine fishing banned in June and July
– controls on net size
Quality – some products banned by western countries
– can be poisonous / makes them unsuitable to eat
Income – not large, delayed profit
Sustainability – issues of over-fishing

UNIT 7 AGRICULTURAL DEVELOPMENT

Q1. With reference to Pakistan, describe the types of agricultural systems.

1. Small scale subsistence farming

Small- scale subsistence farms produce food and raw materials mainly for the people who work on them. Depends on nature i.e. natural manure, seeds, animals, wooden plough. Completed with manual work of family members.

2. Cash crop farming

The growing of agricultural crops for sale. The crops bring high yields and maximum profits i.e. cotton, rice, wheat or sugar-cane, tobacco and oilseeds. Production can be increased many times by using chemical fertilizers, high-yielding seeds, proper distribution of canal water and skilled labour with better knowledge of farming, agricultural machinery and pesticides and insecticides.

3. Livestock farming

Rearing animals for family and commercial use i.e. bullocks, cattle, buffaloes, sheep, goats etc.

Q2. Define the following:-

RABI CROPS

Crops that are grown in the beginning of the winter season (October- November) and are harvested in early summer (April- May). They include wheat, barley, grams, oilseeds and pulses.

KHARIF CROPS

Crops that are sown in summer (April- June) and harvested in early winter (October- November). They are rice, sugar-cane, millet, maize and cotton.

BARANI CROPS

Agriculture depends on rainfall

Cash crops

A crop that is grown primarily for sale.

Subsistence crops

Crops grown only for the use of farmer and his family.

Q3. DESCRIBE DIFFERENT AGRICULTURAL PRODUCTS IN PAKISTAN.

WHEAT

Staple food, Rabi crop

By- products of the flour milling are used as feed for livestock

Cultivated in canal irrigated areas of Punjab and Sindh. In few areas of KPK and Potwar Plateau, wheat is grown on barani lands.

The yield of wheat has increased due to new wheat varieties, improvement in the water management system, chemical fertilizers, new agricultural machinery, loans

Wheat Cultivation
In oct- Dec
Ploughing of field
Sowing of wheat seeds
Irrigation after one month
2nd irrigation one month before harvesting
Harvested after three months
Chaff is separated from grains
Grain is stored/sold

On a BARANI farm
Sowing from Oct- Dec, temp 15C, rainfall 13-32 mm
Seeds get little moisture when growing period starts
In January T 8C, RF 34mm, 60mm in March, the wheat crop grows from western depressions, which are absorbed in the soil
April- may T 25C- 31C, harvesting period wheat ripens
RF 37 mm, swelling of wheat grain
Varieties
High- yielding varieties i. e. Maxi Pak twice yield

RICE
Kharif crop, Punjab and Sindh, commercial farming
Initially sown into beds or nurseries
When 9 inches high, transplanted into ploughed, weeded fields, which are flooded with water 30-37cm
Kept full of water until rice is ripe
Water is drained when harvesting begin
Threshing by animals/ thresher
Polishing and packing in rice mills
Rice husks are used for making cardboard/ roofs of houses
Variety: Irri Pak, Basmati

COTTON (the king of fiber)
Kharif crop, used in textile
Seeds are sown at the distance of 30-45cm in April-may
First irrigation after one month
2nd irrigation two months after first
Cotton bolls ripen in Oct- Nov
After picking, cotton bolls are transferred through trucks to ginning mills
In mills, seeds are separated from the lint (fluffy mass of fiber inside the cotton bolls)
Cotton seeds are used as animal feed/ extraction of oil
Cotton lint is tied up in bales for further processing
Cultivated in Punjab and Sindh, Lasbela district of Balochistan

Diseases: leaf-curl virus, fruit shedding
Varieties: Pak upland, desi, Nayyab 78, B-557, 149-F

SUGAR- CANE
Kharif crop
Sugar-cane stalk, 30cm high are planted in April- May
A distance of 30 cm in between
High quality depends on the frequency of irrigation and fertilizers (Potash)
Rise up to the height of 6-7 feet
After the sugar-cane is harvested, new shoots ratoons are left to grow again and harvested in the following year
After cutting it is immediately transported to the sugar mills to restore sugar content
At the sugar mills it is scrubbed with chalk and crushed with rollers to extract juice
Juice is further processed to produce white sugar
In villages brown sugar and gur are prepared
By- products
Bagasse: used to make paper, chip board, animal feed
Molasses: used in the production of citric acid, cattle feed, bakers yeast, synthetic rubber, fuel in sugar industries

MAIZE
Kharif crop
Food grain, raw material for edible oil production, cornflour, custard powder, fodder for animals and poultry
PULSES
Rich in protein, fix nitrogen in the soil, help to fertilize the next crop
Low value crops, less attention is paid in growing
Mung, mash, grams, masoor

Millets
Jowar, bajra
Food crop, fooder for animal, poultry
OILSEEDS
Sunflower, soyabean, rape seed, mustard, sarson, rai, sesame, linseed, castor seed

FRUIT FARMING
Fruits are grown in many areas
Important diet as subsistence food
Exported to other countries
Dates, bananas, oranges, almonds, apples, apricots, grapes etc

Q3. Describe livestock farming in Pakistan.

1. Subsistence farming

Animals are reared to be consumed by the people who rear them. Three types are

Nomadic

Nomadic people in Balochistan and the desert areas of Punjab and Sindh move from place to place along with their animals in search of food and water. They rear sheep, goats and camels.

Transhumance

The system of livestock farming in which the animals are kept on pastures high up in the mountains in summer and brought down to lower pastures in winter. Goats, sheep and cattle in Northern Mountains and Yak and dzu in higher altitudes. Meat, dairy products and wool are the main outputs.

Settled

Practiced in the villages of Punjab and Sindh. Cows and hens are kept for milk and eggs.Milk is processed to form butter and ghee.

2. Commercial livestock farming

Commercial livestock farming is practiced either on a small scale by private owners or on large scale by government owned or military farms. Urban supplies of milk come mainly from buffalo herds kept on vacant plots. Fodder has to bring from the nearest crop growing area. Cattle dung is collected and dried to use as manure or domestic fuel. To boast livestock production, scientific breeding methods, such as cross breeding to increase fertility rates and better nutritional diets are in use on many of the government farms.

Q4. Why is livestock farming important?

Draught power in the traditional fields
Supply of nutritious food for the people
Raw material for domestic industry of processed milk, meat and leather
Contribution to export of livestock products
Contributes 10% to GDP

Q5.Describe some of the problems related to Livestock farming.

Few veterinary hospitals and vaccinations facilities
Lack of grazing grounds for cattle and sheep lead to overgrazing
High prices of animal feed. Difficult to keep in cities near the market
Inefficient marketing system of milk and other products leads to less profit and low investment in inputs
Insufficient breeding for quality
Gap in prices of livestock products in rural and urban areas

Q6. What are the incentives provided by government to promote the livestock and poultry industry?

Selective and cross breeding for better quality animals
Programs to fatten cows for milk and meat
Control of diseases and improvement in vaccination facilities
Improvement in livestock research farms
Cultivation of fodder crops

Q7. Describe the Natural and Human factors affecting agricultural production.

