

GCE

Edexcel GCE

Geography B (6474)

Summer 2006

Mark Scheme (Results)

Brief Explanation of Criteria Based Mark Schemes

These are used for the extended writing end parts of all questions, and for selected open-ended responses within questions.

Three criteria bands are used:

Highest criteria band answers:
Will show a good range, depth of detail, relevance, precision, answering the question in a logical structured way.
Medium criteria band answers:
Will show some of these characteristics but have limitations on a number of features, especially at the bottom of the band, whereas at the top of the band, they will have many features of the highest band material.
Lowest criteria band answers:
Will be limited in range, vague, using basic terminology and expression, lacking in detail, often of peripheral relevance with limited reference to rubric.

There is no restriction to the number of candidates achieving each band. It is possible that in some tasks, 40% of candidates may achieve highest band work, but because of a lack of consistency or performance, or particular strengths and weaknesses, the performance will not be sustained across a whole paper.

The **first** stage in marking therefore is to decide on the band, and **secondly** to decide on the position in the band. Note that not all points mentioned in the criteria description need to be met for an answer to be placed in the band.

Quality of Written Communication

QWC will be credited within all parts of each question. This will include structure, clarity, the use of geographical terminology and the correct use of grammar, spelling and punctuation.

Mark Scheme 6474 June 2006

1. Study Figure 1. The weather maps show conditions just before the D-Day landings.

(a) Using evidence from Figure 1 explain why: (12)

(i) the weather on 4th June led to 'a day of dreadful tension' for the British leaders;

The dreadful tension was caused by the deep depression centred over Northern Scotland, in particular the passage of the cold front which could bring strong winds (Force 6/7 shown) and also heavy thundery rain. Fog in France was also an issue. Tension associated with the movement of the depression.

(ii)a 'window' of fair weather could be expected for 5th June.

Fair weather could be expected as the depression had occluded and moved north, and the winds along the south coast had died down to Force 2. There were no visibility problems for this reason. Summer anticyclones/or ridges are usually associated with warm, calm conditions and also dry conditions. They usually last for a couple of days so providing a 'window'.

L3	Both explanations well structured and evidenced showing a sound knowledge and understanding of the likely impacts of weather systems on D Day.	12 – 10
L2	Some evidence used. Showing some knowledge and understanding of weather systems. Answer more unbalanced with less understanding of sequence and its impact on D Day.	9 – 6
L1	One or two basic ideas as to what the weather maps showed, descriptive and poorly linked to statements about D Day. Lacks structure.	5 – 1

(b) Suggest reasons why the range and reliability of weather forecasts have both increased in recent years. (13)

Reliability

Essentially has increased to almost 100% for now forecasts and short range and is improving for medium and long term in spite of more uncertainty (global warming). Increased reliability results from improved technology for data collection and analysis – new generation satellites (remote sensing) record °C and humidity. New generation radar (upward pointing Dopplers) → upper atmosphere wind profiles for jet stream movements. Also tornado trackers etc. New generation **computers** for improved statistical forecasting (analogue methods) and ensemble forecasting – so more data **but** still marginal conditions, or differences in track/intensity can occur.

Range is related to reliability as more user groups find forecasts useful, expect details linked to current (tornado/flood watch), short range (road gritting etc), medium range (eg lambing management) or long term (fashion, insurers, outdoor event). Reward details of weather forecast use linked to public service and private with profits section of Met Office and details linked to the importance of weather forecasting. Range could be defined as using a broader range of instruments/techniques, forecast types etc.

L3	Structured, explanation across reliability and range. Good knowledge of new technology and also the growing value of forecasting.	13 – 10
L2	Some structure, tackles both reliability and range but less strong on one. Does give details of some technology and some types of forecast use.	9 – 6
L1	Descriptive, lacks detail of technology – likely to dwell on events such as the 1987 hurricane. Some basic ideas on the use of forecasting. More anecdotal, lacks clear structure and focus.	5 – 1

2. Study Figure 2. The scattergraphs show how variations in precipitation and temperature have differed compared to the long-term means since 1976.

