Mark Scheme (Results)
January 2008

GCE Geography B (6474/01)

A PEARSON COMPANY

6474 Global Challenge

Question Number	Question
1.	(a)
	Indicative content
	Global circulation focuses on three distinct cells: Hadley; Ferrel; Polar. Tropical thunderstorms associated with low-level convergence of warm, moisture-laden air in the ITCZ Gradual movement of upper air towards the poles, cooling as it does so, to subside around 30 degrees – linked to the subtropical highs + very dry weather Low-level currents flow polewards from the sub-tropical highs to form the warm sector rising above the returning polar sector at a frontal zone at 50 – 60 degrees – frontal depressions give precipitation in mid-latitudes. Candidates might mention Rossby waves and the movement of fronts. Also seasonal variations due to migration of ITCZ Sinking air at the highest latitudes associated with surface highs – cold & dry

Level	Mark	Descriptor
Level 3	10-8	Clear understanding of the resource. Well organised explanation. Uses a range of information from the resource effectively. Terminology apparent. Clear linkage to surface weather conditions.
Level 2	7-5	Some structure in the answer which describes some aspects of the resource soundly but more limited explanation. Alternatively only explains global air circulation.
Level 1	4-1	Some basic observation/ description. Generalised and lacks structure.

Question Number	Question
1.	(b)
	Indicative content
	Seasonal variations in climate might include monsoon changes, wet/dry changes, mid latitude seasonal changes or changes in the Arctic region. Possible impacts:
	• Impacts on farming cycles
	• Delays with construction projects, (buildings, roads, etc)
	• Variable demand for products/services
	• Affects tourism & recreation patterns
	• Disruption to road, rail & air journeys
	Max 8 for weather events only.

Level	Mark	Descriptor
Level 4	15-13	Well organised, structured account with a clear focus on the linkage between seasonal variations and economic activities. Shows good detailed knowledge of a range of impacts. Clear exemplification.
Level 3	12-9	Structured account which includes a range of impacts and some exemplification / e.g. detail. Some attempt to examine the linkage between climate variations and economic activities.
Level 2	8-5	Some structure. A descriptive account which looks at several impacts, but with variable depth/detail. Limited attempt to link to economic activities.
Level 1	4-1	1-2 basic ideas. Little or no detail or exemplification. Will lack structure.

Question Number	Question
2.	(a)
	Indicative content
	Possible comments: Marked El Ninos/La Ninas do not occur regularly When they do occur they are associated with extreme regional weather events that persist for a season or so. Impacts can be costly Because El Nino/La Nina develops slowly over months & seasons such anomalies can be tracked to give warnings issued well ahead of the event. Would have given accurate prediction of recent events – students may quote data from the resource, (e.g. marked El Nino event in 1997-98). These can also be used in sophisticated computer modelling to issue predictions of the likely development, evolution and decline of an event. This means that governments can plan for impacts. However, monitoring can be more extensive in some areas rather than others. Forecasting is not an exact science.

Level	Mark	Descriptor
Level 3	10-8	Clear understanding of the concept and resource. Well organised assessment likely to looks both trends and forecasting. May use data from the resource effectively. Terminology apparent.
Level 2	7-5	Some structure and a range of valid comments which either analyses the trends soundly but has limited assessment or discusses the forecasting of El Nino without reference to the values of such graphs.
Level 1	4-1	Some basic observation/comment on forecasting, El Nino or the graph but very limited comment beyond that. Generalised and lacks structure.

Question Number	Question
2.	(b)
	Indicative content
	The cycle is a management problem since it upsets established climatic patterns. El Nino: Torrential rain + flash floods in Peru – disease and disruption to fishing/anchovies. Dessication of Indonesia / E Australia - forest fires & droughts. La Nina: leads to coastal flooding, extremely heavy rain in E Australia but extreme drought in Peru. Accept both environment & economy issues. Max 12 for an account which does not mention both aspects.

Level	Mark	Descriptor
Level 4	15-13	Structured detailed account with a clear focus on the examination of problems. Shows good knowledge of a range of aspects with balanced coverage between El Nino & La Nina impacts. Clear exemplification. Likely to take an overview.
Level 3	12-9	Structured account which includes a range of problems and some exemplification/eg detail. May lack a balanced coverage, e.g. El Nino only. Some attempt to examine.
Level 2	8-5	Some structure - a descriptive account which looks at several management impacts, but with variable depth/detail. No obvious attempt to examine.
Level 1	4-1	1-2 basic ideas. Little or no detail or exemplification. Will lack structure.

