O Levels

Topical Past Papers of Environment of Pakistan 2059/02

PAKISTAN STUDIES PAPERS (2002-2012)

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The Natural Topography

[May/June 03]

(a) Study Fig. 5.

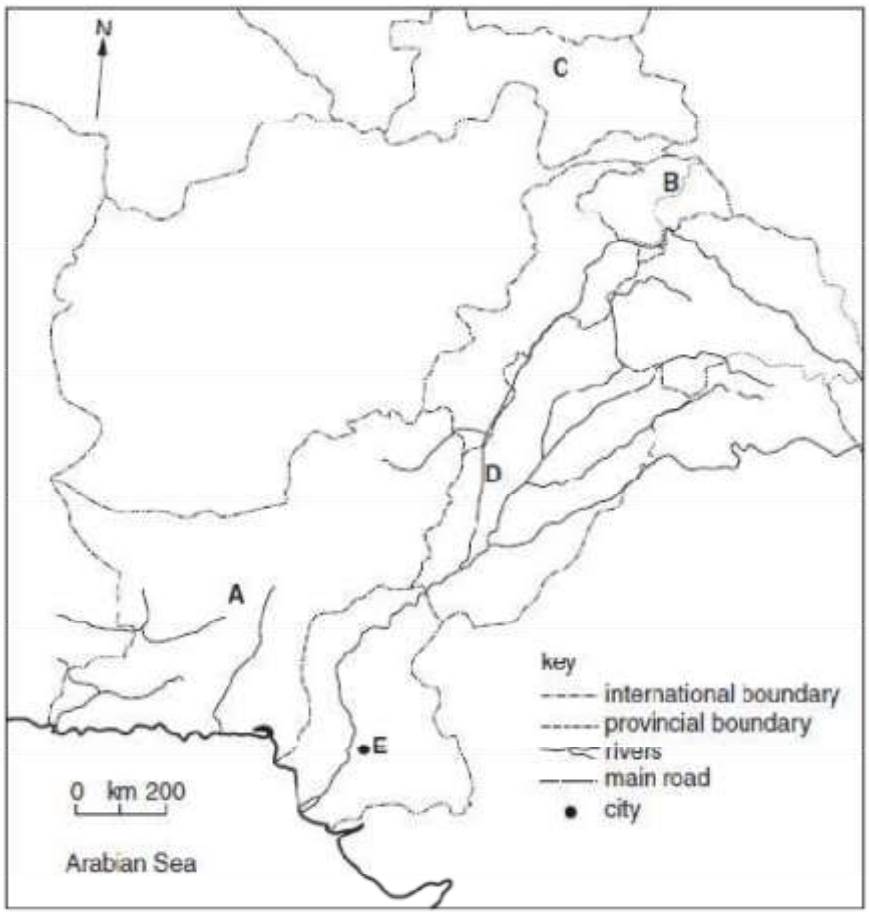


Fig. 5

On your answer paper name

(i) province A, [1]

(ii) the main road B, [1]

(iii) country C, [1]

(iv) river D, [1]

(v) city E. [1]

[May/June 04]

For each of the following, give the name of the physical feature and describe its main physical characteristics:

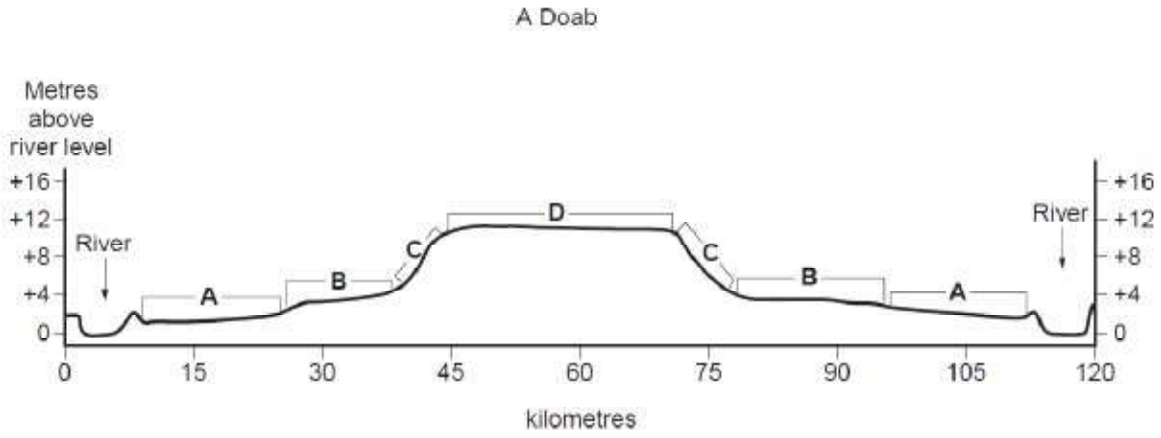


Fig. 1

(i) A, [3]
Active flood plain/bet/khaddar
- Flooded every/most years/frequently
- New alluvium/alluvium deposited every year/meanders/oxbows/ levees
(up to 2 from this line)
- Dry/braided channels
- 10-18 km/around 15 km wide
- 2-3 m above river level
- Flat/level/plain

(ii) B, [3]
- 10-15 m wide/around 12 m
- Flooded every 7/8 years/when severe floods occur
- Old alluvium (old) levees/abandoned channels/dhoros/meander (scars)/dried ox-bows/dhands
(up to 2 from this line)
- 3-5 m above river level/around 4 m

(iii) C, [2]
- Steep slope/5-11 m high
- 5-8 m wide/around 6 m

(iv) D. [2]
- Old alluvium/bhangar/Sindh Sagar is covered by sand
- 10-12 m above river level/around 11 m
- 25-30 km wide
- Flat/level/plain

(b) Compare the *natural* topographical and drainage features of the Upper Indus Plain with those of the Lower Indus Plain. [6]

Topography:

- Both areas are flat/gently undulating
- Land higher in Upper Indus Plain/lower in Lower Indus Plain
- Both areas mainly alluvial/have active flood plain/old flood plain
- Doabs mainly a feature of the Upper Indus Plain /not or rarely found in Lower Indus Plain
- Bar uplands/alluvial terraces in Upper Indus Plain only
- A few low hills in both areas
- Quartzite/slate hills in Upper Indus Plain whereas limestone hills/cuestas in Lower Indus Plain
- Piedmont plains and alluvial fans in both
- Both areas have rolling sand dunes

Drainage:

- Indus has many tributaries in Upper Indus Plain but few in Lower Indus Plain
- Indus has 4/5 large left/east bank tributaries in Upper Indus Plain
- Indus has 1 large and several small right/west bank tributary in Upper Indus Plain'
- Tributaries contribute a huge amount of water to Indus in Upper Indus Plain but very little water to Indus in Lower Indus Plain
- Meanders/braiding/ox-bows/swamps/etc common in both areas
- Indus delta at southern end of Lower Indus Plain not in Upper Indus Plain
- Wider river in Lower Indus Plain /narrower in Upper Indus Plain /LIP over 1.6 miles wide – Upper Indus Plain
- 1.4-1.6 miles wide

(a) Study Fig. 2.

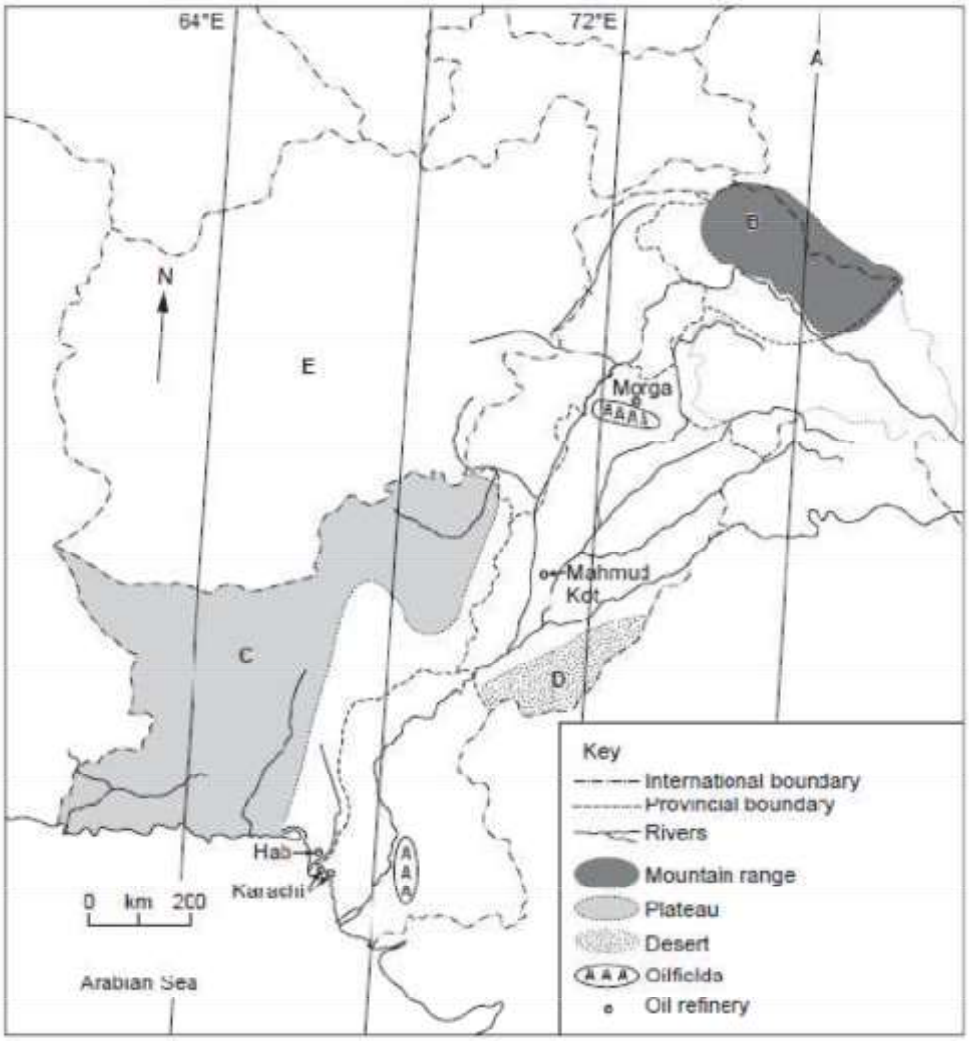


Fig. 2

On your answer paper,

(i) state the number of degrees East of longitude A, [1]
76 (°E)

(ii) name the mountain range B, [1]
Karakoram

(iii) name the plateau C, [1]
Balochi/Balochistan

(iv) name the desert D, [1]
Cholistan

(v) name country E. [1]
Afghanistan

[May/June 05]

On your answer paper

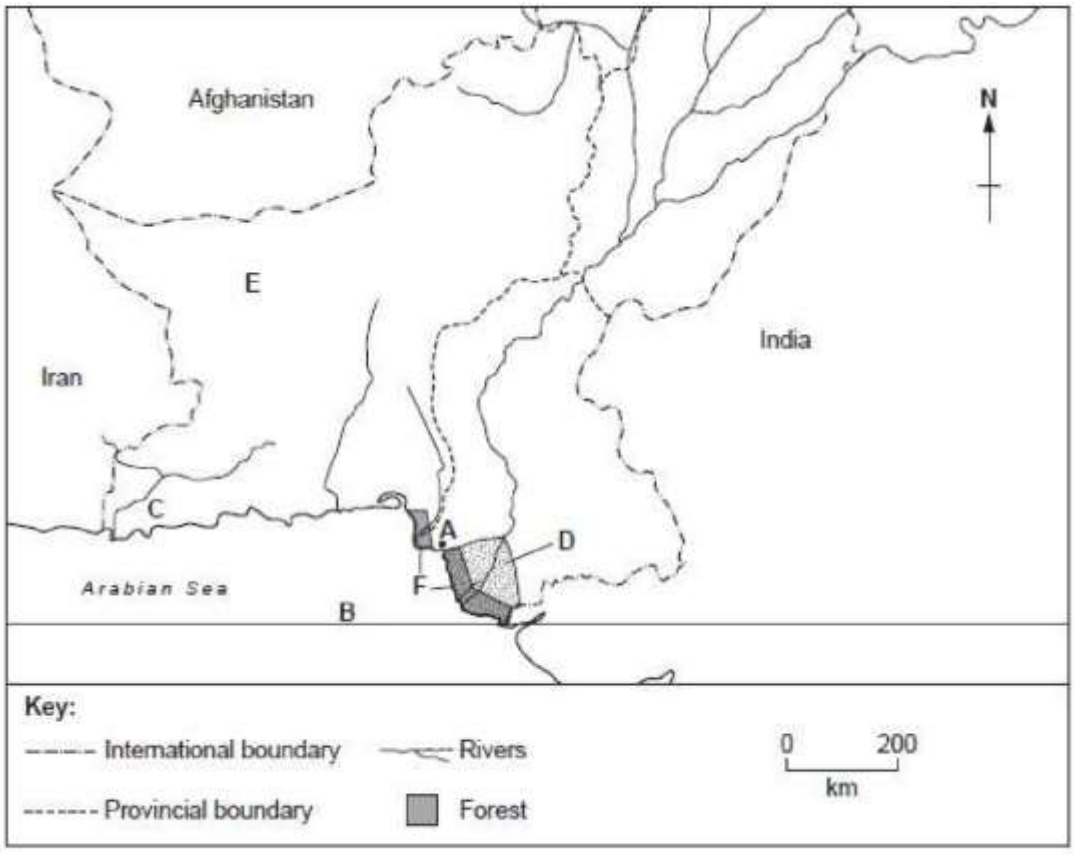


Fig. 1

(i) name the city A,
Karachi

(ii) name the line of latitude B,
Tropic of Cancer/23½° N

(iii) name the river C,
Dasht

(iv) name the area D,
Indus delta/Thatta district

(v) name the province E. [5]
Balochistan

[May/June 06]

Study the map of Pakistan, Fig. 1.

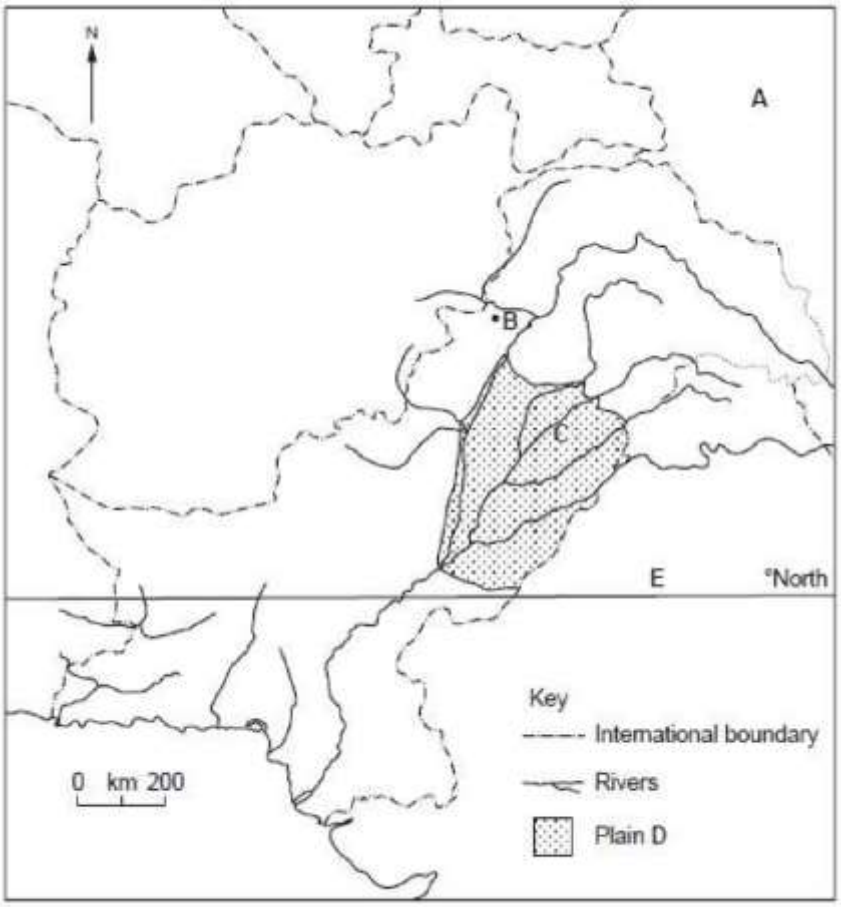


Fig. 1

On your answer paper

(i) name country A,

China

(ii) name city B,

Peshawar

(iii) name the river C,

Chenab

(iv) name the plain D,

Upper Indus (Plain) / Punjab

(v) State the number in °N of the line of latitude E. [5]

28

[May/June 07]

(a) Study the map of the Hunza Valley, Fig. 1

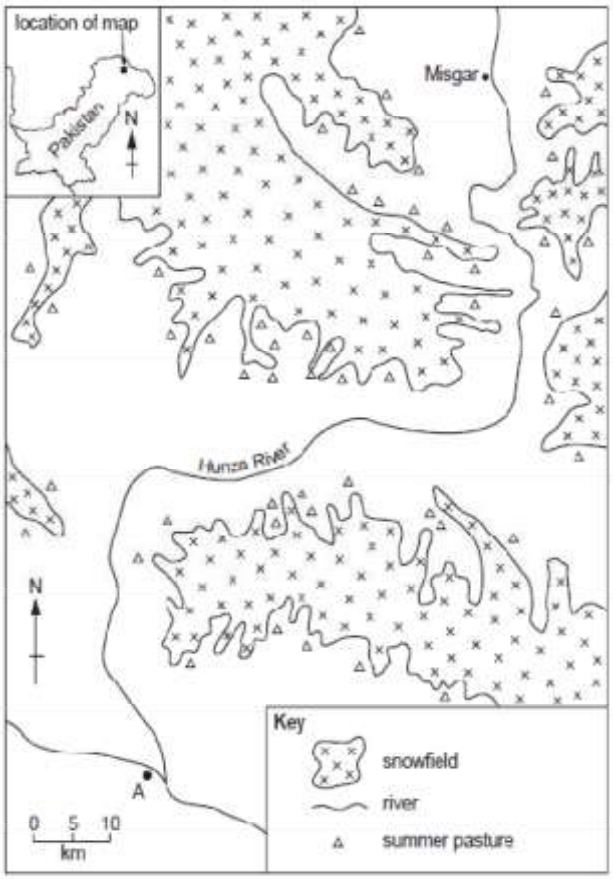


Fig. 1

(i) Name the range of mountains in which this valley is situated. [1]
Karakoram Range

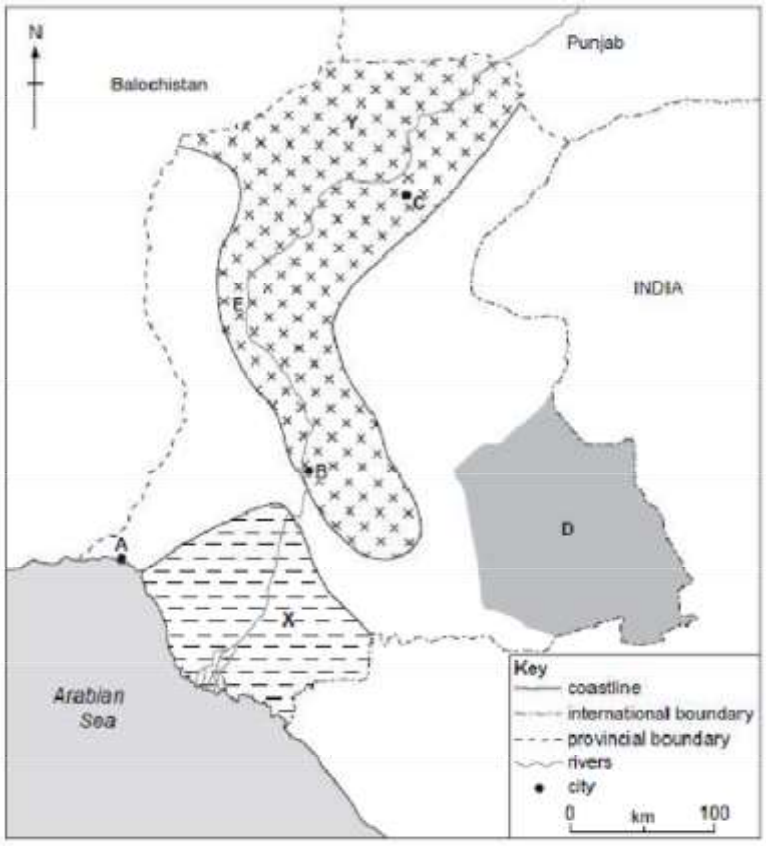
(ii) Name the town A. [1]
Gilgit

(iii) Name the highway which follows this valley north to China. [1]
Karakoram Highway

(iv) Name the Federally Administered Area in which this valley is situated. [1]
Northern Area(s)

[May/June 08]

(a) Study Fig. 2, a map of population density distribution in Sindh province.



(i) Name the cities A, B and C.
A – Karachi
B – Hyderabad,
C – Sukkur,

(ii) Name the desert D.
Thar(parkar)

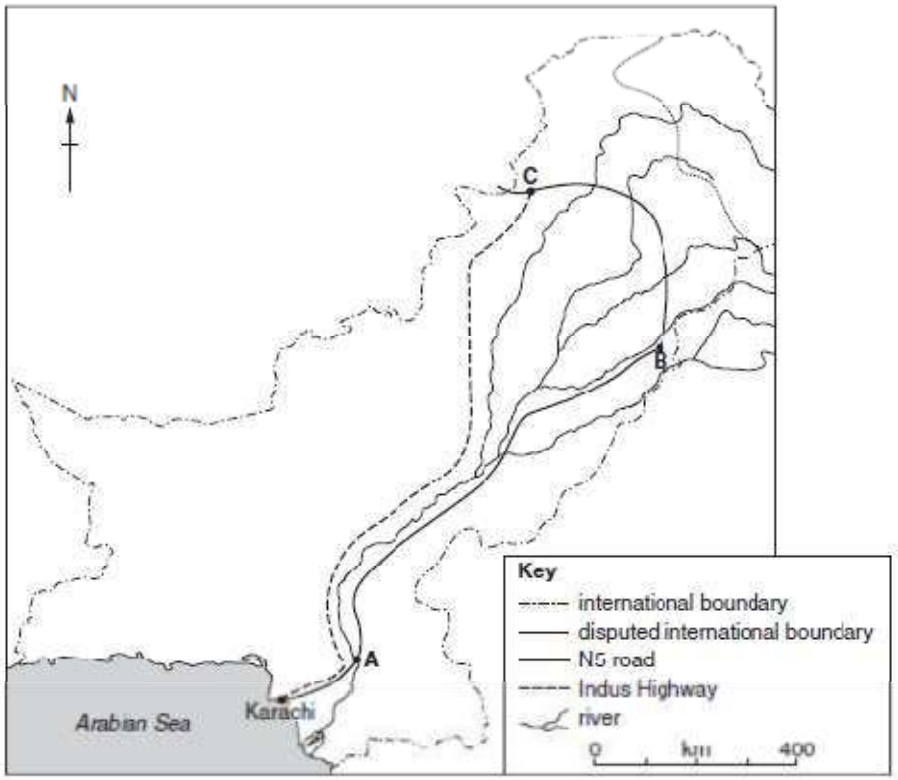
(iii) Name the river E. [5]
Indus

(b) (i) Explain the physical reasons for a high density of population in area Y. [4]
NOT 'GOOD CLIMATE'
-alluvial/rich/fertile soil for good agriculture
-well drained soil for good agriculture, travel, building
-flat land for use of machinery, travel/building/irrigation
-water available for irrigation, domestic use, industry

(ii) Explain the low population density in area X. [3]
Delta/Indus delta
-Salt water/saline soil – difficult to farm/poor soil
-Low river flow/lack of fresh/clean water – so unsuitable for farming, domestic use
-Flooding – so causes problems to farming, industry
-Swamp/marsh – difficult to build/poor foundations
-Mangrove trees – so lack of farmland
-Tropical storms/typhoons/cyclones – dangerous
-Lack of roads – so difficult to move around
-Lack of other named infrastructure – so no industry, improved living standards
-Dry climate/lack of rain so no agriculture, industry, sanitation
-Fishing in decline due to pollution/mangroves dying
-Lack of industry therefore no jobs

[May/June 09]

(a) Study Fig. 3, a map showing three major cities and two major roads.



(i) Name the cities A, B and C. [3]

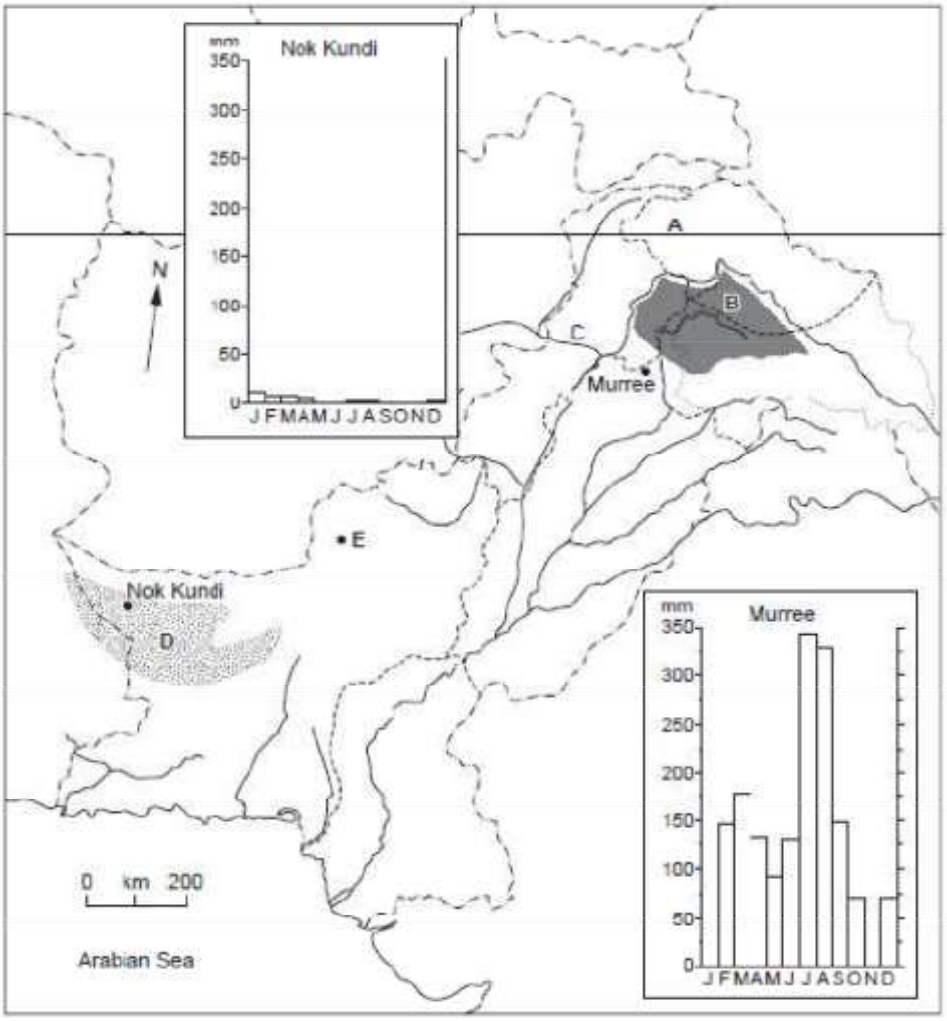
A – Hyderabad

B – Lahore

C – Peshawar

[Oct/Nov 04]

Study the map of Pakistan, Fig. 1.



Key
- International boundary
- Provincial boundary
- Rivers
- Mountain range
- Desert
- Settlement

On your answer paper:

(i) state the number of degrees north of latitude A (Murree is 34°N), [1]

(i) 36 (°N)

(ii) **name the mountain range B, [1]**

(ii) Himalaya(s)

(iii) **name the river C, [1]**

(iii) Kabul

(iv) **name the desert D, [1]**

(iv) Kharan

(v) **name city E. [1]**
(v) Quetta

[Oct/Nov 05]

(a) Study the map of Pakistan, Fig. 1.

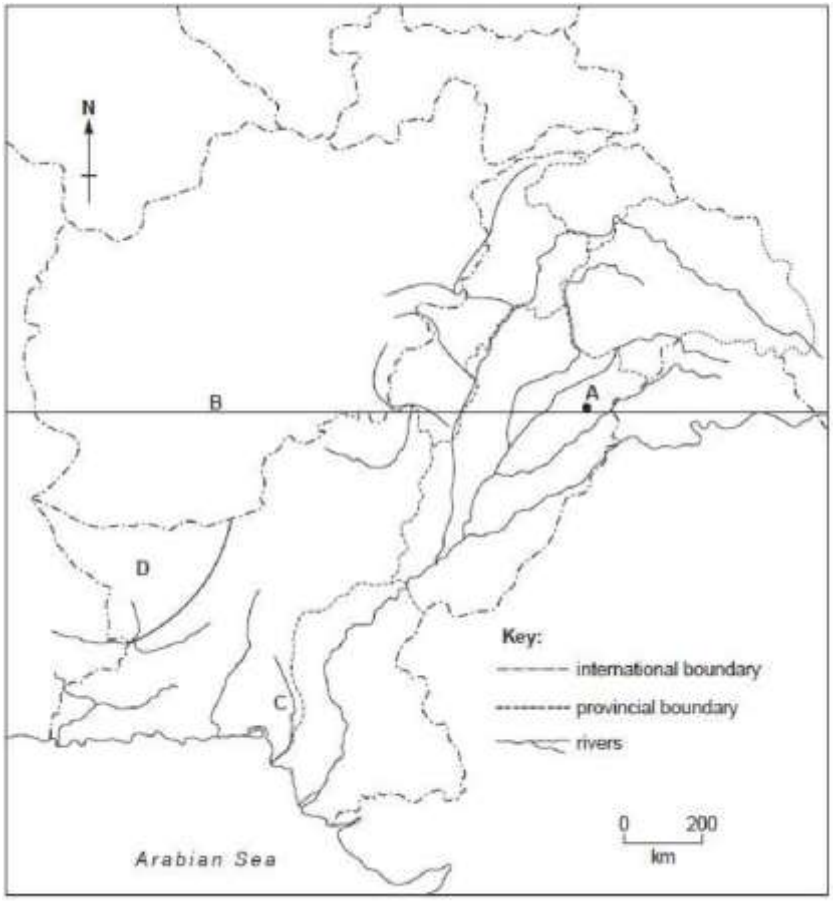


Fig. 1

On your answer paper
(i) name the city A,
Gujranwala

(ii) state the latitude in degrees north of line B,
32

(iii) name the river C,
Hab

(iv) state two main features of the climate in area D. [5]
Arid/very dry/desert
Mild winters
(Very) hot summers

Dust storms/hot, dusty winds May – September

Study the road in area **S** of Fig. 3.

(i) What is shown that is likely to block the road? [1]
(loose) rocks/scree/boulders

(ii) What problems are there for road construction and maintenance in mountain areas? (In your answer you may refer to Photograph A and Figs 3 and 4.) [5]
Construction
-Steep gradients
-Rain/snow/ice
-Deep valleys/crossing rivers/gorges
-Remote from supplies
-Lack of suitable workforce
-High costs
-Difficult to move machinery
Maintenance
-Damage by bad weather
-Blockages restricting access
-High cost, remote, labour etc. (only credit once)
-Earthquakes
-Dangerous place

[Oct/Nov 06]

Study Fig. 1, a map of Pakistan

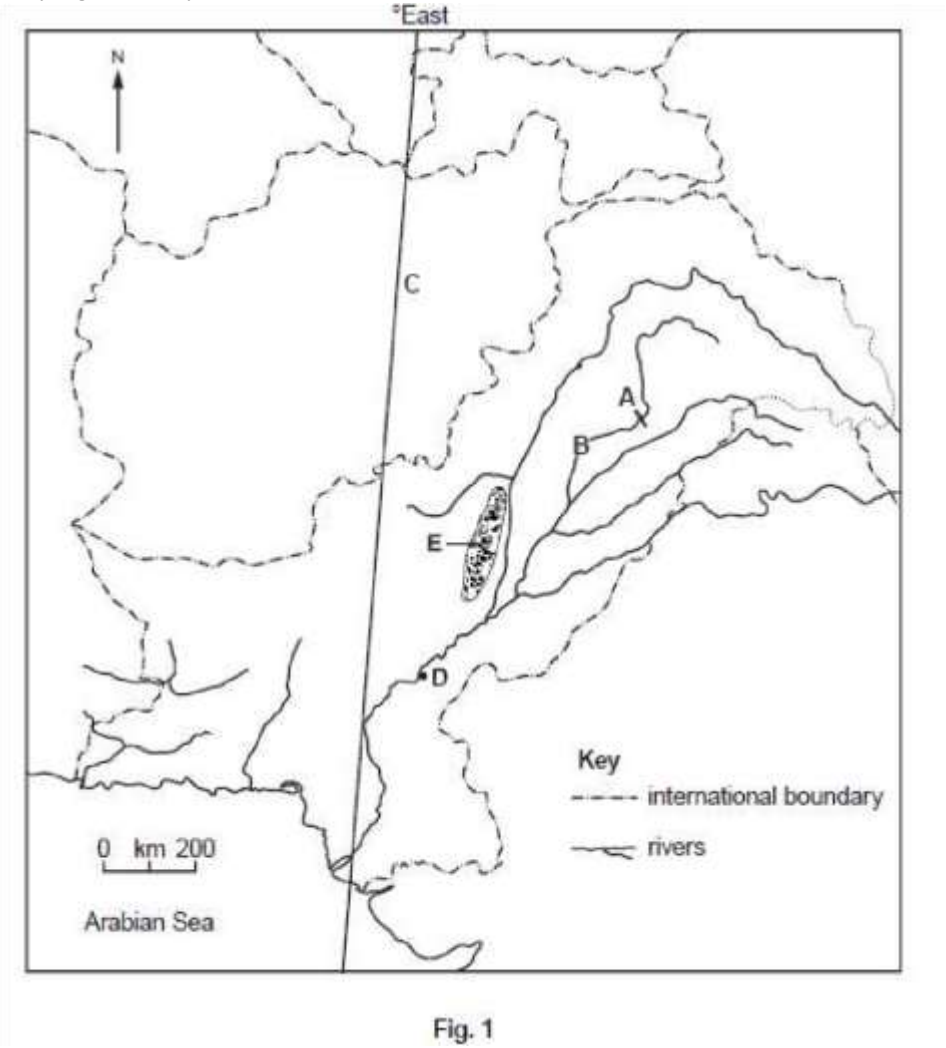


Fig. 1

On your answer paper

(i) name the dam A,

Mangla

(ii) name the river B,

Jhelum

(iii) state the number in degrees East of the line of longitude C,

68

(iv) name the city D,

Sukkur

(v) name the range of hills shaded at E. [5]

Sulaiman

[Oct/Nov 07]

Study Fig. 1 and Photograph A .

Photograph A for Question 1

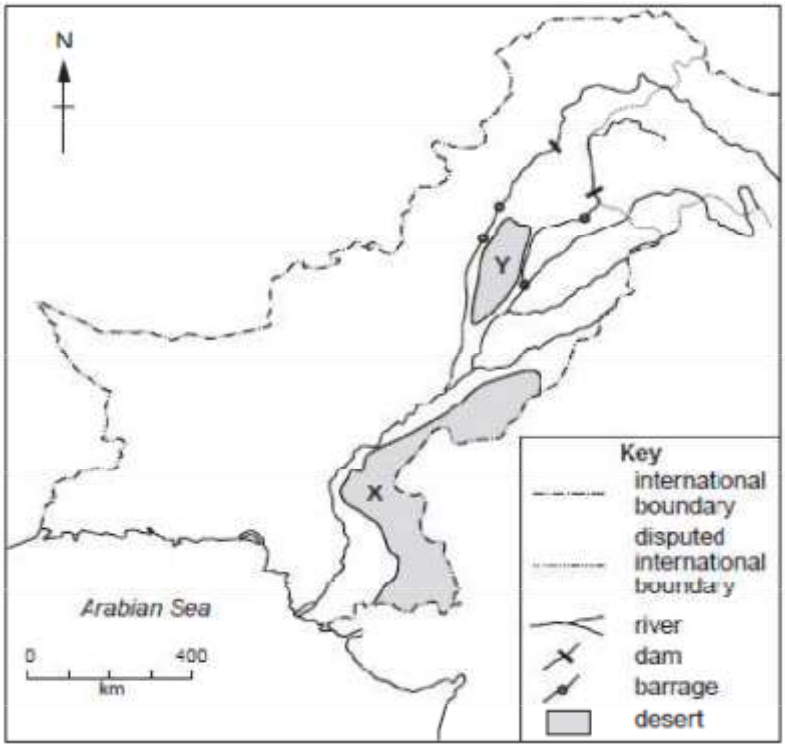


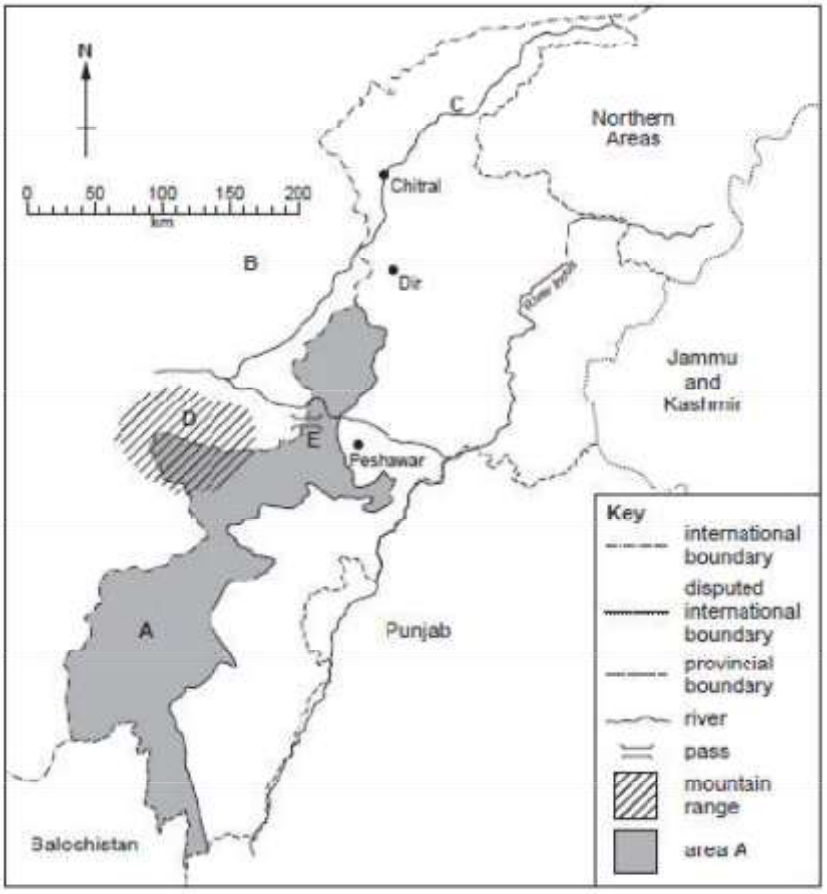
Fig. 1

(i) Name the deserts X and Y. [2]
X Thar/Nara/Cholistan/Tharparkar
Y Thal

(ii) Describe the scene in Photograph A. [4]
-Dry/desert
-Camels
-Bare/sandy ground/ barren
-Low bushes } or sparse vegetation
-Small trees/larger bushes }
-Flat
-No clouds

[Oct/Nov 08]

Study Fig. 1, a map of North West Frontier Province



(i) Name area A,
FATA

(ii) Name the country B,
Afghanistan

(iii) Name the river C,
Mastuj

(iv) Name the range of mountains D,
Safed Koh/Waziristan Hills

(v) Name the major pass through these mountains E. [5]
Khyber

[Oct/Nov 09]

Explain how topography and drainage cause problems for farming in Balochistan. [4]
Topography
-lack of fertility, soil erosion, use of machinery, irrigation
-mountains
-plateaux
-steep slopes
-stony soil
-thin soil
-barren land
-'mountains/rugged topography unsuitable for farming'
Drainage
-inland drainage basins/salt lakes
-few/small rivers
-rivers dry up/evaporate
-much percolation/loss of water through soil
-'lack of water for farming

3 (a) Study Fig. 5, a map of Pakistan.

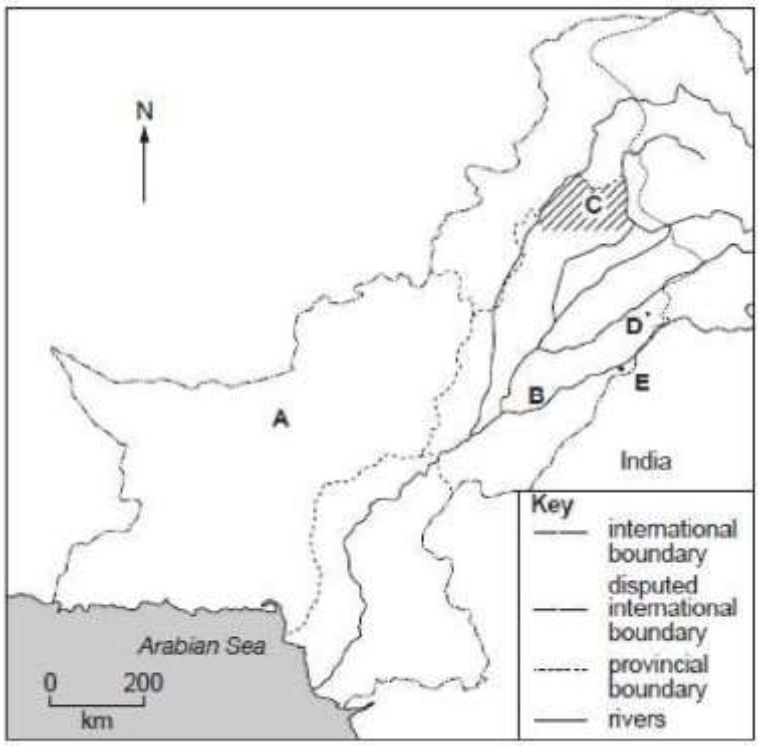


Fig. 5

(i) Name the province A.
Balochistan

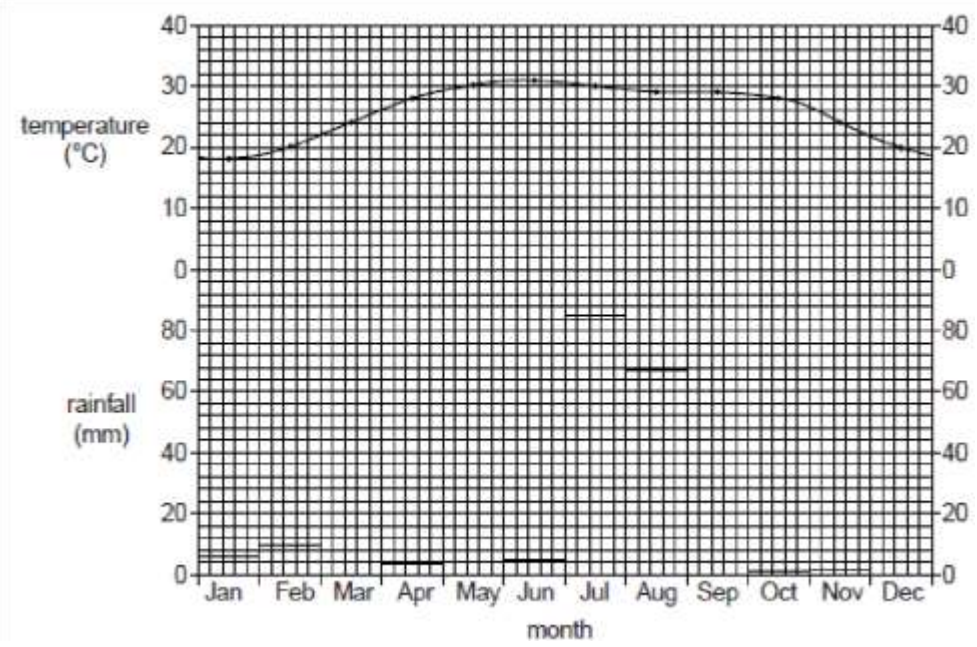
(ii) Name the river B.
Sutlej

(iii) Name the plateau C. [3]
Potwar

The Climate of Pakistan

[Oct/Nov 12]

(a) Study Fig. 3 which shows the climate of Karachi.



(i) By how much does the temperature rise from January to May? [1]
12°C

(ii) Describe the pattern of rainfall during the winter season from October to March. [2]
-Increases
-Steady / constant / regular
-1 – 12mm / by 2mm per month

(iii) With reference to Fig. 3 only, describe the climate of the months from June to September. [4]
-High / warm hot
-29 – 31°C / average 30°C
-Highest in June
-Little change in temperature
-Rainfall
-High (accept July-September)
-20 – 85mm
-Large increase in July / July max
-Decreasing after July
-Total 170-185 mms

(b) Explain the causes of the monsoon at Karachi. [4]
-Low pressure develops over land mass / air rises over land
-Draws in wind from high pressure area
-From the Arabian Sea
-Moisture-bearing /wet winds /carrying rain / humid
-Rise over land
-Cools
-Moisture condenses / clouds form

(c) (i) Name the violent storms that form over the sea and that may affect Karachi. [1]
Cyclones / Typhoons / Hurricanes

(ii) In which months may these occur? [1]
April / May / June / Sept / Oct / November

(iii) Explain how storms such as these may affect industry and communications in urban areas. [6]
-No reserves
-Flooding / heavy rain / high waves/ high tides}
-Strong winds } Weather associated with the storm
-Lightning strike }
-Damage or closure of buildings / roads / bridges / airports
-Lack of deliveries port activity
-Loss of production / work stops
-Lack of labour / cannot get to work
-Lack of experts / investors linked to airports being closed
-Lack of (tele)communication
-Loss of power – electricity

(d) Read the article below.

The continuing power cuts and load shedding in the expanding commercial city of Karachi must be addressed. The port city lies on the shores of the Arabian Sea, and has a windy and sunny climate.

The huge population and many industries generate a huge amount of waste that needs to be disposed of.

Assess the possibilities and problems for electricity generation other than by fossil fuels at Karachi. [6]
<u>Possibilities</u>
-Arabian Sea - so wave and tidal power
-Windy coast - so wind turbines, windmills
-Sunny weather - so solar
-Waste - so possibilities of burning waste
-Port / industrial so nuclear ie.there is a port for importing uranium, water for cooling, there already is a nuclear power station in the area
-Geothermal Energy
-Pakistan is near a plate boundary, active geological zone
-Problems
-Arabian Sea is in the extreme south / away from other large towns

-(res. 2) Wind turbines may obstruct shipping / fishing
-Winds do not blow all the line / with a regular speed
-Sun does not shine at night / can be covered by clouds
-Burning waste causes air pollution
-Problems of nuclear power (Sethi page 127)
-Low output from these generators (except nuclear)
-Modern technology needed for geothermal energy

[May/June 05]

The map, Fig. 2, shows the locations of two weather stations, and their records of rainfall and mean monthly temperature.

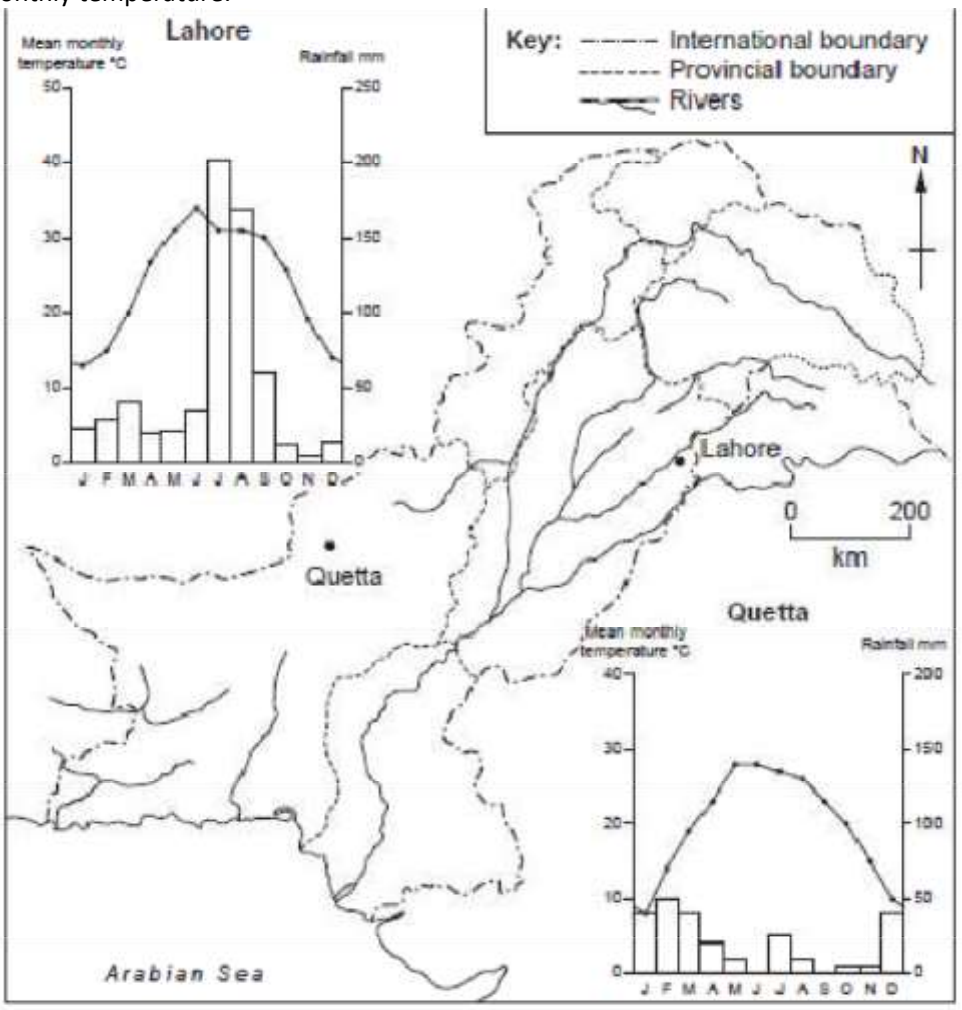


Fig. 2

(a)(i) Compare the amount and seasonal distribution of rainfall at Quetta and Lahore. [4]
-Quetta receives maximum rainfall in winter; Lahore receives maximum rainfall in summer
-Quetta receives maximum from December to March/February, Lahore receives maximum from July to August/August
-Quetta's second wet month is July; Lahore's second wet season is from January to March
-Quetta has lower total rainfall than Lahore/Lahore has higher total rainfall than Quetta
-Quetta has more rainfall in December than Lahore.
-Equal amount of rainfall in March and/or November
-In Lahore it rains in all months, no rain in Quetta in June and September
-Lahore has more rainfall than Quetta from April – October/April - June
-Lahore has higher maximum rainfall than Quetta.

(ii) Give reasons for the differences in amount and seasonal distribution of rainfall at Quetta and Lahore. [6]
<u>QUETTA</u>
-More rain from winter depressions
-Summer convectional rainfall
-No/negligible monsoon rainfall
<u>LAHORE</u>
-Less rain from winter depressions
-Little convectional rainfall/low humidity
-Monsoon winds – this should include both the South-East and North-West monsoon.
-Monsoon brings more rain than depressions.

(b) (i) Compare the mean monthly temperatures of Quetta and Lahore. [3]
Both graphs have a similar range/both 20-22°
-Quetta colder/Lahore warmer
-Quetta has smooth curve, Lahore has sharp drop after June
-Quetta's graph slightly drops from May to July, Lahore's temperature increases then decreases.

(ii) Explain the seasonal changes in temperature at Lahore. **[3]**
-Effect of latitude/angle of the sun rays
-lack of cloud cover before monsoon
-Drop in July related to start of monsoon season/heavy rainfall/stratus cloud.

[May/June 06]

Study the map, Fig. 2, which shows the main monsoon wind and the rainfall distribution from July to September.

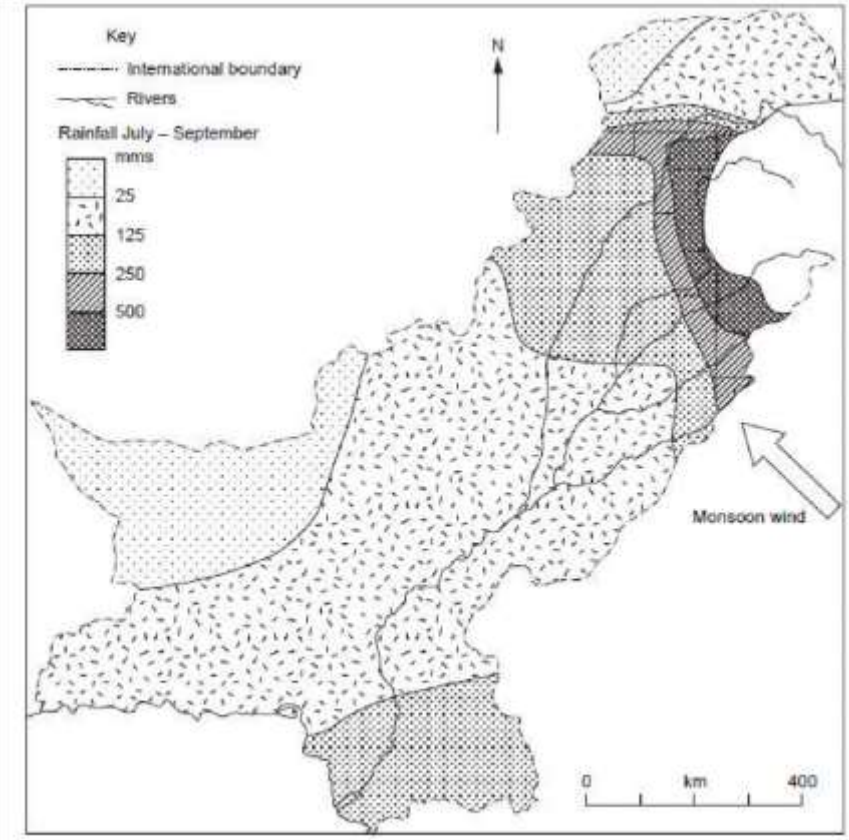


Fig. 2

(i) **Explain why the monsoon wind that is shown develops. [4]**

- Strong heating of ground / High temperatures over land
- Causes air to rise / become lighter / less dense
- Low pressure created
- High pressure created
- Winds move from high to low pressure.

(ii) Describe the rainfall distribution shown in Fig. 2 and explain how it is caused by the monsoon winds. [7]

Description

-Lowest/ less than 25mm in West Baluchistan and extreme NW
-Large areas / Lower Indus Plain less than 125mms
-Most of Baluchistan less than 125mm
-Decreasing towards NW and SW / Increasing towards SE and NE
-Highest in NE Punjab / Murree area / over 500 mm

Explain

-Winds from N India forced to rise by mountains
-Winds from Arabian Sea / secondaries rise over SE Sindh

-Wind has lost moisture over India and Bangladesh/ tail end, so less rain in Pakistan than India
-Baluchistan remote from monsoon winds so less rain
-High mountains in NE increase rainfall
-Plains have less rain than mountains

(d) How may storms and heavy rainfall cause problems for people in Pakistan? [5]
-Effects of flooding:
-Wind damage
-Lightening strike
-Landslides
-Damage to Communications
-Power
-Homes
-Fields
-Workplace

[May/June 07]

Study Fig. 2, which shows the climate of Misgar

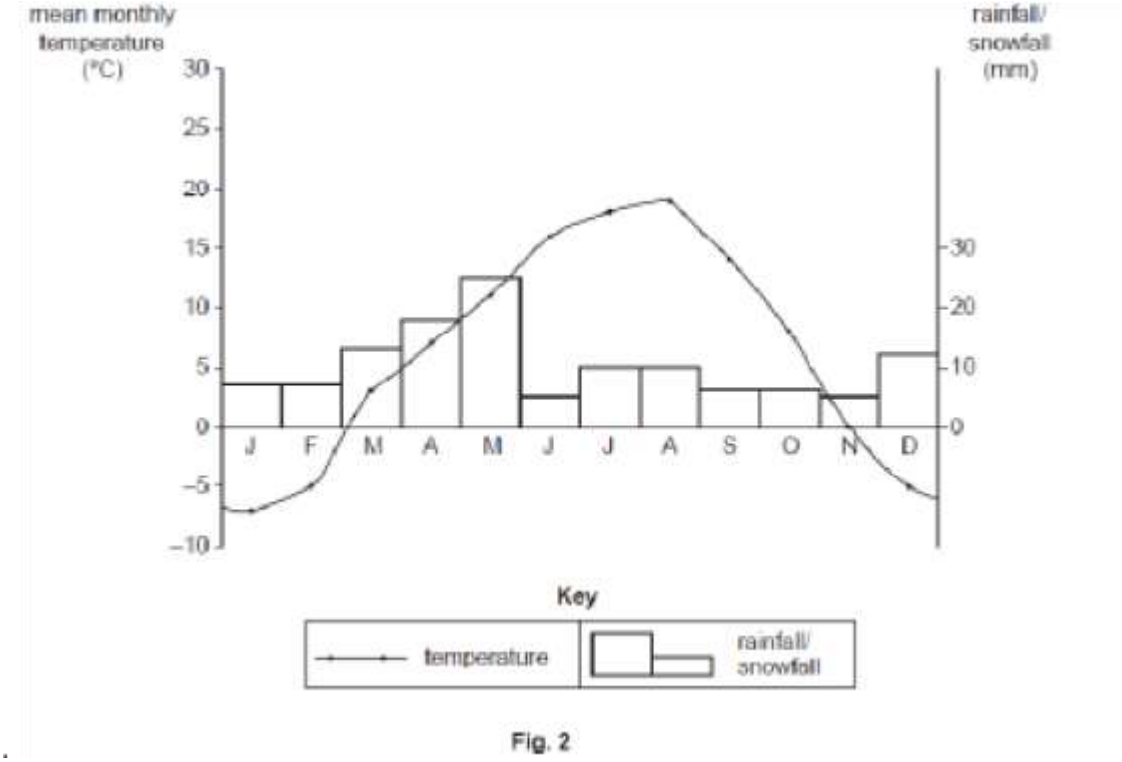


Fig. 2

(i) With reference to Fig. 2, explain why the Hunza River increases in volume in the summer months. [2]
-temperature rises above FP/warm/higher temperatures in summer/named months
-high rainfall in spring/early summer increases flow into river

-snow/ice melts and flows into rivers.

(ii) Explain how topography and climate affect the lives of the people in mountain areas. Use your knowledge of mountain areas and information from Fig. 2 to help you. [6]

-Farming is difficult because of the cold climate
-People live indoors because of the cold climate
-Farming is difficult because of thin, stony soils
-Lack of development because of inaccessibility
-Roads blocked because of landslides, avalanches etc.
-Craft industries because people live indoors in winter
-People wear thick clothes because of the cold climate.
-Transhumance is done because of the mountainous topography
-Tourism is a source of income because of the beautiful mountain scenery

[May/June 07]

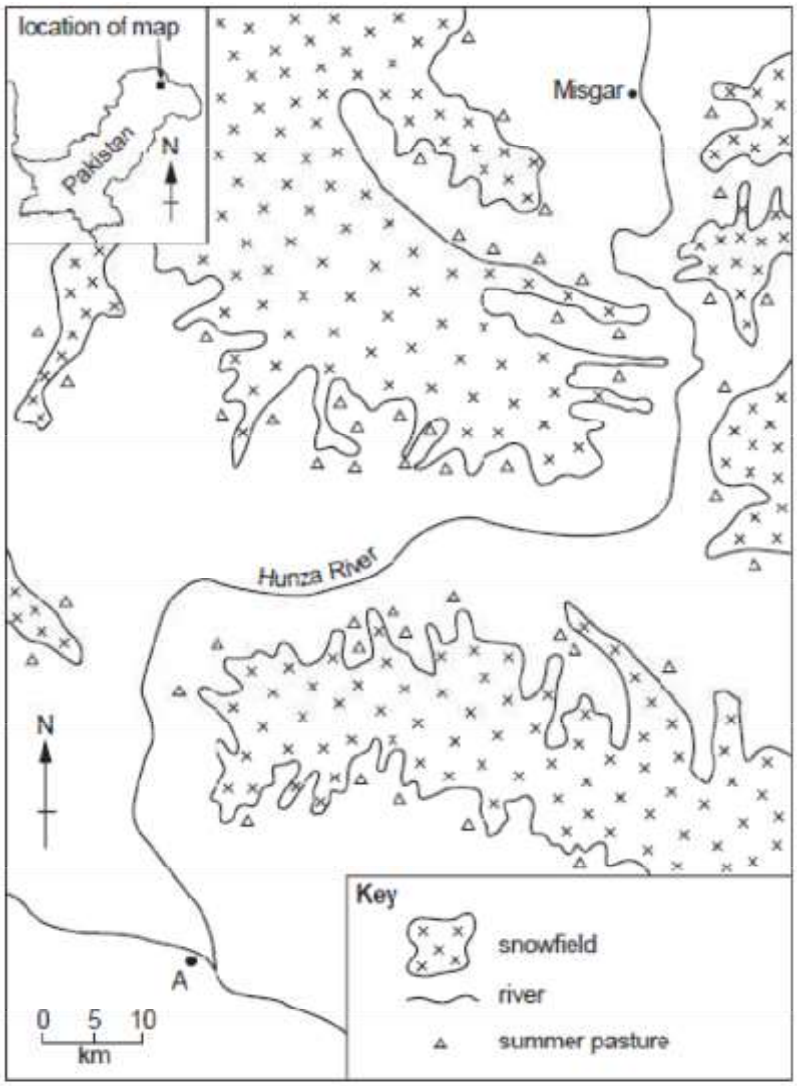


Fig. 1

(i) What is a snowfield? [1]

area where snow/ice does not melt and lies al the year.

