MARK SCHEME for the May/June 2006 question paper

0460 GEOGRAPHY

0460/01   Paper 1   maximum raw mark 75

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

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*.

The minimum marks in these components needed for various grades were previously published with these mark schemes, but are now instead included in the Report on the Examination for this session.

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

CIE is publishing the mark schemes for the May/June 2006 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

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The features of the marking scheme

Each question carries 25 marks. Candidates cannot earn above the maximum marks available within each sub section.

The marking scheme attempts to give guidance about the requirements of each answer and lists a number of responses which will earn marks along with the general principles to be applied when marking each question.
It should be noted that candidates can earn marks if their answers are phrased differently provided they convey the same meaning as those in the mark scheme. THE CANDIDATES DO NOT NEED TO USE THE SAME WORDING TO EARN MARKS.

The notation 'etc.' at the end of an answer in the mark scheme signifies that there may well be other correct responses or examples that can be given credit. Providing the statement is true, relevant to the question asked and not repetition of a previous point made credit should be given.

A point made within one sub-section which is an answer to the question set in a different sub-section should not be given credit as each sub-section asks different questions which require independent answers.

The mark scheme uses semi colons (;) to separate marks and diagonals to separate alternative answers.

During coordination the mark scheme is modified to add points agreed after discussion or to delete any points not allowed. All examiners should ensure that their modified schemes is fully up-to-date before marking begins.

Marking mechanics

Point marking is used throughout the paper, although marks are available in specified questions for development of appropriate points. Ticks should be used to clearly indicate the wording on a script where a mark has been allowed. Where a development point has been allowed the letter 'D' should be placed adjacent to the tick. The number of ticks should always be equal to the total number of marks awarded, the mark for each sub-section should be added up and placed in the margin at the end of the sub-section. The total mark for the entire question should be added and transferred to the front of the script.

Where a candidate makes a point which is not quite sufficient for credit an upturned `V` insert symbol should be used. If after careful consideration a mark is awarded which gives `benefit of doubt` to the candidate the letter 'J' should be placed adjacent to the tick (i.e. the candidate has `just` achieved the mark).

All answers should have signs of having been assessed by the examiner. Crosses are acceptable to signify wrong answers and a red line accompanied by the letters 'I/R' should be used to indicate those which are irrelevant.

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Question 1

(a) (i) 0 to 4 years

<div align="center">1 mark</div> **[1]**

(ii) A. More people in Netherlands at 85+/there is a section for 85+ on Netherlands pyramid but not on Ethiopia pyramid/Netherlands has wider apex/top to pyramid, etc.

B. Greater percentage of population in younger age groups in Ethiopia/wider base to Ethiopian pyramid, etc.

<div align="center">2 @ 1 mark</div> **[2]**

(iii) Candidates should compare here though we should link together two discrete accounts providing they are not simple repetition of figures without interpretation. Ideas such as:

Greater proportion of young dependents in Ethiopia;

About 45% of population Ethiopia compared with less than 20% of that of Netherlands;

Greater proportion of old dependents in Netherlands;

About 15% of population Netherlands compared with less than 10% of that of Ethiopia;

Greater proportion of total dependents in Ethiopia;

Over 50% of population Ethiopia compared with less than 40% of that of Netherlands, etc.

<div align="center">3 @ 1 mark or development for use of figures</div> **[3]**

(iv) MAXIMUM of three marks available for each of LEDC/MEDC. Ideas such as:

LEDCs:

Extended family look after children;

Children look after elderly relatives;

Charities/aid organisations, etc.

MEDCs:

Government support/taxes/social security payments;

Pensions;

Nursing homes, etc.

<div align="center">4 @ 1 mark with MAX 3 on each of LEDCs/MEDCs</div> **[4]**

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(b) (i) Reasons such as:

longer life expectancy;

better treatment of diseases/or examples;

improved health care facilities/or examples;

investment in care homes/services for elderly;

low birth rates/small families, etc.

3 @ 1 mark **[3]**

(ii) Consequences such as:

increasing percentage of elderly dependents;

strain on working population/higher taxation;

need for more money to be spent on care homes/health

care/facilities for elderly, etc.;

not enough workers for key positions;

difficult to defend country;

need to attract foreign workers;

services for young under utilised/uneconomical, etc.