Question Number		Question
3.		(a)
		Indicative content
		TRF highest in terms of NPP (2200) & biomass (45); Desert is the least (90 & 0.7) Primary productivity is the rate at which energy is converted into organic matter. Net Primary Productivity (NPP) = GPP (measure of all photosynthesis within an ecosystem) - respiration i.e. it is the new growth available for other levels of the food chain to use; measured as dry biomass. Ecological productivity depends on: • Heat (temperature) - controls the rate of chemical reactions • Water - a key component in many chemical reactions • Nutrient availability • Light (solar) - for photosynthesis; varies with latitude, altitude, seasonality & day length. Maximum productivity occurs where these factors are optimum such as equatorial areas. Biomass largely correlates to NPP trends with the exception of corals. NB: There are different approaches to answering this question (range and/or detail). Do not expect coverage of all ecosystems.
Level	Mark	Descriptor
Level 3	10-8	Clear understanding of affecting factors. Well organised explanation. Sound reasoning. Likely to examine the linkage between NPP and biomass. Uses data from the resource and own knowledge effectively. Terminology apparent. Likely to have a good coverage of ecosystems.
Level 2	7-5	Some structure in the answer which describes the NPP band/or biomass but has limited depth to reasoning.
Level 1	4-1	Some basic description but very limited comment beyond that. Limited supporting detail from the resource. Generalised and lacks structure.

Question Number		Question
3.		(b)
		Indicative content
		NB a global ecosystem can be a tropical rainforest, coral, etc and does not require a complete coverage. Max 12 for single example, eg. Great Barrier Reef. Impact can be positive or negative; credit any feasible suggestions:

Ecosystem	Examples of human impact
Forest	Forest conservation schemes/use of buffer zones around reserves Deforestation/reforestation Logging or ban/restrictions Sustainable use of forests – butterfly farming, bee keeping, ecotourism
Grassland	Grazing/agricultural activities Soil conservation strategies Game reserve management Establishing protected areas & across international boundaries
Marine	Tourism & fishing Protection/conservation of corals/ban on coral mining Marine Parks Sustainable use of fisheries area/codes of practice Reduction in pollution

Level	Mark	Descriptor
Level 4	15-13	Structured balanced account with clear assessment of the positive and negative impacts. Shows good knowledge of a range of impacts. Detailed exemplification. Likely to take an overview.
Level 3	12-9	Sound account which includes information on a range of impacts. Some attempt to assess.
Level 2	8-5	Some structure. A descriptive account which looks at several impacts, but with variable depth/detail. No obvious attempt to assess.
Level 1	4-1	1-2 basic ideas. Little or no detail or exemplification. Will lack structure.

Question Number		Question
4.		(a)
		Indicative content
		NB: If stage by stage approach look for factors mentioned throughout. Possible factors: Balance of births and deaths Cultural – eg religious beliefs, role of women Economic – eg levels of development, personal wealth Health – eg disease control, healthcare Political – eg access to service, pressure groups, opportunities for women; i/emmigration Education – eg health education, use of contraception, literacy, job opportunities Environmental – eg clean water availability, natural/man-made hazards
Level	Mark	Descriptor
Level 3	10-8	Structured account which uses prompts from the resource and own knowledge. Shows a detailed understanding of a range of factors. Terminology apparent.
Level 2	7-5	Some structure in the answer. Describes several factors but typically not expanded upon. Alternatively a tendency to list a wide range of factors.
Level 1	4-1	Some basic description/comment but very limited range and detail. Generalised and lacks structure.