(ii) Explain why a large part of the area is covered with snowfields? [2]
-Mountainous/high altitudes/Over 3000m
-Cold climate/low temps/below Freezing Point
-Moderate/high snowfall/precipitation
-More accumulation than melting

(i) State where the summer pastures are situated on Fig.1.
next to snowfields **[1]**

(i) Describe the climate of area **C**, shown on Fig. 3.

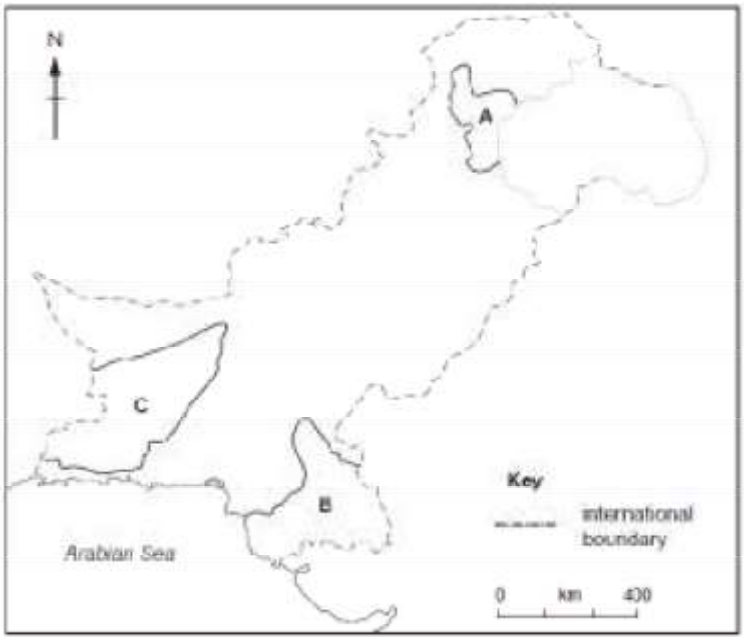


Fig. 3

[May/June 08]

Study Fig. 1, a map of natural hazards in Pakistan.

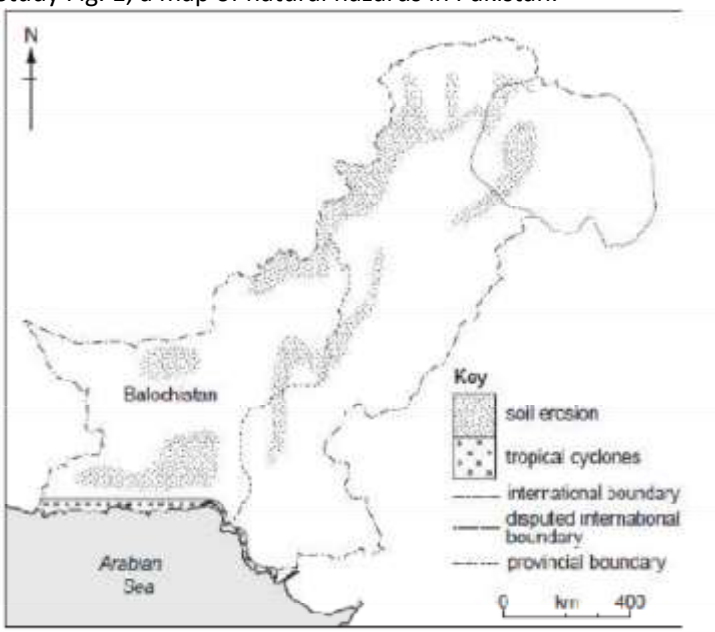


Fig. 1

(b) Study Fig. 1 again.

(i) Which area is affected by tropical cyclones? **[1]**

-Coast/sindh coast, Balochistan coast
-Named area e.g. Indus delta, Makram coast

(ii) Describe the physical effects of tropical cyclones in this area. [5]

-High winds
-High waves
-Heavy/high rainfall
-Floods
-Thunderstorms/thunder/lightening
-Damage

(c) Heavy rain and thunderstorms affect business and industry in urban areas. Explain the advantages and disadvantages of the rain and storms. [6]

Advantages

-Water supply
-Reservoirs filled for HEP/power supply

Disadvantages

-Floods – damage and blockage of roads
-High winds – damage to buildings, trees
-Erosion of land – effect on roads/railways/runways
-Loss of power supply – loss of production, business
-Danger of lightening
-Loss of raw material e.g. cotton, sugar cane
-Disruption of fishing/shipping/trade
-No flights for businessmen

[May/June 10]

(a) Study Fig. 7, which shows the desert climate of Nok Kundi.

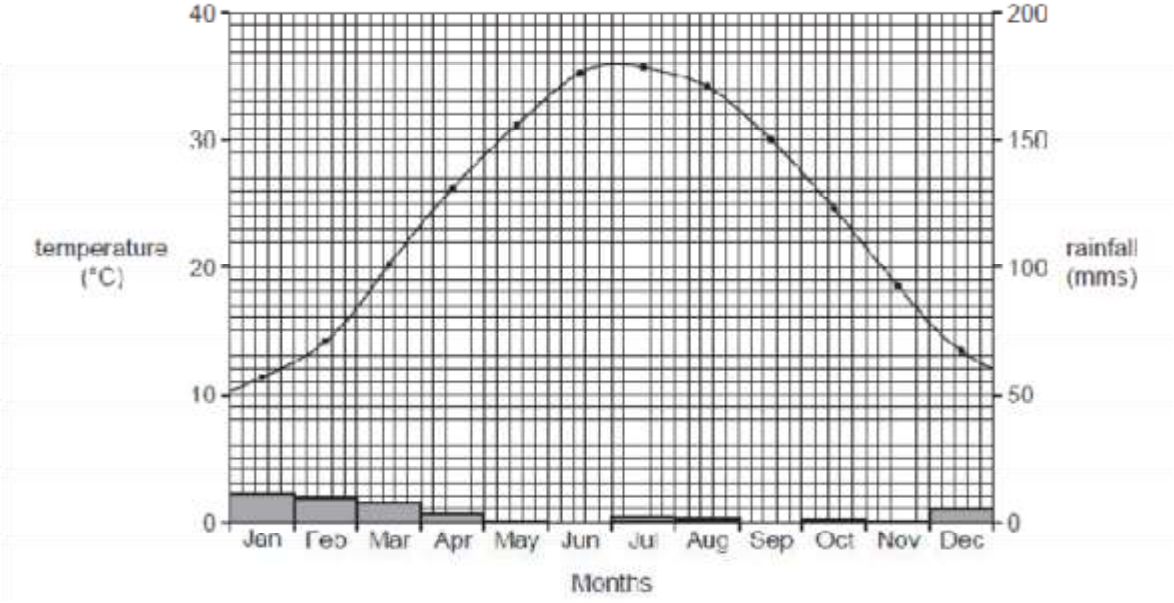


Fig. 7

(i) With reference to Fig. 7, describe the yearly distribution of temperature and rainfall in a desert climate. [5]

-Hot summers and cool / mild winters
-Rises to maximum. in June / July
-Falls to min. in December / January
-Rainfall Wetter in winter than summer / reverse
-Decreases Jan – May
-Variable May – November
-Increases in December

(ii) Explain how the climate of desert areas affects agricultural and industrial development.[6]

Agriculture

-Lack of rain – poor growth / low yields / crops die
-Winds – cause soil erosion / crop damage
-Water supply – need for storage and / irrigation, wells, canals, Karez
-Hot – evaporation of water / high evapotranspiration
-Sunny – need for shade e.g. date palms
-Storms / heavy showers - cause crop damage

Industry

-People do not want to live there / lack of people to work
-Lack of water for production processes
-Lack of agricultural raw materials
-Areas are usually un- or under-developed / cracked, sandy roads
-Unpleasant working conditions

[May/June 11]

(a) Describe the route of the main monsoon across Pakistan. [4]

-East to west / from North-East / from East
-From Bay of Bengal / Northern India
-Across Punjab / upper Indus Plain
-Towards the Northern Areas / mountains / interior Asia

(b) Study Fig. 4, which shows the rainfall of Peshawar and Lahore

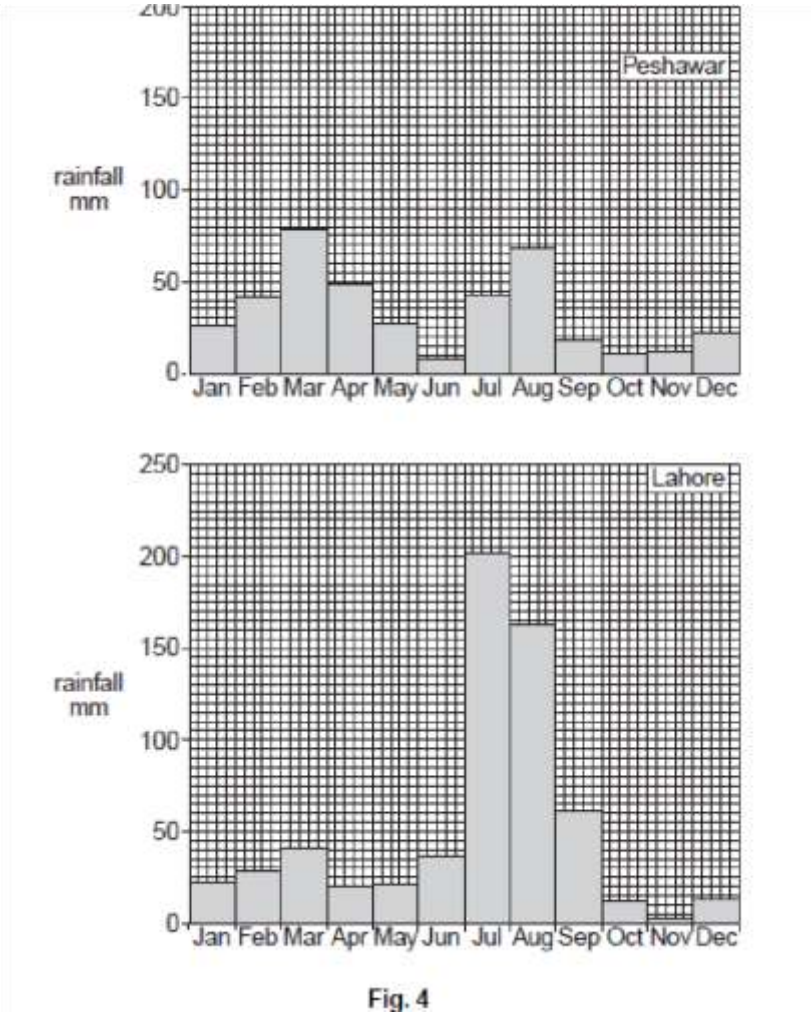


Fig. 4

(i) Using figures from Fig. 4 in your answer compare the distribution of rainfall from June to September at Lahore and Peshawar. [2]

-Max 68 mms in Peshawar, 202 mms in Lahore
-Totals June – September
Comparisons
-Less in Peshawar
-Maximum later in Peshawar
-Max in Aug in Peshawar, July in Lahore

-Annual minimum in June in Peshawar but not Lahore

(ii) Using figures from Fig. 4 in your answer compare the distribution of rainfall from June to September at Lahore and Peshawar. [2]

Comparisons

-Less in Peshawar
-Maximum later in Peshawar
-Max in Aug in Peshawar, July in Lahore
-Annual minimum in June in Peshawar but not Lahore

(c) Study Figs 5A and 5B, which show rainfall distribution in Pakistan.

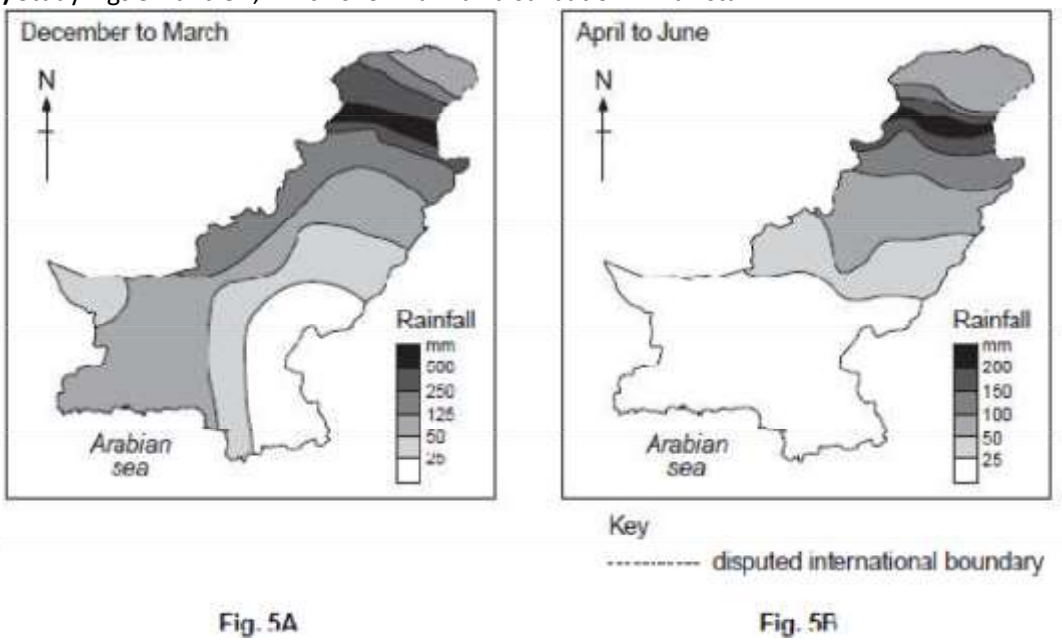


Fig. 5A Fig. 5B

(i) What is the main cause of rainfall from:

A) December to March?

Western depressions

B) April to June?

Convection currents **[2]**

(ii) Name one area which receives high rainfall in both seasons A and B. [1]
North Punjab / central NWFP / Peshawar

(iii) Which area receives the highest rainfall from December to March? [1]
-More than in summer – Western borders / Quetta
-More than rest of Pakistan – North Punjab / central NWFP / Peshawar

Explain the importance of the arrival of the monsoon to people who live and work in urban areas. [4]

Benefits

-Cooler – better working and living conditions / pleasant climate

-Fresher – less dust, pollution, cleaner air

-Water supply – for drinking, factories, market gardens, buffalo (not rural farming)

Problems

-Flooding

-People cannot get to work

-Loss of production

[May/June 12]

Study Fig. 3, which shows the climate of Gilgit.

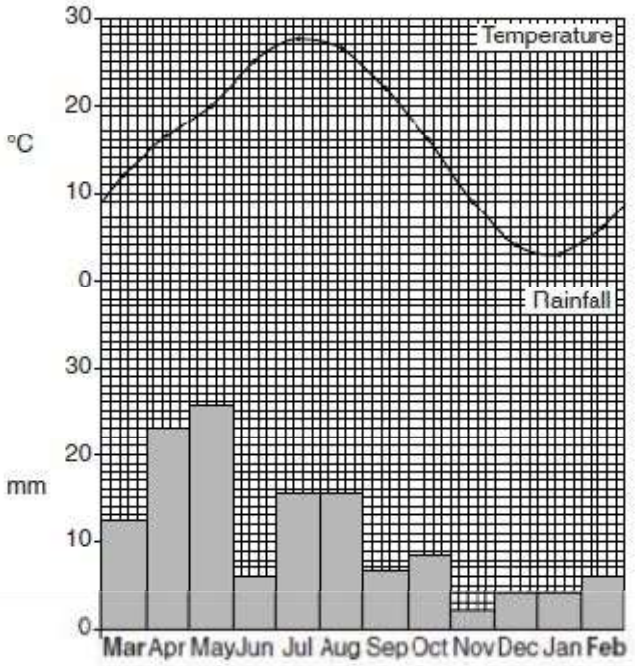


Fig. 3

What is the maximum temperature, and in which month does it occur? [2]

27.5 °C

July

In which season of the year is the rainfall highest? [1]

Spring / early summer / March to May

Compare the climate of the months from May to September with the months from November to February. [4]

-May to September November to February

-Hotter Colder

-Over 18 °C / 18–27.5 °C Under 12 °C / 3–12 °C
-Wetter Drier
-Variable rain low/increasing rain/snow fall
-6–26 mm 2–6 mm

In what ways does the winter climate make life difficult for people who live in mountainous areas? [6]

-snow covers ground
-water shortage / water freezes
-no farming in winter / nothing grows / need to store food / no fishing
-live indoors / cannot work outside
-animals kept in sheds / need feeding / no pasture
-roads or railways blocked / closed / no travel / communication
-damage to buildings e.g. by avalanches, landslides, frozen pipes / death of people
-fog / no air travel
-power lines cut
-telephone lines cut / no telecommunication
-no tourism
-need to keep warm / need for heating
-long nights / short days
-less income / less work / less trade / economic activity stops

[Oct/Nov 04]

(a) Study the map of Pakistan, Fig. 1.

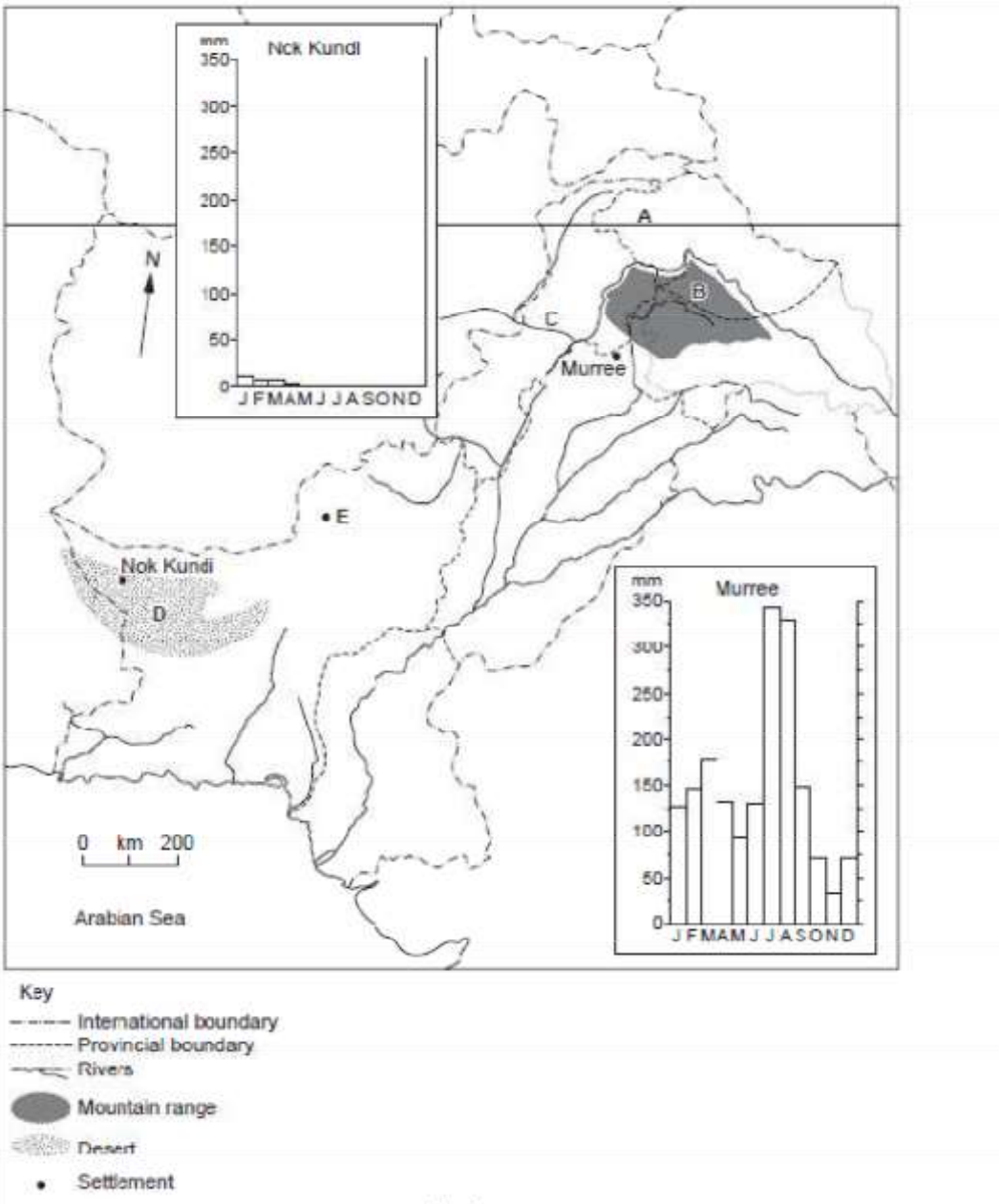


Fig. 1

(b) Study the rainfall graph for Murree located on the map, Fig. 1.

(i) What is the total rainfall for the period July-August? [1]

666mm/660mm to 680mm

(ii) Explain the high rainfall total for the period July-August. [5]

(monsoon) winds from Bay of Bengal/India

-pressure pattern)
-(tail end of) monsoon
-air rises and cools
-condensation/water droplets form
-moisture-laden air

(iii) Describe the amount and pattern of Murree's rainfall from December to March. [3]
-moderate/fairly heavy
-increasing
-70-180mms/doubles/by 25mm per month
-max. in March
-min. in December.

(iv) Explain why Murree has rainfall in winter. [3]
- depression rain/western depressions/disturbances
- originate in Mediterranean area
- enter Pakistan through Afghanistan (not Iran for Murree)
- long land journey depletes moisture reaching area

(v) What type of rainfall does Murree receive in May-June and October-November and how is it formed? [4] convectional/thunderstorms formation

-high temperatures/strong heating
-moisture evaporated from rivers/lakes/vegetation/moisture-laden air
-(moist) air rises (strongly/rapidly)/convection occurs
-air cooled as it rises
-causes condensation of moisture/water vapour
-formation of thunderstorms
-formation of hailstones

(c) Study the rainfall graphs for Nok Kundi and Murree located on the map, Fig. 1.
(i) How much more rainfall does the driest month at Murree receive than the wettest month at Nok Kundi? [1]
20/15-25 mm

(ii) Murree has as much rain in its driest month as Nok Kundi receives in a whole year. Why is the area in which Nok Kundi is situated so dry? [3]
-sheltered by surrounding mountains/rain shadow
-too far west for monsoons to reach/little monsoon rain
-western depressions mostly deflected from area/do not reach area/few depressions
-lacks sources of moisture for convectional rainfall to develop/desert area
-temp. inversion prevents convection NOT 'it is in a desert'

*On 15th April 2002 a heavy thunderstorm occurred in the catchment area of the River Gomal in the Sulaiman mountains. Photograph **B** was taken on 17th April on the piedmont plain east of these mountains. It shows the Gomal flood plain which was being prepared for farming, making use of this natural inundation (flooding).*

(i) Describe the scene shown. [4]
-flat area
-flooded
-banks (of earth)/bunds
-about 1 metre high
-fields
-(scattered) trees/bushes on banks

[Oct/Nov 07]

Explain why desert X has very low rainfall. [3]
-too far south for monsoon rain
-too far east for depressions/westerly winds
-little water to evaporate for convectional rain
-low/flat land so no relief rain
-not coastal so no cyclones/sea breezes

[Oct/Nov 08]

(b) Study Fig. 2, a bar chart showing precipitation for Peshawar.

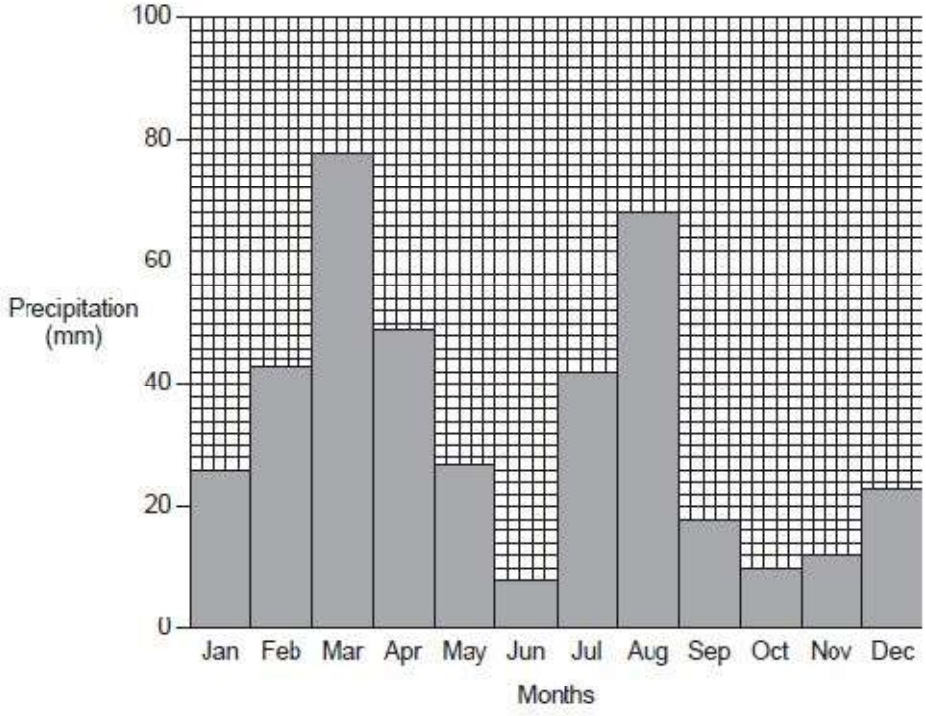


Fig. 2

Describe the precipitation in the months from June to September. [3]
-increases June – August
-from 8mm to 68mmin
-decreases in Sept
-to 18mm
-max. in August/minimum in June

Explain how this precipitation is caused by the monsoon winds in these months. [3]
-low pressure over Himalayas
-high pressure over the Bay of Bengal
-moist winds (from the East/South East)
-air rises
-cools
-vapour condenses
-droplets form

Describe the precipitation in the months from October to April. [2]
-increases Oct – March from 10mm to 78mm

decreases April to May to 27mm

Which weather systems bring this precipitation? [2]
-(western) depressions
-convectional storms

Why does snow fall instead of rain in the winter? [2]
low climatic temperatures at high altitude. Water freezes.

[Oct/Nov 09]

(a) Study Fig. 1, a temperature graph for Lahore.

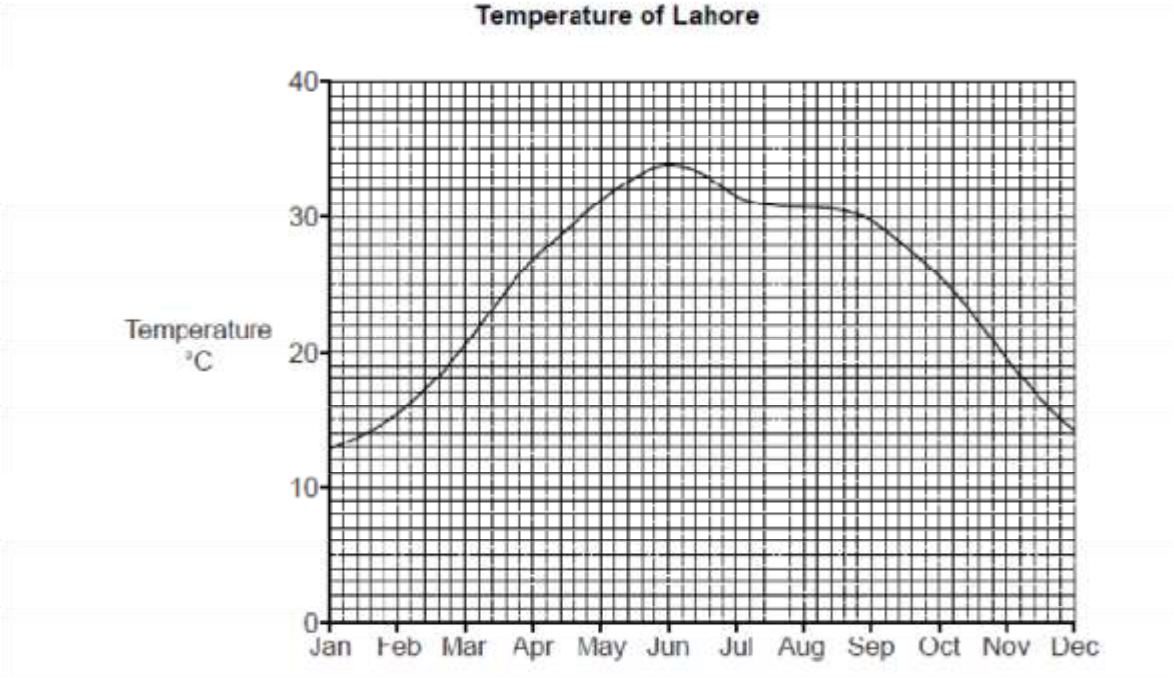


Fig. 1

(i) Describe the pattern of temperature through the year at Lahore. [3]

Either – using only the graph

-rises from January to June

-slow fall July to September/levels out

-falls further to December

or – alternative seasonal approach linked to the graph

-low in winter + months

-rising in spring + months

-falling when monsoon starts + months

-continues falling in autumn

(ii) Explain why heavy rain falls during the monsoon season. **[3]**

-moisture-bearing/wet winds/carrying rain from the sea/Bay of Bengal, rise over land/hills/mountains, cool, moisture condenses/clouds form -

-low pressure (over northern Pakistan) brings air in

(b) Study Fig. 2 ,rainfall charts for Chitral and Lahore.

Compare the amounts of rainfall for Chitral and Lahore

A from January to May

-more/higher in Chitral than Lahore. less/lower in Lahore than Chitral -

high range 35–106 mms/71 mms low range/23–41/18 mms

-highest in March/Increase then decreases Jan–May highest in March

-lowest in Jan lowest in April. same pattern at both places

B from June to September.

-Chitral Lahore

-less/lower in Chitral than Lahore more/higher in Lahore than Chitral

-low range 5–9 mms/4 mms/low high range/range 62–205 mms

-Highest in Sept/rises June–Sept highest in July/decreases/July–Sept **[4]**

(c) (i) In which months do western depressions bring rainfall to Pakistan? [1]
December – March

(ii) Which of the cities in Fig. 2 receives more rainfall from these western depressions? [1]
Chitral

(iii) Explain why western depressions cause rainfall in Pakistan. **[3]**
-come from Mediterranean sea
-bring moisture/cloud/water
-cooling causes condensation
(explain cyclonic rainfall)

(d) Explain how topography and drainage cause problems for farming in Balochistan. [4]
Lack of fertility, soil erosion, very difficult to use of machinery, land is not irrigated so not so suitable for crop growing. Also there is lack of farming due to loss of water through soil, inland drainage basins/salt lakes and evaporation of water. The land is rugged and there are steep slopes.

Rainfall of Chitral and Lahore

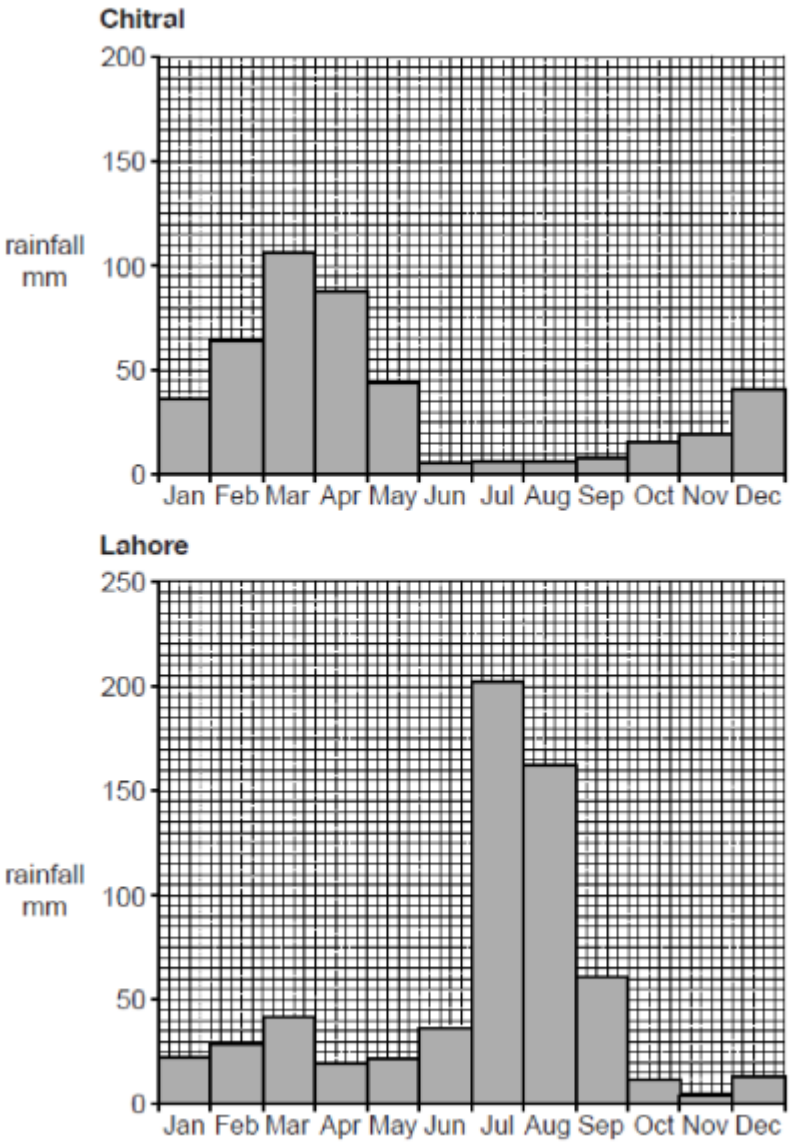


Fig. 2

[Oct/Nov 11]

(a) Study Fig. 8, which shows January temperatures in P akistan.

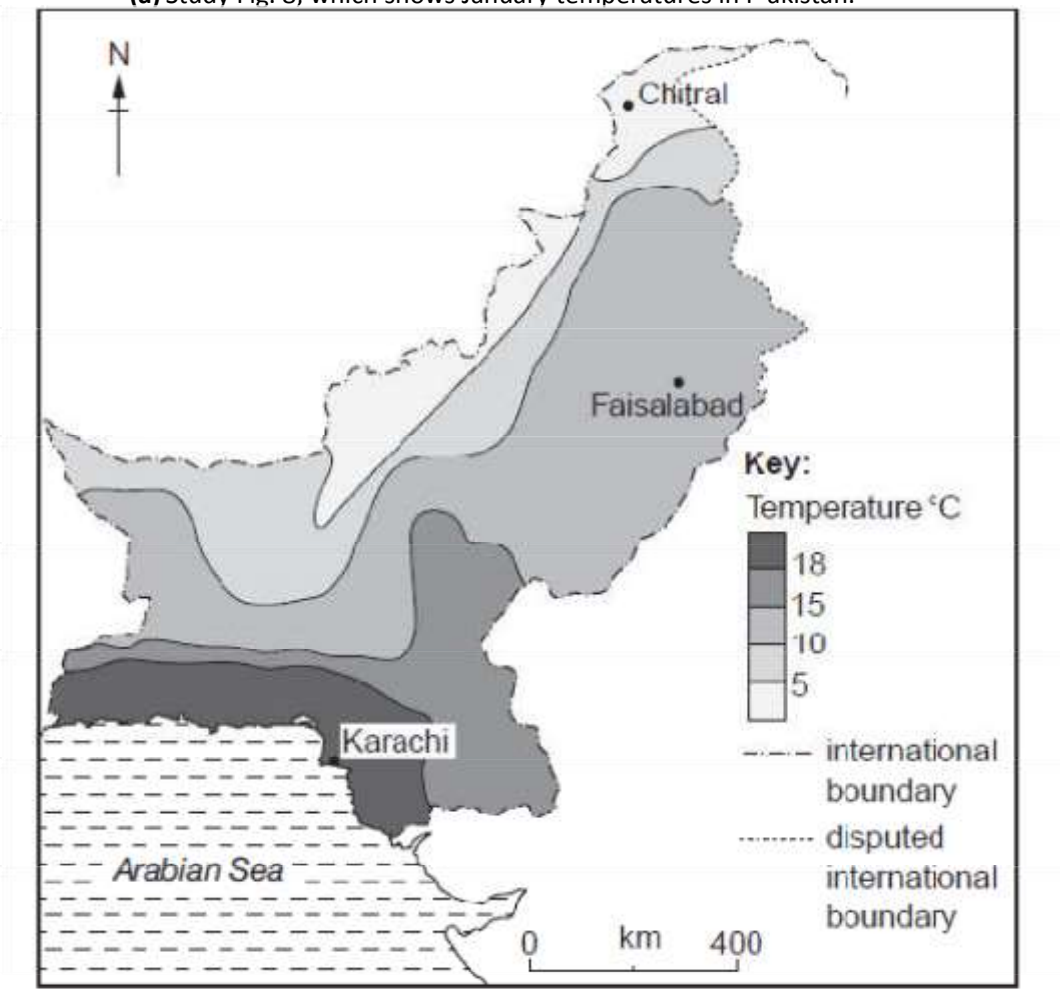


Fig. 8

What is the temperature at: [3]

Karachi?

over 18/ any figure between 18 and 30

Faisalabad?

10–15 or any figure between these

Chitral?

5 or under, or any figure from –10 to + 5

(ii) Do the temperatures increase or decrease:

from south to north?

Decrease

from east to west?

Decrease

(iii) Explain two factors that affect winter temperatures in Pakistan. [4]

-Insolation / angle of the sun

-As the overhead sun moves to the southern hemisphere / over Tropic of Capricorn, rays

-spread over a larger area

-Altitude / height of the land

-As this increases temperatures decrease

-Air is less dense so holds less heat / heat radiated from the surface decreases with

-altitude

Continental / maritime effect

-Land loses heat in winter

-No moderating sea winds

(b) Study Fig. 9, which shows the distribution of monso on rainfall in Pakistan.

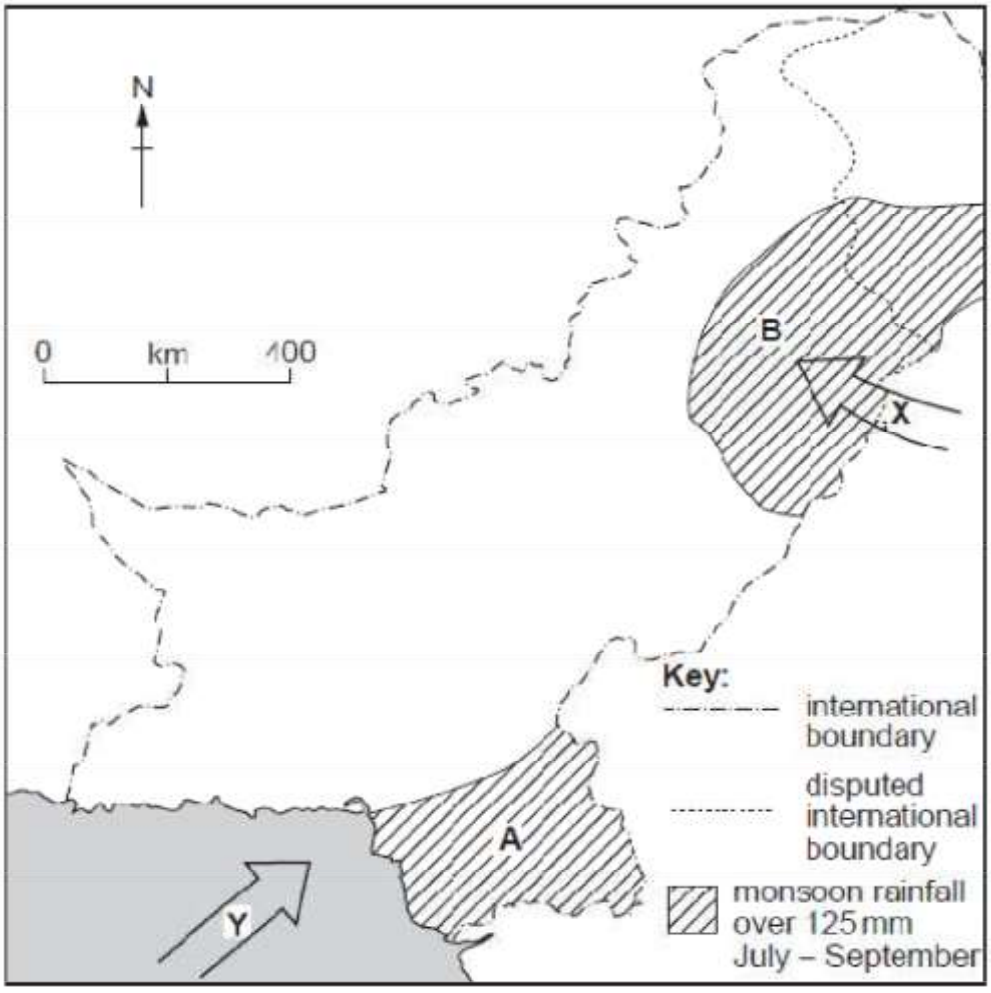


Fig. 9

(i) Name the areas of high rainfall A and B. [2]
A – South / lower / south-east Sindh
B – North / upper / central Punjab.

(ii) Name the body of water that is the source of moisture for each of the monsoon winds X and Y. [2]
X
Bay of Bengal
Y
Arabian Sea

(c) Explain why the lack of monsoon rainfall in the Southern Punjab and Northern Sindh causes problems for farmers. **[6]**
-Poor crop growth / difficult to grow crops
-Low profits / incomes /farm economy
-Unreliable / variable rainfall
-Little or no other sources of rain / western depressions, relief etc.
-Low humidity
-High evaporation / evapotranspiration
-Due to high temperatures
-Need for irrigation / expensive to irrigate / depends on rivers and canals
-Irrigation water already used by North Punjab and other users
-Poor farmers cannot afford tubewells etc.
-Can be soil erosion / blowing

(d) Consider the feasibility of improving water supply to farmers in Punjab and Sindh. [6]

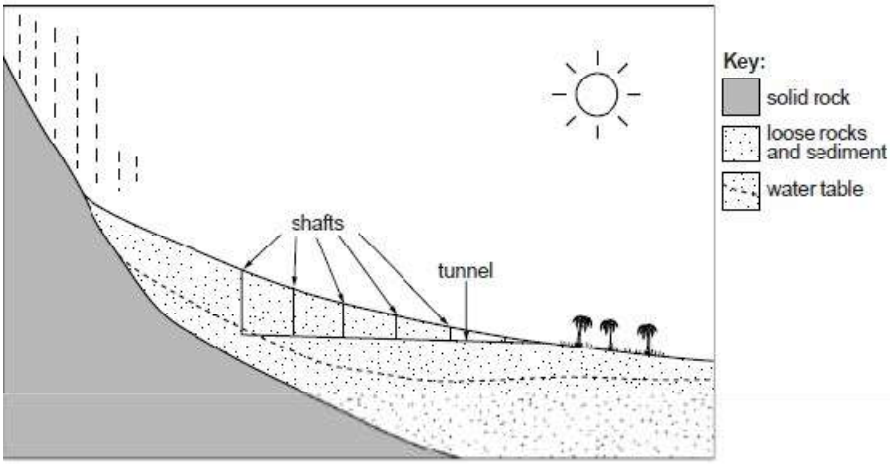
<u>In favour</u>
-Rainfall in monsoon season can be stored
-Snow melt from mountains
-Indus river system brings water from highlands
-Can make more storage / reservoirs / dams / barrages
-Can build more canals
-Can use groundwater / build more tubewells
<u>Against</u>
-Cost of reservoirs, canals etc
-Cost of tubewells
-Lack of reservoirs / dams / barrages
-Indus Treaty limits supply / conflict with India over supplies
-Lower water table restricts groundwater
-Waterlogging and salinity problems
-Lack of / cost of power supplies for pumps
-Other constraints, e.g. education, wastage, conflict between users etc.
-Can be ruined by floods
<u>Improvements</u>
-More storage
-More canals
-Reduce waste / seepage / flooding
-Clear silt / silt traps
-Control water pollution

-Modern technology, e.g. tubewells, sprinklers
-Education of farmers
-Plant trees for more rainfall
But
-Need for investment
-Lack of training for farmers
-Lack of water supply
-Conflict with India

Water Resources

[Oct/Nov 12]

(a) Study Fig. 4 which shows an irrigation system.



(i) Name the irrigation system shown in Fig. 4.[1]
Karez

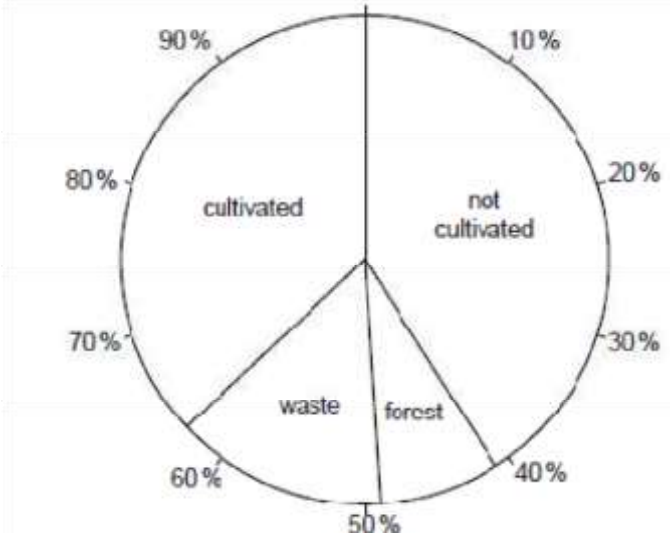
(ii) Name an area of Pakistan where it is used. [2]
Balochistan
Kech Valley / Turbat /Miri / Sharak

(iii) Explain how this system provides water for agriculture in this area. [4]

rain falls in mountains drains to the foothills / sinks into ground / groundwater / travels in tunnels / underground canals reaches surface / oases tunnels need maintenance owned by groups of farmers

(iv) Name a fruit crop grown in this area. [1] dates / apricot / apple / grapes / peaches / melons

Study Fig. 5 which shows the results of a land-use survey in Pakistan in 2008.



(i) What percentage of land is cultivated? [1]
37/38

(ii) What percentage of land is waste? [1]
13 / 14/ 15

(iii) Explain how soils are damaged by waterlogging and salinity. [4]
-Caused by too much irrigation water / misuse of water by illiterate farmers
-Seeps from canals
-Water table rises / soil becomes too wet / puddles of water
-Water rises upwards carrying salts
-Evaporates causing salinity
-hard crust forms / salt patches
-salt poisons crops / crops die
-Roots cannot breathe in waterlogged soil

(iv) Explain three reasons, other than by waterlogging and salinity, why over half the land was not cultivated when the survey was made [6] *explain*

-Pasture - grazing
-Fallow – to allow soil to rest
-Low rainfall / away from canals / desert –infertile, plants cannot grow, no soil
-Mountains – steep slopes / lack of soil (accept rugged)
-Forest – need for
-Rivers – may flood
-Residential / housing - for large population
-Industry – factories need large space
-Commercial – eg. city centres
-Mineral extraction – plus waste
-Pollution – crops die
-Roads, railways, airports – for communication
-Damage – eg. deforestation, pollution

-Wasted by landlords
-Very cold

To what extent could government action increase agricultural production in Pakistan? [6]
Possibilities
-Improve education eg. model farms, travelling advisors, training centres, colleges
-Loans eg. for machinery, HYV, fertiliser
-Subsidies eg. for imported machinery, fertiliser prices lower
-More fertiliser / pesticides factories or imports
-More machinery factories or imports
-Land reforms eg. consolidation
-Improve water availability eg. reservoirs, canals
-Cure of waterlogging and salinity eg. SCARP
-Weather forecasts
-Media eg. radio, TV
Problems
-Lack of money
-Illiteracy
-High population
-Other calls on government investment / attention
-Fears of unemployment due to mechanisation
-Land reforms may fail due to corruption / power of landlords

[May/June 04]

Barrages have resulted in changes in both the Upper and Lower Indus Plains.
(i) Name an example of a barrage. [1]
-Balloki -Kotri -Sidhnai
-Chashma -Marala -Sukkur
-Guddu -Panjnad -Sulaimanke
-Islam -Qadirabad -Taunsa
-Jinnah -Rasul - Trimmu
-Khanki

(ii) Compare the height and length of a barrage with those of a major dam like Tarbela. [2]
- Barrages are lower in height than dams
- Barrages are longer than dams

(iii) What is the main purpose of a barrage and how is this purpose achieved? [3]
Main purpose:
To provide water for irrigation/arable farming/crops
How purpose is achieved:
- Gates closed
- The barrage backs up/stores water behind it/holds the water back - Canals/link canals take water and distribute it into a network of smaller canals

- Link canals take water from western rivers to eastern rivers

(iv) *Briefly* describe the changes that have taken place in the land use of the Lower Indus plain as a result of building barrages. [3]

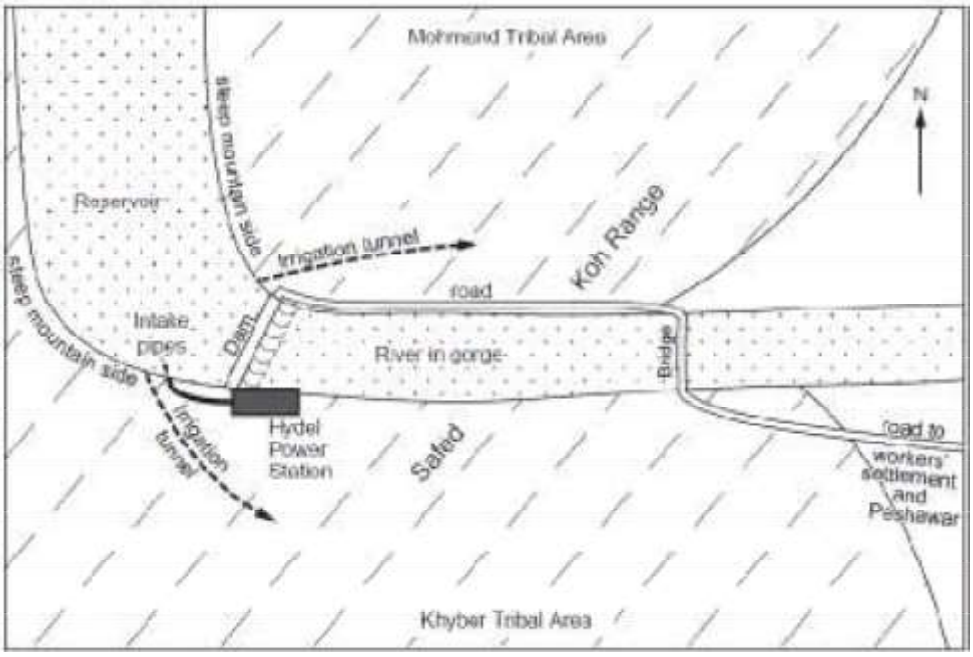
- Large areas (previously desert) are cultivated/agriculture
-developed especially Western Bahawalpur district
- Bananas/cotton/dates/mangoes/oilseeds/pulses/rice/sugarcane/ wheat

- Led to an increase in land used for settlement
- Reduction in crop acreage (recently due to water taken out from barrages in Upper Indus Plain)

- Waterlogged/saline areas (due to poor management of irrigation)

[May/June 04]

(a) The sketch map, Fig. 4, gives some information about the Warsak Dam.



(i) Name the river across which the Warsak dam was built. [1]
Kabul
(ii) Using Fig. 4 and your own knowledge, explain why this is a good site for a dam. [5]
- Narrow gorge/valley
-reduces amount of materials required for dam/expense
- Deep gorge/valley
-increases storage capacity
-provides high head of water for hydel
- Solid/firm rock …
… to support weight of dam

- On river with very large discharge/melting snow/large catchment area … to provide water for storage/to drive turbines

- Impervious rock
… to prevent seepage/reduce loss
- High precipitation/rainfall/snowfall
- Low evaporation rates/low temperatures
- Low population

(iii) Using Fig. 4 and your own knowledge, explain why it was so expensive to build the dam and power station and to provide irrigation water. [3]
- Large size of project
- No access to site/new road had to be built
- New bridge had to be built
- So that heavy machinery/etc could be brought in
- Tunnels had to be constructed to distribute irrigation water
- Need for workers
- Cost of trained/professional workers
- Cost of settlement for workers
- Lack of power supply
- Cost of transport/power lines
- Cost of suitable building materials
- Complex planning/difficult scheme
- Cost of machinery/equipment

(iv) Name the farming area served by irrigation water from the Warsak reservoir. [1]
- Vale of Peshawar/any part of the Vale
- Kabul Valley

(v) How is electricity produced in power stations such as Warsak and how is it transmitted to cities like Peshawar? [5]
How produced:
- Water from reservoir/water from dam/head of water rushes down/passes through dam

… steep/narrowing (intake) pipes
- Drives (hydro) turbines …
- which turns shaft rapidly inside generator/works generator
… within a magnetic field
How transmitted:
- From transformer at hydel/HEP station which controls the voltage/stabilises the electricity

- Onto national grid/power lines/cables wires which is a network (of wires)/booster stations

- Overhead and/or underground
- Onto local/city supply grid
- Voltage dropped/adjusted

(b) Read the following extract from "Dawn – Economic and Business Review", 1st April 2002.

The reasons for the high cost of production which d amage industry are many.
They include the high cost of power, frequent break downs at the power stations and the unsteady supply of electricity fro m them.

(i) Give three reasons for the high cost of power from thermal power stations in Pakistan. **[3]**

- Natural gas expensive/price competition with other users
- Oil is expensive/expensive to import oil
- Oil prices have increased
- Independent power stations charge higher prices
- Inefficient machinery in power plants/high maintenance costs
- Cost of power lines/transmission
- Cost of technology
- Theft

(ii) Suggest one reason why power stations frequently break down. [1]

- Machinery is old/poorly maintained
- Increased strain/high demands
- Silt from reservoir entering HEP turbines

(iii) *Other than the* 'frequent break downs at the power stations', why is the supply of power 'unsteady'? [2]

- Breakage of wires (on grid)/long transmission lines
- Illegal tapping into supply/theft
- Demand exceeds supply/increasing demand
- Power sharing/shedding practiced
- Less Hydro Electric Power in winter

(iv) How may factories try to overcome the problem of unreliable electricity supply from the national grid? Why is it important for them to do so? [4]

<u>How:</u>

- (Government encouraging) private power stations
- Have standby generators
- Use of alternative sources e.g. Solar/biogas

<u>Why:</u>

- Interrupted production
-products being made can be spoilt
-causes inefficient use of machinery/labour
- Interrupts supply to market …
- May lose market/sales
- Profits fall/loss in income
- Damages machinery

[May/June 07]

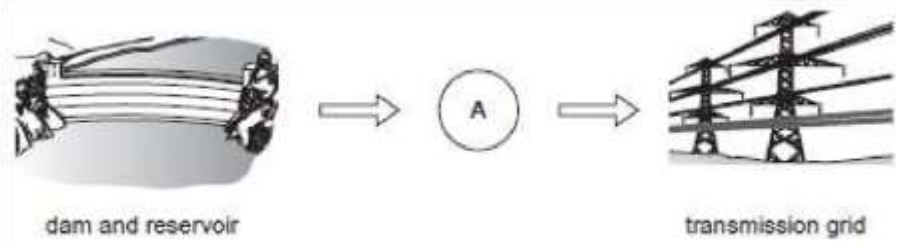
The water of the Hunza and other rivers from the Northern Areas is used to irrigate farmland in the Punjab. Explain how the flow of water is controlled. [5]
-Dams/barrages (name them) built to control/hold back flow in spring
-Further facts about how these control water
-Water allowed out at a controlled rate later in year
-Indus Water Treaty (name + detail about treaty)
-Embankments/Levees
-Gates/sluices to control water into canals/fields

[May/June 08]

(a) Most hydro-electric power (hydel) schemes are in Northern Pakistan.
(i) Name two large dams and the river on which each is built. [2]
-Tarbela on river Indus
-Mangla on river Jhelum
-Warsak on river Kabul

(ii) Why do the reservoirs of these dams hold very large quantities of water? [3]
-Deep valley/large valley/high dam
-Steep sides
-Large river/permanent flow/water from snowfields/glaciers
-Low evaporation/cool climate,
-High rainfall

(b) Study Fig. 4, a diagram showing how hydro-electric power is made.



Name the machine A, and explain how it uses the flow of water to make electricity. [2]
A – turbine/generator/power station
Turbine spins/rotates/moves

[May/June 09]

1 (a) Study Photograph A (Insert) showing the Hanna Dam.

(i) Describe the site of the dam. [3]
-steep rock face/scar/cliff
-bare rock/rocky/barren
-deep and narrow valley
-flatter/lower area/beach
-side valley/tributary
-scree/gravel/sand

(ii) What evidence shows that the water level in the reservoir is low? [1]
Dry ground/silt/scars at edge/beach/sand/flat land at edge

Study Photograph B (Insert) showing the Balloki Barrage.

(b) Compare the barrage shown in Photograph B with the dam in Photograph A. [3]

Barrage is:
-longer/wider/less high
-water on both sides
-link canal
-both have railings along top
-low/flatter land

(c) Study Fig. 1, a graph showing the amount of water stored in the reservoir of the Hanna Dam.

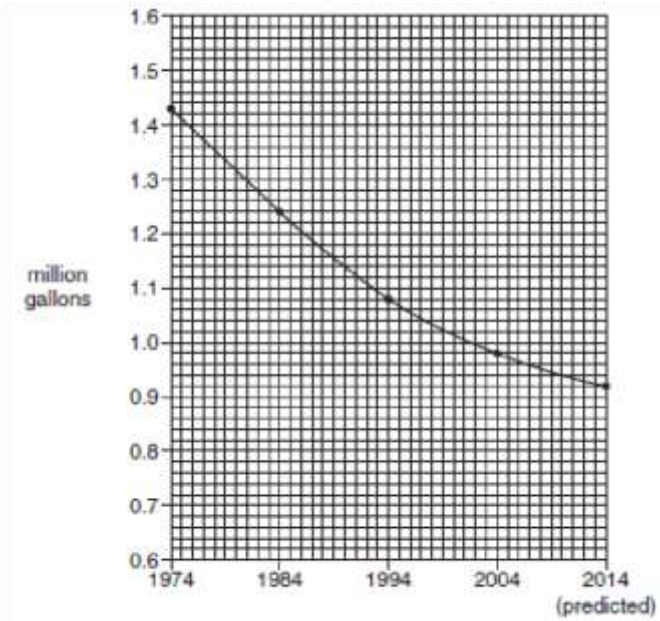


Fig. 1

(i) By how much did the amount of water decrease from 1974 to 2004? [1]

0.45 million gallons/1.43 – 0.98 million gallons

(ii) Suggest why the amount of water stored in the reservoir is decreasing. [2]
-Siltation/silting
-Due to soil erosion/deforestation/overgrazing/river deposition
-Less water supply
-Due to climatic change/lower rainfall/higher temperatures/more evaporation
-Increased usage

(iii) What can be done to stop the amount of water in the reservoir from reducing further? [3]
-Silt traps
-Afforestation }
-Terracing } of slopes
-Dredging/removal of silt
-Reducing wastage/pollution

(d) (i) Why is HEP (hydel) a cheap source of electricity? [2]
Free raw material/rain in mountains
Will never run out/renewable
Not imported/mined/drilled
Efficient/high power output

(ii) What problems occur when supplying electricity from reservoirs to areas of high population? [3]
-Long distance to areas of use/high population
-Cost of wires and poles/difficult terrain/Pakistan cannot afford this/shortage of money
-Loss by damage
-Loss by theft
-Loss of power by resistance/transmission

[May/June 11]

(a) Study Photograph A, a Persian Wheel.

