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.

- Cambridge will not enter into discussions or correspondence in connection with these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2011 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.
1 (a) Study Photograph A (Insert).

(i) State three ways in which the owner has improved the site for fish farming. [3]

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 three ways in which fish can be stored and processed before sale. [3]

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]

Advantages (res 2)
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 with reference to Balochistan
Income – higher living standards, better housing, jobs linked to income or economy
Trade with named country or area – more visitors, contact with other areas etc., e.g. Middle East
Economic development, e.g. investment, entrepreneurs (with some detail)

Disadvantages (res. 2)
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
In hospitable 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

If not related to Balochistan max 2

[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 during harvest  
Poor soil / infertile etc.  
Steep slopes / no flat land  
Remote / long way from factories, demand etc.

(iii) Why is cotton not grown further west? 

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. 

3.2 / 3,200,000

(ii) State the production in 2005. 

2.4 / 2,400,000

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

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

(iv) Which has increased faster, the area used or the cotton production? 

(Cotton) production

(c) (i) Explain three factors that have caused the yield of cotton to increase per hectare.  

An explanation of any three of the following, (max 2 any factor)  
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.

2 marks for each factor  
Name only = 0
(ii) Explain why cotton yields vary from year to year. [3]

- 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 two minerals that can be extracted in this area. [2]

Any two of
Rock salt, gypsum, limestone / marble / dolomite, oil / petroleum, gas, coal, iron ore, 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]

Overall rate of increase greater / gradient steeper 1990–2000
3.0–4.6 / 1.6 million tonnes compared with 4.6–5.7 / 1.0–2 million tonnes / figures with units (max 1)

Allow for slight inaccuracy in figures

(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]

Machinery – 65
Electrical goods – 10

(ii) Name two 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 small-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 so that more income can be made because more production  
Standardised product so that 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.  

Advantages (2 marks)  
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  

Disadvantages (2 marks)  
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?  

Sheep / goats (list rule)
(ii) Describe the topography (relief) and vegetation of the area shown in the photograph. [3]

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 of population in area D. [6]

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: [3]

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 Sindh causes problems for farmers. [6]

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]