

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the May/June 2011 question paper
for the guidance of teachers

2059 PAKISTAN STUDIES

2059/02

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

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1 (a) Study Photograph A of a Persian Wheel.

- (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

- (ii) What are the advantages and disadvantages of replacing this Persian Wheel with a tubewell. [4]**

Advantages of tubewell (res. 1)

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 tubewell (res.1)

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

Also accept the opposite response e.g. Persian Wheel is cheaper.

(b) Study Fig. 1 which shows canal water supply in Pakistan.

- (i) In which year was the water supply highest? [1]**

1999

- (ii) How much higher was this than the supply in 2002? [1]**

31 (million acre feet)

(c) 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

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(d) 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

(e) 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 (res. 1)

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 (res. 1)

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

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2 (a) MAIZE PULSES MILLET OILSEEDS TOBACCO

- (i) Name two crops on the list that are used mainly for animal feed. [2]

maize, millet, oil seeds

- (ii) Name one crop on the list that is not a food crop. [1]

Tobacco

- (iii) Name one crop that is rich in protein. [1]

Pulses

- (iv) Name one type of oil seed. [1]

Rape, mustard, groundnut, sesame, sunflower, safflower, soya bean

- (b) (i) What is meant by a barani crop? [1]

Grown without irrigation
Grown in rainy season

- (ii) Name one area of Pakistan where most wheat is grown by the barani method. [1]

Potwar Plateau, Northern Punjab, Piedmont plains
See atlas for a named district in these areas
e.g. Sheikhpura, Sialkot, Gujrat, Jehlum, Rawalpindi, Attock and more

- (iii) Study Fig. 2, which shows the months when wheat is grown by the barani method. How much rain fell in the wettest month? [1]

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- (iv) Describe the barani method of wheat cultivation with reference to the temperatures and rainfall shown on Fig. 2. [5]

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)

NB Credit any figure within these ranges but must state °C

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(c) (i) Explain why crop yields may be low when subsistence farming methods are used. [6]

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 HYVs
 No fertilisers / pesticides
 Dung for manure

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

Training (res. 1)

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 (res. 1)

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) (res. 1)

Reference to:
 Illiteracy
 Poverty
 Power of landlords (Zamidari)
 Floods
 Etc.

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- 3 (a) (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

Limestone } if not in (i)
Gypsum }

(b) QUARRYING CRUSHING PACKING DRIVER SALESMAN OFFICE WORKER

- (i) From the list above, state one example of: [3]

A Primary employment

Quarrying / crushing

B Secondary employment

Packing, crushing

C Tertiary employment

Driver, salesman, office worker

- (ii) 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

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(c) Study Photograph B (Insert), of Karachi.

- (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

- (ii) 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 etc. (allow any 2)
 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 / Kacha Abadi

- (iii) What are the advantages and disadvantages of building large industrial developments such as cement works, close to major cities?** [6]

Allow advantages and disadvantages to industries and / or city / citizens but do not double mark.

Advantages (res. 2)

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 (up to 2)
 Market / near demand
 Cheaper delivery costs

Disadvantages (res. 2)

Air pollution / dust / smoke	}	pollution (max 2)
Noise	}	
Visual pollution / quarries	}	
Water pollution	}	
Dumping of waste	}	
Traffic congestion		
Loss of farmland		
Loss of other land uses e.g. housing, roads, industry (max. 1)		
Population growth / rural-urban migration		
Squatters / Kacha Abadi / slums		
May be distance from raw materials		

NB. Answers may refer to industrial estates (EPZ) or other industries.

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4 (a) Study Fig. 3, which shows the levels of literacy in urban and rural areas.

(i) State the percentage of literate people in urban areas. [1]

62/63

(ii) How much greater is this than the percentage of literate people in rural areas? [1]

24–26

(Allow correct answer if working shows error carried forward from (i).)

(iii) 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

Accept the opposite – why lower % in rural areas.

(iv) Using examples, explain why there are many jobs for illiterate and poorly educated people in urban areas. [3]

Examples (max 1)(res. 1)
Cleaners, servants, street sellers, etc.

Explanation (max 2)
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

(b) Study Photograph C (Insert).

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. } named illness without explanation (max 1)
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

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- (c) 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

- (d) 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 (res 2)s

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 (res. 2)

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

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- 5 (a) Describe the route of the main monsoon across Pakistan. [3]

East to west / from NE / 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.

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

Comparative figures (res. 1)

Max 68 mms in Peshawar, 202 mms in Lahore

Totals June – September

Figures for any one month with comparative word

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

NB candidates must write about distribution of rain over the period.

- (ii) Explain why there are differences in amounts of rainfall caused by the monsoon in different areas of Pakistan. [4]

Depends on moisture content / humidity

Loses moisture / drier as it crosses the land / Pakistan is at the tail end

More rain as it rises over hills

Condensation / clouds caused by cooling of rising air

Rain shadow effect on lee slopes

Climate change with reason e.g. global warming, ozone layer (max 1)

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

- (i) What is the main cause of rainfall from: [2]

A December to March?

Western depressions

B April to June?

Convection currents / thunderstorms

- (ii) Name one area which receives high rainfall in both seasons A and B. [1]

N Punjab / central NWFP / Peshawar

See atlas for a named district in these areas

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(iii) Which area receives the highest rainfall from December to March? [1]

More than in summer – Western borders / Quetta
 More than rest of Pakistan – N Punjab / central NWFP / Peshawar
 See atlas for a named district in these areas

(iv) What are the advantages and disadvantages of winter rainfall in Northern Pakistan? [6]

Advantages (res. 2)

Fills reservoirs / rivers / more storage
 Water for irrigation
 Water for HEP
 Water for barani crops
 Water for kharif / winter crops / fruit trees
 Water when everything else is frozen
 Lighter form of rain – can soak in
 Snow for tourism

Disadvantages (res. 2)

May fall as snow }
 Rivers / lakes frozen } so of little use
 Temperatures too cold for growth }
 Damage to environment – landslides, mudslides, floods etc. (allow avalanches) (max 1)
 Damage to roads – blockage, slippery etc.
 Silt collects in reservoirs / dams
 Difficulties meaning farmers must do transhumance/ nomadism

(d) 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 (up to 2 marks)
 People cannot get to work
 Loss of production

NB. Urban areas only

Max 2 marks for any line

[Total: 25]