**UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS**

**GCE Ordinary Level**

# 2059 PAKISTAN STUDIES

**2059/02** **Paper 2**

Due to a security breach we required all candidates in Pakistan who sat the paper for 2059/02 to attend a re-sit examination in June 2013. Candidates outside of Pakistan sat only the original paper and were not involved in a re-sit.

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International Examinations

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## MARK SCHEME for the May/June 2013 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.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the May/June 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

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**1 (a) (i) For each of the following cities state the maximum rainfall and the month in which it falls.**

Peshawar 68/69 mm, August
Lahore 201/202 mm, July
Murree 340 mm, July **[3]**

**(ii) Compare the amount and pattern of rainfall in Lahore and Peshawar <u>during the monsoon season</u>.**

<u>Lahore</u>
more rain/higher maximum
increase then decrease
earlier maximum/max in July
tails off more slowly
comparative figures (other than those from **(i)**)

*<u>Peshawar</u>*
*Credit comparison of above* **[3]**

**(iii) Explain how the monsoon winds bring rainfall to northern Pakistan.**

from the sea/Bay of Bengal/Indian Ocean
this increases the moisture content
rise over land
air cools
condensation **[4]**

**(iv) Suggest <u>two</u> reasons why Murree has a higher rainfall than Lahore and Peshawar.**

higher altitude/mountainous
more thunderstorms
more western depressions
windward slope
more vegetation/forests **[2]**

**(b) (i) Circle <u>three</u> of the phrases below that describe a semi-arid climate.**

HIGH EVAPOTRANSPIRATION
HOT DAYS AND COLD NIGHTS
THUNDERSTORMS **[3]**

**(ii) Study Photograph A (Insert)**
**Explain how the ground surface and the vegetation show that this is an area of low rainfall.**

Ground (res. 1)
bare/barren ground
sand
small stones

Vegetation (res. 1)
scattered, e.g. sparce/scanty
lack of greenery/pale brown/not green
low bushes/shrubs/scrub/not tall
adaptations seen in photograph, e.g. thorns/thin leaves etc. **[4]**

**(c) Explain the benefits and problems of high rainfall on either farming or road travel.**

FARMING
**Benefits (res. 2):**
increased water supply/less need for irrigation
alluvium from floods
reduces salinity
better plant growth
higher yield/income
benefit to animals

**Problems (res. 2):**
flooding
waterlogging
water is not absorbed
soil erosion/gullying
leaching
risk of pests/disease
damage at harvest, e.g. cotton, wheat
intensity can damage plant
loss of income (do not credit twice)

ROAD TRAVEL
**Benefits (res. 2):**
lays the dust
water to cool engine

**Problems (res. 2):**
flooding blocks roads/restricts access
washes away surface
destroys bridges
danger of lightning
danger to driving, e.g. slippery **[6]**

**[Total: 25]**

**2 (a) Study Fig. 2 which shows the perennial canal system in Pakistan. Describe the distribution of the perennial canals.**

mainly on Plains/Indus Plain/by the rivers
most widespread in Punjab
only from Indus in Sindh
mostly NE to SW in Punjab and Upper Sindh
mostly NW to SE in Lower Sindh
south/east of highlands
no canals in SE area/Balochistan/north/west/mountains
some in KPK **[4]**

**(b) Name <u>three</u> types of irrigation, other than perennial canals, used in Pakistan. Explain briefly how each type works.**

Allow one mark for a brief description and the second mark for more detail
inundation canals from rivers + details
tubewells from groundwater + details
Karez from foothills + details
others including ponds, tanks, charsa, shaduf and modern methods, e.g. sprinkler, tanker **[6]**

**(c) Explain how a perennial supply of water can damage farmland.**

too much water/waterlogging
watertable rises
evaporates
causes salinity/salts accumulate on surface/surface crust **[4]**

**(d) Study Fig. 3 which shows the main users of water in the Punjab. Name <u>two</u> conflicting users of water supplies in the Punjab shown on Fig. 3. Explain briefly why each user thinks that they should have more water.**

