

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE O Level

MARK SCHEME for the November 2005 question paper

2059 PAKISTAN STUDIES**2059/02****Paper 2 (Environment of Pakistan)****maximum raw mark 75**

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ENVIRONMENT OF PAKISTAN

- 1 (a) (i) Name the city A,
Gujranwala [1]
- (ii) State the latitude in degrees north of the line B,
32 [1]
- (iii) Name the river C
Hab [1]
- (iv) State two main features of the climate in area D
Arid/very dry/desert
Mild winters
(Very) hot summers
Dust storms/hot, dusty winds May – September [1 + 1] [2]
- (b) (i) Which crop is expected to have a decrease in its water demand in 2025?
Rice [1]
- (ii) By how many MAF (million acre feet) will the water demand for wheat expected to increase between 1990 and 2025?
31/30 – 34 [1]
- (iii) Why is an increase in water demand expected for wheat?
More wheat being grown/larger area cultivated/growing demand
More desert areas being reclaimed
More HYVs/Maxipak wheat needs more irrigation
Increased yield per hectare
More double cropping
More spraying and liquid fertiliser
More irrigation (in general) [3]
- (iv) Why is a much smaller increase in water demand expected for cotton?
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 [3]

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- (c) (i) **What are perennial canals, and why are they better for farming than inundation canals?**

What are they? (res. 1)

Canals that supply water throughout the year from dams/barrages

Why better? (res.1)

Water always available when needed

Can be better controlled

Reliable/do not depend on the weather

or credit the reverse for inundation canals

(res. 1) [for each of 'what' and 'why', float of 1] **[3]**

- (ii) **How may irrigation damage the soil?**

Causes water-logging and salinity

Groundwater rises/swamps formed (max. 2)

Salts added to soil by groundwater

Evaporation leaves salts on surface

Hard crust formed

Soil not properly flushed out/shortage of canal water **[3]**

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(iii) How may this damage be overcome?

Water-logged/wet soil (res. 1)

Concrete linings to canals

Closure of canals when not needed/regulate flow

Planting trees eg. Eucalyptus

Tubewells used (instead of old methods)

Tubewells used to lower water table

Surface drains

Lower canal water levels/dredge silt

(res. 1) Salty/saline soil

Water from tubewells used to flush out salts

Education/knowledge of better farming methods

Use of fallow periods

[Some of these points refer to both
water-logging and salinity, do not credit twice] **[6]**

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

(i) Name this type of animal

Cow(s)/cattle **[1]**

(ii) Suggest why these animals were taken here

Food/pasture/grazing/
water/drinking **[2]**

(iii) What type of farming is this?

Livestock/pastoral/transhumance/nomadic/semi-nomadic **[1]**

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- (iv) Give two outputs of this farming system that can increase the income of the farmer.

Hides
Meat
Milk
Butter
Bones

[2]

- (b) Study the line sketch Fig.4 of Photograph A.

- (i) Describe two differences between the vegetation in area X and Y.

X short - Y longer
X few/no bushes/trees - Y more bushes
X no bare ground - Y some stony areas

[2]

- (ii) What features in area Y suggest that it is not used for growing crops?

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

[2]

- (iii) The slope in area X is terraced. Explain how this will help the farmer to grow wheat.

Make flat land for easy cultivation
Holds soil/prevents soil erosion/makes a deeper soil
Holds water/prevents drainage
Keeps minerals/fertiliser in soil

[3]

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

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

[2]

- (c) (i) The wheat is harvested about 6 months after it is sown. In which month is wheat most likely to be sown here?

April/May

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

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
 Dry period for harvesting (only credit if 'May' stated in (i))

[3]

- (d) Study the road shown in area S of Fig. 3.

- (i) What is shown that is likely to block the road?

(loose) rocks/scree/boulders
 allow landslides

[1]

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- (ii) What problems are there for road construction and maintenance in mountain areas? (In your answer you may refer to Photograph A or Figures 3 and 4.)

Construction

Steep gradients
 Rain/snow/ice (max. 2)
 Deep valleys/crossing rivers/gorges
 Remote from supplies
 Lack of suitable workforce
 High costs
 Difficult to move machinery

Maintenance

Damage by bad weather (max. 2)
 Blockages restricting access
 High cost, remote, labour etc. (only credit once)
 Earthquakes
 Dangerous place (max. 1)

[Credit figures from graph and/or references to photograph to 1 each]

[5]

3 On your answer paper state the letter for the following.

- (a) (i) The area of rock containing oil.

Y

[1]

- (ii) The area of rock containing natural gas.

