Cambridge Pre-U Specimen Papers
and Mark Schemes

Cambridge International Level 3
Pre-U Certificate in
GEOGRAPHY

For use from 2008 onwards

UNIVERSITY of CAMBRIDGE
International Examinations

Cambridge Pre-U

Specimen Materials

Geography (9768)

Cambridge International Level 3
Pre-U Certificate in Geography (Principal)

For use from 2008 onwards

QAN 500/4328/6

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This booklet of specimen materials is for use from 2008. It is intended for use with the version of the syllabus that will be examined in 2010, 2011 and 2012. The purpose of these materials is to provide Centres with a reasonable idea of the general shape and character of the planned question papers in advance of the first operational examination.

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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Level 3 Pre-U Certificate
Principal Subject

GEOGRAPHY **9768/01**

Paper 1 Geographical Issues **For Examination from 2010**

SPECIMEN PAPER

2 hours 30 minutes

READ THESE INSTRUCTIONS FIRST

Answer **five** questions.

Two questions must be answered from **each** of Sections A and B.

One question must be answered from Section C.

Candidates are encouraged to support their answers with appropriate examples, sketch maps and diagrams.

The Insert contains Fig. 1 for Question 1, Figs 3, 4 and 5 for Question 2, Fig. 6 for Question 3 and Table 3 for Question 6.

This document consists of **10** printed pages and **1** Insert.

Section A

Answer **two** questions from this section.

Tectonic Hazards

1 **(a)** Identify **two** features of a mid-ocean ridge. [2]

(b) Fig. 1 (Insert) shows some of the effects of the eruption of Mount St Helens, USA, in 1980.

Describe the distribution of the pyroclastic flow and mudflow deposits. State why **one** of these types of flow may be hazardous. [4]

(c) Fig. 2 shows earthquakes recorded by the US Geological Survey at Mount St Helens, USA, 1980–96.

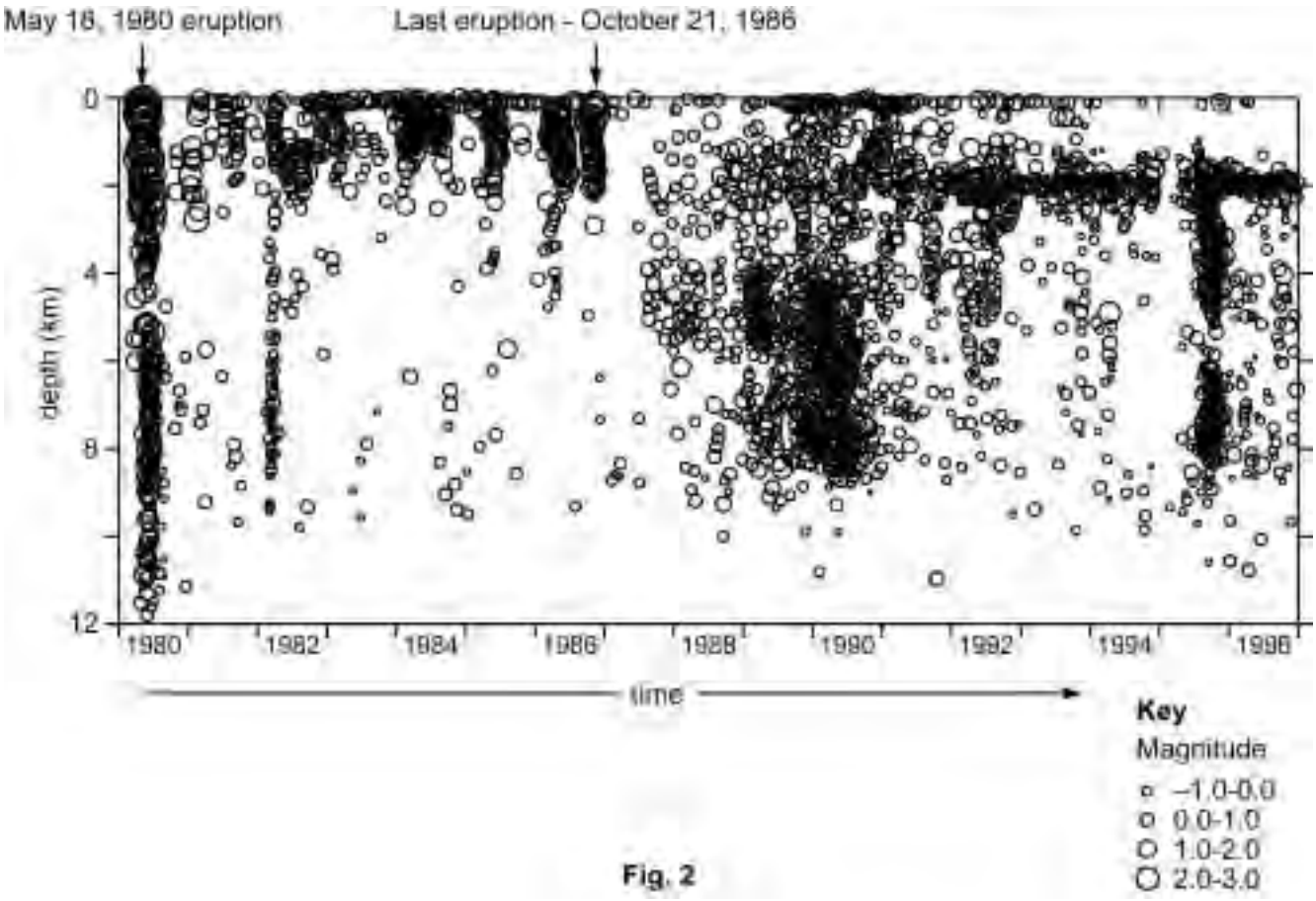


Fig. 2

Describe and briefly explain the pattern of earthquake activity during the period shown in Fig. 2. [5]

(d) 'Different types of volcanic eruption can be explained in terms of their location in relation to particular types of plate boundary.'

With the aid of diagrams, discuss the extent to which this statement is true. [9]

Hazardous Weather

2 **(a)** Define the term *lightning*. [2]

(b) Fig. 3 (Insert) shows lightning incidence in the USA and Fig. 4 (Insert) shows the deaths by state from lightning in the USA from 1997 to 2006.

To what extent is there a correlation between the incidence of lightning and deaths from lightning in the USA, as shown in Figs. 3 and 4 (Insert). [4]

(c) Fig. 5 (Insert) shows the tracks of several hundred tropical storms and tropical cyclones. Describe and explain the pattern of tropical storms and tropical cyclones shown. [5]

(d) 'In tropical storms and tropical cyclones, heavy rainfall poses a more severe hazard than high wind speeds.'

Consider to what extent this statement is true. [9]

Hydrological Hazards

3 Table 1 shows the number of deaths from flooding and the economic cost of flooding globally between 1989 and 2003.

year	number of deaths from flooding	economic cost of flooding (million US$)
1989	2900	8.7
1990	3885	27.5
1991	3250	46.9
1992	5936	77.6
1993	7474	43.5
1994	no data	no data
1995	3248	226.2
1996	no data	no data
1997	3975	47.7
1998	23749	785.4
1999	51088	131.3
2000	10506	34.7
2001	5676	45.1
2002	4454	78.6
2003	1200	56.1

Table 1

(a) Identify **two** natural causes of flooding. [2]

(b) To what extent is there a relationship between the number of deaths from flooding and the economic cost of flooding, shown in Table 1? [4]

(c) Study Fig. 6 (Insert), which shows flood risk in the Midlands, UK, in April 1998.

Give evidence from Fig. 6 to suggest which urban areas might have been most at risk from flooding and explain why they were at risk. [5]

(d) With reference to examples at different scales, examine the relative merits of **two** approaches to reducing the risk of flooding. [9]

Section B

Answer **two** questions from this section.

The Geography of Crime

4 Fig. 7 shows percentages of people saying which types of anti-social behaviour were a big problem in their area. This information was derived from interviews conducted by the British Crime Survey (BCS), 2001-2004. The BCS interviews over 50 000 people aged over 16 each year.

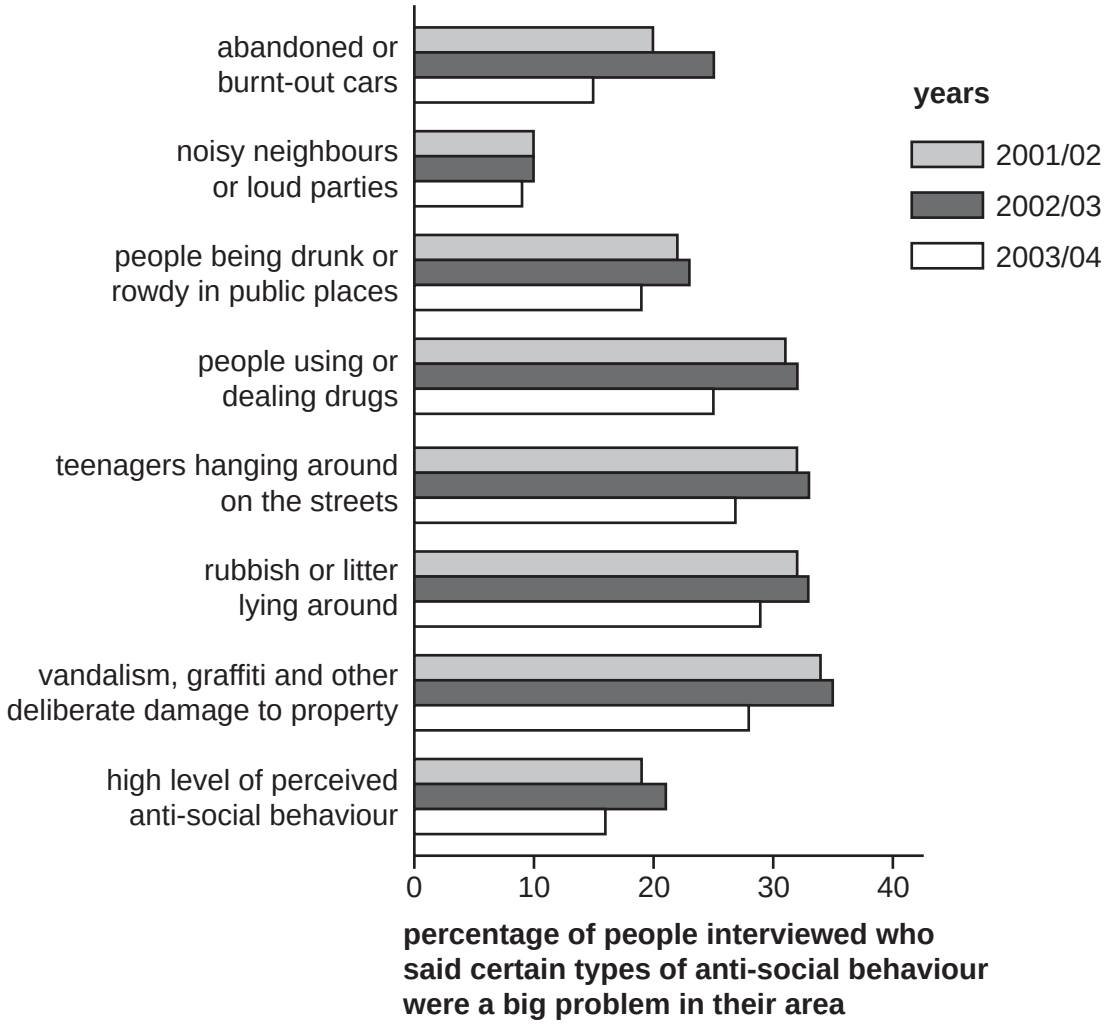


Fig. 7

(a) Explain what is meant by the phrase *perceived anti-social behaviour*. [2]

(b) Contrast the general trends in anti-social behaviour indicators over the period shown in Fig. 7. [4]

(c) Table 2 shows the results of an analysis using data from the BCS 2003/4 and ACORN (A Classification of Residential Neighbourhoods).

income ↑

ACORN area type	Groups included	High level of perceived anti-social behaviour (index)
Wealthy achievers	Wealthy executives, older people and families in urban and rural areas	1.00
Urban prosperity	Prosperous and young urban professionals, students in urban areas	2.40
Comfortably off	Young couples, secure families, older suburban couples and prudent pensioners	1.88
Moderate means	Post-industrial families and skilled manual workers	2.98
Hard pressed	Low income families, residents in council areas, high rise and inner city estates	4.07

Table 2

Describe and suggest an explanation for the relationship between income and high level of perceived anti-social behaviour shown in Table 2. [5]

(d) Using examples at different scales, comment on the effectiveness of management strategies designed to reduce anti-social behaviour. [9]

Health and Disease

5 **(a)** Define the term *death rate*. [2]

(b) Photograph A shows a cigarette advertisement and a billboard in an urban area in Africa.

Photograph A

Describe the messages in Photograph A and outline the effects on health of the activities which they promote. [4]

(c) Fig. 8 is a scattergraph showing the correlation between affluence and life expectancy in a range of countries in 2001.

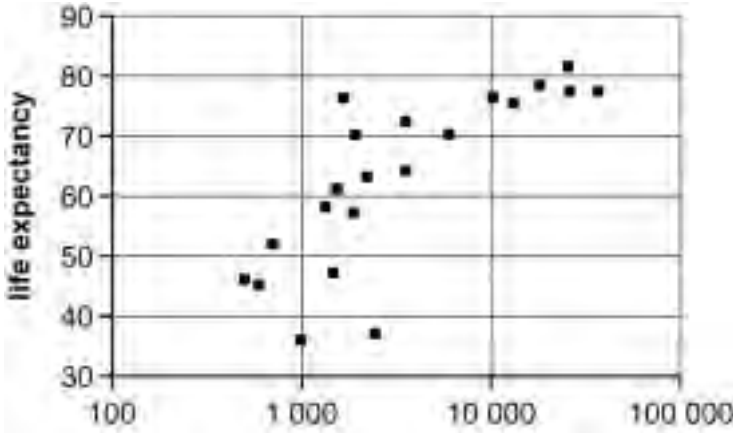


Fig. 8

Describe the relationship shown in Fig. 8 and explain briefly why it occurs. [5]

(d) Evaluate ways in which national governments have tried to improve public health. [9]

Spatial Inequality and Poverty

6 Study Table 3 (Insert), which shows the progress made in different regions towards achieving selected UN Millennium Development Goal (MDG) targets, and Fig. 9, which lists the Millennium Development Goals.

The Millennium Development Goals

- Eradicate extreme poverty and hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS, malaria, and other diseases
- Ensure environmental sustainability
- Develop a global partnership for development

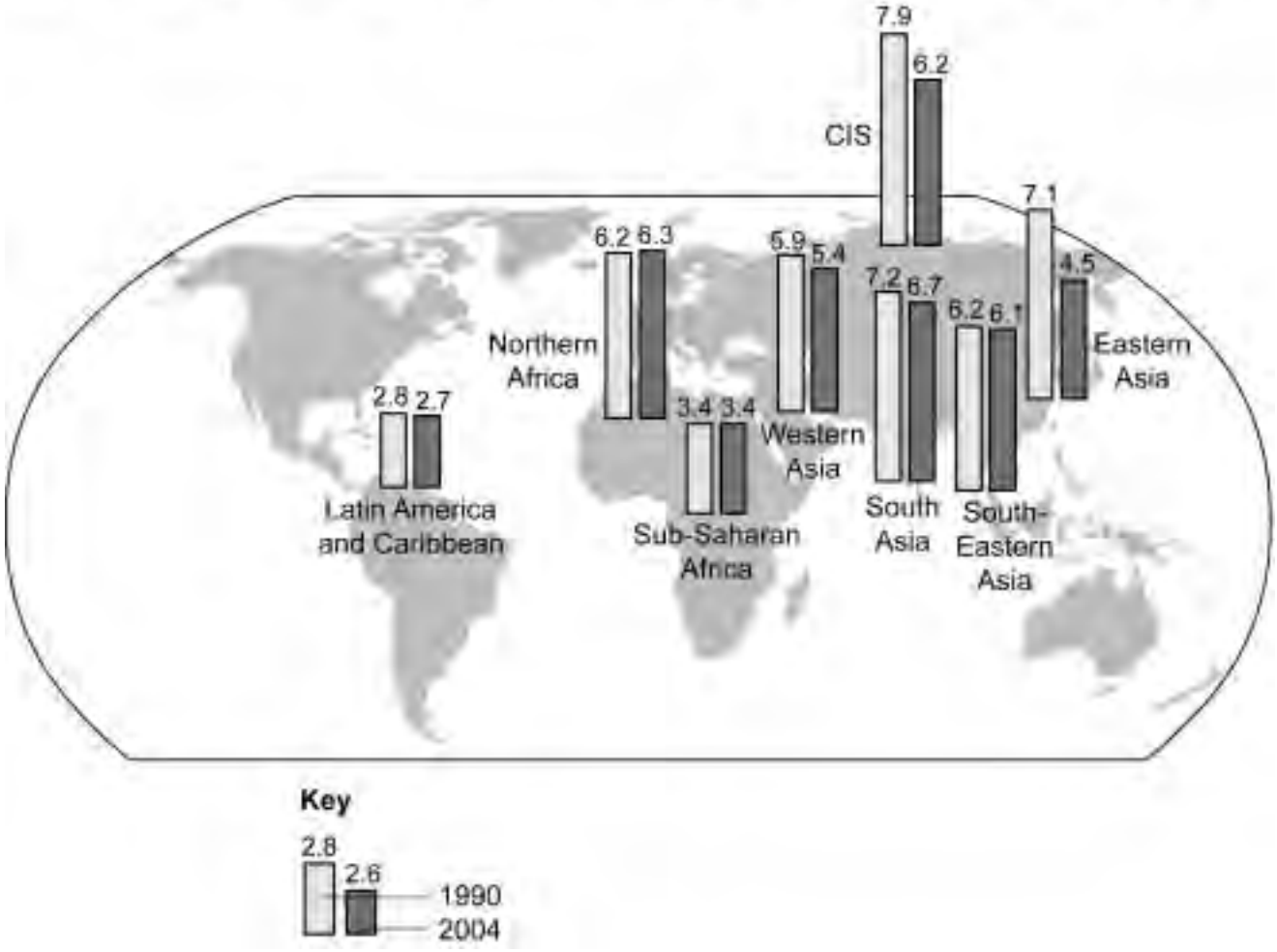
Fig. 9

(a) With the help of Table 3 (Insert), state which region has made the **most progress** and which the **least progress** in achieving the Millennium Development Goal targets. [2]

(b) Study Fig. 10, which is about progress in achieving the first MDG from the UN report, 2007.

Fig. 10

Share in national consumption of the poorest 20% of the population, 1990 and 2004, by region



Giving evidence from Fig. 6, outline the reported effects of poverty reduction on inequality in developing regions. [4]

(c) Suggest why two of the eight Millennium Development Goals in Fig. 9 focus specifically on women. [5]

(d) With reference to examples, evaluate strategies being employed to achieve the Millennium Development Goals. [9]

Section C

Answer **one** question from this section.

7 With reference to an area you have studied, describe the range of geographical issues it faces, and outline what has been done to reduce the problems posed by such issues. [25]

8 'The higher the level of development of an area, the more effectively the area can reduce the risks posed by geographical issues and hazards.'