Natural

The flatter land provides efficient farm. Output tends to decline as the land get steeper and higher.
Rich soil provides high farming output. Alluvial, loess and humus are best suited for farming
Areas receiving adequate rainfall produce crops without irrigation i.e. Potwar Plateau. Drier areas are suited to arable farming with the help of irrigation.
In the northern areas, the length of the growing season is less due to less sunny days, whereas in the sunnier south, crops and fruit can ripen throughout the year.
An attack by pests and diseases reduces agricultural outputs.

Human

Farming can thrive with the help of irrigation. With the extension of irrigation facilities, crops can be grown twice or thrice a year and the cultivable areas increases.
The application of fertilizers (traditional manure or chemical fertilizers) has increased output.
The introduction of machines like tractors, tillers, combine harvesters, threshers, reapers and trans planters for rice has increased agricultural output.
The use of high-yielding varieties of seeds increases output by 10-20%, if fertilizer is applied and water is supplied.
Proper marketing of agricultural products increases profit. It includes transportation, processing, storage, wholesale and retail marketing.
The size of the subsistence farm is small. The solution lies in consolidation of holdings. The government has fixed the minimum holdings at 5.0 hectares of irrigated land.
Plant protection programs prepare treated seeds to be resistant to diseases and aerial and ground spraying against pests and diseases.

Q8. What did the land farms laws aim to do?

Breaking the hold of large landlords
Equitable distribution of land
Protection of the rights of tenants
Consolidation of holdings

Q9. What are the government's efforts to improve agricultural production?

Increasing the production of fertilizers
Distribution of improved seeds
Developing a plant protection program
Providing financial resources
Addressing the problem of waterlogging and salinity
Managing soil through afforestation projects
Developing organic farming
Reclamation of deserts with the help of irrigation schemes
Avoidance of poor farming methods

(c) (i) What did the land reform laws aim to do?
Redistribute land more equally/more fairly/ceiling on land holdings
Take land away from large landowners/landlords and give it to the tenants/poor farmers/protect tenants from eviction [1]
(ii) What are the advantages of land consolidation?
Economic units
Use of machinery/modern methods
Easier to supervise
Better irrigation
Better opportunity for investment/easier to get loans
Opportunities for research
Bring more land into cultivation [4]

(d) How can education and training help a small-scale farmer to increase his output?
Learn about modern methods e.g. seeds, machinery, pest control
Learn how to avoid crop failure
Improve literacy e.g. read about what other farmers are doing, where to sell to make most profit
Take loans – must be related to education or literacy

(c) Waste products from food crops such as straw from cereals and bagasse from sugar cane have some uses. Explain the importance of waste products such as these. You may refer to those crops shown in Fig. 3 or others.
bagasse for paper / cardboard / packaging
bagasse for chipboard,
molasses / bagasse for chemical industry
straw for bedding / roofing / strawboard
animal food
composted
mixed into soil / ploughed in
bagasse for power stations / fuel
Can save fossil fuels / coal / gas / oil
Cheaper than fossil fuels etc. / electricity

(d) Read the extract below.
The farming land in barani areas such as the Potwar Plateau is subjected to soil erosion, overgrazing, and desertification due to poor farm management. This leads to low crop productivity, poor quality livestock and low farm incomes.

(i) What reasons does the writer give for the low farm incomes in barani areas?
soil erosion, over grazing, desertification [3]

(ii) Explain these, and other causes of low farm incomes.
E.g. Soil erosion means poor root growth and small crop output
Overgrazing means lack of food for animals and soil erosion / desertification
Desertification causes climatic change and a lack of water
Low crop productivity means low incomes leading to less money for better seed, fertiliser etc.
Poor quality livestock produces less milk, meat etc.
Little money to spend on better seed, fertiliser etc. because of low farm incomes
Also candidates may be given marks for explaining
Traditional farming methods give low yields
Small farms so little mechanisation
Oppressive landlords (Zamindari) so high rents, no chance of improvement
Poor climate so difficult to grow good crops
Storms and flooding / pest attacks (e.g. locusts, weevils) destroy crops
Illiteracy / lack of education so no improvements
Rural – urban migration so able-bodied men leave
Waterlogging and salinity reduces cultivable area / yield
Lack of government support / investment [5]

UNIT 8 POWER RESOURCES

Q1. How coal is transported to end user?

Coal from the coalmine is send through trolleys/ donkeys to the outside surface. Qualities of coal are separated and sold to the middleman. It is then supplied to the brick kilns and cement factories by trucks where it is used as a fuel. When coal is supplied to the thermal power station, rail transport is also used if it is economically feasible.

Q2. Why coal is a preferred source of power in near future?

New reserves of coal have been discovered in recent years. 7508 million tonnes of proven reserves are found in Thar desert and Salt Range.

In view of the uncertainty surrounding the price of oil and its import, the use of the indigenous coal is the best alternate source of fuel even cheaper than gas.

Power generation through coal and gasification of coal could be used as a cheap fuel.

Q3. What is gasification of coal?

Coal is converted into easily transportable coal gas or liquid fuels. The coal is heated in the presence of steam and oxygen to produce coal gas. It is a mixture of carbon monoxide, hydrogen and methane. It is used directly as fuel or refined into cleaner- burning gas to make it environment friendly. Coal – based vapour fuels are produced through this process.

Q4. What are the advantages and disadvantages of Thar Power Generation Project?

Advantages

Thar coal fields have 175 billion tons of lignite coal reserves that can produce 100,000 MW of power for 200 years.

There is so much coal that it can exported to India.

Consumers can get electricity at a cheaper rate what is paid now.

Billions of dollars spent on the import of expensive oil can be saved.

Disadvantages

Coal fired power plants are the source of fly ash and mercury pollution which falls in the nearby rivers.

People who routinely eat mercury- polluted fish can suffer brain damage and nervous system disorders.

Fly ash causes severe problems like lowered crop yield and respiratory disorders in humans and livestock.

Groundwater is contaminated with toxic salts and metallic content.

Q5. What are the uses of mineral oil?

The greatest use of oil is an indispensable motor fuel used to run motor vehicles, aircraft, trains and ships.

Oil is also used as a lubricant for machines to reduce friction.

It is also very important as a source of power to generate electricity.

The by-products of oil refining have many domestic and industrial uses.

Q6. How is oil drilled?

It occurs in porous spaces of sedimentary rocks and is derived mainly from the decomposition of marine animal and vegetative matter over several million years. Occasionally it has been known to leak up to form puddles on the surface. Wells are drilled to pump this liquid fuel out of the ground.in modern oil prospecting when a drilling site is selected, a derrick or drilling rig is set up. The derrick is a large steel structure that holds the drilling pipes and other equipment.

Q7. Where are the oil refineries in Pakistan?

In or near the oil fields i.e. Attock oil refinery is located on the Potwar Plateau in Mogra

At the port of import i.e. Pakistan refinery and National Refinery are located in Karachi

Q8. How is oil transported?

