

**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

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

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Page 2	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

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

- (i) **With reference to the photograph, explain how this machine is used for water supply.**

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

Page 3	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

(d) Explain why waterlogging and salinity of soils causes problems to farmers.

- 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

[Total: 25]

Page 4	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

2 (a) MAIZE PULSES MILLET OILSEEDS TOBACCO

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

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]

107

(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

Page 5	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

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

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.

[Total: 25]

Page 6	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

3 (a) (i) Name the two main raw materials quarried in Pakistan that are used in cement. [3]

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

Page 7	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

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

**(i) State three uses of concrete shown on the photograph.**

- 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 }  
Noise }  
Visual pollution / quarries } pollution (max 2)  
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.

Page 8	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

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.

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

Page 9	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

(c) Why do people in villages think that their quality of life will improve if they move to a city?

- 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

[Total: 25]

Page 10	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

5 (a) Describe the route of the main monsoon across Pakistan.

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

Page 11	Mark Scheme: Teachers' version	Syllabus
	GCE O LEVEL – May/June 2011	2059

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

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]