Using examples, examine the validity of this statement. [25]

9 Assess the view that most geographical hazards are predictable and thus loss of life is almost always avoidable. [25]

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GEOGRAPHY **9768/01**

Paper 1 Geographical Issues **For Examination from 2010**

SPECIMEN INSERT

2 hours 30 minutes

READ THESE INSTRUCTIONS FIRST

This Insert contains Fig. 1 for Question 1, Figs 3, 4 and 5 for Question 2, Fig. 6 for Question 3, and Table 3 for Question 6.

This document consists of **6** printed pages.

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Fig. 1 for Question 1

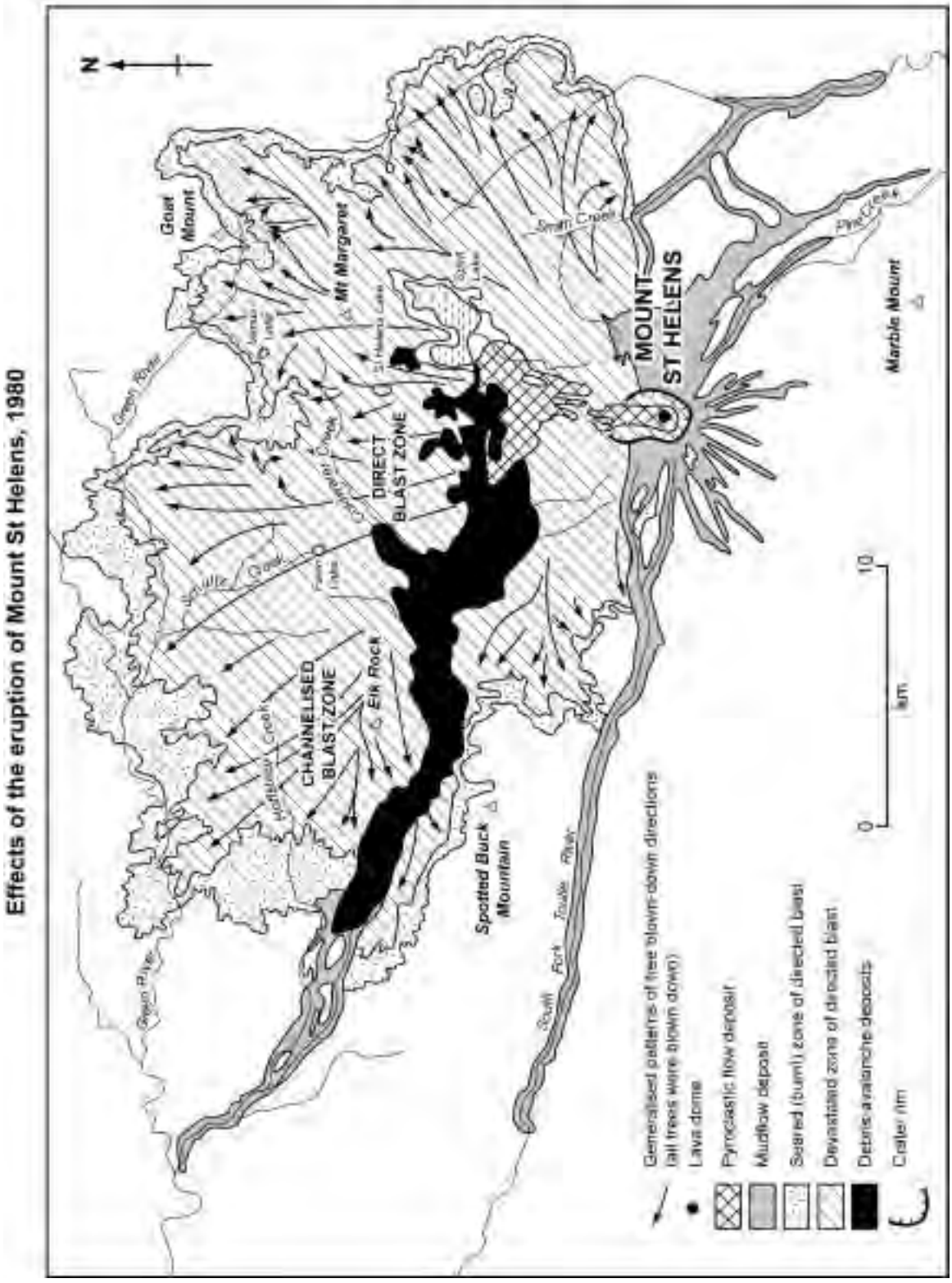


Fig. 3 for Question 2

The incidence of lightning in the USA

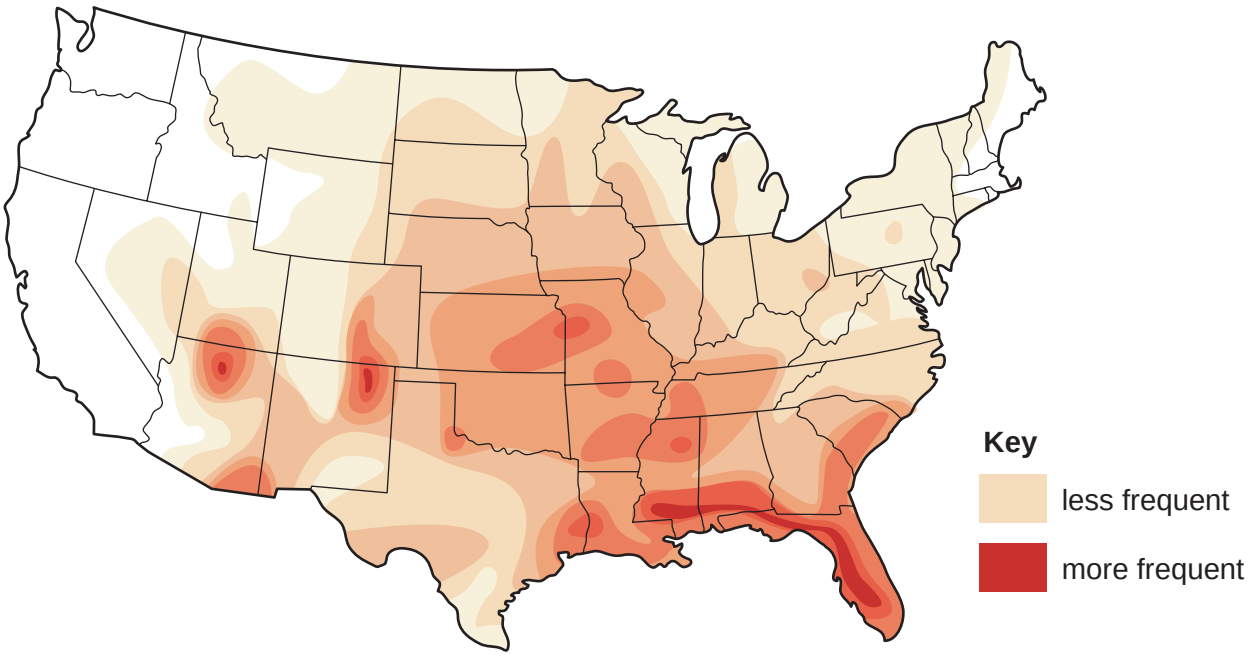


Fig. 4 for Question 2

Deaths from lightning in the USA by state, 1997-2006

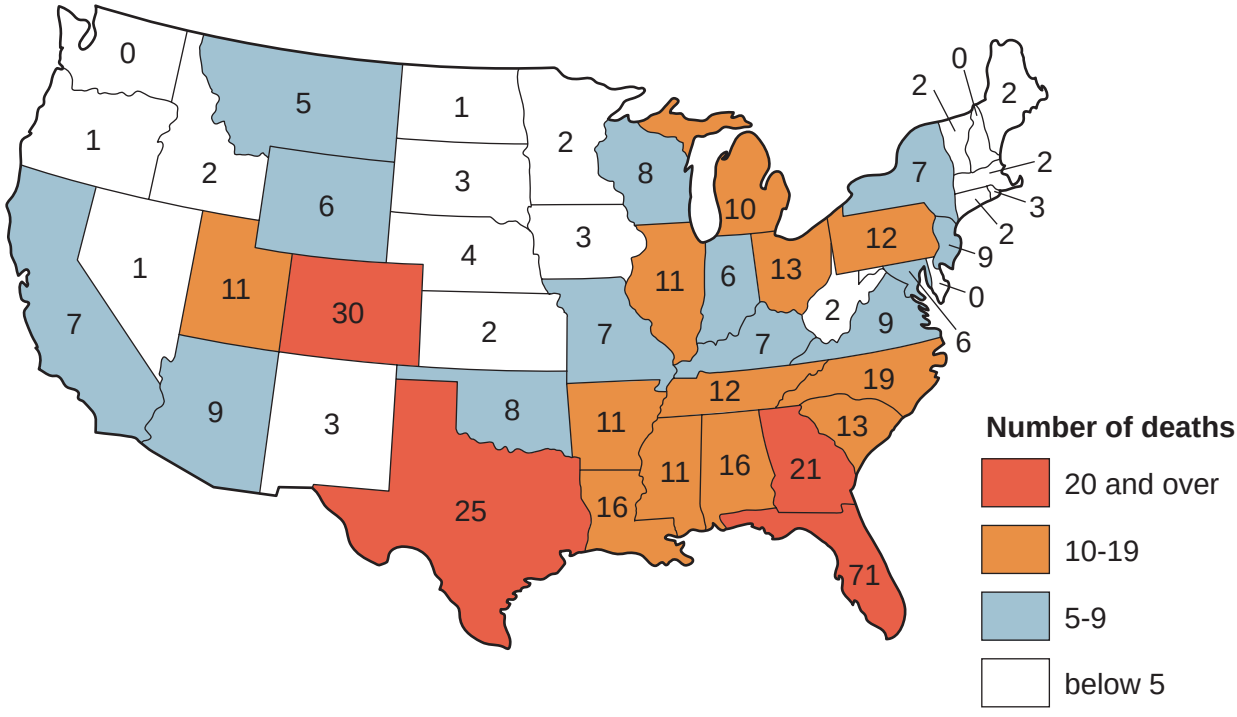


Fig. 5 for Question 2

The tracks of several hundred tropical storms and tropical cyclones

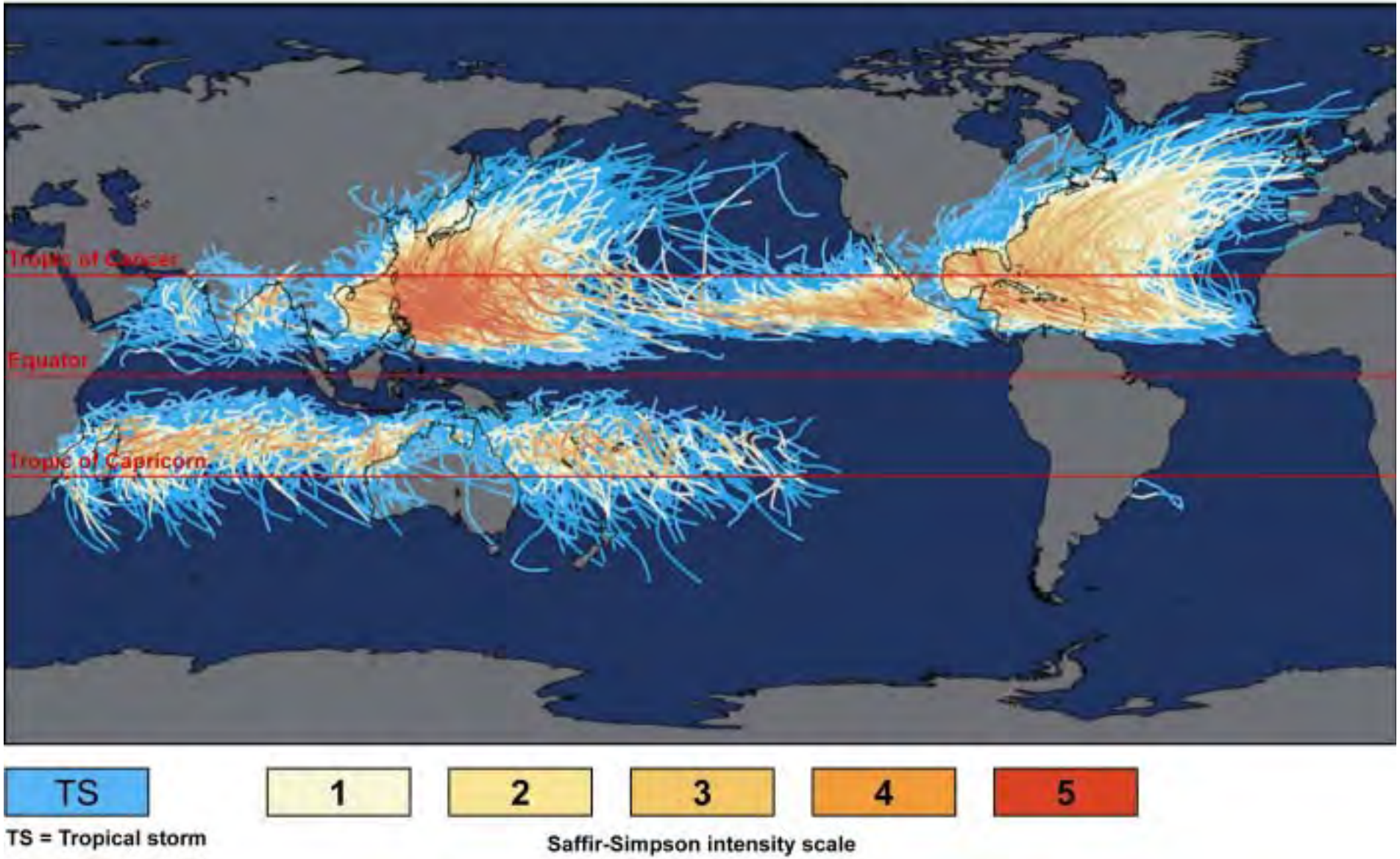
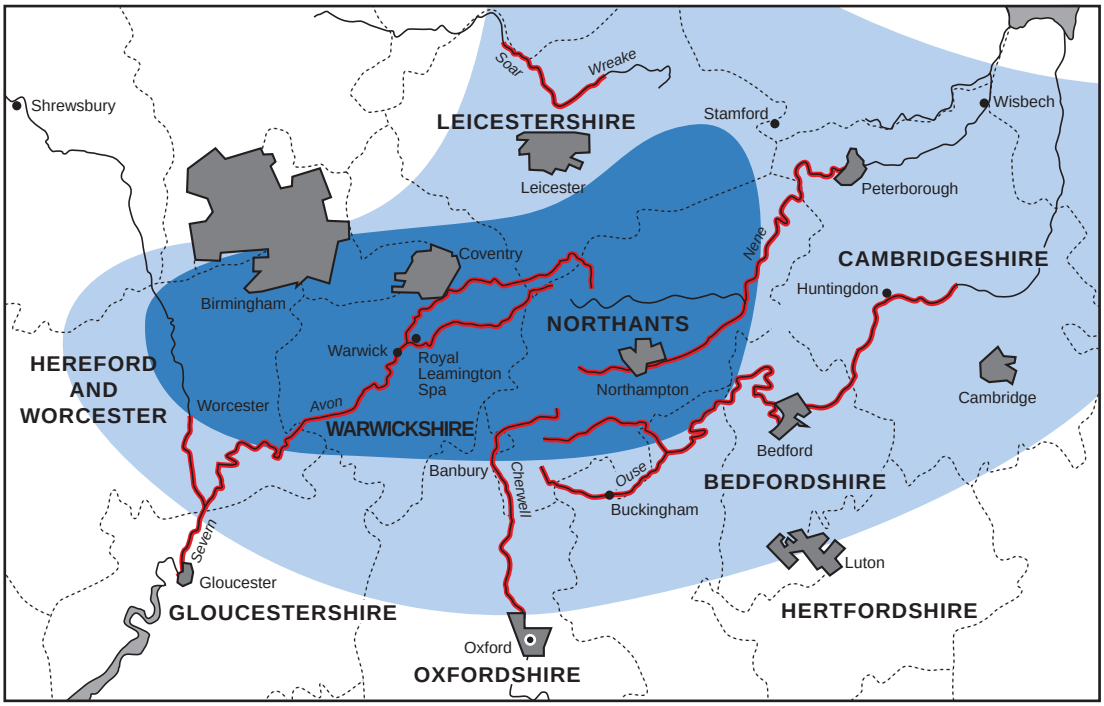


Fig. 6 for Question 3

Flood risk in the Midlands, UK, April 1998



Key

- 25 to 50 mm
- > 50 mm

} rainfall 8-10 April 1998

- rivers with Red Flood Alerts
- large urban area
- smaller urban area

Table 3 for Question 6

Global and regional progress in achieving selected MDG targets by 2015

region	halving poverty	halving hunger	primary education for all	reducing child mortality by two-thirds	halving number without access to clean water	halving number without access to sanitation
Arab States	achieved	reversal	on track	lagging	*no data*	*no data*
Central/Eastern Europe & CIS	reversal	*no data*	achieved	lagging	achieved	*no data*
East Asia/ Pacific	achieved	on track	achieved	lagging	lagging	lagging
Latin America/ Caribbean	lagging	on track	achieved	on track	on track	lagging
South Asia	on track	lagging	lagging	lagging	on track	lagging
Sub-Saharan Africa	reversal	reversal	lagging	lagging	lagging	reversal
WORLD	on track	lagging	lagging	lagging	on track	lagging

CIS = Commonwealth of Independent States (the countries of the former Soviet Union, except for Estonia, Latvia and Lithuania)

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GEOGRAPHY **9768/01**

Paper 1 Geographical Issues **For Examination from 2010**

SPECIMEN MARK SCHEME

2 hours 30 minutes

For Section C see also the Generic levels for essay questions, in the Appendix.

MAXIMUM MARK: 105

This document consists of **13** pages and **1** blank page.

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[Turn over

Section A

1 (a) Identify two features of a mid-ocean ridge. [2]

Range of submarine mountains; formed at divergent, or constructive boundary; formed largely of basalts; can rise 3000 metres above ocean floor; can be 4000 km wide; can break surface to form islands; accept details of named/located ridges.
Any two points for **2 x 1** mark

(b) Fig. 1 (Insert) shows the effects of the Mount St Helens, USA, eruption in 1980.

Describe the distribution of the pyroclastic flow and mudflow deposits. State why one of these types of flow may be hazardous. [4]

Pyroclastic flow deposits extend 8 km north from the cone fanning out to a triangular area of c. 12 sq. kms.

Mudflow deposits mainly radiate along valleys south and west from the cone e.g. along the South Fork Toutle River for c. 30 kms.

1 mark in each for clear general statement plus 1 mark for scales = 3 marks.

Pyroclastic flow: intense heat and high speed of gas, steam and debris overwhelms all living things in its path.

Mudflow: mud, rock and water rush down valleys and stream channels at high speeds (up to 75 km/hr); powerful enough to move large objects and buildings and entomb in mud everything in its path (NB = Lahars).

Statement only required to reveal basic definition and hazard = 1 mark.

(c) Fig. 2 shows earthquakes recorded by the US Geological Survey at Mount St Helens, USA, 1980–96.

