UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the October/November 2011 question paper

for the guidance of teachers

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 must be read in conjunction with the question papers and the report on the examination.

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1   (a)   **Study Photograph A (Insert).**

   (i)   **State three ways in which the owner has improved the site for fish farming.**

   Rectangular / man-made ponds for better management etc.
   Separation of ponds/embankment for different ages / species
   Roads / ponds lined to prevent contamination / mud / dust / leakage etc.
   Brick / stone / Pucca road for vehicles / for easy access
   Trees for shade / shelter / beauty
   Ponds full of water for healthy fish / good conditions

   (ii)   **Name two species of fish reared on fish farms.**   [2]

   Any two of
   Manaseer, Rahu, Palla, Thalla, Trout, Carp, shrimp, catfish, croaker, perch (Damral)

   (iii)   **Describe the fishing methods used on a fish farm.**   [4]

   Prepare ponds / half fill for insects
   Hatch eggs / buy smelt (small fishes) / breeding
   Of single species / improved type of stock
   (Regular) feeding (with poultry waste)
   Health care / regular checks
   Top up ponds / check water levels clean water
   Transfer between ponds by size
   Catch fully grown fish / fish of market size etc.
   By net

   (b)   **Study Fig.1, which shows fish production in Pakistan.**

   (i)   **Which type of fishing increased from 1997 to 2007?**   [1]

   Inland (and fish farms) /both types

   (ii)   **In which year was marine fish production lowest?**   [1]

   1997

   (iii)   **How did the overall total production change from 1997 to 2007?**   [2]

   Increased overall / 1997–2007
   Increased then decreased / highest in 2002

   (c)   **Explain why fishing and fish farming are important industries in Pakistan.**   [4]

   Nutritious food / good quality / healthy
   Content of food including fish oil, e.g. protein, white meat, low in cholesterol, vitamins (max 1)
   Bones for fertiliser / other waste product and use
   Source of income
   Source of employment
   Export / earns foreign exchange – of named type of fish / shellfish / product or to a named country or area

(d) (i) State <u>three</u> ways in which fish can be stored and processed before sale.

Chilled / refrigerated
Frozen / in freezer
Gutted
Filleted / de-boned
Dried
Salted
Canned

(ii) **At the present time, most of the fish catch is processed in Karachi. The ports of Balochistan such as Gwadar and Pasni have the potential for development.**

What are the advantages and disadvantages of developing fish processing industries in the ports of Balochistan? [6]

<u>Advantages (res 2)</u>
Stimulates development of fishing industry / port facilities (other than processing) Gwadar Port
Reduced cost of transport (than to Karachi)
More fresh / no delay / no need for storage
Infrastructure development, e.g. roads, power, telecommunications
Adds value to fish

Also credit the following ideas <u>with reference to Balochistan</u>
Income – higher living standards, better housing, jobs <u>linked to income or economy</u>
Trade with <u>named</u> country or area – more visitors, contact with other areas etc., e.g. Middle East
Economic development, e.g. investment, entrepreneurs (with some detail)

<u>Disadvantages (res. 2)</u>
Undeveloped infrastructure
Lack of infrastructure, e.g. roads, power, water, ports, etc.
Small market / population
Long way from major centres of population, e.g. Karachi
Uneducated / unskilled population
Lack of interest from investors or government / high cost of any development
Inhospitable climate / relief
Named pollution linked to processing (max 1)
Effects of increase in urban population (max 1)
Poor quality product / canned fish banned in some countries

<u>If not related to Balochistan max 2</u>

[Total: 25]

2 (a) **Study Fig. 2, which shows cotton growing regions in Pakistan.**

(i) **Name the regions A and B.** [2]

A – north /north-east / Upper Sindh
B – south / south-west / Lower Punjab / Upper Indus Plain

(ii) **Why is cotton not grown further north?**

Too cold (in summer / growing period)
Sensitive to frost
Rain / too wet <u>during harvest</u>
Poor soil / infertile etc.
Steep slopes / no flat land
Remote / long way from factories, demand etc.