At Sea

Oil is transported in special ships called oil tankers from oil producing countries like Saudi Arabia or United Arab Emirates. At Keamari (Karachi) port and Port Qasim, the oil tanker is berthed at the designated oil pier. Through the pier the ship is connected to the oil handling system. The oil products are pumped from the oil tanker ship to the oil marketing companies/ refineries storage tanks.

On Land

Crude oil is pumped from the oil tankers at coast to the refineries. A pipeline has been constructed from Karachi port to The Pak Arab Refinery Company located at MahmoodKot for the transportation of crude oil. After refining the oil is supplied to the up and mid-country.

The refined petroleum products are transported from Karachi up country by road and rail tankers to the storage tanks of the oil companies like PSO, Caltex, Shell etc.

In 2002, PARCO launched a White Oil Line Project to carry refined oil from Karachi to the north. The new underground pipeline costing $480 million carries refined oil from Port Qasim to MahmmdKot covering a distance of 817 km.

Q9. Why it is better to transport oil by pipelines than through oil tankers?

Transportation by road and rail tankers is relatively costly, time- consuming and inefficient as compared to transmission by pipelines.

Movement of these products is very dangerous for traffic.

It can also cause extreme degradation to the existing road surface due to its weight but can be a danger to human lives as well.

Pipeline transportation is the most efficient, convenient and cheapest mode of transportation besides being far more environmentally friendly.

Q10. Which is the largest gas field in Pakistan? How it is transported to other parts and for which purpose?

Natural gas was discovered in 1952 at Sui, Baluchistan.
After its discovery, a pipeline to Karachi was established to provide cheap fuel to the industrial city.
Another pipeline to Multan was completed in 1958 to supply gas to the thermal power station and fertilizer plant.
This pipeline is further extended to Faisalabad where another gas-fired power station has been set up.
It has been further extended to Lahore, Rawalpindi, Islamabad and Peshawar to domestic consumers and industries.
A pipeline also goes to Quetta from Sui for the benefit of Industrial and household users.

Q11. What is LPG?

When natural gas is cooled to a very low temperature it turns into a liquid. This liquid is called liquefied petroleum gas or LPG. It can be moved from place to place in cylinders.

Q12. How is nuclear energy generated?

In atomic fission, energy is released when atoms split into their constituent parts, neutrons, protons and electrons. In atomic fusion, energy is released when atoms are fused together. At present nuclear power stations are based on atomic fission.
Pakistan is using nuclear energy for electricity generation. The Karachi Nuclear Power plant was commissioned in 1971 and Chasma Nuclear Power Plant was made in 1999.

Q13. What is Thermal electricity?

Electricity that is generated by non-renewable resources like oil, coal, gas, nuclear fuel is called thermal electricity. Fossil fuels and nuclear power stations produce heat energy which is used to turn water into steam which is then used to run turbines.

Q14. What are alternative energy resources?

Alternative energy is defined as coming from sources that do not deplete natural resources or harm the environment e.g. water, solar, wind, tidal, wave, biomass and geothermal sources.

Q15. How do Hydro-electric power stations work?

Hydro-electric power stations use the force of flowing water to spin the hydro-turbines. From a hydro-turbine there is a shaft going into the generator. This shaft spins rapidly inside a magnetic field in the generator and generates electricity. The electric current is regulated by the transformer and sent through the power line at the required voltage.

Q16. What is the potential of solar energy in Pakistan?

In Pakistan there are 250- 300 sunny days a year in many parts of the country.
Solar energy can be used for rural electrification, water heating, pumping water from wells and for cooking purposes.
It is safe, pollution free, efficient and in limitless supply.
Currently, solar technology is used in rural telephone exchanges, highway emergency telephones, refrigeration for medicines in the hospitals.

In the markets there are PV modules, batteries, regulators, invertors, as well as photovoltaic lamps, battery chargers, garden lights etc.

Q17. How wind power is used?

Windmills and wind pumps convert the kinetic energy in the wind into mechanical power. This mechanical power can be used to for various tasks such as grinding grain or pumping water. A wind turbine has a generator which converts this mechanical power into electricity. Large scale wind farms, which consist of many turbines are connected to electrical grids to provide electricity to a large area.

Q18. What is Geo thermal power and how it is used?

Is the energy derived from the heat of the Earth's core. Produced from Earth's heat absorbed in underground water such as hot springs. The holes are drilled into the land to pump out hot water. This hot water and steam is used to drive turbines to produce electricity.

Advantages

Renewable and sustainable

Providing a constant supply

Pollution free

Disadvantages

High cost of construction of a power station and maintenance

Limitation to volcanic area

Threat to power stations from eruptions and earthquakes

Potential

Commercially exploitable sources in Himalaya region and Chagai area in Balochistan

Fairly large number of hot springs

Q19. How is Wave power and Tidal power used?

Wave motion can be used to compress air to drive a turbine to generate electricity

The creek system of the Indus delta extends over an area of 170 km. Tidal water flow in these creeks with high velocity, which can be used for the extraction of energy from the tidal currents.

Advantages

Renewable, providing a constant supply, non-pollutant

Disadvantages

Expensive to build,

Would destroy wildlife habitat

Could disrupt local shipping

Q20. How is Bio-mass and Bio-gas produced and used?

Bio-mas refers to organic material, plants and vegetable matter, both living and decaying that can be used as fuel. Most commonly it refers to plant matter grown to generate electricity or produce biofuel.

Numerous process such as gasification and fermentation can tap to produce energy.

Biogas is produced from animal and plant waste. Fermentation of cow-dung gives off methane gas, which is used for cooking, heating and other purposes. It is a cheap source of energy, but if on alarge scale, cow-dung cannot be used as manure and increase air pollution.

Q21. What is National Grid System and how it works?

The National Grid connects Hydel generation in the north and thermal generation in mid country and the south managed by WAPDA and KESC. It consists of a large network of transmission lines and grid stations to transmit power to load centers and then to commercial and domestic consumers throughout the country according to the requirement.

Q22. Describe the factors responsible for the shortage of energy supplies in Pakistan.

Many of the power plants not working well due to financial constraints, lack of technical expertise and maintenance facilities.

During the winter season, the Hydel power generation decreases with the reduced flow of water in rivers.

Long transmission lines cause losses of electricity

Siltation in the reservoirs of dams causes disruption in electricity generation

Power theft occurs on a large scale

The high prices of fossil fuels increases the cost of electricity generation

Industrialization, urbanization and rural electrification have increased demand for electricity

Q23. Why rural electrification is important?

Tube wells can be installed for irrigation and control of water logging and salinity

Small-scale industries can be developed to provide employment and goods

The standard of living increases by the use of electrical appliances

People can receive the electronic media and access information technology

Q24. Why power resources for economic development are important?

All industrial plants use power in processing raw material

Modernization of agriculture depends on power resources i.e. tube wells, tractors, threshers etc.

Power resources are used in exploration and extraction of metallic and non-metallic minerals i.e. derricks, bulldozers, drills

If power resources are produced locally, the dependence on imported power resources is reduced

All electrical appliances IT. devices run on power/ electricity

UNIT 9

INDUSTRIAL DEVELOPMENT

HUMAIRA RIZWAN

Q1a. Define Secondary industry?