Describe and briefly explain the pattern of earthquake activity during the period shown in Fig. 2. [5]

- Earthquakes of different magnitudes occurred throughout the period at varying depths. Earthquakes accompanied, but were not limited to, eruptions. Black areas, where circles coalesce, indicate multiple earthquakes.
- The eruption of 18 May 1980 was accompanied by multiple quakes at depths of 9-12 km. Other quakes at this depth were only isolated occurrences.
- During the period of eruptions, 1980-86, multiple quakes at 0 (surface) to 2 km depth were recorded.
- A relatively quiet period, with fewer quakes in 1987 and 1998.
- Many earthquakes in the period 1989-96 at depths of approx. 2km. Clusters recorded at 4-8km depths from 1989 to 1990 and at 2-8km depths in late 1995.

Explanation links earthquakes to the nature of the location, but knowledge that Mount St Helens is in the Cascade Range, which forms part of the Pacific Ring of Fire, is not expected. A full explanation covers earthquake activity both during the period of eruptions up to 1986, and the later period to 1996.

Candidates show:

L3 a detailed description of recorded earthquakes, noting clusters, supported by use of data.
effective explanation suggested, linking depth and time of earthquakes to nature of location. **[4-5]**

L2 a satisfactory, but partial, description of earthquakes, lacking detail.
some links between earthquakes and location made, maybe focusing on eruptive period. **[2-3]**

L1 a description of recorded events which is brief and does not convey overall picture.
little or no relevant explanation of the results made. **[0-1]**

(d) Different types of volcanic eruption can be explained in terms of their location in relation to particular types of plate boundary.

With the aid of diagrams, discuss the extent to which this statement is true. [9]

Indicative content:

Identification of different types of eruption (such as Icelandic, Hawaiian, Strombolian, Plinian, Pelean) linked to an appropriate type of plate boundary. Basaltic, gentle fissure eruptions of basic lava occur at constructive margins; acidic and composite, violent eruptions occur at destructive margins. Specific eruptions and named places should be credited. Illustrations of different types of volcano and/or plate boundaries with detailed and accurate annotations demonstrating geographical skill alongside knowledge and understanding of processes involved. Recognition that not all volcanic eruptions are associated with plate boundaries such as hot spots where basaltic, shield island chains may occur.

Candidates show:

L3 knowledge of three or more types of eruption, with accurate locations relative to different types of plate boundary, the nature of the lava flows, and intensity of eruption; recognition that hot spots are exceptions to the rule, and are linked to gently flowing eruptions basic lava; well-annotated illustrations of different types of volcano and/or plate boundaries. **[8–9]**

L2 knowledge of differences between explosive and gently-flowing eruptions in relation to different types of plate boundary, hot spots may be mentioned but without reference to type of eruption/lava type; brief illustrations, with simple annotations are presented. **[5–7]**

L1 knowledge of one familiar case study without setting it in the context of the question; or offers detail on only one volcanic type or plate boundary; illustration may be absent. **[0–4]**

[Total: 20]

2 (a) Define the term *lightning*. [2]

An electrical discharge **(1)** in the atmosphere or between cloud and ground/in a thunderstorm **(2)**.

(b) Fig. 3 (Insert) shows lightning incidence in the USA and Fig. 4 (Insert) shows the deaths by state from lightning in the USA from 1997 to 2006.

To what extent is there a correlation between lightning incidence and deaths from lightning in the USA, as shown in Figs 3 and 4 (Insert)? [4]

Similarities, such as high values for both in south-eastern areas (1) and low values for both in the north-western areas (1). Anomalous areas are identified, where deaths are much higher than the incidence would suggest, such as in the north-east (1), or much lower (1); 1 mark reserved for summative evaluation that is based on the description presented: e.g. generally positive correlation.

(c) Fig. 2 (Insert) shows the tracks of several hundred tropical storms and tropical cyclones. Describe and explain the pattern of tropical storms and tropical cyclones shown. [5]

Description	Explanation
▪ No tropical storms close to Equator [±5° latitude]	▪ Weak Coriolis force
▪ Source regions in tropical areas both N and S	▪ Sea surface temperatures >27°C
▪ Intensity diminishes with latitude	▪ Sea surface temperature declines
▪ Some areas e.g. SE Pacific do not experience tropical storms	▪ Cold currents e.g. Humboldt Current
▪ Storms largely track clockwise in N Hemisphere and anticlockwise in S Hemisphere	▪ Coriolis force
▪ Storms reduce in intensity over land	▪ Source of water vapour for latent heat release ceases; more friction.

Candidates show:

L3 a good balance of description and explanation, with accurate detail. A clear impression of the pattern shown will be offered. **[4–5]**

L2 a balance of description and explanation but the pattern shown will be only partly offered. There may be some inaccuracies in detail. **[2–3]**

L1 some description may be offered but explanation is weak or absent and any detail is inaccurate. **[0–1]**

(d) 'In tropical storms and tropical cyclones, heavy rainfall poses a more severe hazard than high wind speeds.'

Consider to what extent this statement is true. [9]

Indicative content:

Either point of view is defensible. Hurricanes/cyclones are defined by windspeeds >64 knots; peak wind speeds may exceed 250 km/h. In coastal areas, wind-driven storm surges are the major hazard, e.g. Katrina (2005). Flooding often results from both storm surges and rainfall, e.g. Orissa (1999). Inland, rain may be the major hazard. Slow-moving systems cause particularly severe flooding and landslides, e.g. Mitch (1998). Secondary hazards of infrastructure damage, loss of crops, waterborne diseases may result from either element of the hazard.

Candidates show:

L3 convincing case study knowledge from more than one tropical storm or cyclone, which is used to exemplify the impact of both rain and wind in some detail, and to critically compare their impact in a balanced way. **[8–9]**

L2 knowledge of appropriate but less detailed or convincing case studies; a more restricted range of impacts of rain and wind; the candidate tends to describe impacts rather than considering the statement. **[5–7]**

L1 unbalanced knowledge which fails to deal with both types of hazard; case study detail is sketchy or absent; the emphasis is on description rather than evaluation. **[0–4]**

[Total: 20]

3 Table 1 shows the number of deaths from flooding and the economic cost of flooding globally between 1989 and 2003.

(a) Identify two natural causes of flooding. [2]

Prolonged rainfall, snowmelt, intense storms/rainfall, storm surges, monsoon rainfall.
1 mark for each correct natural cause.

(b) To what extent is there a relationship between the number of deaths from flooding and the economic cost of flooding, shown in Table 1? [4]

Similarities, such as increase from 1989 to 1992 **(1)** and high deaths often associated with high economic costs **(1)** are identified; many significant discrepancies are identified, where deaths are much higher than economic cost, as in 1999 **(1)**, or where economic costs are much higher than deaths, as in 1995 or 1998 **(1)**; **1** mark reserved for summative evaluation that is based on the description presented: e.g. very limited relationship with many exceptions.

(c) Study Fig. 6 (Insert), which shows flood risk in the Midlands, UK, in April 1998.

Give evidence from Fig. 6 to suggest which urban areas might have been most at risk from flooding and explain why they were at risk. [5]

Identification involves interpretation of data on rainfall, Red Flood Alerts and urban location. Explanations may relate to the quantity of rainfall, proximity to rivers with Red Flood Alerts and the role of urbanisation itself as a cause of flooding.

Candidates show:

L3 clear identification of appropriate urban areas at risk. Effective explanation suggested, based upon reference to the map, which might involve rainfall, rivers and/or other factors **[4–5]**

L2 identification of appropriate urban areas at risk. Explanation is general and lacks clear reference to the map **[2–3]**

L1 Identification is limited and inappropriate in some respects. Little or no relevant explanation of the pattern. **[0–1]**

(d) With reference to examples at different scales, examine the relative merits of two approaches to reducing the risk of flooding. [9]

Indicative content:

Knowledge of different approaches, including hard engineering (such as embankments, dams, flood relief channels), soft engineering (such as flood retention basins, afforestation) and managed retreat; understanding of how these methods can reduce risk (such as controlling river discharge, reducing overland flow, increasing surface storage, removing vulnerable land uses from high risk areas); application of this knowledge and understanding to named examples; evaluation of the relative advantages and disadvantages of the approaches discussed.

Candidates show:

L3 knowledge of two approaches, illustrate these approaches with detailed exemplar material and explain how these approaches reduce risk; evaluation will be clearly present, logical and based upon the evidence presented. **[8–9]**

L2 knowledge of two approaches, illustrate these approaches with some exemplar material and provide limited explanation of how the approaches reduce risk (explanation may be limited to one approach only); evaluation will be evident but will lack depth. **[5–7]**

L1 knowledge of only one or two approach(es), supported by limited exemplar material; explanation of how the approach(es) reduces risk is limited; evaluation will be absent or assertive, rather than based upon evidence. **[0–4]**

[Total: 20]

Section B

4 Fig. 3 shows percentages of people saying which types of anti-social behaviour were a big problem in their area. This information was derived from interviews conducted by the British Crime Survey (BCS), 2001–2004. The BCS interviews over 50 000 people aged over 16 each year.

(a) Explain what is meant by the phrase *perceived anti-social behaviour*. [2]

Perception is the key word here. As the interviewees represent only a small percentage of Britain's population, they may not have experienced any anti-social behaviour. However, because of what they have seen on television, read in the papers of heard about from others **(1)** they have a perception of the amount of anti-social behaviour that exists. **(1)**

(b) Contrast the general trends in anti-social behaviour indicators over the period shown in Fig. 3. [4]

To 'contrast' is inviting the candidate to look for differences. Whilst it is possible to look at the period as a whole, additional detail should be gained from dividing the period into smaller sections.

2001–2004:

- all forms of anti-social behaviour have decreased
- the perception of anti-social behaviour has decreased by three percentage points (not 3%)
- there is least reduction to 'noisy neighbours and loud parties'
- the overall trend is a reduction in anti-social behaviour which averages about four percentage points per type of behaviour. **2 maximum**

2001/02–2002/03:

- with the exception of the problem of noisy neighbours or loud parties, all of the anti-social behaviours have increased
- the greatest increase (five percentage points – not 5%) is in the problem of abandoned or burnt-out cars
- the overall trend in most forms of anti-social behaviour is a slight increase of one percentage point – not 1%. **2 maximum**

2002/03–2003/04:

- there is a downward trend in both the perception and the actual incidence of anti-social behaviour
- the greatest decrease is in the problem of abandoned or burnt-out cars which has fallen from 25% to 15% (ten percentage points)
- the overall trend is that the problem with most forms of anti-social behaviour has fallen by about five percentage points. **2 maximum**

(c) Describe and suggest an explanation for the relationship between income and high level of perceived anti-social behaviour shown in Table 2. [5]

Indicative content:

Interpretation of the table involves the range of data, the general inverse relationship between income and high level of perceived ASB, and the two groups 'Urban prosperity' and 'Comfortably off' that do not follow this trend. The explanation may link victim, crime and environment, making suggestions based on the social and economic characteristics of neighbourhoods and lifestyles, perhaps focusing on the area types with the highest and lowest results.

Candidates show:

L3 a detailed description of results, noting general trend and anomaly, using data.
effective explanation suggested linking income to the social and economic characteristics of neighbourhoods and lifestyles. **[4-5]**

L2 a satisfactory description of overall results, lacking detail.
some link to income made and a broad general explanation of the results for one or more area types. **[2-3]**

L1 a brief, unfocused or partial description of results.
little or no relevant explanation of the results. **[0-1]**

(d) Using examples at different scales, comment upon the effectiveness of management strategies designed to reduce anti-social behaviour. [9]

Indicative content:

Knowledge of management strategies could include CCTV, security cameras, burglar alarms, security lighting; Neighbourhood Watch schemes, community mobilisation; additional policing, zero tolerance policing, issuing of Anti-Social Behaviour Orders (ASBOs), penalty notices; changes to building layout – reduce number of cul-de-sacs, increase off-street parking/secure areas, gated communities; drug rehabilitation schemes; provision of alternative social facilities for young people; application of this knowledge to named examples; comments on the effectiveness of the management strategies selected.

Candidates show:

L3 knowledge of at least three appropriate approaches which come from at least two different scales; there is accurate exemplification of the strategies; the effectiveness of the strategies is considered with an appreciation of potential difficulties in implementation as well as positive aspects. **[8–9]**

L2 knowledge of approaches which is appropriate but it is limited to one or two approaches and/or a variety of scales is not used; exemplification may be inaccurate or missing; effectiveness of the strategies is included but is limited and/or it only considers the positive aspects. **[5–7]**

L1 only one detailed approach (or two superficial ones) and there is a lack of reference to scale or examples; comments on effectiveness are lacking or of very little depth. **[0–4]**

[Total: 20]

5 (a) Define the term *death rate*. [2]

There are three elements to the term's definition:
the number of deaths/the total number of people who die;
per thousand/per thousand people or population/as a percentage;
per year.
Credit one element **0,** any two elements **1**, all three elements **2**.

(b) Photograph A shows a cigarette advertisement and a billboard in an urban area in Africa.

Describe the messages in Photograph A and outline the effects on health of the activities which they promote. [4]

The advertisement for Winston cigarettes promotes smoking and the purchase of this brand of cigarette. Smoking is an activity injurious to health, associated with respiratory and circulatory diseases and some cancers, about which the advert. is silent. **2/1**

Family planning promotes health directly through the use of condoms (lower likelihood of transmitting HIV/AIDS, STDs) and indirectly, as smaller family sizes are linked to greater family welfare in terms of living standards, nutrition, education etc. Whilst the message is 'SAVES LIVES', the billboard does not say how. **1/2**.

Some recognition or expression of the essential conflict between the two messages **1**, e.g. life expectancy is impacted positively by family planning, but negatively by smoking.

(c) Fig. 4 is a scattergraph showing the correlation between affluence and life expectancy in a range of countries in 2001.

Describe the relationship shown in Fig. 4 and explain briefly why it occurs. [5]

Description of graph should include recognition of general positive correlation and existence of some anomalies. Data from figure may be used in support.
Explanation may cover basic ideas such as standards of living, quality of diet, access to medical care and education, smaller families (impacts on IMR and maternal health).

Candidates show:

L3 accurate interpretation of the graph and data may be quoted from it; explanation of at least two developed causal links between affluence and life expectancy. **[4–5]**

L2 interpretation of the graph which shows some understanding; explanation of only one developed causal link between affluence and life expectancy. **[2–3]**

L1 some reference to the graph but interpretation is likely to be inaccurate; comments may be made on the variables shown without explanation of any causal link. **[0–1]**

(d) Evaluate ways in which national governments have tried to improve public health. [9]

Indicative content:

Wide range of possible answers here as candidates should draw on studies of specific countries at different levels of development. Recognition of attempts by some African administrations to extend family planning and provision of clean water and sewerage versus campaigns in the UK, say, to encourage people to smoke and drink less and exercise more.

Candidates show:

L3 detailed and accurate knowledge of at least two contrasting national responses; perceptive evaluative comment on these initiatives recognising the qualified success or relative failure of measures and the reasons for such outcomes. **[8–9]**

L2 knowledge of public health schemes but may focus on one country, with perhaps brief reference to other places; does so competently with good detail and some evaluation or compares several countries but in less detail; evaluation is attempted but lacks depth of understanding. **[5–7]**

L1 basic knowledge alluding simply to measures that could be applied almost anywhere with no places named; or recounts a case study with little attempt to apply this knowledge to the question; evaluation is absent. **[0–4]**

Total: 20

6 Study Table 2 (Insert), which shows the progress made in different regions towards achieving selected Millennium Development Goal targets, and Fig. 7, which lists the Millennium Development Goals.

(a) With the help of Table 2 (Insert), state which region has made the most progress and which the least progress in achieving the Millennium Development Goal targets? [2]

It is assumed that candidates will make some attempt to score the table which will reveal that Latin America and the Caribbean have made most progress and Sub-Saharan Africa least progress. **1** mark for each.

(b) Study Fig. 6, which is about progress in achieving the first MDG from the UN report, 2007.

Giving evidence from Fig. 6, outline the reported effects of poverty reduction on inequality in developing regions. [4]

Overall statement of effect **1/2** that poverty reduction has had little effect or a negative one on inequality experienced by the poorest 20% in all regions. For evidence in support (region names and percentage data) **3/2**. Very small increase (only Northern Africa); no change in Sub-Saharan Africa and decreases elsewhere of varying sizes up to Eastern Asia which experienced the greatest decrease (from 7.1 to 4.5%). Responses should make clear that decreased percentage share in national consumption for the poorest 20% means *increased* inequality.

(c) Suggest why two of the eight Millennium Development Goals in Fig. 5 focus specifically on women. [5]

Responses should recognise that parity of education has a direct impact on fertility and birth rates, reducing the burden of large families, increasing women's earning ability and thus raising GDP and household income. Improving maternal health also will impact favourably on IMR. Regional and national comparisons are valid (such as Kerala vs other parts of India).

L3 clear understanding of how gender equality/empowering women and improving maternal health can lead to other favourable impacts; at least one developed impact/theme per Millennium Development Goal identified will be offered. **[4–5]**

L2 understanding of why two of the Millennium Development Goals focus specifically on women but the suggested impacts/themes may be rather general. **[2–3]**

L1 some understanding of why one of the Millennium Development Goals focuses specifically on women but any impacts/themes are not clearly expressed. **[0–1]**

(d) With reference to examples, evaluate strategies being employed to achieve the Millennium Development Goals. [9]

Indicative content:

The table should trigger ideas to inform responses. Candidates could focus on infrastructural improvement (sewerage and water supply) in squatter settlements, for example, or look at the many ways in which child mortality could be reduced. Alternatively, use of aid to reduce hunger and poverty is valid (though candidates should recognise that this should only be the ignition of development initiatives as countries should become more self-sufficient over time).

Candidates show:

L3 knowledge and understanding of several strategies and are able to contrast the value of aid in terms of providing food in emergency with funding tube wells or supplying fertilisers, for example; reference to two or more countries with accurate detail of development strategies; strategies are evaluated in terms of their likely success in meeting the MDGs. **[8–9]**

L2 good knowledge of efficiently learned examples but evaluation is simplistic, perhaps failing to grasp the significance, in different contexts, of the challenges encountered in attempts to achieve the MDGs. **[5–7]**

L1 knowledge that is generalised or speculative and examples which are poorly located; or an answer that merely repeats that given for part (c); response lacks evaluation. **[0–4]**

Total: 20

Section C

7 With reference to an area you have studied, describe the range of geographical issues it faces, and outline what has been done to reduce the problems posed by such issues. [25]

Indicative content:

Candidates show knowledge and understanding of a range of geographical issues/hazards that affects a particular named area. The area chosen can be at any suitable scale from urban to national or regional (such as Indonesia or the Mediterranean). The range could focus on purely environmental hazards (e.g. tectonic, atmospheric in Taiwan), purely social issues (e.g. crime, health and disease, spatial inequality in a specified urban area) or a combination of hazards and issues (e.g. tectonic hazards and spatial inequalities in Los Angeles). Candidates also show knowledge and understanding of the strategies used in the chosen area to reduce the risks posed by these geographical issues/hazards. Strategies can be preventative (e.g. prediction, land-use planning) or reactive (e.g. redevelopment schemes, regeneration, emergency response). Weaker responses are likely to show a limited depth of knowledge about the nature of the issues and strategies to reduce the problems created. Knowledge and understanding is applied to a named area, with material included specific to that named area. Weaker candidates are generalised and include limited material specific to their chosen area. At higher levels, candidates show understanding of the often complex links between the range of geographical issues/hazards examined.

8 'The higher the level of development of an area, the more effectively the area can reduce the risks posed by geographical issues and hazards.'

