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.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

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

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

CIE is publishing the mark schemes for the May/June 2008 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.
1 (a) Study the Photograph A, showing sugar cane cultivation.

(i) Describe the scene.
bullocks/cattle/buffalo/ox/cow
traditional/manual labour/man/farmer
wooden
plough/ploughing
young/small plants
ratoons
flat
dry soil
uncut crop in background
trees in background [4]

(ii) What are the advantages and disadvantages of using tractors instead of animals for work on a farm?
Advantages (res.2)
Faster/quicker/suitable for larger fields
More efficient/modern/less hard work/do not tire
Needs fewer workers
Saves animal feed/land/cost of animals

Disadvantages (res.2)
Expensive to buy/few available to buy/imported } max. 2 costs
Cost of fuel }
Cost of repair/difficult to repair }
Breakdowns
Unemployment
Needs skilled labour
Compact the ground
No milk/meat/food etc.
No dung for fertiliser
Maintainance/repair facilities may not be locally available
Cannot use in mountains/fragmented farms [6]

(b) Yields from crops vary from year to year. Explain the reasons for this.
Lack of rain }
Timing/variability of rain } max. 2 climate
Flooding }
Wind }
Problems of irrigation/shortage of water/silt in canals/reservoirs/mechanical failure
Build up of salt and waterlogging
Pests and diseases (max 2)
Family problems/sickness/men go to city
Reference to better inputs must relate to previous year’s profit [4]

(c) (i) What work is done on the farm by these animals, other than that shown on the photograph?
Hoeing – to remove weeds, thin seedlings
Harvesting – cutting the crop
Milling/grinding/threshing – to remove husks, for flour, by animal walking round
Transport – of seeds, fertiliser, crop, to field, to market,
Drawing water – from wells, by shaduf, charsa, by walking round
Threshing – separating the husk from the seed [3]
(ii) What do these animals and other livestock on the farm produce that the farmer can use or sell?
Dairy products/milk/butter/ghee etc.
Meat
Hides/skin
Young stock
Eggs
Dung
Hooves
Horns
Bones

(d) How can livestock farming be improved in Pakistan?
Capital/investment/loans/subsidies for – named purpose
Selective/cross breeding, breeding on scientific lines – for better animals etc.
Better feed/fodder – for stronger, bigger, animals etc.
More grazing land – by irrigation, drainage, fertiliser etc.
Control of disease – e.g.
Research – disease, breeding, feed etc.
Vaccination – to improve health
More medicines/more vets to treat animals
Education/training in named modern methods
Better hygiene/care/living conditions etc.
Mechanisation e.g. milking machines for hygiene, speed

2 (a) Study Fig. 1, a map of natural hazards in Pakistan.

(i) Describe the distribution of soil erosion in Balochistan.
Scattered/widespread/in mountains
Especially in SW
Line at base of highlands
Named mountain range/hills/plateau e.g. Central Makram Range, Coastal Range, Chagai Hills
Provincial borders

(ii) Explain why the dry climate of Balochistan increases the risk of soil erosion.
Lack of vegetation/bare soil
Slow to re-grow
Over cultivation
Dry soil less cohesive
Wind blows soil away

(iii) Where does eroded soil go to?
Wind blown into dunes/on foothils
Into rivers/canals/ditches/sea
Reservoirs/dams/lakes

(iv) How can soil be protected in areas of low and unreliable rainfall?
Shelter belts/trees/afforestation
Irrigation of trees
Prevent over-grazing/move livestock/fewer livestock
Fill gullies/improved cultivation
Terraces and stone lines/reduce gradient
Contour ploughing
Strip farming
(b) Study Fig. 1 again.

(i) Which area is affected by tropical cyclones?
Coast/sindh coast, Balochistan coast
Named area e.g. Indus delta, Makram coast [1]

(ii) Describe the physical effects of tropical cyclones in this area.
High winds
High waves
Heavy/high rainfall
Floods
Thunderstorms/thunder/lightening
Damage (max.3) but buildings max 1, roads and railways max 1 [5]

(c) Heavy rain and thunderstorms affect business and industry in urban areas. Explain the advantages and disadvantages of the rain and storms.
Advantages (res.2)
Water supply
Reservoirs filled for HEP/power supply

Disadvantages (res.2)
Floods – damage and blockage of roads
High winds – damage to buildings, trees
Erosion of land – effect on roads/railways/runways
Loss of power supply – loss of production, business
Danger of lightening
Loss of raw material e.g. cotton, sugar cane
Disruption of fishing/shipping/trade
No flights for businessmen [6]

3 (a) Study Fig. 2 a map of population density distribution in Sindh province.

