

**MARK SCHEME for the October/November 2012 series**

**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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1 (a) Study Fig. 1 which shows mineral extraction in 2008 in Pakistan.

(i) Name two minerals shown on Fig. 1 that are used to make cement. [2]

limestone  
gypsum

(ii) State two uses of rock salt. [2]

Do not credit vague answers such as 'food' 'chemicals' 'textiles' 'pharmaceuticals' etc.

Two of the following (there may be others)  
Food - Flavour, preserving, curing, table salt  
Textiles - dyeing, bleaching, water softening,  
Chemicals - Soda ash, sodium bicarbonate, artificial rubber,  
Misc.- Tanning, household cleaner, fire extinguisher, artificial rubber, roads etc.

(iii) State the amount of gypsum extracted. [1]

640 - 680 thousand tonnes

(b) Study Fig. 2 showing chromite production.

(i) Describe the changes in production from 1992 to 2008. [3]

Increases overall  
Variable overall / 1992-2008  
comment on fall and rise from 1992-97/98  
variable 1998 – 2004/5  
Rises from 2004-2008 / sharp rise in 2007  
Secondary peak 1996-1998 / rises then falls 1996-1999  
Lowest 1994  
Figures to illustrate one of the above (max 1) eg. 28,000-115,000 tonnes 1992-2008

(ii) Suggest why the production of minerals, such as chromite, varies from year to year. [3]

Investment / funding  
Demand / orders  
Bankruptcy / companies leave  
Problems with machinery  
Reserves reducing /new reserves exploited /geological problems  
Terrorism

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**(c) Study Photograph A (Insert)**

- (i) With reference to the photograph and using your own knowledge, describe the environmental problems that can be caused by mineral extraction. [4]**

From photograph - loss of vegetation / deforestation  
Land deformation / piles of rocks / pits  
Loss of soil  
Dust

Own knowledge-smoke / gasses  
Soil erosion  
Loss of farmland / grazing / no cultivation  
Holes / pits etc.  
Noise / vibration  
(reserve one mark for reference to photograph)

- (ii) How can these problems be reduced? [4]**

Laws / legislation+ details  
Tree planting / screens + details  
Land restoration + details  
Personal health and safety – eg wearing masks against the dust, ear defenders, regular medical check ups, etc  
*(allow up to two marks for each line)*

- (d) To what extent can more extraction of mineral resources help to increase development in Pakistan? [6]**

In favour (res. 2)

Increase trade / exports / reduce imports  
Raise GDP/GNP/ increase the economy  
Increase employment  
Raise taxes/ government earnings  
Foreign investment  
Rural development  
Industrialisation / more industry  
Better infrastructure + example  
Provides more fuel or raw material + example.  
Education / skills

Against (res. 2)

Lack of funds  
Lack of machinery / technology  
Unattractive to investors  
In remote areas  
Lack of infrastructure ( but do not double mark)  
Competition from other countries / other countries safer  
Environmental damage  
Lack of skills / expertise

**[Total: 25]**

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2 (a) Study Fig. 3, showing the climate of Karachi.

(i) By how much does the temperature rise from January to May? [1]

12°C

(ii) How does the amount of rainfall change from October to March? [2]

Increases  
Steady / constant / regular  
1 – 12mm / by 2mm per month

(iii) With reference to Fig. 3 describe the climate of the months June to September. [4]

Temperature  
High / warm hot  
29 – 31°C / average 30°C  
Highest in June  
Little change in temperature

Rainfall  
High (except July-September)  
20 – 85mm  
Large increase in July / July max  
Decreasing after July  
Total 170-185 mms  
Allow a mark for 'temperature drops (in July) when rainfall increases'

(b) Explain the causes of the monsoon at Karachi. [4]

Low pressure develops over land mass / air rises over land  
Draws in wind from high pressure area  
From the Arabian Sea  
Moisture-bearing / wet winds / carrying rain / humid  
Rise over land  
Cools  
Moisture condenses / clouds form

(c) (i) Name the violent storms that form over the sea and that may affect Karachi. [1]

Cyclones / Typhoons / Hurricanes

(ii) In which months may these occur? [1]

April / May / June / Sept / Oct / November

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- (iii) Explain how storms such as these may affect industry and communications in urban areas. [6]

*NB. Answer must refer to storms in urban areas, therefore no ref. to farming or its products*

No reserves

Flooding / heavy rain / high waves/ high tides}

Strong winds } Weather associated with the storm

Lightning strike }

Damage or closure of buildings / roads / bridges / airports

Lack of deliveries port activity

Loss of production / work stops

Lack of labour / cannot get to work

Lack of experts / investors linked to airports being closed

Lack of (tele)communication

Loss of power - electricity

- (d) Read the article below.