Using examples, examine the validity of this statement. [25]

Indicative content:

Candidates show knowledge and understanding that the level of development of an area can influence its ability to reduce the risks through a variety of measures, including the ability to identify/predict the risks posed by geographical issues/hazards, to plan for the management of these geographical issues/hazards, through a variety of factors, such as economic and technical resources, quality of life and living conditions, infrastructural conditions, response capabilities.

Candidates at higher levels show knowledge and understanding that other factors may also have an influence, such as the scale and nature of the geographical issue/hazard. Knowledge and understanding is applied through the use of more than one geographical issue/hazard, illustrated by case study material. Higher level responses are likely to refer to several issues/hazards and specific places, showing detailed knowledge of both issues/hazards and places. Candidates use the evidence to examine the validity of the statement in the question. Weaker responses are likely to assert a conclusion that has little or no basis in the evidence presented.

9 Assess the view that most geographical hazards are predictable and thus loss of life is almost always avoidable. [25]

Indicative content:

Candidates show knowledge and understanding of the degree to which different geographical hazards are predictable. The idea of geographical hazards can be extended beyond the purely environmental ones to include human-generated hazards such as crime, pollution and disease. Prediction can be both 'when' and 'where', the recognition of which is likely to characterise the higher levels of response. Candidates also consider whether, where prediction is possible, loss of life can be avoided. Higher level responses examine avoidance and mitigation strategies to avoid loss of life. Higher level responses are also likely to refer to several hazards related to specific places, showing detailed knowledge of both hazards and places. Candidates use the evidence to assess the validity of the statement in the question. Weaker responses are likely to outline a number of case studies and assert a conclusion that has little or no basis in the evidence presented.

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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Level 3 Pre-U Certificate
Principal Subject

GEOGRAPHY **9768/02**

Paper 2 Global Environments **For Examination from 2010**

SPECIMEN PAPER

1 hour 30 minutes

READ THESE INSTRUCTIONS FIRST

Answer **two** questions, **one** from Section A and **one** from Section B.

Candidates are encouraged to support their answers with appropriate examples, sketch maps and diagrams.

This document consists of **3** printed pages and **1** blank page.

UNIVERSITY of CAMBRIDGE International Examinations

[Turn over

Section A

Answer **one** question from this section.

Arid and Semi-Arid Environments

1 Examine the view that the formation of desert landscapes owes more to the role of water than to that of wind. [25]

2 "Deserts are environments where resources are patchy and highly variable in both time and space" (Smith *et al*., 2005).

Assess how different human activities make use of the resources offered by arid and semi-arid environments. [25]

Glacial and Periglacial Environments

3 Assess the importance of the active layer in limiting economic development in periglacial regions. [25]

4 Describe and explain how the distribution of glacial environments has changed over time. [25]

Coastal Environments

5 Assess the relative importance of sea level change in the formation of the features found in coastal environments you have studied. [25]

6 Evaluate the effectiveness of different approaches to protect environments from the risk of coastal erosion. [25]

Section B

Answer **one** question from this section.

Tropical Environments

7 Examine the relative merits of different theories used to explain biological diversity in tropical rainforests. [25]

8 Examine the view that shifting cultivation is the most sustainable form of agricultural development in tropical rainforests. [25]

Temperate Grassland and Forest Environments

9 Consider the assertion that the sequence of seral stages in a succession is rarely seen in its entirety. [25]

10 Examine the possible consequences of climate change for the ecology of temperate environments. [25]

The Atmospheric Environment

11 "The poorest developing countries will be hit earliest and hardest by climate change, even though they have contributed little to causing the problem" (Stern Review, 2006).

To what extent is it possible to manage the impacts of the enhanced greenhouse effect, in countries at different levels of development? [25]

12 Discuss why rainfall totals vary through the year and from place to place in areas of tropical monsoon climates. [25]

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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
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Principal Subject

GEOGRAPHY **9768/02**

Paper 2 Global Environments **For Examination from 2010**

SPECIMEN MARK SCHEME

1 hour 30 minutes

See also the Generic levels for essay questions, in the Appendix.

MAXIMUM MARK: 50

This document consists of **7** printed pages and **1** blank page.

UNIVERSITY of CAMBRIDGE International Examinations

Section A

Arid and Semi-Arid Environments

1 Examine the view that the formation of desert landscapes owes more to the role of water than to that of wind. [25]

Indicative content:

In examining this assertion, candidates have scope for the discussion of a wide variety of desert landforms and environments. Good answers may well express the importance of past as well as present processes. Water-formed: erosional landforms such as wadis and canyons; depositional landforms such as alluvial fans and bajadas; evaporative features such as salt flats and playa lakes. Wind-formed: erosional features such as deflation hollows, rock pedestals and yardangs; depositional/transportational landforms such as ripples, dunes and draas.

Better answers will acknowledge the existence of a wide variety of desert environments, such that the statement is best evaluated at local or regional, rather than global, scales. Sand deserts (ergs) occur on very large scales, such as the Rub al Khali erg in Arabia (650 000 km^2), but many desert environments are characterised by gravel (reg) or boulder (hamada) surfaces. There is a variety of climatic conditions in deserts, from hyper-aridity in the Atacama to areas in which seasonal rains support sparse vegetation. Highest level responses might see links between water and wind in desert environments. For example, rainfall may maintain a vegetation cover which resists wind erosion; gullying may expose subsurface sands to the wind. High level answers will clearly explain the formation of a number of landforms and use place-specific detail to exemplify them in a convincing way, in order to evaluate the statement.

2 "Deserts are environments where resources are patchy and highly variable in both time and space" (Smith et al. 2005).

Assess how different human activities make use of the resources offered by arid and semi-arid environments. [25]

Indicative content:

The quotation originally refers to traditional human interactions with the desert such as hunter-gathering, and well-known examples from traditional societies in areas such as the Kalahari or Australian deserts can be used to good effect. However, the question is open-ended and gives considerable scope for choice of examples. There is no requirement to give an exhaustive list of human activities in arid and semi-arid areas, but the better responses will give detailed description and assessment of a range of real-world human activities. Best answers will probably focus on strategies to utilise sparse or localised resources.

Candidates may interpret 'resources' in a broad way. Possible human activities might include irrigation of arid soils for agriculture, water extraction and 'mining' of fossil water, extraction of oil and minerals in desert areas, tourism and the film industry. High-level responses may well discuss the sustainability of different types of human activities in arid and semi-arid areas, for example contrasting low-impact traditional societies with more intensive or insensitive high-impact development schemes.

Glacial and Periglacial Environments

3 Assess the importance of the active layer in limiting economic development in periglacial regions. [25]

Indicative content:

It is hoped that most candidates will show an understanding of what is meant by the active layer and the importance of seasonal freezing and thawing. The question is clear in its reference to limiting economic development, although we should be flexible about how the candidate interprets economic development. Limitations may well include:

- Building and infrastructural restrictions
- Subsidence of buildings and infrastructure
- Problems associated with mineral extraction
- Trade

The idea of increased thawing of the active layer in recent years and the associated problems is certainly creditworthy but not necessary for the highest levels.

4 Describe and explain how the distribution of glacial environments has changed over time. [25]

Indicative content:

While most students are likely to focus on past distribution of ice and change in Europe and America, we should certainly credit responses drawn from South America and Oceania. Similarly, while it is expected that most students will focus their writing on the Quaternary, there is scope for knowledge of past Ice Ages. There is a clear emphasis on distribution and higher level responses will be accurate and detailed in linking time to the spatial advance and retreat of ice masses. This is a question that demands a thorough knowledge of place and this is expected in higher level answers. Explanation is required and it is expected that many students will focus on Milankovich theories of climatic change, but students discussing advance and retreat in the context of glacial balance should be credited under explanation. Salient points would include:

- The cyclical nature of Ice Ages and glacial and interglacial events and their relationship to relative distribution of ice.
- The notion of stadial and interstadial events within these cycles and the relative distribution of ice, e.g. Loch Lomond
- Milankovich cycles – orbital shape, axial tilt and axial orientation.
- Glacial balance and accumulation – internal flow and the advance of ice.

Coastal Environments

5 Assess the relative importance of sea level change in the formation of the features found in coastal environments you have studied. [25]

Indicative content:

Candidates show a knowledge and understanding of the role of sea level change in the formation of a range of features found in coastal environments. Reference to both submergent features (such as fjords, rias) and emergent features (such as raised shorelines) is expected. Better candidates might also refer to slope over wall cliffs, coral reefs, bars resulting from material pushed onshore as sea levels rose (e.g. Chesil Beach). At higher levels, candidates will also show knowledge and understanding of how other factors, such as geology, current sub-aerial and marine processes and human activity, may also be important in the formation of the coastal features discussed, and assess the complex links between the various factors identified. Knowledge and understanding are applied to particular coastal environments through the use of examples and case studies. At lower levels, case study material is likely to be limited in detail or lacking altogether. Sketch maps and/or diagrams are used to aid communication.

6 Evaluate the effectiveness of different approaches to protect environments from the risk of coastal erosion. [25]

Indicative content:

Candidates show knowledge of at least two different approaches to coastal erosion protection, including hard defences (such as sea walls, dykes, groynes, slope modifications), soft defences (such as beach replenishment) and managed retreat.

Candidates also show an understanding of how the different approaches modify coastal processes to provide protection for coastal environments, such as dissipation/reflection of wave energy, prevention of longshore drift, improving slope drainage. At lower levels the links between the approaches discussed and their effects on coastal processes will lack detail and be limited. Knowledge and understanding are applied to particular coastal environments through the use of examples and case studies. At lower levels, case study material is likely to be limited in detail or lacking altogether. Sketch maps and/or diagrams are used to aid communication.

At higher levels, candidates evaluate of the effectiveness of different approaches considered based upon the evidence presented. The best candidates are likely to consider not just the effectiveness of the methods in the immediate coastal environment, but also the possible knock-on effects in other parts of the coastal system.

Section B

Tropical Environments

7 Examine the relative merits of different theories used to explain biological diversity in tropical rainforests. [25]

Indicative content:

Given the range of theories explaining tropical biodiversity, we should expect discussion of more than two theories and, indeed, this indicates a higher level of response. There is no general consensus as to the cause of biodiversity in the tropics, although concluding remarks offering thought on the relative importance of any one theory are certainly creditworthy and indicate a high level response. Personal opinion is creditworthy but not to the detriment of a balanced and thorough examination of other possible theories. There is clear scope for examples here, (e.g. contemporary research on species richness in the Amazon). Possible theories for discussion would include:

- Climate and Energy
- Methods of coexistence and niche theory
- Climate change and refugia theory
- Favourable rates of evolution
- Intermediate disturbance
- Competition
- Density-dependence mortality
- Neutral theory

We should not be too rigid as to the delineation of any one theory as there are often quite reputable sub-theories within each of the main categories and there is a degree of overlap.

8 Examine the view that shifting cultivation is the most sustainable form of agricultural development in tropical rainforests. [25]

Indicative content:

The question is clear in its requirement of a full understanding of both shifting agriculture and unsustainable agricultural practices. There is plenty of scope for examples here and credit should be given for understanding different economic practices within a range of appropriate settings. The understanding of what is meant by sustainability should be inherent. There is scope for considering how different economic activities differ in their degree of degradation and concluding comments offering evaluative content will indicate a high level response. Environmental sustainability is expected to dominate answers but there are possibilities for social and economic sustainability. Possible activities might include:

- Logging
- Intensified tropical agriculture
- Plantation agriculture
- Ranching
- Overstocking

Temperate Grassland and Forest Environments

9 Consider the assertion that the sequence of seral stages in a succession is rarely seen in its entirety.

[25]

Indicative content:

Human intervention in most temperate regions creates plagioclimaxes which interrupt this, or any other, natural seral progression, thus the full sequence of seral stages is rarely found. One approach could work through the seral stages in a particular succession, either for a hydrosere, xeroseres (psammosere or lithosere) or a halosere, assessing the extent to which human activity may arrest or divert the process of succession. The most perceptive candidates may recognise that there are also edaphic, hydrological, topographical, and climatic restraints on succession and such responses should access higher marks. Middle-ranking responses are likely to focus only on anthropogenic limitations; thorough answers dealing with most of the seral stages may be seen here. Basic responses may add no new terminology, indicate only a simple grasp of the concept of succession and for the arrest of succession offer no more than that temperate environments are urbanised or used for farming.

10 Examine the possible consequences of climate change for the ecology of temperate environments. [25]

Indicative content:

Potentially a highly topical issue. Candidates should recognise the ecological impact of climate change both temporally and spatially. Specifically, there should be reference to the migration of species (both flora and fauna) as abiotic factors change niche environments.

Responses may consider the nature of climate change, not just higher temperatures but also changes in precipitation patterns, increased wind/storm intensity, fewer frosts; the impact of climate change on the structure of ecosystems as species with narrower tolerance ranges die out and better/differently-adapted species invade; the impact of climate change on the functioning of ecosystems as nutrient cycling is enhanced (or hindered) and food chains are altered. Candidates may refer to selected species to illustrate these points and may cite located evidence of such changes. References to human land-use should not be excluded, recognising the potential impact on arable and horticultural enterprises, however this should not form the basis of a good answer. Responses that focus only on plagioclimactic environments should not access higher level marks.

The Atmospheric Environment

11 "The poorest developing countries will be hit earliest and hardest by climate change, even though they have contributed little to causing the problem" (Stern Review, 2006).

To what extent is it possible to manage the impacts of the enhanced greenhouse effect, in countries at different levels of development? [25]

Indicative content:

The quotation implies inevitability and inequity in the impacts of global warming. The key quality of higher level answers will be their ability to negotiate a path through management uncertainties in a range of areas. Higher level answers are likely to use a wide range of global examples to show the possibilities for managing impacts; lower level answers will focus on impacts only, rather than managing impacts, and are likely to use a more restricted range of examples. The vulnerability of poorer communities is likely to be a key theme. Impacts include changes in sea-level, temperature, tropical cyclones, precipitation, seasonality and storminess. All are difficult to manage. Richer countries have more access to the resources and expertise required to implement management options such as raising flood defences, re-locating settlements, changing water resource use and changing crops/economic activities.

The focus of the question is on impacts, but candidates may also refer to management of CO_2 levels which may cause such impacts: Kyoto and the difficulties of reaching global agreements; attempts to reduce deforestation; carbon taxes and carbon-trading; technical solutions such as carbon sequestration; individual actions such as carbon-offsetting. High level answers may set these in the context of a complex earth-ocean-cryosphere-atmosphere system whose behaviour is difficult to predict or manage. Weaker answers will show a less nuanced understanding of the likely impact of actions at different scales.

12 Discuss why rainfall totals vary through the year and from place to place in areas of tropical monsoon climates. [25]

Indicative content:

The main temporal pattern is exemplified by the Mumbai graph. Over much of India, the SW monsoon from June to September dominates annual precipitation totals. Higher-level responses may recognise variation on finer timescales: The monsoon arrives first in Kerala and reaches north-west India about 6 weeks later. The monsoon is a seasonal reversal in wind direction (originally in the Arabian Sea from NE to SW), driven by winter cooling and anticyclone formation over continents, and summer surface heating and fall in pressure. Land-sea temperature differences of up to 20°C drive the process. As the equatorial trough moves north, moist winds from the S/SW bring heavy rain to much of India, China and SE Asia. Responses will be distinguished by their clarity and level of detail.

Spatial variability in the monsoon is likely to be a more challenging topic for candidates. High level responses will give regional examples to explain the effect of relief on rainfall totals (e.g. Cherrapunji) and perhaps proximity to the sea. The Ghats in India divide the monsoon winds into eastern and western arms. Candidates may also refer to monsoon climates in Africa, Australia and the Americas.

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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Level 3 Pre-U Certificate
Principal Subject

GEOGRAPHY **9768/03**

Paper 3 Global Themes **For Examination from 2010**

SPECIMEN PAPER

1 hour 30 minutes

READ THESE INSTRUCTIONS FIRST

Answer **two** questions, **one** from Section A and **one** from Section B.

Candidates are encouraged to support their answers with appropriate examples, sketch maps and diagrams.

This document consists of **3** printed pages and **1** blank page.

UNIVERSITY of CAMBRIDGE International Examinations

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Section A

Answer **one** question from this section.

Migration and Urban Change

1 Examine the factors that influence the type and location of housing in different areas within cities. [25]

2 'Economic factors are the most significant in explaining migration patterns within countries.'

Examine the validity of this statement. [25]

Trade, Debt and Aid

3 Debate the view that aid nurtures dependency and so should be discouraged. [25]

4 Assess the degree to which the rise of newly industrialised countries (NICs) has affected the patterns of world trade. [25]

The World of Work

5 Employment structure varies from region to region within countries. Assess the extent to which this is related to regional disparities in levels of economic development. [25]

6 Using examples you have studied, discuss how the international migration of labour has varied over time and space. [25]

Section B

Answer **one** question from this section.

Energy and Mineral Resources

7 Examine the extent to which the exploitation of energy and mineral resources brings both positive and negative impacts at the national scale. [25]

8 Assess the reasons for changes in the sources of energy used at both global and national scales. [25]

The Provision of Food

9 Assess the advantages and disadvantages of using alternative or intermediate technology solutions to increase food production. [25]

10 'The link between farming and increased yields of food has become less important.'

With reference to countries at higher levels of economic development, justify this statement. [25]

Tourism Spaces

11 'Are tourists killing the paradises they visit?'

Using examples from countries at different levels of development, assess the effectiveness of strategies to manage the negative impacts of tourism on the physical environment. [25]

12 Evaluate the effects of technological developments on the tourism industry in the last fifty years. [25]

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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Level 3 Pre-U Certificate
Principal Subject

GEOGRAPHY **9768/03**

Paper 3 Global Themes **For Examination from 2010**

SPECIMEN MARK SCHEME

1 hour 30 minutes

See also the Generic levels for essay questions, in the Appendix.

MAXIMUM MARK: 50

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UNIVERSITY of CAMBRIDGE
International Examinations

[Turn over

Section A

Migration and Urban Change

1 Examine the factors that influence the type and location of housing in different areas within cities. [25]

Indicative content:

Basic locational descriptors such as city centre, inner city, inner and outer suburbs, and fringe may be used; processes such as gentrification and filtering, suburbanisation and reurbanisation are discussed. Clearly there is a temporal theme also, as older housing may be expected closer to the centre (notwithstanding redevelopment), there may be former cultural, economic and political influences, and redevelopment is changing the pattern of housing in urban areas. The factors influencing type and location of housing should encompass social and demographic influences such as age and ethnicity as well as economic status. Economic status could, of course, refer to both the residents and to the economic function of the city. The best responses cover a wide range of factors in a number of different cities at different levels of development and with different histories (compare, for example, Rio de Janeiro and Brasilia). There is potentially a wide range of responses to this question, depending upon candidates' experience and the range of cities they have studied. Those who present detailed expositions on one city only should not be able to access higher marks as any one city is unlikely to provide a wide enough range of factors, regardless of the depth at which it is discussed. The most perceptive responses recognise that different factors carry different weights of influence in different parts of the world. A more traditional answer may be based upon urban models, although the syllabus does not require candidates to have studied them.

2 'Economic factors are the most significant in explaining migration patterns within countries.' [25]

Examine the validity of this statement.

