CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the October/November 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.

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

1 (a) Study Photograph A.
Name the irrigation system shown in the photograph and explain briefly how it works. **[4]**

Name Tubewell

How it works
Tube to groundwater/aquifer
Water pumped up
By tractor/(diesel) motor/generator
Water flows into pond/reservoir/tank
Distributed to fields by canals/pipes/sprinklers etc.

(b) Study Fig. 1, a map showing the main sugar-cane growing areas.
Name on the map one city, town or district in each of the areas A, B and C. **[3]**

A Peshawar/Charsadda/Nowshera
B Faisalabad/Sargodha/Jhang/Kasur/Lahore/Gujranwala/Sheikupura
C Badin/Sanghar/Hyderabad/Mirpur Khas

(c) (i) What is meant by the following terms? **[2]**

subsistence crop
a crop for the family to eat/use

cash crop
a crop that is grown to be sold/provides income/grown commercially

(ii) Describe the climate and soil conditions needed for growing sugar cane. **[4]**

Climate
Temperature 25–35 °C/warm/hot
Can tolerate short periods of frost
Rainfall at least 1500 mm/over 1500 mm per year

Soil(Silt) loams/(clay) loams best
Retain water
Allow infiltration/drainage of excess water
Fertile/rich in nutrients
E.g. alluvial
Rich in nitrogen/phosphates/potash

(d) (i) Give two reasons why sugar cane factories should be built as close as possible to the fields where sugar cane is grown. **[2]**

Loses its sugar content after harvesting
Heavy/bulky to transport
Saves transport cost

(ii) Name two by-products from sugar cane processing and give a use of each of them. **[4]**

Bagasse
Paper/chipboard/baskets/animal feed/fuel
Molasses
Animal feed/bakers' yeast/synthetic rubber/packaging/chemical industry/
citric acid/alcohol/fuel

(e) Name a cash crop, other than sugar-cane grown in Pakistan. Explain the advantages and disadvantages of increasing its cultivation. **[6]**

Name
Cotton, wheat, rice, tobacco, oilseeds

Advantages
Increased – farm income, exports, GDP, production of manufactured/processed goods/raw materials for manufacturing *(max 2)*
Reduction in imports
More jobs

Disadvantages
Less food crops grown
High cost of machinery/HYV/irrigation/etc.
Lack of land, machinery, skilled farmers, water (max 2)
Greater losses if disease/storms/floods
Water pollution from pesticides/fertilisers
Vulnerable to competitors

[TOTAL MARKS: 25]

2 (a) Study Photograph B (Insert) and Fig. 2, a diagram showing the main inputs to a brick-making industry.

(i) Write the names of three other physical inputs in the empty boxes on Fig. 2 above. **[3]**

Clay, water, coal

(ii) Explain how bricks are made. **[3]**

Clay mixed with water
Placed in moulds
Dried (in sun)
Baked (in kiln)

(iii) Name two types of air pollution that might be produced by a brickworks. **[2]**

Carbon dioxide/carbon monoxide, nitrogen oxides, sulphur dioxide, soot/smoke, smell, dust/ash

(b) Study Photograph B again. Describe the effects of the pollution created by this brickworks on people and the environment in the local area. [4]

People
Respiratory diseases
E.g. Asthma
Skin irritations
Eye diseases
Unsightly views
Irritability/deafness (from noise)

Environment
Quarries/holes/depressions
(Spoil) heaps
Vegetation/crops covered in dust/ash
Land degraded/bare/deformed

(c) Study Fig. 3, a graph showing cement production in Pakistan.

(i) What was the production of cement in 2009? [1]

28 million tonnes

(ii) By how much did production increase from 2000 to 2009? [1]

19 million (tonnes)

(iii) Name the two main raw materials used to make cement. [2]

Limestone, Gypsum

(iv) Give three reasons for the continuous increase in cement manufacture from 2000 to 2009. [3]

Industrial/economic development
Urbanisation/construction
Better/more housing, roads, offices, factories *(max 2)*
Higher living standards
Population increase
Raw materials cheap
Raw materials readily/locally available

(d) Explain the advantages and disadvantages of expanding the sports goods industry in Pakistan. [6]

Advantages
Enhances traditional skills
Uses local raw materials/saves import of raw materials
Increases employment
Work for women
Increases family incomes/GDP
More exports/trade

Disadvantages
Shortage of raw materials
Cost of importing raw materials/machinery
E.g. rubber/thread/leather
Lack of skilled labour
(Trade hindered by) child labour issues
(Trade hindered by) quality issues

[TOTAL MARKS: 25]

3 (a) Study Fig. 4, a graph showing the weight of goods carried by road and rail transport in Pakistan.