Secondary industry is concerned with changing raw material to form a semi-finished or finished goods.

Q1b. Explain the inputs, process and outputs of secondary industries?

INPUTS

Capital: the finance to establish and manage the factories.

Enterprise: business skills needed to develop ideas for products and to manufacture and market them in a successful way.

Land: the actual place where the industry is located.

Raw Material: the basic commodity that is transformed by industrial processes.

Power: Energy or fuel used in the factories.

Labour: the number, skills and other characteristics of the work force.

PROCESSES

Smelting, weaving, spinning, dyeing, printing, knitting, dyeing, tanning, moulding

OUTPUTS

Processed goods i.e. cement, cotton yarn, ghee, sugar etc.

Manufactured goods used as raw materials: bottles, cotton cloth, steel sheets etc.

Manufactured goods i.e. drugs, garments, motor cycles etc.

The products of the construction companies i.e. factories, office blocks, schools etc.

Q2. Which factors contribute to the location of cotton industry?

Located close to the cotton belt

Labour force available from adjoining areas

Large local market for finished products

Favourable government policies

Availability of power supply

Linked to the country by an efficient transport system

Availability of capital and experienced enterprise

Q3a. How is raw cotton converted into a finished product?

Pressure rollers flatten cotton fibres

Teasing wires produce loose bundles of fibers (silvers)

Fast and slow rollers pull silvers out further

Silvers are wound onto bobbins

Silvers are stretched and spun into cotton yarn

Threads are arranged lengthwise (wraps) on a loom

Other threads, the wefts are then woven crosswise through the wrap.

This weaving of thread makes the cloth.

Q3b. what is the importance of cotton textile industry for Pakistan?

Great export potential/ 60% of total exports

Value-added products/ earn more foreign exchange

Promotes production of raw cotton by increasing the income of farmers
Makes use of local raw material reducing dependence on imports
Meets the domestic demand of cotton products.

Q3c. What are the problems/ disadvantages of Textile industry?

Shortage of raw material due to the leaf-curl virus
Recession in the international market
Strong competition from South Korea, Taiwan, Hong Kong etc.
Requires more capital/ investment

Q4a. Why sugar mills have to be located near the sugar-cane fields?

Sugar-cane start losing its sugar content as soon as it is harvested. Needs to be crus immediately.
Heavy and bulky so expensive to transport.

Q4b. Explain the by-products of sugar-cane and their uses.

Bagasse: used as fuels in sugar mills, and make chipboard, paper and animal feed.
Molasses: used to manufacture various types of acids in the chemical industry.

Q5. What is the importance of Fertilizers industry?

Various raw materials, Sulphur, phosphate and gypsum used to make fertilisers are available
Natural gas as a raw material available
Nitrogenous fertilizers used 92% due to deficient soils
Lot of fertilizer industries fulfilling requirements

Q6a. Why Pakistan Steel Mill is located at Pipri near Karachi?

Flat, cheap land was available near Gharo creek
Port Qasim has a natural harbor
The former USSR provided financial assistance
Raw materials are available from nearby hills and water from lake Haleji
Port Qasim and Karachi have the highest electricity generating capacity
Skilled and unskilled labour is available
Domestic markets are throughout Pakistan
Connected to Karachi by train and roads

Q6b. What are the advantages and disadvantages of steel industry in Pakistan?

Advantages

Provides raw material for a number of industries
Cheaper than imported steel
Reduces burden on foreign exchange
Larger GNP/GDP/ national income

DISADVANTAGES

Requires imported raw material
Requires infrastructure
Environmental pollution
Lack of technical experts and skilled labour

Q7a. What are Industrial states and special industrial zones?

Industrial states are specific areas reserved for industry only.They are established to help and encourage entrepreneurs. The government provides infrastructure facilities.

A special industrial zone can be developed in those areas where infrastructure facilities are not available. The investors could develop these facilities with the assistance of government.

Q7b. Define the following: -

Nationalization: The transfer of basic industries to public sector from private sector. Effected the pace of industrial development and it remained slow. Done during Bhutto reign in 1972.

Denationalization: Handing over the nationalized industries to their owners again. Done in 1977 under the Martial Law government of Zia-ul-Haq.

Privatization: State owned industries were privatized, allowed to own by private companies. Done since 1991.

Q8. What is the difference between Formal and informal sectors?

Formal

Employed by institution

Capital intensive with few workers

Regular working hours and certain wages

Work is located in offices and factories

Informal

Self-employment

Labour intensive using hand tools

Irregular working hours and uncertain wages

Work done at home or the streets

9. What is the difference between Cottage / Craft and small scale industry?

Small scale industry employs fewer than 10 people and its fixed assets do not exceed RS. 10 million Pakistan.

Cottage/ craft industry, manufacturing is wholly or partially carried on in the home of the worker and o hired labour is employed.

10. Why it is important to encourage Cottage and Small scale industries? Or
What are the advantages of establishing cottage and small scale industries?

duce unemployment, provide employment to 80% of the industrial labour force.

ovide employment to the women

et the local demand for the industrial goods and save foreign exchange.

urce of 30% foreign exchange earnings by exporting handicrafts and embroidered work.

duce rural- urban migration.

duce regional disparity in income.

od use of the local raw material

s capital and less sophisticated technology is involved.

e burden on imports

e use of industrial waste.

Q11. Why is the Sports Industry of Sialkot important?

Was selected to supply footballs for the 1998 world cup
Export oriented
Uses raw material from both local and imported brands
Bears elements of the Formal as well as of the Informal sector.
Many of the processes of cutting and stitching is done in primitive way and child labour is also involved
All products are made with first class design and quality/ international standards

Q12. Why Surgical Instruments Industry has gained so much importance?

More than 95% instruments manufactured in Sialkot are exported to other countries.
Contributes to 70% to the total exports of engineering.
10,000 different types of surgical instruments are made
Pakistan competes with world's most developed and advanced countries and shares 1% of the world exports of medical and dental instruments.

Q13. How are Bricks made? What are their uses?

Manual-mixing clay with water
Moulding into rectangular shapes by using moulds
Drying in sunlight
Keeping in fired kiln for baking
Turning soft clay into hard bricks

USES
Construction industry
Lining of canals
Making sewerage drains
Protecting underground cables

Q14. What should be done to improve the brick industry?

Strict implementation of child and labour laws
Switching to natural gas as a fuel instead of coal
Chimneys should be at a great height to reduce pollution
Newer technologies for drying process to reduce drying time
Clean coal technologies

Q15. Describe the problems of Cottage and small scale industries.

Limited profits and no extra capital for expansion
Higher production cost as no economies of scale
Lack of standardization and quality control
Outdated production methods and machinery
Wholesalers maximum share of the profit, forces the owner to reduce quality and quantity

Shortage of power supply and fuel
Limited technical advice and training

Q16. Which measures are taken by government to improve the cottage and small scale industries?