Indicative content:

Candidates show knowledge and understanding of the reasons for migration at the national scale. While the initial focus is likely to be on the economic factors indicated in the question, the role of environmental, social and political factors should also figure strongly. Candidates may also consider the factors in the context of push and pull and intervening opportunities or obstacles, but these should be linked to economic and other considerations. Higher level responses are strongly based on detailed case study material, which may come from one or more countries. Lower level responses are likely to lack detail in exemplification and to discuss in broad generalisations. Such responses are also unbalanced in their treatment of the range of factors explaining migration within countries. Higher level answers clearly evaluate the statement on the basis of the evidence, but the final conclusion will depend upon the case studies chosen. Weaker responses will assert rather than argue the evaluation of the validity of the statement.

Trade, Debt and Aid

3 Debate the view that aid nurtures dependency and so should be discouraged. [25]

Indicative content:

There are a variety of forms and characteristics of aid that candidates can consider and describe and debate. These include short-term relief aid (appropriateness in terms of time delay in initial response, vital to save life in the immediate period after a catastrophic event, suitability of aid provided, delivery of the aid to where it is required, sustainability of aid for the duration of the time it is required, likelihood of transition from aid to independence for the communities involved); long-term development aid (provision of goods compared with the provision of training and education); the tying of aid to trade deals (such as purchase of goods or services from the donor country) or to access rights (such as military or prospecting); misappropriation of aid to support a recipient government's economic or political agenda (dam building, highway construction, purchase of weapons); the need for further and increasing aid to administer aid and to pay for debt repayment (countries locked into long-term financial commitments).

Better quality answers consider a variety of different forms of aid and use specific examples to present different perspectives on the dependency that has been created. Arguments are balanced and judgements are made on whether, as a result, aid should be discouraged. Weaker candidates do not include a range of forms of aid and/or may not locate them with examples. Arguments may be one-sided about the value of the aid and there may be only poor linkage between the ideas of dependency and discouraging aid. The least appropriate answers are a dialogue about aid with no exemplification and little or no regard to the issue in the question.

4 Assess the degree to which the rise of newly industrialised countries (NICs) has affected the patterns of world trade. [25]

Indicative content:

Responses should define and exemplify NICs and consider those characteristics of such countries that affect trade. These could include support for the development of the NIC by countries at a much higher level of development; (initial) availability of a valuable raw material such as oil; government of the NIC committed to the industrialisation and development of trade; location of trans-national corporations (TNCs) within the NIC; (literate) cheap labour within the NIC producing low priced labour intensive exports; protectionism to support the NICs' developing industries; the shift towards the production and export of high technology goods; proximity to large markets in countries at lower levels of development. Characteristics such as these can then be linked to patterns of world trade such as direction of trade movements, volume of trade, content of shipments traded.

Better candidates are able to address this issue on a global scale and give examples of several NICs with specific details of the process of industrialisation and the development of trading partners. They appreciate how the world trading patterns have changed over a period of time and are able to differentiate between those factors that are directly related to NICs and those which have other causes (such as the diminishing world supply of oil). There is a balanced assessment of the influence of NICs on trade. Weaker answers only consider one or two examples of NICs and may not appreciate how the nature of their trade has changed over time. Assessment may be limited or one-sided. The weakest candidates give little or no exemplification and have little or no specific details of trading patterns. Assessment is likely to be very superficial or non-existent.

The World of Work

5 Employment structure varies from region to region within countries. Assess the extent to which this is related to regional disparities in levels of economic development. [25]

Indicative content:

Candidates are likely to describe the variations in employment structure between different regions within a country or countries. Explanations for these variations should focus not only on how the variations are related to regional disparities in levels of economic development, but also to other factors, such as political interference, resources, environmental conditions and urbanisation. In countries at higher levels of economic development, the link between employment structure and regional disparities might identify regions of heavy industry that have suffered decline, new areas of growth based upon the rise of tertiary and quaternary industry and peripheral rural regions. Other factors that could be introduced are the role of the government in supporting or promoting particular sectors of employment, improved accessibility and communications allowing the spread of the tertiary and quaternary sectors into more rural locations, the role of tourism. In countries at lower levels of economic development, contrasts could be made between urban industrial and commercial cores and predominantly rural peripheries. Explanations for these may link to the colonial history of many of these countries. Other factors that could be introduced are the presence of mineral resources in particular locations, the promotion of tourism as an industry and the role of government and TNCs in promoting industrial development. While most answers are likely to focus on explanations relating to the country or countries used as examples, credit should also be given for explanations at an international scale, such as the New International Division of Labour and the Clarke model.

6 Using examples, discuss how the international migration of labour has varied over time and space. [25]

Indicative content:

The question is clear in its reference to labour and so other immigrants, such as refugees and involuntary patterns, although they may seek work, should be treated with caution. It is hoped that candidates will refer to the different kinds of migrating labourers:

- Unskilled migrant labour
- Skilled migrant labour
- Seasonal migrant labour
- Long term and short term migrant labour

The variation should be discussed both in the context of time and space with the best candidates linking the two – i.e. during certain times, there were clear and distinct spatial patters to migrant labour (e.g. post WW2 – unskilled labour rush to UK). We should not be restrictive in terms of time. There is a clear emphasis on exemplar material and full detail is expected for higher level responses.

Section B

Energy and Mineral Resources

7 Examine the extent to which the exploitation of energy and mineral resources brings both positive and negative impacts at the national scale. [25]

Indicative content:

Candidates show knowledge and understanding of both economic benefits (such as job creation, wealth generation, the multiplier effect, foreign exchange earnings and debt repayment) and social, economic and environmental problems (such as environmental degradation, pollution, poor living conditions, fluctuating commodity prices). Candidates also apply knowledge and understanding to particular countries and both mineral and energy resources, through the use of case study material. Weaker responses are likely to have an unbalanced treatment of energy and mineral resources. Application is possible through reference to either one country with both mineral and energy resource exploitation or mineral and energy resource exploitation applied to different countries. At lower levels exemplification through different resources and countries lacks detail. Higher level responses clearly assess the balance between positive and negative impacts, while lower level responses simply consider advantages and disadvantages.

8 Assess the reasons for changes in the sources of energy used at both global and national scales. [25]

Indicative content:

Candidates show knowledge of how sources of energy have changed over time at both global and national scales, such as the global shift from coal to oil and gas and the growth of renewables. At the national scale, changes are likely to be more specific. Candidates also show knowledge and understanding of how various factors, such as geological conditions, levels of economic and technological development, the role of foreign private investment, the cycle of exploitation and product cycles, help to explain the changes described. Knowledge and understanding at both global and national scales is applied through the use of case study material that focuses on particular countries and particular energy sources at the global scale. Candidates demonstrate an understanding that the changes are the result of often complex links between different factors, and that such links may be different at different scales. Responses at higher levels are detailed, assess the reasons for changes and consider both global and national scales, while those at lower levels are unbalanced, with either global or national scales being the main focus and assessment may not be present.

The Provision of Food

9 Assess the advantages and disadvantages of using alternative or intermediate technology solutions to increase food production. [25]

Indicative content:

Responses should include a range of located techniques using alternative or intermediate technology in agriculture such as inter-cropping, back-yard gardening, low-input sustainability, seed fairs to preserve agricultural diversity, earth dams, crescent terraces, rainwater harvesting, simple machines using human or animal power, wild food harvesting, simple drainage and irrigation schemes. Advantages: small-scale farming families remain on the land in sustainable communities, debt for farmers is less of a risk because of inexpensive resources, diet and health are improved, a variety of food is available all year round, a marketable yield of food is more likely, land remains in productive use rather than being abandoned and left open to degradation. Disadvantages: people who do not own land are still likely to move away as this level of technology does not create additional jobs, training will be required at the outset, restraint needs to be placed on the use of additional water for irrigation as this can lead to creation of infertile hardpans, work is still labour intensive.

Better answers describe, locate and assess the merits of at least three different schemes. There is a balance of advantages and disadvantages: they relate directly to the increase of food production and their merit is assessed. There may be classification of the advantages and disadvantages into categories such as social, economic and environmental. Weaker candidates have a limited range of examples that may not be located. Their arguments lack balance and may not be expressed in terms of food production. Assessment of merits is superficial or missing.

10 'The link between farming and increased yields of food has become less important.'

With reference to countries at higher levels of economic development, justify this statement. [25]

Indicative content:

This question relates to the area of the syllabus focusing on the 'post-productionist' phase of food production. Examples are most likely to come from areas such as the European Union or North America. Candidates are only being asked for examples that support this statement. These could include schemes such as the reduction/elimination of farm subsidies, increasing subsidies to farmers who keep rates of stocking below a certain level, quota systems, farm diversification, organic farming, low-impact techniques, farm management under specified conditions such as Environmentally Sensitive Areas, set aside schemes.

Higher quality answers describe in detail a range of at least three located schemes and there is a considered and reasoned link to the reduction in the yield in food that is taking place. Weaker candidates suggest a number of schemes but may not locate them, they may be hesitant as to the details of the schemes, they may not link them clearly to a reduction in food production, their answer may lack reasoning. Very weak candidates may not appreciate that this is intended to be a one-sided response and may possibly try to argue against the validity of the statement. They cite very few or no specific schemes and there are few, if any, locations mentioned.

Tourism Spaces

11 'Are tourists killing the paradises they visit?'

Using examples from countries at different levels of development, assess the effectiveness of strategies to manage the negative impacts of tourism on the physical environment. [25]

Indicative content:

Candidates are not being asked to comment on the validity of the statement. Responses should be limited to specific strategies and should be focused on management of the physical environment. A description of the environmental issue is only needed in terms of context. Possible issues and strategies could include visual pollution due to coastal development (strict planning controls; direction on scale and appearance; screening); air pollution due to increased use of transport (road pricing, pedestrian only access, carbon tax, timed visits); destruction of fragile ecosystems (zoning, buffer zones, retraction of tourist licences, footpath management, designation as Marine Park/SSSI/National Park, increased public information etc.) Noise, litter, pressure on water supplies, water pollution are also appropriate issues.

Better answers include at least three examples from at least two different levels of development and examples are located and at different scales. There is a focus on how the impact of tourists is being managed and schemes can be described and explained coherently, leading to an assessment of the effectiveness of the strategies. Weaker answers only consider one or two examples or possibly fail to recognise different levels of development. They may describe the strategies but omit to make an assessment of their effectiveness. The weakest candidates may select issues that are not related to the physical environment, they may possibly only consider one strategy and assessment of effectiveness is at a superficial level or missing.

12 Evaluate the effects of technological development on the tourism industry in the last fifty years. [25]

Indicative content:

The time scale of fifty years should allow candidates to consider a wide range of technological developments. Better answers may attempt to classify developments into categories such as transport; communication; development of specialist equipment.

Within the area of transport candidates may discuss the large increase in the availability of personal transport, especially in countries at higher levels of development; development of package holidays; charter flights; recent boom in budget airlines; increased cost of fuel; opening up of more inaccessible regions to road traffic, especially in countries at lower levels of development; development of off-road and amphibious vehicles. Communication developments are likely to focus on the effects of the widespread availability of Internet access, broadband, wireless access; mobile phones; 24/7 availability of information/booking services. Specialist equipment developments include satellite navigation systems, hand-held GPS; specialist clothing/equipment for altitude, extreme cold, diving, parascending etc.

Higher quality answers link developments to consequences for the tourism industry and evaluate the effects, considering both positive and negative impacts. There may be relevant linking to Butler's tourist area life cycle model. Better candidates are also likely to use pertinent examples to illustrate their comments. Weaker candidates cover a limited range of developments, with few or no examples. They may present an unbalanced evaluation or fail altogether to evaluate the effects on the tourism industry.

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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Level 3 Pre-U Certificate
Principal Subject

GEOGRAPHY **9768/04**

Paper 4 Research Topic **For Examination from 2010**

SPECIMEN PAPER

1 hour 30 minutes

READ THESE INSTRUCTIONS FIRST

Choose Section A **or** Section B **or** Section C, according to your research topic.

Answer **three** questions, from the same section.

You are advised to spend thirty minutes on each Question.

For **Section A**, Fluvial Geomorphology, answer:
Question 1, Question 2 and **either** Question 3 **or** Question 4.

For **Section B**, Environmental Degradation, answer:
Question 5, Question 6 and **either** Question 7 **or** Question 8.

For **Section C**, Retail Patterns, answer:
Question 9, Question 10 and **either** Question 11 **or** Question 12.

The Insert contains all the Figures and the Photograph referred to in the Question Paper.

This document consists of 4 printed pages and **1** Insert.

Section A: Fluvial Geomorphology

Answer **three** questions:
Question 1, Question 2
and **either** Question 3 **or** Question 4

1 Study Figs 1A and 1B, Fig. 2 and Photograph A.

Fig. 1A shows the relationship between channel slope and bankfull discharge on braided and meandering streams in the USA. Fig. 1B shows the relationship between channel slope and sediment load for the same two types of stream. Fig. 2 and Photograph A show meandering on the River Cuckmere, Sussex, UK.

(a) Using Fig. 1B, give the approximate threshold values of sediment load and channel slope for braided streams. [2]

(b) Briefly describe the differences between braided and meandering streams that are suggested by Figs 1A and 1B. [4]

(c) To what extent is the use of lines of best fit on Figs 1A and 1B valid? Support your answer with evidence from both graphs. [6]

(d) The meandering course of the River Cuckmere has been straightened. Suggest how far each of Fig. 2 and Photograph A help in understanding the decision to straighten the river. [8]

2 **(a)** Study Fig. 3, which shows the relationship between river velocity and size of particles eroded.

How far does Fig. 3 support the assertion that 'the higher the velocity, the greater the erosion?' [5]

(b) 'River landforms in uplands will always look similar because similar processes are at work.'

From your wider study of fluvial geomorphology, to what extent do you agree with this statement? [10]

EITHER

3 With reference to your own investigation of fluvial geomorphology, discuss the strengths and limitations of the use of primary sources and secondary sources of information.

Begin by stating the question or hypothesis that you investigated. [15]

OR

4 In your own investigation of fluvial geomorphology, to what extent could the variations you found be explained?

Begin by stating the question or hypothesis that you investigated. [15]

Section B: Environmental Degradation

Answer **three** questions:
Question 5, Question 6
and **either** Question 7 **or** Question 8

5 Study Fig. 4 and Figs 5A and 5B, which show information relating to environmental degradation around two mining sites.

Fig. 4 gives information from the abandoned Mole River Mine in New South Wales, Australia, in 1998. Until the 1930s rock was extracted here to obtain arsenic, a poison. Figs 5A and 5B show information about the chemistry of water in the area around the Venir waste tip in Colorado, USA, in 1999. Gold, silver, lead and zinc have been mined at this location since 1859.

(a) For the area shown on Fig. 4, describe the locations at which concentrations of over 20% arsenic were recorded in stream sediment samples. [2]

(b) Make a brief assessment of the possible risks to geographers planning to investigate environmental degradation in the area shown on Fig. 4. [4]

(c) Explain the variation in environmental degradation around the Mole River Mine, supporting your work with evidence from Fig. 4. [6]

(d) How far is the information shown on Figs 5A and 5B useful in understanding the environmental impact of mining in the Venir waste tip area? [8]

6 **(a)** Study Fig. 6, which shows information about average concentration of nitrogen dioxide (NO_2) in the air at 14 monitoring stations in Hong Kong in 2006.

To what extent did Hong Kong appear to have been successful in keeping its NO_2 levels within the 24 hour target maximum in 2006? [5]

(b) From your wider study of environmental degradation, to what extent can pollution be considered a global scale problem with local scale solutions? [10]

EITHER

7 With reference to your own investigation of environmental degradation, discuss the strengths and limitations of the use of primary sources and secondary sources of information.

Begin by stating the question or hypothesis that you investigated. [15]

OR

8 In your own investigation of environmental degradation, to what extent could the variations you found be explained?

Begin by stating the question or hypothesis that you investigated. [15]

Section C: Retail Patterns

Answer **three** questions:
Question 9, Question 10
and **either** Question 11 **or** Question 12

9 Study Figs 7A and 7B which show information about two different types of food retailer in a large city in the UK, using a Geographical Information System (GIS) based on postal districts.

Fig. 7A shows store location for a discount food retailer plotted against the percentage of households in social classes 4 and 5 (the lowest) from the Census. Fig. 7B shows market penetration by, and branch location of, one supermarket chain. Market penetration refers to the percentage of the market reached by that supermarket chain.

(a) Using Fig. 7A, describe the location of the discount food stores in relation to distance from the city centre. [2]

(b) Suggest **two** reasons for the relationships shown in Fig. 7B between the location of supermarket branches and market penetration. [4]

(c) In Fig. 7A, to what extent is there a correlation between the location of this discount food retailer's stores and the residence of social classes 4 and 5? Use evidence from Fig. 7A to support your response. [6]

(d) The supermarket chain proposes to open a new branch at the location shown as **Y** in Fig. 7B. Analyse the limitations of the information given in Figs 7A and 7B when considering this possible addition to the city's retail pattern. [8]

10 **(a)** Fig. 8 shows the rental cost of prime retail space in four cities in the UK between 1994 and 2005.

Assess whether these four cities experienced the 'strong growth in prime retail rents' that was reported for the period shown. [5]

(b) From your wider study of retail patterns, consider how changes in retail hierarchies have created both winners and losers. You may answer using examples at any scale. [10]

EITHER

11 With reference to your own investigation of retail patterns, discuss the strengths and limitations of the use of primary sources and secondary sources of information.

Begin by stating the question or hypothesis that you investigated. [15]

OR

12 In your own investigation of retail patterns, to what extent could the variations you found be explained?

Begin by stating the question or hypothesis that you investigated. [15]

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Level 3 Pre-U Certificate
Principal Subject

GEOGRAPHY **9768/04**

Paper 4 Research Topic **For Examination from 2010**

SPECIMEN INSERT

1 hour 30 minutes

READ THESE INSTRUCTIONS FIRST

This Insert contains all the Figures and the Photograph referred to in the Question Paper.

This document consists of **11** printed pages and **1** blank page.