Photograph A for Question 1

(i) With reference to the photograph, explain how this machine is used for water supply. [3]

-Worked by animal or man power
-Using wooden shaft / pole / log
-Turns horizontal wheel / a wheel rotates
-Which is attached to vertical wheel
-With buckets / cups to raise water
-Water goes into trough / pipe / channel

What are the advantages and disadvantages of replacing this Persian Wheel with a Tube well? [4]

Advantages of tube well
-More efficient / faster / does not need to rest
-For larger area / more water / goes deeper
-Regular supply / can be used at any time of year / continuous
-Less labour required
-Cleaner water
-Reduces waterlogging and salinity

Disadvantages of tube well
-Expensive / cannot be used by poor farmers
-Needs fuel /electricity / diesel etc.
-Reduces groundwater / lowers water table (as a disadvantage)

Study Fig. 1, which shows canal water supply in Pakistan.

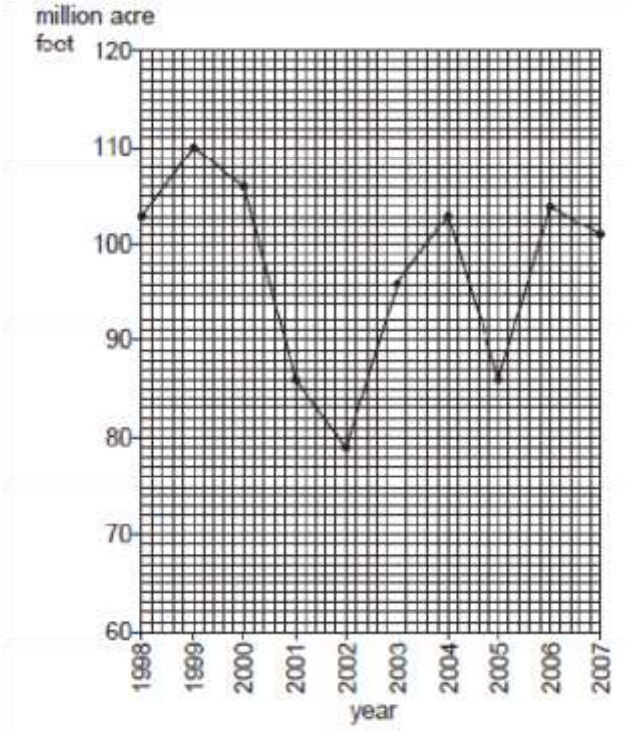


Fig. 1

In which year was the water supply highest? [1]
1999

How much higher was this than the supply in 2002? [1]
31 (million acre feet)

Why is there not enough water supply from canals to meet the needs of all users? [4]
-Shortage of rainfall
-Evaporation
-Less river water / restrictions by India / more dams on rivers
-Problem of tail-enders / canal system does not reach all those who need it
-Siltation in reservoirs / canals
-Seepage / leakage from canals
-Wastage by users / some use more than they need
-Water pollution
-High demand / variety of uses
-Theft of water
-Population increase
-Lack of investment

Explain why waterlogging and salinity of soils causes problems to farmers. [6]
-Reduces cultivable area / makes land un-usable
-Reduces yield / damages crops
-Reduces income / profit
-Expensive to reclaim land / treat soil
-Reasons why this occurs
-Water table rises / water collects on the surface / water on roots

-Evaporation (caused by hot climate)
-Fertilisers add to salts in water
-Salts left behind / form a hard crust on surface
-Soil becomes infertile / toxic
-Farmers use too much water / poor farming methods
-Perennial water supply / available all year
-Water pollution is a major problem in urban areas.

With reference to examples, explain some of the causes of this pollution, and why it is a major problem to the people who rely on this water supply [6]
Causes
-Explanation of Human waste e.g. because no sanitation / untreated sewage
-Industrial waste e.g. dumping in rivers
-Litter / plastic/paper e.g. because no organised collection
-Oil spills e.g. from washing of tanks / ship breaking
-Agricultural runoff e.g. because of use of chemicals / fertilisers and
-insecticides
Problems
-Not for drinking / poisonous / contaminates groundwater
-Cost of treatment
Causes disease
– risk of cholera, typhoid, diarrhoea , hepatitis, dysentery etc.
-Not for food processing (e.g. fish canning)
-Smells
-Reduces fish catch / kills fish
-Can damage machinery
-Blocks ditches / canals / causes flooding
– risk of malaria from stagnant water.

[Oct/Nov 05]

(i) What are perennial canals, and why are they better for farming than inundation canals? [3]
Canals that supply water throughout the year from dams/barrages. Better because
-Water always available when needed
-Can be better controlled
-Reliable/do not depend on the weather

(ii) How may irrigation damage the soil? [3]
-Causes water-logging and salinity
-Groundwater rises/swamps formed
-Salts added to soil by groundwater
-Evaporation leaves salts on surface
-Hard crust formed
-Soil not properly flushed out/shortage of canal water

(iii) How may this damage be overcome? [6]
Water-logged/wet soil

-Concrete linings to canals
-Closure of canals when not needed/regulate flow
-Planting trees e.g. Eucalyptus
-Tubewells used (instead of old methods)
-Tubewells used to lower water table
-Surface drains
-Lower canal water levels/dredge silt
Salty/saline soil
-Water from tubewells used to flush out salts
-Education/knowledge of better farming methods
-Use of fallow periods

[Oct/Nov 06]

Study Photograph B (Insert), which shows an area in Hyderabad District damaged by waterlogging and salinity.

(i) Describe the appearance of the area S in Photograph B. [3]
-bare / no vegetation
-cracks / cracked mud
-pools of water
-saline water
-(mineral) salts
-white / mustard colour
-edged with black / grey

(ii) What are perennial canals, and how may they lead to problems such as those in area S? [4]

definition
-canals that can supply water all year round
-from reservoirs / barrages
-via link canals
problems
-too much irrigation water leading to evaporation in hot, dry climate
-rise of water table
-rise of salts to surface

(iii) How can these problems be reduced? [4]
-Lined canals to prevent infiltration
-Culverts to drain excess water from canals
-Surface drains to flush out salt from soil
-Tubewells to lower water table
-Eucalyptus trees plants to reduce water underground
-SCARP - government program
-WAPDA - to carry out projects.
-WAPDA used surf ace drains and tubewells to lower the water table and flush out salt from the soil.

Read the extract Fig. 2.

> Pakistan is a water-deficit country. The rainfall is neither sufficient nor regular, and does not meet the growing need for water. Agriculture is a major user, and good yields depend on the adequate availability of water at the right time. The increasing pressures of population and industrialisation have already placed great demands on water supplies and there are an ever-increasing number of local and regional conflicts over water availability and use.

Why do the writers refer to Pakistan as a 'water-deficit country'? [2]
-insufficient rainfall
-growing needs

Using examples, explain why there are conflicts over water availability and use. [7]
Examples:
-Farming vs industry vs domestic vs food processing vs Hydro Electric Power
-India vs Pakistan 1947 – 1960
-NWFP and Punjab vs Sindh -

Development of Kalabagh dam

Explanation:

-Irrigation for more agriculture
-Industrialisation – water for washing, cooling, processing
-Hygiene - need to keep clean
-Population growth – need for more
-Electricity for modem technology – because there is not enough

[Oct/Nov 07]

Study figure 1

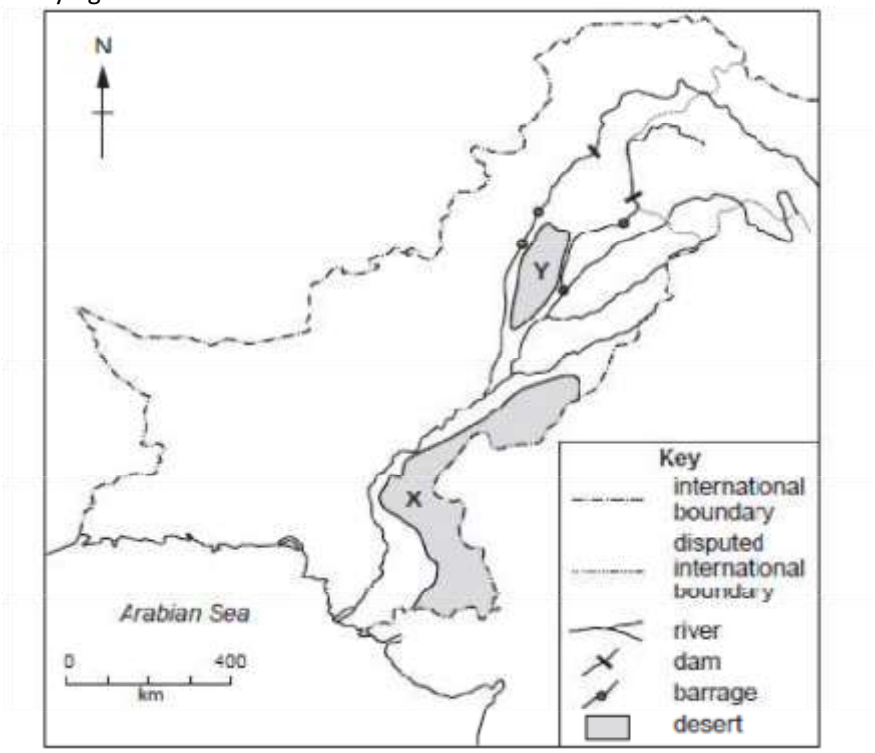


Fig. 1

(ii) Describe simple methods that can be used to irrigate small areas of desert X. [4]

Methods:

-wells.

A well is an excavation or structure created in the ground by digging, driving, boring or drilling to access ground water in underground aquifer.

-ponds.

A pond is a body of standing water, either natural or man-made.

-tanks

A water tank is a container for storing water.

-shaduf.

Shaduf is a hand-operated device for lifting water.

-jars.

Jars are used to store water.

-tubewell/tanker/sprinkler

(iii) Explain how some parts of desert Y can be irrigated by large-scale schemes. You should refer to Fig. 1 and use your own knowledge. [4] -Barrages (name + location)

e.g. at Jinnah or Chashma

at Rasul or Trimmu

-link canals– to transfer water
-perennial canals – to provide water all year
-distribution canals – to reach all fields
-inundation and diversion canals
-dams
e.g. Tarbela
Mangla

(i) Why do problems of waterlogging and salinity occur in some irrigated areas? [3]
Waterlogging
-Water available all year
-Crops given more water than they use
-Water table rises/reaches surface
Salinity
-Evaporation of water
-Salt in irrigation water
-Salts brought to surface
-Unlined canals leak

(ii) How can these problems be overcome? [5]
-Lowering water table by tubewells, trees
-Control of water by lining canals, closing canals temporarily, surface drains
-Flushing out of salt by water from tubewells
surface drains
-Education to improve farming methods
-Government schemes SCARP, WAPDA

[Oct/Nov 11]

Consider the feasibility of improving water supply to farmers in Punjab and Sindh. [6]

Forests

[May/June 03]

Photographs **A**, **B** and **C** show the natural vegetation of three areas of Pakistan.

(a) For Photograph **A**,

Photograph A for Question 2

Chitral Gol National Park, Hindu Kush

(i) name the main type of natural vegetation shown, [1]

(ii) describe the natural vegetation, [4]

(iii) explain why there is little or no natural vegetation in area X in the background of photograph A.

[2]

(b) For Photograph **B**,

Photograph B for Question 2

Hazarganji-Chiltan National Park, near Quetta

(i) name the type of natural vegetation shown, [1]

(ii) describe the natural vegetation, [4]

(iii) explain why there is little or no natural vegetation in area X in the background of photograph A.

[2]

(c) For Photograph **C**,

Photograph C for Question 2

Indus Delta

(i) name the type of natural vegetation shown and describe it, [4]

(ii) state how this type of natural vegetation is used by the local people, [2]

(iii) explain how this type of natural vegetation is helpful to the fishing industry of the area. [2]

(d) (i) How has deforestation been avoided in the areas shown on Photographs A and B? [1]

(ii) Deforestation may cause a variety of problems. Describe the ways by which such problems may be solved. [4]

[May/June 05]

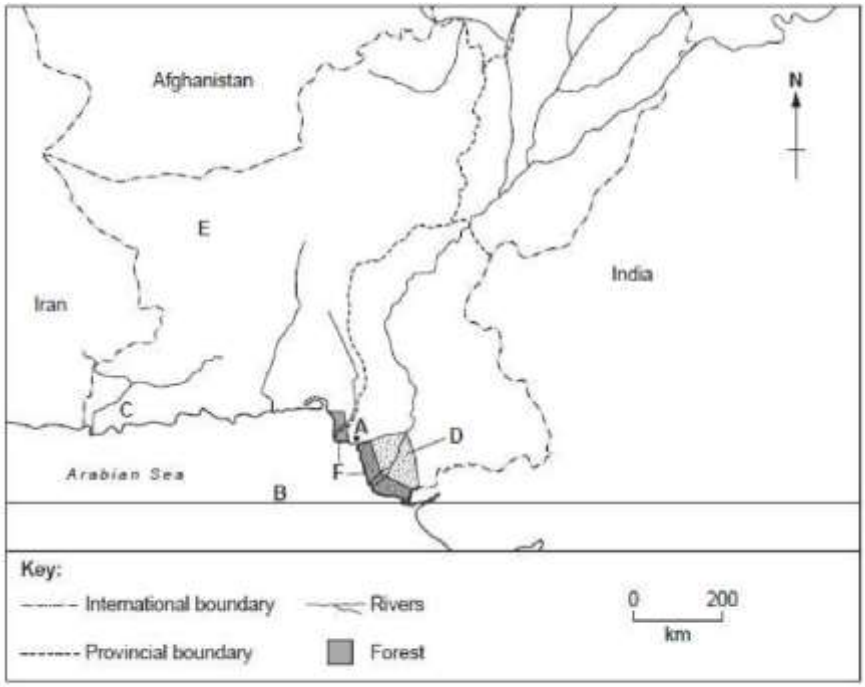


Fig. 1

(b) (i) What type of forest grows in the area F on Fig. 1? [1]
Mangrove

(ii) Why is this type of forest only found in this area? [2]
-Saline soil/salt water in soil
-Tidal regular flooding
-Trees are adapted to this environment/have aerating roots/roots filter

salt/salt secreted

(iii) The area of this forest has decreased in size in recent years. How and why has this affected the local fisheries? [2]

<u>How</u>
-Fewer fish
<u>Why</u>
-Roots provide shelter for young fish
-Less food
-Breeding ground

[May/June 06]

Study Photograph A of an area in the Shangla District of NWFP.

(a) (i) Describe *in not more than two words* the topography (relief) shown in the photograph.[1]

mountainous / wooded / coniferous(trees)/ steep slopes/deep valleys

(ii) What type of trees are shown in the photograph? [1] coniferous / spruce / fir / deodar/kail/chir

(iii) At what altitude do these trees grow in NWFP ? [1]
1000-4000 metres

(iv) How is this type of tree adapted to the climate of this area? [3]
-Conical shape to shed snow
-Small leaves }
-Thick, leathery leaves } to reduce transpiration
-Evergreen to take advantage of short growing season

(b) (i) Trees have been cut down in area X. What effects may this have on the soil there? [3] -leaching
-soil erosion
-gullying
-landslides/total soil loss/only rocks left

(ii) How can deforestation affect water supplies? [4]
-Too little: Muddy water undrinkable/polluted
-Reduced evapotranspiration so less rain
-Silt in reservoirs reduces storage
-Silt blocks irrigation channels

-Irregular flow/ comes in bursts
-Too much: Flooding/faster runoff

(iii) State and explain one way in which the effects of deforestation can be reduced. [3]

Explain
-ways: regeneration programmes
-education / better management
-forest reserves
-legal controls on commercial cutting / selective cutting
-restricting use of heavy machinery
-supply of gas to Northern areas to reduce need for firewood
-terracing

(c) Why are there irrigated plantations of trees in the Indus Plain? [4]

-Construction }
-Firewood }
-Furniture }
-Boxes }
-Agricultural implements }
-Irrigation available
-Shade
-Prevent erosion of banks
-Reduces air pollution
-For shade
-Reduce timber imports

[May/June 07]

(a) Study Photograph A , which shows part of the Changa Manga plantation.

Photograph A for Question 3

(i) What evidence in Photograph A shows that this is a plantation? [2]
-Trees in lines/rows/equally spaced/grid
-Same age/height
-Same species

(ii) What is used to line the canals, and why is this necessary? [2]
-Clay/cement/bricks
-To prevent seepage/leakage/water getting out

(iii) Why is the plantation being irrigated? [2]

-Low rainfall/there is not enough rainfall
-For a constant/regular supply/rainfall is unreliable
-Trees need a moderate to good water supply
-High rate of evapotranspiration/evaporation/transpiration

(iv) Why is the water level in the canal lower than the ground around it? [1]
-To avoid waterlogging to keep the water table low
-Trees do not want their roots in water

(b) (i) State two domestic uses of wood. [2]
Firewood heating/cooking/house building/furniture/fencing

(ii) Explain how wood is used in industry and transport. [4]
-construction of building, bridges,
-means of transport – railway sleepers (not fuel), bridges, lorry chassis/carts
-chemical such as – resin, varnish, mazri (for mats), pharmaceuticals, medicine,
-farm/agricultural use such as fences, gates, implements
-paper production from pulp -

sports goods such as bats, rackets,

-crafts such as ornaments, beads,.

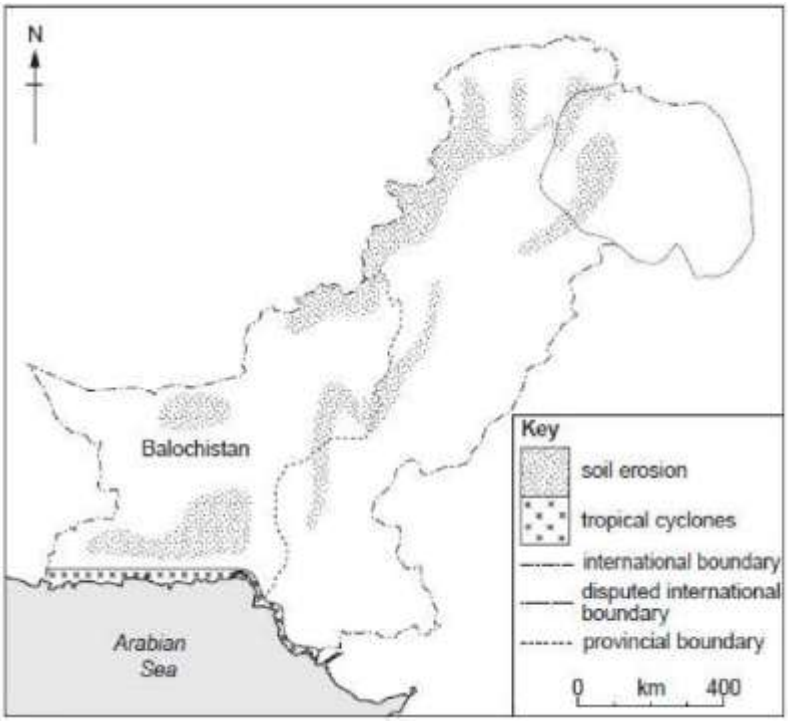
-furniture such as chairs, tables.

(c) (i) What is *sustainable forestry* ? [3]
-ensuring supplies are there for the future selective cutting
-replanting trees that have been cut down/re-afforestation
-maintaining/looking after forests
-planting species that do not need irrigation

(ii) Why does Pakistan need to increase the area of irrigated plantations? [3]
-Too many trees have been cut down/too much deforestation
-To provide more wood for industry, increase in population etc.
-To relieve waterlogging/waterlogging and salinity
-To prevent erosion of banks/slopes
-To replace areas where forests cannot be replaced (e.g. due to soil erosion or urbanisation)
-For tourism
-To reduce imports

(d) (i) Why is afforestation called 'a long-term investment'? [2]
-trees take many years to grow
-many years before financial return/start production/results are seen
-high cost of planting
-costs during growth

(a) Study Fig.1, a map of natural hazards in Pakistan.



(i) Describe the distribution of soil erosion in Balochistan.
-Scattered/widespread/in mountains
-Especially in SW
-Line at base of highlands
-Named mountain range/hills/plateau e.g. Central Makram Range, Coastal Range, Chagai Hills
-Provincial borders **[3]**

(ii) Explain why the dry climate of Balochistan increases the risk of soil erosion.
-Lack of vegetation/bare soil
-Slow to re-grow
-Over cultivation
-Dry soil less cohesive
-Wind blows soil away **[3]**

(iii) Where does eroded soil go to?
-Wind blown into dunes/on foothills
-Into rivers/canals/ditches/sea
-Reservoirs/dams/lakes **[3]**

(iv) How can soil be protected in areas of low and unreliable rainfall?
-Shelter belts/trees/afforestation
-Irrigation of trees
-Prevent over-grazing/move livestock/fewer livestock
-Fill gullies/improved cultivation
-Terraces and stone lines/reduce gradient
-Contour ploughing
-Strip farming **[4]**

[May/June10]

Study Fig. 1 which shows a map of forest types in Pakistan.

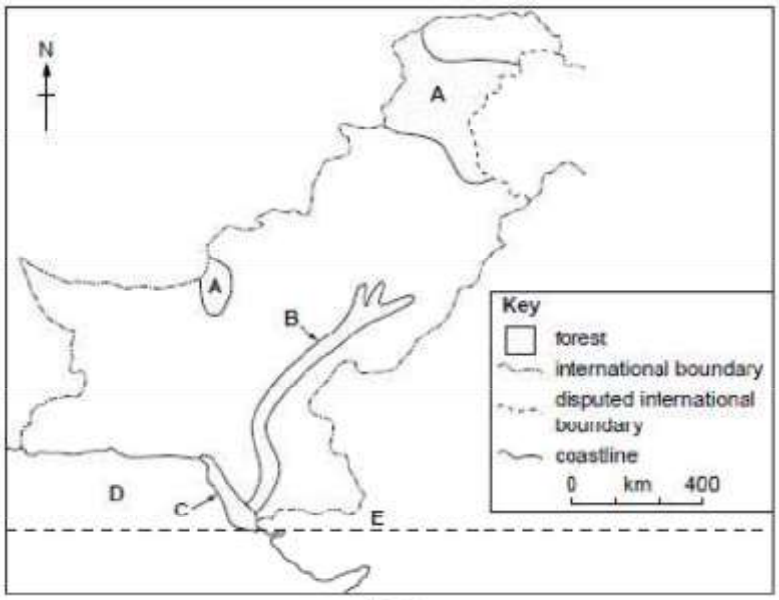


Fig. 1

(i) Name the forest types found in each of the areas A, B and C. [3]

A coniferous / alpine
B riveraine / bela
C mangrove

(ii) Name the sea D and the line of latitude E. [2]

D Arabian (Sea)
E Tropic of Cancer / 23½ °N

(iii) Explain why the forest type A grows naturally in cool, hilly areas. [3]

-Can tolerate cold (with a thick bark)
-Can tolerate poor / thin / dry soils
-Can shed snow (with sloping branches etc.)
-Can reduce water loss / transpiration (with needle-shaped / waxy leaves)
-Can absorb water from melting snow (with shallow roots)
-Can save energy (with evergreen leaves)

(iv) Why is it important that forests by the coast are protected? [4]

-Breeding grounds for fish }
-Feed amongst roots / protected by roots }
-Shelter from storms / cyclones / high tides / flooding
-Prevents coastal erosion
-Resource for local people – wood for houses, boats, food, fruit
-Habitat / shelter for wildlife
-Under threat from oil spills / overcutting / polluted effluent / etc.

Study Fig. 2.

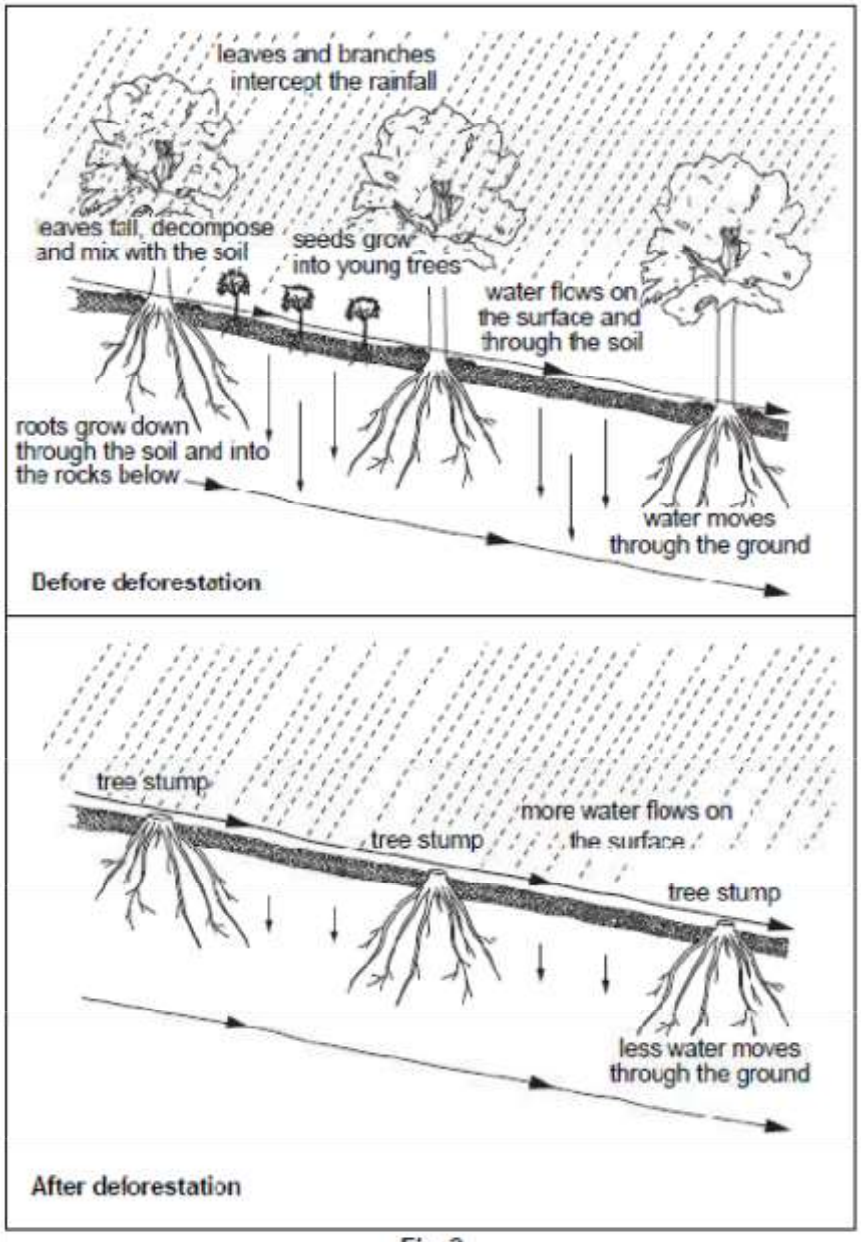


Fig. 2

With reference to Fig. 2, explain how deforestation can cause soil erosion. [5]

-Soil is exposed / lack of protection from leaves and branches
-Surface water flow carried soil away -
Lack of infiltration into ground
-Less water absorbed by roots / less evapotranspiration
-No roots to hold soil
-No leaf fall to add humus / fertility
-Leaching of nutrients / nutrients lost
-No new plants grow

There has been development of forests in lowland areas of Punjab and Sindh using irrigation.

(i) Why is irrigation necessary for new plantations of trees? [2]

-Low rainfall / high evapotranspiration

-Seasonal rainfall
-Irregular rainfall / rain not dependable / makes a regular water supply
-Keeps the soil wet / prevents soil erosion
-Root system needs to grow

(ii) Explain the advantages and disadvantages of developing more irrigated plantations of trees in lowland areas of Punjab and Sindh. [6]

Advantages
-Timber for named use e.g. construction, fencing, firewood
-Food for animals / people
-Leaf fall for humus / fertility
-Rainfall / humidity
-Shade / shelter/ reduce temperatures
-Clean air / more oxygen / absorbs CO_2
-Scenic beauty/ promote tourism
-Protection from soil erosion
-Employment / work
-Habitat for wildlife
-Eucalyptus trees can reduce waterlogging and salinity

Disadvantages
-High cost /long term investment / not a quick profit
-Cost of maintenance / care
-Need for irrigation / more demand on water supplies
-Loss of land for housing / farmland / other land use
-Problems caused by roots, leaves etc.

[May/June 12]

Study Photographs A, B and C.

Photograph C for Question 1

(i) Name the forest types A, B and C and locate each type of forest by writing the correct letter in each area shown on the map below (Fig. 1). [4]

A Coniferous / alpine
B Mangrove
C Tropical thorn / Rakh / Irrigated / Riveraine / Bela

Fig. 1

Describe the appearance of the forest shown in Photograph C. [3]

-green / healthy
-dense / close together
-plantation / planned / in lines
-varied height
-form a canopy / canopy open / crowns meet / provides shade
-no undergrowth / bare floor
-same species
-shisham / babul

Explain the importance of the forest in Photograph B to fishermen and fishing villages. [3]

-breeding area / many fish there
-source of income
-protection to villages (against storms, floods, tidal waves etc.)
-firewood
-fodder / food
-timber / wood for boats, houses

Why does the forest in Photograph A appear to be in an area of afforestation? [3]
-regular pattern / evenly distributed / in blocks
-straight lines
-blocks of same height / age / young trees
-blocks of same species
-evidence of deforestation / cutting

State two effects of deforestation in mountain areas. [2]
-Increased surface runoff
-soil erosion / leaching / infertile
-landslides / avalanches
-floods
-less rainfall } climatic change
-higher temperatures }
-loss of habitat / rare species
-shortage of firewood / food
-siltation in reservoirs (dams)

Explain how one of these could be controlled. [4]
(Soil erosion etc. controlled by)
-planting trees to hold the soil
-planting trees to protect the soil
-terracing
-contour ploughing
-selective cutting
-education / awareness
(Siltation controlled by)
-Silt traps
-Dredging / removal of silt from reservoirs
(Flooding controlled by)
-Embankments
-Dams / barrages
(Climatic change controlled by)
-Reduce burning of fossil fuels
-Controls on emissions
-Laws / treaties etc.
(Loss of habitat controlled by)
-Establish reserves
-Selective cutting
-Rangers / laws
(Shortage of firewood controlled by)
-Use of alternative fuels (other than firewood) eg. LPG / natural gas

CRAFTS TOURISM CLIMATE SOILS
With reference to two of the above, explain how trees can be a valuable resource for the people who live in mountain areas. [6]
-'for income / employment'
-Improved standard of living / quality of life / better lifestyle

-CRAFTS – small scale / cottage industry, work for locals, income, furniture, toys etc. sale to

tourists, local need, export, for raw material

-TOURISM – scenic beauty (or similar) shade, picnics, nature study, photography, to buy Crafts
-CLIMATE – increases transpiration, increases humidity, more rain, shade, to

lower temperature reduce pollution / more oxygen / fresh air

-SOILS – leaf fall creates humus, more fertility, can grow crops, pastures,

prevents erosion / landslides / soil erosion, prevents flooding,

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[Oct/Nov 04]

Study Fig.2.

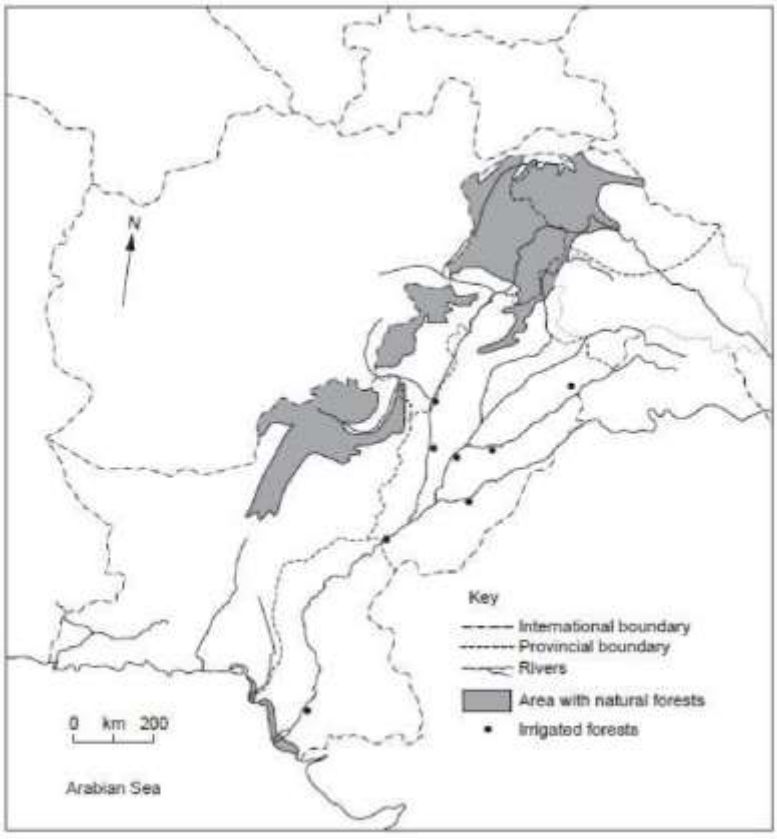


Fig. 2

Describe the distributions of both the areas with *natural forests* and the *irrigated forests* shown on Fig.2. [4]

Areas with forests'

-northern mountains/northern NWFP/Northern Area/named area or
mountain range
-(some on) Potwar Plateau/Salt Range

-western highlands/(western) NWFP/NW Pakistan/Afghan border
-northern Balochistan (Plateau)/central Brahui Range
-Indus delta/Hab delta/Sindh coast
-Below snow line/4500m
'irrigated forests'
-most by rivers/by Indus
-6/7 in Punjab/most in Punjab/upper indus plain
-1 in Lower Sindh/near Hyderabad/lower Lower Indus Plain
-1 on border of Punjab and NWFP/confluence of Indus and Gomal

(b) There has been deforestation within the areas with natural forests. How has this caused problems for:
(i) communications in the mountain areas, [3]
-steep valley sides exposed/soil erosion occurs
-landslides
-avalanches
-flooding
-eroded/broken up/destroyed/telephone wires grounded

(ii) farming on valley floors and plains, [3]
-flooding
-irrigation canals/channels blocked
-less rainfall
-salts in irrigation water – salinity
-(coarse) sand and gravel deposited on fields
-crops destroyed

(iii) hydro-electric (hydel) power supplies? [3]
-decreases water/electricity supply/power supply
-silt in reservoirs
-rivers blocked
-less rain
-silt in intake pipes/turbines/power plant
-landslides may break power lines

(c) Linear plantations are common in many parts of Pakistan.
(i) What are *linear plantations* and where are they found? [4]
Linear plantations are planted in a line by man. found
-alongside canals/rivers
-alongside roads/railways
-along field boundaries
.
(ii) Explain the purposes of linear plantations. [4]
-prevent soil erosion
-lower the temperature …
-provide shade
-fruit/food
-firewood/timber
-leaves/roofing
-to reduce air pollution/make clean air

[Oct/Nov 08]

Study Fig. 3, a map of environmental damage in Pakistan.

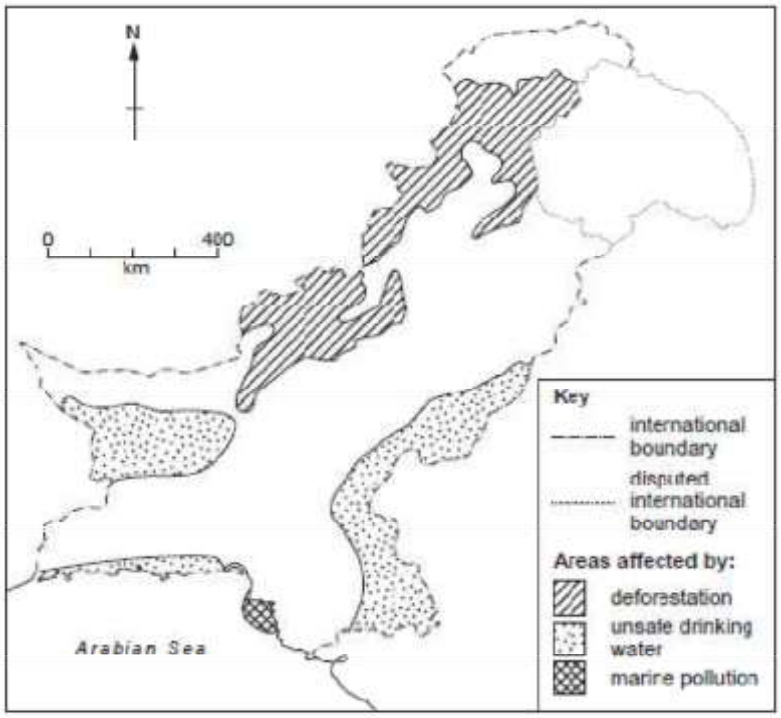


Fig. 3

(i) Locate the areas most affected by deforestation. [2]

-North West borders
-NWFP
-North Balochistan
-FATA

(ii) State three causes of deforestation in these areas. [3]

-firewood
-industry
-charcoal
-road building
-housing/construction
-mining
-dams
-farming

(b) Study Photograph A.

(i) Describe the scene. [4]

-bare ground/rocky/barren
-steep slopes
-gullies
-scattered/small amounts of vegetation
-red colour
-mountains/hills and valleys/dissected/ridged
-eroded landscape/badlands
-lake

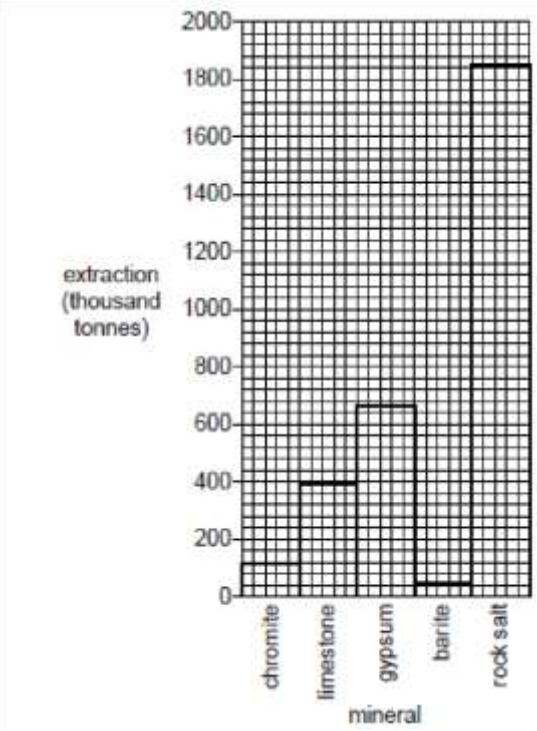
(ii) Explain why scenes such as this are caused by deforestation. [4]

-no roots to hold soil together
-runoff erodes soil/soil erosion
-no interception
-less infiltration/more runoff
-loss of leaf fall
-lack of decomposition
-nutrient cycle broken
-loss of fertility
-leaching
-less rainfall
-more exposure to sun and wind

Mineral Resources

[Oct/Nov 12]

(a) Study Fig. 1 which shows mineral extraction in 2008 in Pakistan.



(i) Name two minerals shown on Fig. 1 that are used to make cement. [2]

-limestone
-gypsum

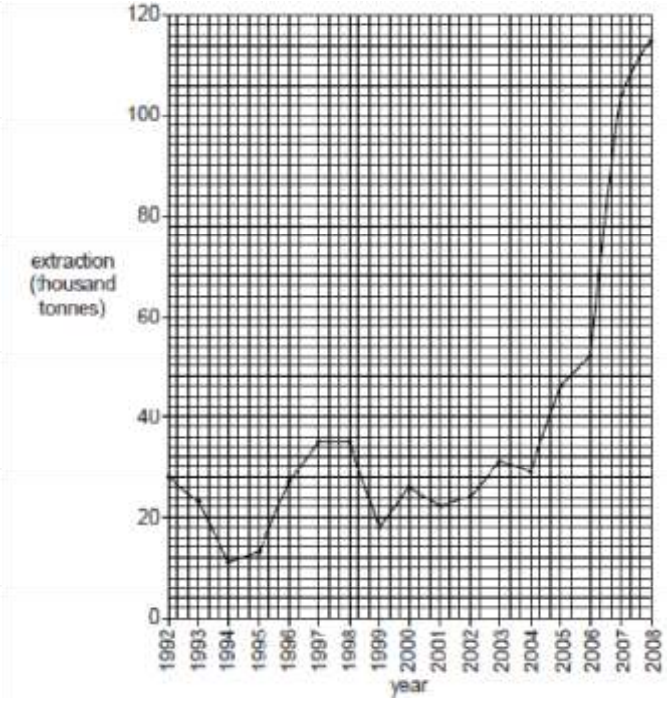
(ii) State two uses of rock salt. [2]

Two of the following (there may be others)
-Food - Flavour, preserving, curing, table salt
-Textiles - dyeing, bleaching, water softening,
-Chemicals - Soda ash, sodium bicarbonate, artificial rubber,
-Misc.- Tanning, household cleaner, fire extinguisher, artificial rubber, roads

(iii) State the amount of gypsum extracted. [1]

640 - 680 thousand tones

(b) Study Fig. 2 which shows chromite extraction in Pakistan.



(i) Describe the changes in extraction from 1992 to 2008. [3]

-Increases overall
-Variable overall / 1992-2008
-comment on fall and rise from 1992-97/98
-variable 1998 – 2004/5
-Rises from 2004-2008 / sharp rise in 2007
-Secondary peak 1996-1998 / rises then falls 1996-1999
-Lowest 1994
-Figures to illustrate one of the above eg. 28,000-115,000 tonnes 1992-2008

(ii) Suggest why the extraction of minerals, such as chromite, varies from year to year. [3]

-Investment / funding
-Demand / orders
-Bankruptcy / companies leave
-Problems with machinery
-Reserves reducing /new reserves exploited /geological problems
-Terrorism

Study Photograph A (Insert) which shows a quarry in Pakistan.

(i) Use the photograph and your own knowledge to describe the environmental problems that can be caused by mineral extraction. [4]
-From photograph - loss of vegetation / deforestation
-Land deformation / piles of rocks /pits
-Loss of soil
-Dust
-Own knowledge-smoke / gasses
-Soil erosion
-Loss of farmland / grazing / no cultivation
-Holes / pits etc.
-Noise / vibration

How can these problems be reduced? [4]
-Laws / legislation+ details
-Tree planting / screens + details
-Land restoration + details
-Personal health and safety – eg wearing masks against the dust, ear defenders, regular medical check ups,

To what extent can more extraction of mineral resources help to increase development in Pakistan? [6]
<u>In favour (res. 2)</u>
-Increase trade / exports / reduce imports
-Raise GDP/GNP/ increase the economy
-Increase employment
-Raise taxes/ government earnings
-Foreign investment
-Rural development
-Industrialisation / more industry

-Better infrastructure + example
-Provides more fuel or raw material + example.
-Education / skills
Against (res. 2)
-Lack of funds
-Lack of machinery / technology
-Unattractive to investors
-In remote areas
-Lack of infrastructure (but do not double mark)
-Competition from other countries / other countries safer
-Environmental damage
-Lack of skills / expertise

[May/June 05]

(a) Study Fig. 4, a cross section showing two types of coal mine.

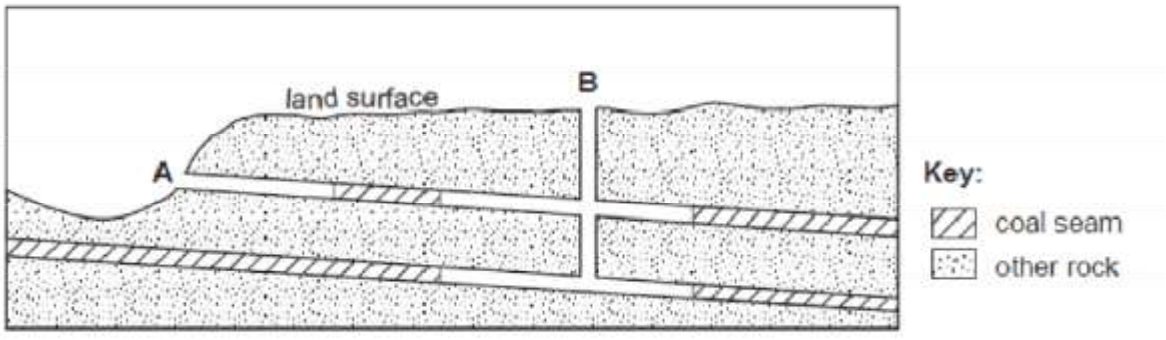


Fig. 4

For each of the mines **A and B,**
(i) name the type of mine, [2]
A – adit/drift
B – shaft

(ii) explain why that is the type of mine there, [2]
A – coal (seam) exposed on a slope/can dig tunnels along the seam
B – coal (seam) underground / does not outcrop

(iii) describe the method of mining. [5]
Adit mine
-Horizontal shaft into hillside
-Possibly several shafts at different levels
-Pick and shovel/trepanner
-Dynamite on seam
-Buckets/trucks/trolleys/conveyor belt/donkeys to surface
Shaft mining
-Main shaft (vertical or sloping)
-Tunnels/side shafts along seams

-Pick and shovel/trepanner
-Dynamite on seam
-Buckets/trucks /trolleys to main shaft
-Lifted to surface/elevator

[May/June10]

(i) Name three ways by which coal is mined. [3]
Shaft, adit / drift, open cast

(ii) Why is coal produced in Pakistan described as low quality? [3]
Lignite
-Low burning temperature / produces less energy
-Low carbon content / more impurities / more smoke
-High ash content
-High sulphur content

[May/June11]

(i) Name the two main raw materials quarried in Pakistan that are used to make cement. [2]
Limestone and gypsum

(ii) Name three other inputs used by a cement factory. [3]
-Labour,
-Land / area
-Buildings
-Machinery
-Money / capital / investment
-Power / electricity / gas / coal / oil
-Water

[Oct/Nov 07]

Study Fig. 3, which shows limestone and rock salt extraction.

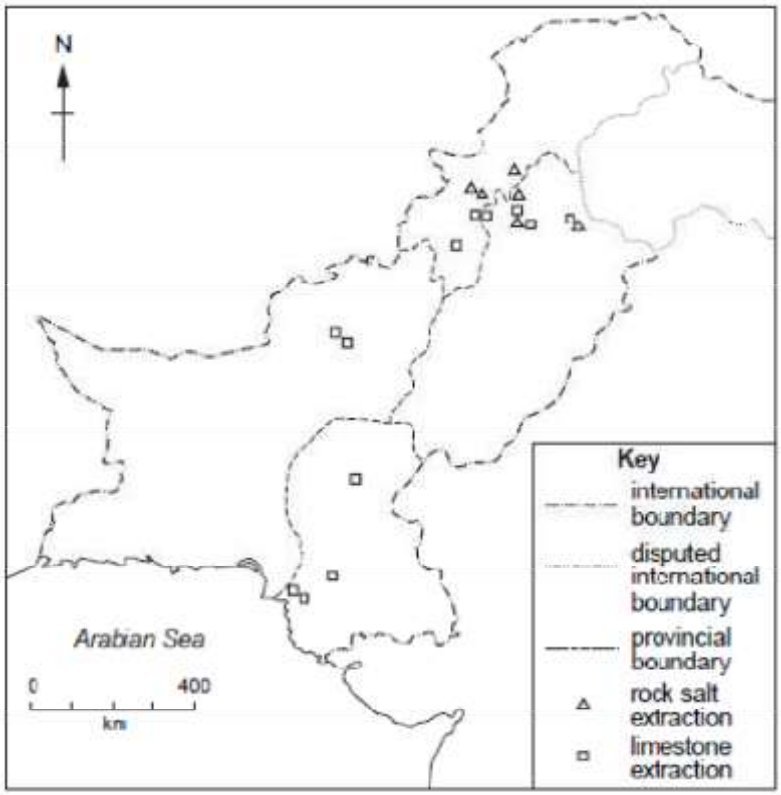


Fig. 3

(i) Describe the distribution of limestone extraction in Pakistan. [3]

-Widespread
-NWFP-Punjab border/Potwar Plateau
-North (Eastern) Baluchistan
-Southern Sindh/near Karachi
-Central Sindh

(ii) Limestone and rock salt are both called 'bulky goods'. What is the cheapest form of transport for these goods? [1]

Railway

(iii) Why is the supply of limestone to most areas likely to be cheaper than rock salt? [1]

-does not have to travel so far
-quarried in many areas/more widely available

(b) Nearly one million tonnes of rock salt were extracted in Pakistan during 2002.

(i) What is a mixture of rock salt and water called? [1]

Brine

(ii) What is rock salt used for in Pakistan? [2]
Cooking, preservation, soda ash, bicarbonate, caustic soda for tanning, textiles and laundries, Table salt

(c) Study Photograph B, showing a cement factory near Ghulamullah, in Thatta district.

(i) Describe the scene in the photograph. [4]
-Flat
-Dry/bare/barren/unpopulated
-Rough road to factory
-Vegetation in background
-Chimney
-Smoke/dust/air pollution
-Low flat-roofed building
-Stones/rocks
-Tyre tracks

(ii) State three natural inputs used to make cement. [3]
-limestone
-gypsum/calcium sulphate
-natural gas/coal
-clay/shale
-water
-sand

(iii) Explain the importance of three human inputs at a cement factory and the difficulty of providing them at this site. You should refer to Photograph B and use your own knowledge. [6] inputs

-electricity for power

-road/railway for transport
-labour for good production
-telecommunications for supply/sales etc.
-machinery for fast/efficient production
-capital for investment

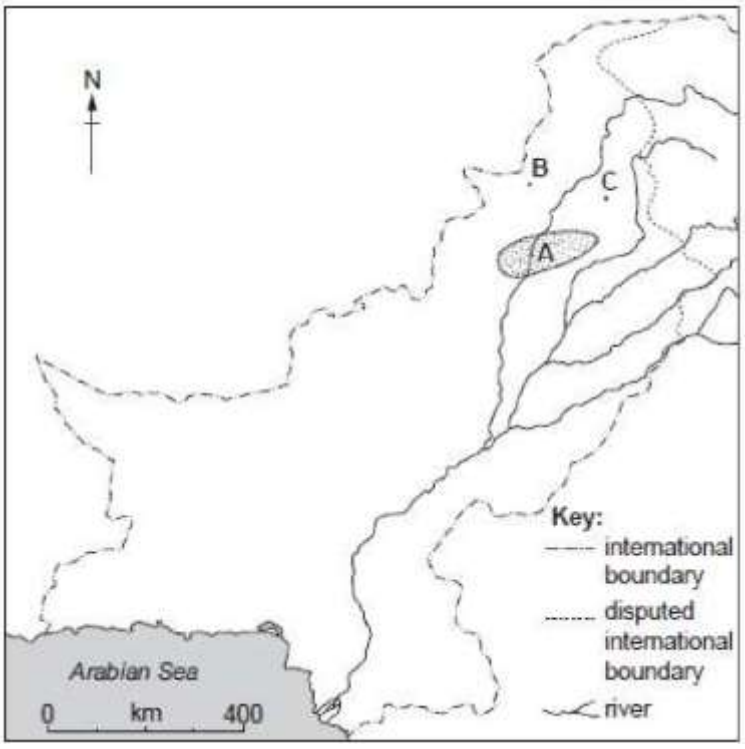
difficulty

-remote from settlement
-lack of skilled/educated workforce
-unreliable labour force
-lack of named infrastructure
-hot/dry climate
-lack of local entrepreneurs

(d) Why is there a large demand for cement in Pakistan? [4]
-Industrial construction e.g. Factories
-Institutional buildings/schools/hospitals/offices etc.
-Communication e.g. roads, bridges, railway sleepers
-Port developments
-Water management e.g. Dams, canals, embankments
- new development e.g. Gwadar

[Oct /Nov 11]

Study Fig. 4.



Name the area A which has many mineral resources. [1]

Name two minerals that can be extracted in this area. [2]

Name the cities B and C. [2]

Fishing industry

[May/June 04]

(a) Study Photograph **A** which shows part of a fish farm at Faiz, south of Multan.

(i) Describe the lay-out and features of the fish farm. [4]

- Large/big/extensive
- Grid pattern/regular pattern
- Ponds/lakes/toba
- Several/at least 4 ponds
- Rectangular ponds/long (and thin)
- (Ponds separated by) earth(en) banks/embankments/raised edges/mud walls/brick/paved road/path … wide, flat, straight
- (Line of) trees
- Trees for shade
- Rough ground/bare ground/dung on edge of ponds

(ii) How has the physical topography of the area made it easy to construct the ponds? [3]

- Flat land/plain land
- Large area
- Easy to use machinery for digging out ponds
- Unconsolidated rock/soil/alluvial deposits/soft soil
- Easy to dig/excavate
- Impervious alluvium/clay/rock/high water table
- Retains water/water collects

(iii) Where has the material come from that has been used to make the banks of the ponds? [1]

From the area dug out for the ponds

(b) Why is fish farming of growing importance in Pakistan? Credit will be given if you name a species of fresh water fish reared on fish farms. [4]

Fish bred:
Grass/moore/rahu/silver/tallah (thalla)/manaseer/palla/trout/carp
Why:
- Growing population
- Lack of protein in diet/important part of diet
- Education on nutrition
- Fish are rich in protein/low in cholesterol
- Provides alternative income for farmers
- Provides employment
- Water available from irrigation schemes/lakes/reservoirs

[May/June 08]

(a) (i) Name two fishing ports on the coast of Balochistan. [2]

Jiwani, Gwadar, Pasni, Ormara, Sonmiani

(ii) Name two types of marine fish caught by fishermen. [2]

-Shark -Herring
-Drum -Mackerel
-Croaker -Sardine
-Cat fish -Pomfret
-Skate
-Ray

(iii) Describe subsistence fishing methods. [3]

-Small/wooden boats
-Sailing/rowing boats
-Traditional/hand made nets
-Coastal only
-Lack of machines/simple engines
-Rod and line method
-Fish kept in baskets of ice

(iv) Explain how these methods can be improved to make fishing commercial. [4]

-Engines
-Gill netters/nylon nets/stronger nets
-Can go further offshore
-Radios
-Chilled storage on boat
-Trawlers

-Loans for fishermen
-Education/training for fishermen

(b) (i) How can fish be stored and processed onshore? [3]
-In ice/cold storage/refrigerated
-Gutted
-Canned
-Dried
-Frozen
-Salted
-Fish-fingers/other product
-Fish oil

(ii) Why is fish processing called 'value-added'? [1]
Can be sold for more money/more profit

(iii) How does the poor infrastructure of Balochistan make development of the fishing industry difficult? [4]
-Poor roads/no railway for transport
-Lack of electricity/power for processing
-Poor telecommunications to markets
-Lack of fresh/clean water for processing
-Illiteracy/lack of training/lack of education

(c) Study Fig. 3, a graph comparing the production of marine and inland fisheries in Pakistan.

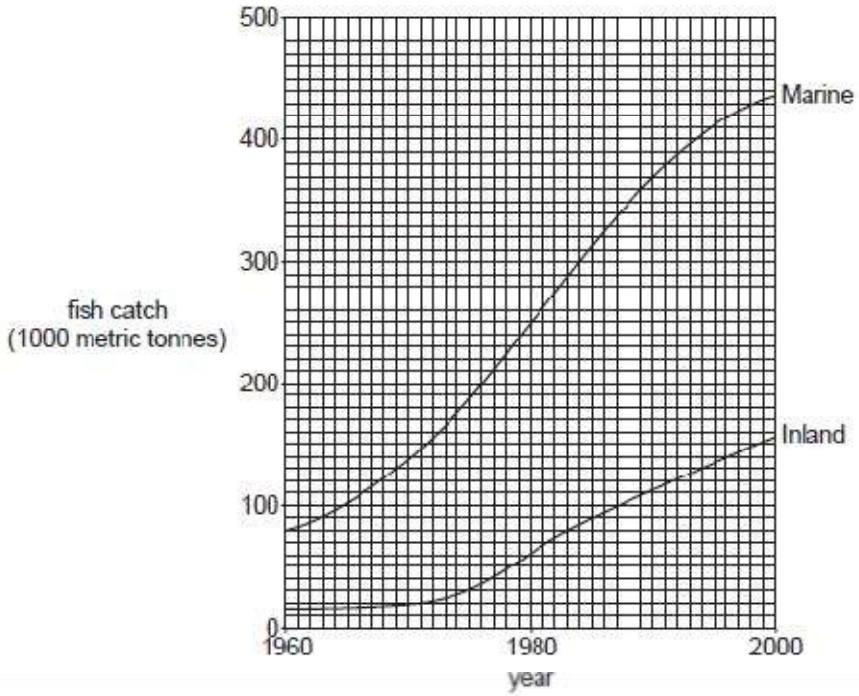


Fig. 3

(i) Compare the changes shown in the graph. [3]
-Both increase

-Marine increases more than inland/faster than inland
-Marine increases/continuously but inland had little increase until early 1970s
-Inland increased to nearly 10 times bigger/marine only 5 times bigger
-Comparative figs – units not required

(ii) Explain why more people are employed in inland fisheries than marine fishing. [3]

-More people live near rivers, lakes etc.
-Maintenance of ponds
-Hatcheries
-Feeding
-Harvesting (catching)
-Transport
-Government encouragement/loans etc.

[Oct/Nov 08]

Study Fig. 3

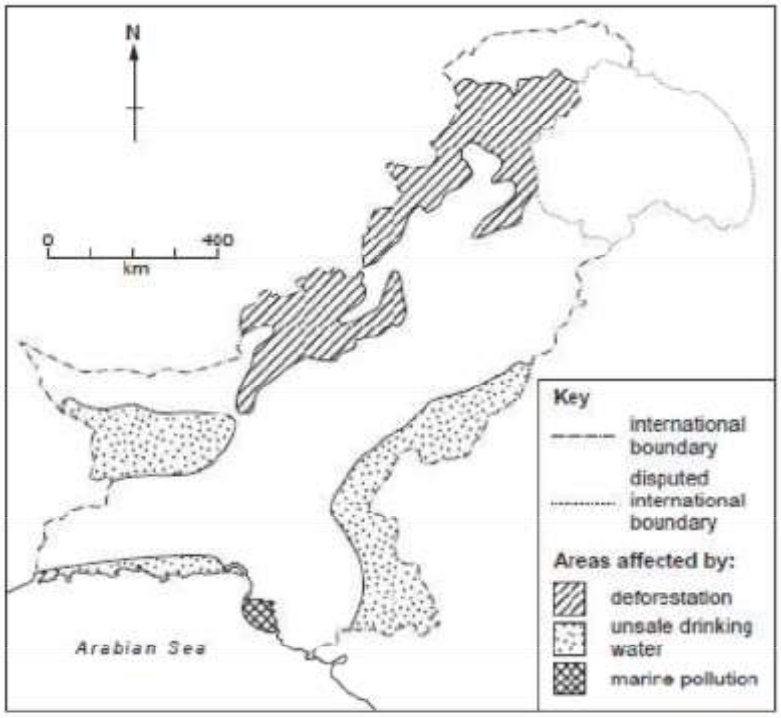


Fig. 3

(i) Locate one area of

A unsafe drinking water,

Makran coast/Gwadar district, South East Sindh, West Balochistan

B marine pollution. [2]

Indus delta, Karachi, Korangi, Port Qasim

(ii) Explain how industries can pollute river and sea water. [4]

-effluent/liquids }
-dumping/solids } sewage/garbage
-e.g. dyeing and tanning
-hot water from power stations
-oil spills
-accidents

(iii) Explain how this pollution affects farming, fishing and wildlife. [6]
-contamination of sub-soil water and irrigation,
-contamination of mangrove environment,
-toxic chemicals cause mutation and death,
-entering food chain,
-oil kills seabirds
-eutrphication reduces oxygen

[Oct/Nov 10]

Study Fig. 2, which shows the weight of marine fish caught 1996–2006.