(a) Describe and suggest reasons for the patterns shown for both winter and summer. (12)

Note - the graphs were for UK, but this was omitted. Causes/reasons could be wide ranging.

There are two patterns apparent.

- The recent years (1976 – 2002) show a slight tendency for warmer (19/27) and wetter (18/27) **winters** (extreme 1990). There is also a slight trend for warmer/hotter (15/27) and definitely drier (18/27) **summers** (1976 the great drought an extreme). This could legitimately be linked to global warming (details) or N.atlantic oscillations, or even El Niño teleconnexions.

Good candidates may further comment on:

- In general the scatter graphs show inherently variable weather (°C and rainfall) especially in the winter and this is brought about by the position at a fluctuating Polar front. Expect details of mid latitude depressions (nearly 15% of Lamb’s weather types) and contrasting air masses – probably linked to fluctuations in Polar jet stream.

L3	Sound description of graphs, well supported by reasons. Well structured. Does both summer and winter soundly.	12 – 10
L2	Clear description, may be stronger on one or the other. Offers some explanation with some structure. Max 8, 1 pattern only ie winter or summer or °C/rainfall.	9 – 6
L1	Attempts a description, but has only very limited explanation eg because of Global Warming. Lacks structure. Data poorly interpreted.	5 – 1

(b) With reference to named areas, examine the problems of managing the short-term changes in climate caused by the El Niño/La Niña cycle. (13)

El Niño/La Niña cycle is concentrated in its effects around the Pacific, but teleconnexions can lead to a global impact, eg in an El Niño Caribbean is free(r) from hurricanes.

The cycle is a management problem because it overturns established climatic patterns.

- El Niño** → desiccation of Indonesia Eastern Australia (forest fires/droughts) and the arrival of flash floods/landslips, torrential rain in Peru as well as subsequent disease and outbreaks and devastation of anchovy fishing etc.
- La Niña** leads to coastal flooding, extremely heavy rain in Eastern Australia but extreme drought in Peru. Is a more extreme version of normal conditions.

Accept both environment and economy issues. Award max 9 for an account which fails to mention La Niña.

Note – This question is on **management problems** not causal explanation and should consider environment and economy. Causal explanation can inform the answer.

L3	Sound, structured examination of a range of problems. Likely to be well located/Pacific and possibly global across full cycle.	13 – 10
L2	Some structure in a located statement of problems. Likely to be Pacific orientated specialising in El Niño and concentrating on hazards.	9 – 6
L1	One or two basic descriptions of problems, likely to be in general terms, poorly related to elements of cycle. Lacks structure/generalised.	5 – 1

3. Study Figure 3. The diagram shows the factors and the ‘players’ that affect the condition of ecosystems.

(a) Explain how either factors or ‘players’ shown can affect the condition of named ecosystems. (12)

Some suggestions:

FACTORS include

- **Physical** – influence of climate change and weather patterns (Global Warming, El Niño) and natural disasters (hurricanes etc).
- **Social/Economic** – positive effects on education(+), issues of poverty(-), population pressure(-), industrialisation pressures(-).
- **Political** – corruption/illegal logging(-), theft/poaching(-), political stability and laws and finance favour conservation(+).
- **Science and technology** – use of pollution control, efficiency improvement, improved technologies.
- **Community access** – role of Green Movements, bottom up conservation.

PLAYERS include

- Role of Governments (+/-)
- Individuals eg consumer pressures
- Communities and land owners
- TNC corporations (+/-)
- International Institutions (+/-)
- Green organisation

Note – do not expect all these, but a fair mix related to ecosystems for Level 3.

L3	Structured explanation of the effects of a range of players or factors. Well supported by examples. Likely to include positives and negatives.	12 – 10
L2	Some structure in a solid account with limited explanation which refers to some factors or players. Tends to be less range and more general at lower end with limited links to named ecosystems	9 – 6
L1	Some basic statements on the influence of either factors or players on ecosystems. Generalised and lacks structure.	5 – 1

(b) With reference to one named global ecosystem, assess its value as a provider of goods and services. (13)

The question requires a global ecosystem (**max 9 for just Korup etc**). Likely to be corals/mangroves, (rain) forests, grasslands (temperate/tropical).

