

**MARK SCHEME for the May/June 2010 question paper
for the guidance of teachers**

0448 PAKISTAN STUDIES

0448/02

Paper 2 (Environment of Pakistan), maximum raw mark 75

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

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

- A coniferous / alpine
- B riveraine / bela
- C mangrove

[3]

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

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

[2]

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

- 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)

[3]

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

- Breeding grounds for fish } max 2 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 max. 2 for resource
- Habitat / shelter for wildlife
- Under threat from oil spills / overcutting / polluted effluent / etc.

[4]

(b) Study Fig. 2.

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

- 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

[5]

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(c) There has been development of forests in lowland areas of Punjab and Sindh. Explain the need for irrigation.

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

- 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

[2]

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

Advantages (res. 2)

- 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 CO₂
- Scenic beauty/ promote tourism
- Protection from soil erosion
- Employment / work
- Habitat for wildlife
- Eucalyptus trees can reduce waterlogging and salinity

Disadvantages (res. 2)

- 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.

[6]

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- 2 (a) Study Fig.3, which shows the areas of cultivation for four main crops in Pakistan.
- (i) Which crop covers the greatest area?
Wheat [1]
- (ii) What is the area covered by this crop?
8,450–8500 (000 hectares) [1]
- (iii) Name *two* other food crops grown in Pakistan not shown on the graph.
Millet / jawar / bajra / sorghum
Pulses / mung / mash / grams / masoor
Oil seed
Named fruit e.g. banana / apple / apricot / date / mango / almond / grape
(apply list rule)
Named vegetable e.g. tomato / cabbage / carrot [2]
- (b) (i) Describe the methods of cultivation of wheat on barani (rain-fed) lands.
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 [5]
- (ii) Explain the advantages and disadvantages to wheat farmers of modern irrigation methods such as perennial canals and tubewells.
Advantages (res. 2)
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 (res. 2)
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 (can go to 2 marks) [5]

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- (c) **Waste products from food crops such as straw from cereals and bagasse from sugarcane have some uses. Explain the importance of waste products such as these. You may refer to those crops shown in Fig. 3 or others.**

bagasse for paper / cardboard / packaging
bagasse for chipboard,
molasses / bagasse for chemical industry
straw for bedding / roofing / strawboard
animal food
composted
mixed into soil / ploughed in
bagasse for power stations / fuel

The candidate may refer to 'importance' if so accept

Can save fossil fuels / coal / gas / oil
Cheaper than fossil fuels etc. / electricity
Etc.

[3]

- (d) **Read the extract below.**

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

- (i) **What reasons does the writer give for the low farm incomes in barani areas?**

soil erosion, over grazing, desertification

[3]

- (ii) **Explain these, and other causes of low farm incomes.**

Explanation of those reasons stated in (i). This may include those given in the last sentence of the extract.

E.g. Soil erosion means poor root growth and small crop output
Overgrazing means lack of food for animals and soil erosion / desertification
Desertification causes climatic change and a lack of water
Low crop productivity means low incomes leading to less money for better seed, fertiliser etc.
Poor quality livestock produces less milk, meat etc.
Little money to spend on better seed, fertiliser etc. because of low farm incomes

Also candidates may be given marks for explaining

Traditional farming methods give low yields
Small farms so little mechanisation
Oppressive landlords (Zamindari) so high rents, no chance of improvement
Poor climate so difficult to grow good crops
Storms and flooding / pest attacks (e.g. locusts, weevils) destroy crops
Illiteracy / lack of education so no improvements
Rural – urban migration so able-bodied men leave
Waterlogging and salinity reduces cultivable area / yield
Lack of government support / investment

[5]

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3 (a) (i) Name *three* ways by which coal is mined.

Shaft, adit / drift, open cast

(ii) Why is coal produced in Pakistan described as low quality?

Lignite

Low burning temperature / produces less energy

Low carbon content / more impurities / more smoke

High ash content

High sulphur content

[3]

(b) Study Photograph A (Insert 1), which shows a brickworks near Kanai, Balochistan Plateau. Describe the main features of the brickworks shown in the photograph.

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

[4]

(c) Study Fig. 4, which shows the location of Pipri steelworks.

(i) Name *three* raw materials used in production of steel.

Coal/coke

Iron ore / scrap iron

Manganese

Limestone,

Oxygen / air

Chromite

[3]

(ii) With reference to Fig. 4, explain why the steel mills were located here.

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 etc.

[6]

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(d) 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 is more than any government predictions.

Explain the advantages and disadvantages of increasing steel production in Pakistan.

Advantages (res. 2)

Cheaper supplies (than imports)

Saves foreign currency / improves balance of payments / reduce imports

Can be used for development / industrialisation e.g. construction, machinery

(max 2 examples of use)

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 (max 2.)

May encourage rural-urban migration

Accept 'increases balance of payments' if opposite not given in advantages

[6]

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- 4 (a) Study Fig. 5, which shows the exports of Pakistan in 2007 by percentage.
- (i) What percentage of the exports was cotton?
60 (%)
- (ii) Suggest reasons why cotton makes up a large percentage of Pakistan's exports.
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 [3]
- (iii) From Fig. 5 state
- A one item that has increased in its percentage,
rice
- B two items that have decreased in their percentage. [3]
Leather, synthetic textiles, sports goods
- (b) Study Photograph B (Insert 1), showing Landhi Export Processing Zone, Karachi.
- (i) What features show that this is a modern, developed industrial estate?
Good / pucca / metalled / wide
Street lighting
Electricity supply
Trees/ greenery
Modern / good quality buildings
Planned / straight roads [4]
- (ii) Explain the importance of Export Processing Zones.
Good quality goods / export quality / to International standards
Can increase economy / income / exports / foreign exchange
Better infrastructure / power / water supply / road etc. (max. 2)
Good working conditions (max 2)
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 [4]

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(c) Study Fig. 6.

(i) Give two advantages of transporting goods by

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
- (2 marks each)

[4]

(ii) To what extent would the building of more motorways such as that between Lahore and Islamabad help the development of industry in Pakistan?

Advantages/ Potential (res. 2)

- 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
- Shorter / by-passes towns and villages / short cut
- Relieves other roads / relieves congestion

Disadvantages / Problems (res. 2)

- 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 / other factors influence industrial development [6]

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5 (a) Study Fig. 7. The desert climate of Nok Kundi.

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

Res. 1 mark each for temperature and rainfall

Temperature

Hot summers and cool / mild winters

Rises to max. 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

Figures

Allow up to 2 marks for correct figure or range of figures with month(s) from graph [5]

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

Agriculture (res. 1)

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 (res.1)

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 [6]

(b) Study Fig. 8, showing a population pyramid for 2006.

- (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 (accept other old ages e.g. 65)

[2]

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(c) Study Fig. 8 again.

- (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 / few 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.**

Advantages (res.2)

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 (res. 2)

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 [6]

[Total: 25]