

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE O Level

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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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Page 1	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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]

Page 2	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

(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]

Page 3	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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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]

Page 4	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

- (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]

Page 5	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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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]

Page 6	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

- (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]

Page 7	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

(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]

Page 8	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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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]

Page 9	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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

Definition (res. 1) 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 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]

Page 10	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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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]

Page 11	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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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

Page 12	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

Outputs	<i>Iron and steel</i>		
	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]

Page 13	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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]**

Page 14	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

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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]

Page 15	Mark Scheme	Syllabus
	GCE O Level – November 2005	2059

- (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]