Establishment of industrial estates
Providing marketing facilities
Setting up of technical service centres
Establishing handicrafts and carpet centres
Providing pre-investment counselling and guidance
Providing loans on easy installments

Q17. How does industrial pollution affect people?

Serious health hazards in the form of diseases
Contamination of sub-soil water affects food crops and drinking water
Industrial waste water affects irrigation of crops
Threat to marine life/ seafood
Threat to mangroves/ reduction in fish production
Seaport pollution due to nearby industries
Noise pollution resulting in deafness and irritability

Q18. How to control Industrial pollution?

Enforcement of efficient disposal mechanism
Import of machinery for treating industrial waste
Extensive cultivation of green shady trees
Industrial sites should be away from residential areas
Strict laws against dumping of waste in Arabian sea
Massive campaign to create awareness

Q19. What is a Tertiary Industry?

Tertiary Industry is concerned with providing a service and is also known as Service Industry i.e. Public administration, transport, defence, tourism etc.

Q20a. Define Tourism.

Tourism means the whole business of providing accommodation and recreation facilities for those people who are travelling and visiting or staying in a place for a relatively limited period of time.

Q20b. Describe the factors affecting tourism development in Pakistan.

The presence of tourist attractions
Pakistan has impressive natural, historical and cultural attractions i.e. Murree, Lahore Fort, Minar e Pakistan. Many are not easily accessible.
Level of Security for the tourists

45

350,000 tourists used to visit Pakistan annually but has declined after 9/11 due to security reasons terrorists attacks on foreign tourists.

3. Availability of Capital

Inadequate funds for the development of tourist industry. Much is spent on advertisement.

4. Provision of Infrastructure facilities

All weather roads, electricity, water supply, hospitals, food supply and proper sewage disposal systems are short to reach the unexplored natural beauty.

5. Management of tourist attractions

Some tourist attractions lose their charm due to deforestation, congestion, inadequate sewage disposal and environmental pollution when not managed properly.

6. Marketing and publicity at international level

Pakistan Tourism Development Corporation has started marketing and publicity through its websites.

7. The feasibility of developing transport and communication

Need to be made more roads and air services

8. Government Priorities

Government is developing targeted tourism, only developing those tourist points which are cost effective

Q21. What are the different categories of international visitors to Pakistan?

a. visitors on business

to attend trade delegations

for educational activities

as staff of multinational companies

as UNO officials

as members of diplomatic delegations

b. People visiting families

Pakistanis working in Saudi Arabia, Kuwait, UAE. UK, USA and Canada come to visit their families.

c. Foreign Tourists

High adventure tourists interested in northern areas of Pakistan

Q22. Mention some advantages and disadvantages of Tourism.

Advantages

Increase the balance of payment and lesson the burden of debt

Creates domestic employment

Encourages Cottage craft industry

Increase in production of food

Tourist facilities can be used by locals as well

Profits can improve the life style of local people

Increase cultural linkages with foreign countries

Reduces migration

Sustainable industry – will continue

Disadvantages

Political and economic situations determines the number of tourists
Generates seasonal employment (May to October)
Basic sectors of economy need more attention and funds than Tourism
High adventure Tourism is only for young males
Local homes, land, and traditional livelihood is lost
Local culture and traditions are lost
Less tourist facilities for domestic tourists
Rise in the prices of commodities for locals
Natural environment is affected

Higher taxation limits the purchasing power of the customer
Business and commercial activity slows down

Q7. What is difference between GDP and GNP?

GDP (Gross Domestic Product)

Means the total monetary value of all products and services produced within a country over a particular time period.

It is a nation's economy in geographical terms, whatever is produced in all four provinces of Pakistan.

Produced within Pakistan, whether by the citizens of Pakistan or by the foreign companies.

GNP (Gross National Product)

Means the total monetary value of all goods and services produced by the resources owned by the citizens of the country.

GNP focuses on the production by nationals. Anything produced by Pakistanis or Pakistan-owned capital.

The output produced by the country's companies whether these companies are physically located in that specific country or not.

Q8a. What is Balance of Payment?

Balance of Payment= Value of Exports- Value of Imports (goods and services)

Q8b. Why is there a Negative Balance of Payment?

Import of capital goods and raw material for industries increase import bill. E.g. 86% in 2011-12

Difficult to compete in highly competitive market as our goods lack standardization and efficient quality control

Our society is consumption- oriented one.14% of total imports.

Effects of the rise in oil prices in the 1970s and 80s is still felt.

With unfavourable weather conditions, the production and export of cotton and rice declines, affecting exports.

Import of wheat and our food items increases import bill.

Imported raw materials were 63% in 2011-12.

Exports of non-textile products have faced trade barriers due to concerns about child labour, environmental and health standards.

Pakistan not part of major regional organization.

Q9. Which measures should be taken to increase Exports?

Export higher value-added goods
Develop small scale and cottage industries for export using local raw material
Increase the variety of export items
Reduce taxes to provide incentives to exporters
Export Promotion Bureau should organize export activities
Strict quality control measures to be imposed
Export processing Zones should be set up in different parts of country

Q10a. What are Export Processing Zones? What are their objectives?

EPZ contain industrial units which manufacture the products with export potential.

To boast industrialization

To increase the country's exports by creating facilities for investors
To create job opportunities
To transfer Hi-tech from the developed world to developing countries

Q10b. Which incentives are provided to the investors to set up a unit in EPZs of Pakistan?
100% ownership rights
No minimum or maximum limits for investments
Duty free imports of machinery, equipment and material
No sales tax on input goods and services

Q11.What are the potential of establishing EPZs on the Makran Coast (Gwadar)?
Foreign investment along with High-Tech could be attracted to Gwadar and Ormara with access to the CAS.
The port of Gwadar can serve as a Regional Trade Hub with the recent geo-political developments in the region. It will cater for the requirements of trade of Afghanistan, UAE, Oman, Saudi Arabia, Qatar and CAS. Will help in the marketing of EPZs' products.
The Deep Water Port and Export Processing Zone can be developed simultaneously.
Infrastructure facilities such as transport links, water resources from Dasht river and the Mirani Dam, Desalination plants and power generation through WAPDA plant at Pasni could be arranged by the government.

Q12a. What were the functions of the Export Promotion Bureau (EPB)?
Creating awareness among the manufacturing and service sectors about the potentials of export
Exploring and identifying market opportunities abroad
Assisting Pakistanis entrepreneurs to secure entries in the international market

Q12b. what were the reasons of replacing EPB with TDAP (Trade Development Authority of Pakistan?
The EPB was unable to play a role in the international trade
TDAP will result in significant changes to trade development
TDAP will result in the overall planning and development of different sectors

Q13a. What are the different forms of Trade Barriers?
Tariffs (taxes on imports)
Trade embargoes (a ban on certain imported products)
Quotas (restrictions on the Physical quantity of goods imported)

Q13b. What are the advantages and disadvantages of Trade Barriers?
Advantages
Give rise to greater self-sufficiency, reducing foreign dependency
Protect local industries and create employment opportunities
Improve the balance of payments position
Create domestic demand that leads to greater exploitation of local resources
Disadvantages
Consumer choice is limited to domestically produced goods
Local industries become complacent and lose efficiency
Inefficient and high cost products need to be produced

Q14. What are exchange rates?

