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
- 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

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.  

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?

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.  

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. [4]

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. [4]

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? [1]

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:
- 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:
- 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.
- 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.
- 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.
- 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]