Basic goods will include food crops, food (meat/fish), building materials such as timber/limestone, water, energy via biomass, genetic resources.

Vital services could include, depending on chosen ecosystem, climate regulation, water control, air purification (green lungs), flood protection, water purification, nutrient cycling and humus generation, biodiversity/gene pool, wildlife habitat, aesthetic enjoyment and recreation for tourism, employment.

Reward candidates who evaluate/assess value (may put a numeric value on services) and link answers strongly to locations/chosen ecosystems.

L3	Structured, detailed assessment of both goods and services. Well linked to a global ecosystem.	13 – 10
L2	Some structure in account which may include some limited assessment. Some linkage to a chosen ecosystem. Does mention goods and services but is unbalanced.	9 – 6
L1	One or two basic statements of value – not linked to goods and services concept – very generalised and lacking in structure. Poorly linked to a chosen ecosystem.	5 – 1

4. **Study Figure 4. The graph and table show actual and predicted trends in global population.**

(a) **Describe and suggest reasons for the trends shown.** (10)

Historic trends up to 2000 show 6 billion and still rising tendencies with the number of years taken to add 2 billion people decreasing (rapidly initially) until 1974. This can be linked to demographic transition in particular population **explosion** caused by death rate decline (medical technology etc), yet continued fertility of a young population in spite of efforts at birth control in many countries. The young population – 2000, 50% under 30 means the growth continues to be strong globally but gradually impact of the power houses [2/3rds of total], eg birth control programmes in China and decline in Russia, lead to a prediction of a slower growth. From 2028 onwards this trend increases • possible impact of ageing population, • birth control programmes, • impact of HIV Aids. Note some Moslem countries are continuing to grow (pro natalist strategies), also some countries such as in Africa, continue still at population explosion stage ie takes time for bomb to be defused.

L3	Clear description, sound structured explanation with clear understanding of factors influencing actual and predicted trends. Likely to include examples.	10 – 8
L2	Some structure in an account which describes trends soundly, but more limited explanation. May be unbalanced/ incomplete.	7 – 5
L1	Some basic description of trends but very limited explanations. Shows poor understanding of demographics. Lacks structure.	4 – 1

(b) **With reference to named examples, explain why the rates of population change between now and 2050 will vary considerably from country to country.** (15)

- **Differential change** is a feature of both demography and economic development. DTR model could be useful here.

Examples of change include:

- **Rapid growth** countries include many LEDCs/LDCs – high birth rate, young population, high fertility rates. Lack of economic emancipation of women eg Ethiopia/Congo, some Arab countries.
- **Slow growth** but also controlled growth includes many Far Eastern countries and many Latin American countries. Related to both demographic transition birth control strategies as well as economic development (role of women).
- **Still stand or even decline** includes many European countries (population demographically ageing, birth rate not replacing death rate, as well as major decline in Eastern Europe and Russia (emigration/ageing population, economic stagnation). USA unusually is set for steady growth, possibly fuelled by immigration of a younger fertile population and affluence. Britain too will experience immigration fuelled growth.

L3	Clear structure, eg splitting nations into groups or stages of DTR. Well exemplified and explained across a range of countries in demographic and economic terms.	15 - 11
L2	Some structure in an answer which explains a variety of changes with reference to examples. May be a more generalised N/S approach.	10 – 6
L1	One or two basic ideas but lacks order and structure, may develop into a one country description eg China (child policy).	5 – 1

5. Study Figure 5. The resource gives details of one example of economic migration.

(a) Discuss the implications of this migration for both source and host countries. (10)

The resource shows **one** selected economic migration of professional economic migrants – within the English Language Commonwealth permit/fast visa access system. Whilst in general the numbers are small in relation to total population, in some cases eg Jamaica this would represent for the source a financial **brain drain** of trained professionals. Some of these countries have only low or middle incomes and low literacy rates eg India or Pakistan suggesting teachers needed at **source** country. The teachers may well accumulate wealth and send remittances home for some Caribbean islands, a vital source of wealth. An industry in the source countries supports peoples desire to better themselves (see 5b).

