

CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

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.