Question Number		Question
4.		(b)
		Indicative content
		Possible themes: Strong linkage between DTM and economic development/industrialisation. Many factors that now affect population change mean that few LEDCs are likely to follow the same patterns today as perhaps an outdated European based model (1929). DTM gives an idea of the linkage between natural population change and decline but demographic change has other aspects too, such as migration. 5th stage was added more recently in an attempt to reflect developments in some MEDCs.
Level	Mark	Descriptor
Level 4	15-13	Structured account with clear examination of relevant linkages. Shows a sound understanding of the model. Clear and detailed exemplification. Likely to take an overview.
Level 3	12-9	A sound account which includes a range of comments and some exemplification / eg detail. Some attempt to examine linkage between DTM and economic development.
Level 2	8-5	Some structure. Tends to be descriptive or superficial examination with limited linkage between DTM and economic development.
Level 1	4-1	1-2 basic ideas. Little or no detail or exemplification. No linkage between DTM and economic development. Will lack structure.

Question Number	Question
5.	(a)

	Indicative content
	Resource focuses on **forced** migration. Patterns (for information only): Largest number of displaced people in Sudan, Congo, Angola, Burundi Predominantly an issue in central band Refugee movements appear to be to neighbouring countries Some countries have both internally displaced people and receive refugees, eg Sudan Possible causes: Conflict – eg Angola Environmental hazards – eg Sudan Civil war in West Africa – eg Sierra Leone & Liberia Distance decay concept of refugee movement. Political regimes and intolerances Answers may include reasons why some countries do not have refugees. Allow credit for own knowledge in addition to patterns shown post 2003 eg, Kenya.

Level	Mark	Descriptor
Level 3	10-8	A range of possible reasons for the migration patterns shown with some detail. Well organised account. Likely to use data from the resource effectively to support points made. Terminology apparent.
Level 2	7-5	Some structure in the answer. Uses the data to outline some reasons but lacks insight. Alternatively only certain aspects identified.
Level 1	4-1	Some basic description but very limited reasoning. Generalised and lacks structure.

Question Number		Question
5.		(b)
		Indicative content
		Depends on whether the source or host country. Answers might examine this with respect to voluntary, forced and/or economic migrations. Given that the question states management issues answers are likely to be skewed towards consideration of negative issues. The table below highlights common themes but obviously there may be others. Credit feasible ideas. Do not credit internal migration, eg. rural to urban migration.

Max 12 marks for a single example, eg, Turks into Germany. |

	Positive issues	Negative issues
Country of departure (source)	Relief of shortages, eg jobs, services, food
Reduced pressure on resources
Emigrants send money back to relatives
If immigrants return, they take new skills back with them
Reduction of birth rate, in over populated areas due to emigration of people of child-bearing age	Loss of human resources, eg labour, enterprise, skills/brain drain
Communities & regions drawn into a vicious cycle of decline
Growth of emigration culture
Dependence on remittances
Premature ageing of the population due to emigration of younger people
Country of arrival (host)	Enrichment of human resources – skills, capital, etc.
Unwanted jobs filled by cheap labour
Opening up of peripheral regions	Pressure on food supplies, housing, jobs, services, etc
Discrimination against immigrants, particularly if members of ethnic minorities – may require extra policing, etc
Congestion, especially in cities
Predominance of males leading to social problems
Additional healthcare concerns. eg transmission of TB

Other issues in the movement between host and source might include

Level	Mark	Descriptor
Level 4	15-13	Well organised, structured account. Shows knowledge of a good range of management issues. Clear exemplification and examination of the issues. Likely to take an overview.
Level 3	12-9	Structured account which includes a range of management issues and some exemplification / e.g. detail. Some attempt to examine.
Level 2	8-5	Some structure. A descriptive account which looks at several management issues, but with variable depth/detail. No obvious attempt to examine.
Level 1	4-1	1-2 basic ideas. Little or no detail or exemplification. Will lack structure.

Question Number	Question
6.	(a)

	Indicative content
	Globalisation fostered by the development of TNCs
Outsourcing of production to NICs, RICs and now BRICs (Brazil, Russia, India and China) to take advantage of working environments free from over regulation + lower labour/production & development costs
Inward investment to the countries listed in the resource have meant development in their manufacturing processes
Now a mixture of R&D & skilled developers between MEDCs and LEDCs
Assembly in low production cost location

Credit should be given for candidates relevant own knowledge on globalisation and the global shift. |

Level	Mark	Descriptor
Level 3	10-8	Shows a clear understanding and examination of globalisation / global shift. Able to link the resource to own knowledge effectively. Examines a reasonable range of factors. Well organised account. Terminology apparent. Clear link to laptop.
Level 2	7-5	Some structure. Some detail and understanding of global supply chains either from the resource or from own knowledge or a more limited range of factors.
Level 1	4-1	Some basic comments drawn from the resource eg low labour costs, but very limited detail beyond that. Lacks structure.