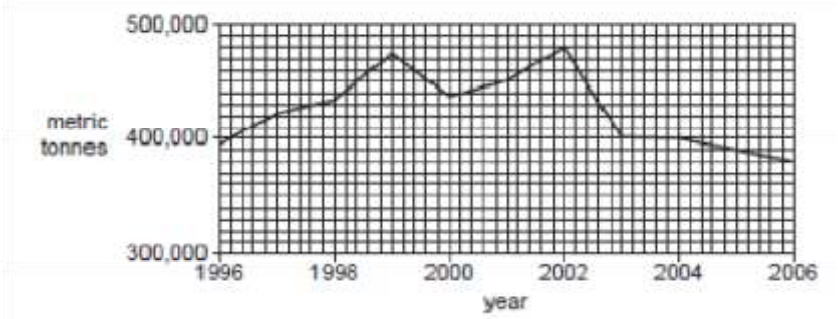


Fig. 2

The weight of fish caught in 2006 was less than in 1996.
Suggest two reasons for this decrease. [2]
-Over-fishing
-Water pollution / oil spills etc.
-Loss of breeding / shelter / feeding areas (i.e. mangroves)
-Fishing in closed season / when breeding
-Fishing by boats from other countries
Describe how the weight of fish caught changed in the years between 1996 and 2006. [3]
-Increases and decreases / fluctuates
-Highest in 2002
-Two peaks
-Lowest in 2006
-No increase since 2003 / decline from 2004
Describe how marine fishing methods can be improved. [5]
-Boats with engines
-Can go further offshore
-Can stay at sea for several days

-Cold storage on boat
-Mechanised equipment / winches
-Nylon / bigger / stronger/ nets or ropes
-Weather forecasts
-Sonar to locate fish
-Satellite navigation
-Training / education

Study Fig. 3.

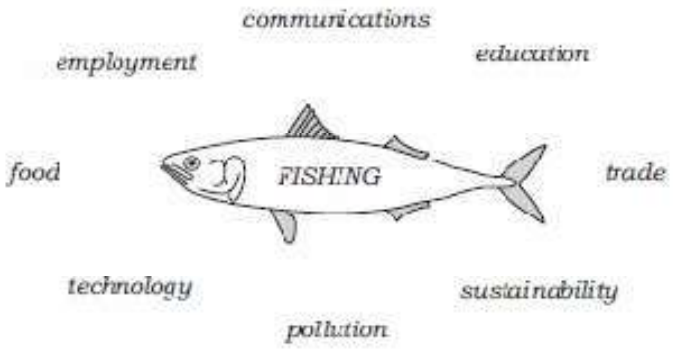


Fig. 3

With reference to Fig. 3, explain the advantages and disadvantages of developing the fishing industry in Pakistan. [6]

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

Study Photograph A.

State three ways in which the owner has improved the site for fish farming. [3]
-Rectangular / man-made ponds for better management etc.
-Separation of ponds/embankment for different ages / species
-Roads / ponds lined to prevent contamination / mud / dust / leakage etc.
-Brick / stone / Pucca road for vehicles / for easy access
-Trees for shade / shelter / beauty
-Ponds full of water for healthy fish / good conditions

Name two species of fish reared on fish farms. [2]
Any two of
Manaseer, Rahu, Palla, Thalla, Trout, Carp, shrimp, catfish, croaker, perch (Damral)

Describe the fishing methods used on a fish farm. [3]
-Prepare ponds / half fill for insects
-Hatch eggs / buy smelt (small fishes) / breeding
-Of single species / improved type of stock
-(Regular) feeding (with poultry waste)
-Health care / regular checks
-Top up ponds / check water levels clean water
-Transfer between ponds by size
-Catch fully grown fish / fish of market size etc.
-By net

Study Fig. 1, which shows fish production in Pakistan.

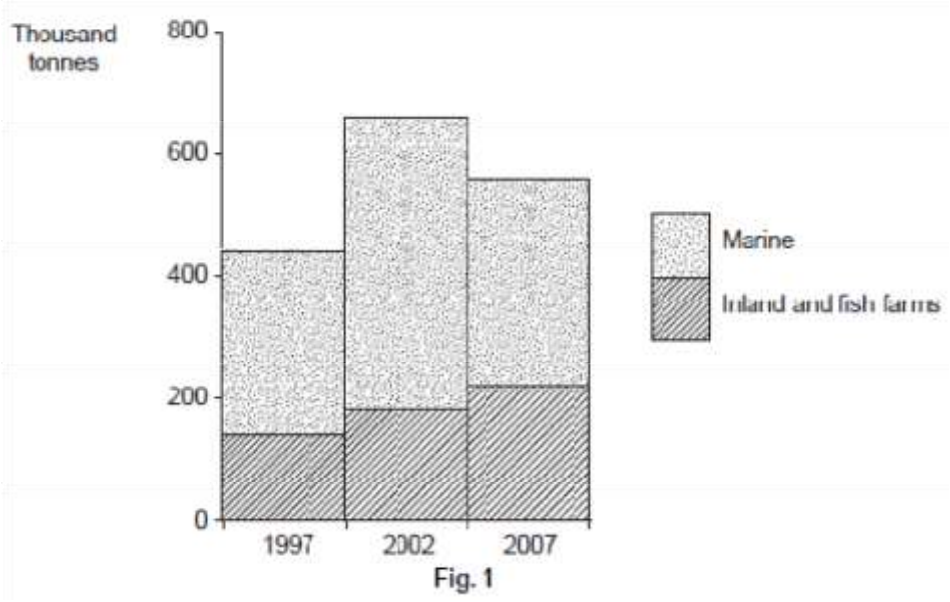


Fig. 1

Which type of fishing increased from 1997 to 2007? [1]
Inland (and fish farms) /both types
In which year was marine fish production lowest? [1]
1997
How did the overall total production change from 1997 to 2007? [2]
-Increased overall / 1997–2007
-Increased then decreased / highest in 2002
Explain why fishing and fish farming are important industries in Pakistan. [4]
-Nutritious food / good quality / healthy
-Content of food including fish oil, e.g. protein, white meat, low in cholesterol, vitamins
-Bones for fertiliser / other waste product and use
-Source of income
-Source of employment
-Export / earns foreign exchange – of named type of fish / shellfish / product or to a named country or area

State three ways in which fish can be stored and processed before sale. [3]
-Chilled / refrigerated
-Frozen / in freezer
-Gutted
-Filleted / de-boned
-Dried
-Salted
-Canned

At the present time, most of the fish catch is processed in Karachi. The ports of Balochistan such as Gwadar and Pasni have the potential for development.

What are the advantages and disadvantages of developing fish processing industries in the ports of Balochistan? [6]

Advantages

-Stimulates development of fishing industry / port facilities (other than processing)
-Gwadar Port
-Reduced cost of transport (than to Karachi)
-More fresh / no delay / no need for storage
-Infrastructure development, e.g. roads, power, telecommunications
-Adds value to fish

Disadvantages

-Undeveloped infrastructure
-Lack of infrastructure, e.g. roads, power, water, ports, etc.
-Small market / population
-Long way from major centres of population, e.g. Karachi
-Uneducated / unskilled population
-Lack of interest from investors or government / high cost of any development
-Inhospitable climate / relief
-Named pollution linked to processing
-Effects of increase in urban population
-Poor quality product / canned fish banned in some countries

Agriculture

[May/June 04]

Study Photographs **B** and **C** which show parts of one of the many buffalo farms in the area of Karachi called Buffalo (Cattle Colony).

Photograph B

Photograph C

(i) How can you tell from Photograph B that this is a dairy farm? **[1]**

Milk churns/containers/cans/drums

(ii) Describe the shelter shown on Photograph C, also marked X on Photograph B, and suggest why such shelters are needed for the buffalo. [4]

Description:
- Flimsy
- Roof covered with canes/rushes/straw/mazri
- Horizontal poles used as beams } wooden poles used
- Supported on (thin) vertical poles }
- Open (on some) sides
- White/stone/brick wall (at one end)
- Partitions/sectioned inside
- Feeding troughs
- Flat/hard floor

Why needed:
- To protect buffalo from (intense) heat of sun
- Milking/feeding/calving - Floor easy to clean
- Ventilation (open sides)

(iii) Why is a large supply of water necessary for this farm? [2]
- For drinking
- For keeping the buffalo cool/spraying on buffalo
- For washing/dipping buffalo/bathing
- For cleaning
- For adding to milk

(iv) No fodder crops are grown on this farm. How are farms like this supplied with food for the buffalo? [2]
- By road/lorry/tractor/cart etc
- In bulk/large amounts
- From crop farms outside Karachi/on (southern) lower Indus Plain/near Hyderabad/Thatta/Badin
- Bought with money from sale of milk or other products/barter byproducts of agriculture/industry

(d) Explain the importance of the buffalo farms of Buffalo to Karachi. [4]
- Milk
- Butter/ghee/other named dairy product
- Karachi has a huge population/increasing population
- Milk is expensive to transport
- Milk can be fresh
- Milk can be supplied regularly
- Supplies hides/skins
- Karachi is important for the production of leather goods
- Dung sold for fuel in markets

-domestic use/homes
-commercial use/hotels/shops/bakeries

[May/June 05]

(c) (i) What are the benefits and problems for farmers in the area around Lahore which result from the rainfall? [5]

Benefits

-Some rain in all months/throughout year
-Enough without irrigation/ for barani farming
-Monsoon rain/summer rain for Kharif crops
-Depression and convectional rain/winter rain for Rabi crops

Problems

-Uneven distribution
-Too much in July – August
-too little October/November
-Flooding in wet season
-Lack of sunshine for ripening crops
-Drought/high evapotranspiration April – June
-Early or late arrival of monsoon
-Heavy rain damages cereals, cotton
-Pests, disease, virus in wet season
-Heavy rain ineffective/does not soak in

(c) (ii) Choose one of the problems from (c) (i) and explain how it can be reduced. [4]

Uneven distribution/too little in some months

-Storage in reservoirs, ponds, tanks, barrages
- Canals from storage in mountains
-Use of underground supplies in dry season, tube wells

Flooding/too much in some months

-Dams (in catchment areas), reservoirs, barrages
-River embankments/levees
-Drainage systems/diversion canals
-Afforestation in catchment area
-Dredging canals
-Weather forecasts

(a) Study the bar chart, Fig. 3, which shows the acreage of 4 crops grown in Pakistan from 1980 to 2000.

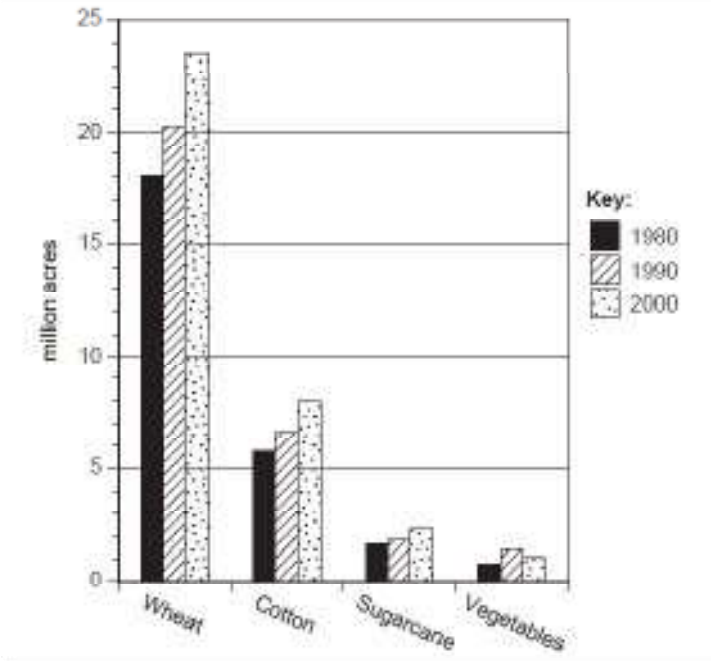


Fig. 3

(i) How many million acres of wheat were grown in 2000? [1]
23.5/23 – 24

(ii) For which crop was there a reduction in area from 1990 to 2000? [1]
Vegetables

(iii) For which crop was there an increase in area from 1980 to 2000 by 2 million acres? [1] Cotton

(b) (i) Why is an increase in wheat production important? [3]
-Increasing population
-Alleviate starvation/lack of food
-Decreasing imports/step towards self-sufficiency/no loss of foreign exchange
-Increasing export (in good years)/increase foreign exchange

(ii) State two natural inputs necessary for wheat production, and for each explain its importance. [5]
-Cool/moderate temperatures 10 – 20 - for germination and good growth/sowing
-Warmer; 25 – 30 for ripening
-Dry period - for ripening/harvesting
-Moderate rainfall/moist/wet weather - for germination/growing/swelling the grain
-Alluvial/loam/clay soil/fertile – for good growth
-Well drained soil – for root growth/aeration
-Flat land – for machinery and/or irrigation

(iii) Explain how human inputs have contributed to the increase in wheat production. [6]
-Irrigation on Indus plains and semi-arid areas
-Details of irrigation

-Fertiliser factories in (named town)
-High Yield Varieties developed e.g. Maxi Pak, Shahkhan 95, Wadnak 95, Kohson 95
-GM modifications
-Plant protection programmes e.g. treated seeds, pesticide sprays, locust watch
-Land reforms making larger fields/more economical units
-Tractors and other modern machinery
-Government loans
-Support prices
-Education/skills/colleges
-Capital from investors/banks
-Land reform

(c) (i) What did the land reform laws aim to do? [1]
-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

(ii) What are the advantages of land consolidation? [3]
-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

(d) How can education and training help a small-scale farmer to increase his output? [4]
-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

[May/June 06]

(i) Name a plateau where barani wheat farming takes place. [1]
Potwar plateau

(ii) How is the cultivation of wheat related to the seasonal rainfall on the plateau? [3]
-ploughing October – December /when first rain falls
-seed sown after rain
-rain continues though growing period/ some rain before harvest to swell the grain
-dry period for harvest

(a) Study Fig. 3.

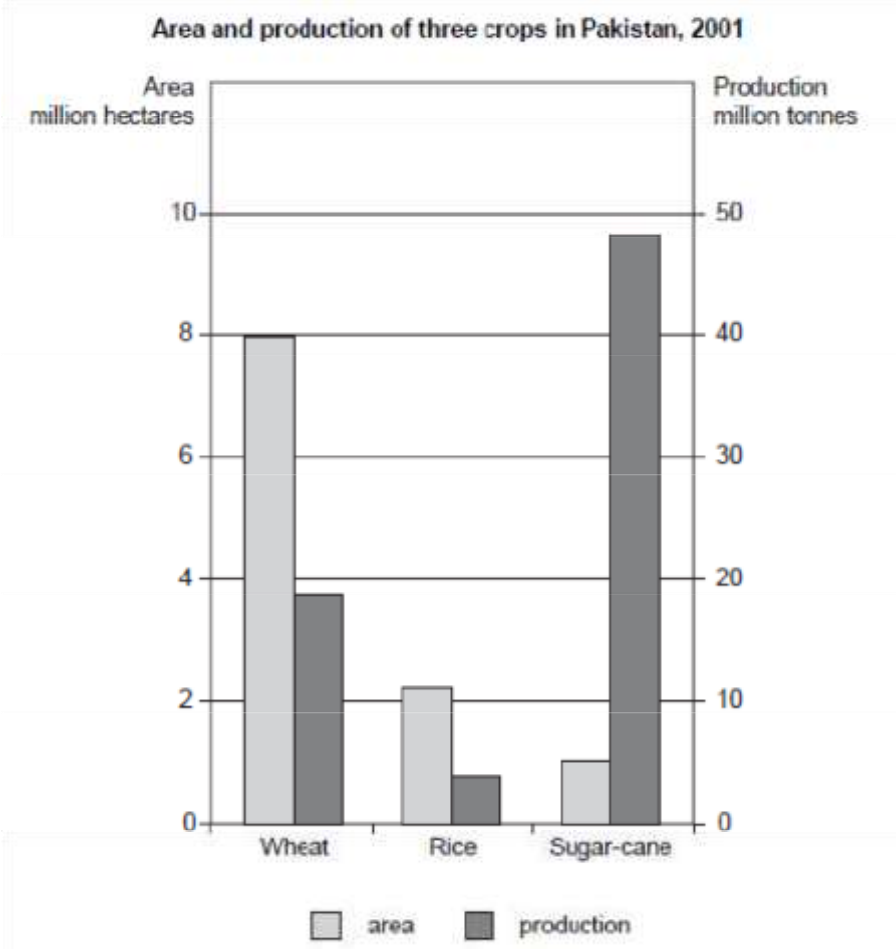


Fig. 3

(i) Which crop is grown on the largest area? [1]
Wheat

(ii) Which crop has the lowest production per hectare? [1]
Rice

(iii) Why is there such a large production of sugar-cane from a small area? [2]
-Large/tall plant
-High yield per plant

(iv) Name another cash crop grown in Pakistan. [1]
- cotton/tobacco/maize

(b) Study Fig. 4, a map showing the distribution of sugar-cane farming.

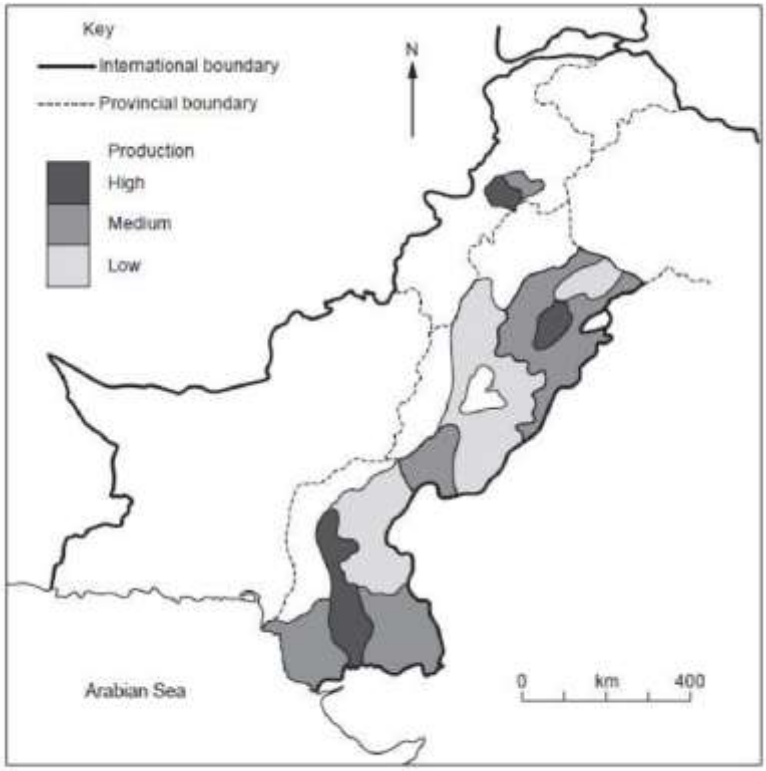


Fig. 4

(i) Name the areas of high sugar-cane production. [3]

-Peshawar district
-NW of NWFP
-Faisalabad district
-Central Punjab
-Nawabshah/Nausharo Firoz/Hyderabad/Badin district
-Central Sindh/near the river in Sindh

(ii) Why are these areas suitable for the cultivation of sugar-cane? [4]

-Temperature 25-35 C
-Irrigation to make up for shortage of rainfall (1520mm)
-Loam/clay/silt/alluvial soil (not fertile only)
-Fertiliser factories
-Good road system

(iii) What happens to sugar-cane from the time it is fully grown to when sugar juice is extracted? [3]

-cut by hand/manual labour
-transported by bullock cart/lorry/truck
-quickly transported
-scrubbed with chalk to remove dirt and smell
-crushed to remove juice in heavy rollers

(iv) Explain why bagasse is an important by-product of a sugar-cane factory. [2]

-Fuel
-Can be used to generate electricity

-Animal feed
-Made into chipboard/paper

(c) (i) State two climatic inputs for rice cultivation. [2]
-high rainfall/over 1500mms/ more than 1270 mms
-temperature 20 – 30 C
-warm, dry period for harvesting

(ii) How can the yield (production) per hectare of rice be increased? [6]
-Irripak/High Yeild varieties/ genetic modification to increase output
-Modern irrigation / perennial canals to give better water supply/at correct times
-Modern fertilisers/pesticides to improve growth/prevent loss
-Machines to make work faster
-Education to make farmers aware of better methods
-Reduction of waterlogging and salinity to increase cultivable area

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[May/June 07]

(a) Study the map of Pakistan, Fig. 3.

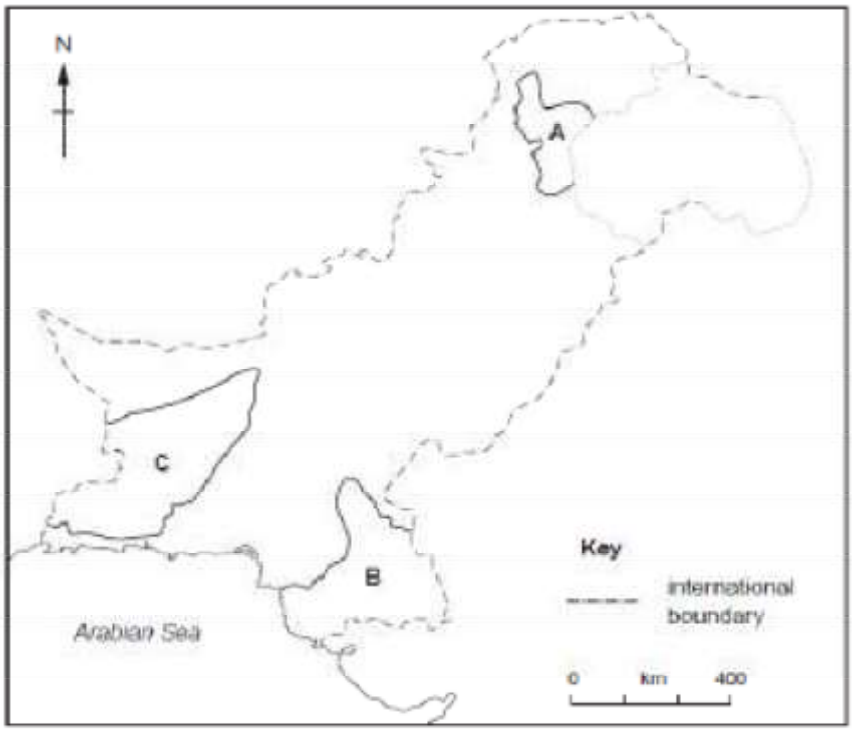


Fig. 3

(i) Name the two main fruit crops grown in area A. [2] apples, apricots, almonds

(ii) Why are fruit crops grown in mountain valleys? [3]

-warmth
-shelter
-sunshine
-rain/less snow
-soil
-flat land

(iii) Name one of the main fruit crops grown in area B. [1]
(iv) Bananas/mangoes/citrus fruit

(v) Why are fruit crops grown in this area? [2]
-Monsoon/summer rainfall
-Mild winter temperatures/above 15 C
-Irrigation (from the River Indus)

(vi) Why are fruit crops grown mainly for local use? [1]
-Perishable
-Heavy to transport
-Small amounts/not of export quality

(b) (ii) Explain how Karez irrigation helps date palms to grow in the oases of area C. [3]
-Provides water for growth
-Underground canal/subterranean
-From mountains/foothills
-From aquifer/groundwater/soaks into ground
-More rain on mountains/higher slopes
-Reduces evaporation

(iii) Name one other type of crop grown in oases. [1]
Named cereals – millet (bajra), sorghum (jowar), barley/maize, pulses

(iv) How is crop growth improved by the date palms nearby? [2]
-Shade from/sun/extreme heat/reduce evapotranspiration
-Shelter from winds/windbreak

(c) (i) Name two animals that are reared by nomads in area C. [2]
-goats
-sheep
-cattle
-camels

(ii) Explain the importance of livestock to the nomads. [2]
-Food – milk, meat, butter etc.
-Clothing – wool, hides etc.
-Income/for selling/bartering – Young animals/named product
-Transport
-Tents/shelter
-Wealth

(iii) Describe the nomadic method of farming. [3]
-Moving/settle for a few weeks
-In search of water
-In search of pasture/food
-Subsistence farming

[May/June 07]

Describe the method of farming called 'transhumance', which is used in areas such as the Hunza. [4]
-Goats/sheep/cattle/livestock
-Seasonal movement
-Move to higher slopes in summer/to summer pastures
-Move to find food/pastures/grass/for grazing
-Animals fattened
-Milk/meat/wool/skins, etc.
-Stay in valleys in winter/permanent homes in valley
-Animals kept in sheds in winter
-Storage of hay/fodder crops
-May take animals from other families

[May/June 08]

(a) Study Photograph **A** showing sugar cane cultivation.

(i) Describe the scene. [4]
-bullocks/cattle/buffalo/ox/cow

-traditional/manual labour/man/farmer
-wooden
-plough/ploughing
-young/small plants
-ratoons
-flat
-dry soil
-uncut crop in background
-trees in background

(ii) What are the advantages and disadvantages of using tractors instead of animals for work on a farm? [6]

Advantages
-Faster/quicker/suitable for larger fields
-More efficient/modern/less hard work/do not tire
-Needs fewer workers
-Saves animal feed/land/cost of animals
Disadvantages
-Expensive to buy/few available to buy/imported }
-Cost of fuel }
-Cost of repair/difficult to repair }
-Breakdowns
-Unemployment
-Needs skilled labour
-Compact the ground
-No milk/meat/food etc.
-No dung for fertiliser
-Maintenance/repair facilities may not be locally available
-Cannot use in mountains/fragmented farms

(b) Yields from crops vary from year to year. Explain the reasons for this. [4]
-Lack of rain
-Timing/ variability of rain
-Flooding
-Wind
-Problems of irrigation/shortage of water/silt in canals/reservoirs/mechanical failure
-Build up of salt and waterlogging
-Pests and diseases
-Family problems/sickness/men go to city

(c) (i) What work is done on the farm by these animals, other than that shown in the photograph? [3]
-Hoeing – to remove weeds, thin seedlings
-Harvesting – cutting the crop
-Milling/grinding/threshing – to remove husks, for flour, by animal walking round
-Transport – of seeds, fertiliser, crop, to field, to market,
-Drawing water – from wells, by shaduf, charsa, by walking round
-Threshing – separating the husk from the seed

(ii) What do these animals and other livestock on the farm produce that the farmer can use or sell? [3]

-Dairy products/milk/butter/ghee etc.
-Meat
-Hides/skin
-Young stock
-Eggs
-Dung
-Hooves
-Horns
-Bones

(d) How can livestock farming be improved in Pakistan? [5]

-Capital/investment/loans/subsidies for – named purpose
-Selective/cross breeding, breeding on scientific lines – for better animals etc.
-Better feed/fodder – for stronger, bigger, animals etc.
-More grazing land – by irrigation, drainage, fertiliser etc.
-Control of disease – e.g.
-Research – disease, breeding, feed etc.
-Vaccination – to improve health
-More medicines/more vets to treat animals
-Education/training in named modern methods
-Better hygiene/care/living conditions etc.
-Mechanisation e.g. milking machines for hygiene, speed

[May/June 09]

(a) There are four main processes of rice cultivation:

harvesting planting preparation of fields growth

List these processes in the correct order. [1]

preparation, planting, growth, harvesting

(b) Study Fig. 2, a bar chart showing monthly rainfall in the Lahore area.
Explain how each of the processes named in (a) is linked to the rainfall in the Lahore area

from June to October. [4]

June Rain to soften soil for preparation of field/ploughing
June–July Rain for planting seeds/seedlings
June–September High/increasing rainfall for flooding fields
June–September Sufficient rainfall/rain continues for growth
September–October Drier period for harvest

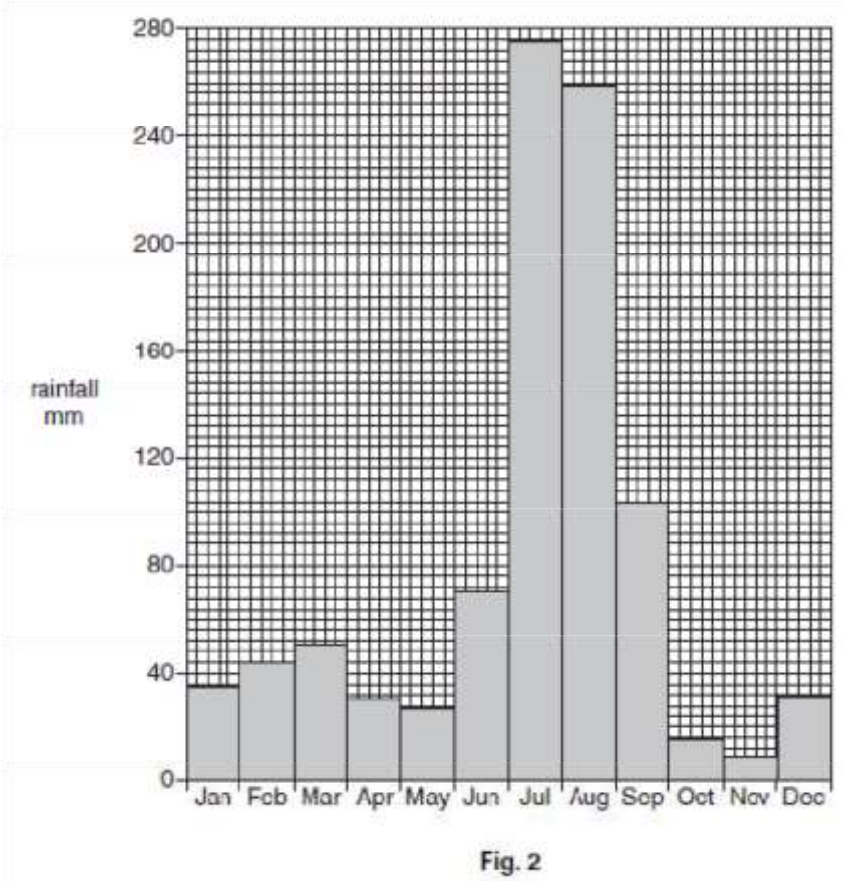


Fig. 2

(c) (i) Explain why many farmers use HYV (High Yield Varieties) of seed. [4]

-Bigger harvest/heavy crop/double yield/fast growth
-Double cropping/multi-cropping
-Disease/pest resistance
-Drought resistance
-Stronger stems
-Growing population/increased demand
-Government encouragement/incentives
-Named variety with crop (e.g. Irripak rice, Maxipak wheat, Nayab 78 cotton)

(ii) Study Fig. 2 again. In how many months is the rainfall less than 40 mm? [1]

6

(iii) Briefly explain four methods of providing water in times of low rainfall. [4]

Explanation of:
-Canal irrigation
-Perennial canal from a dam/headworks
-Inundation canal from a river in flood
-Distribution/diversion canal from a mountain stream
-Tubewell run by electricity
-Shaduf, a bucket on a pole, from river or canal
-Charsa water drawn from a well by animal power
-Persian wheel, a waterwheel turned by animal power
-Ponds and tanks to collect rainwater
-Karez, a tunnel carrying water from the mountains

-Tankers carrying water
-Storage in dam, reservoir, barrage
-Well for groundwater
-Sprinklers

(d) (i) What is alluvial soil? [2]
-silt/loam/sediment
-deposited by rivers when they flood/from flooding
-contains nutrients/minerals

(ii) Explain why alluvial soil is good for crop growth. [3]
-Fertile/contains nutrients (e.g. nitrate/potash/phosphate)
-deep
-fine texture for drainage/not prone to waterlogging
-retains moisture/moisture retentive
-replaced each year

(e) Explain why there is a shortage of water for irrigation in the Indus Plains. [6]
-Canals blocked by silt/siltation
-Low/lack of rainfall/variable rainfall/tail end of monsoon or western depressions/
-Evaporation
-Wastage/leakage/seepage
-Demand of domestic, farming, industry users
-Conflicting users/too many users
-Water pollution
-Siltation in reservoirs/lower capacity
-Less in Sindh because too much used in Punjab
-Examples of use to illustrate answer (e.g. water for washing cotton threads)

[May/June10]

Study Fig. 3, which shows the areas of cultivation for four main crops in Pakistan.

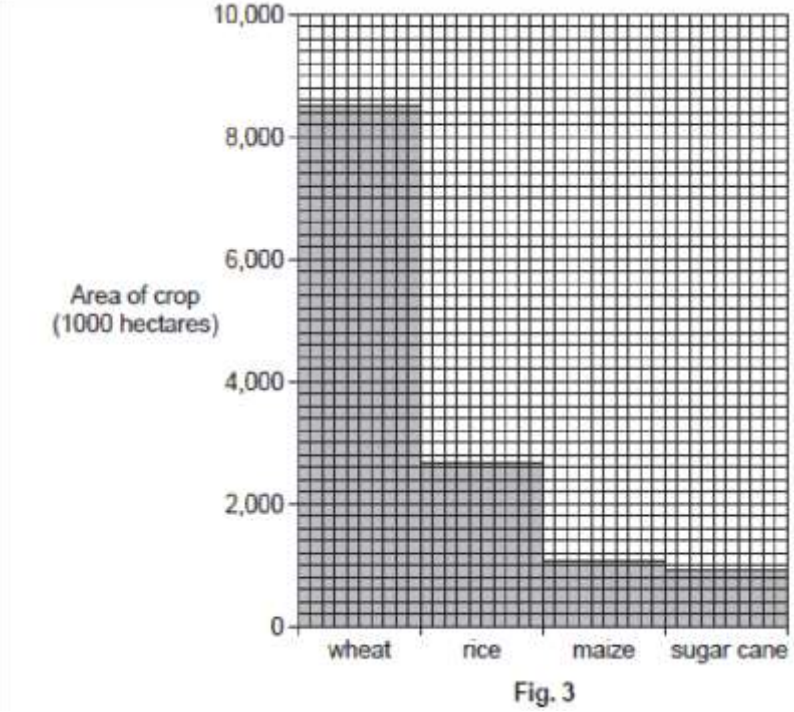


Fig. 3

(i) Which crop covers the greatest area? [1]
Wheat

(ii) What is the area covered by this crop? [1]
8,450–8500 hectares

(iii) Name two other food crops grown in Pakistan not shown on the graph. [2]
Millet / jawar / bajra / sorghum
Pulses / mung / mash / grams / masoor
Oil seed
Named fruit e.g. banana / apple / apricot / date / mango / almond / grape
Named vegetable e.g. tomato / cabbage

(b) (i) Describe the methods of cultivation of wheat on barani (rain-fed) lands. [5]
-when the rain falls in winter / October-November
-seed sown
-harvested when ripe / after 3–6 months / January–March / 90–120 days -ploughing/preparation of soil
-fertiliser
-pest control / bird scaring / pesticides
-weed control / weeding / hoeing
-allow collection of rainfall in ponds / tanks
-allow levelling of land / terracing / embankments to conserve water

(ii) Explain the advantages and disadvantages to wheat farmers of modern irrigation methods such as perennial canals and tubewells. [5]

Advantages

-Fills rainfall gap / water when needed / reduces dependence on rainfall
-Can be controlled / steady supply (not in heavy showers)
-All year round
-Provides more water / irrigates large lands
-Increases yield
-Double cropping possible
-Needed for HYVs
-Less labour required
-Tubewells can lower the water table / reduce water-logging and salinity

Disadvantages

-Cost of installation / expensive
-Problems / cost of maintenance / requires fuel or electricity
-Shortages / canals may run dry / competition with other users
-Lack of technology for pumps/wells
-Lack of electricity / power cuts
-Causes waterlogging and salinity + explanation

(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. [3]

-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

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? [3]

soil erosion, over grazing, desertification

(ii) Explain these and other causes of low farm incomes in Pakistan. [5]

-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
-Poor quality livestock produces less milk, meat etc.
-Little money to spend on better seed, fertiliser because of low farm incomes

Or explain
-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

[May/June 11]

MAIZE PULSES MILLET OILSEEDS TOBACCO

Name two crops on the list that are used mainly for animal feed [2]

maize, millet, oil seeds

Name one crop on the list that is not a food crop. [1]
Tobacco

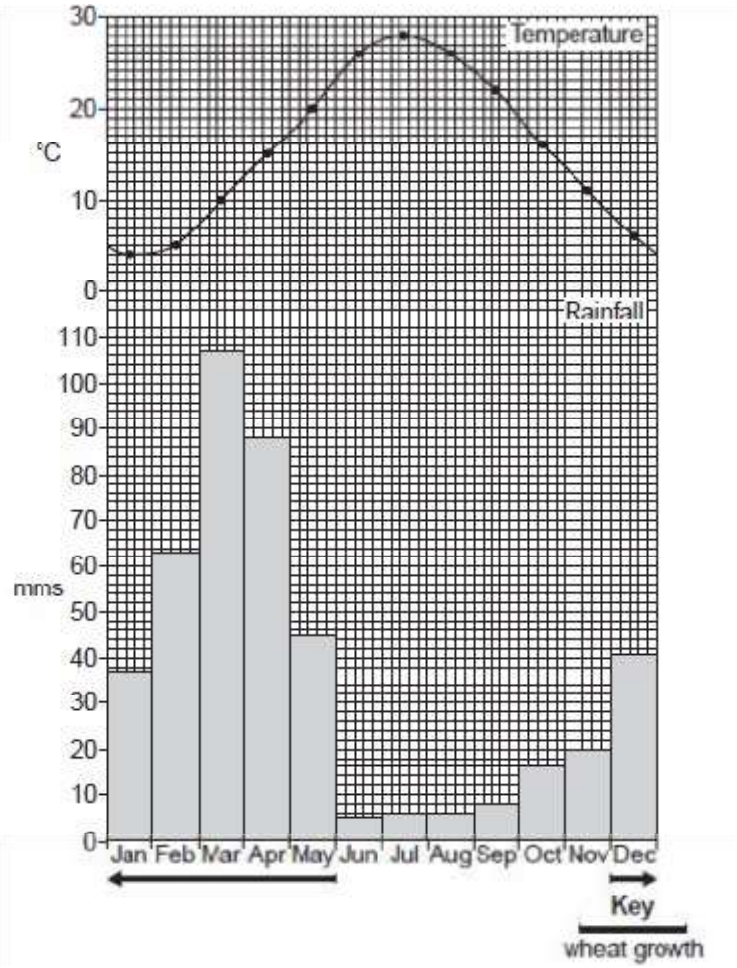
Name one crop that is rich in protein. [1]
Pulses

Name one type of oil seed. [1]
Rape, mustard, groundnut, sesame, sunflower, safflower, soya bean

What is meant by a barani crop? [1]
-Grown without irrigation
-Grown in rainy season

Name one area of Pakistan where most wheat is grown by the barani method. [1]
Potwar Plateau, Northern Punjab, Piedmont plains

Study Fig. 2, which shows the months when wheat is grown by the barani method.



How much rain fell in the wettest month? [1]
107

Describe the barani method of wheat cultivation with reference to the temperatures and rainfall shown on Fig. 2. [4]

-Sown at beginning of winter / Oct–Dec
-As rainfall increases (16–41 mms)
-When temperatures are mild (4–19 °C)
-Grain swells in March–April
-With higher rainfall (88–107 mms)
-Crop ripens / is harvested in spring / April–May
-When temperatures warmer (12–23 °C)

Explain why crop yields may be low when subsistence farming methods are used? [4]
-Uneducated / lack of knowledge of modern methods / use of traditional methods
-Animals / draft power
-Primitive irrigation system
-No mechanisation / tractors
-Family / unskilled labour
-Poor seed / seeds from last harvest / no High Yield Varieties
-No fertilisers / pesticides

-Dung for manure

To what extent can training and land reform be successful in increasing agricultural production? [6]

Training

-Better management / efficiency e.g. knowledge of weather, understanding of soils
-Better methods of cultivation,
-Knowledge of disease
-Better seeds / use of HYVs
-Proper use of fertilisers and pesticides
-Use of machinery / technology
-Better money management / can get loans
-Better marketing

Land reform

-More efficient use of land
-Fields for mechanisation,
-Less time wasted,
-Lower transport costs
-More independence / free from control of landlords

BUT (i.e. To what extent) Reference to:

-Illiteracy
-Poverty
-Power of landlords (Zamidari)
-Floods

[May/June 12]

What is the meaning of the following livestock farming terms:

A Transhumance? [1]

Seasonal movement to higher pastures in mountains in summer and return in winter

B Nomadic farming? [1]

(Seasonal) movement in search of pasture / water / food

What are the advantages and disadvantages of these types of livestock farming in either mountain or desert areas? [6]

Advantages

-Access to good pasture
-Low cost / free
-In areas of poor soil / land
-Source of income e.g. goods to
-Source of food
-Dung for fertile soil
-Camels adapted to desert
-Sheep and goats eat poor quality grass

Disadvantages

-Need to move about / no permanent home

-Poor quality animals / difficult to be commercial / cannot keep buffalo
-Lack of water in desert
-Lack of vets in both areas
-Relies on uncertain desert climate
-Overgrazing ONLY in desert / nomadic farming

(a) Study Fig. 4, which shows the climate of Sialkot.

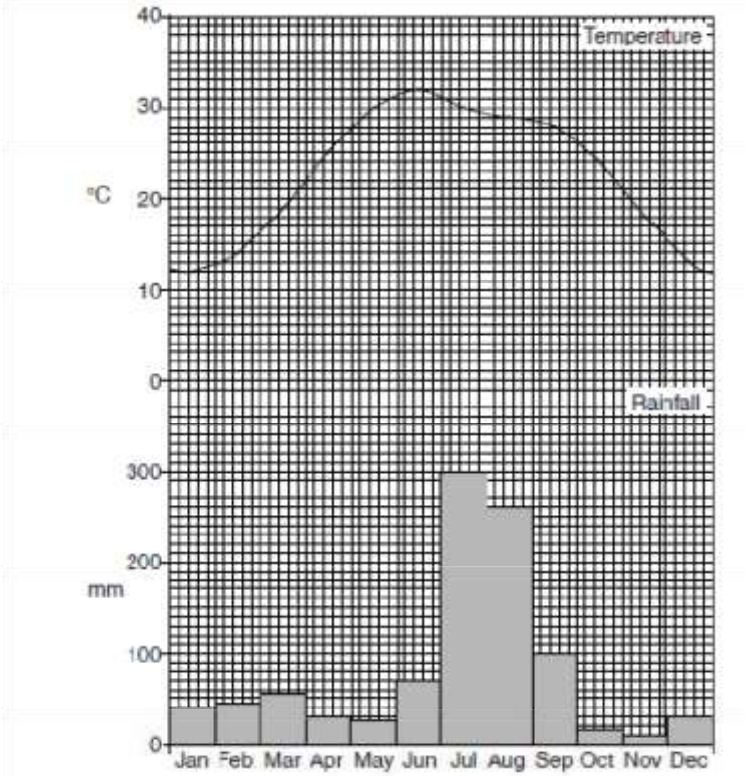


Fig. 4

Circle and label on the x-axis:
A the month when rice would be planted,
Any one month from April to June
B the months when it would be growing,
Any 3–5 consecutive months between May and September

C the month when it would be harvested. [3]
September or October

Explain how canal irrigation is used and controlled to grow rice. [4]
-from river / reservoir / dam / barrage / another canal
-closed or opened (by sluice or gate)
-field flooded in preparation / for nursery beds / before transplanting
-kept flooded during growth
-to a depth of about 30–37 cm / 12–15 inches
-drained before harvest

Study Fig. 5, which shows wheat production.

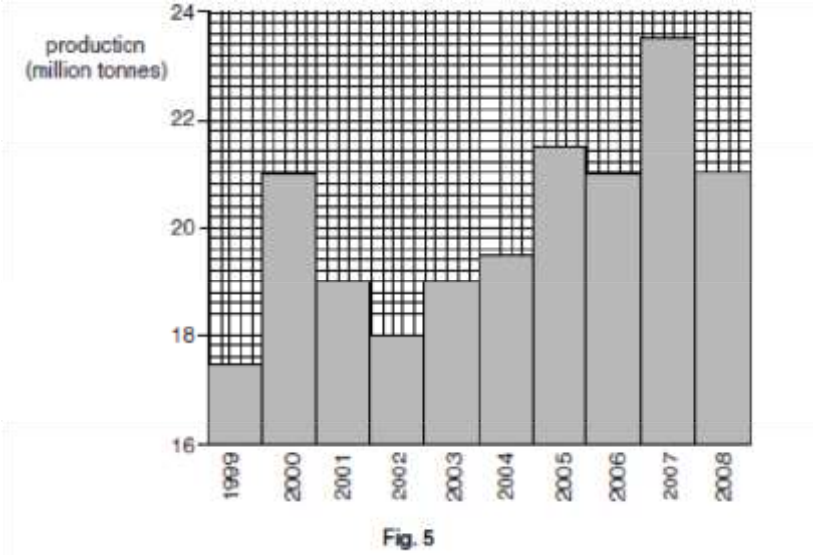


Fig. 5

What was the production in 2008? [1]
21 million tonnes / 21 000 000 tonnes

Compare this to the production of wheat in the years from 1999 to 2007. [2]
-higher than in 1999 / 2001/02/03/04
-but not as high as 2005 / 2007
-same as 2000 / 2006

Suggest reasons for the changes in production over these years. [4]
-Rainfall variability / drought }
-floods / storm damage } reference to a form of water supply max 2
-poor irrigation }
-temperature
-pest attack
-capital / loans / profit from previous year
-family sickness
-security / theft
-wheat price
-reasons for overall increase e.g. High Yield Varieties, better / more fertiliser, mechanisation, training
-population increase

To what extent is it possible to increase agricultural production by the use of modern methods? [6]
<u>Possibilities</u>
-More growth with fertilisers
-Less damage with pesticides
-More yield with better seed / HYVs /GM crops
-High Yield Varieties / GM pest resistant
-Benefits of machines
-named modern irrigation method
-Treatment of waterlogging and salinity e.g. with tubewells
-Crop rotation to improve fertility eg. growing pulses, fallow
-Training and education

Problems (can be environmental or economic)
-Lack of literacy / education
-Means less training
-Lack of money to invest
-Traditional farming methods
-Over-use of irrigation water causes waterlogging / salinity
-Small / fragmented farms
-Causes and effects of pollution
-Build up of resistance to pests
-High cost of fertiliser, machinery etc.
-Water pollution from runoff with fertiliser / pesticide
-May be unsustainable

[Oct/Nov 03]

The map, Fig. 2, shows the percentages of land under cultivation throughout Pakistan.

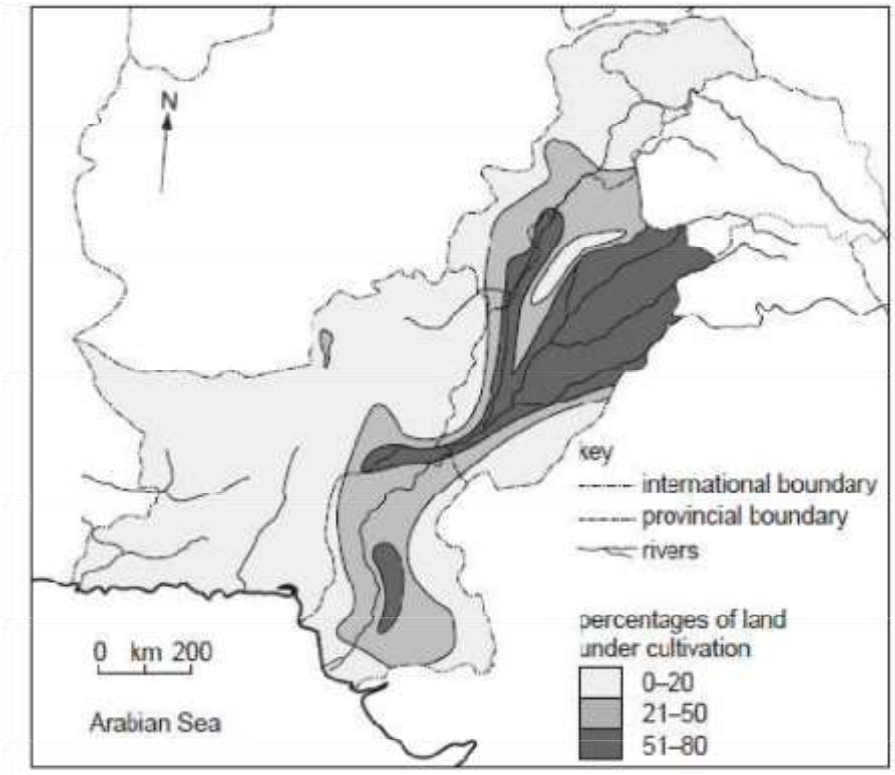


Fig. 2

(i) Describe the distribution of the areas with more than 50% of their land under cultivation. [3]

(ii) Explain why these areas have more than 50% of their land under cultivation. [6]

(b) (i) Describe the distribution of the areas with less than 20% of their land under cultivation. [4]

(ii) Explain why these areas have less than 20% of their land under cultivation. [5]

(c) In areas where little cultivation is possible, nomadic or semi-nomadic pastoral farming takes place. Describe this type of farming and explain the reasons for it being nomadic. [7]

[Oct/Nov 04]

On 15th April 2002 a heavy thunderstorm occurred in the catchment area of the River Gomal in the Sulaiman mountains. Photograph **B** (insert) was taken on 17th April on the piedmont plain east of these mountains. It shows the Gomal flood plain which was being prepared for farming, making use of this natural inundation (flooding).

How does farming which depends on natural inundation (flooding) like this differ from farming that depends on irrigation? [4]

-farming using natural rainfall/flooding
-can only be carried out after flooding/must wait for floods
-farmers have no control of water supply/rain variable
-seasonal /continuous cropping rarely possible
-higher banks/bunds have to be built to hold as much water as possible when it comes
-(usually) can only grow coarser grains/millet (bajra)/sorghum
-(jowar)/pulses
-lower yields/output
-variable yields/outputs
-further floods could destroy seedlings/standing crop
-less advanced/traditional methods
-annual floods supply nutrients
-smaller farms

Away from the Gomal flood plain, in those areas which the flood waters cannot reach, barani farming is practised. Give the main characteristics of barani farming and name two crops grown in this way. [6]

<u>characteristics</u>
-depends (entirely) on rainfall/rain-fed area
-(low) banks/bunds constructed
-field size varies considerably/small/large fields
-ploughing after/if rain falls
-farmers too poor to own tractors/lack of machines/traditional methods
-use of animal dung/no fertiliser
-some years rainfall is insufficient/crops fail
-low yields
-often sheep/goats reared as alternative source of food/income
-family labour

crops

-wheat
-barley
-groundnuts
-millet/bajra
-pulses/gram/mash/masoor/moong
-sorghum/jowar
-oil seed/rape/mustard
-maize.

(c) Rice is one of Pakistan's major crops.

(i) Why is rice a kharif crop? [2]

-requires warm temperatures for growth
-20°C to 30°C
-dry season for harvest
-monsoon rain for growth/flooding fields
-1270-2000mms
-winter/rabi season is too cold

(ii) Why is rice not grown in areas which only practise barani farming? [2]

-requires over 1275mm rainfall (in growing season)
-prefers over 2000mm rainfall
-nowhere in Pakistan has this amount of rainfall (in the growing season)
-not enough rain for flooding fields

(iii) Explain why rice growing is important in north-east Punjab and in the northern Lower Indus Plain of Sindh. [5]

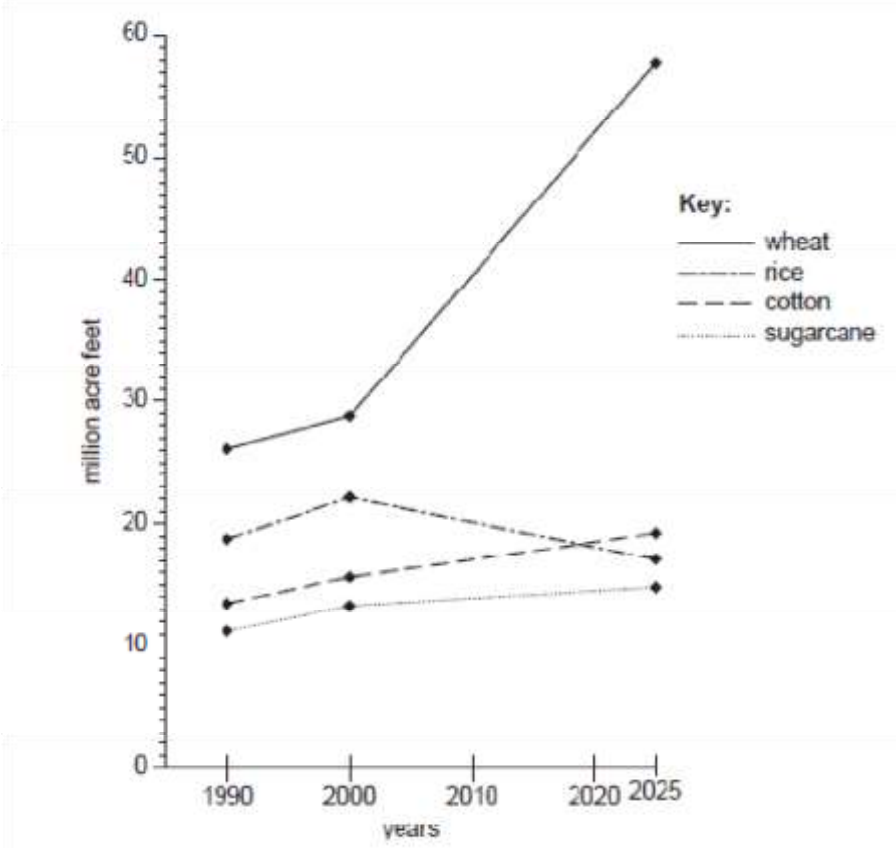
-good irrigation
-details of canal network
-flat land assists in provision of irrigation/for use of machines
-have clay/loam/alluvial soils/soils rich in minerals/soils which retain
-fertilisers/rich in nutrients
-have water retentive soils
-north-east Punjab receives more/heavier rainfall than any other plain
areas in Pakistan …
-large population/towns/cities
-large farms
-tubewells in Punjab
-impervious layer below soil
-high monsoon rain in Punjab

(iv) Name the main type of rice that is exported and name the country which was a part of Pakistan and now imports rice from Pakistan. [2]

Basmati
Bangladesh

[Oct/Nov 05]

The graph, Fig. 2, shows the expected water demands for 4 crops in Pakistan up to the year 2025, in million acre feet (MAF)



(i) Which crop is expected to have a decrease in its water demand by 2025? [1] Rice

(ii) By how many MAF is the water demand for wheat expected to increase between 1990 and 2025? [1]

31/30 – 34

(iii) Why is an increase in water demand expected for wheat? [3]
-More wheat being grown/larger area cultivated/growing demand
-More desert areas being reclaimed
-More High Yield Varieties/Maxipak wheat needs more irrigation
-Increased yield per hectare
-More double cropping
-More spraying and liquid fertiliser
-More irrigation

(iv) Why is a much smaller increase in water demand expected for cotton? [3]
-Less land suitable for cotton/too wet in North

-Fertile soil needed – fertiliser expensive
-Fluctuating export demands due to competition
-Fluctuating prices
-Land changing to wheat cultivation
-Cotton not needed for food
-Cotton cultivation expanding more slowly than wheat/other crops

2 (a) Study Photograph A of a valley in the Hindu Kush.

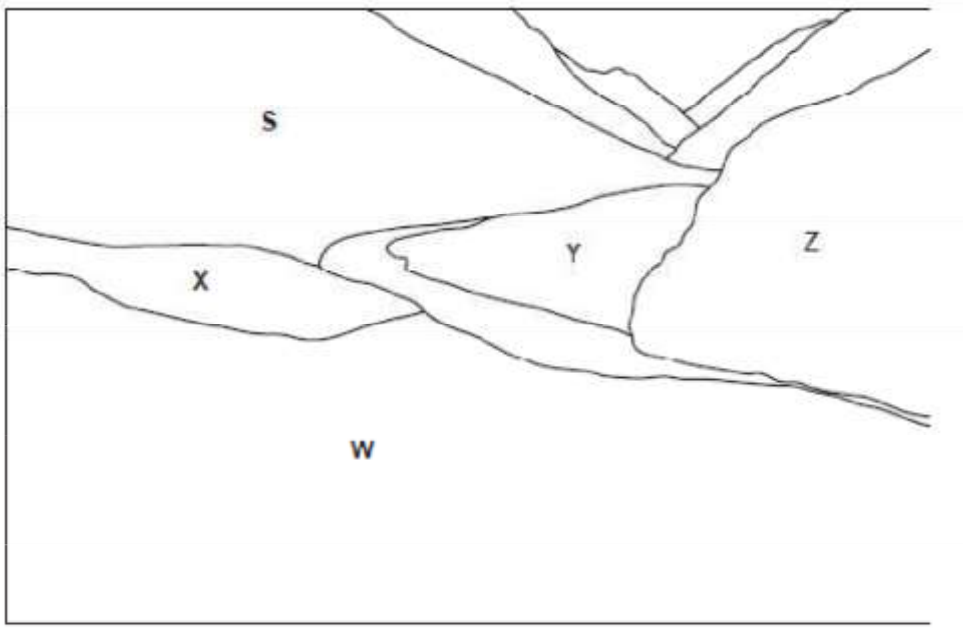
(i) Name this type of animal. [1]
Cow(s)/cattle

(ii) Suggest why these animals were taken here. [2]
-Food/pasture/grazing/
-water/drinking

(iii) What type of farming is this? [1]
Livestock/pastoral/transhumance/nomadic/semi-nomadic

(iv) Give two outputs of this farming system that can increase the income of the farmer. [2]
-Hides
-Meat
-Milk
-Butter
-Bones

Study the line sketch, Fig. 3, of Photograph A.



(i) Describe two differences between the vegetation in areas X and Y. [2]
X short - Y longer
X few/no bushes/trees - Y more bushes
X no bare ground - Y some stony areas

(ii) What features in area Y suggest that it is not used for growing crops? [2]
-Mixture of vegetation/no single type of plant
-No fields/field boundaries
-Floodplain/slip off slope likely to be flooded
-Rocks/pebbles/evidence that it has been covered with floodwater
-Not level/uneven

(iii) The slope in area X is terraced. Explain how this will this help the farmer to grow wheat. [3]
-Make flat land for easy cultivation
-Holds soil/prevents soil erosion/makes a deeper soil
-Holds water/prevents drainage
-Keeps minerals/fertiliser in soil

(iv) Study areas W and Z. What two features shown suggest that these areas will never be cultivated? [2]

-Too steep
-Little soil/no soil
-Rocky/rugged
-No water/too much drainage/dry

Study the climate graph, Fig. 4, which shows the rainfall/snowfall and mean monthly temperatures in the valley.