(iii) **Why is cotton not grown further west?** [2]
Too dry / lack of rainfall (for growth)
Lack of irrigation canals
Too cold (in growing period)
Poor soil / infertile / etc.
Steep slopes / no flat land
Remote

(b) **Study Fig.3, a graph of cotton farming.**

(i) **State the area used to grow cotton in 2005.** [1]

3.2 / 3,200,000

(ii) **State the production in 2005.** [1]

2.4 / 2,400,000

(iii) **By how much has the area used to grow cotton increased from 1975 to 2005?** [1]

1.2 / 1,200,000 hectares / 2.8–2.9 acres

(iv) **Which has increased faster, the area used or the cotton production?** [1]

(Cotton) production

(c) (i) **Explain <u>three</u> factors that have caused the yield of cotton to increase per hectare.** [6]

<u>An explanation of any three of the following, (max 2 any factor)</u>
fertiliser — for nutrients /fertility + Pakistan soil deficient in nitrogen, better than dung
irrigation — to make up rainfall deficiency + named modern method, all year water
pesticides — as pests reduce growth + example
mechanisation — for efficiency + faster, better quality of work, named machine
education — in modern methods + examples of how things can be improved
HYVs — high yield + pest resistance / double cropping / example
capital — for buying inputs + example
land reform — for more motivation, bigger fields etc.

<u>2 marks for each factor</u>
<u>Name only = 0</u>

(ii) **Explain why cotton yields vary from year to year.**

rainfall / damage to cotton boll before harvest
summer temperatures / early frost
availability of water from irrigation or rain
floods / high winds / storms etc. causing damage
pest attack causing damage
previous income affecting investment so cannot buy good quality inputs
sickness of labour affecting production

Name only = 0

(d) **What are the advantages and disadvantages of developing the cotton manufacturing industry in Pakistan?** [6]

Advantages (res. 2)
Established industry / good reputation worldwide
Creates jobs / employment / develops skills
Traditional skills / cheap labour available
Value-added export / export of named product or to named area / large scale export/ main export
Higher price (because it is processed) / value added
Farmers can increase income
Better named infrastructure
Less imports / can meet demands of population
Can compete with other countries

Disadvantages (res. 2)
Lack of modern skills / education
Lack of money to invest / investors
Competition from other countries
Old machinery, breakdowns, slow, old products / need to import machinery
Water shortage for manufacturing / conflict with other users
Power shortage / power breakdown,
Poor roads and railways / transport to ports,
Government policy / changing policies
Less land for growing food other crops
Problems of poor harvest / pest attack / climate problems
Effects of increase in urban population (max 1)
Named pollution linked to cotton manufacture (max 1)
Machines will replace manpower / loss of unskilled jobs
Lack of investment in other industries / services

[Total: 25]

3 (a) **Study Fig. 4.**

(i) **Name the area A which has many mineral resources.** [1]

Salt range

(ii) Name <u>two</u> minerals that can be extracted in this area.

Any two of
Rock salt, gypsum, limestone / marble / dolomite, oil / petroleum, gas, coal, iron o~~
celestite, soapstone / talc / stealite

(iii) Name the cities B and C. [2]

B – Peshawar
C – Islamabad / Rawalpindi

(b) Study Fig. 5, which shows fertiliser production in Pakistan.

(i) By how much did fertiliser production increase from 2000 to 2008? [1]

1.0–1.2 / 1,000– 1,200

(ii) Compare the production from 1990 and 2000 to that from 2000 to 2008. [3]

More variable 1991–2000 than 2000–2008
Overall rate of increase greater / gradient steeper 1990–2000
3.0–4.6 / 1.6 <u>million tonnes</u> compared with 4.6–5.7 / 1.0–2 <u>million tonnes /</u> figures <u>with</u>
<u>units</u> (max 1)

<u>Allow for slight inaccuracy in figures</u>

(c) What are the benefits of increasing fertiliser production for the people and the economy of Pakistan? [4]

Higher yields
More food production
More agricultural exports, or improved balance of payments (max1)
Reduced imports of fertiliser, or improved balance of payments (max1)
Higher GNP
Less debt
Higher farm incomes / profits
More jobs
Cheaper cost of fertiliser
More industrial goods (e.g. cotton)

(d) Study Fig 6, which shows imports of goods to Pakistan in 2007.