Question Number	Question
6.	(b)

	Indicative content
	Industrial area could include named NICs. Eg Taiwan, Korea
Max 8 for single industry, eg car industry in several different countries, but ensure credit of 'best' country reference.
Max 8 for story of TNC, eg Nike
Answers will depend on the region and its industry selected. One theme might be:
• Original industry developed
• Re-organisation of the industry with the emergence of TNCs + amalgamation of smaller companies for economies of scale
• Attraction of cheaper production costs abroad/LEDCs leads to closures, dereliction and decline
• New industry attracted by government incentives
• Redevelopment initiatives and inward investment for the area

Level	Mark	Descriptor
Level 4	15-13	Well organised, structured account with a clear focus on the impacts of changing economic activity. Clear assessment and detailed exemplification. Likely to take an overview.
Level 3	12-9	Structured account which includes a range of impacts and some exemplification / e.g. detail. Some attempt to assess.
Level 2	8-5	Some structure – a descriptive account which looks at several impacts, but with variable depth/detail. No obvious attempt to assess.
Level 1	4-1	1-2 basic ideas. Little or no detail or exemplification. Will lack structure.

Question Number	Question
7.	(a)
	Indicative content
	Highest vulnerability in Mali , Ethiopia & Mozambique (>7) Lowest in Sth Africa, Nambia, Botswana, Gabon & Swaziland (1-4.99) Pattern reflects: • Environmental sensitivity- climate, soil condition, ecosystem management • Natural hazards & their management • Climate change • Level of development, personal wealth and unfair trade • Population pressures + human influence (+ or -)/human conflict situations • Governments capability • Health and disease related issues Accept other feasible reasons.

Level	Mark	Descriptor
Level 4	15-13	Well organised, structured account with an evidenced description. Shows good knowledge of possible factors influencing the patterns. Likely to take an overview.
Level 3	12-9	Structured account which includes a range of aspects. Some attempt to describe and reason. Some development of each aspect but maybe a limited range. Clear linkage to map.
Level 2	8-5	Some structure but rather a descriptive account which looks at some aspects, but with variable depth/detail. Very limited reasoning.
Level 1	4-1	1-2 basic ideas. Little or no detail from the resource. Will lack structure.

Question Number	Question
7.	(b)

Indicative content
Sustainable initiatives might include: • Protection of sensitive areas • Value environments – eg ecotourism, alternative medicines • International agreements (eg Kyoto) to cut greenhouse gas emissions • Green growth initiatives • Waste management /recycling • Development of clean technology • Planting trees to create extra carbon sinks • Sustainable energy use + use of renewables • Use of planning regulations to reduce urban sprawl & therefore distances driven The need to manage economic development in this way relates to: • Pressures associated with global warming / Kyoto etc • Desire to protect vulnerable areas • Lessons learnt from other countries to enable economic development with minimum impact on the environment Answer may include challenges to the argument i.e. economic development cannot/does not always need to be managed in a sustainable way.

Level	Mark	Descriptor
Level 4	15-13	Well organised, structured assessment of the need to protect/manage environments. Shows good knowledge of sustainable environmental management. Clear and detailed exemplification. Likely to take an overview.
Level 3	12-9	Structured account which includes a range of comments and some exemplification/eg detail. Some attempt to assess with clear linkage to the question.
Level 2	8-5	Some structure. A descriptive account which looks at several management examples or ideas on sustainability, but with variable depth/detail. No obvious attempt to assess.
Level 1	4-1	1-2 basic ideas. Little or no detail or exemplification. Will lack structure.

Question Number	Question
8.	(a)

	Indicative content
	Interpret the question as <u>likely</u> to have greater success.
	Possible trends: Many of Eastern Europe countries + UK have met or exceeded their individual targets and have exceeded EU progress.
	Spain, Austria and the Netherlands have increased their emission levels since Kyoto and not reached their targets. Luxembourg set a very ambitious target and this was not met.
	Reasoning is likely to focus on:
	• Population density & consumerism levels
	• Level & scale of recycling initiatives & use of renewable energy
	• Challenge of the target set originally
	• Agreements between countries to 'balance' GHG emissions and trade-off arrangements
	• Government commitment.
	• Importance of media coverage and pressure groups.
	• Cultural factors
	• Stage in the industrial cycle.