(i) Name the cities A, B and C.
A – Karachi
B – Hyderabad,
C – Sukkur,

(ii) Name the desert D.
NB. NOT THAL
Thar(parkar)

(iii) Name the river E.
Indus [5]

(b) (i) Explain the physical reasons for a higher density of population in area Y.
NB. NOT ‘GOOD CLIMATE’
alluvial/rich/fertile soil for good agriculture
well drained soil for good agriculture, travel, building etc
flat land for use of machinery, travel/building/irrigation etc.
water available for irrigation, domestic use, industry etc.
(max 2 uses from any line) [4]
(ii) Explain the low population density in area X.
Delta/Indus delta
Salt water/saline soil – difficult to farm/poor soil
Low river flow/lack of fresh/clean water – so unsuitable for farming, domestic use
Flooding – so causes problems to farming, industry
Swamp/marsh – difficult to build/poor foundations
Mangrove trees – so lack of farmland
Tropical storms/typhoons/cyclones – dangerous
Lack of roads – so difficult to move around
Lack of other named infrastructure – so no industry, improved living standards
Dry climate/lack of rain so no agriculture, industry, sanitation
Fishing in decline due to pollution/mangroves dying
Lack of industry therefore no jobs [3]

(c) Port Qasim is located 20 kilometers south-east of city A.

(i) Give two reasons why this site was chosen for a new port.
Deep water
Sheltered harbour/creeks/inlets
Close to Karachi/relieve pressure on Karachi Port
Near steelworks/Pakistan Steel Mill
Flat land
Space for industrial development
Near oil refinery [2]

(ii) Name the other port in Sindh to the west of city A.
Keamari/Karachi Port [1]

(d) Iron ore, oil, and machinery are imported in large quantities at Port Qasim.

(i) Give one large-scale use of each of these three.
Iron ore – to Pakistan Steel at Korangi, steel, named iron or steel product
Oil – transport, power, electricity, chemicals, etc.
Machinery – vehicles, named industry, power generators etc. [3]

(ii) Another large import is wheat. Name one country from which it is imported.
UK, USA, Russia/Australia [1]

(iii) Explain why Pakistan will need to continue to import wheat.
Increasing population
Poor agricultural production/smaller area cultivated/increase slower than population [2]

(e) Name one dry port and explain why dry ports are needed to reduce the burden on sea ports.
Sambrai(Sialkot), Lahore Multan, Faisalabad, Rawalpindi, Hyderabad, Larkana, Peshawar, Quetta
Reasons:
lack of space/storage
to deal with paperwork/quicker processing and clearing/customs duties/tax etc.
relieve congestion
only 2/3 sea ports/few sea ports
allows packing/unpacking (of containers) (1+3) [4]
4 (a) (i) Name two fishing ports on the coast of Balochistan.
Jiwani, Gwadar, Pasni, Ormara, Sonmiani [2]

(ii) Name two types of marine fish caught by fishermen.
Shark, Herring
Drum, Mackerel
Croaker, Sardine
Cat fish, Pomfret
Skate, Ray [2]

(iii) Describe subsistence fishing methods.
Small/wooden boats
Sailing/rowing boats
Traditional/hand made nets
Coastal only
Lack of machines/simple engines
Rod and line method
Fish kept in baskets of ice [3]

(iv) Explain how these methods can be improved to make fishing commercial.
Engines
Gill netters/nylon nets/stronger nets
Can go further offshore
Radios
Chilled storage on boat
Trawlers
Loans for ---
Education/training for------ [4]

(b) (i) How can fish be stored and processed onshore?
In ice/cold storage/refrigerated
Gutted
Canned
Dried
Frozen
Salted
Fish-fingers/other product
Fish oil [3]

(ii) Why is fish processing called ‘value-added’?
Can be sold for more money/more profit [1]

(iii) How does the poor infrastructure of Balochistan make development of the fishing industry difficult?
Poor roads/no railway for transport
Lack of electricity/power for processing
Poor telecommunications to markets
Lack of fresh/clean water for processing
Illiteracy/lack of training/lack of education [4]
(c) Study Fig. 3 a graph comparing the production of marine and inland fisheries in Pakistan.