<u>2 conflicting users</u> (one mark), e.g. farmer, industrialist, home-owner, power industry

<u>Reasons for wanting more water</u> (two marks each)
e.g. farmer wants it for higher yields – more food for growing population, income for himself, irrigation, example of high usage, e.g. rice and sugarcane.
e.g. industrialist wants it for bigger/better output – increase trade, exports, income for himself, example of high usage, e.g. drinks, chemicals.
e.g. home owner wants it for domestic use – better hygiene, food preparation, healthy living, example of high usage, e.g. washing, drinking. **[5]**

**(e) To what extent is it possible to increase water supply in Pakistan?**

Possibilities (res. 2)
Indus river system + details
rainfall in mountains
melt water from mountains
groundwater
flat land for canals
cleaning dirty water/desalination
reduce losses, e.g. more storage, less leakage, ration usage (max. 2)
control misuse, e.g. by education

Problems (res. 2)
not enough river water
not enough rain
loss by leakage, siltation
Indus Water Treaty restricts water in reservoirs/rivers
evaporation in hot climate
pollution
demands always increasing
some places remote (e.g. Baluchistan)
lack of funds/government will **[6]**

**[Total: 25]**

**3 Study Photographs B, C and D (Insert)**

**(a) (i) Name the crops shown in each photograph and give a use of each within Pakistan.**

One mark for correct name + use
B rice – for food
C cotton – for cloth, seeds for oil
D sugar cane – for food, allow by products **[3]**

**(ii) With reference to <u>one</u> of the crops named in <u>(a)(i)</u> explain the meaning of cash crop farming.**

<u>No mark for repeating the name of a crop</u>
growing a crop for sale (res. 1)
use of good quality inputs,
e.g. fertiliser, HYV/GM seed, modern machinery **[2]**

**(b) (i) Place the following processes in the correct order**
**SOWING SEEDS, PLOUGHING, HARVEST, WEEDING**

ploughing, sowing seeds, weeding, harvest **[1]**

**(ii) With reference to your answer to <u>(b)(i)</u> explain how rice is grown on small-scale farms in Pakistan.**

manual labour/little machinery/hand tools (max. 2)
animal/draft power
seeds planted in nurseries
transplanted into flooded fields
care during growth – weeds, pests, maintaining water levels etc. (max. 3)
water drained before harvest **[6]**

**(c) Study Fig. 4 which shows sugar cane production in Pakistan.**

**(i) What was the highest annual production, and in which year did it occur?**

Production – 64 <u>million tonnes,</u> Year – 2008 **[2]**

**(ii) By how much did production decrease between 2008 and 2010?**

15 <u>million tonnes</u> **[1]**

**(iii) Explain why the production of agricultural crops varies from year to year.**

temperatures vary
rainfall varies,
e.g. floods, drought, extreme events
irrigation water may be short
high winds
pests/disease/virus
quality of inputs depends on last year's profit
human factors, e.g. sickness
changes in government policies **[4]**

**(d) To what extent could the improvement of road, rail and air transport improve the distribution of food supplies in Pakistan?**

Improvements (res. 2)
general comments, e.g. quicker, further, use for emergencies (max. 2)
air quick for perishable food
rail slow for bulky goods
road goes everywhere, door-to-door

Problems (res. 2)
air expensive
roads congested
rail lack of maintenance, not door-to-door
general comments, e.g. lack of funding, difficult topography, poor maintenance (max. 2) **[6]**

**[Total: 25]**

**4 (a) Study Fig. 5 which shows thermal and hydel (HEP) power stations in Pakistan.**

**(i) Name the cities A, B and C.**

A Islamabad or Rawalpindi
B Lahore
C Multan **[3]**

**(ii) Compare the distribution of thermal and hydel (HEP) power stations.**

Both near rivers
*Credit any relevant comparison from the list below*

Thermal (res. 1)
in cities/towns/urban areas
along River Indus in Sindh
more widespread

Hydel (res. 1)
away from cities/towns/urban areas
on River Indus in Punjab, KPK (accept NWFP)
in Northern part of the country
none in Sindh/Baluchistan **[4]**