**Assess the possibilities for electricity generation other than by fossil fuels at Karachi.** [6]

The article refers to waves/tidal, wind, sun and waste, but there may be reference to others eg nuclear power.

The answer should make reference to the suitability of Karachi as a coastal location / just north of the Tropic of Cancer

Possibilities (Res 2)

Arabian Sea - so wave and tidal power

Windy coast - so wind turbines, windmills

Sunny weather - so solar

Waste - so possibilities of burning waste

Port / industrial so nuclear ie. there is a port for importing uranium, water for cooling, there already is a nuclear power station in the area

Geothermal Energy

Pakistan is near a plate boundary, active geological zone

Problems

Arabian Sea is in the extreme south / away from other large towns

(res. 2) Wind turbines may obstruct shipping / fishing

Winds do not blow all the time / with a regular speed

Sun does not shine at night / can be covered by clouds

Burning waste causes air pollution

Problems of nuclear power (Sethi page 127)

Low output from these generators (except nuclear)

Modern technology needed for geothermal energy

Problems must concern people and environment of Karachi.

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**3 (a) Study Fig. 4.**

**(i) Name the irrigation system shown in Fig. 4** [1]

Karez

**(ii) Name an area of Pakistan where it is used.** [1]

Balochistan  
Kech Valley / Turbat / Miri / Sharak

**(iii) Explain how this system provides water for agriculture in this area.** [4]

*rain falls in mountains  
drains to the foothills / sinks into ground / groundwater /  
travels in tunnels / underground canals  
reaches surface / oases  
tunnels need maintenance  
owned by groups of farmers*

**(iv) Name a fruit crop grown in this area.** [1]

*dates / apricot / apple / grapes / peaches / melons*

**(b) Study Fig. 5 showing the results of a survey in 2008.**

**(i) What percentage of land is cultivated?** [1]

*37/ 38*

**(ii) What percentage of land is waste?** [1]

*13 / 14/ 15*

**(iii) Explain how soils are damaged by waterlogging and salinity.** [4]

Caused by too much irrigation water / misuse of water by illiterate farmers  
Seeps from canals  
Water table rises / soil becomes too wet / puddles of water  
Water rises upwards carrying salts  
Evaporates causing salinity  
hard crust forms / salt patches  
salt poisons crops / crops die  
Roots cannot breathe in waterlogged soil

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- (iv) Explain three reasons, other than by waterlogging and salinity, why over half the land was not cultivated when the survey was made. [6]

Pasture - grazing  
 Fallow – to allow soil to rest  
 Low rainfall / away from canals / desert –infertile, plants cannot grow, no soil  
 Mountains – steep slopes / lack of soil (accept rugged)  
 Forest – need for  
 Rivers – may flood  
 Residential / housing - for large population  
 Industry – factories need large space  
 Commercial – eg. city centres  
 Mineral extraction – plus waste  
 Pollution – crops die  
 Roads, railways, airports – for communication  
 Damage – eg. deforestation, pollution  
 Wasted by landlords  
 Very cold  
 1 mark for reason, 1 mark for explanation. [3 × 2]

- (c) To what extent could government action increase agricultural production in Pakistan? [6]

Possibilities (res. 2)

Improve education eg. model farms, travelling advisors, training centres, colleges  
 Loans eg. for machinery, HYV, fertiliser  
 Subsidies eg. for imported machinery, fertiliser prices lower  
 More fertiliser / pesticides factories or imports  
 More machinery factories or imports  
 Land reforms eg. consolidation  
 Improve water availability eg. reservoirs, canals  
 Cure of waterlogging and salinity eg. SCARP  
 Weather forecasts  
 Media eg. radio, TV

Problems (res. 2)

Lack of money  
 Illiteracy  
 High population  
 Other calls on government investment / attention  
 Fears of unemployment due to mechanisation  
 Land reforms may fail due to corruption / power of landlords etc.

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4 (a) Study Fig. 6.

- (i) Name the main centres of textile production A, B and C. [3]

A Quetta  
 B Gujranwala  
 C Multan

- (ii) Describe the distribution of cotton processing centres. [3]

most processing centres / factories in Punjab  
 along rivers (in Punjab) / River Indus (in Sindh)

THE FOLLOWING REQUIRE A NAMED TOWN IN AN AREA  
 Southern / Lower Sindh eg. Hyderabad, Karachi  
 Northern / Upper Sindh eg. Sukkur, Larkana  
 KPK / NWFP eg. Peshawar, Nowshera  
 Northern Baluchistan eg. Quetta

(b) Study Fig. 7.