(i) What is the weight of goods carried by road in 2009? [1]

128 million tonnes per km

(ii) How much more was carried by road than rail in 2009? [1]

122 million (tonnes per km)

(iii) By how much has the weight of goods carried by road increased from 2002 to 2009? [1]

18–20 million (tonnes per km)

(b) Why has the use of road transport increased more than rail transport since 2000? [4]

Roads go everywhere } *(Accept converses for these two lines)*
Door-to-door }
More roads built
Improved/pucca roads
Motorways/dual carriageways
Little investment in railways
Damaged track
Poor engines/trucks/carriages
Rail suffers delays

(c) Study Fig 5, a map of Pakistan.

(i) Give the latitude of the lines X – X and Y – Y [2]

X – X 36 °N
Y – Y 30 °N

(ii) Explain the effect of latitude on temperature and day length. [4]

Temperature
Greater heating/warming effects lower latitudes/nearer equator/lower heating/cooling effect higher latitudes
Lower latitudes more direct rays of the sun *(Accept converse)*
Higher or lower angle of the sun/high latitude lower angle of sun/low latitude higher angle of sun
High latitudes less insolation/more rays absorbed by the atmosphere/rays spread over larger area*(Accept converse)*

Day length
High latitudes days shorter in winter and longer in summer/the higher the latitude the shorter the days in winter/low latitudes days and nights more equal in length
Earth is tilted on its axis
Hemisphere experiencing summer points towards the sun / N hemisphere points toward sun in summer and away from sun in winter

(d) (i) Study Photograph C.
Name three attractions to tourists shown in the photograph. [3]

Valleys
Rivers/rapids
Mountains/hills
Greenery/lush vegetation/meadows/pastures
Forest/trees
Terraces
Tracks/trails

(ii) Explain how local people can gain income from tourism in mountain areas. [3]

Making/sale of crafts
Opening shops in village
Guides (on tracks/trails)
Named services e.g. hotels/restaurants
Named transport services
Offering accommodation in own home
Construction of tourist facilities

(e) To what extent is it possible to increase tourism in Pakistan in the 21st century? [6]

Possibilities
By providing more/improved/good/etc. – security, named infrastructure, hotels, named tourist activities *(max 2)*
Advertising/promotion
Training for staff in tourist industry/education about accepting tourists
Maintenance/cleanliness of tourist attractions
Attraction – mountain ranges/valleys, forests, archaeological/historic/cultural sites, mosques, modern buildings, traditional crafts/bazaars, hill stations *(max 1)*
Strategies for increasing tourism, e.g. – preventing deforestation in tourist areas, removing litter/rubbish from e.g. Murree, opening a (winter) resort + details, *(max 2)*

Problems
Unstable political situation
Corruption
Lack of security/terrorism
Accommodation below Western standards
Poor named infrastructure
High cost of developing tourist areas/facilities
Lack of government support/attention/interest

[TOTAL MARKS: 25]

4 (a) Study Photographs D and E (Insert).

(i) Name the type of renewable energy being generated. [2]

D wind
E solar

(ii) Give three advantages of renewable energy. [3]

Will not run out/does not deplete natural resources
Clean/do not pollute (environment)
Free at source
Can be small scale

(iii) Give three disadvantages of generating energy by either D or E. [3]

Wind
Not constant, ineffective if wind speed too low/too high, unsightly, noisy, expensive to build, small output, can harm wildlife e.g. birds

Solar
Not constant, needs clear skies, not at night, less in winter, expensive to build, small output

(b) On the map name the two dams shown, and the rivers on which they are situated. [4]

X Tarbela, Indus
Y Mangla, Jhelum

(c) (i) With reference to water supply and relief (topography) explain why it might be possible to build more HEP (hydel) power stations in areas such as that shown in Photograph C (Insert). [4]