The host countries benefit (saving on cost of training) ie **brain gain** often paying these quality teachers on a lower rate than home based teachers. Vital role in the economy, plugging gaps in city schools, role models etc. Issues of housing new teachers, often concentrated in more urban areas. Benefits of multiculturalism.

L3	Structured, sound analysis of implications, with supporting data. Looking at issues across host and source. Well supported arguments.	10 – 8
L2	Some structure, in an account which explores the implications at host and source but may be less detailed, more unbalanced.	7 – 5
L1	One or two basic ideas, showing limited understanding of economic migration of professionals. Lack structure.	4 – 1

(b) With reference to named examples, compare the global pattern of voluntary movements by economic migrants with those of forced migrations by refugees. (15)

Economic migrants seek to better themselves (pull factors) – the flow is therefore from LDC/LEDCs to MEDCs, often with appropriate access eg within EU or cultural/linguistic similarity (anglo phile/franco phile etc). It occurs at a professional level to fill skill shortages eg in health, and also at a basic dirty job level – basic services, sweat shop manufacturing, eg Chinese cockle pickers. Also many Arab countries receive guest worker style migrants. Note some illegals in a grey area, similar to refugees in terms of conditions. There is also much MEDC→MEDC movement again for economic advancement or improved quality of life or low tax retirement. Return migrants back from MEDC to homelands (LEDCs). Worldwide, ongoing all ages, may be predominantly young male in some cases.

Refugees are forced to migrate (push factors) – sources are therefore areas of war, famine, political persecution, environmental disaster. Vary over time (decline of Bosnian problem), but essentially conflict zones. Therefore the bulk of movement is to neighbouring country ‘havens’ eg Afghanistan to Pakistan. Some do get to MEDCs which for political reasons can operate quotas to control flow in spite of opportunities and some do claim asylum.

L3	Structured comparison with a clear understanding of the contrasting global patterns , well exemplified and wide ranging.	15 – 11
L2	Some structure, likely to be two sound accounts with limited comparisons. Some explanation, understands some reasons for patterns. May lack balance.	10 – 6
L1	One or two basic ideas, but confused about the differences between the two groups, so limited in focus. Lacks structure.	5 - 1

6. Study Figure 6. The cartoon represents some views on the negative consequences of globalisation.

(a) Suggest reasons why these views on globalisation have come about. (10)

The answer might include the fact that as a result of the impact of TNCs, supported by escalating systems of global communications (ICT/satellites) 'free' trade and global financial systems, spread of globalisation – especially economic globalisation - has accelerated, also economic globalisation has now developed many facets. It has led to cultural globalisation which is perceived by some as Americanisation/Hamburgerisation – and unhealthy as now only one super power.

Concerns shown include those associated with the power of TNCs especially American HQ TNCs (Microsoft, McDonalds, Coca Cola, Nike) more powerful than most LEDCs/LDCs in terms of turn over. Breakdown of local culture sweatshop labour (Nike) and exploitation of poor workforce for profit are concerns. Other concerns can include issues of unfair trade, the technology gap and the way globalisation can increase poverty for the world's poorest peoples. Globalisation can also lead to increased environment damage eg pollution transfer, rainforest destruction.

Some students may identify global terrorism as an issue, accept any anti-globalisation ideas.

L3	Structured explanation which looks at a range of reasons for the concerns. Uses cartoon effectively.	10 – 8
L2	Some structure in an explanation which identifies several key concerns.	7 – 5
L1	One or two basic ideas eg on the Big Mac culture. Little insight into globalisation. Lacks structure.	4 – 1

(b) With reference to named examples, examine the reasons why many people argue that the global shift and globalisation have also had beneficial impacts. (15)

Globalisation induced by TNCs has led to global shift ie the spread of initially manufacturing and more latterly services (outsourcing) to at first NICs, then RICs and then LEDCs and LDCs to working environments free from over regulation. Often quality products are made but at less cost (China Pearl River). This keeps prices down for electronics and clothes in MEDCs. Globalisation can be seen as good – providing jobs, raising quality of life in NICs (4 tigers) and many RICs often in SE Asia. Also it improves trade balance of these countries. Examples of TNC or NIC success relevant. It also encourages inward investment – development of alternative employment to agriculture – can lead to growth poles and disparity but in time backwash spreads effects (see Vietnam/India). Also employs graduates at 'home'. Environmental degradation can turn into environmental improvement over time. TNCs put money back into the NICs and RICs etc.