Refers to the price of one currency in terms of another currency.

An exchange rate is said to depreciate when one unit of that currency buys fewer and fewer units of another currency. If Pakistan's exchange rate against the US dollar was $1= Rs 95 last month, but changes to $1=100 now, it means Pakistani currency is depreciated. Currency depreciation makes imports expensive and exports cheaper.

Appreciation of the exchange rate takes place when one unit of a currency can buy a greater value of another currency. The Pakistani rupee is appreciated when $1= Rs. 100 changes to less amount e.g. $1= Rs, 98. Appreciation of the exchange rate makes imports cheaper and exports more expensive.

Q15. What are trading Blocs?

Refers to regional groupings of international economies to allow for greater economic cooperation and facilitation of free trade. e.g.

SAARC (South Asian Association for Regional Cooperation)

ECO (Economic Cooperation Organization)

ASEAN (Association of Southeast Asian Nations)

EU (European Union)

Q16. What are the advantages and disadvantages of developing trade agreements with EU?

Advantages

Expansion in the export market and more foreign exchange earnings thus improving the balance of payments.

Development of the export-orientated industries to promote industrialization

More investment in industry by local and foreign investors

EU countries have fewer trade barriers so access is easier

Disadvantages

Pakistan may face restrictions due to environmental conditions and child labour issues

There may be sanctions due to terrorism and declining law and order conditions

Products of cottage and small-scale industries lack standardization. They may not be approved by EU countries

Agro-based industries and agricultural production of Pakistan exports are unreliable due to dependence on natural factors

Q17a.What are the opportunities and challenges for Pakistan resulting from its membership of the World Trade Organization (WTO)?

Reorientation of textile industry is required to maintain comparative edge and strong position through modernization and replacement of industrial machinery.

Pakistan's agriculture is not ready to cope with the WTO regime because it is highly subsidized and not fully modernized. This may reduce our exports and government's revenue.

The service sector will make quite a few adjustments as it is already competing with international players.

Government has to implement strict rules to conform to the WTO agreements to establish a transparent and cost-efficient business environment

Pakistan has to reduce or regulate its import duties in conformity with WTO relations.
Small-scale and medium-scale industry will face a tough competition with imported goods because of high cost of production and lack of standardization.

UNIT 11 TRANSPORT AND TELECOMMUNICATION

Q1. What is the lay-out of Pakistan railways?

Extends to 11,899 km track with 900 stations and 54 train halts.
It stretches from Karachi to Peshawar.
A little used line goes from Peshawar to the Afghanistan border. A branch line extends from Nowshera to Dargai.
A branch line winds its way from Sukkur to Sibi and on to Quetta. From Quetta one branch goes to Chaman and other to Zahidan in Iran.
The railway network is best developed along the rivers in the plains of Punjab and Sindh. One branch line goes from Lahore to India border.
In the high mountains of northern and north-western areas, railways are non-existent.

Q2. Why Pakistan Railway has deteriorated over the years?

Lack of investment
Worn-out rails and sleepers
Operational inefficiencies in timings
Overstaffing and corruption
Uneconomic stations
Poor reservation system
The presence of single tracks

Q3a. Which developments took place in Pakistan railways after 1947?

Replacement of steam engines with diesel engines
Introduction of faster trains i.e. Shalimar Express from Karachi to Lahore
Electric traction on 289 km from Lahore to Khanewal
Establishment of repair workshops in Moghalpura Lahore. Spare parts factories in Islamabad, Sukkur and Jhelum.

Construction of Karachi Circular Railway. (closed now)
Dual track between Khanewal and Lodhran to avoid bottleneck for the trains on the Karachi-Lahore and Karachi-Peshawar tracks.

Q3b. What are the recent developments in Pakistan Railways?

Several new services which have resulted in increase in passengers and freight transport
Construction of Railway track from Karachi to Gwadar
Computerized ticketing system
One-window ticketing system

Q4. Which proposals are made for expansion and reopening of Karachi Circular Railway (KCR)?

Connection of the newly-built road fly-overs and bridges to the new stations
Extension of the route of the KCR
Improvement in the time-table, ticketing arrangements and the stations

Q5. What are dry ports? What are their functions?

Some inland cities which are far from seas have developed dry ports to promote foreign trade.
They help to speed up export and import procedures
They provide checking facilities
help in giving clearance by the custom authorities
Provide temporary storage space and transportation

Q6a. what are the aims of establishing dry ports?

To reduce the workload at Karachi port and Port Qasim by speeding up the checking and clearance of cargo.
To help the government in the smooth collection of revenue
To provide hassle-free transportation of cargo from production point to the seaport.
To stimulate foreign trade facilities in faraway cities.

Q6b. Where are dry ports located in Pakistan?

Sambrial (Sialkot), Lahore, Multan, Faisalabad, Rawalpindi, Hyderabad, Larkana, Quetta and Peshawar.

Q7. Which infrastructure facilities are required for dry ports?

Highly efficient rail transport with a container to carry bulk cargo
Efficient managerial staff
Huge storage sheds and open areas
Refrigeration facilities for perishable items

Q8. What are the principal roads of Pakistan?

The National Highway Grand Trunk Road (the N5) stretches for 1260 km from Karachi through Hyderabad, Sukkur, Bahawalpur, Multan to Lahore. From Lahore known as GT road passes from Gujranwala, Gujrat, Jhelum, Rawalpindi and Peshawar to Turkham.

The Indus Highway is 1204 km and covers the west bank of river Indus. Goes from Karachi to Kotri (known as Super Highway), Dadu, Larkana, Shikarpur, Dera Ghazi Khan, Dera Ismail Khan, kohat to Peshawar.

The RCD connects Karachi to Lasbela, Khuzdar, Kalat, Quetta, Nushkai and NokKundi in Pakistan and then goes to Iran and Turkey,
Route 50 from Lahore passes through Faislabad, Dera Ismail Khan, Derajats in KPK, Zohb to Quetta.
Route 65 links Sukkur to Shikarpur, Jacobabad, Sibi, Bolan Pass to Quetta.
Karakoram High way connects Pakistan to China.
The Pakistan Motorway is divided into four sections.
Islamabad to Lahore 339 km, Islamabad to Peshawar M1 155 km, PindiBhattian to Faisalabad M3 52 km, Karachi- Hyderabad M-9 135 km.

Q9. What are the benefits of Motorways?

Road transport is quicker and more efficient
Industrial estates have established on its route
Has promoted Industrial growth by supplying raw material to the Industries and manufactured goods to the market
More employment opportunities for the people
Many new settlements along the road
Leading to Afghanistan and CAS Republics

Q10. How the roads have affected the international trade in Pakistan?