Water supply
High rainfall, melting glaciers, melting snow, low temperatures/evaporation, continuous supply from rivers/rain *(max 2)*

Relief (topography)
Deep valleys, narrow valleys, steep slopes/steep-sided valleys, waterfalls, high altitude *(max 2)*

(ii) Give three reasons why it is difficult to develop more HEP (hydel) power stations in Pakistan. [3]

(Climate change so) less rainfall
(Climate change so) higher temperatures and more evaporation/glaciers smaller
Liable to siltation in reservoirs
High cost
No investment/government support/changing government policies
Opposition from tribal areas (in mountains)/security issues
Lack of skilled labour/expertise
Opposition to loss of land (for reservoir)
Dispute over share of water (between provinces)

(d) To what extent is it possible to increase the electricity supply to rural areas? [6]

Possibilities
Extend national grid
Increase (national) power generation/nuclear power
More/good potential for renewable schemes, wind, solar, HEP (max 2)
(allow dev to further max 2 for details)
More small-scale power generation schemes
E.g. biogas using animal/plant waste/molasses (dev)

Problems
High cost of technology/fuel/maintenance
Theft
Damage/energy loss…
…Due to long transmission lines/siltation in reservoirs for HEP
Distance from grid stations/remoteness of some rural areas
Tribal opposition
Insufficient power generation…
…So urban needs met first
Lack of government support/loans/investment/policies
Difficult construction in rugged/mountainous terrain
Lack of named skilled personnel, e.g. engineers

[TOTAL MARKS: 25]

5 (a) Study Fig. 7 (Insert) a map of literacy in Pakistan.

(i) Name a city in each of the three areas shown on the map where literacy is over 60%. [3]

Islamabad/Rawalpindi/Gujrat/Jhelum
Lahore
Karachi

(ii) Name an area where literacy is below 20%. Explain why the literacy rate is low in this area. [6]

Name
Central/N/NE/E/correctly named District in Balochistan, SE Sindh/Tharparkar, N/NE KPK/Shangla/Kohistan/Batgram

Explanation
Remote (from main population centres)
Traditional ideas/women uneducated/tribal influences
Terrorism
Nomadic lifestyle (in Balochistan)
Self-sufficient/less need for education/less work available
Child labour
Lack of named infrastructure e.g. roads, schools, telecoms/IT, electricity *(max 2)*
No government help
Poverty/cannot afford education
Fewer/less skilled teachers

(b) Study Fig. 8, pie charts showing literacy rates in Pakistan.

(i) What is the percentage of literate males in urban areas? [1]

37–39 (%)

(ii) How much larger is this than the percentage of literate males in rural areas? [1]

12–14 (%)

(c) (i) Give an example of tertiary employment for which literacy is not important. [1]

A named example e.g. domestic/street trader/industrial cleaner/roadsweeper/driver/etc.

(ii) Explain why literacy is important to increase economic development in Pakistan. [6]

More skilled workers…
…E.g. managers, IT, teachers, engineers, architects
…More attractive to foreign investors
…More remittances from abroad
More businesses started
Increased number in employment
Higher wages…
…Therefore more money to spend in local economy
…Therefore more taxes raised
Businesses better managed/farms use modern methods…
…Therefore become more profitable
…So greater efficiency/higher quality goods in agriculture/industry (dev)
Better policy making/administration in government

(d) Study Fig. 8 again.

(i) What is the percentage of literate females in rural areas? [1]

10

(ii) To what extent can population growth be influenced by increasing female literacy? [6]

Likely to influence population growth
Reduce
(More informed about) family planning
(More informed about) use of contraceptives
Later marriage so delay in having/reduced number of children
Empowered so will choose whether to have more children/to follow traditional beliefs about large families
Work/become career orientated therefore likely to have less children
(Higher) wages therefore less need for so many children who work
Will understand economic consequences/health risks of a high birth rate/large families
Increase
Higher family income so can afford more children

Will not influence population growth
(Too many) other factors which increase population growth
Factors explained – reasons for high birth rate *(max 2)*
Other factors are just as/more important in reducing population growth
Factors explained – better healthcare/improvements in sanitation/hygiene so less need for children to replace those who die, more family planning clinics, approval of family planning by religious leaders, etc. *(max 2)*

[TOTAL MARKS: 25]