L3	Structured, well exemplified examination which shows good understanding of the benefits of the global shift/globalisation.	15 – 11
L2	Some structure in an account which uses one or two examples to show some of the benefits. Less well linked to two concepts.	10 – 6
L1	Basic statement on some benefits of globalisation, likely to be descriptive account of a TNC. Little structure or conceptual understanding.	5 – 1

7. Study Figure 7. The diagram shows two major policies for eliminating the ecological deficit.

(a) **With reference to examples, explain how each of the three actions shown could reduce the global ecological footprint.** (15)

Three factors determine size of ecological footprint:

- the efficiency of production systems used to produce goods;
- the level of consumption per person;
- the number of consumers.

Some ideas on reduction

- (1) **Resource efficient production** - expect details of decreasing fossil fuels, using renewable energy, energy efficient technologies, buildings, transport. Removal of subsidies on wasteful, destructive agriculture, fisheries or forestry to more sustainable systems. Use of tax systems to support recycling transfer technology to allow LDCs to become resource efficient.
- (2) **Encourage sustainable consumption** – stringent environmental laws control of greenhouse gases (Kyoto), ensure polluter pays, establish trade agreements to ensure fair trade, minimise consumer waste (recycling etc).
- (3) **Control population** – UN Millennium Declaration –goals promoting education and health – primary education for all, create educational access routes for women, reduce child mortality and prevalence of diseases. Improve maternal mortality. Primary healthcare and access to family planning for all (Cairo 1994). Plus range of anti-natalist strategies.

Max 12 2 strands only, max 6 1 strand only – well done.

L3	Structured explanation of a range of actions from all three strands. Linked to eco-footprint at a global scale.	15 – 11
L2	Some ideas, with some structure but stronger on two strands. Overall less balanced and less detailed exemplification.	10 – 6
L1	One or two basic ideas, narrow range. Strategies very generalised not linked to eco-footprint. Lacks structure.	5 – 1

(b) **With reference to examples, assess the effectiveness of each of the three ways of maintaining and developing the biological capacity of ecosystems.** (15)

A useful concept is the conservation spectrum. Expect discussion on various types of **protected** ecosystems (WH sites, biosphere reserve, marine parks etc) to discuss their effectiveness (Korup/Udzungwa SMMA etc). **Management** could include **sustainable** design, various soil conservation schemes, schemes to combat grassland degradation, deforestation etc. Elimination of use of toxic chemicals, or sustaining wetlands could be suitable as examples. **Restoration** eg of degraded mining areas, or by reintroducing nationally extinct species into the food chain (Project Eden), plant breeding and conservation and research centres in zoos, is the most costly option and basically a last resort. Allow a wide variety. **Note:** there is overlap and the distinction is blurred.

Max 12 2 ways only, max 6 1 strand only – well done.

L3	Structured assessment showing knowledge of management spectrum. Looks at all three with support, linked to biological capacity.	15 – 11
L2	Some structure in an account which describes a series of ways of maintaining biological capacity with limited assessment. Some exemplar support. May only look at two in-depth or three superficially.	10 – 6
L1	One or two basic ideas on conservation. Generalised ideas not well linked to biological capacity. Lacks structure.	5 – 1

8. Study Figure 8. The photographs shows three images of people and their possessions (A, B and C).

(a) Suggest reasons for the differences shown between photographs A, B and C. (15)

Note description is only implied. Essentially Mali is an LDC, Vietnam a 3rd generation NIC and USA an MEDC so the possessions, houses and content link very closely to states of economic development eg note the rising affluence in Vietnam, electricity → basic fans, bicycles, etc. There are ample opportunities for comparing house design, density, as well as material wealth. The house design could be linked in Mali to semi desert conditions ie environment plays some part.

Equally important are the people – reward observations on family structure and size related to demographic transition as well as economic circumstances (High BR etc).