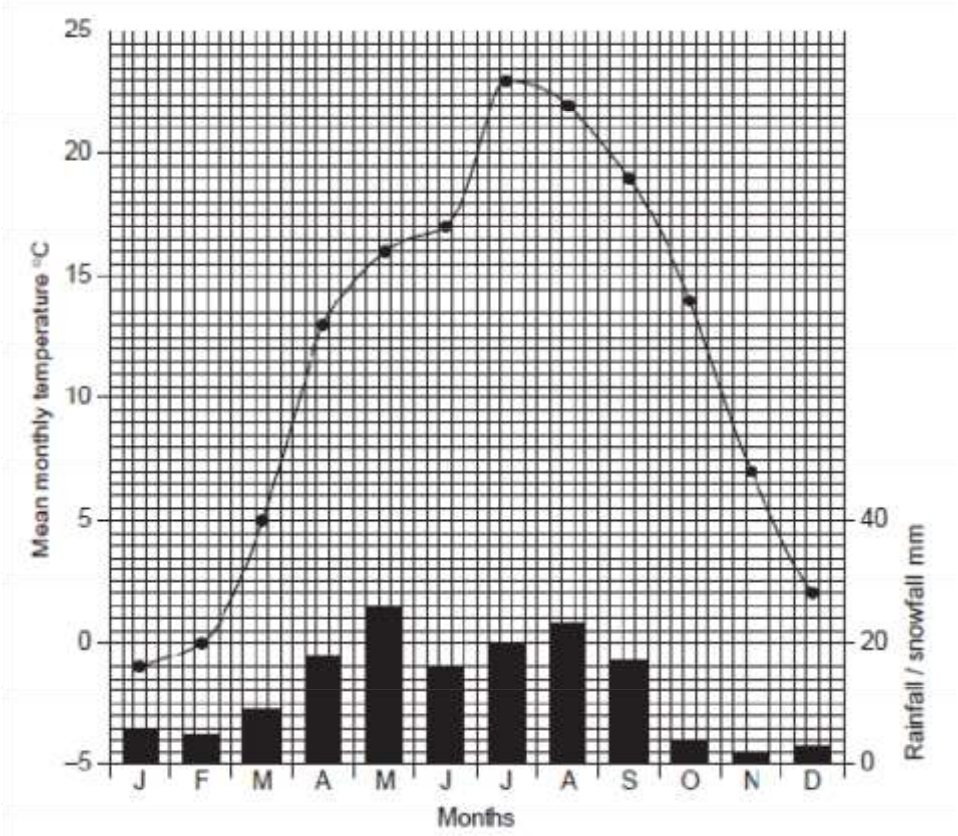


Fig. 4

(i) The wheat is harvested about 6 months after it is sown. In which month is the wheat most likely to be sown here? [1]

April/May

(ii) Why is the climate in the months after it is sown good for the growth of wheat? [3]

-Mild temperatures 13-23
-Warmer for ripening July 23, August 22
-High/Moderate rainfall 16-26 mms per month
-(Light) rain before harvest/increase in July and August

[Oct/Nov 06]

Study Photograph A (Insert) of a rural area in Hyderabad District.

(a) (i) What is this man doing? [1]
Ploughing / cultivating / tilling

(ii) Why is the soil at X a different colour from the soil at Y? [1]
-it has been ploughed / turned over
-it has not dried out
(iii) Name three inputs for farming other than soil that can be seen on the photograph. [3]
-bullocks/ cattle/cows/oxen (not buffalo)
-plough
(manual) labour
(iv) Describe three other processes that may be carried out before a crop is harvested. [3]
-Sowing seeds
-Fertilising to provide extra nutrients
-Weeding to give plants space to grow
-Irrigation / watering to provide water
-Spraying pesticide to kill insects / virus / weeds

(b) (i) What is subsistence farming? [1]
Producing food for ones self / family (that it not for sale)

(ii) Name two animals other than those on Photograph A that may be kept by a small-scale subsistence farmer. [2]
-Goats
-Sheep
-Buffalo

-Chickens / poultry
-Mules
-Donkeys

(iii) For each of the two animals you have named in (b)(ii), explain how it is important to the farmer and his family. [4]

This depends on the animal chosen, accept any appropriate product, e.g. Skin for leather, eggs for eating, milk for drinking

-Milk
-Milk products
-Eggs
-Meat
-Nutrition
-Skin / hide
-Haulage / carrying

(c) (i) Why does the output of a small-scale subsistence farm vary from year to year? [4]

-Variable rainfall / monsoon / water supply
-Pests and diseases
-Uses own seed / not High Yield Varieties

(ii) If this farmer has a good crop and can sell some in the market, how may he use the money he earns (capital) to improve his yield (production) in the next year? [4]

-Better seed – High Yield Varieties, GM, disease/pest resistant
-Fertiliser – to provide nutrients
-Pesticides – to kill insects, viruses etc.
-New animals – younger, better breeding
-New tools/implements – better/faster work
-Repairs – to machinery, irrigation system, storage

(iii) Give two ways in which a small-scale subsistence farmer can supplement his income. [2]

Carpenter
Blacksmith
Shoe-maker/cobbler
Driver

[Oct/Nov 07]

Study Fig. 2, which shows the climate of Multan.

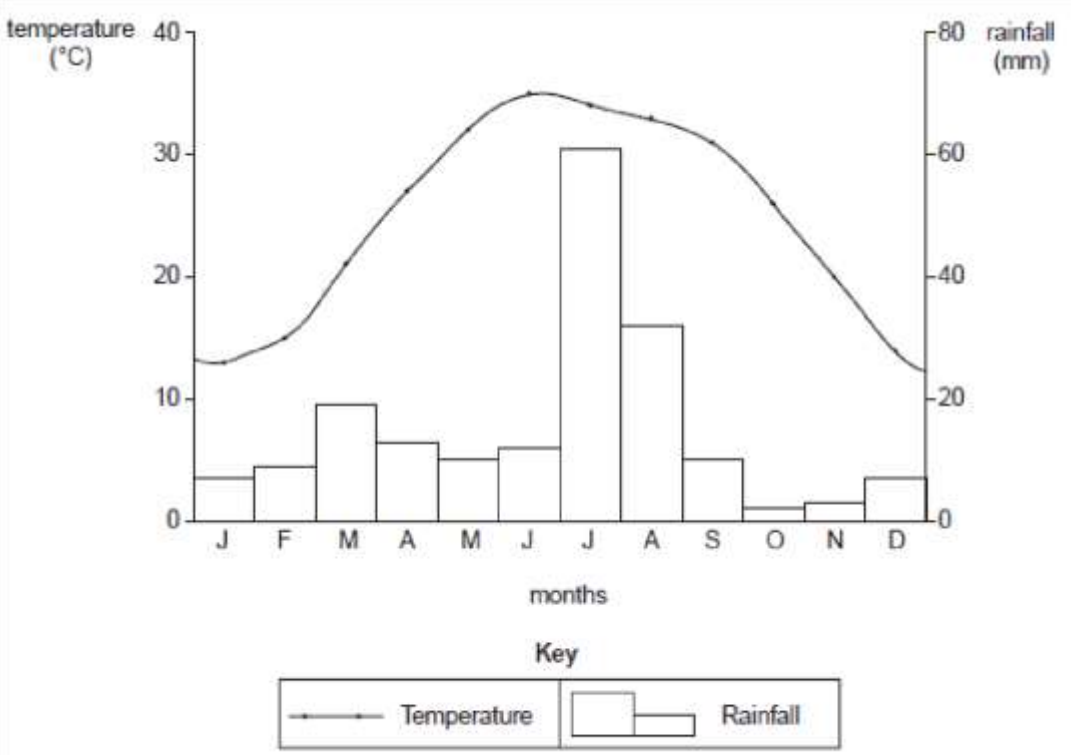


Fig. 2

(i) Explain why cotton is grown in this part of the Punjab. Refer to Fig. 2 in your answer. [5]

-High summer temperatures/Summer temperatures over 30/May–September 32–31
-Temperature rises to 35 in June
-Not too cold/No temperatures below freezing/Lowest temperature 7 in Jan + Dec
-Some rainfall in April–May for sowing/15-18mms
-Rainfall increases in July–August for growth/to 60mm
-Little rain/dry on October–November for ripening and harvesting/less than 10mms
-Alluvial/loam }
-Moisture retentive }
-Rich in humus }
-Lime }
-Deep soil }
-Flat land
-Dry climate to reduce pest attacks
-Good irrigation available
-Good roads/infrastructure
-Access to capital/investment

(b) (i) Explain how climatic hazards may destroy or reduce the yield of cotton on farms. [4]

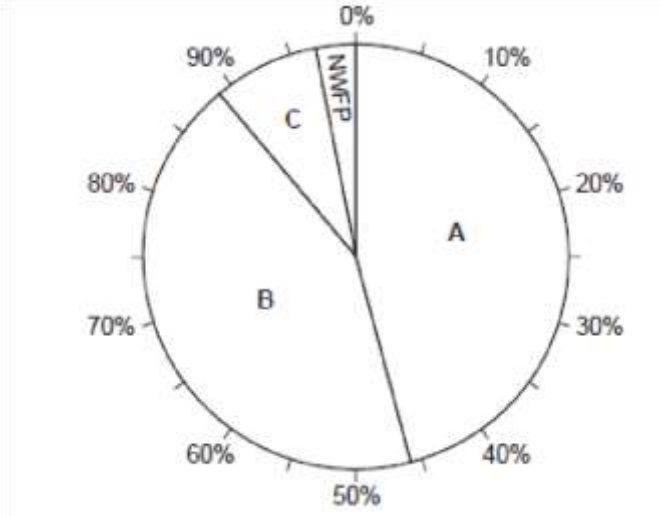
-Cold temperatures/Frost + can kill plants
-Rain + damages cotton boll before picking
-Floods + can wash crops away/soil erosion

-Thunderstorms/Cyclones – damages to crops/soil erosion
-Drought + can reduce growth, kill young plants

(ii) Explain two other factors that may reduce the production of cotton in Pakistan. [4]
-Virus/Pests/disease + e.g. Leaf-curl virus or other named disease
-Lack of irrigation water + reduces yield
-'Waterlogging and salinity' or other soil damage + reduce yield
-Economic/drop in demand/other crops make more money
-Pollution + effect
-Loss of fertility – not replenished by floods/depleted by crop.

[Oct/Nov 08]

Study Fig. 5, a pie chart showing rice production in Pakistan by province.



(i) Name the provinces A and B where most rice is grown. [1]
Punjab and Sindh

(ii) What percentage of total rice production comes from these two provinces? [1]
88% or 89% OR
46% A and 43% B

(iii) Name a variety that has doubled rice production. [1]
Irripak/IR8

(b) (i) Explain why the cultivation of rice is labour-intensive. Refer in your answer to the work done from planting the seeds to harvest. [5]
-nursery for seeds
-repairing bunds for water
-prepare fields by plouging/weeding
-flooding/irrigation
-transplanting seedlings
-fertiliser for nutrients/good growth

-pesticide to kill pests/for better growth
-drain water
-cutting/harvesting ripe crop

(ii) Name a type of machine that can be used for rice cultivation instead of human labour. [1] tractor, harvester, mechanical irrigator

(iii) What are the advantages and disadvantages of using this machine? [4]
Advantages
-quicker
-more efficient/less tiring
-learn mechanical skills
-needs less labour
Disadvantages
-expensive
-can break down
-cause unemployment
-needs larger fields
-causes compaction
-needs skilled workers
-cannot be used on a small farm

(c) Study the list below:

SOIL	FERTILISER	RAIN	IRRIGATION	SEEDS
SUNSHINE	PESTICIDES	DRAINAGE	KNOWLEDGE	

(i) Choose two physical inputs from the list above. Explain how these can increase rice yields. [6]
-soil – best clay/clay and loam, provides nutrients, needs water retention, can be drained
-rain – needs a minimum of 1270mms, preferably 2000mms, at the correct time of year,
-at start of monsoon, gentle showers, none during harvest
-sunshine – for warmth, ripening, photosynthesis
-drainage – water retention, slope to prevent waterlogging or flooding

(ii) Choose two human inputs from the list above. Explain how these can improve rice yields. [6]

-fertiliser – better than dung, provides nutrients, rice exhausts soil
-irrigation – enough water, at correct time, fills the gap of rainfall
-pesticides – kills pests, targeted at pest, used at correct time, examples
-seeds – GM, High Yield Varieties, new strains developed to increase yield, grow faster, shorter straw,
-pest resistant
-knowledge – better cultivation methods, management, skills for machinery, examples -drainage – controlled/better water supply/correct amounts

[Oct/Nov 09]

Read Fig. 3, an extract from a magazine.

> Most farmers in Balochistan do not have access to water from the River Indus. There are many small rivers that flow into shallow lakes but they are dry for most of the year. These small rivers can provide some water for irrigation. Other sources of water are underground, and some water flows in tunnels from the mountains.
>
> *Irrigation News*

Describe the irrigation methods that can be used by farmers in Balochistan and comment on the success of such schemes for increasing farming output. [6]

-Karez
-canals from rivers/diversion canals
-tubewells
-wells (primitive)
-shaduf to lift water
-charsa to lift water
-Persian Wheel to lift water
-tanks for storage
-dams (small)

<u>For Example – The Karez</u>

-underground canal/tunnel
-uses groundwater
-vertical shafts for cleaning
-water taken in turn according to shares in ownership
-irrigates oases

Example – Quetta-Pishun valley, Mastung valley

-Success – less important now, neglected – bad
-sources drying up – bad
-lack of government investment – bad
-continuous supply – good
-only water in the desert – good
-water from mountains put to good use – good
-does not evaporate – good

2 (a) Study Photograph A showing a crop of sugar cane.

(i) Describe the appearance of this crop. [2]
-tall/medium height
-not fully grown
-thin leaves/long leaves/like grass
-dense/close together
-good growth because lack of disease/well irrigated

(ii) Explain how the growth can be improved by
A irrigation
-plants need water to photosynthesis/to be healthy/sugar needs a lot of water
-makes it grow faster/bigger/higher yield
-needed in dry periods/drought/make up deficiency in rainfall
-to remove salinity (in the soil)

B fertilisers. [4]
-provide minerals for growth/reduces crop failure/nutrients
-makes up for deficiencies/Pakistan soil deficient in minerals
-minerals need replacing after cultivation
-examples of minerals e.g. nitrogen, potash (potassium), phosphate
-makes it grow faster/bigger/higher yield

(b) Explain how this crop is processed. [6]
-taken to factory/mill
-quickly/without delay
-washed/scrubbed
-crushed
-juice collected
-refined
-crystallised
-whitened/made into white sugar
-molasses/brown sugar
-baggase produced (a waste product)

(c) Study Fig. 4, a graph of sugar cane production.

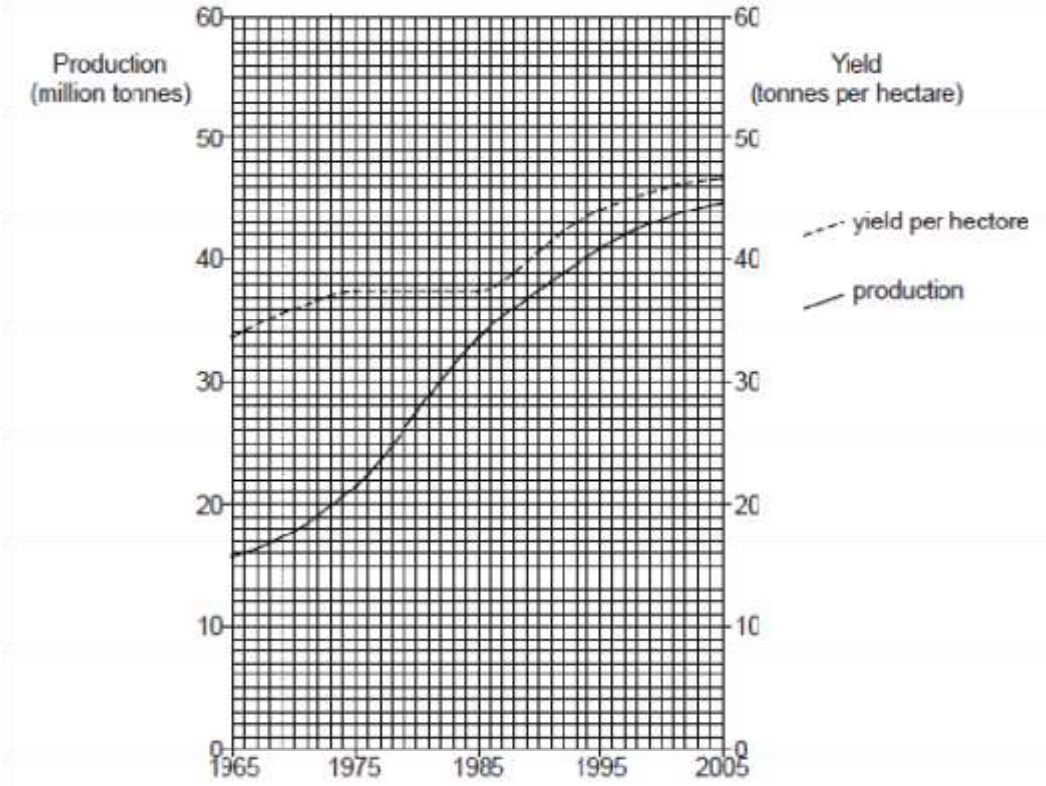


Fig. 4

(i) What was the increase from 1965 to 2005 in
A production?
28–29 million tones

B yield per hectare? [2]
13–14 tonnes per hectare

(ii) Name an area of high sugar cane production. [1]
-East-central Punjab/Faisalabad/Sardodha
-South-central Sindh/Hyderabad/Badin
-Central NWFP/Charsadda

(d) Study the list of factors below which affect agricultural development:

mechanisation	land consolidation	transport improvements	
financial loans	education	telecommunication	new seed varieties

(i) Choose three of these factors and for each explain how it increases production of sugar and other agricultural products. [6]
-Mechanisation – faster work, more efficient, better preparation, can thresh and harvest, 'does not need to rest', use of tubewells
-Land consolidation – bigger fields, more mechanisation

-Transport – faster speed e.g. sugar cane to the mill prevents losses, dry ports for inputs e.g. fertiliser, experts (advisers) can visit
-Loans – funds to buy inputs e.g. fertiliser, machines, bigger fields, purchase more land, better irrigation
-Education – knowledge of better methods,
-Seed varieties – higher yields, resistance to pests and disease, less water demand, better germination
-Telecommunication – access to information, education, skills

(ii) Explain why it is important to increase the production of sugar and other agricultural products in Pakistan. [4]
-increasing population
-nutritious/need for better food production
-higher incomes (for farmers and businessmen)
-increase exports/earn foreign exchange/increase GDP/increase Pakistan's income
-reduce imports/improve balance of payments
-provides employment in (named industry)
-by-products e.g. Bagasse for fuel, Board for building

[Oct/Nov 10]

Study Fig. 4, which shows patterns of goat rearing in Pakistan.

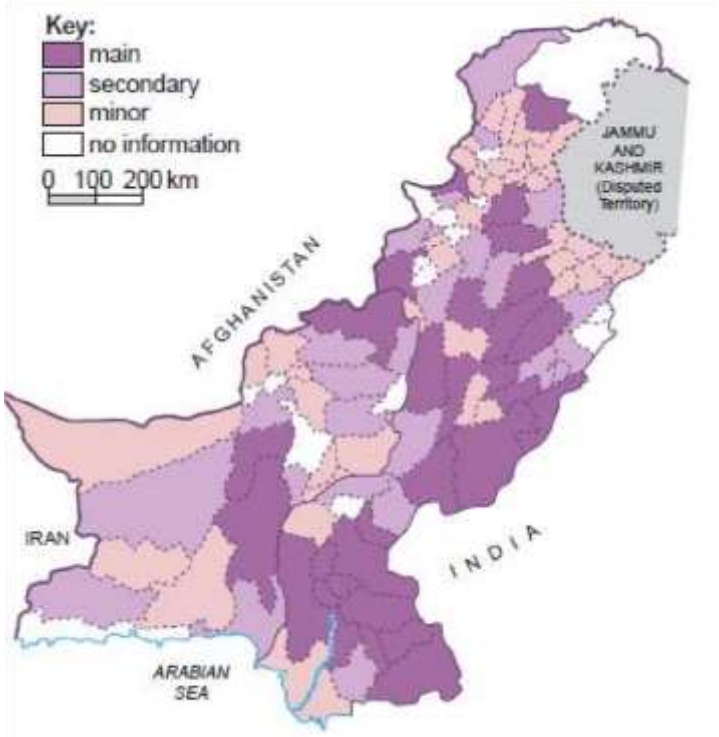


Fig. 4 for Question 2

Describe the distribution of goat rearing in Balochistan. [3]
-Widespread / low and moderate in most areas

-Main area in SE / E / Sindh border / Kalat / Khuzdar / Central Brahui Range / Kirthar

-Range / Indus Plain

-Main area in North / NW / NWFP border / Zhob

-Low in West / Western borders / Chagai Hills / Ras Koh / Kharan desert

Suggest why the government of Pakistan discourages the rearing of goats. [2]
-Overgrazing

-Loss of vegetation / deforestation

-Soil erosion / soil loose

Why are there many nomadic farmers in Balochistan? [3]
-Shortage of / to search for grazing / food

-Shortage of / to search for water

-Agriculture / cultivation /crop growth difficult or impossible

-Low population (so plenty of land)

Explain why buffalo are not reared in Balochistan. [3]
-Lack of water to drink

-Lack of water to wash / lie in / bath in / keep cool

-Lack of fodder crops / poor grazing

-Lack of demand / few urban areas

Study Photographs A and B showing a buffalo farm in Lodhran district, Punjab.

Photograph A for Question 2

Photograph B for Question 2

How do the photographs show that these buffalo are being kept in good living conditions? [6]

Photo A

-Covered shelters / shade / roof / shed etc.

-Brick / concrete / will not collapse

-Fodder / food

-Feeding trough

-Brick standing by troughs

-Clean conditions / dung cleared away

Photo B
-Water for bathing / washing / cooling /drinking

-Concrete pool

-Clean water / water from well

-Organised storage of fodder / dung

Suggest why buffalo farms can often be found around urban areas. [2]
-Food (for urban population) / demand for milk or meat

-Must be fresh / deteriorates quickly

-Can make deliveries / supplied on a regular basis

-Products for processing, e.g. milk, ghee, butter

Meat provides a valuable source of protein in food, and there are many other useful products from animals. Explain the advantages and disadvantages of developing livestock farming in Pakistan. [6]
Advantages
-More food / healthy food / great demand – with e.g.
-Other products – with example (hides, horn)
-Exports (with example)
-Employment / earnings
-Manure / dung / gobar / for burning
-Processing industries (with example)
-Sustainable e.g. animals reproduce, traditional skills

Disadvantages
-Loss of land / water for food crops.
-Overgrazing problems.
-Less investment in other forms of farming.
-Low income / low profit.
-Disposal of waste / problems of cleanliness / pollution (with example)
-Cost of setting up / fodder / vets bills etc
-Disease transfer to humans
-Some products not of export quality / banned by western countries
-Not sustainable

[Oct /Nov 11]

Study Fig. 2, which shows cotton growing regions in Pakistan.

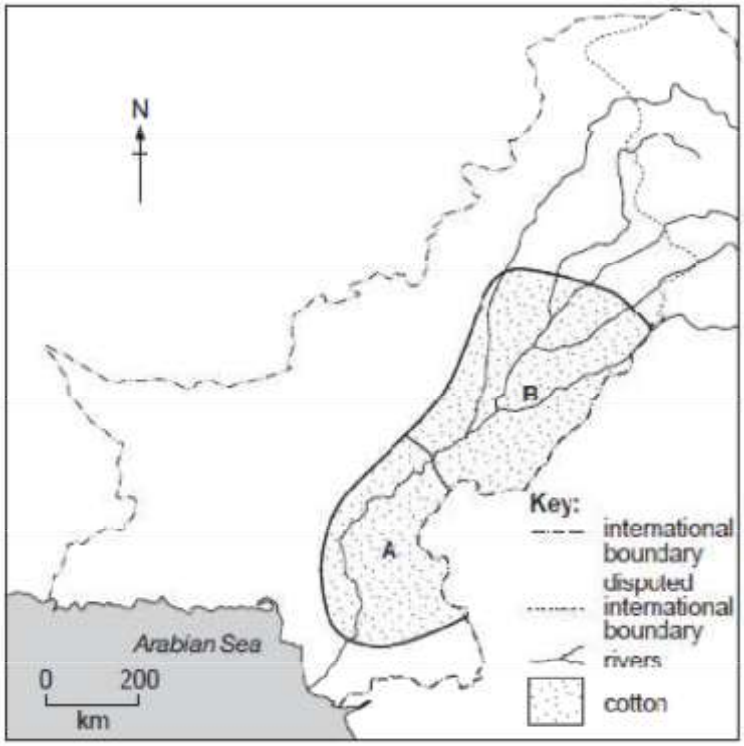
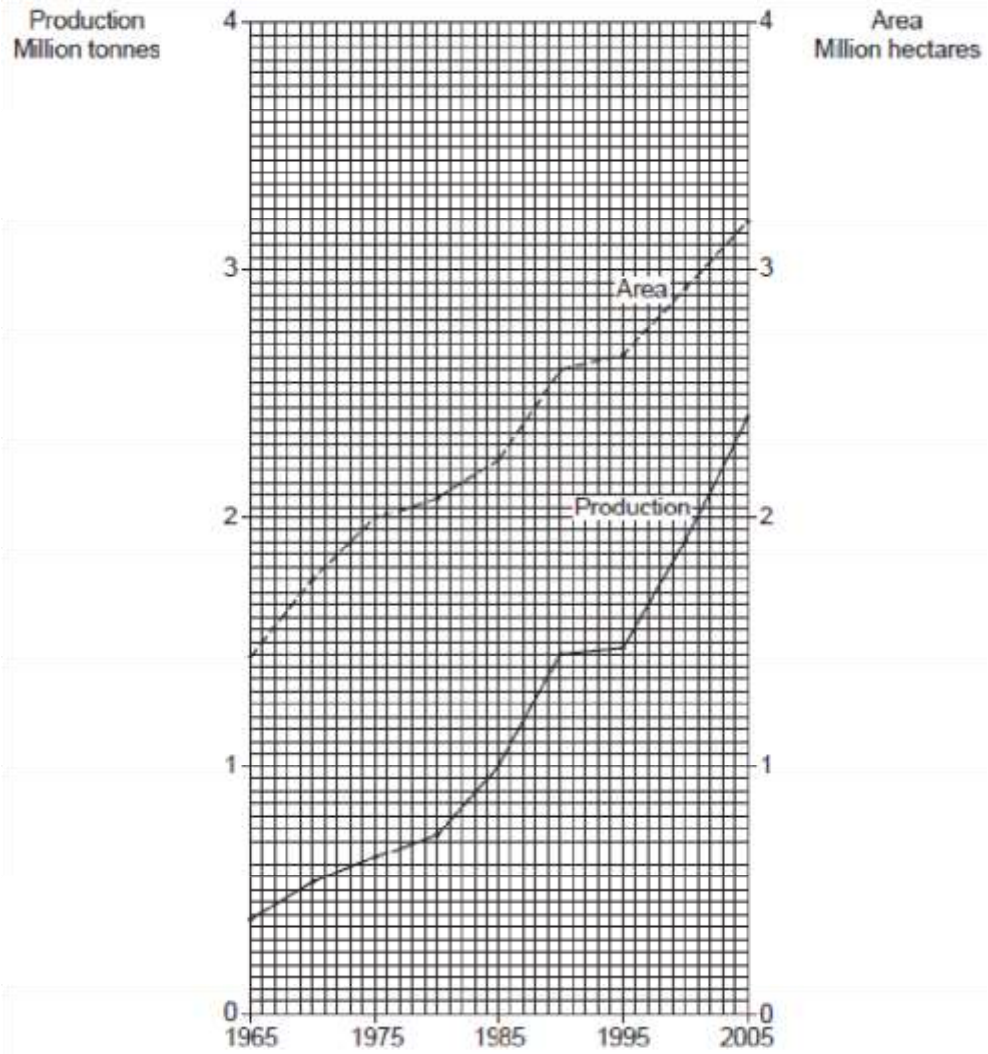


Fig. 2

Name the regions A and B. [2]
A – north /north-east / Upper Sindh
B – south / south-west / Lower Punjab / Upper Indus Plain
Why is cotton not grown further north? [2]
-Too cold (in summer / growing period)
-Sensitive to frost
-Rain / too wet during harvest
-Poor soil / infertile etc.
-Steep slopes / no flat land
-Remote / long way from factories, demand

Why is cotton not grown further west? [2]
-Too dry / lack of rainfall (for growth)
-Lack of irrigation canals
-Too cold (in growing period)
-Poor soil / infertile / etc.
-Steep slopes / no flat land
-Remote

Study Fig. 3, a graph of cotton farming



State the area used to grow cotton in 2005. [1]
3.2 / 3,200,000
State the production in 2005. [1]
2.4 / 2,400,000
By how much has the area used to grow cotton increased from 1975 to 2005? [1]
1.2 / 1,200,000 hectares / 2.8–2.9 acres
Which has increased faster, the area used or the cotton production? [1]
(Cotton) production

Explain three factors that have caused the yield of cotton to increase per hectare. [6]
-fertiliser for nutrients /fertility + Pakistan soil deficient in nitrogen, better than dung
-irrigation to make up rainfall deficiency + named modern method, all year water
pesticides as pests reduce growth + example
-mechanisation for efficiency + faster, better quality of work, named machine
-education in modern methods + examples of how things can be improved
-HYVs high yield + pest resistance / double cropping / example
-capital for buying inputs + example
-land reform for more motivation, bigger fields

Explain why cotton yields vary from year to year. [3]
-rainfall / damage to cotton boll before harvest
-summer temperatures / early frost
-availability of water from irrigation or rain
-floods / high winds / storms etc. causing damage
-pest attack causing damage
-previous income affecting investment so cannot buy good quality inputs
-sickness of labour affecting production

What are the advantages and disadvantages of developing the cotton manufacturing industry in Pakistan? [6]
Advantages
-Established industry / good reputation worldwide
-Creates jobs / employment / develops skills
-Traditional skills / cheap labour available
-Value-added export / export of named product or to named area / large scale export/ main Export
-Higher price (because it is processed) / value added
-Farmers can increase income
-Better named infrastructure
-Less imports / can meet demands of population
-Can compete with other countries
Disadvantages
-Lack of modern skills / education
-Lack of money to invest / investors
-Competition from other countries
-Old machinery, breakdowns, slow, old products / need to import machinery
-Water shortage for manufacturing / conflict with other users
-Power shortage / power breakdown,
-Poor roads and railways / transport to ports,
-Government policy / changing policies
-Less land for growing food other crops
-Problems of poor harvest / pest attack / climate problems
-Effects of increase in urban population
-Machines will replace manpower / loss of unskilled jobs
-Lack of investment in other industries / services

Study Photograph B

What are the animals shown in the photograph? [1]
Sheep / goats (list rule)

(ii) Describe the topography (relief) and vegetation of the area shown in the photograph.

-Flat
-Gently sloping, undulating
-Small ridges
-Vegetation Sparse
-Scattered / uneven
-(Small) bushes, scrub, trees, thorny

(iii) Explain why these animals are reared in a nomadic way in arid areas. [3]
-Search for / lack of food / pasture
-Quickly finished so have to move
-Search for / lack of water
-Move with the weather
-No infrastructure for settlement

What are the disadvantages of keeping animals in a nomadic way? [2]
-Overgrazing / soil erosion / desertification
-Low incomes
-Animals may die / starve / poor quality animals
-Difficult to improve / develop

-Lack of veterinary care / disease spreads easily
-Poor breeding

Suggest an alternative way of keeping these animals. [1]

-In stalls / stall feeding
-In fields / fenced areas
-Transhumance

Power Resources

[May/June 04]

Study Fig. 2.

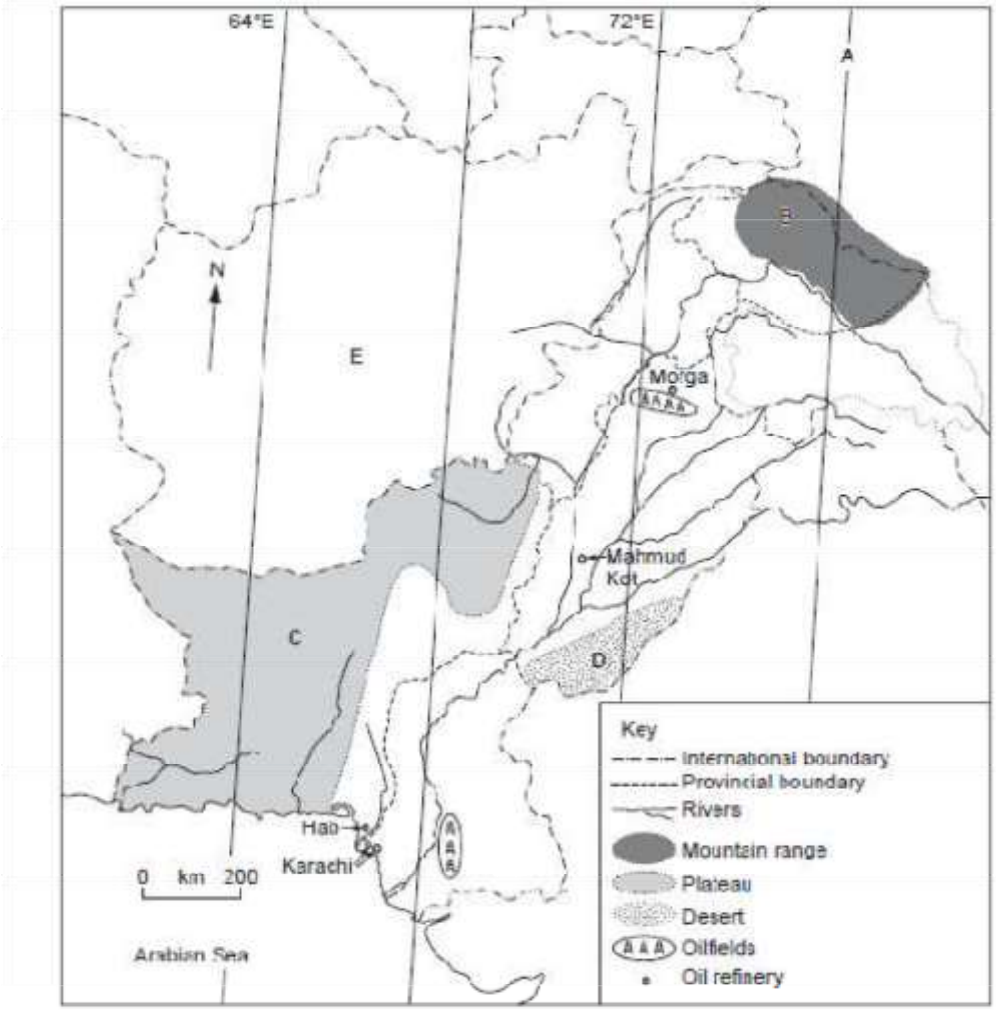


Fig. 2

(i) Describe the distribution of oilfields. [2]

- (central) Potwar/Potohar Plateau/in north-west Punjab/between rivers Indus and Jhelum
- Southern/Lower Sindh/Hyderabad/Badin (area)

(ii) Describe and explain the distribution of oil refineries. [4]

Distribution:

- Morga refinery is on Potwar Plateau/near Attock (oilfield) Punjab

- Mahmud Kot (Mahmood Cot) is on (southern end of) Sindh Sagar doab/west of Multan/S Punjab/between Rivers Indus and
Chenab/lower Upper Indus Plain - on coast
near Karachi/at Hab/Sindh Coast

Explanation:

- Morga refinery refines oil from local/Potwar Plateau oilfields for
Upper Punjab (and NWFP)
- Mahmud Kot placed to serve central Pakistan/Lower Punjab/lower
Upper Indus Plain
… supplied with crude oil by (White) pipeline from Karachi
… supplied by pipeline from Iran (across Balochistan)
- Karachi refineries refine imported oil
- Karachi refineries crude oil from Lower Sindh oilfields
- Hab refinery supplied by pipeline from Karachi
- Hab and Karachi to serve industrial area/large population
- High demand in named city/industry/area

Study Fig. 3, which shows the amount spent by Pakistan on importing 'petroleum and petroleum products' from 1991 to 2002.

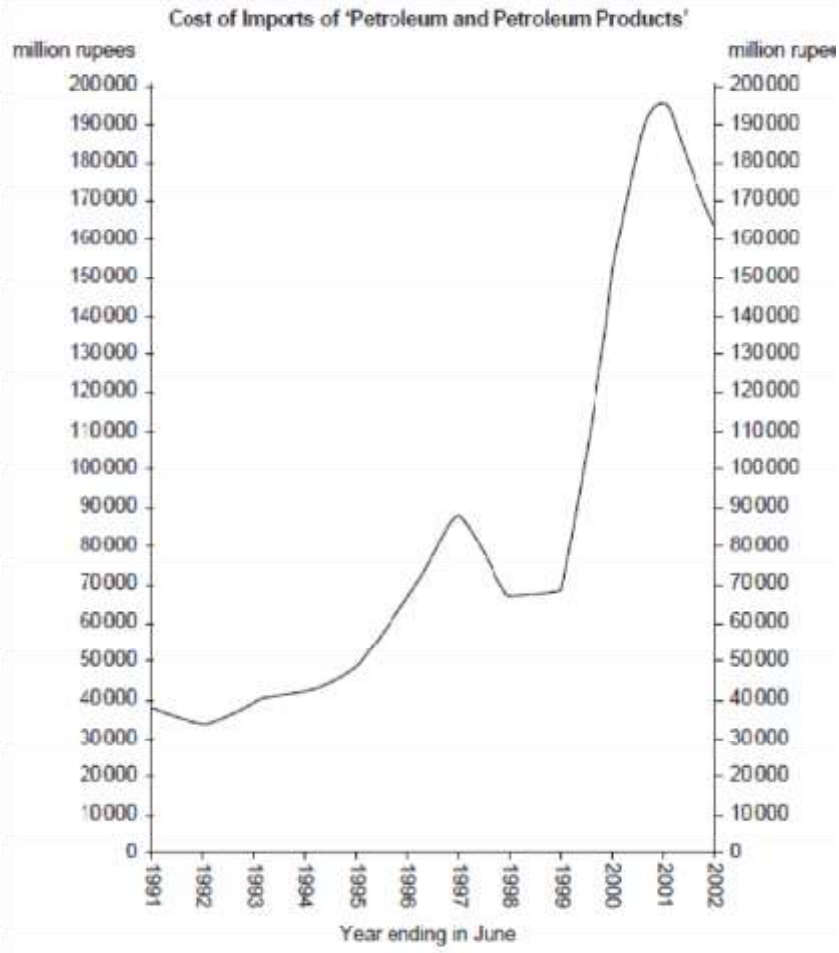


Fig. 3

Describe the trends in the cost of 'petroleum and petroleum products' imports shown on Fig. 3. [3]

(Large) overall rise/(more than) quadrupled/rise of 127 000
(million rupees)
- Fluctuated
- Fell (slightly) from 1991 to 1992/in first year
- Increase from 1992 to 1997
- Faster increase from 1995 to 1997
- Fell back 1997 to 1998
- Steady/slight increase 1998 to 1999
- Rapid rise 1999 to 2001/(more than) doubled/125 000 (million
rupees)
- Fell again in 2002/maximum in 2001

(d) (i) Explain in detail why it is necessary for Pakistan to import so much petroleum (crude oil) even though petroleum is produced in Pakistan. [7]

- Oil production in Pakistan is low/small
- Pakistan cannot satisfy its own needs for oil
- Pakistan's resources not yet exploited
- Growing demand/higher incomes/high demand due to increasing population
- Increasing number of industries/industrialisation
- Extension of road network/improved transport system
- Increasing number of lorries/buses/cars
- Conversion to diesel locomotives
- Mechanisation of agriculture
- Urbanisation
- (Most) thermal power stations use oil
- Increasing demand for electricity
- Lubricant for machinery
- Source of many by-products: Paraffin/wax/plastics/synthetic rubber/detergents/insecticides

(ii) What problems are caused for Pakistan because so much is spent on importing petroleum? [4]

- Negative trade balance
- Increasing burden of debt
- Economy goes down/adverse effect on economy/economic burden
- Uses foreign exchange
- Creditors exercise influence over Pakistan's affairs/political
implications
- Less money for investment/to spend on development/basic needs
… of education/health facilities/housing }
… of infrastructure/roads/railways }
… of industry/agriculture }
- More taxes imposed
- Cannot afford to exploit new oilfields

[May/June 05]

(b) Study the map Fig. 5 showing coalfields and coal mining centres in Pakistan.

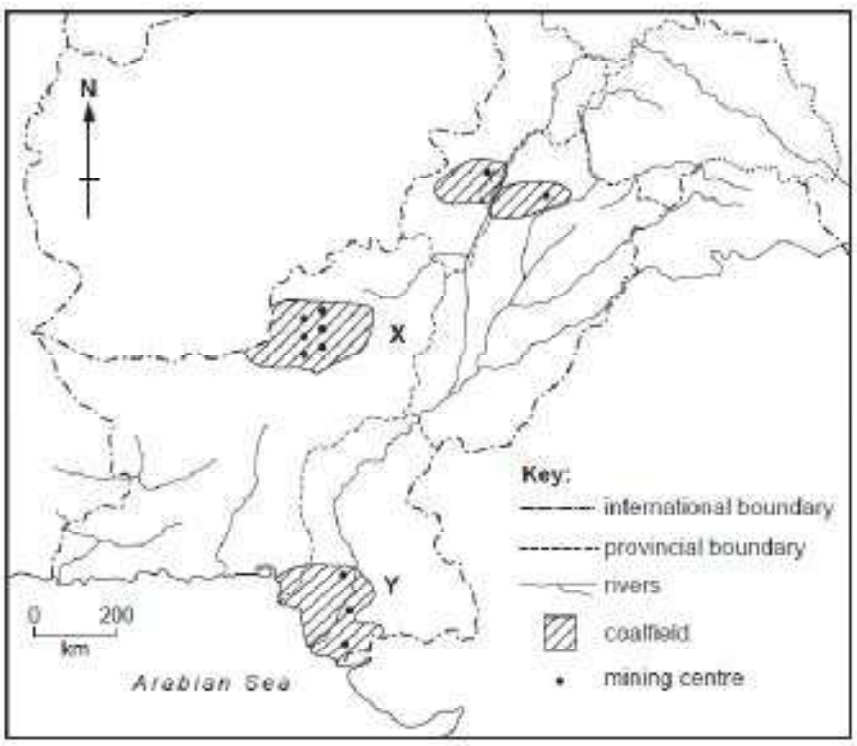


Fig. 5

(i) Name the coalfield X and one of the mining centes there. [2]
-Quetta (coalfield)
-Sor Range, Degan, Mach, Khost, Shahrig, Harnai

(ii) Name the coalfield Y and one of the mining centres there. [2]
-Lower Sindh (coalfield)
-Blakhra, Jhimpir, Sonda

(iii) State the two main uses of the coal mined in coalfield X. [2]
-Brick making/brick kilns
(mixed with imported coal) For steel making/in the blast furnace
-Briquetting

(c) Explain why coal has to be imported. [3]
-Not good enough for iron smelting/no metallurgical coal/needed for Pakistan Steel
-Need for coal to mix with poorer grade
-Difficult to mine/seams thin/seams contorted
-Not enough mined in Pakistan/lack of technology/lack of finance

(d) Hydro-electric power (HEP/hydel) is called a 'renewable' source of power.
(i) State three physical conditions necessary for the development of an HEP scheme. [3]

-Wet climate/moderate/high rainfall/over 750 mms
-Water from glaciers/snowfields
-Deep valley
-Steep sided valley
-Narrow valley
-Impervious/impermeable rock
-Large drainage basin/large river/large catchment area
-Cool climate/low evaporation
-Strong/hard rock
-Reliable water supply

(ii) Why is it important for Pakistan to develop renewable power sources? [4]
-Reserves of fossil fuels running out
-Named pollution/not environmentally friendly/causes global warming/greenhouse gases
-More readily available
-Schemes in remote areas/can be built away from fuel resources
-Low running costs of HEP, solar power, wave energy etc./cheaper in the long term
-Fossil fuels expensive
-Fossil fuels are imported
-Nuclear power is dangerous

[May/June 07]

(a) Study Fig. 4, which shows the gas pipelines in Pakistan.

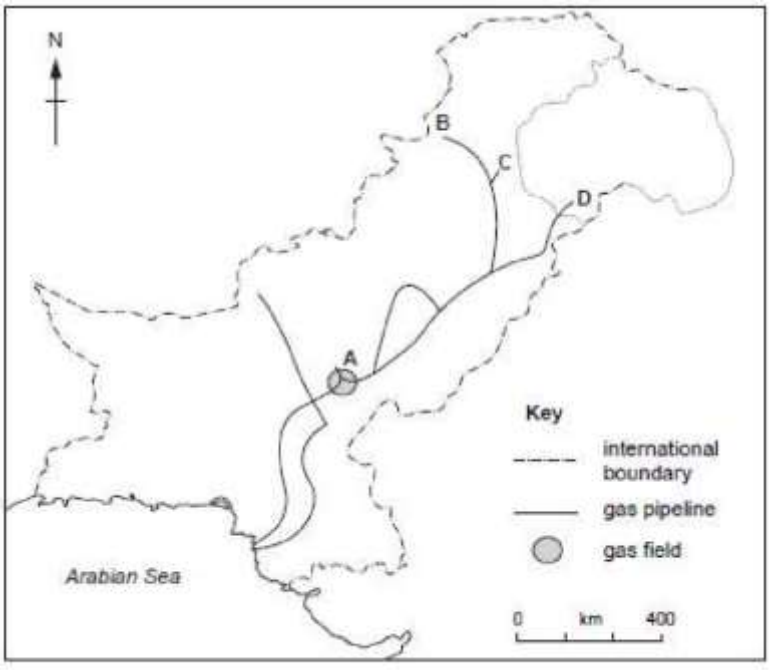


Fig. 4

(i) Name the gas field A. [1]
Sui

(ii) Name the cities B, C and D at the ends of the gas pipelines. [3]
B Peshawar, C Islamabad, D Sialkot

(iii) State two ways in which gas can be supplied to areas away from pipelines. [2]
-Changed to a liquid/LPG/CNG
Cylinders
-(Pressurised) tankers

(b) Study Fig. 5, which shows the uses of natural gas in Pakistan.

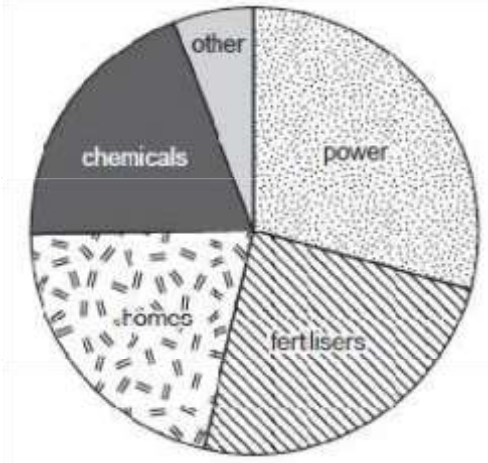


Fig. 5

(i) State the largest use of natural gas. [1]
Power

(ii) Name a use in the 'other' sector. [1]
-commercial/office
-cement
-transport/cars/lorries/motor vehicles
-named industry

(iii) What is natural gas used for in homes and why is this fuel chosen? [3]
Use
-Heating
-Cooking
Why
-Available in cities/towns
-Cheaper than oil or coal
-Easier than collecting firewood
-Less bulky/easier to transport than coal/wood
-Cleaner than coal/wood/oil

(iv) Why is natural gas called 'non-renewable'? [1]

it will run out/is not being replaced/etc.

(c) (i) Name two raw materials, apart from natural gas, which are used to make fertiliser. [2]
-Nitrogen
-Sulphur
-Gypsum
-Potassium/Potash
-Phosphate
-Ammonia
-Fish/animal remains/bones

(ii) Explain why most fertiliser factories are in the Punjab and northern areas of Sindh. [4]
-Main farming area }
-Deep soil/fertile soil } Good irrigation }
-Less flooding now to replace nutrients
-Large population to feed
-Good roads for transport/low transport costs
-Named raw material near, e.g. Rock salt and Gypsum at Khewra/Salt Range
-Gas at Sui

(iii) Why is it important that Pakistan manufactures its own fertilisers? [3]
-Expensive (to buy)
-Reduce imports/cannot afford to import fertilisers
-Improves balance of payments/fertilisers burden the economy/greater crop production
-improves the economy
-Heavy to carry very far
-Produce more food for large population reduces malnutrition
-Produce more crops for export
-Increases employment/reduces poverty

(d) What environmental damage can occur when a new fertiliser factory is built in a rural area? [4]
-Loss of farmland/land lost for factory and roads
-Damage to roads
-Water pollution/pollution of river/canal/irrigation water/water supply
-Noise pollution
-New quarries/pits
-Dumping of waste (only credit if not given as a form of pollution)
-Land clearance/loss of habitat/soil erosion
-Traffic congestion

[May/June 08]

(c)Study Fig. 5, a pie chart showing the different users of electricity in Pakistan.

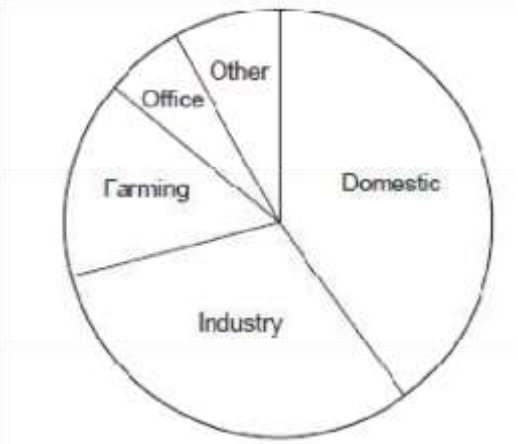


Fig. 5

(i) Which sector uses the largest percentage of electricity? [1]
Domestic/homes

(ii) State two more large users of electricity shown on the chart and explain what they use it for. [4]
-Industry – for machinery, computers, lighting, air conditioning -

Farming – for much of above, tubewells, drying crops, etc.

-Offices – computers, lighting, communication, air conditioning etc.
-One mark for two large users

(iii) What problems are caused when the electricity supply to factories breaks down? [4]
-Stops production/slows production/output reduced
-Damages machinery short circuit/explosion
-Damages goods/affects the quality e.g. food, cloth
-Delays contracts/orders
-Loss of money/profit/orders
-Workers laid off/sit idle

(e) (i) Name two environmentally-friendly ways of making electricity other than hydro-electric power. [2]

solar, wind, tidal, biogas, bagasse, geothermal

(ii) Explain why each of the two ways you have named could be used in Pakistan. [2]
-Wind – Indus plain flat, on mountains, windy in coastal areas, Balochistan, mountains
-Tidal – for coastal areas esp. Karachi
-Biogas – cheap, small scale, disposes of waste product
-Bagasse – many sugar cane factories, disposes of waste product, cheap, small scale
(Geothermal – not in Pakistan)

(iii) Why is it important that more renewable energy schemes are developed in Pakistan? You may use your answers to part (c) and your own knowledge. [5]

-General reasons for needing more power supplies:
-frequent power cuts and stoppages/load shedding/shortage of HEP
-increasing population/industrialisation/development
-higher living standards
-to encourage development/modernisation/industrialization
-rural electrification

Reasons for more renewable schemes:
-fossil fuels running out/renewables do not run out
-fossil fuels expensive
-renewables cheap/free after installation
-can be generated in remote areas/no expensive infrastructure needed
-small scale/cheap to construct
-nuclear is dangerous/problems of waste disposal-renewables safe
-fossil fuels cause air pollution/renewables do not pollute
-poor quality of coal/reserves not exploited/small reserves in Pakistan
-allows independence/need not rely on other countries

[Oct/Nov 05]

Study Fig. 5 a cross section showing an anticline oil trap.

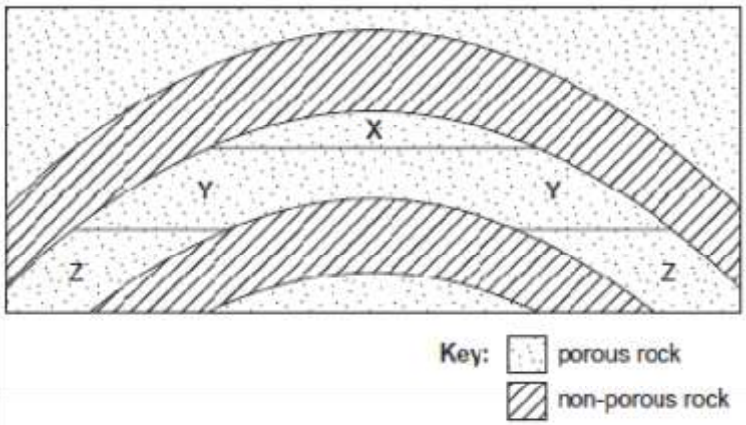


Fig. 5

(a) On your answer paper state the letter for the following,

(i) the area of rock containing oil, [1]

Y

(ii) the area of rock containing natural gas. [1]

X

(b) (i) What is meant by the term 'porous rock'? [1]

Has pores/holes/spaces (to hold liquids/gases)

(to let liquids/gases pass through)

(ii) Why is the feature in Fig. 5 called an oil 'trap'? [3]
-Cannot get through rocks around it
-Between layers of non-porous/impervious/impermeable rock
-Rises to top of anticline/top of bend

(iii) How is oil extracted from this 'trap'? [5]
-Derrick/drilling rig built
-Drilling (oil well)/oil well constructed/pipes inserted
-Diamond/tough metal drills into rock
-Cooled with mud mixture/water
-Oil rises when pressure released/pumped up/sucked up
-Valves to control flow into pipeline
-Derrick removed/dismantled after oil is flowing

In a recent study it was stated that over 46% of thermal power in Pakistan is generated in the area around Karachi.
(i) Why is so much thermal power generated in this area? [3]
-Gas/Oilfields in Lower Sindh
-Coal mines in Lower Sindh
-mining centre/Lakrha/Jhimper/Sonda
-Gas pipeline from Sui
-Imports of oil at Karachi
-Demand from industry
-Demand from large population
-Other demands e.g. railway -Oil refineries at Karachi

(ii) What problems are created when there are many large thermal power stations in one area? [4]

-Air pollution and details
-Shortage of oil/gas/coal supply
-Depletion of oil/coal reserves in the area
-Lack of investment in renewable energy generation
-Hot water flows out into rivers

What is 'load shedding' and how does it affect industry and business in Pakistan? [4]
Definition Planned power cuts
Effects
-Interrupts production
-Damages machinery
-Cannot meet deadlines
-Loss of quality
-Loss of orders
-Loss of money/profit
-Cost of generators
-Lights/computers/freezers/air
-conditioning/heating stops
Transport/traffic problems

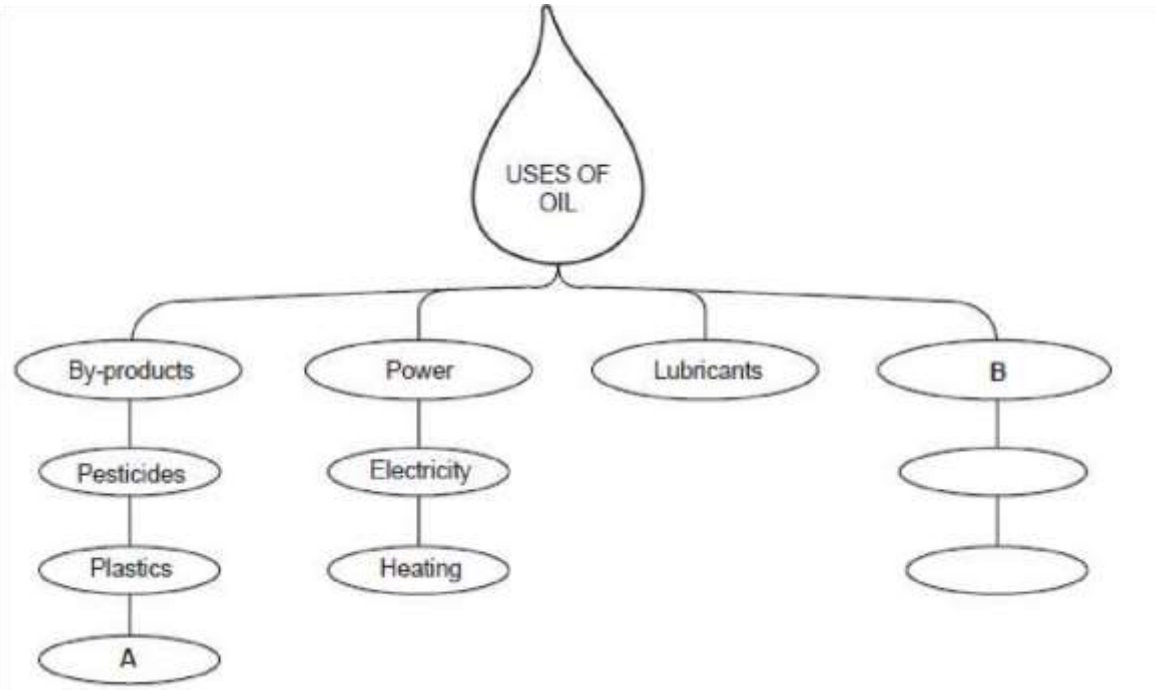
[Oct/Nov 06]

(a) (i) Locate an oil refinery near the coast, and give one reason why it is there. [2]
Refinery:
Karachi / Keamari / Bin Qasim
Reason:
-Imported oil
-Demand from named area
-Oilfields in Southern Sindh

(ii) Locate an oil refinery in the province of Punjab, and give one reason why it is there. [2]
Either:
-Mahmood Kot / PARCO
-Pipeline from Karachi / port
-Demand from named area / Multan
or:
Attock / Morga
-Local oilfield in Potwar plateau
-Demand from named area / Islamabad / Rawalpindi

(b) State two ways in which refined oil can be transported in Pakistan, and give an advantage and disadvantage of each. [6]
Pipeline
Bulk transfer / large quantities
Cheap (after cost of building)
But – only to a few big centres
Costly to build and maintain
Problem of leakage
Only a single product (e.g. Diesel)
Railway
Can go to more places than pipeline
More products can be carried
But – smaller quantities
Expensive
Chance of accidents
Tanker / Lorry
Can go anywhere by road
More products can be carried
But – expensive
Heavy / can only carry small amounts
Chance of accidents
Theft

(c) Study Fig. 3 which shows some examples of the four main uses of oil.



(i) Name another by-product A. [1]

wax / synthetic rubber / detergent / pharmaceutical products / furnace oil

(ii) Name the fourth main use of oil B. [1]
Fuel

(iii) With reference to Fig. 3 and using your own knowledge, explain how oil products are important to either farming or manufacturing. [6]
farming

-fuel for machines
-fuel for transport
-electricity generation – for power
-fertiliser – for growth }
-pesticides – for healthy growth } raw material
-tarmac for better roads / metalled roads
-lubricants for machines

manufacturing

-fuel for machines
-fuel for transport vehicles
-electricity generation – for power / heat / light
-fuel for heating
-raw material for named product
-tarmac for better roads / metalled roads

(d) (i) Which gas field produces most natural gas in Pakistan? [1]
Sui

(ii) Name two industries in Pakistan that use natural gas as a raw material. [2]
fertiliser
cement
chemical

(iii) Why is natural gas an important fuel in Pakistan? [4]
-Can reach remote areas in cylinders
-Easier to transport than coal
-Alternative to oil in vehicles
-Used in power stations
-Cleaner than oil or coal
-Reduces dependence on imported fuels
-Shortage of coal and / or oil in Pakistan
-Cheaper compared to coal

[Oct/Nov 09]

Study Fig. 7, a pie chart showing the sources of energy supply

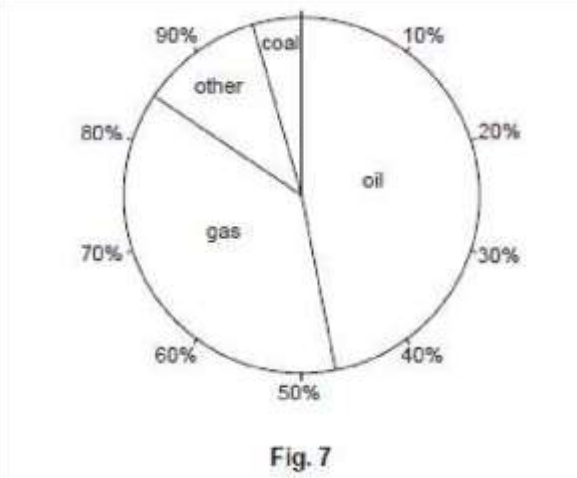


Fig. 7

(i) Name the two largest sources of energy. [1] oil and gas

(ii) What percentage of energy comes from oil? [1]
47–48

(iii) Name two other sources not named on the pie chart. [2]
HEP, nuclear, bagasse, solar, wind, geothermal, waves, tidal

(iv) Why does coal only supply 4% of the energy supply in Pakistan? [3]
-low quality/lignite
-reserves not developed/not mined
-bulky/heavy to transport
-used for other things e.g. coke, bricks, cement

-coal seams difficult to mine because – thin, contorted, faulted

(b) Study Fig. 8, a map of Pakistan.