Level	Mark	Descriptor
Level 4	15-13	Well organised, structured account with a clear focus on reasoning. Clear understanding of Kyoto targets and enhanced greenhouse issues. Shows good knowledge of a range of reasons. Good supporting detail. Likely to take an overview.
Level 3	12-9	Structured account which includes several reasons with sound supporting detail.
Level 2	8-5	Some structure. A descriptive account which looks at several data differences/similarities. Some attempt to reason but limited in terms of range or detail.
Level 1	4-1	1-2 basic ideas. Little or no detail. Will lack structure.

Question Number	Question
8.	(b)

	Indicative content
	Discussion likely to focus on positive and negative consequences which vary according to global location and state of development: • Sea levels – land losses with coastal flooding, ice melt • Meteorology – changes in temperature and rainfall patterns • More extreme events – storms & flash floods • Impact on ecosystems & human activities • Disease and insect plagues • Climate related food security • References to Stern Report • May need a rethink on water management and transfer strategies • May have a feedback mechanism and reduce/stop the Gulf Stream (heat conveyance across the Atlantic) • Increased tourism/recreation possibilities • Decreased need to heat buildings (but increased demand for air conditioning) • Significant changes as tipping point approaches. Validity of the statement is perhaps linked to how successful mitigation and adaptation can be.

Level	Mark	Descriptor
Level 4	15-13	Well organised, structured account. Shows good knowledge of a range of implications with coverage positive & negative aspects. Detailed exemplification and a clear assessment of the validity of the statement. Likely to take an overview.
Level 3	12-9	Structured account which includes a range of implications and some exemplification / e.g. detail. May lack a balanced coverage. Begins to assess the validity of the statement.
Level 2	8-5	Some structure. A descriptive account which looks at several implications, but with variable depth/detail.
Level 1	4-1	1-2 basic ideas. Little or no detail. Will lack structure. Likely to be sensational statements.

Question Number	Question
9.	(a)

	Indicative content
	The Ecological footprint is a measure of resource consumption and waste output of an individual, city, region or country. NB the map concerns the footprint of individuals within a particular country. Variations are likely to reflect: level of development (inverse relationship); economic income/consumption/waste; energy use (especially fossil fuel consumption); road miles travelled & fuel use; land use & housing characteristics; extent of recycling. Credit any feasible suggestions and/or exemplification.

Level	Mark	Descriptor
Level 4	15-13	Well organised, structured account. Clear understanding of the term ecological footprint and factors that have/are influenced/ing sustainability. Shows good knowledge of several reasons across a range of countries. Likely to take an overview and/or include supporting exemplification / detail from the resource.
Level 3	12-9	Structured account which includes a range of reasons and some country/resource support.
Level 2	8-5	Some structure. A descriptive account which looks at several countries. Limited attempt to reason.
Level 1	4-1	1-2 basic ideas. Little or no detail. Will lack structure.

Question Number		Question
9.		(b)
		Indicative content
		Main themes likely to be: • impact of uneven distribution of wealth on flows of trade, technology, food resources, investment, aid & people • Some change in world order with the emergence of NICs, RICs and BRICs • Development of trade blocks/preferred linkages • Changing patterns of aid and global assistance • Impact of loan arrangements and the elimination of LEDC debt • Globalisation • Some initiatives designed to help shift the balance, eg Traidcraft, Fairtrade, debt relief etc.
Level	Mark	Descriptor
Level 4	15-13	Well organised, structured account with a clear focus on the assessment of the extent of the North-South development gap. Shows good own knowledge across a range of aspects. Clear and detailed exemplification. Likely to offer a summative statement of the extent of the development gap.
Level 3	12-9	Structured account which includes a range of points and some exemplification / e.g. detail. Some attempt to assess the extent of the North-South development gap.
Level 2	8-5	Some structure. A descriptive account which looks at several aspects, but with variable depth/detail. Often basic MEDC versus LEDC accounts. No obvious attempt to link statement.
Level 1	4-1	1-2 basic ideas. Little or no detail or exemplification. Will lack structure.