5 @ 1 mark or development **[5]**

(c) Be prepared to accept any concerns resulting from rapid growth of population, in both LEDCs and MEDCs. Candidates could refer to examples they have studied, if so these can be credited as development marks (MAX 2) if linked with appropriate points [e.g. a rapid growth of population could lead to the growth of shanty towns; as have developed as a result of rapid population growth in cities such as Rio de Janeiro (dev)] but do not credit examples in isolation. Depending on the examples chosen expect to see discussion of issues such as:

overpopulation/not enough resources to go round;

lack of work;

inadequate food supplies:

poor access to education;

poor access to health care;

overcrowded housing/lack of space for development;

traffic congestion;

atmospheric pollution;

inadequate water supply/sanitation;

lack of facilities for waste disposal/land pollution;

overuse of agricultural land/overgrazing;

deforestation/loss of natural vegetation, etc.

7 @ 1 mark or development **[7]**

TOTAL: 25 marks

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Question 2

(a) (i) Town/city/built up area

1 mark   **[1]**

(ii) A. Kolkata/Mumbai

B. Kolkata/Beijing/Mexico City/Mumbai/Los Angeles

2 @ 1 mark   **[2]**

(iii) Candidates should compare here though we should link together two discrete accounts providing they are not simple repetition of figures without interpretation. Ideas such as:

overcrowding of housing is more of a problem in Shanghai;

there are more houses without electricity/fresh water in Shanghai;

there is more chance of being murdered in New York;

there is more noise in New York;

there is more traffic congestion in New York;

3 @ 1 mark   **[3]**

(iv) Evidence from photograph of problems such as:

danger from traffic;

noise from traffic;

congestion on roads;

fumes from vehicles/exhausts;

lack of open space, etc.

4 @ 1 mark   **[4]**

(b) (i) Ideas such as:

timing of rush hour journeys into city centre using car/bus/cycle;

cyclists take less time to complete journey than buses;

especially from north, east and west/exception of south;

buses are particularly slow/take twice as long as cycles, etc.

3 @ 1 mark or development   **[3]**

(ii) Reasons such as:

large numbers of people own cars;

and are not prepared to use public transport to work;

as it is dirty/smelly/crowded, etc.;

lack of investment in public transport in many cities;

road network/infrastructure not designed for the present volume of traffic;

presence of many traffic signals/intersections, etc.;

much freight still using roads/delivery to businesses in urban areas, etc.

5 @ 1 mark or development   **[5]**

(c) Be prepared to accept answers relating to any urban problem providing the problem is clearly identified and the solutions described. Candidates could refer to improvements instigated by local authorities, national government, charities or local groups in any combination. Candidates need to refer to an example they have studied, for which one mark is reserved.

e.g. **squatter settlements**:

Installation of mains water;

Laying of sewage pipes/building of sewage works;

Infrastructural development;

Increase of local authority housing stock;

Improvement of communications;

Regular disposal of refuse;

Self help schemes;

Site and services schemes;

Education in building skills;

Provision of low cost building materials;

Building of schools;

Building of clinics/hospitals;

Charitable initiatives working with street children, etc.

7 @ 1 mark or development **[7]**

TOTAL: 25 marks

Question 3

(a) (i) A structure built up from remains of living organisms/coral polyps/offshore rocks formed of limestone skeletons, etc.

1 mark **[1]**

(ii) Any two countries for 1 mark each for example:

Mexico, United States, Peru, Cuba, Haiti, South Africa, Kenya, Tanzania, Mozambique, Madagascar, India, Saudi Arabia, Indonesia, Thailand, etc.

2 @ 1 mark **[2]**

(iii) Description of distribution of coral reefs could include reference to:

close to/attached to coasts;

largely between Tropics of Cancer and Capricorn/between 30N and 30S;

areas experiencing warm ocean currents;

concentrations in South East Asia/Caribbean/east African coast.

(2 areas required for MAX 1 – NB. not country names)

3 @ 1 mark **[3]**

(iv) Conditions required for the growth of coral reef such as:

Warm water/seas; temperatures above (20 degrees C) (dev);

Shallow water; not more than 60 metres deep (dev);

Water free from sediment/clear;

Plentiful supply of oxygen in water/unpolluted;

Plentiful supply of plankton, etc.

4 @ 1 mark or development **[4]**

(b) (i) Opportunities for local people such as:

fishing;

ports/trading;

tourism, etc.