- (i) Compare the outputs of cotton yarn and cotton cloth from 1999 to 2008. [2]

Yarn greater than cloth  
 Both increase  
 Both make sharp increase in 2004  
 After 2005 cloth levels out but yarn continues to increase

- (ii) Suggest one reason for the difference in output of cotton yarn and cotton cloth, and explain your answer. [2]

More yarn / spinning mills than cloth / weaving mills  
 Yarn is made into cloth  
 Problems / less investment/ in cloth weaving factories / machinery  
 (Eg. loadshedding, old machines)  
 More demand for yarn (worldwide)  
 Lack of skilled labour

- (c) (i) Give an example of a job in the primary, secondary and tertiary sector of the cotton industry. [3]

Primary – farming, picking, bringing water  
 Secondary – washing, dyeing, spinning, weaving  
 Tertiary – sales, transport, management

- (ii) How are the proportions of workers employed in each of these sectors changing? [3]

Less in primary  
 More / less in secondary  
 More in tertiary



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**(iii) Explain why the changes you have stated in (c)(ii) may lead to unemployment. [3]**

*Lack of literacy / illiteracy*  
*Lack of skills for machines*  
*More mechanisation / fewer workers needed with mechanisation*  
*Computers faster than writers / more IT in offices*  
*Can use foreign workers*  
*Less work in rural areas*

**(d) To what extent will improvements in education benefit both the rural and urban people of Pakistan? [6]**

Benefits (res.2)

Will increase literacy / skills / can read eg. government advice  
 Better paid jobs / can work in the professions / can use machinery / skilled  
 Better farm outputs / income for farmers  
 Better understanding of family planning / hazards of overpopulation  
 Better health / more doctors, nurses, clinics etc.  
 Better living standards / better hygiene, sanitation etc.

Problems (res. 2)

Lack of jobs for educated people  
 Loss of skilled workers eg. teachers, doctors  
 Break-up of families through rural-urban migration  
 General problems of too many people

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5 (a) Study Fig. 8 showing birth and death rates in Pakistan 1990 to 2005.

- (i) State the birth rate and death rate in the year 2005. [2]

26 per thousand, 7 per thousand

- (ii) By how much has each decreased since 1990? [2]

13 per thousand, 3 per thousand or percentages 33% and 30%

- (iii) Explain why both the birth and death rates have fallen in Pakistan. [6]

Better family planning / awareness of overpopulation  
 Better education of women / fewer early marriages more doctors / hospitals / clinics  
 Better access to / use of contraceptives  
 Lower infant mortality  
 Religious advice changed / no longer 'Allah gives Rizq'  
 Less need for child labour  
 Old people living longer  
 Better access to medication eg. vaccination  
 Better food / nutrition  
 Better hygiene / access to clean water  
 Better housing  
 More materialistic attitudes  
 Healthy lifestyle / people take care of their health  
 (res 2 each for specific reference to birth and death rates)

(b) Study Fig. 9

- (i) Describe the main changes in birth rate from 1941 to 2000. [4]

*Overall decrease*  
*Decreased 1941 – 1972*  
*Increased to 1981*  
*by a large amount / steeply / almost back to 1940 level*  
*Decreased to 2000*

- (ii) Complete the following [2]

NATURAL INCREASE = Birth rate minus death rate

- (iii) Study Fig. 9 again. Underline the year in which the natural population increase was greatest. 1941, 1972, 1981, 2000 [1]

1981

- (c) (i) Explain the difference between emigration and immigration. [2]

Emigration – moving away from an area / country  
 Immigration – moving into an area / country

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- (iii) Explain the advantages and disadvantages of international emigration for the people of Pakistan. [6]

Advantages (res. 2)

Can earn higher income / better prospects  
 Remittances sent home  
 Jobs for educated eg. doctors, engineers, university lecturer  
 Jobs for construction in Middle East / domestic, restaurants, shops in Malasia  
 Better living condition eg. housing, electricity, sanitation etc.  
 Social benefits eg. education, healthcare etc.  
 Religious freedom  
 Better food

Disadvantages (res.2)

Loss of educated workers eg. doctors, teachers  
 Qualifications may not be accepted / language problems  
 High cost of living abroad  
 Prejudice eg. thought to be extremist  
 Too many people there already  
 Need for permits eg. to enter country, work permit  
 Exploited by traffickers / poor working and living conditions etc.  
 Homesick / different culture etc.