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Section A: Fluvial Geomorphology

Fig. 1A for Question 1

Relationship between channel slope and bankfull discharge

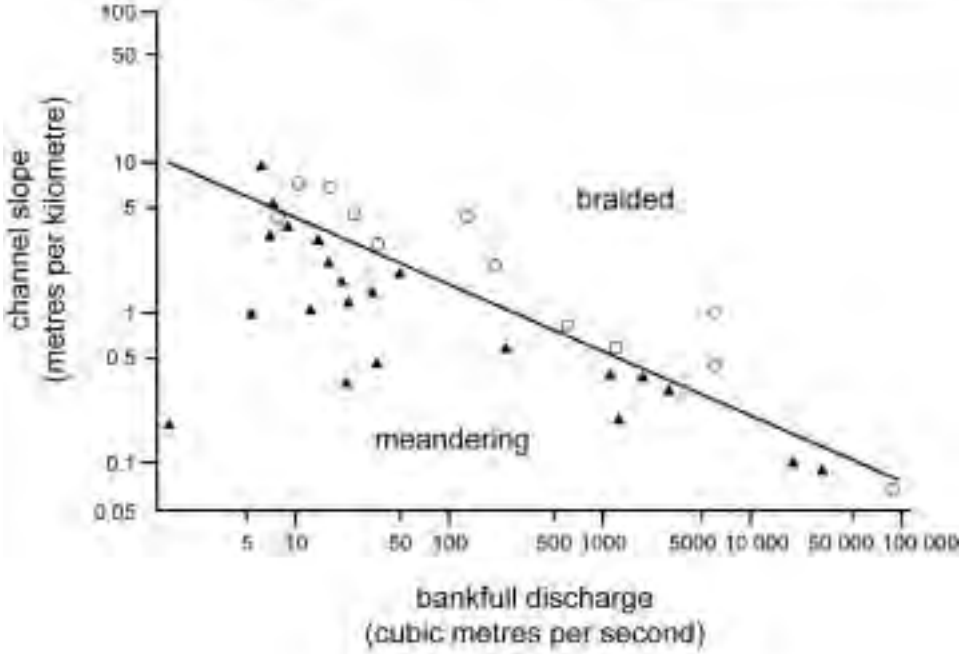


Fig. 1B for Question 1

Relationship between channel slope and sediment load

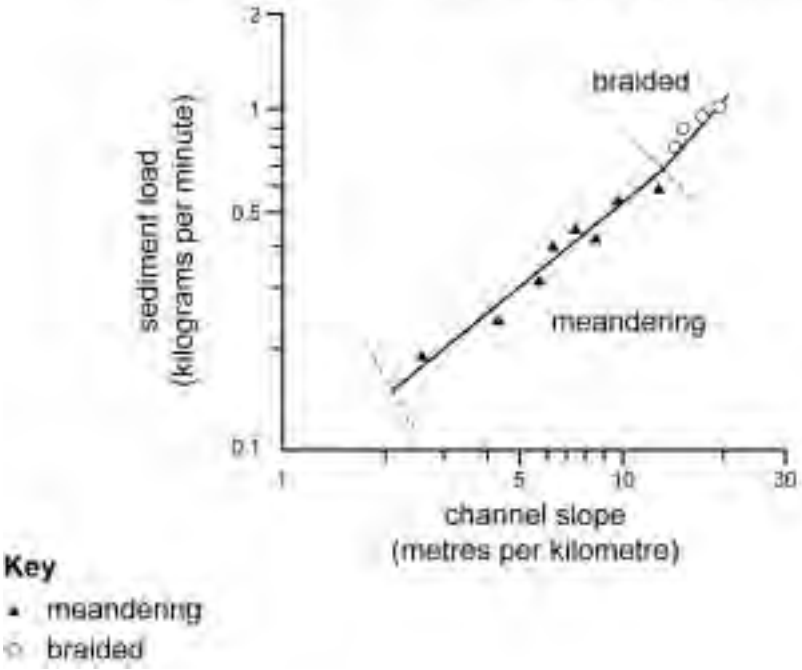


Fig. 2 for Question 1

1: 25 000 map extract, River Cuckmere, Sussex, UK

52 Ground survey height
284 Air survey height

Surface heights are to the nearest metre above mean sea level. Heights shown close to a triangulation pillar refer to the ground level height at the pillar and not necessarily at the summit

Vertical face/cliff

75
60
50

Loose rock | Boulders | Outcrop | Scree

Contours are at 5 metres vertical interval

Water

Mud

Sand; sand & shingle

National Trail / Long Distance Route: Recreational Route

Permitted footpath
Permitted bridleway
} Footpaths and bridleways along which landowners have permitted public use but which are not rights of way. The agreement may be withdrawn.

Footpath

Bridleway

Byway open to all traffic

Road used as a public path (From late 2004 roads used as public paths are to be redesignated as 'Restricted byways'. Restricted byways provide a right of way for walkers, horse riders, cyclists and other non-mechanically propelled vehicles)

Coniferous trees

Non-coniferous trees

Coppice

Orchard

Scrub

Bracken, heath or rough grassland

Marsh, reeds or saltings

Access land boundary and tint

Access land in woodland area

Access information Point

Access to foreshore

1 National cycle network route number - on road

P Parking

V Visitor centre

Public house/s

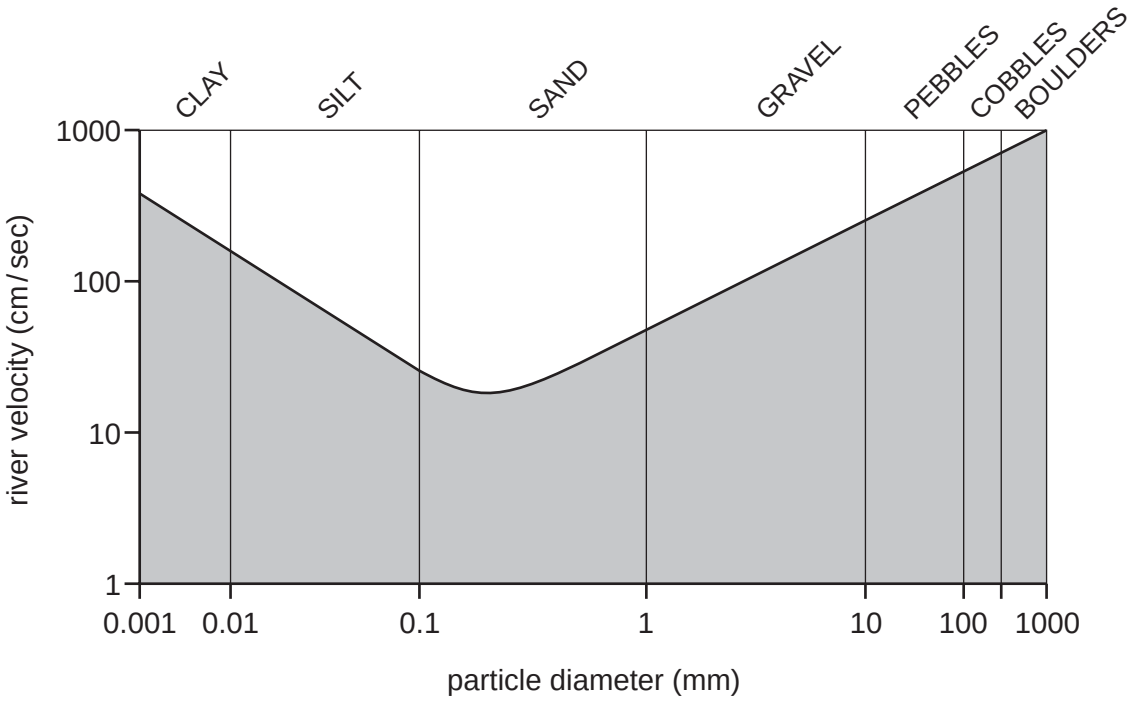
Photograph A for Question 1

Aerial photograph of River Cuckmere, Sussex, UK

[Turn over

Fig. 3 for Question 2

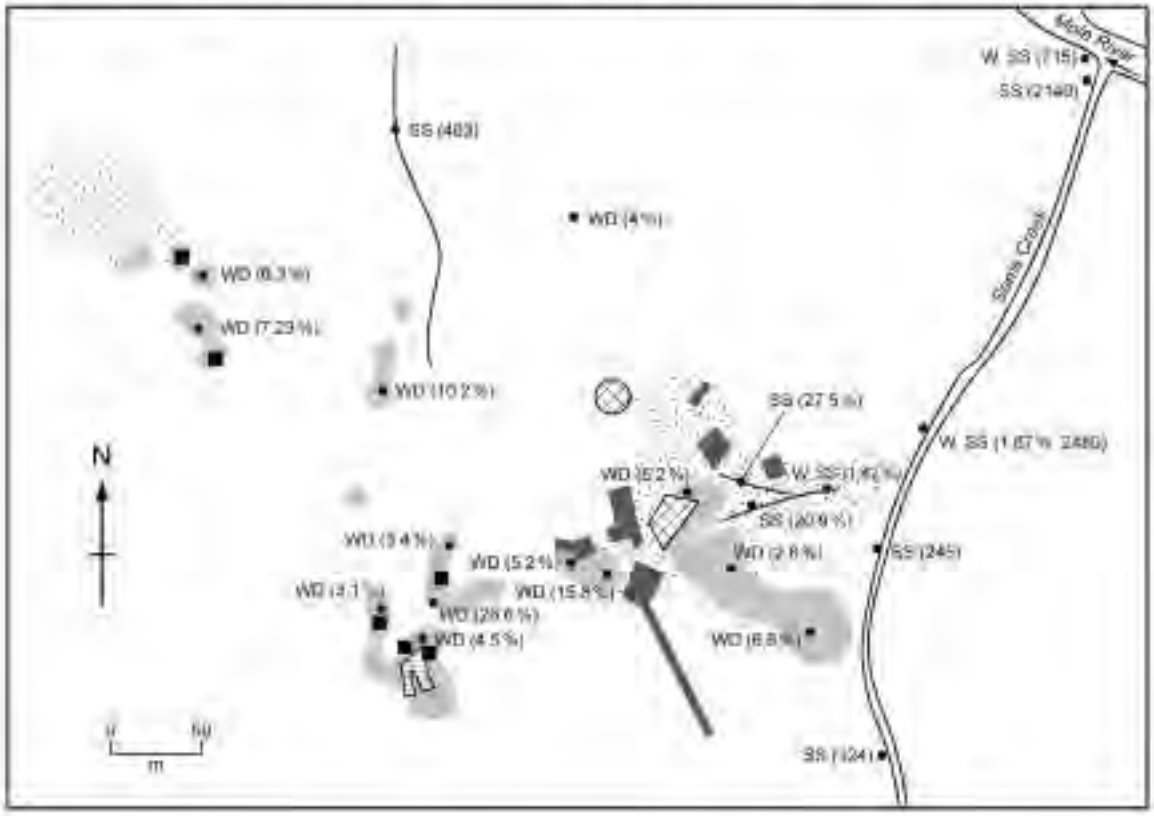
Relationship between river velocity and size of particles eroded



Section B: Environmental Degradation

Fig. 4 for Question 5

Environmental degradation around the Mole River Mine, New South Wales, Australia, 1998



Key

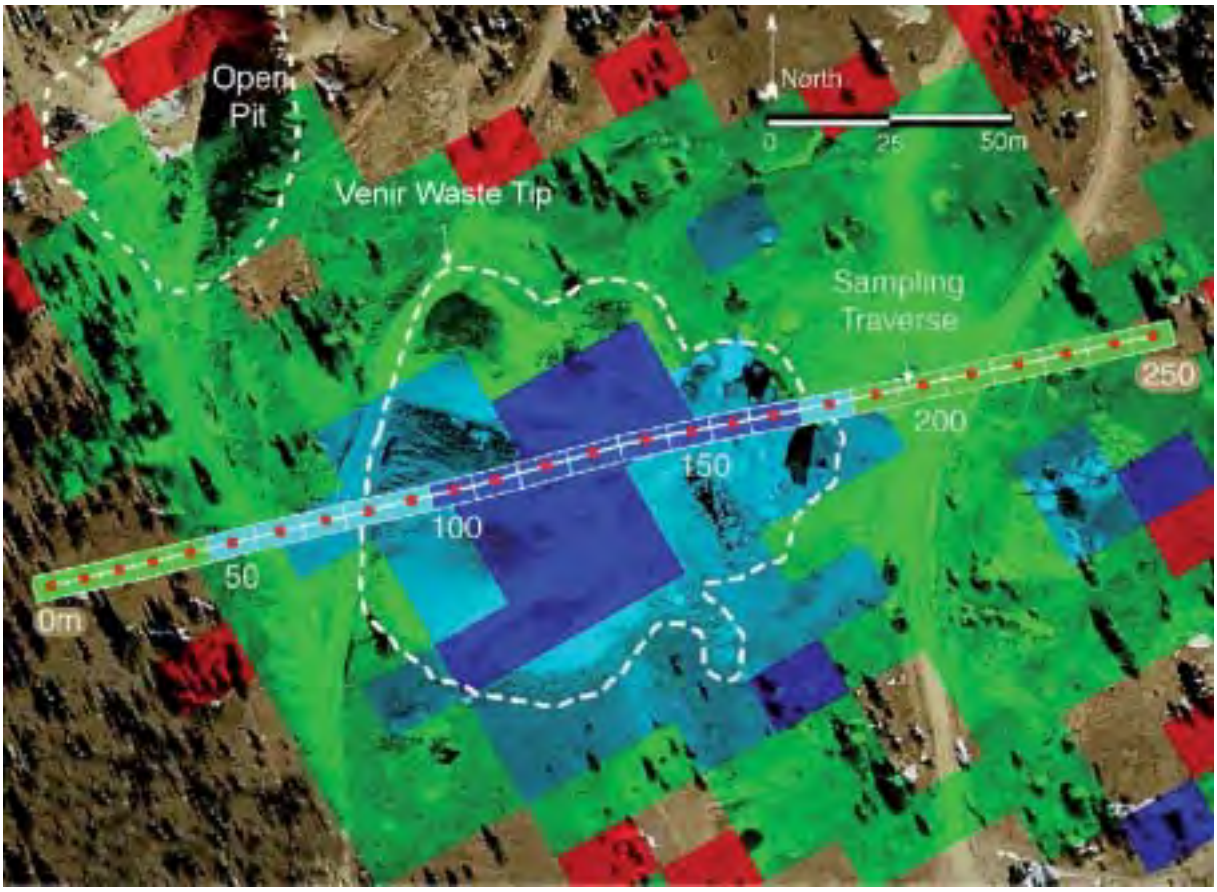
- major stream, small gully
- area of bare ground (no vegetation)
- building ruins
- drum stockpiles
- waste dumps (at mine shafts and processing plant)
- mine shaft, open cut

- WD waste dump sample site
- W water sample site
- SS stream sediment sample site

(483, 3.8 %) concentrations of arsenic in ppm (parts per million) and percentage

Fig. 5A for Question 5

pH values of water around the Venir waste tip, Colorado, USA, 1999



Key

pH Acidic ← Neutral

light brown areas have neutral background pH readings

Fig. 5B for Question 5

Lead concentration along sampling traverse, Venir waste tip area, Colorado, USA, 1999

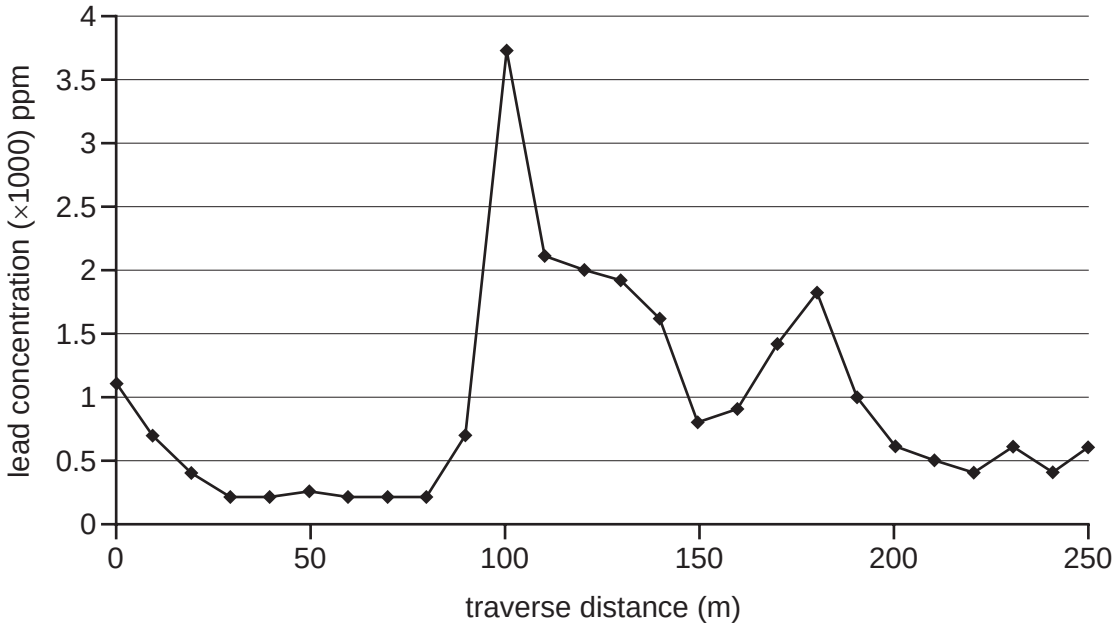
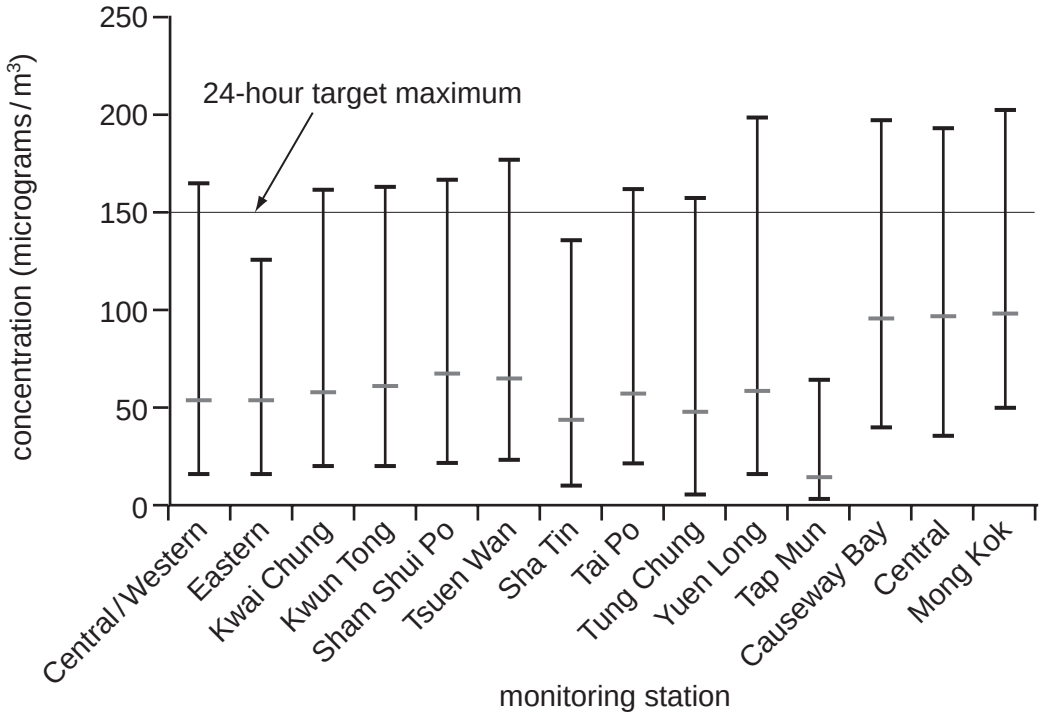


Fig. 6 for Question 6

Nitrogen dioxide monitoring, Hong Kong, 2006 (24-hour average statistics)



Key

maximum 24-hour average

annual average

minimum 24-hour average

Section C: Retail Patterns

Fig. 7A for Question 9

Location of stores of one discount food retailer and percentage of households in social classes 4 and 5