3 @ 1 mark **[3]**

(ii) Candidates should explain how human activities can damage the natural environment in coastal areas. Ideas such as:

tourists walking through shallow reef waters damage coral

structures;

noise/wash from ships could scare fish;

litter from tourism;

sewage outflows pollutes seas;

overfishing has left stocks of fish seriously depleted;

impacts on ecosystems/food chains;

visual impacts of developments, etc.

5 @ 1 mark or development **[5]**

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(c) Candidates should explain how the natural features have been formed rather than simply describing the landforms. Credit written answers or information included as part of labelled diagrams (do not double credit here):

sequential development of notch/cave, arch, stack for 1 mark;

waves erode cliffs;

hydraulic action/corrasion/corrosion to MAX 2;

lines of weakness eroded to form notches/caves;

back to back caves break through to form arch;

arch roof collapses to form stack;

stack further eroded to form stump, etc.

7 @ 1 mark or development **[7]**

TOTAL: 25 marks

Question 4

(a) (i) Wind speed

<div align="center">1 mark</div> **[1]**

(ii) B = Maximum and minimum thermometer/six's Thermometer

C = Hygrometer/wet and dry bulb thermometer

<div align="center">2 @ 1 mark</div> **[2]**

(iii) Three marks available as follows:

one mark for using correct instrument (i.e. hygrometer);

one mark for correct calculation of wet bulb depression (3 degrees C);

one mark for correct use of table (humidity 76%)

<div align="center">3 @ 1 mark</div> **[3]**

(b) (i) Ideas such as:

remove bottle from rain gauge;

empty water from bottle into measuring cylinder;

read at eye level;

repeat every 2 hours/same time of day, etc.

<div align="center">3 @ 1 mark</div> **[3]**

(ii) Ideas such as:

Measures air temperature/not affected by direct sunlight;

Painted white to reflect heat/building may absorb heat;

Louvred sides to allow free flow of air/wind could affect readings on roof;

Easier access to read instruments than a site on the roof, etc.

<div align="center">4 @ 1 mark or development</div> **[4]**

(iii) MAXIMUM of 5 marks on each weather instrument. Ideas such as:

Wind vane:

Located on roof of building/above ground level;

So there are no obstacles to prevent accurate readings.

Rain Gauge:

Located on area of grass;

To avoid splashback from concrete surfaces;

away from trees/buildings/in open area;

to ensure there is no shelter which would give inaccurate readings.

<div align="center">5 @ 1 mark or development with a MAX of 3 marks on each instrument.</div> **[5]**

(c) Candidates should describe the hazards experienced by people living in areas at risk from any weather or climatic hazard. Candidates could refer to examples they have studied, if so these can be credited as development marks (MAX 2) if linked with appropriate points [e.g. yields of crops will be reduced by lack of water; as they have done in Burkino Faso (dev)] but do not credit examples in isolation.

e.g. Drought - expect hazards relating to issues such as:

Impact on crop yields;

Lack of food/starvation;

Farmers unable to leave land fallow;

Therefore soils exhausted;

And overgrazing of livestock takes place;

Increased likelihood of soil erosion by wind;

Loss of vegetation leads to more rapid run off;

Therefore less moisture trapped in soil;

And greater potential for flash floods, etc.

<div align="center">7 @ 1 mark or development</div> <div align="right">[7]</div>

<div align="right">**TOTAL: 25 marks**</div>

Question 5

(a) (i) 58%

<div align="center">1 mark</div> **[1]**

(ii) Ideas such as:

more jobs are created for local people;
greater proportion of higher paid jobs for people from
abroad/lower paid jobs for locals, etc.

<div align="center">2 @ 1 mark</div> **[2]**

(iii) Benefits such as:

foreign exchange/income;
enabling spending on education/hospitals, etc. (to MAX 2);
development of infrastructure (water, electricity, transport, etc. to MAX 2);
cultural exchange;
retention of culture/traditions;
increased market for local farmers;
sales of local craft items, etc.

<div align="center">3 @ 1 mark</div> **[3]**

(b) (i) Candidates should identify changes here though we should link together two discrete accounts providing the land uses before and after in the **same area** are described. Ideas such as:

Aleppo pine trees removed for building of tourist complexes;

lowland farming now intensive with irrigation rather than dependant on rain;

lagoons filled in/drained for urban development;

roads built across areas of forest/grassland;

farming abandoned on terraces next to villages and land degraded, etc.