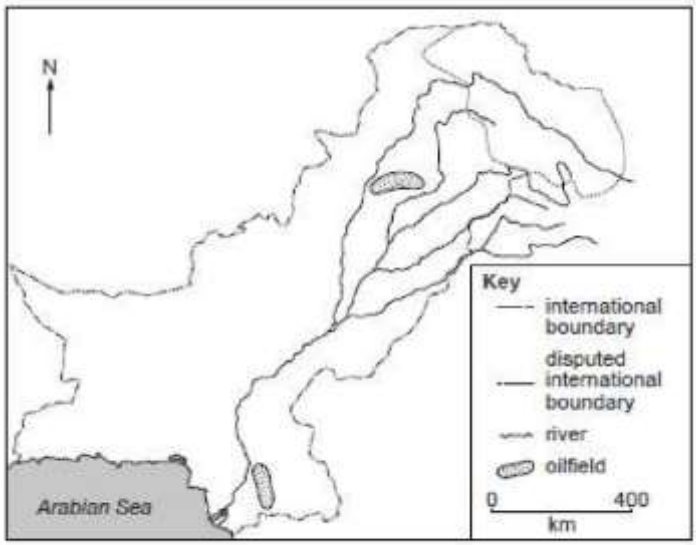


Fig. 8

(i) Describe the location of the two main oil fields shown on the map. [2]
-Potwar plateau/Northern Punjab
-Lower Sindh/Southern Sindh

(ii) What is crude oil? [1]

unrefined/raw/as it comes out of the ground

(iii) Why does Pakistan import most of its oil? [2]
-no enough for demands/not self-sufficient/mall reserves
-running out
-lack of investment/development of new fields
-high cost/lack of money
-lack of skilled/educated labour

(c) Study Photograph B, a gas extraction unit at Nautheh in the Potwar Plateau.

(i) With reference to Photograph B, explain why natural gas is an easy fuel to extract. [3]
-small size of land
-little impact on the environment
-simple machinery/small machinery
-pipes go into ground
-works automatically/no/little manpower needed
-controlled by valves/valves control pressure
-near road for easy access

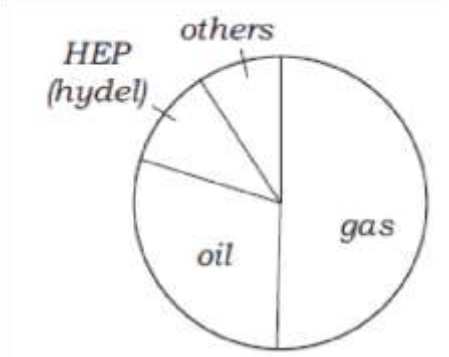
Study Fig. 9, an advertisement for natural gas.

Suggest why this advertisement states that natural gas is 'A cheap fuel. Easy to use.' [4]
-produced in Pakistan/in Balochistan/at Sui/not imported
-large reserves
-lightweight
-available in pipelines
-portable in cylinders
-cleaner than burning wood/coal
-easy to extract

(d) Explain the advantages and disadvantages of developing nuclear power. [6]
Advantages
-large output
-reliable
-small input of raw material/efficient
-long lasting fuel
-fossil fuels running out/reduce burden on other fuels
-less pollution/environmentally friendly
-will be less need for load-shedding/power cuts
Disadvantages
-expensive to buy fuel
-expensive to build
-lack of technology/skills/difficulties of maintainance
-dangerous/risk of radioactivity
-unpopular/local opposition
-disposal of waste is a problem
-risk of terrorism
-use for bombs

[Oct/Nov 10]

Study Fig. 6, which shows energy sources by percentage in Pakistan.



Name the two largest sources of energy. [2]
Oil and gas
Which source named on Fig. 6 is renewable? [1]
Hydel

Suggest two sources of energy in the 'others' sector of Fig. 6. [2]
Wind, tidal
Name an HEP (hydel) power station and state the name of the river on which it is built. [2]
Tarbela on River Indus

Why is HEP(hydel) an important source of electricity in northern Pakistan? [3]
-Cheap to generate
-Renewable
-Available / no fossil fuels / no thermal power stations
-Rivers / water from glaciers
-High rainfall
-Lack of evaporation / lower temperatures
-Deep / steep sided valleys for dams
-No air pollution / CO_2

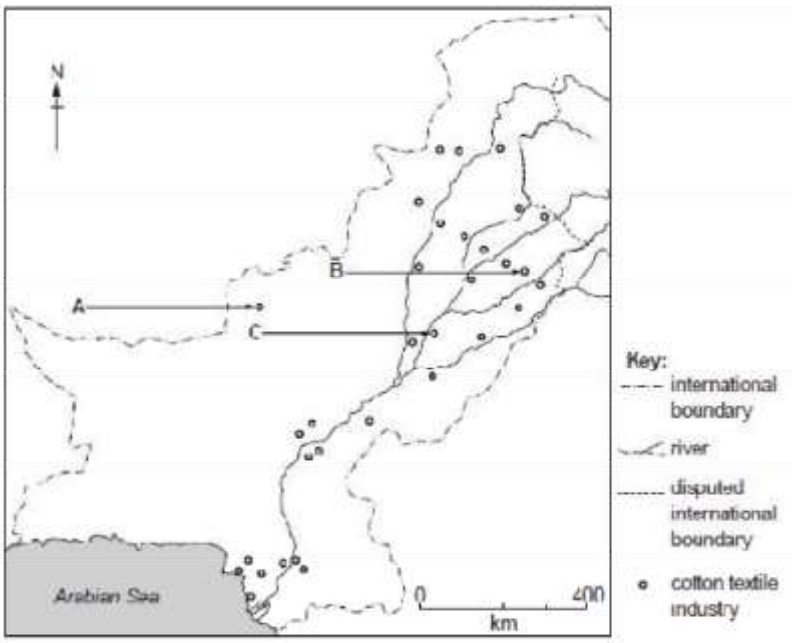
Why can the supply of power from these stations be unreliable? [3]
-Shortage / not enough for every user/ load shedding
-Silting in reservoir (reduces capacity)
-Silt in turbines (causes damage)
-Seasonal shortages e.g. winter / frozen / monsoon etc.
-Lack of rainfall / changing climate
-Theft
-Damage to power lines
-Old / worn machinery

5. The development of wind power generators off the coast of Pakistan could reduce the country's dependence on imported fuels. Explain the advantages and disadvantages of developing alternative power sources. [5]

Industries

[Oct/Nov 12]

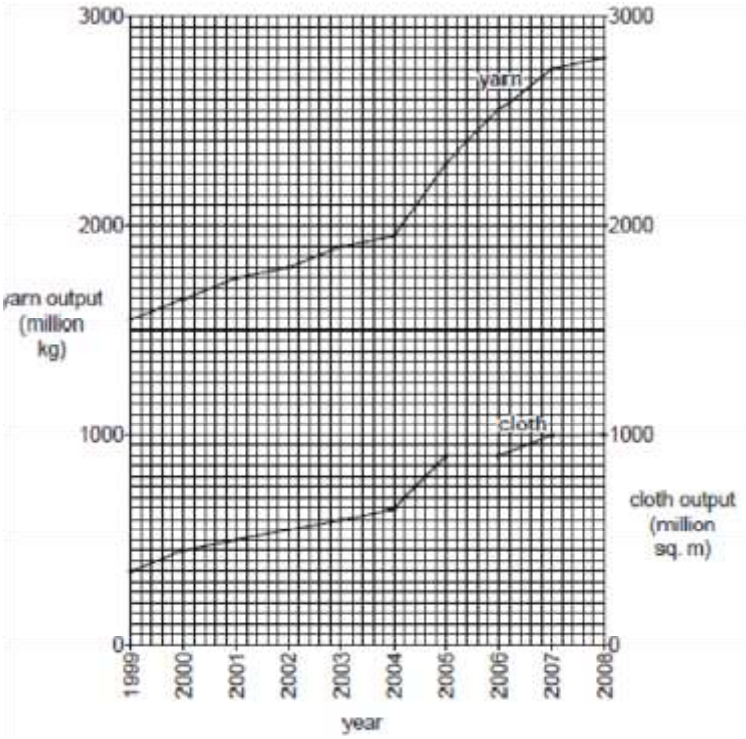
(a) Study Fig. 6 which shows the distribution of the cotton textile industry in Pakistan.



(i) Name the main centres of the cotton textile industry A, B and C. [3]
A Quetta
B Gujranwala
C Multan

(ii) Describe the distribution of the cotton textile industry. [3]
most processing centres / factories in Punjab along rivers (in Punjab) / River Indus (in Sindh)
-Southern / Lower Sindh eg. Hyderabad, Karachi
-Northern / Upper Sindh eg. Sukkur, Larkana
-KPK / NWFP eg. Peshawar, Nowshera
-Northern Baluchistan eg. Quetta

(b) Study Fig. 7 which shows the output of yarn and cloth between 1999 and 2008



(i) Compare the outputs of cotton yarn and cotton cloth from 1999 to 2008 shown on Fig. [2]

-Yarn greater than cloth
-Both increase
-Both make sharp increase in 2004
-After 2005 cloth levels out but yarn continues to increase

(ii) Suggest one reason for the difference in output of cotton yarn and cotton cloth, and explain your answer. [2]

-More yarn / spinning mills than cloth / weaving mills
-Yarn is made into cloth
-Problems / less investment/ in cloth weaving factories / machinery
(Eg. loadshedding, old machines)
-More demand for yarn (worldwide)
-Lack of skilled labour

(c) (i) Give an example of a job in each of the primary, secondary and tertiary sectors of the cotton industry. [3]

Primary – farming, picking, bringing water
Secondary – washing, dyeing, spinning, weaving
Tertiary – sales, transport, management

(ii) How is the proportion of workers employed in each of these sectors changing? [3]

Less in primary
More / less in secondary
More in tertiary

(iii) Explain why the changes you have stated in (c)(ii) may lead to unemployment. [3]
-Lack of literacy / illiteracy
-Lack of skills for machines
-More mechanisation / fewer workers needed with mechanisation
-Computers faster than writers / more IT in offices
-Can use foreign workers
-Less work in rural areas

(d) To what extent will improvements in education benefit both the rural and urban people of Pakistan? [6]
Benefits
-Will increase literacy / skills / can read eg. government advice
-Better paid jobs / can work in the professions / can use machinery / skilled
-Better farm outputs / income for farmers
-Better understanding of family planning / hazards of overpopulation
-Better health / more doctors, nurses, clinics etc.
-Better living standards / better hygiene, sanitation etc.
Problems
-Lack of jobs for educated people
-Loss of skilled workers eg. teachers, doctors
-Break-up of families through rural-urban migration
-General problems of too many people

[May/June 03]

(a) Fig. 2 is a plan of Quaid-e-Azam Industrial Estate in Lahore.

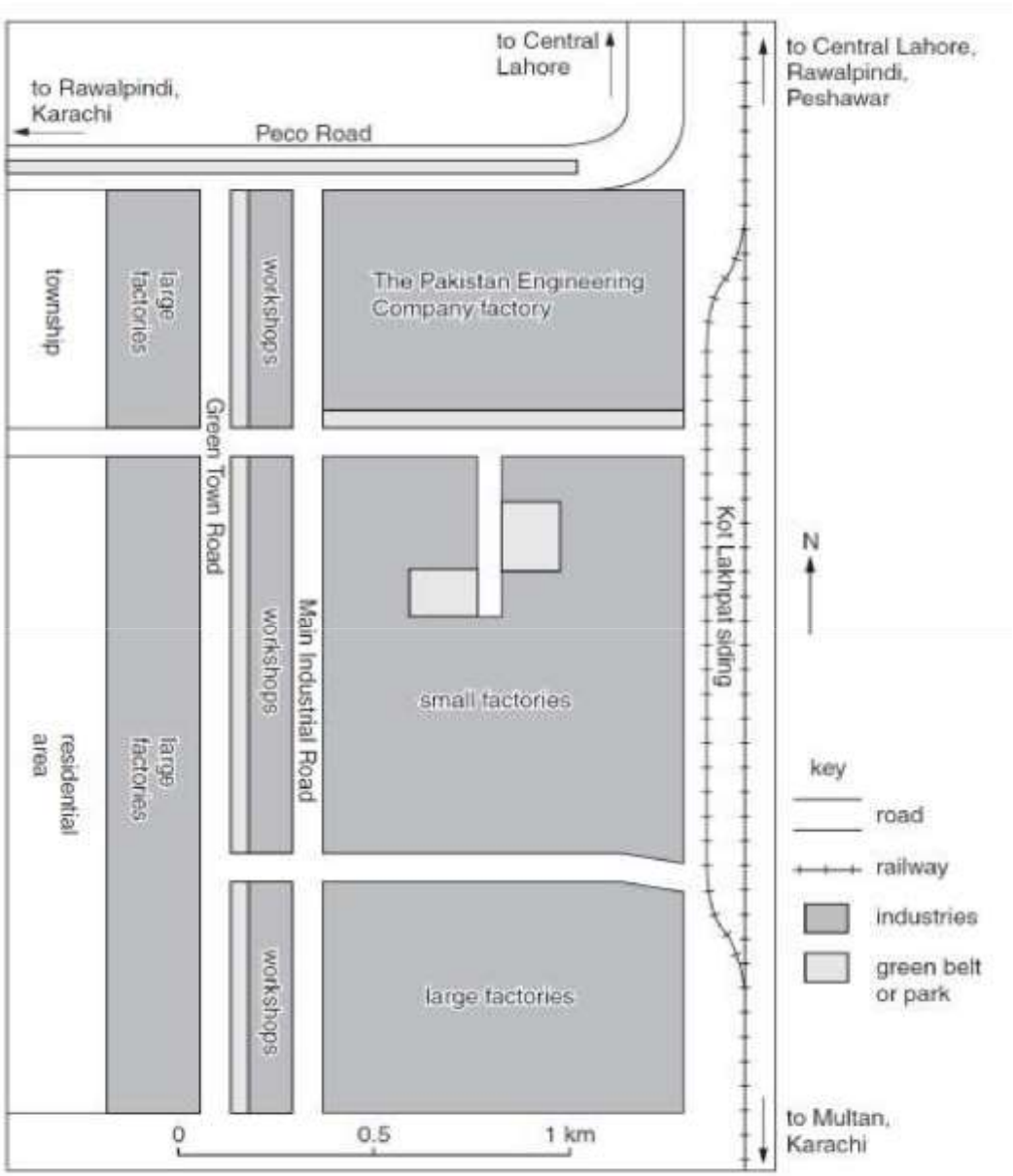


Fig. 2

(i) Describe the features and lay-out of this industrial estate. **[4]**

(ii) Using only Fig. 2, what communication links are available to factories on this industrial estate? [2]

(b) Fig. 3 shows the main types of industry on the Quaid-e-Azam Industrial Estate.

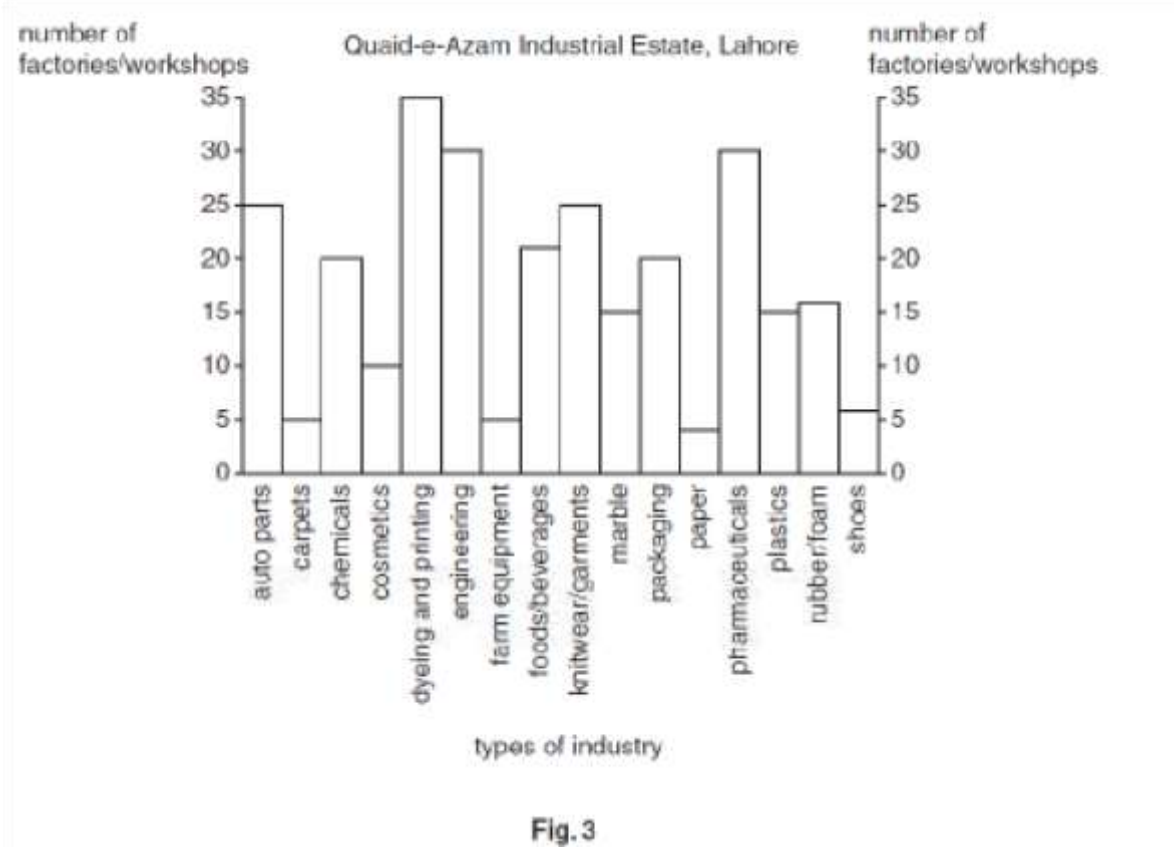


Fig. 3

(i) Name the three types of industry with the most factories. [1]

(ii) To which type of industry shown on Fig. 3 does each of the following belong:
l Yummy icecream,
ll Nyle tyres, lll Caravel

refrigerators? [3]

(iii) What are the advantages for the industries on the Quaid-e-Azam Industrial Estate of

being situated in a major city like Lahore? [5]

(c) How have the national and provincial governments of Pakistan encouraged the development of industrial estates? [5]

(d) With the help of an example, explain the importance of cottage (household) industries to village life in Pakistan. [5]

[May/June 04]

(a) Study Fig. 5.
Fig. 5 shows the proportions of the labour force of Pakistan working in the primary, secondary and tertiary sectors of industry. Which of these three sectors is labeled?

Fig. 5

(i) Y, [1]
Tertiary

(ii) Z? [1]
Secondary

[May/June 05]

The Kaghan Valley and others in the Himalaya Mountains attract international and domestic tourists.
(i) Explain why tourists visit these valleys. . [3]
-Views of mountain peaks, snow, waterfalls, etc.
-Forests/orchards
-Fishing in River Kunhar
-Saiful Maluk Lake
-Jeep rides
-Walking/hiking/climbing/mountaineering/picnics
-Unique area/nothing like it anywhere else
-Polo
-Flora/fauna
-Cooler climate than plains
-Traditional crafts/customs/lifestyle/cottage industries

(ii) Explain with reference to two examples, why tourists visit cultural attractions in Pakistan. [4]

Archaeological sites
-Moen-jo-darn, Harappa, Taxila,
-Kashmir Smats (caves) in NWFP

Historic and religious sites
-Forts (Baltit), Lahore
-Mosques (Badshabi, Muhabat),
-Tombs (Chaukandi, Makli, Allarma Iqbal, Ranjit Singh),
-Shrines (Uch Sharif)
-Khyber Pass,
-Shalimar Gardens,
-Kalash Valley
-Swat area

Modern buildings
-Faisal mosque, Parliament building, Presidential palace,
-Jinnah mausoleum, Minar-Pakistan,.

Named/Located example of traditional culture
-Swat, Gilgit, Kalash, Kaghan valleys
-Named/Located Festival
-Basant panchmi – kite flying at Lahore
-Mela chiragan – festival of lamps beside Shalimar gardens
-Named/Located Bazaar or Market
-Anaskali,Chitral, Swat, Kalash,

Why they visit
-Historic interest
-Museum
-Religious faith
-Education
-Different culture to their own

Explain the advantages of developing tourist attractions in Pakistan.
-Foreign exchange/currency
-Reduced debt
-Reduced trade deficit/improved balance of payments
-More jobs + development
-Higher incomes to locals + dev
-Better local economy/demand for more services
-Better facilities, infrastructure, services, communications for locals
-Better cultural understanding
-Sustainable industry/will not run out like coal
-Reduces rural-urban migration
-Cultural/historic sites restored/maintained **[4]**

Why is capital important in the development of tourism?
-Building and maintenance of shops, hotels,
-Security
-Travel facilities/roads/jeeps/buses,
-Provision of named infrastructure

-Professional management
-Marketing and publicity/advertising
[4]

Name an example of a craft industry. [1]
-Carpet
-Traditional textiles
-Embroidery
-Jewellery
-Ceramics
-Woodwork
-Metalwork
-Sports goods
-Pottery

In what ways is this type of industry important to the local economy? [4]
-Employment (in general)
-Employment of women/the whole family
-Meet demand of local market
-Reduces rural-urban migration
-Uses local raw materials
-Uses waste materials
-Low investment in technology/cheap to set up
-Increases capital/earns money for the local community

[May/June 06]

(a) Study Fig. 5, a diagram showing some inputs to Pakistan Steel

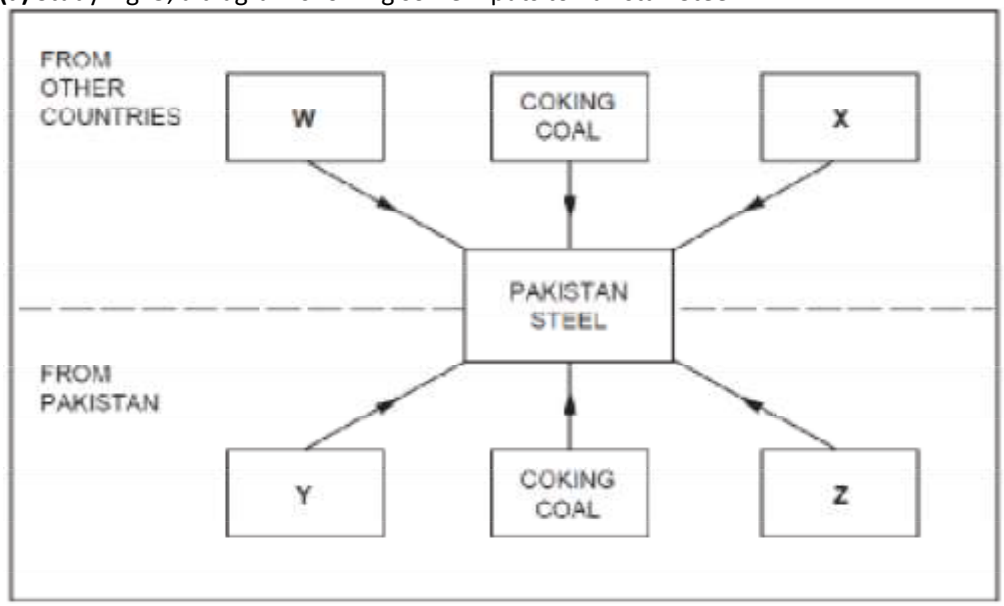


Fig. 5

(i) Name the two raw materials W and X. [2]
-iron ore
-manganese

(ii) Name two other inputs Y and Z. [2]
-limestone/flux
-water
-electricity
-labour
-capital
-transport
-new technology e.g. computerisation, telecommunication

(iii) Why is coal imported in addition to that produced in Pakistan? [2]
-Poor quality of local coal
-Mixed with local coal
-Not enough local coal

(b) Describe how two human inputs contribute to production at Pakistan Steel. [6]
-Capital – for wages, new machines, transport
-Electricity / power- for faster work etc.
-Labour- for work, trained for better work, details of jobs
-Transport – for inputs,outputs, from or too
-government policies- tax concessions,training new technology
- for better productivity, communication

(c) Why is over 50% of the output of Pakistan Steel sent north from Karachi to the Punjab? [3]

-Send to Taxila
-Heavy engineering
-Machinery for industry and power generation/ construction / railways boilers etc.
-Construction of buildings/ bridges / pylons

(d) What features of Pakistan Steel show that it is an industry in the formal sector? [4]
-Large-scale industry
-Employed labour
-Good quality goods/service
-Capital intensive
-Regular working hours
-Regular wages
-Legal and registered

(e) How does the government attract local and foreign investors to develop industries in Pakistan? [6]
-Industrial estates
Example. Sindh Trading Estate Ltd. (SITE)
-Tax exemptions on imported machinery
-Less foreign exchange control
-Tax holidays
-Simplified procedures
-Private power stations

Example Hub power project
-Less foreign exchange control
-Better roads/railways/airports
-Dry ports for better security
-Agencies to help investors provide infrastructure e.g. water, electricity, telephone, roads to estates
-Land available for housing, commercial, social facilities near industrial zones
-Consistent policies/stable government.

[May/June 06]

(d) Using examples, suggest why the Northern Areas of Pakistan are attractive to tourists. [5]
-Examples – Kaghan, Swat, Gilgit valleys, Chitral
-mountain scenery
-forests
-recreation
-photography
-trekking
-cooler climate than the rest of Pakistan

[May/June 07]

What are the advantages and disadvantages of developing a forest area for tourism? [4]
<u>Advantages</u>
-Employment opportunities
-Source of income
-Provision of named infrastructure/electricity, roads, water, sanitation
-Provision of other modern facilities, e.g. shops
-Reduces the effects of deforestation/destruction of habitats/soil erosion.
<u>Disadvantage</u>
-High cost of development/money could be spent on other things
-Effects on habitats/damage to trees
-Litter/garbage
-Resettlement of local people
-Tourists may not come, problems of security.
-Loss of culture

[May/June 09]

Photograph A shows a chair lift. This shows that tourists may visit the area.

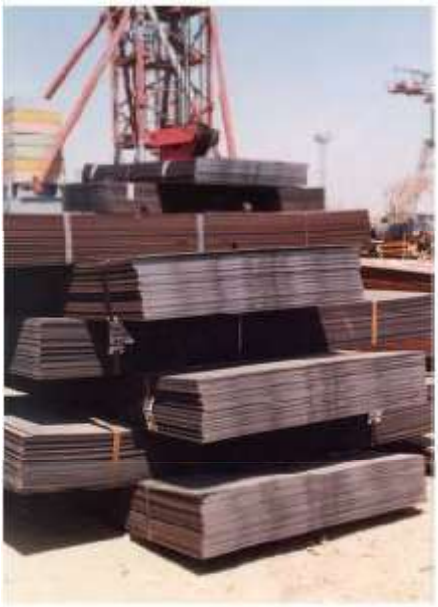
(i) List some other tourist attractions in mountain areas. [2]
-beautiful scenery, views, valleys, peaks
-lakes, rivers
-wild animals, birds, snakes, flora AND fauna
-tribal people, traditional crafts
-mountain climbing, fishing, winter sports, etc.

(ii) Explain how tourism could help to develop some mountain areas. You may use examples in your answer. [5]

Government investment leading to:
Infrastructure – roads/airports for travel – electricity/water/gas/telecommunications
Work – development of small scale industries, to raise living
standards money – for business people, shopkeepers, craftsmen,
etc. environmental improvement – e.g. re-afforestation education –
of skills required, more investment in schools cultural change –
meet other cultures/cultural exchange less isolation – global
awareness, trade security increased food production improved
health facilities – better sanitation, hospitals, healthy living rural –
urban migration reduced

(a) Study Photographs C, D and E (Insert) showing the stockyard at Pakistan Steel Mills, Pipri.

Photograph C for Question 4



Photograph D for Question 4

Photograph E for Question 4

(i) Name three raw materials used in the Pakistan Steel Mills. [3]

Any three of:

Iron ore, coal/coke/coking coal, limestone, manganese, chromite

(ii) Why are most of the raw materials imported? [2]

Lack of development of resources/small output
Iron ore not mined in Pakistan
Coal poor quality

(iii) Name the two outputs from the steel mills shown on Photographs D and E. [2]

Any two of:
sheets, plates, rolls, coils, slabs

(b) (i) Name two human inputs to the steel mills. [2]

Any two of:
Labour, capital, machinery, skills, technology, transport, power, water, etc.

(ii) Explain how human inputs such as those named in (b)(i) can improve production. [4]

-Labour – work machines, carry materials, office work
-Capital – wages, machines, technology, investment
-Machinery – faster, better quality, new products
-Skills – computers, office work, machines
-Technology – quality, speed, modernisation
-Transport – faster, larger supply, bigger markets
-Power – efficiency, speed, quality
-Water – for cleaning

(c) (i) What is an Export Processing Zone (EPZ)? [2]

-An industrial estate
-Producing products for export

-High quality/export quality goods/quality checked

(ii) Explain how the building of industrial estates could help to increase industrial production in Pakistan. [5]

-Increase quality of goods
-Reliable power/telecomm supply
-Water supply/sanitation/cleanliness
-Roads, railways to and from the estate/transport network
-Attractive to investors/government incentives
-Opportunities for more technology/modernisation/specialisation
-Development in rural areas
-Potential industrial linkages
-Example of an industrial estate

(d) Describe the characteristics of an industry in the formal sector of employment. [5]

-Employment/not self-employed
-Uses machinery
-Investment of capital
-Regular working hours
-Fixed/set wages
-Good quality goods/high value goods
-In office or factory/in proper buildings/not at home
-Legal/registered/pays tax
-Skilled labour
-Mainly men
-Pension scheme
-Incentives (e.g. health care, education)

[May/June10]

Study Photograph A which shows a brickworks near Kanai, Balochistan Plateau.

Photograph A for Question 3

Describe the main features of the brickworks shown in the photograph. [4]

-Furnace / Kilns
-Chimney(s)
-Black smoke / pollution
-Air intakes below ground
-Hard /flat working area
-Piles of finished bricks
-Pattern of small hummocks
-Good / Pucca road / tarred road / highway
-Electricity pylon/ Telephone poles / lines
-Moulds
-Underground entrance

Study Fig. 4, which shows the location of Pipri steelworks.

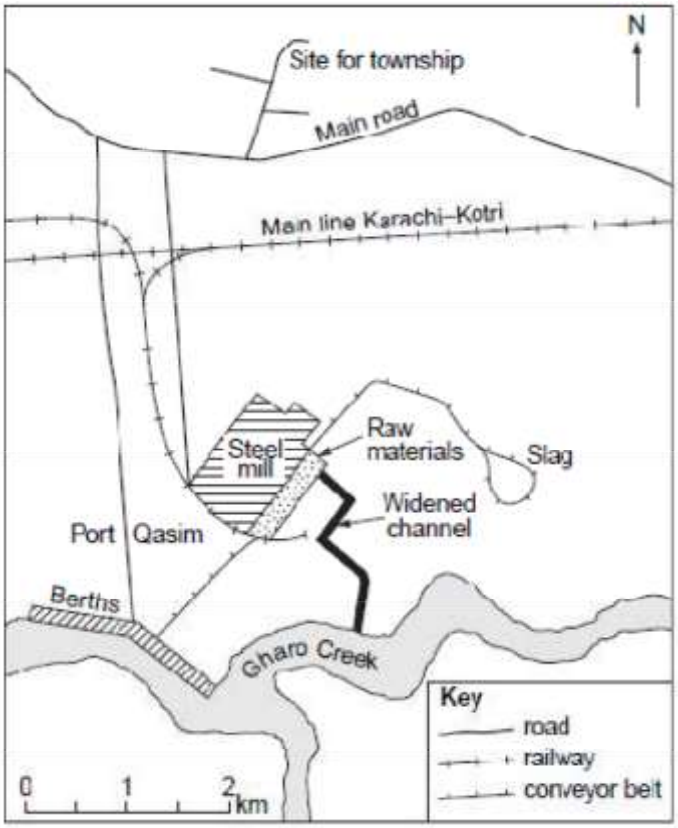


Fig. 4

(i) Name three raw materials used in production of steel. [3]

-Coal/coke
-Iron ore / scrap iron
-Manganese
-Limestone,
-Oxygen / air
-Chromite

(ii) With reference to Fig. 4, explain why the steel mill was located here. [6]

-coastal site/ Port (Bin) Qasim for imports
-berths by creek for unloading
-widened channel for effluent / shipping
-railway /road – for supply of limestone / workers
- for distribution of finished products
-township / houses for workers
-large /open site for waste disposal, storage, building

Read the extract below.

Imports of steel increased by 37% from 2004 to 2005 as a growing amount of machinery and industrial steel products flowed in.
This amount is higher than any government predictions.

Explain the advantages and disadvantages of increas ing steel production in Pakistan. [6]

Advantages

-Cheaper supplies (than imports)
-Saves foreign currency / improves balance of payments / reduce imports
-Can be used for development / industrialisation e.g. construction, machinery
-Larger GNP / GDP / national income
-Independence from other countries
-More work / employment

Disadvantages

-Lack of raw materials/imported
-High cost of imported iron / other raw materials
-Burden on economy / less development
-Cost / Lack of machinery / technology / set-up costs
-Cost / Lack of infrastructure / power supplies / roads etc.
-Lack of skilled labour
-More waste / named pollution
-May encourage rural-urban migration

Study Photograph B, showing Landhi Export Processing Zone, Karachi.

Photograph B for Question 4

(i) What features show that this is a modern, developed industrial estate? [4]

-Good / pucca / metalled / wide
-Street lighting
-Electricity supply
-Trees/ greenery
-Modern / good quality buildings
-Planned / straight roads

(ii) Explain the importance of Export Processing Zones. [4]
-Good quality goods / export quality / to International standards
-Can increase economy / income / exports / foreign exchange
-Better infrastructure / power / water supply / road etc.
-Good working conditions
-Modern buildings
-Incentives e.g. tax breaks, cheap loans
-Attracts investors / entrepreneurs
-Aids growth of small-scale / cottage industries
-Employment / jobs
-Government helps with marketing events / trade fairs

Study Fig. 6.

Fig. 6

(i) Give **two** advantages of transporting goods by:
A bullock cart,
B lorry. [4]
A Bullock Cart
-Cheap / economic
-No fuel cost
Available / used in other farm work
B Lorry
-Quick / fast
-Carries bigger / heavier load
-Can go further / does not need to rest

(ii) To what extent would the building of more motorways, such as that between Lahore and Islamabad, help the development of industry in Pakistan? [6]
Advantages/ Potential
-Better movement of finished products FROM industry to ports and other towns
-Better movement of raw materials / machinery TO industry
-Stimulates industrial development near motorway / opens up undeveloped areas
-Helps development of dry ports
-Better movement of businessmen / tourists / experts
-Faster travel
-Better road surface / wider for large vehicles / lorries / well-maintained
- By-passes towns and villages / short cut
-Relieves other roads / relieves congestion
-Disadvantages / Problems Expensive
-Takes long time to build
-Needs maintenance
-Cost to economy / increase debt
-Only connects large centres

-Will not go to many small towns / rural areas / anywhere
-Not only motorways help development

[May/June11]

Study Photograph B, of Karachi.

Photograph B for Question 3

(i) State three uses of concrete shown on the photograph. [3]
-Roads / pavement
-Bridges
-Multi-storey buildings
-Housing / flats
-Factories
-Offices
-Shops
-Street furniture e.g. lamp or electricity poles, bollards

Using your answer to (c)(i), explain the importance of concrete to the development of Karachi. [4]
-Developing / increasing population, industrialisation, offices, housing, ports, roads,
-example of infrastructure
-Better roads for transport
-Better bridges for access
-Stronger building materials
-Long-lasting / more durable / less chance of damage
-More modern appearance
-Improving slums / squatters / Kachi Abadi

What are the advantages and disadvantages of building large industrial developments, such as cement works, close to major cities? [6]

Write about either cities or industries

Advantages

To city and citizens:

-Cheaper transport costs to work
-Readily available / quicker supply
-Employment

To cement company:

-Supply of labour
-Good infrastructure e.g. port, roads, electricity, water
-Market / near demand
-Cheaper delivery costs

Disadvantages

-Air pollution / dust / smoke }
-Noise }
-Visual pollution / quarries } pollution
-Water pollution }
-Dumping of waste }
-Traffic congestion
-Loss of farmland
-Loss of other land uses e.g. housing, roads, industry
-Population growth / rural-urban migration
-Squatters / Kacha Abadi / slums
-May be distance from raw materials

[May/June 12]

Explain why the Pakistan Steelworks is called 'a large scale industry'. [4]

-handles large quantities of raw materials
-large production / large output / generates large income
-large area / site
-large electricity use / local power station
-large gas use / large pipeline
-large workforce
-higher output per worker
-large capital / investment
-mechanised / automated
-standardisation of products

WATER ELECTRICITY GAS PIPES TELEPHONE ROADS

Choose two types of infrastructure from the list above and for each explain its importance to businesses on an industrial estate. [6]

-Water – for washing, cooling, cleaning, food processing, chemicals, dyeing / bleaching

-Electricity – for power / energy / machinery, light, heat, ventilation, computers, faster / better / more efficient work

-Gas – for power, heat, light, cooking food,
raw material for fertiliser / chemical industry
-Telephone – (for contact with) suppliers and buyers, quick response, may be in other places, for sales, orders, marketing, advertising, line to computer
-Roads – (for transport of), inputs, outputs, people, less breakage / damage of valuable goods, quick travel, attracts investors

What are the benefits and problems of developing new industrial estates? [6]
Benefits
-Employment / jobs / raise incomes
-Goods for local needs
-Goods for export / more trade
-Increase GNP / GDP / increases national income / economic growth
-Reduce imports
-Attracts more investors / entrepreneurs
-Development of named infrastructure e.g. roads, power, telecomm
-Reduces emigration / if in rural areas reduces rural-urban migration
-More competition improves quality
-Stimulates growth of service industries
Problems
-Cost
-Lack of skilled labour
-Loss of agricultural land / trees
-Depletion of named natural resources eg. water, gas
-Lack of named infrastructure e.g. electricity, roads, water
-Lack of government support
-Named pollution e.g. water, air, land
-Need for more imports with e.g. machinery, raw materials, oil
(Increases) rural-urban migration.

[Oct/Nov 04]

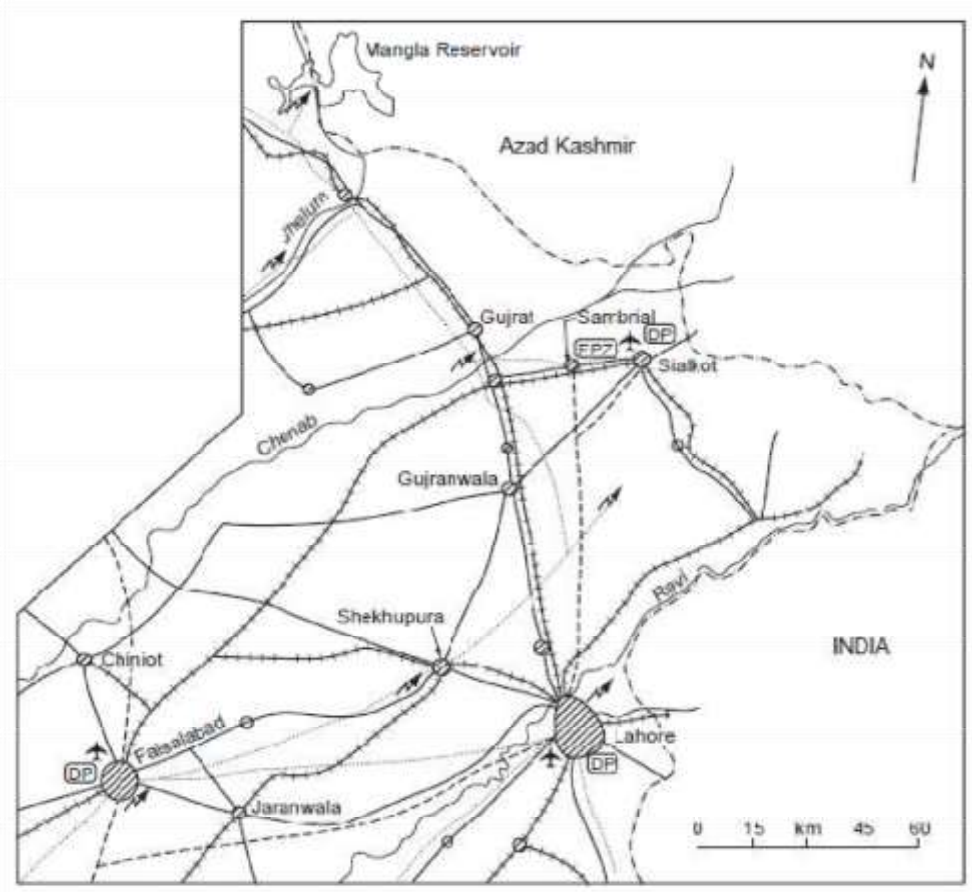
Photograph A (insert) shows a furniture workshop in Chitral which is in an area with natural forests. Describe the features of this workshop and the characteristics of the type of industry shown. [4]

workshop
-large shed
-dark/poorly lit
-(simple) machinery/named machines, band saw, electric motor
-lack of safety guards
-(many) hand tools/named tools
-sawdust/shavings
-window -planks of wood
characteristics of type of industry
-small scale/cottage industry
-craft industry

-traditional skills
-labour intensive
-simple machinery
-use local raw materials/timber
-local specialisation
-supply larger factories in towns
-possible export
-sales to tourists
-encouraged by government
-less than 10 employees (small-scale)
-family/no hired labour (cottage)
-fixed assets less than Rs. 10 million
-in homes/small workshops.

[Oct/Nov 04]

The sketch map, Fig. 3, shows the location of important industrial centres in north-east Punjab and their main industries.



Key

- Boundary with Kashmir and India
- Rivers
- Main road
- Railway
- National electricity grid
- Gas pipeline
- Airport
- Industrial centre
- Power station
- DP Dry Port
- EPZ Export Processing Zone

Fig. 3

(a) With the help of Fig. 3 and your own knowledge *describe* the factors that have encouraged the growth of industries in this area. [7]

-capital from foreign investment/banks/governments
-flat land/sites
-agricultural raw materials plentiful/available …
… wheat/rice/oilseeds/sugarcane/hides
-7 power stations serve area
-main cities are on (national) electricity (grid)
-gas pipelines to area (from Sui/Potwar Plateau)/for power stations
-water available from rivers/canals
-Grand Trunk Road/etc }
-served by railway network/named rail route } area served by

-roads, rail, air -
-airports
-large labour force
-educated workers available/University of Lahore/etc.
-industrial estates have been built in area + details of incentives
-export processing zone benefit from government incentives + details
-dry ports encourage international trade + details

[Oct/Nov 05]

There are three sectors of employment in the oil industry. These are primary, secondary and tertiary. Study this list of jobs in the oil industry.

Computer operator

Refinery worker

Rig worker

Safety officer

Tanker driver

State one job from the list that is in the
(i) primary sector of employment, [1]
Rig worker

(ii) secondary sector of employment, [1]
Refinery worker

Safety officer

(iii) tertiary sector of employment. [1]

Tanker driver
Computer operator
Safety officer

C (i) Give a location in Pakistan for
A the iron and steel industry,
Karachi/Pipri/Port Qasim/Gharo Creek

B the cement industry. [2]
Potwar Plateau

(ii) Choose one of these industries, and state two inputs and two outputs of that industry. [4]
Inputs Iron and Steel
-Iron ore
-Scrap iron
-Coke
-Limestone

-Electricity
-Other raw material e.g. Manganese
-Power supply
-Land
-Labour
Cement
-Limestone/chalk
-Clay/shale
-(Powdered) coal
-Calcium sulphate/gypsum
-Electricity/power supply
-Kiln
-Land
-Labour

Outputs Iron and steel
-Raw steel
-Cast iron
-Rolled and cast billets
-Galvanised products
-Girders
Cement
-Cement powder
-Cement blocks
-Pre-cast cement
-Bricks
-Slabs/paving

How can telecommunications such as the telephone, e-mail and the internet help
(i) to buy and sell the goods stated in (c)(ii), [4]
-Locating supplies
-Advertising goods/publicity
-Arranging transport
-Finding orders/tendering
-Faster method
-Arrange delivery
-Can communicate internationally

(ii) in the expansion and modernisation of industries? [4]
-Credit ideas of increased funds by sales and advertising
-Obtaining machinery and building materials (best prices)
-Arranging transport
-Expert advice
-Easy communication with branches in other areas/countries
-Contact with investors
-Share dealing
-Sites for education of workers

[Oct/Nov 06]

(i) Name a city in Pakistan where sports goods are manufactured. [1]
Sialkot or Lahore

(ii) How may the presence of the sports goods industry in this area
A increase employment opportunities
-Labour intensive
-Work contracted out to small scale and cottage industries
-Growth of administrative jobs
-Growth of transport jobs
-Growth of tertiary industries with increased prosperity
-Dry port (related to employment)
-Export Processing Zones

B improve the local infrastructure? [5]
-Power / electricity supply
-Roads / railway
-Airport
-Better water supply
-Telecommunications
-Dry port (related to infrastructure)

(iii) How does industry in cities pollute the environment? [5]
-Effluent in river – effect on fishing, drinking water, irrigation
-Effluent in sea water – effect on fishing e.g. Indus delta, mangroves
-Smoke / gases in the air – health problems, acid rain (global warming)
-Traffic 1 congestion in urban areas
-Waste from factories and people
-Traffic / congestion in urban areas
-Loss of scenery by construction

[Oct/Nov 07]

(c) (i) List the following in order of production: [3]

Cloth, raw cotton, cotton yarn, ready-made clothes

(ii) From your answer to 2(c)(i), state one product of:
(A) a processing industry,
Yarn/thread or cloth

(B) a manufacturing industry. [2]

cloth or ready-made garment

(iii) Explain why Lahore is an important centre of the textile industry. You should use your answers to 2(c)(i) and (ii) and your own knowledge. [7]

-Cotton grown locally
-Water for washing
-Machinery from Taxila
-Labour supply – large skilled and unskilled population
-Power – national electricity grid, gas pipelines, oil pipeline, power stations
-Transport – good roads, railways transport north, south and west +
-Tele-communications, access to internet,
-Education – skilled workforce, IT skills, foreign experts
-Dry port – to promote exports
Export Processing Zones – to improve quality, better infrastructure
-Industrial estates – for accommodation, infrastructure
-Market – large population
-Investors/entrepreneurs – for capital
-Factories for all stages of production

[Oct/Nov 08]

(a) (i) What is the main raw material used in the production of
A footballs?

leather/plastic

B cricket bats? [2]
Wood

(ii) Which city in the northern Punjab is a centre of sports goods manufacturing? [1]
Sialkot/Lahore

(iii) Why have small-scale industries, such as sports goods, developed in this area? [4]
-easy to set up, no expensive machinery, low capital input
-labour – local skills, increases employment opportunities, work for women, higher local incomes
-raw materials available
-airport at Sialkot/Sambrai and Lahore
-roads and rail north (Karakorum Highway), south to Karachi, west to Islamabad
-power supply good in Punjab
-Punjab is the most industrialised province
-supply tourists
-dry port at Sialkot/Lahore

[Oct/Nov 09]

3 (a) Study Fig. 5, a map of Pakistan.

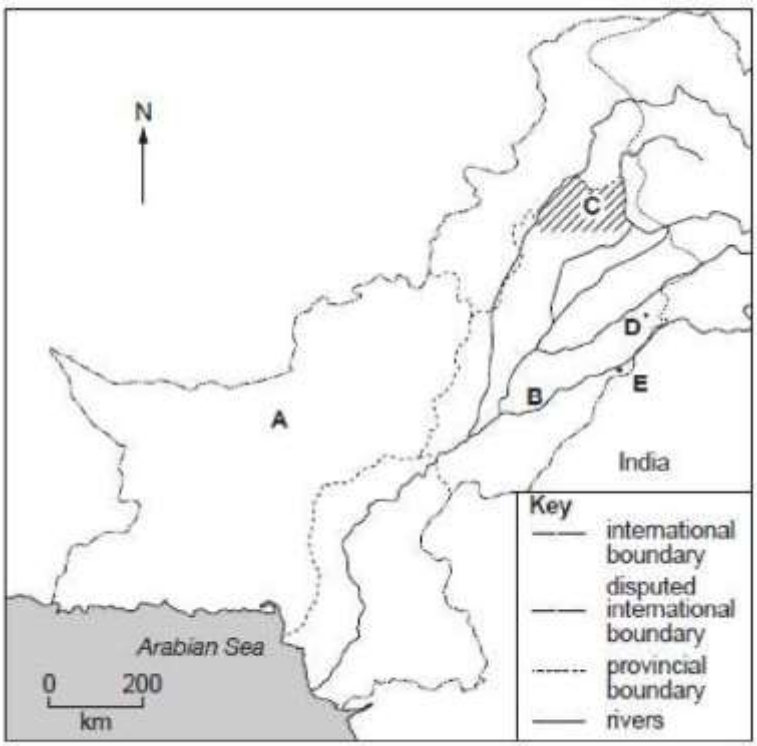


Fig. 5

Name the two main centres of production of surgical instruments at D and E. [2]
D Sialkot,
E Lahore

(c) (i) Give two examples of a small-scale or cottage industry. [1]

wood carving, embroidery, jewellery, ornaments etc. sports

goods, surgical goods.

(ii) Using your answers to (c)(i), explain what is meant by a small-scale or cottage industry. [4]
-small production/small output
-traditional skills
-in homes/on the street/not in factories
-lack of machinery/labour intensive/low technology
-women workers/family workers/no hired labour
-self-employment/informal industry/less than 10 workers employed/small workforce
-low profits
-to meet local demand
-for tourism

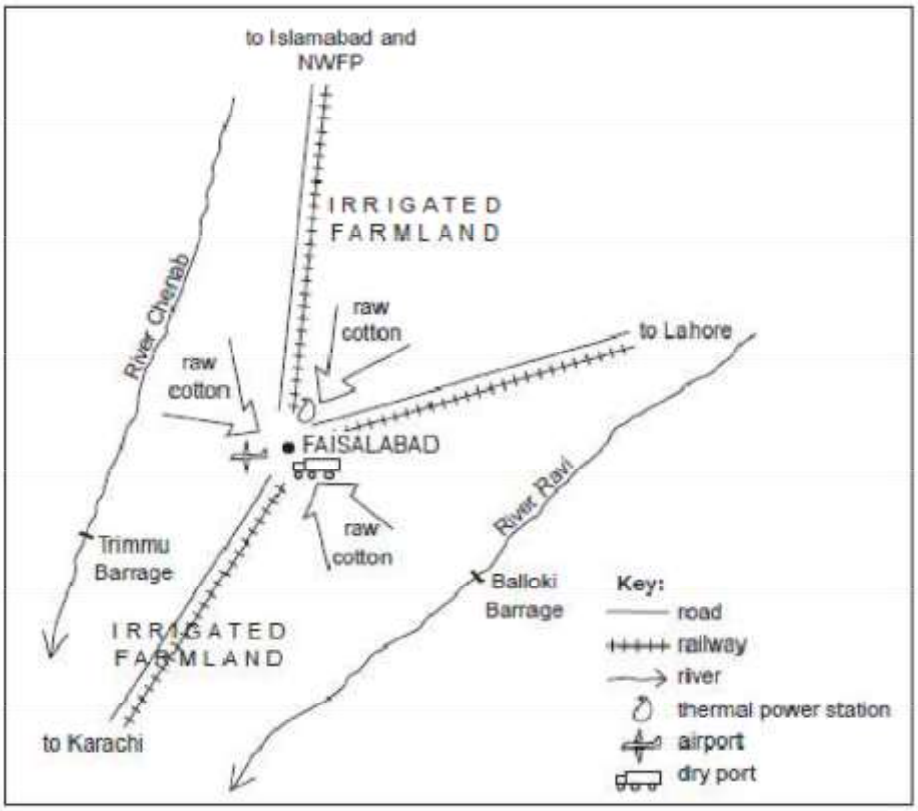
-local raw materials
-low capital input/fixed assets less than Rs. 10 million
-use waste products

(d) Explain how government organisations help and promote the development of small-scale industries. [5]

-organisations e.g. PSIC (Pakistan Small Industry Corporation), PSIC (Punjab SIC), SMEDA (small and medium enterprise development agency) etc.
-marketing facilities/trade fairs/shops
-technical service centres/expert advice
-education and training
-cheap loans/loans on easy installments
-tax breaks/cheaper raw materials
-small industrial estates
-dry ports/better road transport
-power supply/electrification/gas/water
-telecommunications
-more value – added goods
-aid mechanisation
-no reserves for help or promotion

[Oct/Nov 10]

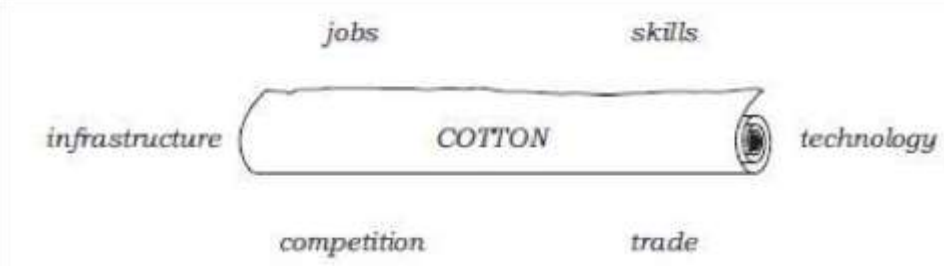
Study Fig 7, which shows the location of Faisalabad.



State three factors shown on Fig. 7 which influence the cotton industry in Faisalabad. For each factor, explain its importance to the development of this industry. [6]

Irrigated farmland – for raw cotton e.g. Rechna Doab
Rivers/barrages – supply water for washing cotton
Road/railway – for supply of goods, sales
Dry port – for exports, transport to Karachi
Thermal power – for electricity supply for machines etc.
Airport – for businessmen

Study Fig. 8.



In recent years there has been little growth in the cotton textile industry. With reference to Fig. 8, explain the advantages and disadvantages of increasing cotton textile production in Pakistan. [6]

JOBS
More available, can reduce unemployment, higher income, formal employment, move from primary to secondary
BUT need for literacy and skills, may cause rural urban migration and its consequences

SKILLS
Beneficial to workforce, higher earnings,
BUT shortage of training at the present time

COMPETITION
Will improve standards
BUT cannot compete, low quality of Pakistan products, synthetics may be cheaper

TRADE
Will stimulate / increase trade, earn foreign exchange, improve balance of payments, pay off debts
BUT inadequate port facilities, poor roads / rail etc.

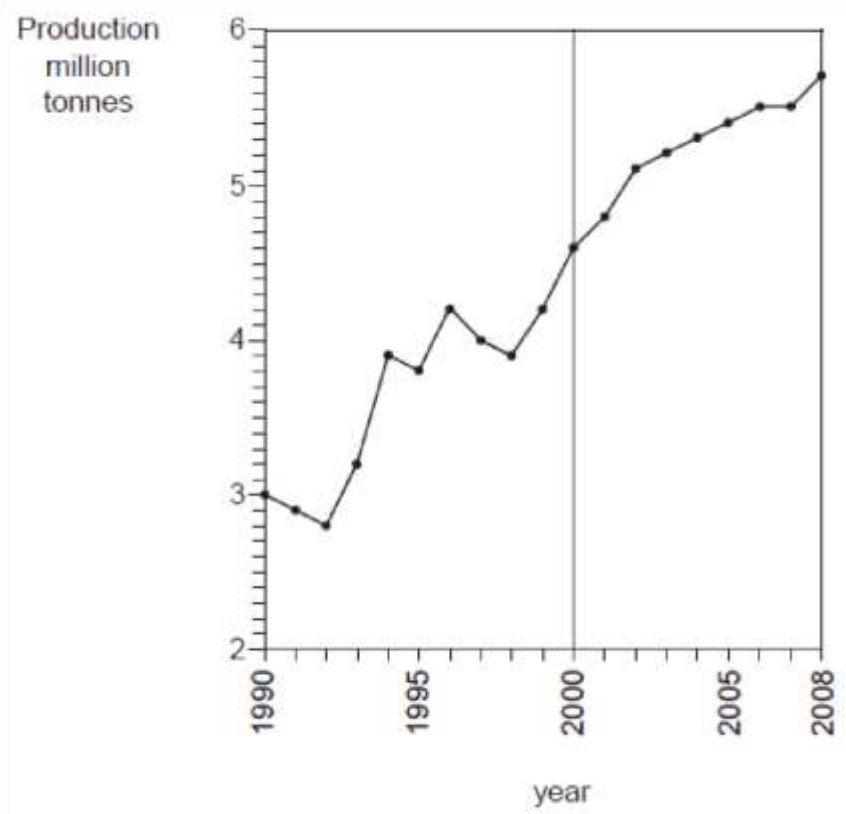
TECHNOLOGY
Good for development, can improve quality and / or quantity
BUT high cost, lack of skilled workforce, unemployment, shortage of electricity, more imports

INFRASTRUCTURE
Stimulates construction of better roads, railways, power supply, water supply
BUT higher costs, shortages at source, others may lose supply e.g. power, water

GENERAL
Increase GDP
BUT – may cause less investment in other
industries less land for food crops quality must be
good leaf curl virus / other pests climatic
limitations

[Oct /Nov 11]

Study Fig. 5, which shows fertiliser production in Pakistan.

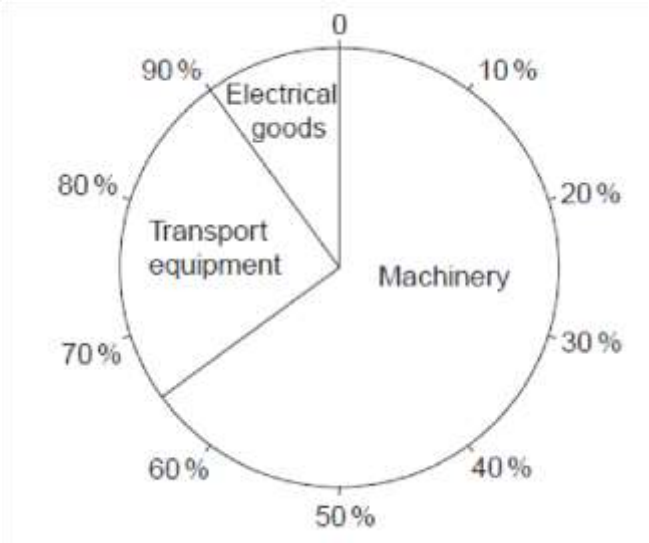


By how much did fertiliser production increase from 2000 to 2008? [1]
1.0–1.2 / 1,000– 1,200

Compare the production from 1990 to 2000 to that from 2000 to 2008. [3]
More variable 1991–2000 than 2000–2008
Overall rate of increase greater / gradient steeper 1990–2000
3.0–4.6 / 1.6 million tonnes compared with 4.6–5.7 / 1.0–2 million tonnes / figures with units

What are the benefits of increasing fertiliser production for the people and economy of Pakistan? [4]
Higher yields
More food production
More agricultural exports, or improved balance of payments (max1)
Reduced imports of fertiliser, or improved balance of payments (max1)
Higher GNP
Less debt
Higher farm incomes / profits
More jobs
Cheaper cost of fertiliser
More industrial goods (e.g. cotton)

Study Fig. 6, which shows imports of goods to Pakistan in 2007.



State the percentage of:

A. Machinery

65

B. Electrical goods [2]

10

Name two machines that may be used in a craft industry. [2]

sewing machine, drill, lathe, sawing (machine), generator

Explain the importance of mechanisation to the craft industry and other small-scale industries of Pakistan. [4]

Faster
Larger production
Lower labour costs / cheaper
Less work / easy / less tiring
Standardised product / better quality
Can replace child labour
New skills learned

[May/June 03]

(b) Study Photograph A

(i) Describe the features of Lahore Dry Port that can be seen in Photograph A. [4]

-Lorries/trucks/containers/trailers
-Sign to import examination area
-Storage sheds/warehouses
-Covered loading area/shelter with poles
-Loading platform/raised area
-More containers in background/behind sheds
-Flat/hard/concrete ground
-men/drivers/labours
-Forklift truck

(ii) State two other features of a dry port that cannot be seen in Photograph A. [2]

-Export checks and clearance
-Import examination area
-Railway yard
-Refrigeration facilities
-Management offices/customs administration
-Cranes/loading facilities
-Large storage area
-Security gate/guards

(iii) Why are dry ports important to the economy of Pakistan? [3]

-Speeds up customs procedures/better collection of revenue/simplified administration
-Saves time transporting goods to Karachi/hassle-free transport
-Reduce workload at Karachi port/Port Qasim
-Stimulate foreign trade (in cities far away from ports)

[May/June 07]

(a) Study Fig. 6, which shows the imports and exports of Pakistan.