**(iii) Explain why these two different types of power station are built in different areas in Pakistan.**

Thermal
built where fuel is locally available,
e.g. coal at Quetta, Potwar plateau
oil/gas at Sui, N Punjab
oil/coal imported at Karachi
near demand in cities/towns

Hydel
needs large volume of water in river
high rainfall
deep/steep-sided valley
only available in North/in mountains **[4]**

**(b) Explain why the supply of electricity is not reliable in many parts of Pakistan.**

shortage due to lack of oil, gas, coal
less water in reservoirs due to silting, less melting of glaciers
damage to grid/transmission
long transmission lines
theft
poor maintenance/old machinery/breakdowns
demand exceeds supply/increasing demands/load shedding
lack of investment in new power stations/alternative energy **[4]**

**(c) Study Fig. 6 which shows the percentages of fuels used for electricity supply.**

**(i) Use Fig. 6 to state the percentage of electricity generated from natural gas.**

46–47 **[1]**

**(ii) Name the <u>two</u> other fossil fuels <u>Y</u> and <u>Z</u>, and explain why each is used less than natural gas.**

coal – poor quality, small reserves, remote/in Balochistan, heavy to carry
oil/petroleum/diesel – small reserves, unexplored, expensive. **[3]**

**(d) To what extent can the development of renewable energy resources improve the reliability of electricity supply in Pakistan?**

<u>Reliability (res. 2)</u>
available everywhere
free after installation
possibilities, e.g. sunshine for solar, exposure for wind, coast for tidal or wave (max. 3)

<u>Problems (res. 2)</u>
costly to install
lack of technology
lack of skills
low output
variable output, e.g. wind, sun **[6]**

**[Total: 25]**

**5 (a) Study Fig. 7 which shows a population pyramid for Pakistan.**

**(i) What is the age range of the shaded portion of the population?**

65 – over 75/over 65 **[1]**

**(ii) Estimate how many people there are in this sector of the population.**

5 million **[1]**

**(iii) Why is this figure likely to increase in the next 20 years?**

lower death rate
longer life expectancy
better healthcare/pensions etc.
higher birth rate/more babies being born
lower infant mortality **[2]**

**(iv) What pressures will this increase put on the working population?**

higher taxes
less jobs
example of costs, e.g. medical care, pensions, care homes, food **[2]**

**(b) (i) Estimate how many children aged under 5 are shown on Fig. 6.**

19–19.8 million **[1]**

**(ii) Explain why the birth rate of Pakistan is very high.**

lack of knowledge of family planning/consequences of a high population
lack of contraception
female illiteracy
early marriage
high infant mortality rate
religion/children will be provided for
pride in large families
family labour/sent out to work
desire for sons **[4]**

**(iii) Explain how better health and education provision can reduce the birth rate in Pakistan.**

Education
use of contraception/family planning
understand overpopulation
emancipation of women/delayed marriage
change of religious views
mechanised/progressive farming

Healthcare
lower infant mortality so fewer births
use of contraception
access to family planning clinics **[6]**

**(c) Study Fig. 8 which shows the calories and grams of protein consumed per person per day in Pakistan.**

**(i) Compare the increase in food calorie intake with the increase in protein consumption from 1980 to 2010.**

protein increases more
calories constant/slight increase 2000–2010
comparative figures
(protein 61–71 grams, calories 2300–2400 per day) **[2]**
comparison of decades (max. 1)

**(ii) The United Nations (UN) has predicted that the population of Pakistan may double from 2010 to 2050.**

**To what extent can Pakistan increase its food supply for this large population?**

<u>Increase by</u>
more fertiliser
better seed
more pesticides
irrigation
mechanisation
more land brought into cultivation
more fishing
education/professionals/colleges
investment/loans
more imports
foreign aid
better transport system linked to better distribution or less food spoilt
better storage facilities

<u>Problems</u>
lack of money
lack of education
lack of experts
too many people
lack of water
political problems
war etc. **[6]**

**[Total: 25]**