<div align="center">3 @ 1 mark</div> **[3]**

(ii) Be prepared to accept a range of responses here which could stem from either Fig. 9 or their own knowledge including ideas such as:

loss of natural vegetation (or examples);

pollution of areas of sea/rivers/lakes;

increase in local traffic/congestion/atmospheric pollution from traffic;

loss of local culture;

impact of behaviour of tourists/drunkenness, etc.;

low paid jobs;

seasonal work;

shortage of water supplies, etc.

No MAXIMUM on any one factor, providing adequate development of points.

<div align="center">4 @ 1 mark or development</div> **[4]**

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(iii) Ideas such as:

restricting tourist numbers;

by dealing with a limited number of tourist firms;

ensuring wildlife is conserved;

ensuring vegetation/habitat is not cleared for tourist development;

encouragement of ecotourism;

setting up National Parks/conservation areas;

education of tourists regarding environmental issues;

employing people to clear up regularly in sensitive areas;

restricting access to sensitive areas;

banning tourists from hunting activities;

using local labour;

using local provisions, etc.

No MAXIMUM on any one aspect, providing adequate development of points.

5 @ 1 mark or development **[5]**

(c) Be prepared to accept any example of an area where tourism is important at any scale and any location. Candidates need to explain the reasons why tourism is important in the chosen area by referring to both physical and human attractions (MAX 5 on each). Candidates need to refer to an example they have studied, for which **one mark is reserved**.

Depending on the example chosen expect to see reference to features such as:

beaches;

climatic attractions;

scenic attractions;

attractions of natural vegetation;

cultural attractions;

architectural attractions;

historical attractions;

recently built attractions/theme parks, etc.

No MAXIMUM on any one aspect, providing adequate development of points.

7 @ 1 mark or development **[7]**

TOTAL: 25 marks

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Question 6

(a) (i) Australia

1 mark **[1]**

(ii) A = Oil/natural gas/coal/lignite

B = HEP/Solar/Geothermal/wind/wave/tidal, etc.

2 @ 1 mark **[2]**

(iii) Candidates should identify differences here though we should link together two discrete accounts. Ideas such as:

Greater proportion of fossil fuels used in Japan;

Greater proportion of renewable energy used in New Zealand;

Japan uses nuclear energy New Zealand does not

3 @ 1 mark **[3]**

(iv) Candidates should suggest reasons for the importance of different methods of generating electricity in different countries. Expect ideas such as:

Availability of reserves of fossil fuels/coal/oil/natural gas;

Level of development/technology available;

Government policy/attitude/towards the environment/e.g. nuclear power;

Environmental conditions or examples e.g. opportunity to use solar power, HEP, etc. (to MAX 2), etc.

4 @ 1 mark or development **[4]**

(b) Trends such as:

Increase in output from all three types;

particularly thermal (tenfold increase);

and Nuclear which wasn't used in 1960 but now provides a third of total power;

HEP increases slightly/remains roughly the same

3 @ 1 mark **[3]**

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(c) Candidates need to select one type of power station.

e.g. **thermal**:

Proximity to coal mines/oil refinery;

Availability of cooling water/close to river/lake;

Rail/road transport for fuel deliveries;

Plenty of land/room to store fuel;

Solid foundations;

Availability of local workforce;

Positioned well in relation to National Grid/supply network, etc.;

<div align="center">5 @ 1 mark or development   [5]</div>

(d) Candidates should choose a form of energy and describe threats to the environment which result from its exploitation and use. Be prepared to accept reference to any type of energy, in any country, and at any scale. Examples could range from the problems caused by the use of firewood in LEDCs to those caused by the generation of nuclear power. Candidates could refer to examples they have studied, if so these can be credited as development marks (MAX 2) if linked with appropriate points [e.g. acid rain from thermal power stations in the UK; destroys forests in Norway and Sweden (dev)] but do not credit examples in isolation.

e.g. the use of fossil fuels:

burning pollutes the atmosphere;

with gases such as carbon dioxide/sulphur dioxide;

causing acid rain;

which damages forests;

and kills aquatic life;

extraction in opencast mines destroys landscape;

and vegetation;

gases result in global warming/enhanced greenhouse effect;

melting of ice caps;

rise in sea level;

flooding of areas of coastal lowland, etc.

No MAXIMUM on any one aspect, providing adequate development of points.

<div align="center">7 @ 1 mark or development   [7]</div>

<div align="right">TOTAL: 25 marks</div>

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