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

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CAMBRIDGE
International Examinations

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

(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]

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 (accept 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

(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

<u>Possibilities (Res 2)</u>
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

<u>Problems</u>
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 line / 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.

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

(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.

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

(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

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

(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.