After the construction of Karakoram Highway (KKH) trade relations between Pakistan and china have strengthen. There is inflow of Chinese goods i.e. electronics, medicinal herbs, Chinese fabrics, decorative items and toys. Our exports are cotton textiles, dried fruits and hosiery goods.
After the opening of China Pakistan Economic Corridor (CPEC), from the deep-sea water of Gwadar to Central Asian States through China, the opportunity of trade has increased a lot.
Pakistan joins Afghanistan with historical passes, Khyber, Kurram and Khojak , and there is improvement in trade in the recent years.
In east lies India, and there is proper net-works of roads, but there is little trade because bilateral trade, cultural and diplomatic relations have not developed since partition.
To the south-west, a land route, the RCD Highway goes to Iran and Turkey. Very little trade is carried out through this route as it is narrow and not built properly.

Q11a. What is the effectiveness of air transport?

Most effective mode of transport for high value lightweight goods. People who value time and can afford prefer this mode.
Northern areas like Gilgit and Skardu are more accessible.
More people can afford it due to Industrialization and urbanization.
Air cargo transport has increased to the Middle East, mainly of perishable items, like fruits and vegetables.
The world is now a global village, so more people travel from one country to another using air travel.
Air transport facilities have increased and improved a lot with the latest international quality equipment.

11b. which factors are important for the development of international Airports?

Large flat land for the construction of runways
Considering relief and climate, so flights are permitted throughout the year.
Suitable place to take short routes to countries around.
Capital cities to provide travel facilities to foreign delegates and diplomatic officers

Trade and industrial centres to carry out activities
Cities with proper infrastructure facilities

Q12a. What is the importance of Keamari Port?

Deep-water natural seaport
Long approach channel, receiving tankers, containers, bulk and general cargo ships
Sheltered by the inlands of Keamari and a breakwater at Manora
It has a number of wharves. (A wharf is a landing stage to which ships and barges moored while loading and unloading)

Q12b. Which programme is made to modernize Keamari Port?

Liquid products terminal with ancillaries (support facilities i.e. unloading, storing and transporting)
Construction of flyovers to ease traffic congestion in the port area.
Provision of navigational aids and radars
Environmental protection equipment to keep sea-water clean from seepage of oil
Container terminals at west wharf.

Q12c. Why Port Qasim was developed?

Pakistan's second deep sea port
Has modern machinery to relieve the pressure at Keamari port
Handling raw material for Pakistan steel mill
First integrated port that combines the functions of multi-purpose deep-sea port and an industrial zone.
Cargo include iron ore, coal, grain, furnace oil, edible oil, rice, LPG, jute and fertilizers
Industries include paper and board, chemicals, cotton textiles and assemblies

Q13. What is the economic importance and reasons for the development of Gwadar port?

Can serve as an entre-port for central Asian land-locked countries. Revenue generation for Pakistan/ Transit fee from Afghanistan
Balochistan may emerge as a hub of international traffic and economic activities. For export of large fruit crop/ mineral output to be exploited by China
Substitute port for Keamari and Port Qasim
Export warehouses for Afghanistan and CAS
Development of a number of ancillary industries and fish harbor
Opens opportunities to skilled and unskilled labours
Development of rail network, international airport, grid stations, housing colonies, hotels and tourist resorts, industrial states, EPZs, coastal Highway, Akracore and Miraini Dams.

Q14a. What are Telecommunications?

Radios, televisions, telephones, fax machines, computers, mobiles provide rapid, long distance communication, convert sound and images into signals which are then transmitted along wires or radio waves in worldwide waves.

Q14b. What is the function of internet?

To send and receive emails

To create websites of information on the network called the World Wide Web (www)
To obtain information from websites anywhere in the world

Q15a. What is the role of Telecommunication in promoting education/Industrial Development?

An exciting new development is the distance learning possible via the Allama Iqbal Open University in Islamabad through radio and TV programmes.
Providing courses to train teachers
Increasing the standard of literacy
Information technology has revolutionized methods of teaching in the classrooms. The use of computers and multi-media projectors in the classroom enhance learning by bringing the world in the classroom.
New technology helps to improve the quality of products by ordering and importing without delay
International companies can open their branches in Pakistan to operate their business
Industrial products can be launched in local and international markets with the help of advertisements on radio, TV and internet websites
Latest information about new market opportunities and trends can increase export
Transactions costs have reduced as a result of electronic modes of trading

Q15b. What are the problems/ disadvantages of developing Telecommunications in Pakistan?

Any faults/ breakdowns in internet services can make the tertiary industry non-functional which is highly dependent on IT.
Decreases employment opportunities as few workers are needed when depending on IT devices
Load shedding and frequent power breakdowns slow the work in the offices
Older generations are less interested in introducing modern devices at their work places
Easy access to some websites may harm local culture and value systems
A country's sensitive data is vulnerable to cyber-attacks by foreign countries and individuals
Computers and other IT devices are capital intensive which are quite expensive

Q15c. What are government plans regarding IT?

More widespread provision of infrastructure
Establishment of internet centers
Encouragement of educational channels on TV
Sufficient highly- trained IT professionals at different levels
Encouragement of the software industry
Use of software in education and business

UNIT 12 POPULATION AND EMPLOYMENT

Q1. What is Natural increase of population? What are the reasons for high population growth?

Birth rate - Death rate = rate of Natural increase
Child labour as children can help to increase family income
Early marriages increase the span for reproductivity
Family planning programmes receive strong resistance on religious grounds
Strong desire for sons
Entrance of Afghan refugees
Inconsistent government policies, not working for population welfare projects
Majority of the people are illiterate, not aware of economic distress caused by high birth rate

Q2. How the growth in population hinders the economic development?

Food insecurity
Unemployment
Burden on health facilities
Shortage of water supply
Electricity crisis
Lack of educational institutes
Child labour
Burden on transport resources and housing facilities
Rise in crimes and terrorist activities

Q3. Which efforts should be made to achieve balanced population growth?

Population welfare programmes like women's Association, Behbud Association etc.
NGOs working with government for population welfare
Increase in literacy rate, spread of education, rural electrification, building of all-weather roads
Convincing people on religious grounds
More educational institutes for females to create awareness
Better utilization of natural and human resources to increase the rate of development

Q4. What is Demographic Transition model? What does it tell us?

It suggests a sequence of change in the relationship between birth rates and death rates.
Demographic rate can be divided into four stages.
Stage 1: 1905-1935
High birth rate due to no birth control programs, large families were taken as pride, farming the main occupation required more work force
High death rate was due to high infant mortality rate, shortage of food supplies, poor hygienic facilities spreading diseases, little development in medical science
STAGE 2: 1936-1970
Birth rate was still high

Drop in death rate was due to increased medical facilities, improvement in sanitation and water supply, increase in food production, better transportation to reach medical facilities, decrease in child mortality

STAGE 3: 1971-2013

The fall in birth rate due to family planning programs, improved literacy rate, increased industrialization and mechanized farming, career oriented women, delayed marriages, improvement in living standards

Drop in death rate

STAGE 4: 2014-2040

If both birth rate and death rate remain low, it will lead to a stable stage

Q5. What is a population structure? What does population Pyramid indicate?

The population structure is the percentage of males and females in different age groups. A population Pyramid usually shows it.