(i) State the percentage of: [2]

<u>Machinery</u> – 65
<u>Electrical goods</u> – 10

(ii) Name <u>two</u> machines that may be used in a craft industry. [2]

Allow any tool as long as it is likely to be mechanical
E.g. sewing machine, drill, lathe, sawing (machine), generator

(iii) Explain the importance of mechanisation to the craft industry and other scale industries of Pakistan.

Faster
Larger production
Lower labour costs / cheaper
Less work / easy / less tiring
Standardised product / better quality
Can replace child labour
New skills learned

Allow development, e.g.
Faster <u>so that</u> more income can be made because more production
Standardised product <u>so that</u> it is more attractive to buyers

Allow problems, e.g.
Unemployment, loss of traditional skills

(e) The countries of the European Union have a large demand for goods such as clothes and sports goods. Pakistan can produce these goods cheaply.

Explain the advantages and disadvantages of developing a trade agreement with partners in the EU.   [4]

<u>Advantages (2 marks)</u>
More exports / can pay off debt / improved trade balance / more foreign exchange (max 1 boosts economy)
Cheaper imports
Better availability
Boosts industrialisation / more factories built / more investment in these industries
Fewer trade barriers / lower taxes
Stable market

<u>Disadvantages (2 marks)</u>
Can be stopped / sanctions
Conditions imposed / ban on child labour
Pakistan goods may not be up to standard
Pakistan production may not be reliable
Imports may compete with local production
May affect other agreements, e.g. Iran, China
Fluctuating currency rates

[Total: 25]

4   (a) Study Photograph B (Insert).

(i) What are the animals shown in the photograph?   [1]

Sheep / goats (list rule)

(ii) Describe the topography (relief) and vegetation of the area show~~~~~~ photograph.

Topography (res. 1)
Flat
Gently sloping, undulating
Small ridges

Vegetation (res. 1)
Sparse
Scattered / uneven
(Small) bushes, scrub, trees, thorny (any 2)

(iii) Explain why these animals are reared in a nomadic way in arid areas. [3]

Search for / lack of food / pasture
Quickly finished so have to move
Search for / lack of water
Move with the weather
No infrastructure for settlement

(iv) What are the disadvantages of keeping animals in a nomadic way? [2]

Overgrazing / soil erosion / desertification
Low incomes
Animals may die / starve / poor quality animals
Difficult to improve / develop
Lack of veterinary care / disease spreads easily
Poor breeding

(v) Suggest an alternative way of keeping these animals. [1]

In stalls / stall feeding
In fields / fenced areas
Transhumance

(b) Study Fig. 7.

(i) State one important physical reason for the low density of population in each of these areas: [3]

A – High relief, mountainous, hilly / cold temperatures
B – Arid, dry, extreme temperatures / lack of soil, stony, plateau, sand storms
C – Arid, dry, extreme temperatures / hot /lack of soil, sandy, sand storms

(ii) **RELIEF   RAINFALL   RIVERS**

Explain how each of the three factors above contributes to a high density population in area D.

One mark for simple explanation of factor, development mark for links to higher population density

Relief (2 marks)
Flat / gently undulating
So good for cultivation, mechanisation, roads (allow infrastructure), buildings

Rainfall (2 marks)
Monsoon / enough / high rainfall
So plenty for rainfed / barani farming, domestic or industrial use, better air quality

Rivers (2 marks)
Indus and tributaries
So bring silt /alluvium, water for named use, fishing
So perennial irrigation

(c) Choose either area A or area B from Fig. 7.