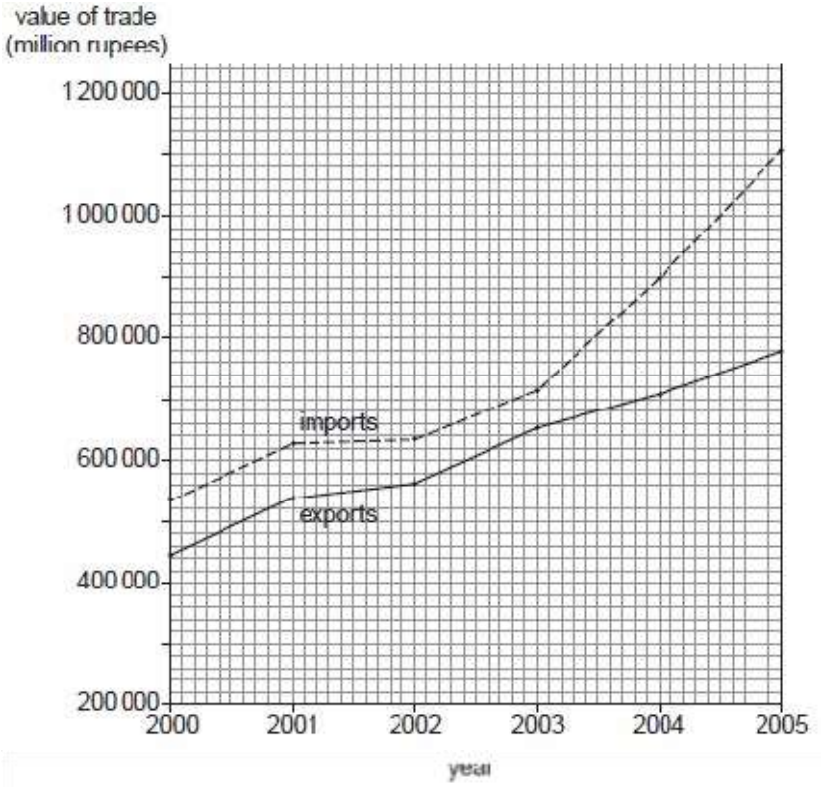


Fig. 6

(i) State the increase in the value of imports from 2000 to 2005. [1]
-560,000 – 580,000 (million rupees)
-540,000 – 1,100,000 / 530,000 – 1,110,000 (million rupees)

(ii) How has the value of exports changed compared with imports? [2]
-Both have increased
-Imports have increased more than exports/increased faster after2003
-Similar trends 2000 – 2003
-Comparative figures

(iii) How will this affect the balance of trade? [1]
-It has increased (negatively)
-It has got worse
-There is a bigger deficit

(b) Study Fig. 7, which shows the goods exported from Pakistan in 1975 and 2000.

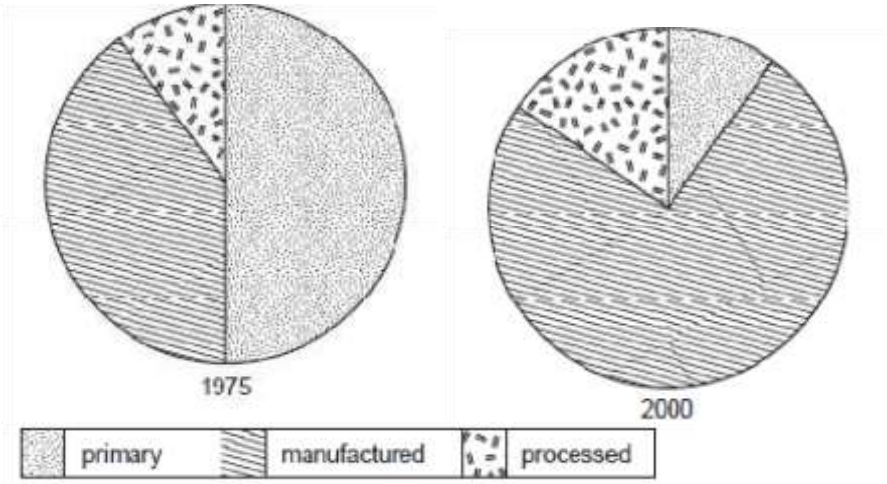


Fig. 7

(i) How have the proportions of primary and manufactured goods changed from 1975 to 2000? [2]

-Primary goods are a lower proportion of exports/exports have decreased
-Manufactured goods are higher proportion of exports/exports have increased

(ii) How have these changes affected earnings from exports? [2]

-Manufactured goods sell for higher prices
-Earnings will increase
-Manufactured goods are value-added

(iii) Explain how cotton can be exported as a primary, a processed and a manufactured product. [3]

-Primary raw cotton
-Processed yarn, thread, cloth
-Manufactured ready-made garments, cloth

(c) Name two dry ports and explain how they make import and export easier, and increase trade. [6]

Lahore, Multan, Faisalabad, Rawalpindi, Hyderabad, Larkana, Quetta, Peshawar, Sambrai

(d) (i) State two methods of telecommunication. [2]

-Better customs checking/clearance/easier collection of taxes/revenue
-Better transport links/easier transport to Karachi/cheaper transport to Karacit
-Container facilities
-Better management
-Storage in sheds and open areas
-Refrigeration available
-Quicker processing/less time lost/avoid delays at Karachi
-Less congestion at Karachi/eases pressure at Karachi

(ii) Explain how telecommunication can be used to improve the supply of goods, and increase trade in Pakistan and abroad. [6]

-telephone
-e-mail/internet
-fax

-computer conferencing
-video conferencing
-TV
-Radio

[May/June 08]

Iron ore, oil, and machinery are imported in large quantities at Port Qasim.

(i) Give one large-scale use of each of these three. [3]

-Iron ore – to Pakistan Steel at Korangi, steel, named iron or steel product
-Oil – transport, power, electricity, chemicals, etc.
-Machinery – vehicles, named industry, power generators.

(ii) Another large import is wheat. Name one country from which it is imported. [1]

UK, USA, Russia/Australia

(iii) Explain why Pakistan will need to continue to import wheat. [2]

-Increasing population
-Poor agricultural production/smaller area cultivated/increase slower than population

[May/June10]

Study Fig. 5, which shows the exports of Pakistan in 1997 and 2007 by percentage (each dash on the circumference represents 10%).

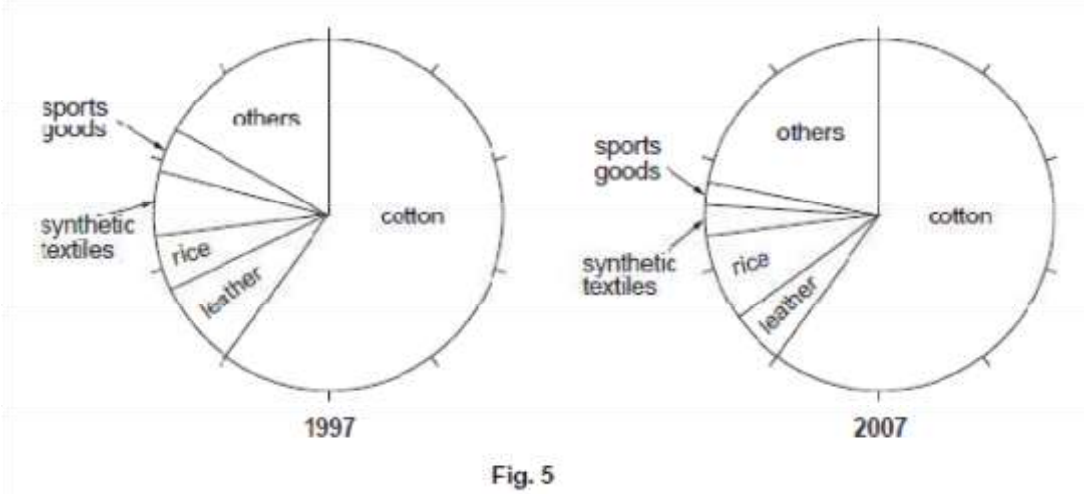


Fig. 5

(i) In 2007, what percentage of the exports was cotton? [1]

60 (%)

(ii) Suggest reasons why cotton makes up a large percentage of Pakistan's exports. [3]

-Produces a surplus of raw cotton / large production
-Large international demand / Cannot be grown in other countries/Europe
-Cheap labour/ competitive price
-Can be a variety of products
-Many textile mills / factories

(iii) From Fig. 5, state:
A one export that has increased in percentage,
Rice

B two exports that have decreased in percentage. [3]
Leather, synthetic textiles, sports goods

[May/June 12]

Study Fig. 7.

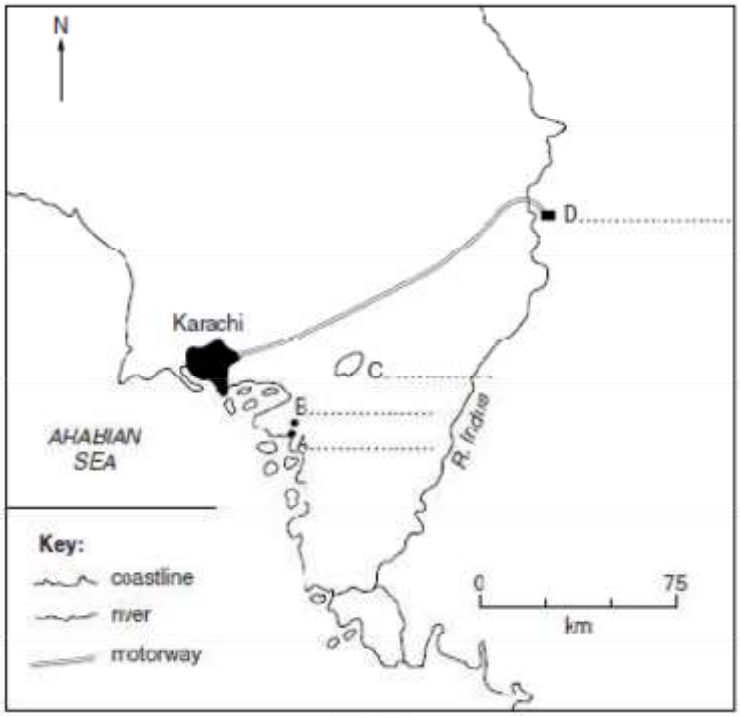


Fig. 7

Name on the map:
A the port where iron ore and coal are imported
(Port) Qasim

B the site of the Pakistan Steelworks
Pipri

C the lake that supplies water to the Pakistan Steelworks
Haleji

D the destination of the motorway from Karachi [4]
Hyderabad

Study Fig. 8, which shows imports of steel.

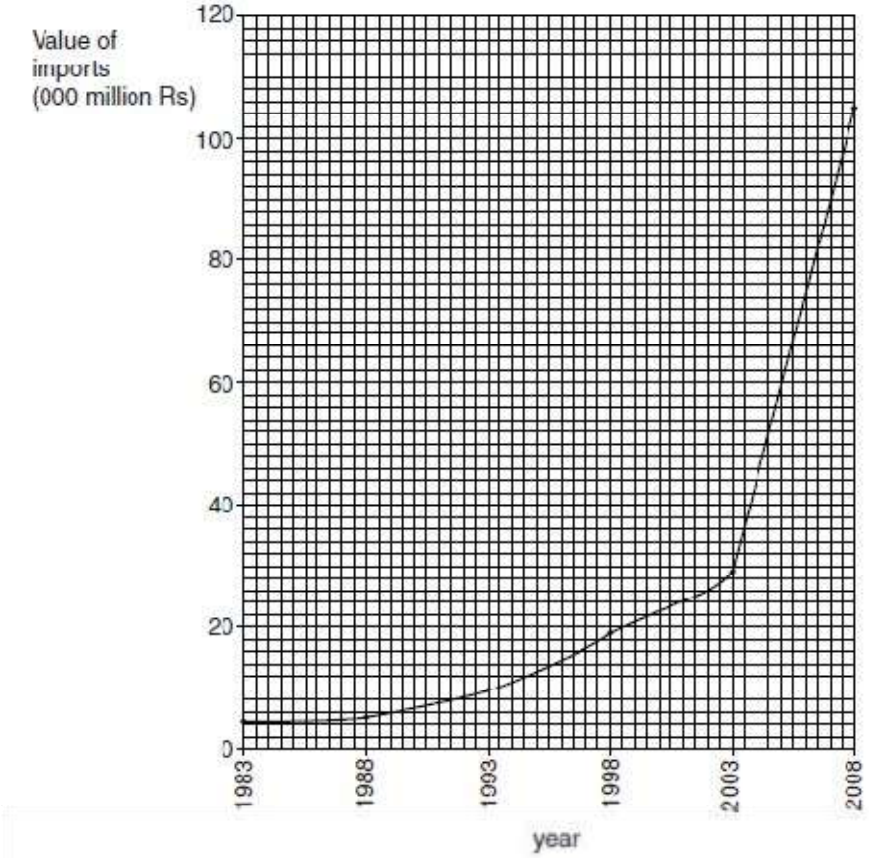


Fig. 8

What was the value of imports in 2008? [1]
105 000 million Rs

By how much has this increased since 1998? [1]
85–88 000 million Rs.

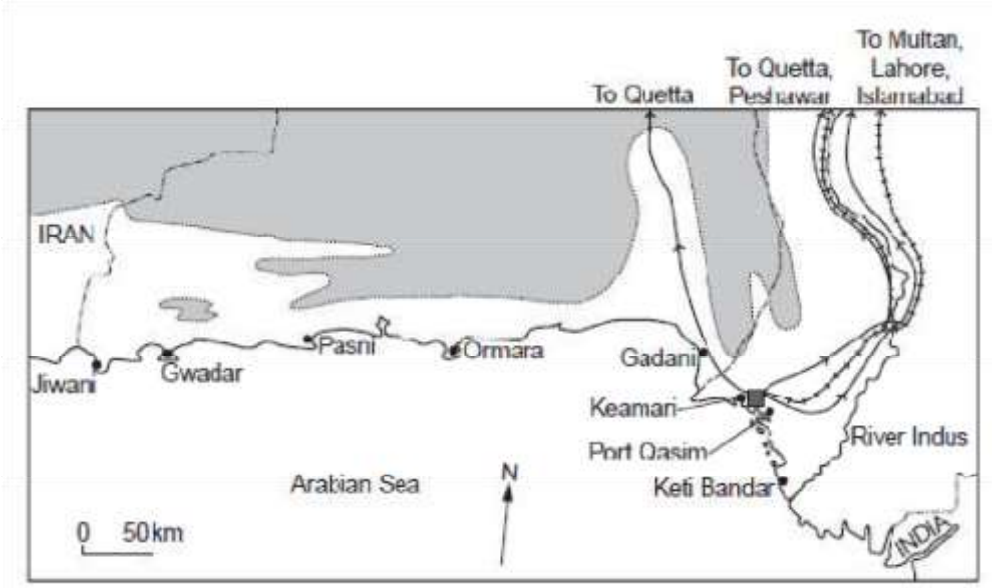
Suggest one reason for this increase and explain your answer. [3]
Reasons
-Industrialisation / growth of industry
-Named use eg. construction, machinery,
-Increase in cost of steel
-Devaluation of Pakistan currency
-Growing population
-Explanation of that reason
-Needs machinery
-Needs raw materials
-Building of new houses / industrial estates
-Road and rail repair
-Better agriculture

-Shortage of world steel supplies
-Devaluation of Pakistan currency

Read the following summary of an article in The Finance, 13th October 2000:

[Oct/Nov 03]

The map, Fig. 4, shows Pakistan's Arabian Sea ports.



(a) Name, in order of importance, Pakistan's three main importing and exporting ports. [4]

(b) (i) State and explain the main functions of the ports on the Balochistan coast. [5]

(ii) Why are the ports in Balochistan small? [4]

(c) For Port Qasim,
(i) explain why it was necessary to build this new port, [2]
(ii) explain why it was built on Gharo Creek, [4]

(iii) name its main imports and explain for what purposes they are imported. [6]

[Oct/Nov 04]

The sketch map, Fig. 3, shows the location of important industrial centres in north-east Punjab and their main industries

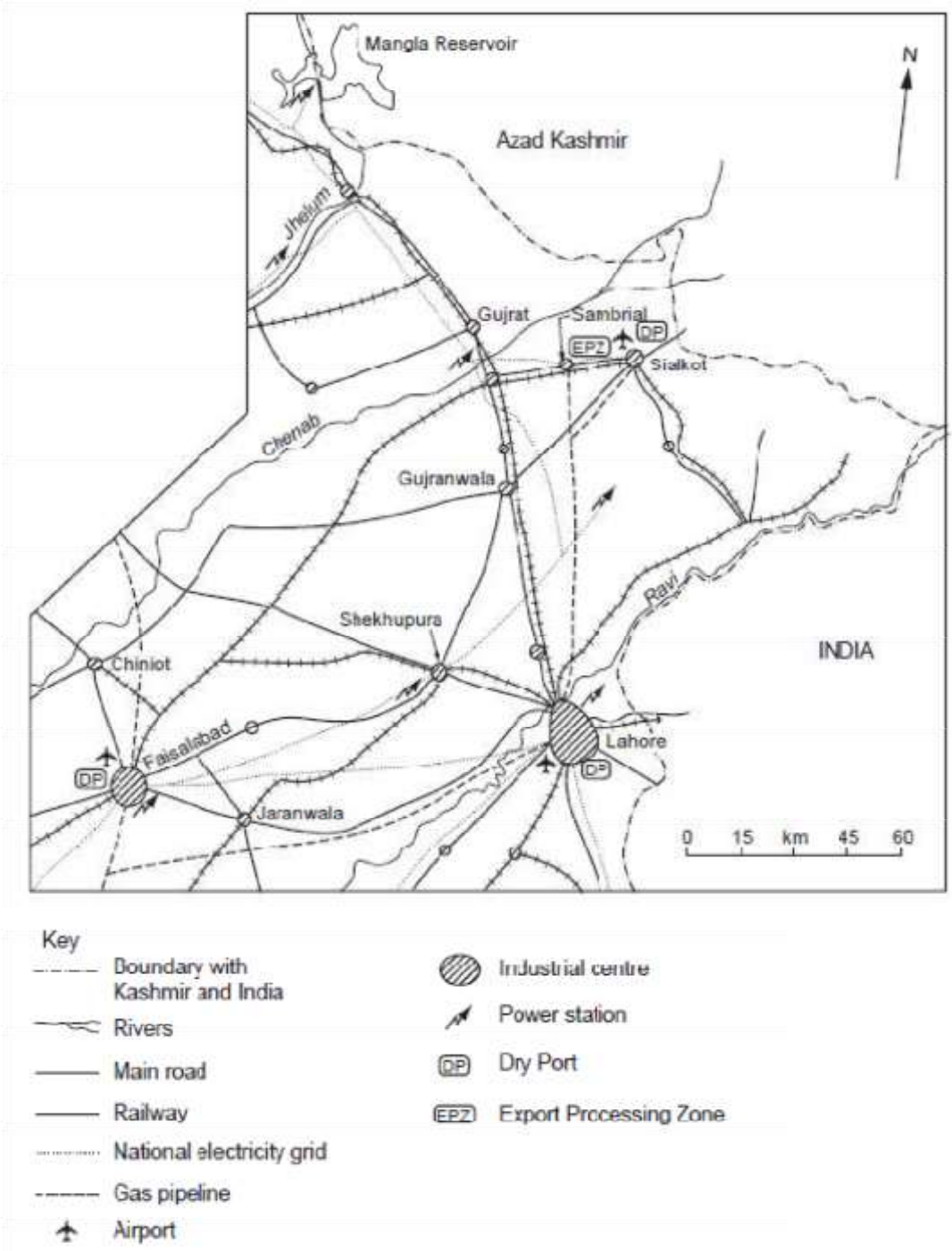


Fig. 3

Sialkot is a major industrial centre for export goods.

(i) Sports goods and surgical instruments are very successful industries in Sialkot. With the help of Fig. 3 and your own knowledge explain why this is so, despite the fact that most of their raw materials have to be imported. [3]

-pioneered here to serve needs of British army in colonial
-times/traditional/for many generations
-(highly) skilled workforce has developed …
-labour is cheap

-foreign investment
-raw materials imported through Lahore/Sialkot airport
-good electricity/gas/water/road/rail/ services
-high value goods
-cottage industries/small scale industries supply larger
-factories/outworkers
-high value goods
-dry ports/ Export processing zones
-airport

(ii) About 99% of Sialkot's industries export their products or supply the exporting factories. Why are exports very important for the development of Pakistan? [5]
-negative balance of trade
-lacks foreign exchange
-a large burden of debt
-capital/money to buy essential imports
-needs capital/money to develop infrastructure/services
-needs capital/money to develop its industries
-Sialkot's exports are highly competitive on the world market
-high value-added exports

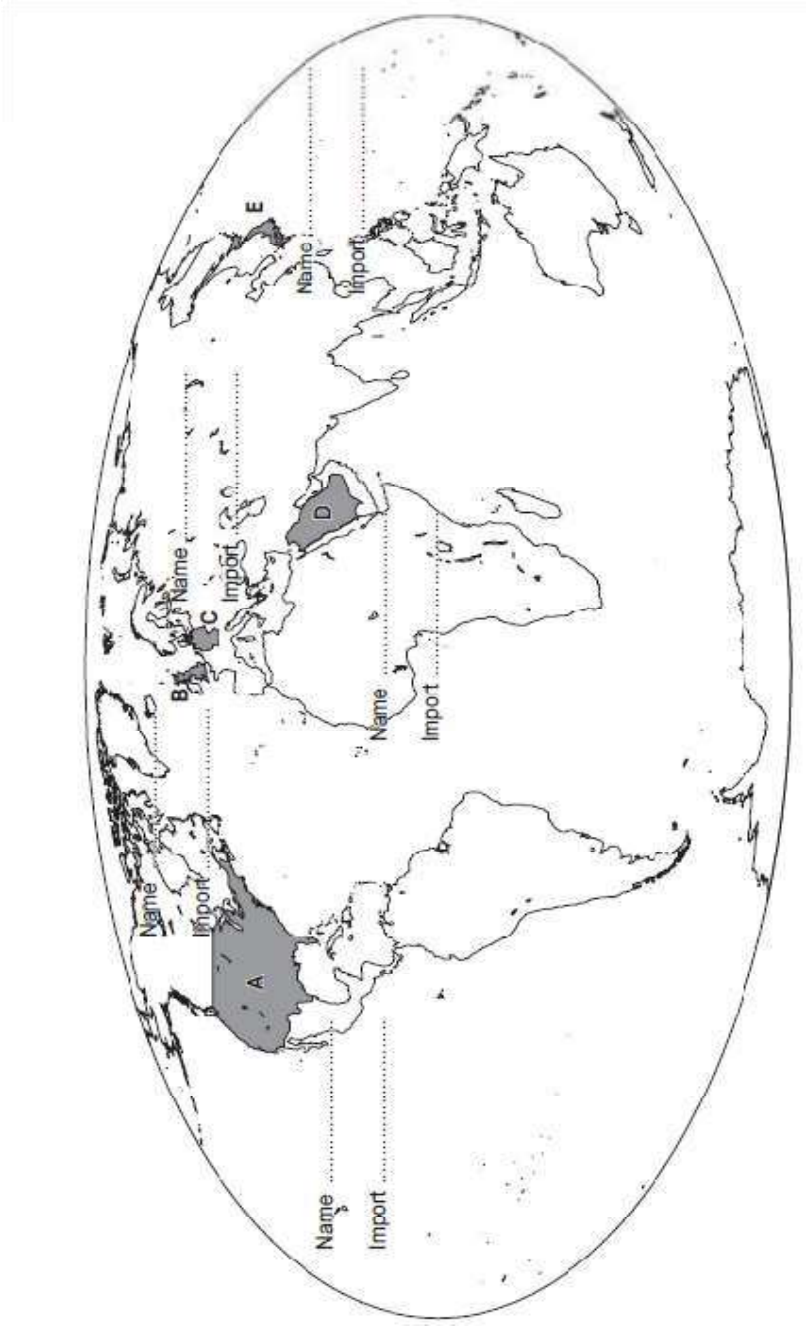
(iii) Since 2000 the Sialkot Export Processing Zone has been in the process of development at Sambrial and a new airport is being built by the Sialkot Chamber of Commerce. How will these developments help the expansion of industry? [5]
<u>Export Proccessing Zones</u>
-government incentives
-infrastructure put in place
-attracts foreign/private investment
-attracts foreign technological/management skills
-improved quality
-better marketing
<u>airport</u>
-closer than Lahore's
-cheaper transport for imported light raw materials
-more convenient for visiting businessmen
-more convenient for exporting light goods
-service industries develop to serve airport
-tourism

(c) What factors should be considered when choosing the site for a new airport like the one being built at Sialkot? [5]
-flat site
-large area
-cheap land
-unobstructed approaches for aircraft
-firm/solid ground
-well drained land
-climatic factors e.g.. snow, fog
-few/nobody living in area to be developed
-large pool of labour available …

-closeness to utilities/water/electricity
-closeness to road/rail/transport links
-(preferably) far away from houses
-demand
-availability of fuel

[Oct/Nov 05]

Study the world map, Fig. 6



Choose two of the countries A – E. Using the lines on the map
(i) name the country,

Name the country
[A] USA/America
[B] UK (accept England or British Isles)
[C] Germany (not EU)
[D] Saudi Arabia
[E] Japan

(ii) state a product that the country imports from Pakistan. [4]
Choose two countries only.
[A] Carpets, rugs surgical, sports goods
[B] (Raw) cotton, goods to A
[C] Cotton cloth, goods to A
[D] Spices, rice, ready made garments/cotton/fish
[E] Fish and fish products/cotton

(b) (i) How can Pakistan increase foreign exchange earned by trading with a country or trading bloc such as SAARC or the EU? [3]
-Value-added/processed goods
-Good quality
-Competitive prices
-Reliable supply
-Stable government
-Good (tele)communications
-Political influence/agreements
-Better port facilities

(ii) State another way in which Pakistan obtains foreign exchange. [1]
-Remittances (from relatives abroad)
-Tourism
-Invisible earnings

(iii) Why does Pakistan need to increase its foreign exchange? [3]
-Negative balance of payments/trade
-Reduce foreign debt
-Investment in agriculture
-Industrialisation
-Named infrastructure improvements
-Better housing/ resettle squatters
-Cost of foreign expertise

[Oct/Nov 07]

Read the extract below and study Photograph C.

> *Quetta is an important and busy trading centre. One of its main trades is in textiles and tribal clothes. The centre of the city has seen many modern improvements to its buildings and communications.*

(i) State three features that can be seen in Photograph C and agree with what is said in the extract. [3]

-People/more than 5
-Many shops/commercial buildings
-Textiles/clothes shops
-Overhead wires/power/telephone lines
-Modern/concrete buildings
-Tarred road
-Truck/4x4/car
-Scooter
-Telecom mast

(ii) Why is Quetta an important trading centre? [3]

-Focus of roads/well connected to rest of country
-Main road through pass/RCD highway
-Nomadic tribes
-Near Afghan border/Afghanistan
-Only large settlement in area
-Railway

-Airport
-Capital of Baluchistan
-Dry Port

(i) State two types of infrastructure shown in Photograph C. [2]
-electricity (wires)
-road
-telephone (wires)

(ii) Explain why these and other types of infrastructure are important to a centre such as Quetta. [5]
-Electricity for offices, factories, lighting, power, communication
-Roads for transport of people and goods
-Telephone for quick communication, better business
-Water for drinking, cleaning, hygiene, etc
-Gas for power, heating etc.
-Industrialisation needs good infrastructure
-Hotels for tourism, visitors
-Administration buildings

(c) (i) State three types of tertiary employment that may be taking place in the street shown in Photograph C. [3]
-shop keeper
-office worker
-(vehicle) driver
-Cleaner

[Oct/Nov 08]

Study Fig. 6, a graph showing the value of sports goods exports.

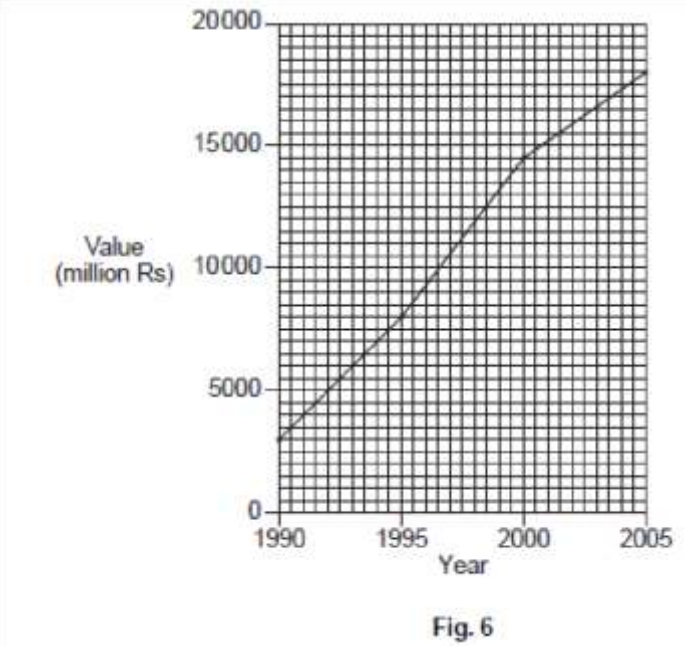


Fig. 6

(i) What was the value of sports goods exports in 2005? [1]
18,000 (million rupees)

(ii) By how much did the value of sports goods exports increase from 1995 to 2005? [1] 10,000/8000 – 18000 (million rupees)

(iii) Why is a large proportion of the production of this industry exported? [4]
-to make capital/improve trade balance/lessen debt/raises GDP
-to earn foreign exchange
-demand from abroad
-popularity of sports in the world
-competitive price/good quality
-good reputation of Pakistan
-less need in Pakistan/greater need abroad

(iv) How can Pakistan maintain and increase its exports of sports goods? [6]
-improve quality/quality control
-more Export Processing Zones
-more Dry Ports
-modernisation/machines to replace hand work
-training/skills/talents
-innovation/new products
-ban child labour
-regular/reliable supply
-more factories/government incentives
-larger factories/economies of scale
-better roads/airports/telecommunications/uses of telecommunication

-advertising
-do deals with companies, e.g. Adidas

(c) Sports and other manufactured goods are transported by air, sea and road both in Pakistan and across the world. Name two methods of transport used for the export of sports goods from Pakistan. For each method, explain its advantages and disadvantages. [6]

Sea

Advantages
-Cheap, good for bulky goods, use of dry ports, long distance
Disadvantages
Slow, problem of getting goods to and from coast, damage, delivery may be delayed

Air

Advantages
-Fast, safer, preferred by managers, long distance
Disadvantages
-Expensive, few airports, have to get goods to airport, only light or high value goods

Road

Advantages
-Accessible/goes everywhere, lorries easily available
Disadvantages
-Only within Pakistan (mostly), accidents, damage, theft, needed to get to port\

[Oct/Nov 10]

From the list below state **two** imports and **two** exports. [2]

COTTON MACHINERY WHEAT IRON ORE LEATHER
CRICKET BATS SURGICAL EQUIPMENT COMPUTERS

The European Union (EU) is a major trading partner of Pakistan. Name two countries in this trading community. [2]

Why it is important that Pakistan trades both imports and exports with the EU? [2]

[Oct /Nov 11]

The countries of the European Union have a large demand for goods such as clothes and sports goods. Pakistan can produce these goods cheaply.
Explain the advantages and disadvantages of developing a trade agreement with

partners in the EU. [4]

Transport and Communications

[May/June 05]

Study the map, Fig. 6, which shows internal air routes in Pakistan.

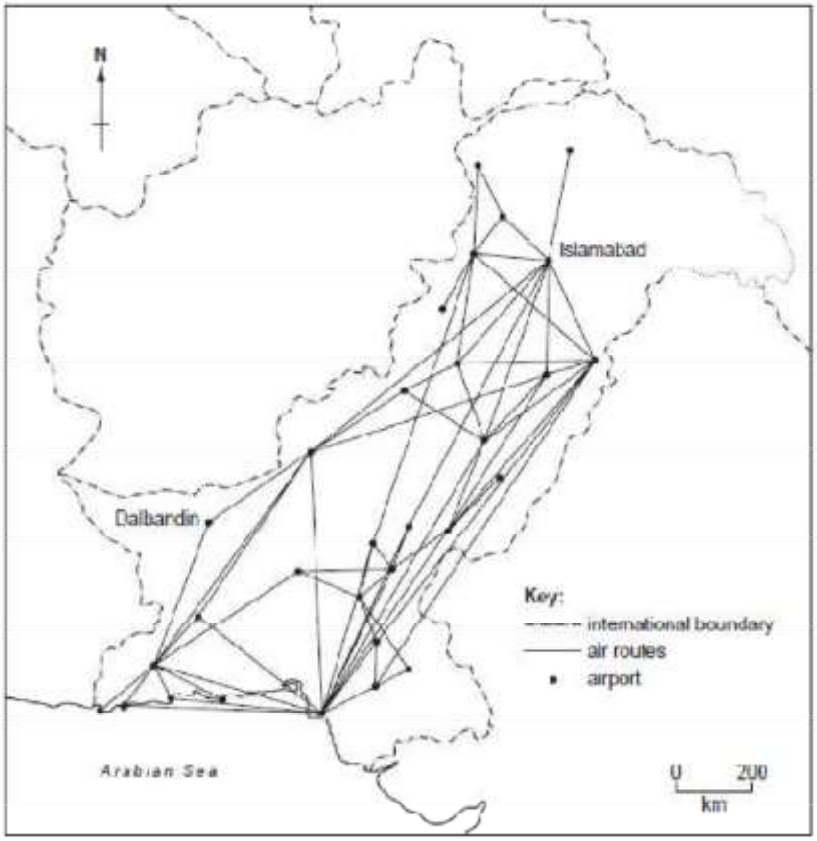


Fig. 6

(a) (i) Describe the distribution of air routes in Pakistan. [4]

-Largest numbers/biggest foci from Karachi (10)
-Centres/foci in other major cities e.g. Lahore, Multan, Turbat, Quetta, (Any 2 examples)
-More south-north/SW-NE/less east-west
-Many routes follow Indus Plain
-Branches up other valleys e.g. Peshawar-Chitral
-None in extreme north,
-Few/none in Chagai, SE Sindh/Thar

(ii) Explain the reasons why there are more internal air routes from Islamabad than Dalbandin. [4]

Islamabad
-Federal capital
-Administration/business/tertiary industry
-Larger population
-More people can afford to travel/high standard of living

-International airport
-Access to Northern Areas
-Better road links
Dalbandin
-Poor road links
-Lower population
-Less administration/office jobs
-Fewer people can afford to travel/low standard of living
-No international airport
-Desert/barren land

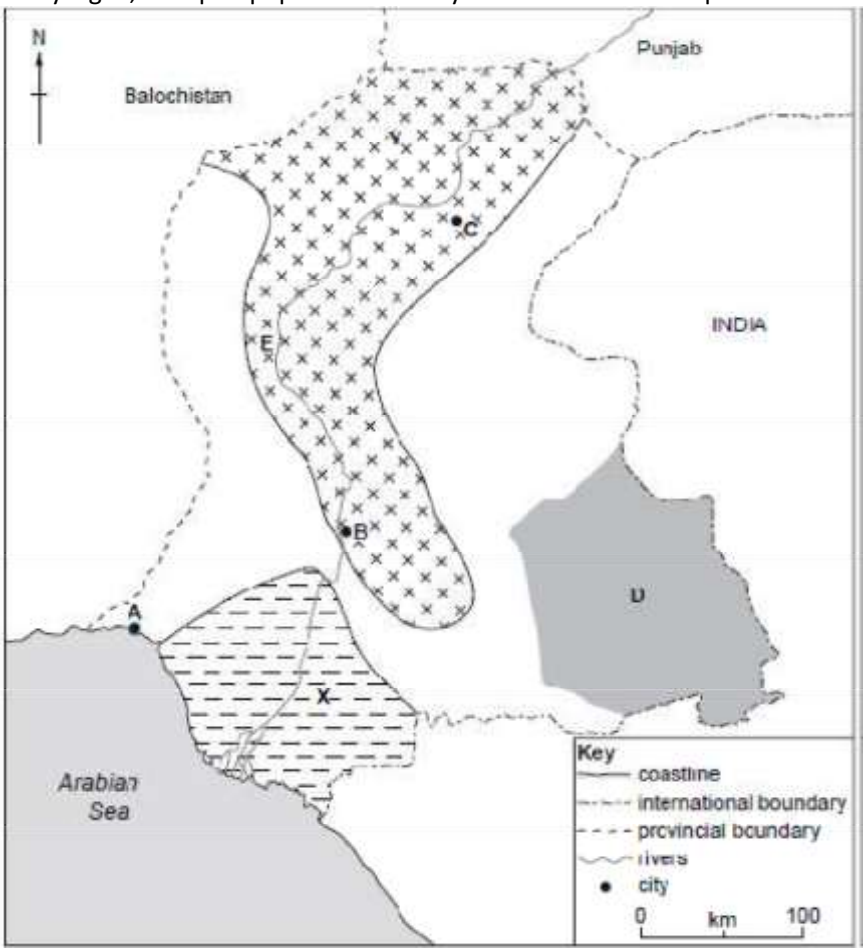
(iii) Why is air transport and travel important within Pakistan? [3]
-Faster than road and rail
-Better to reach remote places/places where roads are poor
-Better in hilly/mountainous areas
-Better for light, high value goods
-Less chance of robbery/safer
-More people can afford air fares
-More demand from business
-Can be used all year/not affected by snow, flood etc.
-Tourism within Pakistan
-Emergencies
-Improved communication between cities

[May/June 07]

Explain how telecommunication can be used to improve the supply of goods, and increase trade in Pakistan and abroad. **[6]**
Look for how these methods are better in the 21$_{st}$ century, and what they are used for
How
-Faster
-Can contact other countries/long distance communication
-Easier communication
-Internet conferencing
-Better advertising
For
-Ordering/purchasing/buying/selling
-Internet banking/transfer of funds
-Finding out what it required/discussion
-Call centres
-Surfing the web/searching for goods or suppliers
-Assembly of components/co-ordination of inputs

[May/June 08]

Study Fig. 2, a map of population density distribution in Sindh province.



Port Qasim is located 20 kilometres south-east of city **A**.

(i) Give two reasons why this site was chosen for a new port. [2]

-Deep water
-Sheltered harbour/creeks/inlets
-Close to Karachi/relieve pressure on Karachi Port
-Near steelworks/Pakistan Steel Mill
-Flat land
-Space for industrial development
-Near oil refinery

(ii) Name the other port in Sindh to the west of city A. [1]

Keamari/Karachi Port

(iii) Name one dry port in Pakistan and explain why dry ports are needed to reduce the burden on sea ports. [4]

-Sambrai(Sialkot), Lahore Multan, Faisalabad, Rawalpindi, Hyderabad, Larkana, Peshawar,Quetta

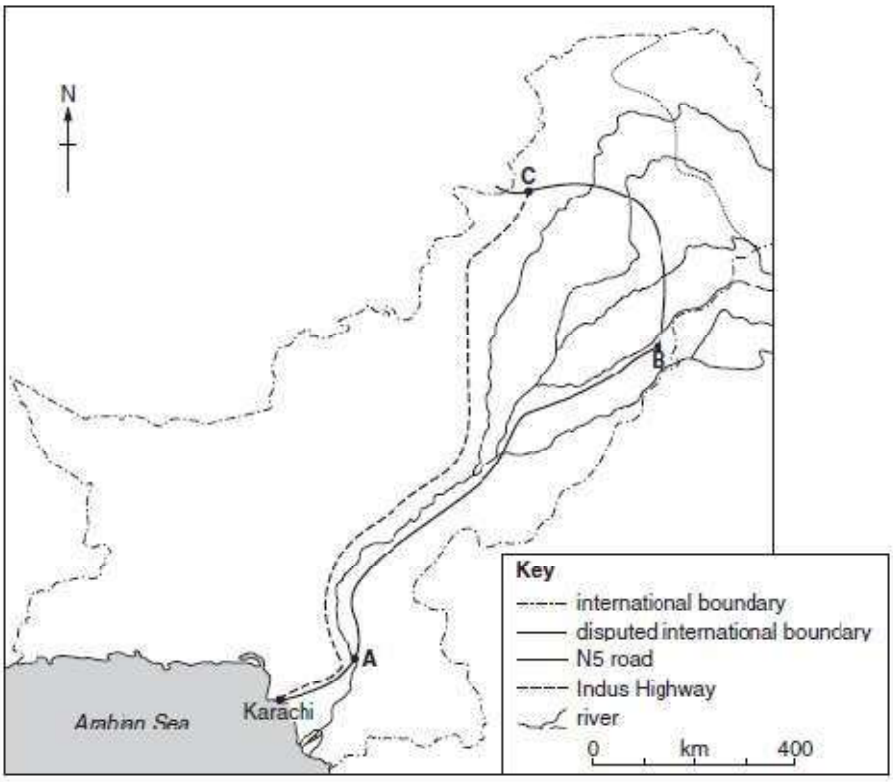
<u>Reasons:</u>

-lack of space/storage

-to deal with paperwork/quicker processing and clearing/customs duties/tax etc.
-relieve congestion
-only 2/3 sea ports/few sea ports
-allows packing/unpacking (of containers)

[May/June 09]

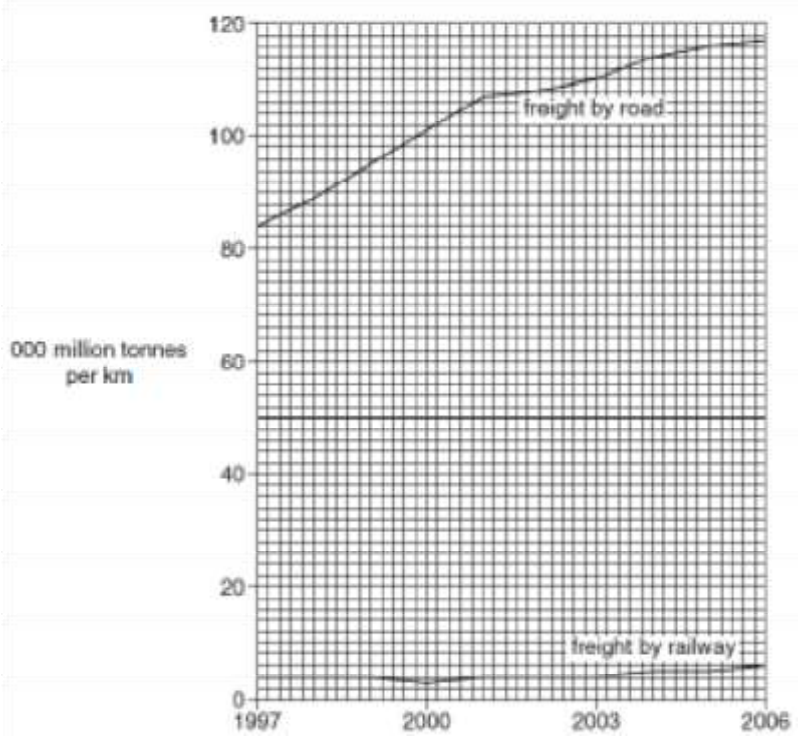
Study the figure given below



(ii) Using the map, describe the route of the N5 road, starting from Karachi. [3]
-NE (to Lahore)
-NW/N then W (to Peshawar/Afghanistan/Durand line)
-(East side of) River Indus
-Khyber Pass to Afghanistan
-Crosses river at Hyderabad
-Follows River Chenab then Ravi
-Crosses River Ravi (near Lahore)/other named rivers/Indus tributaries

(iii) Compare this to the route of the Indus Highway. [2]
-other/west side of River Indus
-heads north in Punjab instead of NE/follows only the Indus
-does not go to Lahore/other large cities
-shorter/more direct
-crosses only one river

Study Fig. 4, a graph showing freight carried in a year by road and by railway in Pakistan.



(i) Compare the amounts of freight carried by road and railway between 1997 and 2006. [3]

-Total larger by road
-About 20× more than railways
-Road increased/rail stayed approx. same/rail increased less
-Road 84 – 117 but rail 4 – 6 (1000 million tonnes per km)/rail stayed almost the same
-Both increased 2003–6
-Rail decreased in 2000, road always increases

(ii) Suggest reasons for the differences in the amounts carried by road and railway. [4]

-More roads than railways
-More road vehicles than rail
-More places accessible by road/lorries can go anywhere/door-to-door service
-Lorries more useful/carry small amounts
-Railways old/lack of investment
-Investment in new/better roads/motorways

(c) (i) Why are there very few major roads and railways in Balochistan? [4]

-low population (density)
-scattered population/few towns/lack of urban development
-Rugged/rocky/mountainous/barren/badland/rock slides/hills make barrier
-Desert/lack of water/difficult working conditions
-lack of government investment/backward/present political instability
-little industry
-tribal opposition

(ii) Explain how better transport routes could help to increase development in Balochistan. [6]

-Industrialisation – bigger lorries, employment
-Urbanisation – better travel, less nomadism
-Faster travel for cars and lorries
-EPZ and dry port developed
-Better access to port at Gwadar/coastal development/development of ports
-Travel to Afghanistan or Iran via Quetta and passes
-Access for health and education workers or travel to them
-Promotion of small scale industries
-Tourism
-Mineral exploitation
-Fishing development/better access to markets
-Higher incomes/living standards/quality of life
-More security

[May/June 12]

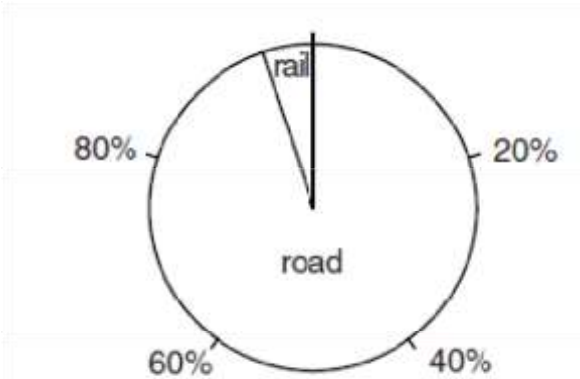


Fig. 6

What is the percentage of goods carried by rail? [1]

4, 5, 6 or 7

Compare the advantages of transporting goods by road and rail. [4]

Road
-Door-to-door / goes everywhere
-Reaches all areas / remote areas / more roads
-Available to all / no special vehicles
-More modern / better maintained
-Better for short distances / local deliveries
-Cheaper because
-Faster because

Rail
-Only goes to stations
-Limited network

-Cheaper because
-Faster because
-Carries more bulky / larger / heavier loads
-Old infrastructure / equipment
-Better for long distances

[Oct/Nov 06]

Study Fig. 4, a map of the road network in Pakistan in 2002.

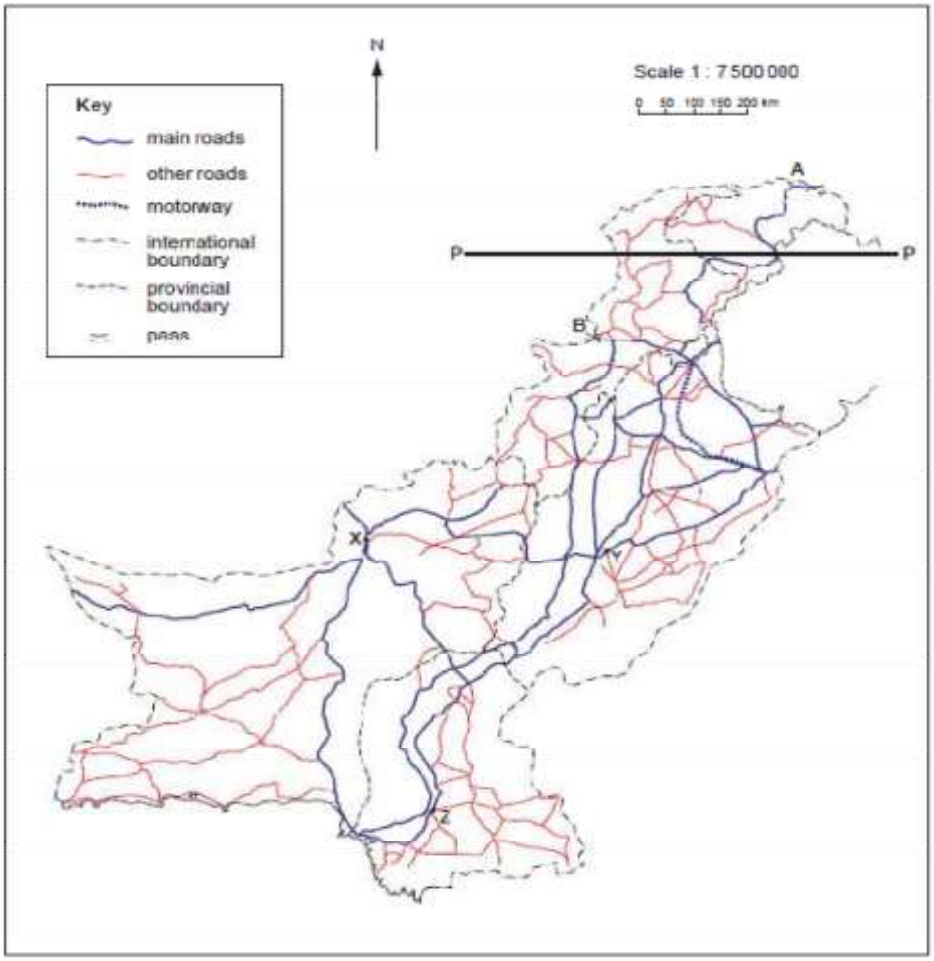


Fig. 4

(a) (i) Name the cities X,Y and Z. [3]
X Quetta
Y Multan
Z Hyderabad

(ii) For each of the roads leading to A and B, state the country to which it is going, and the name of the pass through which it goes. [4]
A to China, through the Khunjerab Pass
B to Afghanistan, through the Khyber Pass

(b) (i) Describe the ways in which the road network of Punjab is different from the road network of Sindh. [3]
-Punjab more dense – Sindh less dense
-Sindh 'other roads' more dense in S – Punjab all over
-More areas in Sindh with few / no roads
-More foci – fewer centres / foci
-Sindh 2 main roads follow R. Indus then W to Karachi – Punjab spread out
-Motorway in Punjab, not Sindh.

(ii) Give reasons for your answer to (b)(i). [4]
-one river in Sindh – 5 in Punjab – roads follow these routes

-more desert in Sindh – less habitable
-large areas of low population density in Sindh –- less need
-fewer major cities in Sindh – less need
-ideas linked to industrial development

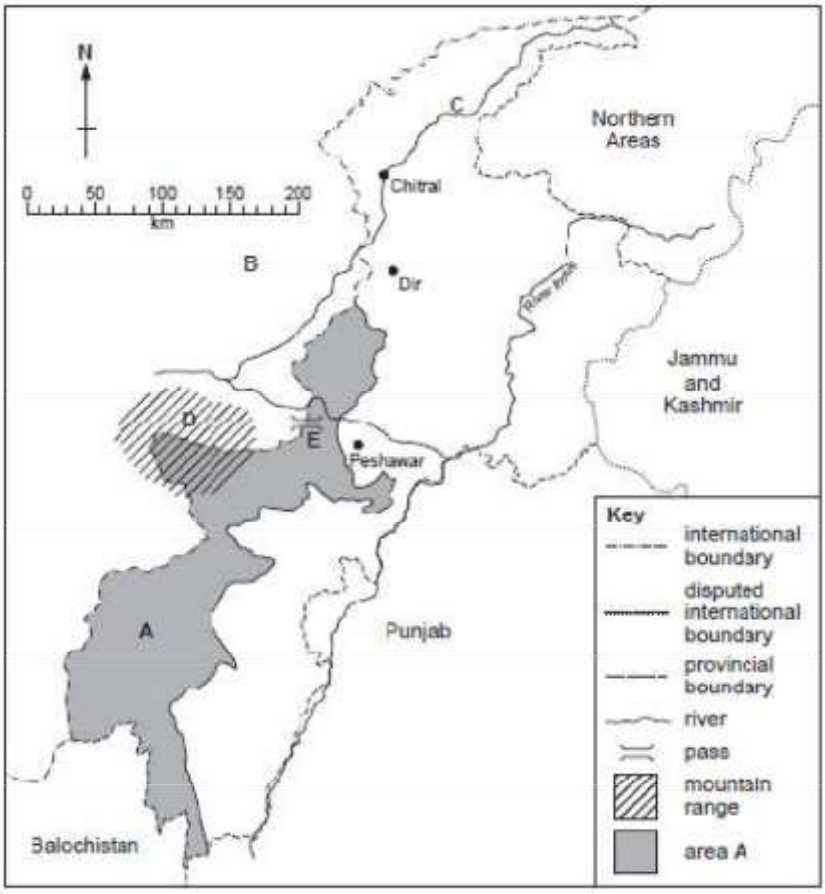
(iii) Explain why there are few roads in the area north of the line P – P shown on Fig. 4. [4]
-Mountains
-Steep slopes
-Landslides
-Snow
-Avalanches
-Floods
-Ice / snow/ stones damage road surface
-Lack of demand

(c) What factors hinder the development of air transport in the area north of the line P – P? [4]
-Bad weather / snow / ice / fog / heavy rain / floods
-Lack of flat land for runways / airports
-Lack of good roads to airports
-Lack of passengers / freight
-Problem of blocked radio signals

(d) Why was the first motorway in Pakistan built between Islamabad and Lahore? [3]
-2 large centres of population
-passed by other populated areas
-to promote growth of industrial estates
-large volume of traffic / ease congestion / save other roads
-better for lorries / large vehicles
-link from Lahore to Karakoram Highway

[Oct/Nov 08]

Study Fig. 1



(i) The distance in a straight line from Peshawar to Dir is about 135 kilometres. Using this knowledge, state how far it is from Peshawar to Chitral in a straight line. [1]

190 – 210 kms

(ii) What would the most suitable form of transport from Peshawar to Chitral be for
A a rich businessman?
aeroplane/car

B the delivery of gas cylinders?
road, lorry, rail

C the transport of wool and hides? [3]

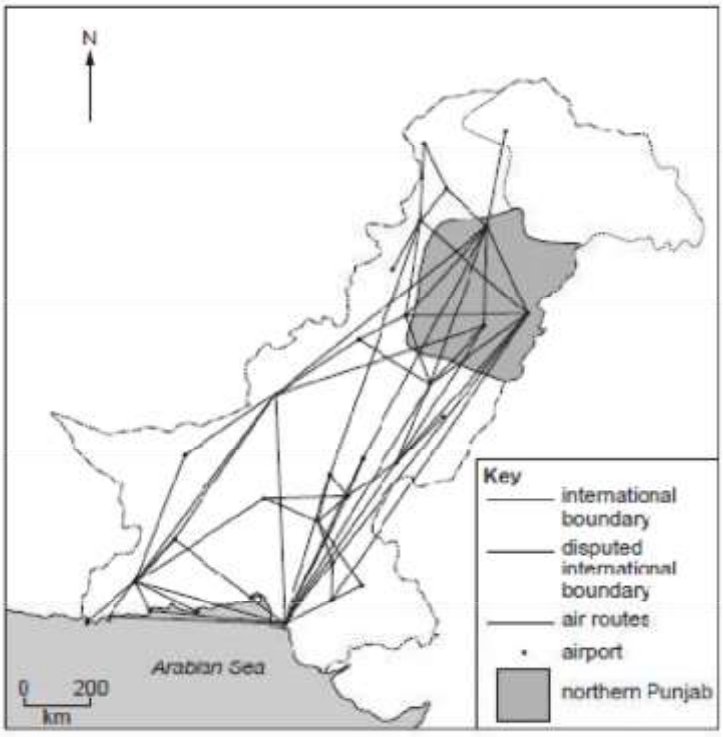
road, pack animal, lorry, rail

(iii) Explain the problems of maintaining infrastructure and communication in these areas all through the year. [4]
Explain
-snow and ice
-avalanche
-heavy rain

-flooding
-earthquake
-sabotage
-accidents
-landslides
-shortage of machinery/people
-inaccessible/isolated

[Oct/Nov 09]

Study Fig. 6, a map of air routes in Pakistan.



(i) Name two major airports in the northern Punjab shown on the map. [2] two

from – Lahore (Alama Iqbal)/Faisalabad/Islamabad (Benazir Bhutto) or Fateh Jang

(ii) Describe the distribution of air routes from the northern Punjab. [3]
-to the coast/Karachi
-follow the Indus plain/through Sindh
-a few north and west
-to NWFP/Peshawar
-via Islamabad to Northern Areas/Chitral/Gilgit
-west to Quetta

(iii) Explain the advantages and disadvantages of using air transport in the northern Punjab. [5]

Advantages
-fast/saves time
-over difficult relief/mountains/deserts
-where no roads/railways/inaccessible
-direct to other countries
-businessmen/politicians/tourism
-perishable/high value/light goods
-more comfortable/less tiring
-promotes tourism
Disadvantages
-bad climate/fog/ice/snow/dangerous
-expensive
-unsuitable for perishables/heavy loads/cheap goods (do not double mark)
-few airports/difficult to build
-does not go door-to-door/airports may be out of city
-air pollution/global warming

[Oct/Nov 10]

Study Fig. 9, which shows an advertisement for a big company.

THE BIG POWER TRACTOR COMPANY

- Our tractors are big and powerful.
- They work quickly and efficiently.
- They can do many tasks.

For sale or lease

Bank loans can be arranged

Contact The Big Power Tractor Company, Karachi, Pakistan
Tel. 021-7654222
Fax. 92-21-7654333
Website www.Bigpowertractors.com
E-mail bigpowertractors@pakcom.com

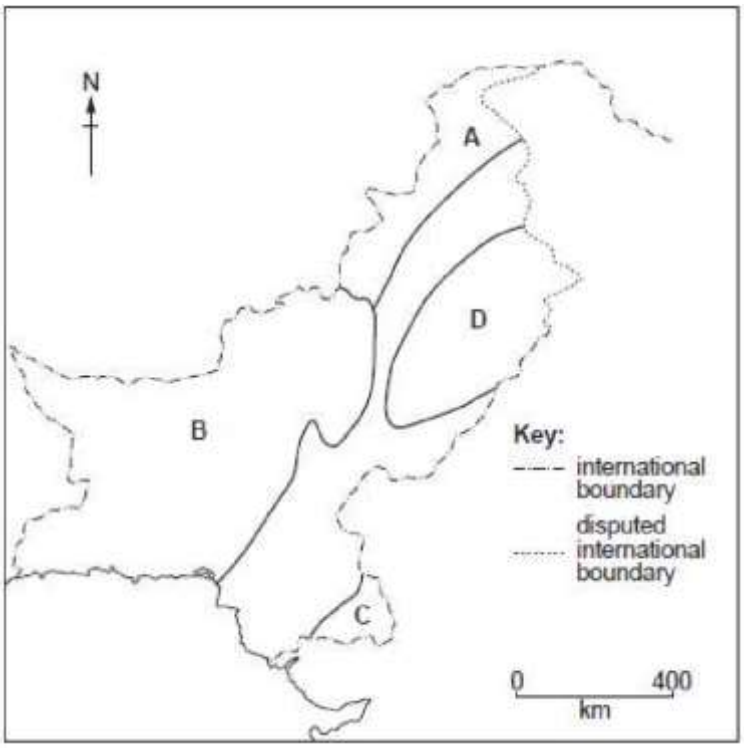
State four ways of contacting this company [2]

Which is the slowest way of contact? [1]

Why does the company advertise many different ways of contacting it? [1]

Explain two of the reasons given in the advertisement for using this tractor on a farm. [2]

[Oct/Nov 11]



Choose **either** area **A** or area **B** from Fig. 7.

