

CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

MARK SCHEME for the October/November 2013 series

0448 PAKISTAN STUDIES

0448/02

Paper 02 (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 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

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- (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

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- (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

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- (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

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(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

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(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

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(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)

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(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

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- (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

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(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]