It is often suggested that improved transport and telecommunications can bring development to a sparsely populated area.

What are the advantages and disadvantages of these improvements to either area A or area B? **[6]**

Advantages (res. 2)
Development of mineral / other resources
Trade / access to markets for local products, e.g.via Gwadar port, to Iran and Afghanistan
Industrial development
Development of employment opportunities
Access to consumer goods / better food / machines etc.
Access to health / education
Contact with buyers by telecommunications
Advertising by telecommunications
Distance learning
Tourism

Disadvantages (res. 2)
People can leave more easily / more rural-urban migration
Difficulty of construction (must be clear reference to the area), risk of damage or blockage
Cost of construction / cost of maintenance / lack of machinery etc.
Lack of power / electricity for telecommunications
People may see better lives / opportunities elsewhere
Low population therefore uneconomic
Resistance of local tribes / loss of culture
Deforestation when roads/ transmission lines are built

[Total: 25]

5   (a)   **Study Fig. 8, which shows January temperatures in Pakistan.**

   (i)   **What is the temperature at:**

   Karachi – over 18/ any figure between 18 and 30
   Faisalabad – 10–15 or any figure between these
   Chitral – 5 or under, or any figure from –10 to + 5

   Or credit a temperature within the range

   (ii)   **Do the temperatures increase or decrease:**   [2]

   A from south to north – decrease
   B from east to west – decrease (allow increase only if stated 'in the south')

   (iii)   **Explain two factors that affect winter temperatures in Pakistan.**   [4]

   Insolation / angle of the sun
   As the overhead sun moves to the southern hemisphere / over Tropic of Capricorn, rays spread over a larger area

   Altitude / height of the land
   As this increases temperatures decrease
   Air is less dense so holds less heat / heat radiated from the surface decreases with altitude

   Continental / maritime effect
   Land loses heat in winter
   No moderating sea winds

   2 marks for each factor

   (b)   **Study Fig. 9, which shows the distribution of monsoon rainfall in Pakistan.**

   (i)   **Name the areas of high rainfall A and B.**   [2]

   A – South / lower / south-east Sindh
   B – North / upper / central Punjab

   (ii)   **Name the body of water that is the source of moisture for the monsoon winds X and Y.**   [2]

   X – Bay of Bengal
   Y – Arabian Sea

(c) Explain why the lack of monsoon rainfall in the Southern Punjab and Sin[d] problems for farmers.

Poor crop growth / difficult to grow crops
Low profits / incomes /farm economy
Unreliable / variable rainfall
Little or no other sources of rain / western depressions, relief etc.
Low humidity
High evaporation / evapotranspiration
Due to high temperatures
Need for irrigation / expensive to irrigate / depends on rivers and canals
Irrigation water already used by North Punjab and other users
Poor farmers cannot afford tubewells etc.
Can be soil erosion / blowing

(d) Consider the feasibility of improving water supply to farmers in Punjab and Sindh.   [6]

In favour (res.1)
Rainfall in monsoon season can be stored
Snow melt from mountains
Indus river system brings water from highlands
Can make more storage / reservoirs / dams / barrages
Can build more canals
Can use groundwater / build more tubewells

Against (res. 1)
Cost of reservoirs, canals etc
Cost of tubewells
Lack of reservoirs / dams / barrages
Indus Treaty limits supply / conflict with India over supplies
Lower water table restricts groundwater
Waterlogging and salinity problems
Lack of / cost of power supplies for pumps
Other constraints, e.g. education, wastage, conflict between users etc.
Can be ruined by floods

Alternative approach
Improvements (res. 1)
More storage
More canals
Reduce waste / seepage / flooding
Clear silt / silt traps
Control water pollution
Modern technology, e.g. tubewells, sprinklers
Education of farmers
Plant trees for more rainfall

But (res. 1 mark)
Need for investment
Lack of training for farmers
Lack of water supply
Conflict with India

[Total: 25]