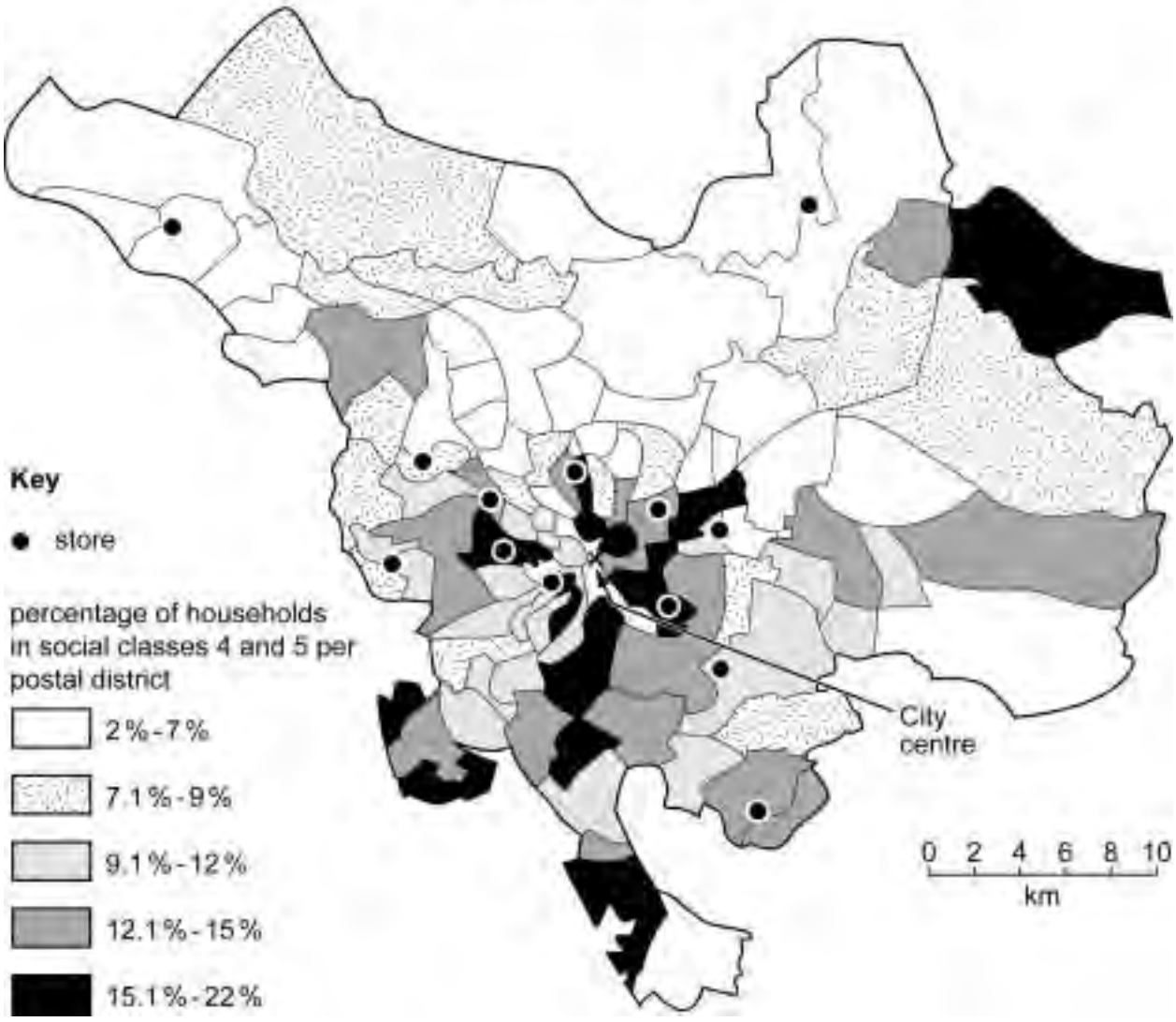


Fig. 7B for Question 9

Market penetration by, and locations of branches of, one supermarket chain

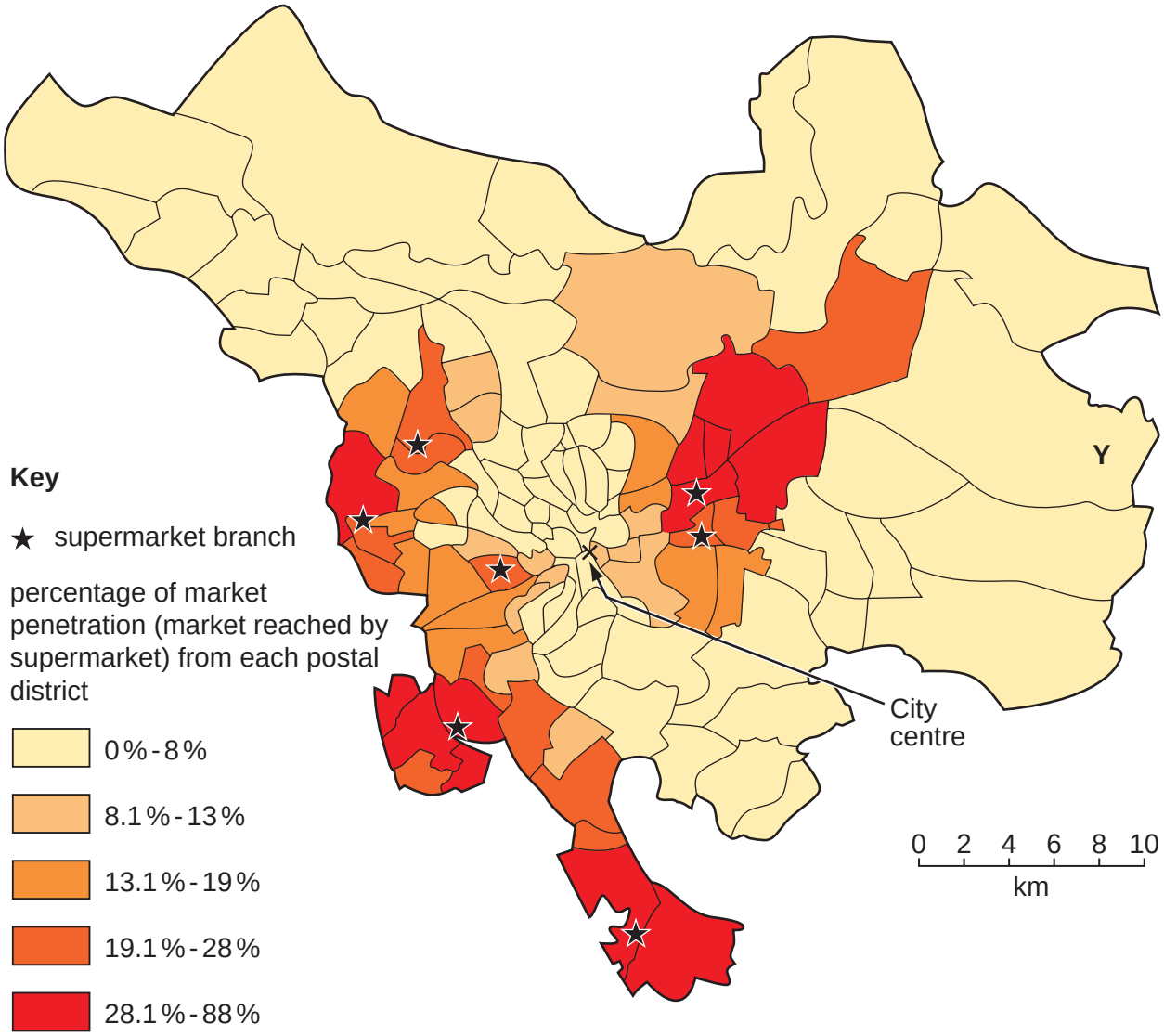
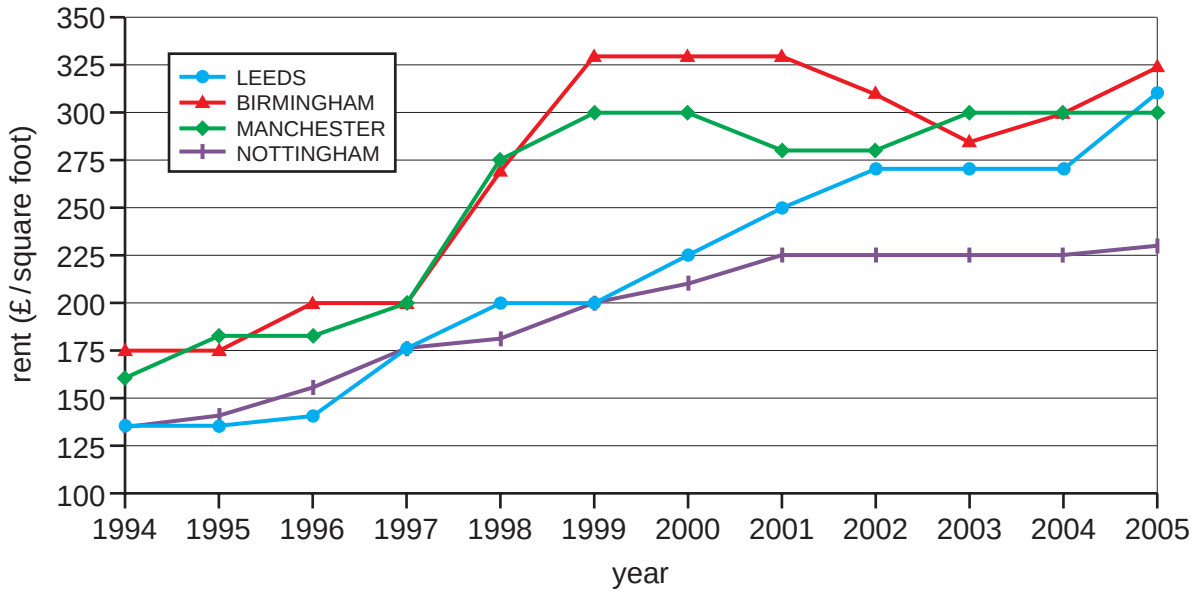


Fig. 8 for Question 10

Rental costs for prime retail space in four cities in the UK, 1994-2005



UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
Cambridge International Level 3 Pre-U Certificate
Principal Subject

GEOGRAPHY **9768/04**

Paper 4 Research Topic **For Examination from 2010**

SPECIMEN MARK SCHEME

1 hour 30 minutes

MAXIMUM MARK: 50

This document consists of **20** printed pages.

UNIVERSITY of CAMBRIDGE International Examinations

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Section A: Fluvial Geomorphology

1 Study Figs 1A and 1B, Fig. 2 and Photograph A.

Fig. 1A shows the relationship between channel slope and bankfull discharge on braided and meandering streams in the USA. Fig. 1B shows the relationship between channel slope and sediment load for the same two types of stream. Fig. 2 and Photograph A show meandering on the River Cuckmere, Sussex, UK.

(a) Using Fig. 1B, give the approximate threshold values of sediment load and channel slope for braided streams. [2]

Candidates should identify the dashed break point as the threshold, rather than the lowest plotted circle.
Sediment load Accept a value between 0.7 and 0.65 kg per minute.
Channel slope 13 or 14 metres per kilometre.

(b) Briefly describe the differences between braided and meandering streams that are suggested by Figs 1A and 1B. [4]

The two principal differences suggested are, from Fig. 1A, that the channel slope of braided streams is greater than for meandering streams at all rates of bankfull discharge (note one anomaly). On Fig. 1B, channel slope and sediment load are greater for braided streams than for meandering streams. For a description of one figure, with data support, max. 2.

(c) To what extent is the use of lines of best fit on Figs 1A and 1B valid? Support your answer with evidence from both graphs. [6]

Candidates should recognise that the use of both lines of best fit seems valid given the data plotted, but Fig. 1B's may be regarded as 'cleaner' than Fig. 1A's. In Fig. 1B all 12 values plotted occur on or very close to the best fit line, with approximately equal divergence either side. In Fig. 1A two anomalous circles (braided) and two triangles (meandering) are visible on the opposite side of the best fit line. The best fit line is precisely that, a best fit, but demonstrates an element of compromise or judgement or, possibly, anomalous results. A full answer addresses extent directly and provides evidence from both graphs.

L3 (5–6 marks)
Clear and detailed assessment of use of lines of best fit.
Extensive and accurate data support from both figures.

L2 (3–4 marks)
Some assessment of one or both lines of best fit.
Provides some data support from one or both figures at the top end of this level.

L1 (0–2 marks)
Limited ability to provide assessment and interpret graphs, may simply describe.
Use of data support is inaccurate or lacking.

(d) The meandering course of the River Cuckmere has been straightened. Suggest how far each of Fig. 2 and Photograph A help in understanding the decision to straighten the river. [8]

The most likely reason is to control flooding (though candidates might refer, creditably, to navigational improvements). Straightening would reduce flooding by increasing the gradient, thus increasing the speed of flow and resulting in less deposition. Also, the straight stretch may be deeper – thus reducing the frictional effect (by increasing hydraulic radius) and increasing the efficiency of the channel. It may also reduce the roughness of the channel. The photograph and the map can be used to inform the judgement about some of these (e.g. gradient, sinuosity) but not others – e.g. depth, discharge, bankfull discharge, deposition, channel efficiency.

L3 (6–8 marks)
Firm suggestions made as to why the river was straightened, and clear assessment of how far the evidence supports these suggestions.

L2 (3–5 marks)
Some suggestions as to why the river was straightened and some assessment of the evidence supporting these suggestions.

L1 (0–2 marks)
Some reference may be made to possible reasons for straightening the river but evidence is weakly described rather than assessed.

[Total: 20]

2 (a) Study Fig. 3, which shows the relationship between river velocity and size of particles eroded.

How far does Fig. 3 support the assertion that 'the higher the velocity, the greater the erosion'? [5]

From the evidence in the figure, in some respects there is support for the assertion. There is a clear positive correlation between velocity and particle size from about 0.2 mm diameter particle size upwards, that is from sand grade materials. For gravel, pebbles, cobbles and boulders to be eroded, increasing velocities are required. For boulders to be eroded, velocities of around 700 cm/sec are required, higher than for any other particle size. However, for small particles of clay and silt grade, there is a negative correlation, so that the largest silt particles can be eroded by velocities of 20 cm/sec, whereas to erode the smallest clay particles the velocity must be about 300 cm/sec. The minimum velocity for the smallest clay particles to be eroded is the same as the velocity required to erode pebbles. Allow tolerance between markings for data quoted, because of log scales. *Reasons for these differences are not required.* The figure only gives information about erosion in terms of competence of the river, with no account of capacity, or of other factors such as *availability* of the material of different sizes.

L3 (4–5 marks)
Detailed coverage of the positive and the negative correlations shown, making good use of data from the figure. Clear evaluation of how well the assertion is supported.

L2 (2–3 marks)
Coverage of examples of particle sizes eroded at different velocities, with use of data from the figure. Some reference to how well the assertion is supported.

L1 (0–1 marks)
Limited ability to interpret the figure and provide assessment, may simply describe. Use of data support is inaccurate or lacking.

(b) 'River landforms in upland areas will always look similar because similar processes are at work.'

From your wider study of fluvial geomorphology, to what extent do you agree with this statement? [10]

Candidates should produce answers from a range of locations, which are not constrained by scale, and should include examples from a number of different river systems. There is a clear need to balance the similarity of upland landforms in different river systems with inevitable variations caused by the relative importance of specific locational processes and factors. Higher level responses will certainly refer to the differences that can exist. Points may include:

Similarities as determined by the dominance of downward erosion and hydraulic action and abrasion.

- Waterfalls and Rapids
- Narrow channels
- V-shaped valleys and Gorges
- Pot-holing

Differences as determined by geology, past and present climate, glaciation, vegetation and human influences:

- Size of channel
- Braiding
- Valley morphology
- Size of waterfalls

L3 (8–10 marks)
Evaluation is to the fore with sophisticated exemplar support and good coverage of a range of landforms and processes. There is clear reference to factors which may explain variations between different upland river systems.

L2 (5–7 marks)
Some evaluation is attempted, with examples and coverage of some landforms and processes, but any reference to factors which may explain variations between different upland river systems is slight.

L1 (0–4 marks)
There is some reference to landforms and processes in upland river systems but the approach is generally descriptive.

[Total: 15]

3 With reference to your own investigation of fluvial geomorphology, discuss the strengths and limitations of the use of primary sources and secondary sources of information.

Begin by stating the question or hypothesis you investigated. [15]

Candidates should base their responses firmly in the results of their own investigation and quote evidence from that investigation to establish clearly the strengths and limitations of the primary and secondary sources used. Strengths of primary sources are likely to focus upon issues of reliability, which could be related to sampling techniques and sizes, accuracy of any equipment used and diligence in the collection process. Strengths of secondary sources are likely to focus on the reliability of published material. Limitations of primary sources are likely to focus on the difficulties involved in the data collection process, while limitations of secondary sources might consider how up-to-date the material is and the scale at which the material is available. Candidates should consider both strengths and weaknesses of both sources of information and provide some assessment of these strengths and weaknesses.

Possible strengths could include:

- a carefully and logically structured sampling framework with a good sample size that covered the area(s) chosen for study fully;
- the use of repeated readings to increase accuracy;
- the reliability of any equipment used and the diligence with which it was operated;
- the reliability of secondary sources used, which might include base maps at different scales, geology maps, hydrological and precipitation data from official sources.

Possible limitations could include:

- practical considerations, such as weather conditions, time limitations, accessibility and minimising risk;
- problems experienced with the equipment used;
- how up-to-date the secondary sources were;
- the scale at which secondary data were available.

L4 (13–15 marks)
Candidates cover a range of possible strengths and weaknesses of both primary and secondary sources. Discussions are detailed and show a clear understanding of the nature of the strengths and weaknesses identified. An assessment of the importance of these strengths and weaknesses is clear. The whole answer is clearly built around the candidate's own investigation.

L3 (10–12 marks)
Candidates cover a range of possible strengths and weaknesses of both primary and secondary sources. Discussions are detailed and show an understanding of the nature of the strengths and weaknesses identified, but may show an imbalance between primary and secondary sources or between strengths and weaknesses. An assessment of the importance of these strengths and weaknesses is present. The answer makes appropriate reference to the candidate's own investigation.

L2 (7–9 marks)
Candidates cover a narrow range of possible strengths and weaknesses of both primary and secondary sources. Discussions are sound and show some understanding of the nature of the strengths and weaknesses identified, but show an imbalance between primary and secondary sources or between strengths and weaknesses. An assessment of the importance of these strengths and weaknesses is present, but lacks any development. The answer makes appropriate reference to the candidate's own investigation, but some points made are rather generalised.

L1 (0–6 marks)
Candidates cover a narrow range of possible strengths and weaknesses and may concentrate on either primary or secondary sources. Discussions lack detail but show some understanding of the nature of the strengths and weaknesses identified. An assessment of the importance of these strengths and weaknesses is likely to be absent. The answer makes little appropriate reference to the candidate's own investigation, but some points made are rather generalised.

4 In your own investigation of fluvial geomorphology, to what extent could the variations you found be explained?

Begin by stating the question or hypothesis you investigated. [15]

Candidates should base their responses firmly in the results of their own investigation and quote evidence from that investigation to establish clearly the variations observed. Variations observed could be spatial or temporal in nature or could represent variations from the expected pattern derived from theoretical or conceptual ideas. Explanations for the observed variations might relate to the underlying theories or concepts, the local geographical conditions or methodological issues. Candidates should evaluate how far these explanations help to explain the variations observed.

Variations could relate to:
- changes in variables or characteristics downstream;
- changes in variables or characteristics across a section of the river;
- differences in variables or characteristics between rivers in different locations or at different times;
- the identification of anomalies to the normal or expected pattern.

Explanations could be based on one or more of the following:
- theoretical or conceptual ideas about the expected variations in fluvial variables and characteristics downstream, across the channel and over time;
- identification of specific geographical factors that might influence variations, such as geology or human impact;
- methodological issues relating to the reliability of the techniques used.

L4 (13–15 marks)
Candidates cover a range of possible explanations for the variations identified. Explanations are detailed and show a clear understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations. They are able to evaluate the relative importance of different factors in explaining variations. The whole answer is clearly built around the candidate's own investigation.