It is often suggested that improved transport and telecommunications can bring development to a sparsely populated area.

What are the advantages and disadvantages of these improvements to either area A or area B? [6]

[May/June 03]

(b) Study Fig. 6 which shows population densities in Sindh.

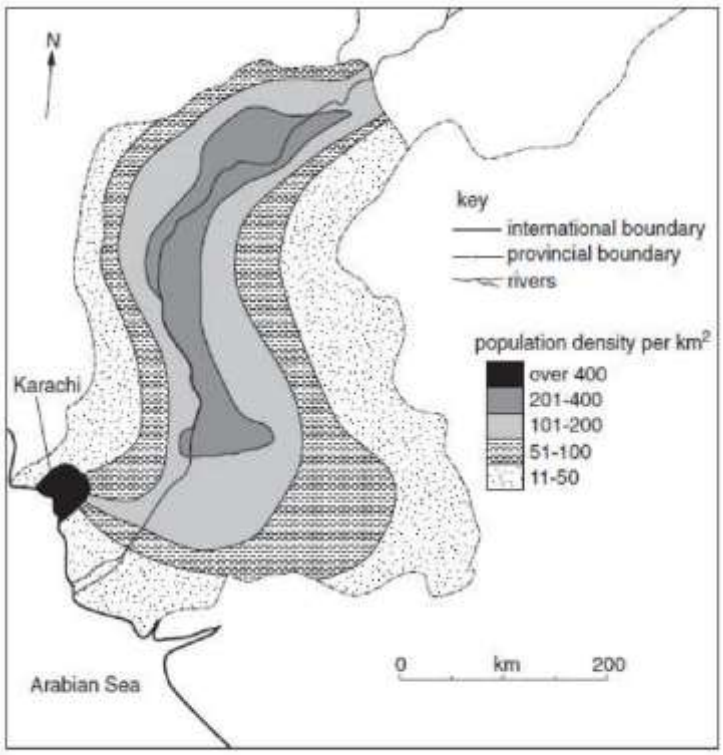


Fig. 6

(i) Describe the pattern of population densities in Sindh. [5]

(ii) *Excluding Karachi*, explain the pattern of population densities in Sindh. [9]

(c) Many people have moved from the rural areas to large cities such as Karachi. Explain the 'pull' of large cities. [6]

[May/June 04]

Study Fig. 6.

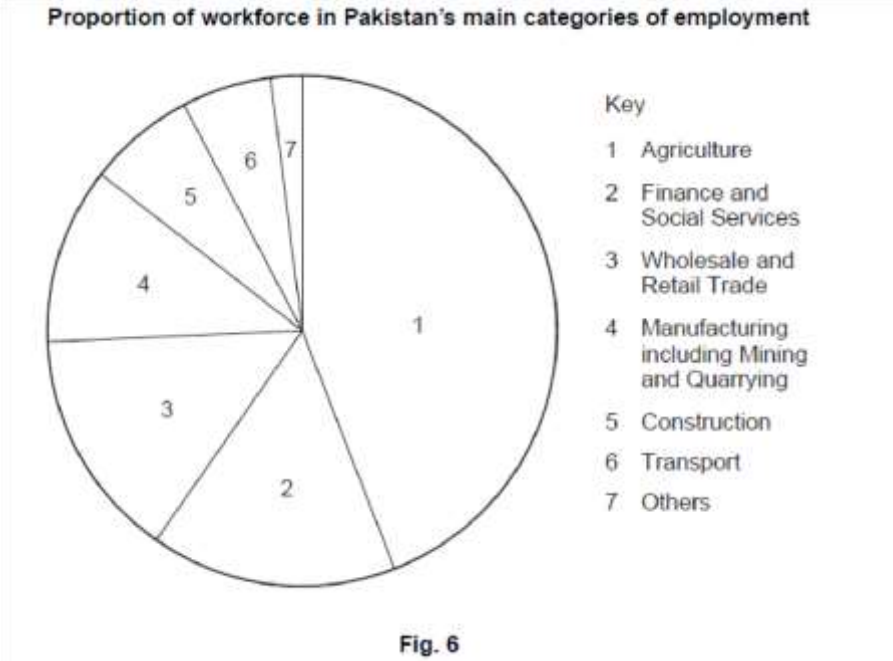


Fig. 6

(i) Which of these categories of employment has all its workforce in the primary sector of industry? [1]

Agriculture/category 1

(ii) How many of the categories of employment given are in the tertiary sector of industry? [1] 3

(c) (i) Give four reasons why so many people work in agriculture. [4]

- Tradition/inheritance
- Subsistence farming/no income/get basic necessities - Large % of population lives in rural areas/in villages (where farming is the main occupation)
- Large areas of Pakistan are suitable for farming
- Alluvial soils
- Irrigation schemes
- Lack of money for farm machinery/much manual labour needed
- Pakistan has an agro-based economy/is an agricultural country
- Many industries are agro-based and therefore promote farming

… example

- Growing population requires feeding
- Low standard of education means many secondary/tertiary occupations are not open to workers/or cannot do other work/cannot get good jobs
- Lack of other jobs available
- Cotton is a major export

(ii) Why has the percentage of the labour force working in agriculture declined steadily in recent years? [6]

- Increasing mechanisation on farms
- Fragmentation of holdings has made them unable to support the family
- Problems for tenants caused by landlords/jagirdars/zamindars
- Not enough farmland for increasing population
- Loss of farmland due to waterlogging/salinity/soil erosion
- Government policies
- Consolidation of holdings
- Improving education/literacy in rural areas/of rural people …

… so people want to work in jobs using their skills

- Increase in manufacturing industries/industrialisation …

… providing more job opportunities

- Higher wages in manufacturing industry
- Rural-urban migration …

… disenchantment with rural life/lure of city life …

… another push/pull factor

- Urbanisation
- Find other jobs for additional income.

(iii) Why has the percentage of the workforce working in tertiary industries increased steadily in recent years? [6]

- Rising standard of living …

… greater demand for services/increase in service industries/professions/increase in tertiary work

- Higher literacy/more educated so use qualifications in tertiary sector
- Want higher pay/wages
- Want better working conditions
- Government training programmes/Employment Generation Programme
- Rural-urban migration tends to mean a change from a primary occupation to a tertiary
- Government efforts to improve services/development - Improving educational standards so more teachers/lecturers needed
- Improving medical facilities so more doctors/nurses needed
- Growth of tourism
- Extension of road network
- Growth in recreational activities
- Fewer people make their own clothes/grow their own food etc
- More shops
- Spread of IT/computers
- More opportunities in banking/insurance etc
- More trade
- Industrialisation

(d) Attempts are being made to improve the standard of literacy in Pakistan. Explain why this is vital for the development of all three sectors of industry. [5]

- Pakistan's lack of skilled workers holds back development/skills promote development - People need to be literate in order to …

-be taught the skills needed …

-use better agricultural techniques to increase production

-engineering skills are needed in
-mining/processing/manufacturing industries
-management skills are needed to run businesses/services
-professional skills are needed in the service industries like education/health
- Inability to read instructions can cause mis-use/break down of machinery (and) …
-poor quality work …
-more difficult for firms to compete on world market
- Use of telecommunications
- Use of IT/computers

[May/June 06]

Study Fig. 6, population pyramids showing age distribution in urban and rural areas of Pakistan.

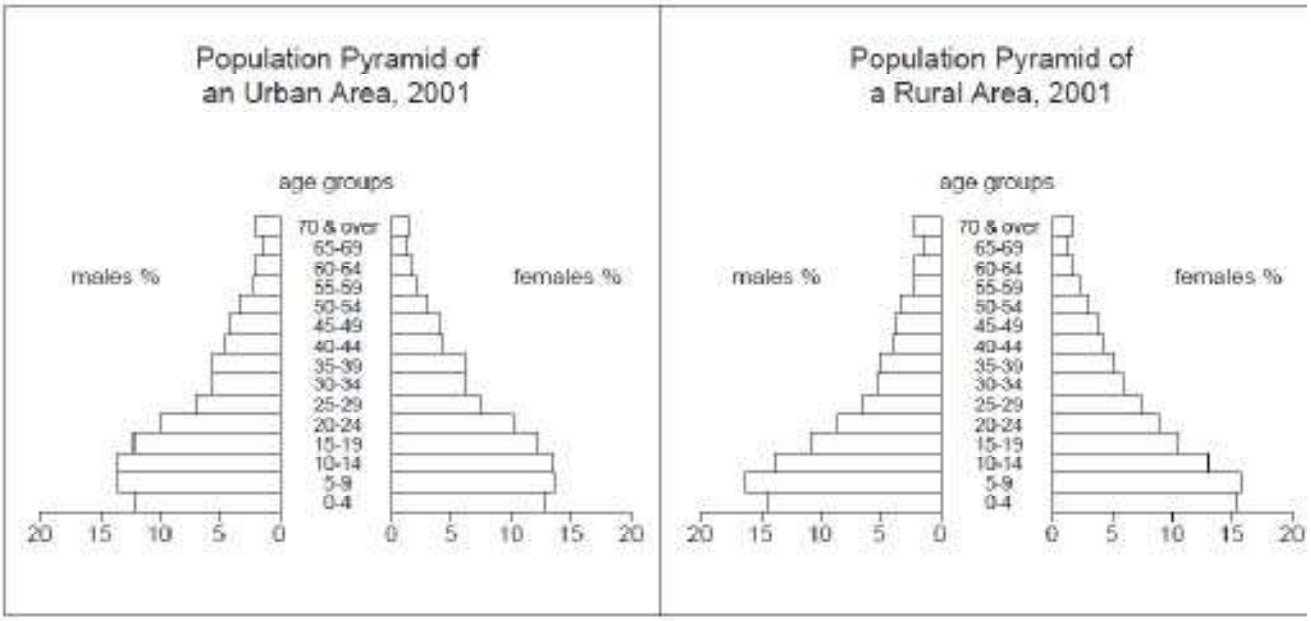


Fig. 6

(a) (i) Compare the percentage of children aged 9 and under in rural and urban areas and suggest three reasons for this difference. [5]

Rural greater than urban <u>reasons</u>
-Lack of education on birth control/family planning
-Lack of availability of contraceptive measures
-Traditional values
-Religious beliefs
-High infant mortality rates
-Need for family labour on farms

(ii) How do both pyramids show that the birth rate has fallen? [1]

bar lengths getting shorter 0-9 years

(b) (i) What is the percentage of people aged 20-24 in urban areas? [1]
20(%)

(ii) Is this larger or smaller than the percentage in rural areas? [1]
Larger

(iii) What is the main reason for this difference? [1]
Rural-urban migration

(c) (i) Describe the urban pull factors that cause rural-urban migration. [4]
-Better quality of life / living standard
-More reliable food supply
-Attractions of entertainment/bright lights
-Better employment opportunities
-Better services eg. Health, education

(ii) What improvements may be made in some rural areas to reduce rural-urban migration?[6] -Better access to medical / health and family planning facilities
-More free contraceptives and better availability
-Better access to education and training
-More / better jobs
-Better (named) infrastructure/ roads, electricity,telephone etc.
-Land reform
-More cottage and small-scale industries in villages
-Better (named) service other than those above

(d) How may improvements in literacy and education help to lower the rate of population growth? [6]
-More doctors, nurses, teachers
-Health education
-Nutrition awareness
-Birth control and Family planning
-Better jobs with better working conditions, shorter hours

[May/June 08]

Study Fig. 8, which shows a population pyramid for Pakistan for 2006.

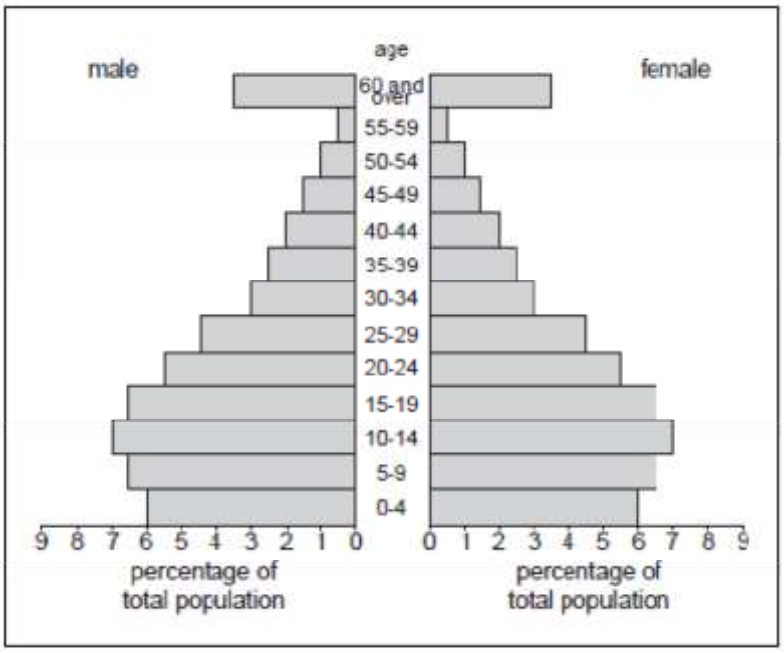


Fig. 8

(i) What percentage of the population is 4 years and under?
12% **[1]**

(ii) Which age group is the largest percentage?
10–14 years **[1]**

(iii) What is the percentage of people over 60 years old?
7 / 6.5–7.5 % **[1]**

(iv) Which age groups are called 'the dependent population'?
under 15 over 60

years old **[2]**

(i) How is the shape of the population pyramid likely to change from 2006 to 2026?
-Narrow base / shorter bars / fewer children under 15 years / young dependants / fewer young children
-Wider middle / longer bars / more 15–59 years / more working population / more independents
-Wider top / longer bars / more over 60s / more old dependants / more old people **[3]**

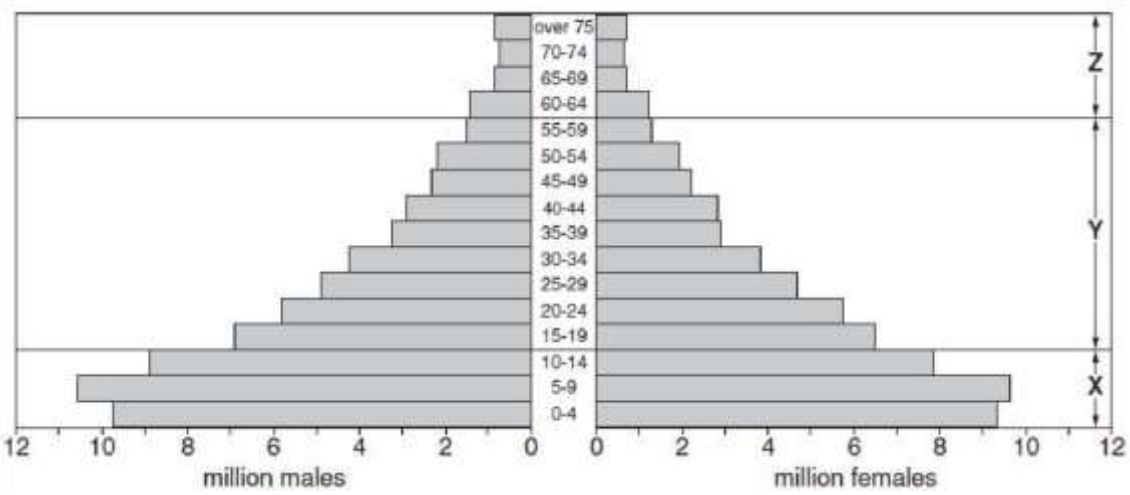
(ii) The changing shape of the population pyramid affects Pakistan's workforce both now, and for the future. Explain the advantages and disadvantages of the changes. [6]
Advantages

-fewer children to look after / more money for development
-more workers for developing the country / less burden on the economy

-more young workers / more energetic / innovative
-young more likely to be educated / more room in schools
-more old to give advice to young
Disadvantages
-more old to look after
-more unemployment due to larger workforce
-loss of educated / skilled workers through emigration
-more taxes needed to support older people
-examples of needs of old e.g. health care, pensions, care homes

[May/June 09]

(a) Study Fig. 5, a population pyramid for Pakistan in 1998.



(i) How many million children were there below the age of 5 years? [1]
19–19.2 (million) or males 9.7 or 9.8 + females 9.3 or 9.4

(ii) Why were there more children in the age group 5 to 9 than 0 to 4 years? [1]

Changing birth rates, infant mortality, family planning, contraception

(b) Study the sectors X, Y and Z on Fig. 5.
(i) Which sector represents the group 'young dependents'? [1]
X

(ii) Which sector represents the group 'economically active?' [1]
Y
(iii) The numbers of people in sector Z are likely to have increased since 1998.
Explain the effects of this on the economy and development of Pakistan. [5]
-More dependents/burden on working population
-More older family members to care for children

-More older people to give advice
-Overpopulation/strain on resources
-Shortage/demand of food
-More medical services needed/hospitals overcrowded
-More old people's homes
-Adaptations in houses for elderly
-Less money for development/burden or pressure on economy
-Cost of pensions

(c) (i) Explain the reasons for a high birth rate in Pakistan. [5]
-Lack of knowledge of contraception/family planning
-Lack of availability of contraceptives
-Need for help on farms/increase income
-Trying for a son
-Support in old age
-Religious beliefs/Allah will provide/prestige of large families
-High infant mortality
-Women at home to care for children/women lack education/marry at a young age
-Do not know about problems of overpopulation/large families

(ii) Explain some measures that could be taken to reduce the birth rate. [4]
-Access to, education of, and use of contraceptives/family planning
-E.g. Sabz sitara, green star (example of government scheme)
-Reduce need for child labour/ban child labour
-Education and awareness of population growth/how to improve living standards -Education of women/jobs for women
-More clinics and hospitals
-Healthy environment/better sanitation/better living conditions
-Clean water/piped water
-Better nutrition/better food
-Religious support for birth control

[May/June11]

QUARRYING CRUSHING PACKING DRIVER SALESMAN OFFICE WORKER

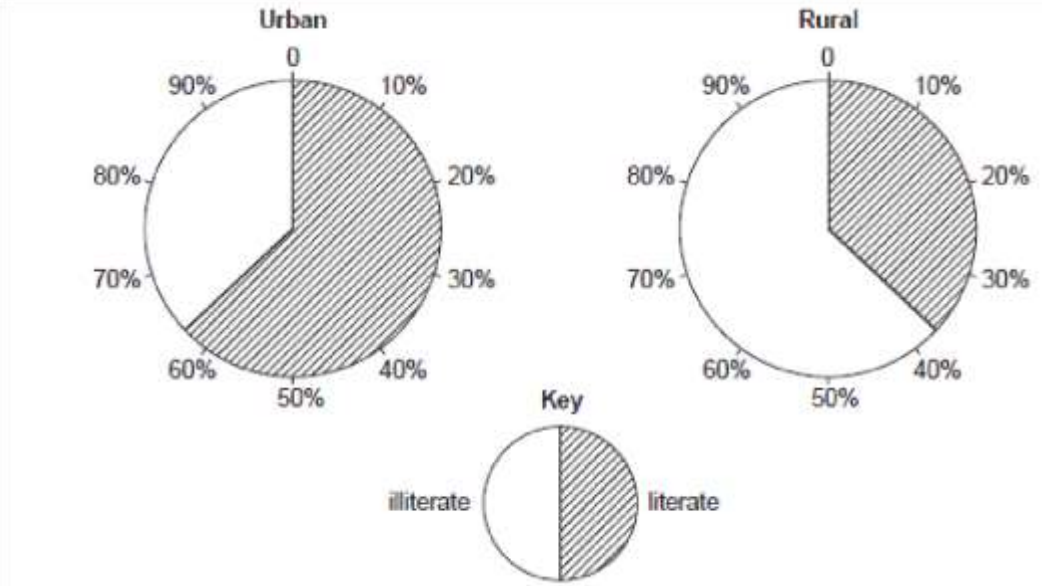
(i) From the list above, state one example of:
A Primary employment
Quarrying / crushing

B Secondary employment
Packing, crushing

C Tertiary employment [3]
Driver, salesman, office worker

Explain why a salesman should have a good education. [4]
-Good communicator
-Polite manners / etiquette
-Knowledge of what he is selling
-Knowledge of other cultures / can deal with foreign customers
-Use of computers / modern technology
-Can write letters etc. / read instructions
-Speaking English / other languages
-Use of figures / mathematics / calculations
-Open to new ideas

Study Fig. 3, which shows the levels of literacy in urban and rural areas.



State the percentage of literate people in urban areas. [1]
62/63

How much greater is this than the percentage of literate people in rural areas? [1]
24-26

Give two reasons why the percentage of literate people is larger in urban than in rural areas. [2]

-Jobs for literate / young people
-Better schools / colleges /education
-More educated women
-Traditional farming does not require education
-Can afford education

Using examples, explain why there are many jobs for illiterate and poorly educated people in urban areas. [3]
<u>Examples</u>
-Cleaners, servants, street sellers, etc.
<u>Explanation</u>

-It is a developed area so factories, building work etc.
-Rich people can afford this
-Their labour is cheap
-Unskilled work available
-Low standards of living
-Plenty of informal employment opportunities / lack of formal, regular waged employment

Study Photograph C.

Photograph C for Question 4

With reference to the photograph and using your own knowledge, explain why many people become ill in homes like these. **[6]**
Pool of water encourages mosquitos
– risk of malaria }
Water pollution / lack of clean water
Lack of sanitation / unhygienic
– risk of typhoid, cholera, diarrhea etc.
Dust / air pollution
– risk of asthma / breathing difficulties,
Waste dumped / lack of disposal of waste / dirty environment
Congested / high density / live close together
Kacha Abadi / Flimsy buildings / leaky roofs / slums
– risk of flu, bronchitis, pneumonia etc.
Spread of disease
Malnutrition / poor food supply
No resistance to disease
Poverty / no jobs
Illiteracy

Why do people in villages think that their quality of life will improve if they move to a city? [6]
-Better housing
-More chances of employment / jobs with higher incomes, regular income etc.

-Easier work / better working conditions (than farming)
-Electricity / gas
-Telecommunication / telephone / internet
-Sanitation / sewage disposal / more hygienic / cleaner
-Water – more / clean water
-Access to entertainment / bright lights / clubs / parks
-Media encourages perception of a better life
-Good shops / major chains / markets
-More food / better food
-Public transport
-Education
-Health care / hospitals
-Security / police

The government can introduce self-help schemes to improve the living conditions of people in shanty developments and tent cities. Explain the advantages and disadvantages of self-help schemes. [6]

Advantages
-Reduces poverty
-Healthier environment / less disease / lower death rates
-Encourages people (to better themselves / work harder etc.) / improve skills / get jobs
-Can build better housing / fewer slums
-Better care of the area
-Removes unwanted people
-May reduce crime rates
-Removes an eyesore / encourages tourism
-Less labour required

Disadvantages
-High cost / lack of finance available
-Corruption (money goes elsewhere)
-Takes time to achieve
-High risk of failure in Pakistan
-Lack of resources to do this
-Where do people go / moves the problem elsewhere
-May attract more people / more rural-urban migration
-Need for education

[May/June 12]

Study Fig. 9, which shows population density in Sindh.

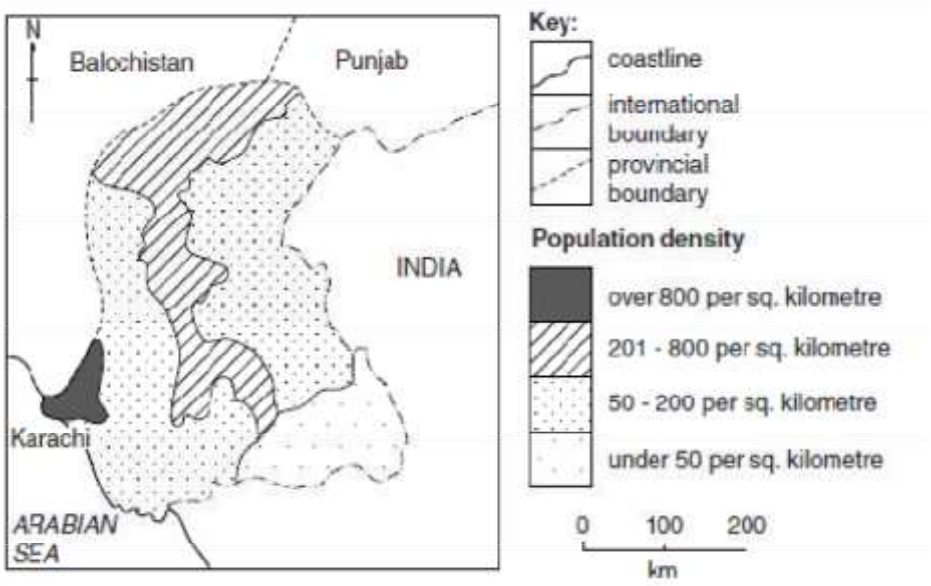


Fig. 9

Describe the distribution of the areas with a population density of 201 to 800 people per square kilometre.[3]

-Northern border with Balochistan or Punjab / in the north or north-west
-follows river Indus
-central areas
-towards to south-east / east of river towards south
-named city or district (not Karachi)
e.g. Hyderabad, Sukkur, Larkana, Shikarpur, Jacobabad

What is the lowest population density shown on the map? [1]

under 50 persons per square kilometer

Name the area which has the lowest population density. [1]

South-East Sindh / Thar(parkar)(desert)

Explain the reasons for a high population density in the Karachi area. [6]

-rural-urban migration
-high birth rate / low death rate
-industrial / port / administration / trade / commerce / fishing
-good housing
-opportunities for businessmen / for trade
-employment / work / jobs
-example of type of work (but NOT fishing)
-(perceived) better living standards / bright lights / entertainment
-better infrastructure with eg. such as roads, rail / airport / electricity / gas / water /
-better services with eg. such as education, health, sanitation
-more food
-maritime climate more pleasant /moderate
-refugees (from Afghanistan / after the partition in 1947)
-old capital city of Pakistan / present capital city of Sindh province.

Explain the difference between density and distribution of population. [2]
-density – numbers per unit area
-distribution – the spread of people in an area -areas of

different density within a larger area (or similar)

.

Study Fig. 10, which shows the increase in population in Karachi.

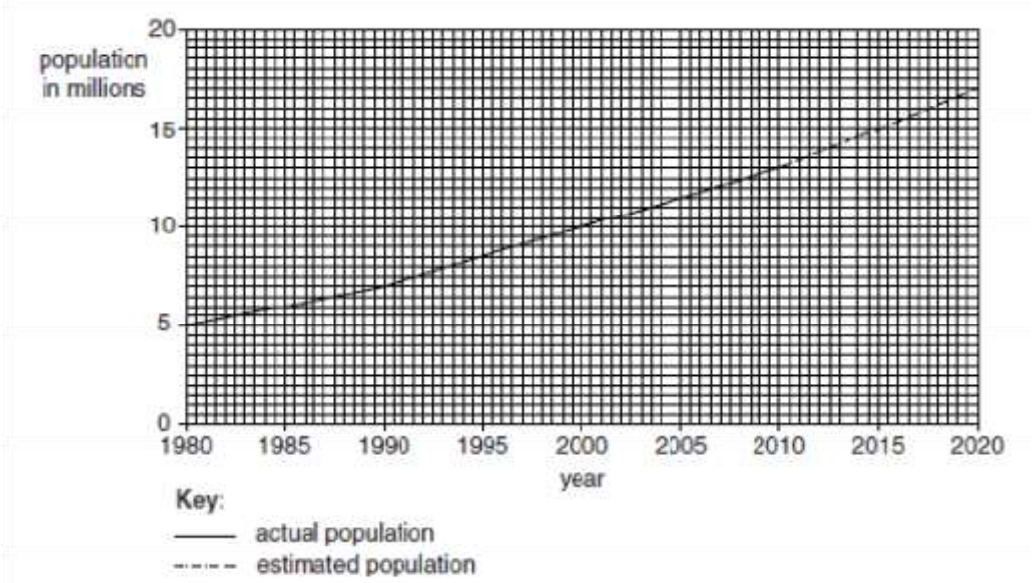


Fig. 10

What was the population in 2010? [1]
13 million

By how much is this expected to increase from 2010 to 2020? [1]
4 million

What problems can be caused in an urban area by a high population density? [4]
-poor housing / living on the streets / slums / Katchi Abadi / overcrowding
-unemployment
-poverty
-lack of hygiene / waste dumped / litter
-sickness / disease / poor health
-high death rates
-crime / drugs / terrorism
-traffic congestion / pressure on roads / rail
-shortages / strain on named resources / services / utilities with e.g. such as schools,
-health, food,
-named pollution
-low quality of life

Read the article below, published in 2009.

In 1996 the Orangi Welfare Project was established in a slum area of Karachi. Government authorities and utility companies are working together with local people to establish a model town or 'misali ilaqa'.

The work is shared between the authorities and the local people.

Residents will benefit from sanitary facilities, water systems, a power supply and better roads. Materials for building are supplied for housing, health centres and schools, including a grammar school.

There is also a scheme to provide cheap loans for small businesses.

To what extent can self-help schemes, such as that in Orangi, succeed in improving the living conditions in this and other slum areas? [6]

Success
-Water Cleanliness, hygiene, safe to drink
-Sanitation Less disease / better health
-Lower death rates, infant mortality -

Power Electric light, air con.

-Roads Opportunities for trade etc.
-Housing Improvements or removal of slums / squatters, houses for the homeless

stronger, bigger, drier

-Health centres better health, less disease, advice, effect on BR, DR and LE
-Schools better qualified for jobs, effect on health and BR
-Cheap loans more opportunities to set up businesses, leading to jobs,
-Safer / less crime / terrorism
-Higher income / will make money / economic development
-Set up / development of business, industry
Failure
-Lack of money / investment
-Lack of support co-operation
-Lack of education / skills to do the task
-Corruption
-Change of governments/political instability
-Huge size of task / high cost
-Will take time
-Or more specific e.g. shortage of water, electricity, education

[Oct/Nov 03]

Fig. 5 is a population pyramid for Pakistan in 1998.

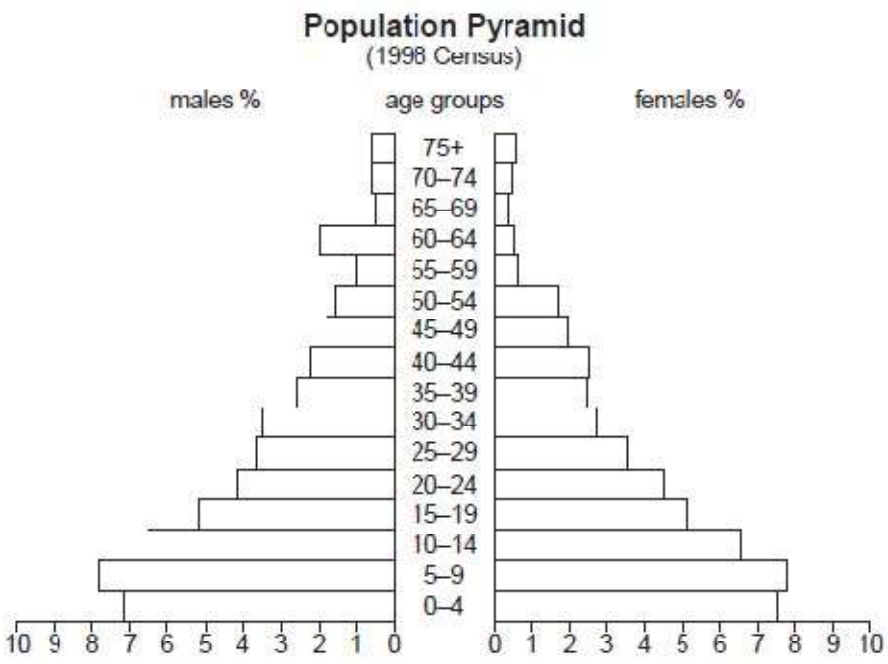


Fig. 5

(a) (i) Which age group has the most males and females? [1]

(ii) Compare the percentage of males with the percentage of females in the age group you have given in (a)(i). [1]

(iii) Describe the overall shape of the graph. [4]

(iv) Does the overall shape of the graph show that the population of Pakistan is increasing, staying the same or decreasing? [1]

(b) (i) How does Fig. 5 show that the birth rate is high? [1]

(ii) Why is the birth rate in Pakistan high? [6]

(iii) How does Fig. 5 show that the birth rate has come down a little recently? [1]

(iv) Explain why the birth rate has decreased a little in recent years. [5]

[Oct/Nov 04]

(c) "It is difficult for the working population of Pakistan to support the non-working population." Using your own knowledge and Fig. 5 give reasons for agreeing and/or disagreeing with this statement. [5]

Balochistan:

- occupies 43.5% of Pakistan

- has a total population of 6.5 million
- has 5% of the total population of Pakistan
- has an average population density of 19 per square kilometre

(i) Amongst the provinces of Pakistan where does Balochistan rank in terms of size? [1]

first/largest/biggest

(ii) Amongst the provinces of Pakistan where does Balochistan rank in terms of its total population? [1] last/fourth/lowest/least

(iii) Describe in *no more than two words* the average population density of Balochistan.

[1] very low/low/sparse

The map, Fig. 4 shows the densities of population in Balochistan.

(i) Explain why the area marked A has the highest density of population in Balochistan. [6]

(includes (by far) its largest city) Quetta
-has 575 000/over 500 000 people/largest city
-administration centre/government offices
-military base
-farming valleys/area …
-Pishin/Mastung valley …
-apples/apricots/grapes/almonds/tobacco
-Quetta coalfield
-woollen textiles (Harnai/Mastung)/cotton
-vegetable ghee/cooking oil (Quetta)
-road network
-railway focus
-(international) airport
-on national electricity grid/gas pipeline
-passes through highland
-markets/warehouses/trade
-dry port
-entertainment University/good schools
-Cool summers
-Medical/health facilities

(ii) Explain why large areas of Balochistan have fewer than 11 people per square kilometre. [7]

-mountainous
-Sulaiman/Toba Kakar/Chagai/Ras Koh/Siahan/Central
-Makran/Makran Coast/Brahui/Kirthar Range
-very low rainfall/arid/desert/scarcity of water
-Kharan (Sandy)/Kachhi Desert
-lack of water for domestic/industrial purposes
-lack of water for irrigation
-very hot in summer
-(very) high evapo-transpiration

-very/cold winters
-large areas of bare rock/barren/lack vegetation
-large areas of sandy waste }
-large areas of reg } infertile soils
-saline soils }
-hamuns (lakes) often dry/salt lakes/inland drainage/seasonal rivers
-Mashkel/Kap/etc Hamun/named river
-limited mineral resources/not exploited
-little developed by British
-lack of communications over vast areas
-lack of education/health/social facilities/services/electricity/
-lack of jobs
-very little industry

(iii) The area marked B is part of the Lower Indus Plain. Explain the density of population in this area. [4]
-51-100 per square km
-near river Indus
-canal from Guddu barrage/Indus …
… (part of) area irrigated
… flat/plain land
… alluvial soils
… rice/wheat/edible oils/pulses
-fishing
-Sui gas field
-road/rail communications network
-on national electricity grid/gas pipeline
-named town/city/state e.g. Jaffarabad, Nasirabad

(iv) Why is it that in the area to the south-west of line Z–Z some permanent settlements do exist? [5]
-administrative centres
-education/health centres
-oases …
… fed by karez
… fed by tubewells
-grow dates/vegetables/fruit etc.
-fishing e.g. Gwadar, Pasni, Ormara
-industries connected with fishing
-ports
-military posts
-border check-point

Study Fig. 7, a map of population density in Pakistan.

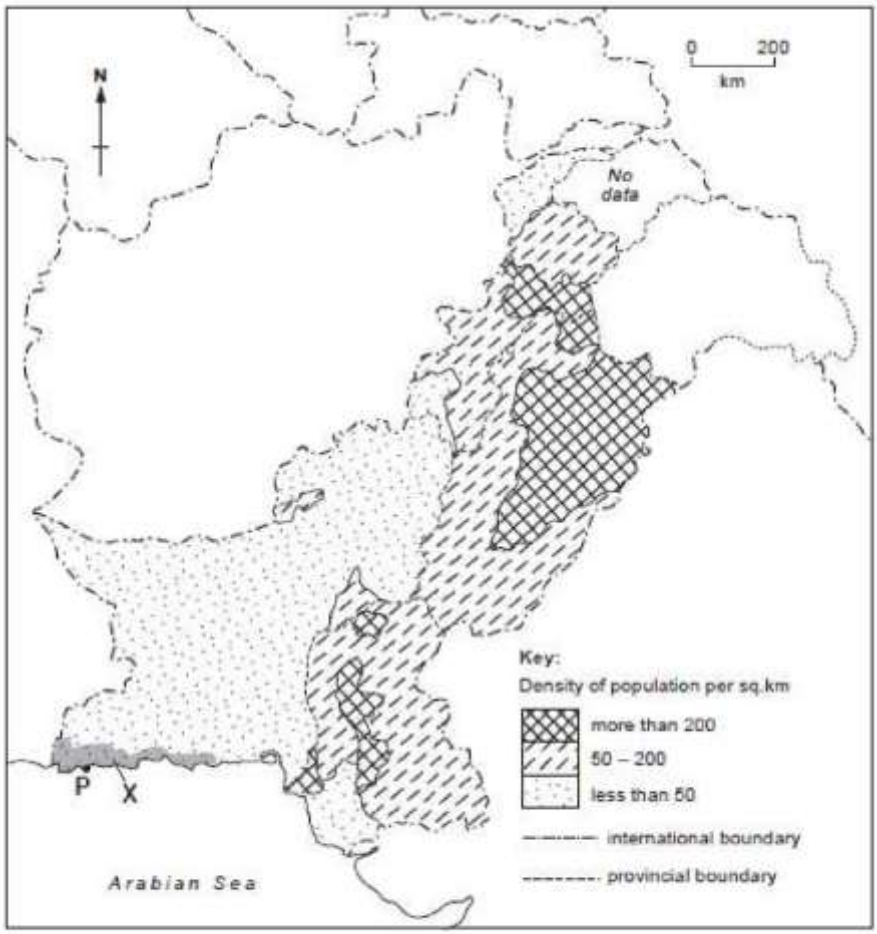


Fig. 7

Describe and explain the distribution of areas of population density more than 200 persons per square kilometre. [6]

Description

-North East and Central Punjab
-Valleys of the 4 rivers east of the Indus
-Named city/district e.g. Faisalabad, Gujranwala, Lahore
-Central NWFP/W-E band through the middle
-Vale of Peshawar
-Named city/district e.g. Charsadda, Mardan, Abbottabad, Islamabad, Rawalpindi
Central Sindh
-Along Indus Valley
-Named city/district e.g. Hyderabad, Nawabshah, Shikaphur,
-Naysharo Firoz
-South west Sindh/Karachi area

Explanation

-Rural urban migration and reasons

-High birth rates
-Employment/farming in area

(b) (i) Explain why Pakistan has a high rate of population growth. [4]

-High birth rate and reason
-Declining death rate/people living longer and reason
-Afghan refugees

(ii) State and explain two problems caused by the high rate of population growth in Pakistan. [6]

Problems

-Unemployment – lack of skills, mechanisation of agriculture and industry, division of land etc.
-Hunger/starvation – lack of fertile land, lack of irrigation, rural urban migration
-Overpopulation/shortage of resources
-Lack of healthcare
-Lack of education/illiteracy
-Lack of housing
Overpopulation (i.e. Lack of resources)

(c) (i) On your answer paper name the shaded area X on Fig.7. [1]

Makran coast/ Gwadar (district)

(ii) Why has there been a low population density in area X up to the present day? [3]

-Arid climate/no rivers/lack of water
-Mountainous interior
-Lack of communications to more prosperous parts of the
-country/isolated/remote
-Poor soil for farming/lack of agriculture
-Lack of government investment
-Lack of jobs
-Lack of industry

(iii) On your answer paper name the port P on Fig. 7. What developments are taking place here that are likely to increase the population in area X in the near future? [5]

Gwadar

-Deep water port scheme (inaugurated by Pres. Musharraf March 2002)
-Phase 1 should be complete in 2004
-International port
-Government agreement with China to construct a deep water port
-Openings for trade with Central Asia (incl. Afghanistan), China,
-Japan, Singapore
-Warehouses built for storage
-Ancillary industries related to port
-Bigger fish harbour
-Industries related/fish processing
-Makran coastal highway to Karachi under construction
-Highway west to central Asian Republics
-Residential estates/housing schemes

-Mirani Dam project
-Hingol Dam project
-International airport
-QESCO power lines
-Mini port at Pasni

[Oct/Nov 06]

Study Fig. 5, which shows types of employment in rural and urban areas.

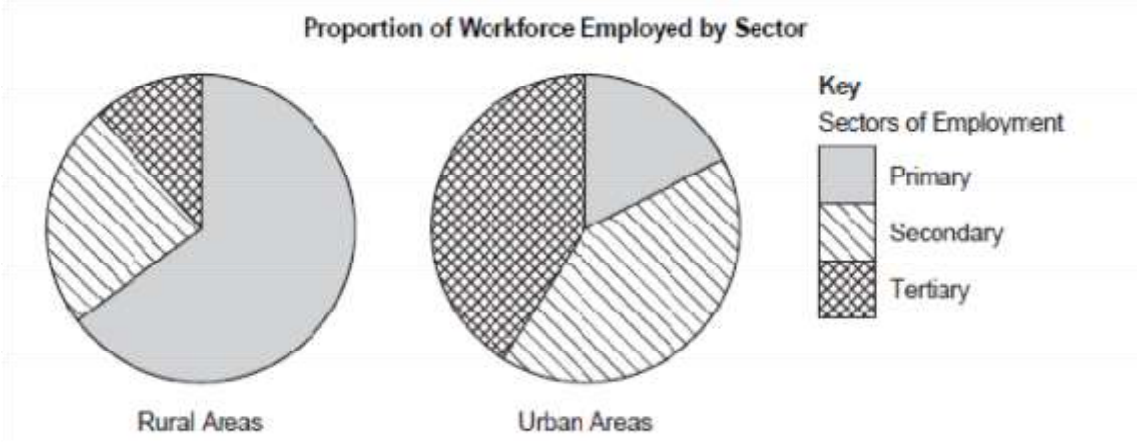


Fig. 5

(i) In which area is the proportion of those employed in the primary sector highest? [1] Rural

(ii) What is the main type of employment in the primary sector in rural areas? [1]
Farming/agriculture

(iii) Why is this type of employment probably underestimated? [1]
Family labour / disguised unemployment

(b) Why is there unemployment and underemployment in rural and urban areas? [5]
-Mechanisation of farming
-Lack of skills for work
-Lack of jobs
-Seasonal employment e.g. sugar cane factories
-Lack of jobs for women
-Poor health, nutrition, medical care for sick and injured
-Computerisation in offices

(c) Why is the sector of tertiary employment likely to increase more in urban areas than in rural areas? [6]
-Rural – urban migration
-Increase in literacy / more jobs for the educated
-Growth of services / more demand in cities

-Economic prosperity / people have more money to spend
-More transport / shops / offices
-Growth of informal sector / pavement services

[Oct/Nov 07]

(ii) Why are very few primary jobs available in urban areas? [2]
-No arable land
-No pasture
-No mines or quarries
-No forest
-Creates pollution
-High cost of land

Study Photograph D, which shows a refugee camp near Quetta.

(i) Describe the scene in Photograph D. [3]
-dry/desert/arid
-flat/sloping
-hills in distance
-stone/gravel/barren/uncultivated
-tracks
-tents/huts
-few people
-few animals
-fodder/straw
-wall

-poles

(ii) What problems does the arrival of large numbers of refugees create for infrastructure and services? [4]

Lack of, or provision of:
-Food
-Water
-Sanitation
-Medicine
-Housing
-Power
-Damage to roads
-Cheaper labour for services

(a) Study Fig. 4, which shows some population indicators in Pakistan in 1995 and 2002.

Population indicator	Year	
	1995	**2002**
Birth rate per thousand	41	28
Death rate per thousand	11	8
Infant mortality rate per thousand	97	85
Life expectancy in years	59	64

Fig. 4

(i) Which indicator shows that population growth may be slowing down? [1] Birth rate

(ii) Which indicator shows that there could be more children in the future? [1]

Lower infant mortality rate

(iii) Why do the statistics show that there could be more people aged over 50 in the future? [2]
Lower death rate [2]
Higher life expectancy

(b) (i) With reference to your answers in 5(a), explain how the age structure of the population is changing. [4]
-Fewer babies
-More young people
-More old people
-Larger proportion not working/dependent
-Smaller proportion working/independent

(ii) What problems will this cause? [5]
-more people to look after/dependent population
-need for more schools
-training
-hospitals and clinics
-houses
-adaptations for old
-more unemployment
-more pensioners
-more pressure on government/services
-workers have to work harder/more stress
-higher taxes

(c) (i) Explain the causes of rural-urban migration. [4]
Push factors
-Loss of agricultural jobs
-Lack of named facilities e.g. shops, entertainment
-Lack of school/trained teachers
-Lack of health facilities/trained staff
-Loss of land
-Natural disasters with example
-Poverty because of
Pull factors
-Better pay
-More jobs
-Better lifestyle/bright lights effect/entertainment Better education -Better health services

(ii) What problems are caused in rural areas by migration to urban areas? [4]
-Loss of workforce/only the old and young left
-fewer children
-loss of services e.g. education, medicine, public transport, shops
-loss of infrastructure e.g. roads, electricity, telephone
-loss of educated people/young people
-women left behind/unbalanced sex ratio
-lack of government investment/neglected/remain undeveloped

(iii) How can people be encouraged to stay in rural areas? [4]
-Land reform and consolidation
-Better infrastructure e.g. Electricity, water, roads
-Better services e.g. Schools, hospitals, clinics
-Development of Cottage/small-scale industries
-Better communications e.g. Radio, TV
-Government schemes
-Irrigation schemes
-e.g. Land reform because many farmers have small landholdings
-Electricity supplies for raising living standards
-More schools to increase literacy
-Cottage industries for employment/income
-Radios for education/entertainment
-Tourism for employment

[Oct/Nov 08]

Study Fig. 4, a bar chart showing the percentage of urban population in Pakistan by Province

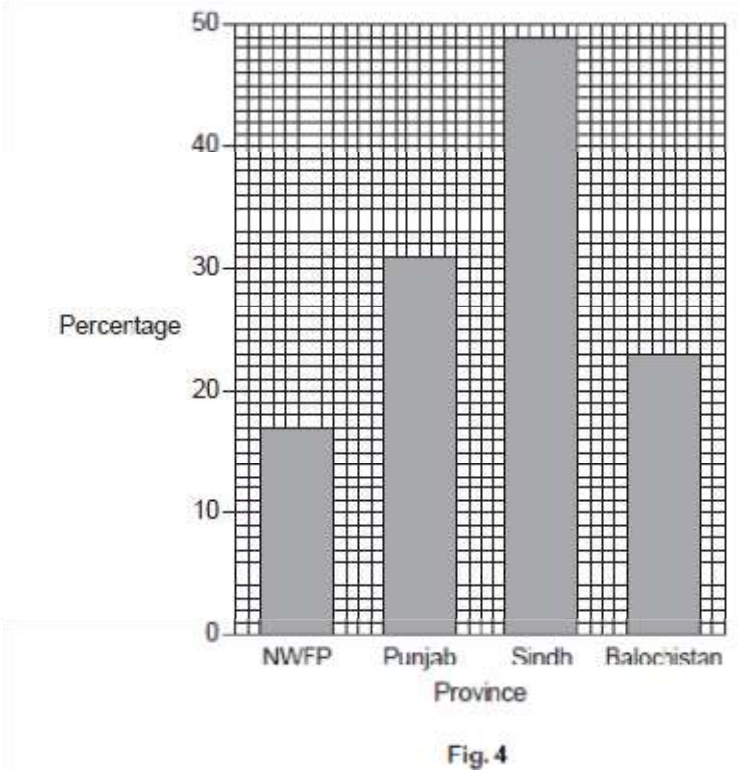


Fig. 4

(i) Which province has the highest percentage of urban population? [1]
Sindh

(ii) Name two cities in this province. [1]
Karachi, Hyderabad

(iii) Explain the pull factors that attract people from rural areas. [5]
Explain:
-more jobs for the unemployed
-better pay/more skilled for the educated
-expectation of better quality of life compared to rural areas
-reliable food supply for nutrition, health
-entertainment/bright lights not in rural areas with example
-clean water and sanitation for health
-better education from more schools
-better medical facilities in modern hospitals

(b) (i) Why do many people who move to cities have difficulty in finding a job? [3]
-illiterate,
-untrained/mismatch of labour

-lack of jobs,
-too many people
-no relatives to help

(ii) What is meant by the phrase 'the informal sector of employment'? [3]
-self-employed,
-little machinery
-poor wages/no regular wages
-temporary/seasonal work
-no legal protection/low standards/not government registered
-no tax paid
-irregular working hours

(iii) Using examples, explain the advantages and disadvantages of informal employment to people living in cities. [5]
Advantage:
-money
-something to do
-needed by other people
-to gain respect/religeon expects them to work
-need not be educated/skilled
Disadvantages
-low paid
-child labour
-demeaning
-dangerous
-illegal/not registered
-temporary/seasonal
Also give an example of such job
ANOTHER APPROACH – THE OTHER URBAN
RESIDENTS
Advantages
-cheaper/can bargain
-doorstep service/delivery
-'open all hours'
Disadvantages
-unskilled work/poor quality
-poor quality goods (goods may be illegal, past sell-by date)
-no guarantees or return of goods
-dubious supply (may be stolen)

(c) Study Fig. 4 again.
(i) Which province has the lowest percentage of urban population? [1]
NWFP

(ii) Name the largest city in this province. [1]
Peshawar

(iii) Explain why there is less urban development in this province. [5]
-mountainous land

-distance from Indus Plain
-cold/harsh/unpleasant climate
-poor infrastructure e.g. roads, power, telecommunications
-poor services e.g. schools, hospitals, water, etc.
-lack of industrial/business development
-less government investment/government interest/neglect of area -problem of terrorism/border control/etc
-isolated in winter/by poor roads/lack of trade
-influence of landlords/tribes

[Oct/Nov 09]

Study Fig. 10, a bar chart showing population change from 1951 to 2001

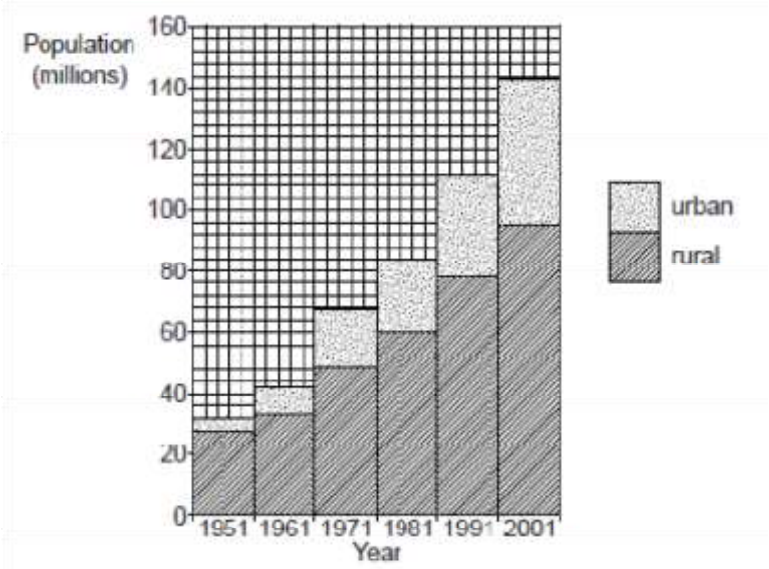


Fig. 10

(i) What was the total population in 2001? [1]
143–144 million

(ii) By how much did the total population increase from 1951 to 2001? [1]
111–114 million

(iii) Compare the increase in the urban and rural areas. [3]
-more increase in rural/less in urban
-greater percentage increase in urban areas
-urban increase 5–48 million/by 43 million/approx. 9 times }
-rural increase 27–95 million/by 68 million/approx. 3.5 times

(b) Explain the causes of the population increase in Pakistan since 1991. [5]
-high birth rate
-birth rate exceeds death rate

-longer life expectancy/lower infant mortality/lower death rate
-better health care/medical facilities
-better care of the elderly/pensions
-better sanitation and clean water/less disease
-lack of family planning/use of contraceptives
-traditional beliefs/want a son/Allah will provide
-unaware of population problem/lack of education on ---
-need of family labour/lack of farm mechanisation
-lack of education of women/early marriage
-lack of government programmes
-lack of transport to rural areas

(c) Describe the effects of population growth on the economy and development of Pakistan. [6]
Economy
-shortage of money/foreign exchange to buy food etc./negative balance of payments
-need for foreign loans
-debt
-lack of money for investment

Development overpopulation leading to

shortages of :

-food,
-water,
-education,
-health services,
-work/unemployment,
-money/poverty
-housing/homelessness/living on the streets/overcrowding/Kacha Abadi
-pollution (must be named)
-traffic congestion
-high prices/inflation
-power/fuel/load shedding
-deforestation/trees/loss of farmland
-little industrial development

(d) Study Fig. 11, a bar chart showing employment and unemployment in 2004.

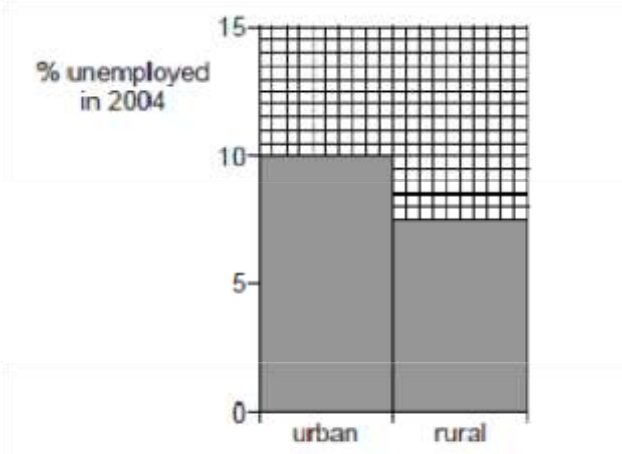


Fig. 11

(i) What percentage of people were unemployed in urban areas? [1]

10

(ii) Why are many people unemployed in cities? [5]

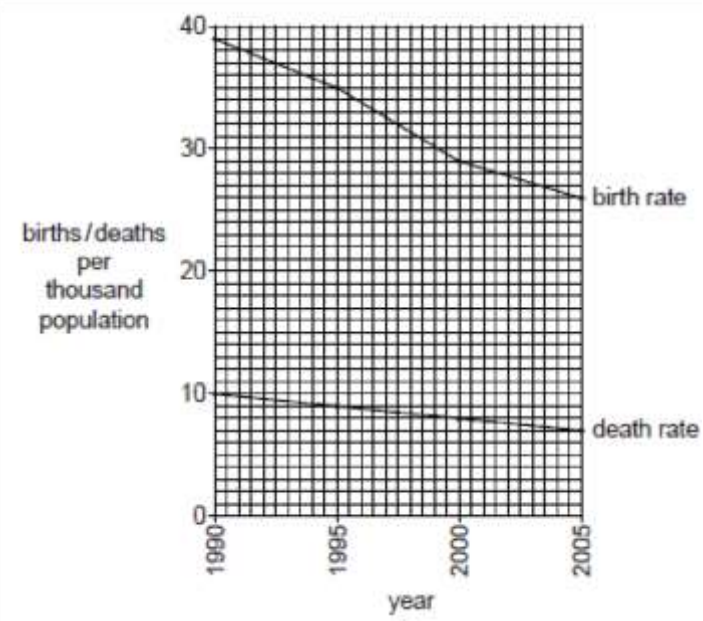
-illiterate/uneducated
-lack of skills/training
-tertiary jobs/jobs needing qualifications
-shortage of jobs/too many people/rural-urban migration
-IT in offices
-machines in factories
-unfinished projects/slow economic growth/recession
-new residents do not have contacts/family contacts

(iii) Suggest why the real number of people unemployed in rural areas may be higher than the figures recorded. [3]

-under-employment/more people work on farms than are needed/disguised
-unemployment
-difficult to collect figures
-women not included?
-many self employed/subsistence farming/subsistence existence
-seasonal work e.g. sugar mills
-informal employment (as opposed to formal employment)

[Oct/Nov 12]

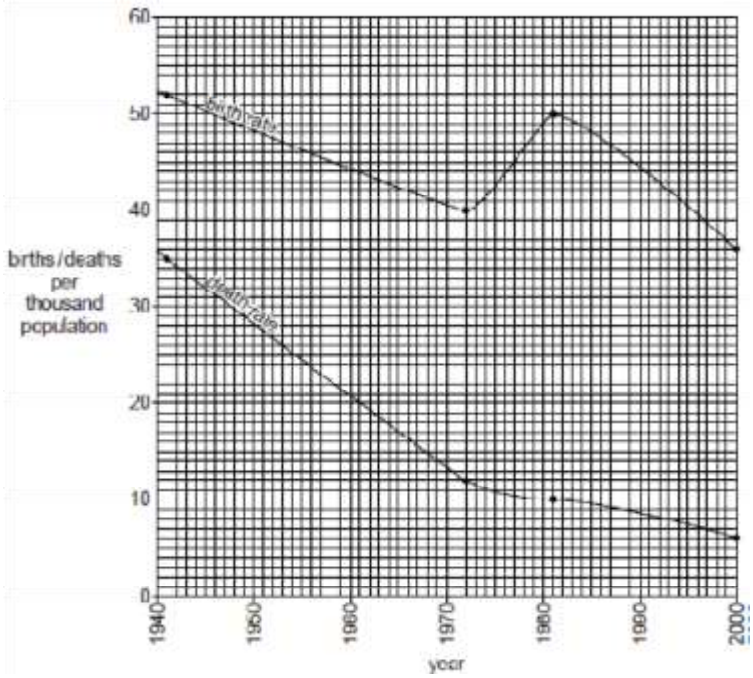
(a) Study Fig. 8 which shows birth and death rates in Pakistan from 1990 to 2005.



(i) State the birth rate and death rate in the year 2005. [2]
26 per thousand, 7 per thousand

(ii) By how much has each decreased since 1990? [2]
13 per thousand, 3 per thousand or percentages 33% and 30%
(iii) Explain why both the birth and death rates have fallen in Pakistan. [6]
-Better family planning / awareness of overpopulation
-Better education of women / fewer early marriages more doctors / hospitals / clinics
-Better access to / use of contraceptives
-Lower infant mortality
-Religious advice changed / no longer 'Allah gives Rizq'
-Less need for child labour
-Old people living longer
-Better access to medication eg. vaccination
-Better food / nutrition
-Better hygiene / access to clean water
-Better housing
-More materialistic attitudes
-Healthy lifestyle / people take care of their health

(b) Study Fig. 9 which shows birth and death rates of a country.



(i) Describe the main changes in birth rate from 1941 to 2000. [4]

Overall decrease

Decreased 1941 – 1972 Increased to 1981 by a large

amount / steeply / almost back to 1940 level

Decreased to 2000

(ii) Complete the following:

NATURAL

INCREASE [2]

= ..... Birth rate..... **minus.....**death rate.....

(iii) Study Fig. 9 again. Circle the year (below) in which the natural population increase was greatest.

[1]

1941 1972 1981 2000

1981

(c) (i) Explain the difference between emigration and immigration. [2]

Emigration – moving away from an area / country

Immigration – moving into an area / country

(ii) Explain the advantages and disadvantages of international emigration for the people of Pakistan. [6]

Advantages

-Can earn higher income / better prospects

-Remittances sent home
-Jobs for educated eg. doctors, engineers, university lecturer
-Jobs for construction in Middle East / domestic, restaurants, shops in Malasia
-Better living condition eg. housing, electricity, sanitation etc.
-Social benefits eg. education, healthcare etc.
-Religious freedom
-Better food

Disadvantages

-Loss of educated workers eg. doctors, teachers
-Qualifications may not be accepted / language problems
-High cost of living abroad
-Prejudice eg. thought to be extremist
-Too many people there already
-Need for permits eg. to enter country, work permit
-Exploited by traffickers / poor working and living conditions etc.
-Homesick / different culture etc