It indicates

A high birth rate leading to a high dependency ratio

Fall in death rate with more people in the middle age group

Slightly longer life expectancy

Q6a. How does the present day population structure affect the economy and development of the country?

A high birth rate causes pressure on the economic resources of the country i.e. food, housing, educational institutions etc.

A smaller proportion of the age group 15-60 is negative sign. This is economically productive group and helps to generate income.

Economy may further be overburdened with a substantial rise in an ageing population.

Q6b. How the projected population pyramid will affect the economy and development of Pakistan?

A low birth rate means a lower dependency ratio, saved money will lead to more investment in developmental sectors such as agriculture, industry, trade, transport and communication.

A larger proportion of people from 15-60 means a large skilled and unskilled labour force available for economic activities.

A larger proportion of an ageing group will create a burden on housing facilities. They need to be provided with pensions by the government and support by other family members. They can't contribute to revenue but their expertise, experience and specialized advice can help the younger generations.

7. Define employment, disguised unemployment and unemployment.

The employed comprise all persons of ten years or above who worked one hour during the reference period and were either paid employed or self- employed.

Disguised unemployment occurs when the number of workers is more than is actually needed.

Unemployment means the state of being unable to find a job.

. What causes unemployment?

gh rate of population growth is the major factor for rising unemployment

ring recent years mechanized farming is becoming popular and fewer farm workers are needed

h great improvement in information technology, the demand for manual workers has gone down

Money spent on weddings and festivals lead to low domestic savings and less investment in economic activities.
Great degree of mismatch in demand and supply of labour in different sectors of economy
Less people are now needed at agricultural farms
People from rural areas migrate to urban areas to seek jobs but remain unemployed
Political instability and frequent changes of governments has slowed

Q9. How unemployment affects economic development?
Underutilization of human resources and less generation of income
Due to increased competition for jobs, wages decrease, which leads to decrease of tax collection
Reduction in consumer expenditure leads to low profit and less investment
Fall in revenue leads to the government rising the tax rate
Reduces local and foreign investment because low profit is expected
Increases physical and mental stress and may lead to a rise in the crime rate and terrorist activities

Q10a. How literacy and training programs can solve the problem of unemployment?
Reduce the pressure on land in rural areas and people may choose some other occupations
Literate and trained labour can make economic activities more productive
No gap between demand and supply of labour force
People will improve the standard of living and appreciate the advantages of small family

Q10b. How literacy and training programs can meet agricultural/ industrial requirements?
Establishment of training institutions to teach agriculture as the basic subject
Enrollment of young people to these institutions
Model farms to be attached for practical demonstration
Workshops to repair and maintain the agricultural machinery
Training for cottage industries
Specialized training of particular manufacturers
Maintenance of plant and machinery and understanding of basic functions
Handling of new sophisticated machines
Send trainees abroad to centres of excellence in highly specialized /advanced techniques

Q11a. Explain the factors responsible for high population density./ low population density
Flat or undulating land
Doabs located in Punjab
Moderate temperature/ rainfall
Deep fertile alluvium/ rivers, lakes
Mineral resources
Valleys/ natural harbours
Efficient transport /port facilities
Industrial areas/trade and business centers
Tourism/ HEP supplies
Favourable government policies/ new towns
Better accommodation facilities/education and health
Rural-urban migration

LOW
Steep or rugged mountains
Extreme temperature/less rainfall
Barren lands/ mangroves
Thin soil/ minerals not explored
Non-availability of water/mountain barrier
Poor transport links/ limited port facilities
Lack of industrial development/limited trade and business
Unreliable power supplies
Lack of government investments
Poor housing/health/ education facilities
Depopulation of rural areas

Q12. What is Migration/ immigrant?

Migration is the movement of people from one area to another.
In-migration means people arriving in the area from other places.
Out-migration means people leaving the area to go to other areas.
Migration can be internal within the country e.g. rural to urban.
It can be international e.g. to other countries.
Immigrants are the people who arrive in the country e.g. Afghan refugees in Pakistan
Emigrants are those who leave a country e.g. Pakistanis leaving for Canada or the Middle East.

Q13. What are the Rural Push and Urban Pull factors?

PUSH FACTORS
Pressure on land, disguised unemployment and division of land
Overpopulation/ poor quality of life
Limited food production due to decrease in cultivable land
Mechanization causing reduction in job availability
Natural disasters such as floods, thunderstorms etc.

PULL FACTORS
Better job opportunities
Expectation of better quality life
Reliable sources of food
Attraction of entertainment/ bright lights
Better civic services i.e. transport, health, education

Q14. Describe the problems resulting from rural-urban migration.

As a result of rapid urbanization, the housing situation is under tremendous pressure. It has resulted in deterioration of living conditions, increased health hazards, rapid growth of slums and squatter settlements.
Environmental degradation due to air, water and land pollution and health hazards, dumping of untreated municipal and industrial wastes, vehicular emission due to over-population
Rural-urban migration overburdens all the resources of urban areas such as food supply, health facilities, educational institutions, the transport system, sanitation and drainage systems, electricity, water and gas supply, telephone lines and employment opportunities etc.
Increase in crime rate and terrorist activities

Social and psychological problems
The unplanned growth of cities

Q15. What is a self-help scheme? Describe its advantages and disadvantages.

It is usually a government sponsored scheme under which members of a community are encouraged to better themselves through self-employment, growing food, arranging for a clean water supply or making their own shelter.

ADVANTAGES

Reduce poverty by providing shelter to low income families
Fewer diseases declining death rate
Improve living standards and start small business
Reduce crime rates
Young people take responsibility of guarding the area
Recreational facilities can be built on empty lands
Government is persuaded to provide electricity and road lights
Educational institutions can be built by NGOs

DISADVANTAGES

Due to high cost of construction material, projects cannot be completed
Low income groups can't contribute
Corruption or mishandling of funds is common
Administrative delays and financial constraints
More rural-urban migration
Difference in the opinion of people/ less cooperation in community services
Political instability affect negatively

Q16a. What are the causes and effects of out-migration (emigration) from Pakistan?

CAUSES

Unemployment/ young educated people want better reward for their services
Developmental projects in the Middle East
The glamorous life-style of advanced countries
Corruption, delayed justice, favoritism and high birth rate
Policy of the Canadian government to attract more Asians
Growing terrorism and economic crisis

EFFECTS

Overseas Pakistanis send remittance in the form of foreign exchange
Encourages the flow of IT
Rate of unemployment decreases
More investment in Pakistan
Strong cultural ties between different nations
Pakistan is deprived of its talented and educated people
Skilled labrours are required in local factories

Q16b. Describe the causes of seasonal migration in Pakistan.

Transhumance life-style in Northern and North-western mountains

Due to drought and shortage of rainfall people migrate to urban areas for few months
Due to severe floods from July to September, people living near rivers move to safer areas
During harvesting seasons of crops in Punjab and Sindh, people move there for employment
Sugar and cotton processing mills also hire seasonal workers

Q17. How can sustainable population growth be maintained?

By increasing awareness of adverse consequences of rapid population growth
By attaining a balance between resources and population by maximum utilization of natural and human resources
By promoting family planning methods to reduce the birth rate