X

[1]

- (b) (i) What is meant by the term 'porous rock'?

Has pores/holes/spaces (to hold liquids/gases)
 (to let liquids/gases pass through)

[1]

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(ii) Why is the feature in Fig. 5 called an oil 'trap'?

Cannot get through rocks around it

Between layers of non-porous/impervious/impermeable rock

Rises to top of anticline/top of bend

[3]

(iii) How is oil extracted from this 'trap'?

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

[5]

(c) There are three sectors of employment in the oil industry. These are primary, secondary and tertiary. Study this table of jobs in the oil industry.

Computer operator

Refinery worker

Rig worker

Safety officer

Tanker driver

State one job that is in:

(i) The primary sector of employment,

Rig worker

[1]

(ii) The secondary sector of employment,

Refinery worker

Safety officer

[1]

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(iii) The tertiary sector of employment

Tanker driver

Computer operator

Safety officer (credit only once in (ii) or (iii))

[1]

In a recent study it was stated that over 46% of thermal power in Pakistan is generated in the area around Karachi.

(d) (i) Why is so much thermal power generated in this area?

Gas/Oilfields in Lower Sindh

Named oilfield (max. 1)

Coal mines in Lower Sindh

Named 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 (max. 2)

Oil refineries at Karach

[3]

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

Air pollution and details (max. 2)

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

(Answers must refer to the close environment of Karachi only)

[4]

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- (e) What is 'load shedding', and how does it affect industry and business in Pakistan?

<u>Definition</u>	(res. 1) Planned power cuts
<u>Effects</u>	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 etc. stops (max 2) Transport/traffic problems

[4]

4 Study the World Map, Fig. 6 (Insert 2)

- (a) Choose two of the countries A – E. Using the lines on the map

- (i) 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

- [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

(2 + 2)

[4]

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- (b) (i) **How can Pakistan increase foreign exchange earned by trading with a country or trading bloc such as SAARC or the EU?**

Value-added/processed goods

Good quality

Competitive prices

Reliable supply

Stable government

Good (tele)communications

Political influence/agreements

Better port facilities

[3]

- (ii) **State another way other than trade, in which Pakistan can earn foreign exchange.**

Remittances (from relatives abroad)

Tourism

Invisible earnings

[1]

- (iii) **Why does Pakistan need to increase foreign exchange?**

Negative balance of payments/trade

Reduce foreign debt

Investment in agriculture

Industrialisation

Named infrastructure improvements

Better housing/ resettle squatters

Cost of foreign expertise

[3]

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(b) (i) Give a location in Pakistan for:

A The Iron and Steel industry

B The Cement industry

Iron and Steel

Karachi/Pipri/Port Qasim/Gharo Creek

Cement

Potwar Plateau

(Any named place from map in 'Sethi' p.116 or Atlas p.25) (1 + 1) **[2]**

(ii) Choose one of these industries and state 2 inputs and 2 outputs of that Industry.

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

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Outputs

Iron and steel
 Raw steel
 Cast iron
 Rolled and cast billets
 Galvanised products
 Girders etc.
 Cement
 Cement powder
 Cement blocks
 Pre-cast cement
 Bricks
 Slabs/paving etc.

(2 + 2)

[4]

(d) How can telecommunications such as the telephone, e-mail and the internet help

(i) To buy and sell the goods stated in (c)(ii)?

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?

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

[Allow development marks]

[4]

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5 Study Fig. 7, a map of population density in Pakistan.

- (a) Describe and explain the distribution of areas of population density more than 200 per square kilometre.**

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

(reserve 3 for description)

Explanation

Rural urban migration and reasons (max. 2)

High birth rates (max. 2)

Employment/farming in area (other than rural-urban migration)

(reserve 3 for explanation) (3+3) **[6]**

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(b) (i) Explain why Pakistan has a high rate of population growth.

High birth rate and reason (max. 2)

Declining death rate/people living longer and reason (max. 2)

Afghan refugees

[4]

(ii) State and explain two problems caused by the high rate of population growth in Pakistan.

Problems (res. 1+1)

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 etc.

Overpopulation/shortage of resources

Lack of healthcare

Lack of education/illiteracy

Lack of housing

Overpopulation (i.e. Lack of resources)

[6]

(c) (i) On your answer paper name the area marked X on Fig. 7.

Makran coast/ Gwadar (district)

(ii) Why is there a low population density in area X up to the present day?

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

[3]

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- (iii) On your answer paper name the port P. What developments are taking place here that are likely to increase the population in area X in the near future?

Gwadar (res. 1)

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

(name 1 developments 4)

[5]