(i) **Compare the changes shown in the graph.**
   Both increase
   Marine increases more than inland/faster than inland
   Marine increases/continuously but inland had little increase until early 1970s
   Inland increased to nearly 10 times bigger/marine only 5 times bigger
   Comparative figs (max 1) – units not required [3]

(ii) **Explain why more people are employed in inland fisheries than marine fishing.**
    More people live near rivers, lakes etc.
    Maintenance of ponds
    Hatcheries
    Feeding
    Harvesting (catching)
    Transport
    Government encouragement/loans etc. [3]

5 (a) **Most hydro electric power (hydol) schemes are in Northern Pakistan.**

(i) **Name two large dams and the rivers on which they are built.**
    Tarbela on river Indus
    Mangla on river Jhelum
    Warsak on river Kabul
    Must name both dam and river for one mark [2]

(ii) **Why do the reservoirs of these dams hold large quantities of water?**
    Deep valley/large valley/high dam
    Steep sides
    Large river/permanent flow/water from snowfields/glaciers
    Low evaporation/cool climate,
    High rainfall [3]

(b) **Study Fig. 4, a diagram showing how hydro electric power is made.**
    Name the machine A, and explain how it uses the flow of water to make electricity.
    A – turbine/generator/power station
    Turbine spins/rotates/moves [2]

(c) **Study Fig. 5, a pie chart showing the percentage use of electricity.**

(i) **Which sector uses the largest percentage of electricity?**
    Domestic/homes [1]

(ii) **State two other large users of electricity shown on the chart and explain what they use it for.**
    Industry – for machinery, computers, lighting, air conditioning etc
    Farming – for much of above, tubewells, drying crops, etc.
    Offices – computers, lighting, communication, air conditioning etc.
    One mark for two large users
    Three marks for how the electricity is used (2+1) [1+3] [4]
(iii) **What problems are caused when the electricity supply to factories breaks down?**
- Stops production/slow production/output reduced
- Damages machinery short circuit/explosion
- Damages goods/affects the quality e.g. food, cloth
- Delays contracts/orders
- Loss of money/profit/orders
- Workers laid off/sit idle

[4]

(d) (i) **Name two environmentally-friendly ways of making electricity other than hydro-electric power.**
- Any two of solar, wind, tidal, biogas, bagasse, geothermal

[2]

(ii) **Explain why each of the two ways you have named could be used in Pakistan.**
- Solar – long hours of sunshine/many sunny days/many days of clear skies
- Wind – Indus plain flat, on mountains, windy in coastal areas, Balochistan, mountains
- Tidal – for coastal areas esp. Karachi
- Biogas – cheap, small scale, disposes of waste product
- Bagasse – many sugar cane factories, disposes of waste product, cheap, small scale
- (Geothermal – not in Pakistan)

[2]

(iii) **Why is it important that more renewable energy schemes are developed in Pakistan?**
You may use your answers to part (c) and your own knowledge.

General reasons for needing more power supplies:
- frequent power cuts and stoppages/load shedding/shortage of HEP
- increasing population/industrialisation/development
- higher living standards
- to encourage development/modernisation/industrialisation
- rural electrification

Reasons for more renewable schemes:
- fossil fuels running out/renewables do not run out
- fossil fuels expensive
- renewables cheap/free after installation
- can be generated in remote areas/no expensive infrastructure needed
- small scale/cheap to construct
- nuclear is dangerous/problems of waste disposal/renewables safe
- fossil fuels cause air pollution/renewables do not pollute
- poor quality of coal/reserves not exploited/small reserves in Pakistan
- allows independence/need not rely on other countries

Credit ideas from either section, no reserves

[5]