L3	Structured perceptive comparisons across population and economy. All three included with good reasons on people and possessions.	15 – 11
L2	Some structure in an account which offers some reasons. May concentrate on people or possessions.	10 – 6
L1	Basic descriptions of the pictures with limited insights as to differences.	5 – 1

(b) With reference to examples, evaluate two strategies for attempting to reduce the development gap. (15)

There are many answers to this depending on the examples selected. Expect:

- Reforming WTO rules development of Fair Trade strategies.
- The Usefulness of Aid. Accept 2 distinct types of Aid as 2 strategies.
- Promoting health (1) and education (1) – (millennium development goals).
- Reassessment of World Debt (restructuring/rescheduling).
- Use of new technologies to raise living standards eg broadband/communications/ICT.
- Strategies such as agricultural^①, industrial^① or tourism development^① ie sectoral development.
- Could look at strategies by **organisation** – Global v local NGO. Top down v bottom up.
- Role of Mass Media or Popular Culture, eg Live 8

L3	Two distinct strategies evaluated in a structured, well exemplified account. Well focussed on the Development Gap reduction.	15 – 11
L2	Two strategies, one maybe less effective than the other. Some structure, does include some examples. Limited evaluation, clear statements.	10 – 6
L1	Poorly developed strategies (may be two very weak or one weak). Very generalised with no support. Lacks structure and focus on development gap.	5 – 1

Note – max 9 for one strategy only. If more than 2 mark best two.

9. Study Figures 9(a) and 9(b). They show global patterns of environmental sustainability, but measured in two different ways.

(a) Compare the global patterns shown and suggest reasons for any differences. (15)

9A - Essentially as the map measures **capacity** to become sustainable there is a direct relationship with levels of development. MEDCs have more capital and technology to develop sustainable green growth hence most of Europe, N America, Australia ie the North and much of South America including Brazil (Amazonia?!) are the most environmentally friendly. Environmentally friendly countries vary from Russia to isolated 'South' countries. The least environmentally friendly include most NICs, many OPEC countries and a range of LEDCs. NICs will be experiencing rapid growth eg and LEDCs may lack capacity.

The 22 measures are very diverse and some are even concerned with Human Development so not surprisingly this makes LDCs not very sustainable. Some anomalies, eg Austria

9B – Essentially 9B is about damaging actions so the maps are very similar to eco footprint maps – **inversely** related to development. Least friendly are MEDCs, OPEC and rapidly growing NICs, details of China etc. The most environmentally friendly are usually LDCs who make very light demands on their environment ie 9B overall is a mirror image of 9A.

L3	Well structured argument, clear comparative description supported by sound reasons across both maps which leads to explained differences → effective comparison.	15 – 11
L2	Some structure in an effective description across both maps, limited comparison with one or two reasons to support differences.	10 – 6
L1	Describes some general aspects of the maps, very limited reasons if any. No comparison. Lacks structure.	5 – 1

Max 8 for one map only with **no** comparison.

(b) Evaluate some of the ways of measuring progress towards either environmental or socio-economic sustainability. (15)

Note wide range possible – many candidates will use qualitative ideas.

Environmental indicators could be related to atmosphere and biosphere.

Expect • levels of pollution, • CO₂ emissions, • pollution of rivers → water quality, • % derelict land (re-use), levels of marine pollution, and deforestation, degradation rates, levels of biodiversity, noise pollution, waste generated etc, many possible.

Socio economic indicators could be linked to Human Development Index eg levels of literacy, infant mortality, • levels of crime, • health, • political freedom for communities to operate, • the viability of the economy, • balance between population and resources, • poverty levels.

The eggs of well being may well be used to list indicators (June 2005).

L3	Structured evaluation with a range of explained and appropriate ideas which could be used to measure progress. Good understanding of chosen sustainability type.	15 – 11
L2	Some structure in an account which shows some understanding of sustainability. Describes some suitable ideas for chosen sustainability type.	10 – 6
L1	One or two basic ideas, which could be linked to sustainability. Some general, some inappropriate, lacks structure.	5 – 1

Note - if just general sustainability, mark for the best result.

Total for Paper: 80 mark