L3 (10–12 marks)
Candidates cover a range of possible explanations for the variations identified. Explanations are detailed and show an understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations. There is an attempt to evaluate the relative importance of different factors in explaining variations. The answer makes appropriate reference to the candidate's own investigation.

L2 (7–9 marks)
Candidates cover a narrow range of possible explanations for the variations identified. Explanations are sound and show some understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations, or a detailed understanding of one of these areas. The evaluation of the relative importance of different factors in explaining variations is present but lacks development. The answer makes appropriate reference to the candidate's own investigation, but some points made are rather generalised.

L1 (0–6 marks)
Candidates cover a narrow range of possible explanations for the variations identified. Explanations lack detail but show some understanding of the either underlying theoretical or conceptual ideas or other geographical factors or methodological issues relevant to their explanations. The answer provides explanations for variations, but includes little or no evaluation of these explanations. The answer makes little appropriate reference to the candidate's own investigation, but some points made are rather generalised.

Section B: Environmental Degradation

5 Study Fig. 4 and Figs 5A and 5B, which show information relating to environmental degradation around two mining sites.

Fig. 4 gives information from the abandoned Mole River Mine in New South Wales, Australia, in 1998. Until the 1930s rock was extracted here to obtain arsenic, a poison. Figs 5A and 5B show information about the chemistry of water in the area around the Venir waste tip in Colorado, USA, in 1999. Gold, silver, lead and zinc have been mined at this location since 1859.

(a) For the area shown on Fig. 4, describe the locations at which concentrations of over 20% arsenic were recorded in stream sediment samples. [2]

There are two, 27.5% and 20.9% occurring close together. Each is found in a small gully in an area of bare ground leading away eastwards from near the most extensive waste dump and drum stockpile, towards Sams Creek.

(b) Make a brief assessment of the possible risks to geographers planning to investigate environmental degradation in the area shown in Fig. 4. [4]

Investigation in this area represents a high level of potential risk and may be inadvisable. Evidence includes the poisonous nature of the product and waste; contaminated ground and water; possible dangers from abandoned buildings, equipment and drums; numerous old mine shafts which may not be sealed off; one open cut. The site may not have warning notices displayed or access restricted. Remoteness may be an issue.

(c) Explain the variation in environmental degradation around the Mole River Mine, supporting your work with evidence from Fig. 4. [6]

Candidates may recognise two elements of degradation: pollution of land and water and general deterioration and loss of environmental quality in this area.
There is considerable variation across the site, greatest around where production was concentrated (mine shafts, buildings and waste dumps) to the south and east of the area shown. Waste dump samples vary greatly, for example neighbouring sites recorded a modest 4.5% and maximal 26.6%. Outlying areas and those left blank may be commented on. There is considerable downstream variation in concentrations of arsenic in ppm in Sams Creek and after it joins the Mole River.

L3 (5–6 marks)
Detailed description of observed variations showing judgment.
Wide and robust use of evidence.

L2 (3–4 marks)
Partial description of variations in environmental degradation.
Provides some evidence from the figure at the top end of this level.

L1 (0–2 marks)
Simple description of one or more aspects of varying degradation
Use of data support is inaccurate or lacking.

(d) How far is the information shown on Figs 5A and 5B useful in understanding the environmental impact of mining in the Venir waste tip area? [8]

Fig. 5A gives a clear visual picture of the spatial pattern of water pollution in the area and as such has considerable merit. This should be supported by evidence from the figure.
However, there is a range of things it does not show – for example the polluting substances, is this stream water or soil water? The suggestion of uniformity within areas as well as the step-like boundaries are also limitations. Additionally, although the colour density generally increases with acidity, the red colour for neutral doesn't agree with this.
Fig 5B, of lead pollution, also gives a good visual impression, but only along the traverse line indicated. Its spatial usefulness is therefore limited.
Additionally, there is no representation of noise, visual, air or ground pollution on either diagram, and similarly no indication of the impact on fauna and flora (though high lead contents are unlikely to be beneficial).

L3 (6–8 marks)
Clear and detailed assessment of the usefulness of both figures and their limitations.
Extensive and accurate support for the assessment made.

L2 (3–5 marks)
Some assessment of usefulness and/or limitations of both figures, which may be unbalanced.
Provides support for some observations.

L1 (0–2 marks)
Limited ability to interpret the map or the graph, may simply describe.
No attempt to evaluate.

[Total: 20]

6 (a) Study Fig. 6, which shows information about average concentration of nitrogen dioxide (NO_2) in the air at 14 monitoring stations in Hong Kong in 2006.

To what extent did Hong Kong appear to have been successful in keeping its NO_2 levels within the 24 hour target maximum in 2006? [5]

With respect to the maximum 24h average, the most likely response will be 'with very limited success'. Only three of the stations were below the target. Four stations considerably exceeded the target (by almost a third). However, in terms of annual averages, all stations were very successful (the highest of these figures is one third below the target maximum).

L3 (4–5 marks)
Clear and detailed assessment of the averages in relation to the question.
Extensive and accurate data support for the assessment made.

L2 (2–3 marks)
Some assessment of the usefulness (or otherwise) of the average figure.
Provides data support for some of the observations made at the top end of this level.

L1 (0–1 marks)
Limited ability to interpret data and provide assessment, may simply describe.
Use of data support is inaccurate or lacking.

6 (b) From your wider study of environmental degradation, to what extent can pollution be considered a global scale problem with local scale solutions? [10]

Candidates should consider both the problems and the solutions. Candidates might be expected to question the scale of the problem or the scale of the solutions. Top candidates will be questioning both the scale of the problem and the scale of the solutions. Examples should be used to support points but these could be drawn from a large range of places and locations. Points could include:

- Evidence for pollution being a global scale problem: Ozone depletion, Greenhouse gas emission, disposal of nuclear and domestic waste, pollution of the oceans.
- Evidence for pollution being a local scale problem: Industrial pollution of waterways, urban waste, smogs and chemical clouds, agricultural waste, pollution of groundwater.
- Evidence for local scale solutions: Sustainable domestic practices; recycling, water conservation, insulation. Lifestyle choices; modes of transport, shopping habits etc. The role of industry and company level decision making.
- Evidence for global scale solutions: Political discussion and cooperation, the role of China and India, Carbon taxes.
  The recognition that local scale solutions can contribute at a global scale – 'Think globally, act locally'.

L3 (8–10 marks)
Detailed consideration of problems and solutions, clearly based in candidate's wider study and both scales to the fore. Critical appraisal of outcomes.

L2 (5–7 marks)
Some consideration of problems and solutions, perhaps focussed on one change and with limited attention to either global or local. Some links to candidate's wider study apparent.

L1 (0–4 marks)
Limited consideration of problems and solutions. May be simply generally descriptive of change, lacking the global/local thrust of the question.

[Total: 15]

7 With reference to your own investigation of environmental degradation, discuss the strengths and limitations of the use of primary sources and secondary sources of information.

Begin by stating the question or hypothesis you investigated. [15]

Candidates should base their responses firmly in the results of their own investigation and quote evidence from that investigation to establish clearly the strengths and limitations of the primary and secondary sources used. Strengths of primary sources are likely to focus upon issues of reliability, which could be related to sampling techniques and sizes, accuracy of any equipment used and diligence in the collection process. Strengths of secondary sources are likely to focus on the reliability of published material. Limitations of primary sources are likely to focus on the difficulties involved in the data collection process, while limitations of secondary sources might consider how up-to-date the material is and the scale at which the material is available. Candidates should consider both strengths and weaknesses of both sources of information and provide some assessment of these strengths and weaknesses.

Possible strengths could include:
- a carefully and logically structured sampling framework with a good sample size that covered the area(s) chosen for study fully;
- the use of repeated readings to increase accuracy;
- the reliability of any equipment used and the diligence with which it was operated;
- the diligence with which any observational data ere recorded;
- the reliability of secondary sources used, which might include base maps at different scales, geology maps, hydrological and precipitation data from official sources.

Possible limitations could include:
- practical considerations, such as weather conditions, time limitations, accessibility and minimising risk;
- problems experienced with the equipment used;
- how up-to-date the secondary sources were;
- the scale at which secondary data were available.

L4 (13–15 marks)
Candidates cover a range of possible strengths and weaknesses of both primary and secondary sources. Discussions are detailed and show a clear understanding of the nature of the strengths and weaknesses identified. An assessment of the importance of these strengths and weaknesses is clear. The whole answer is clearly built around the candidate's own investigation.

L3 (10–12 marks)
Candidates cover a range of possible strengths and weaknesses of both primary and secondary sources. Discussions are detailed and show an understanding of the nature of the strengths and weaknesses identified, but may show an imbalance between primary and secondary sources or between strengths and weaknesses. An assessment of the importance of these strengths and weaknesses is present. The answer makes appropriate reference to the candidate's own investigation.

L2 (7–9 marks)
Candidates cover a narrow range of possible strengths and weaknesses of both primary and secondary sources. Discussions are sound and show some understanding of the nature of the strengths and weaknesses identified, but show an imbalance between primary and secondary sources or between strengths and weaknesses. An assessment of the importance of these strengths and weaknesses is present, but lacks any development. The answer makes appropriate reference to the candidate's own investigation, but some points made are rather generalised.

L1 (0–6 marks)
Candidates cover a narrow range of possible strengths and weaknesses and may concentrate on either primary or secondary sources. Discussions lack detail but show some understanding of the nature of the strengths and weaknesses identified. An assessment of the importance of these strengths and weaknesses is likely to be absent. The answer makes little appropriate reference to the candidate's own investigation, but some points made are rather generalised.

8 In your own investigation of environmental degradation, to what extent could the variations you found be explained?

Begin by stating the question or hypothesis you investigated. [15]

Candidates should base their responses firmly in the results of their own investigation and quote evidence from that investigation to establish clearly the variations observed. Variations observed could be spatial or temporal in nature or could represent variations from the expected pattern derived from theoretical or conceptual ideas. Explanations for the observed variations might relate to the underlying theories or concepts, the local geographical conditions or methodological issues. Candidates should evaluate how far these explanations help to explain the variations observed.

Variations could relate to:
- spatial variations in land degradation or pollution across an area or with distance from a source of land degradation or pollution;
- temporal variations in land degradation or pollution;
- differences in land degradation or pollution between different locations;
- the identification of anomalies to the normal or expected pattern.

Explanations could be based on one or more of the following:
- theoretical or conceptual ideas about the expected variations in land degradation or pollution, including the ideas of distance decay, dispersion and dilution;
- identification of specific geographical factors that might influence variations, such as atmospheric conditions or human impact;
- methodological issues relating to the reliability of the techniques used.

L4 (13–15 marks)
Candidates cover a range of possible explanations for the variations identified. Explanations are detailed and show a clear understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations. They are able to evaluate the relative importance of different factors in explaining variations. The whole answer is clearly built around the candidate's own investigation.

L3 (10–12 marks)
Candidates cover a range of possible explanations for the variations identified. Explanations are detailed and show an understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations. There is an attempt to evaluate the relative importance of different factors in explaining variations. The answer makes appropriate reference to the candidate's own investigation.

L2 (7–9 marks)
Candidates cover a narrow range of possible explanations for the variations identified. Explanations are sound and show some understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations, or a detailed understanding of one of these areas. The evaluation of the relative importance of different factors in explaining variations is present but lacks development. The answer makes appropriate reference to the candidate's own investigation, but some points made are rather generalised.

L1 (0–6 marks)
Candidates cover a narrow range of possible explanations for the variations identified. Explanations lack detail but show some understanding of the either underlying theoretical or conceptual ideas or other geographical factors or methodological issues relevant to their explanations. The answer provides explanations for variations, but includes little or no evaluation of these explanations. The answer makes little appropriate reference to the candidate's own investigation, but some points made are rather generalised.

Section C: Retail Patterns

9 Study Figs 7A and 7B which show information about two different types of food retailer in a large city in the UK using a Geographical Information System (GIS) based on postal districts.

Fig. 7A shows store location for a discount food retailer plotted against the percentage of households in social classes 4 and 5 (the lowest) from the Census. Fig. 7B shows market penetration by, and branch location of, one supermarket chain. Market penetration refers to the percentage of the market reached by that supermarket chain.

(a) Using Fig. 7A, describe the location of the discount food stores in relation to distance from the city centre. [2]

6 stores form an uneven ring within 4km of the city centre. 4 stores are located further out to the west and east, at distances of approx. 6-10km from the centre. Beyond this central belt of there are 3 'outliers' at approx. 14-24km. A full answer describes all stores' locations and gives distance data read using the key.

(b) Suggest two reasons for the relationships shown in Fig. 7B between the location of supermarket branches and market penetration. [4]

Possible reasons for the localised effects and distance decay relate to issues such as,

- the presence or absence of competition from other food retailers
- the role of supermarket advertising
- shoppers' personal preference, brand loyalty, etc.
- the nature of food as a commodity: heavy, bulky, some perishables e.g. dairy, bread
- the nature of food shopping as a low range activity
- the significance of shoppers' personal transport e.g. foot, car, courtesy bus.

Credit each suggested reason up to 2 marks.

(c) In Fig. 7A, to what extent is there a correlation between the location of this discount food retailer's stores and the residence of social classes 4 and 5? Use evidence from Fig. 7A to support your response. [6]

Candidates are likely to respond to some extent, to a certain extent, or similar. Some may observe the nature of the data and the relatively modest percentages of social classes 4 and 5 in even the highest category shown (maximum 22%).

Half the stores (7) are located in areas of residence of social classes 4 and 5 of 12.1% or greater. 3 stores are located in lower % areas but very close to areas of these highest percentages and 4 stores are in low % areas. Candidates may contrast the single store in the NW, away from the high % areas, with that in the NE, located in the lowest % area, but with the most extensive area of class 15.1-22% starting 6km away.

L3 (5–6 marks)
Clear and detailed assessment of the correlation recognising main pattern and anomalies or exceptions
Extensive and accurate data support for the assessment made.

L2 (3–4 marks)
Some assessment of correlation.
Provides data support for some of the observations made at the top end of this level.

L1 (0–2 marks)
Limited ability to recognise correlation and provide assessment, may simply describe.
Use of data support is inaccurate or lacking.

(d) The supermarket chain proposes to open a new branch at the location shown as Y in Fig. 7B. Analyse the limitations of the information given in Figs 7A and 7B when considering this possible addition to the city's retail pattern. [8]

Opening a new branch is complex in terms of retail dynamics and timing. It depends on past performance, the current situation which is partially shown and future trends which are not.

Fig. 7A gives some information about percentage households in the postal district for **Y** and nearby in classes 4 and 5. What it does not give is information about who else lives there in terms of households, income, etc. It also shows that this discount food retailer has no store near **Y**, but other food retailers, especially other supermarkets, are not known as Fig. 7B is also only about one chain. It is not simply incidence or location that matters but also store size, sales volume and turnover. Market penetration is clearly localised with a strong distance decay effect, so a new store in an unserved area could potentially capture the trade.

In addition, other types of information would be very useful, for example,
- road networks and access
- population growth and house building in the districts near to **Y**
- potential custom from settlements beyond the city boundary
- consumer survey around **Y** about shopping behaviour and consumer needs or wants
- City Council planning policy and other official decisions affecting the sector
- plans of rival supermarket chains.

L3 (6–8 marks)
Clear and detailed analysis of the information's usefulness and its limitations.
Extensive and accurate support for the analysis made.

L2 (3–5 marks)
Some analysis of usefulness and/or limitations, which may be unbalanced.
Provides support for some observations.

L1 (0–2 marks)
Limited ability to interpret figures and provide analysis, may simply describe.
Support is inaccurate or lacking.

[Total: 20]

10 (a) Fig. 8 shows the rental cost of prime retail space in four cities in the UK between 1994 and 2005.

Assess whether these four cities experienced the 'strong growth in prime retail rents' that was reported for the period shown. [5]

On the basis of the evidence candidates are likely to respond both to support and to challenge this viewpoint as the cities' experience. For example, whilst all four cities saw prime retail rents grow, in Nottingham growth was moderate compared to the other three. Leeds, Birmingham and Manchester each experienced upward trends in rents and short periods of strong growth within that, for example in Manchester,1997-1998. But there were flat periods of one or two years' duration, such as in Leeds 2002-2004, and, exceptionally, a drop in prime retail rents in Birmingham, 2001-2003, before a recovery.

L3 (4–5 marks)
Clear and detailed assessment of the cities' rents in relation to the statement.
Extensive and accurate data support for the assessment made.

L2 (2–3 marks)
Some assessment of the cities' rents and diverse experiences in terms of the statement.
Provides data support for some of the observations made at the top end of this level.

L1 (0–1 marks)
Limited ability to interpret data for cities' and provide assessment, may simply describe.
Use of data support is inaccurate or lacking.

(b) From your wider study of retail patterns, consider how changes in retail hierarchies have created both winners and losers. You may answer using examples at any scale. [10]

Candidates should identify more than one change that has occurred in retail hierarchies and groups/individuals/companies that have benefited or suffered as a result. Changes in retail hierarchies studied might include:

- Out-of-town developments; shopping malls; retail closure; the spread of large companies into 'convenience shopping', change in economic circumstances (e.g. industrial change); gentrification; transport improvements.

Winners and losers are loose terms which should be treated with some flexibility.

- 'Winners' could include large companies and their increasing share of the market, consumers, local councils and their 'planning gain'
- 'Losers' could include small convenience providers, specialist independent companies, consumers with reduced choice and access.

Top end candidates might cite how in some circumstances it would seem that change generates vastly more losers than it does winners (and vice versa) but that one rarely occurs in the complete absence of the other.

L3 (8–10 marks)
Detailed consideration of changes in retail hierarchies, clearly based in candidate's wider study. Critical appraisal of outcomes for both winners and losers.

L2 (5–7 marks)
Some consideration of retail hierarchies, perhaps focussed on one change and with limited attention to either winners or losers. Some links to candidate's wider study apparent.

L1 (0–4 marks)
Limited consideration of retail hierarchies and winners/losers. May be simply generally descriptive of change.

[Total: 15]

11 With reference to your own investigation of retail patterns, assess the strengths and limitations of the use of primary sources and secondary sources of information.

Begin by stating the question or hypothesis you investigated. [15]

Candidates should base their responses firmly in the results of their own investigation and quote evidence from that investigation to establish clearly the strengths and limitations of the primary and secondary sources used. Strengths of primary sources are likely to focus upon issues of reliability, which could be related to sampling techniques and sizes, accuracy of any equipment used and diligence in the collection process. Strengths of secondary sources are likely to focus on the reliability of published material. Limitations of primary sources are likely to focus on the difficulties involved in the data collection process, while limitations of secondary sources might consider how up-to-date the material is and the scale at which the material is available. Candidates should consider both strengths and weaknesses of both sources of information and provide some assessment of these strengths and weaknesses.

Possible strengths could include:
- a carefully and logically structured sampling framework with a good sample size that covered the area(s) chosen for study fully;
- the use of repeated readings to increase accuracy;
- the diligence with which information was gathered from people being interviewed;
- the diligence with which any observational data ere recorded;
- the reliability of secondary sources used, which might include base maps at different scales, GOAD maps, retail directories and census data.

Possible limitations could include:
- practical considerations, such as weather conditions, time limitations, accessibility and minimising risk;
- problems experienced with people refusing to be interviewed;
- how up-to-date the secondary sources were;
- the scale at which secondary data were available.

L4 (13–15 marks)
Candidates cover a range of possible strengths and weaknesses of both primary and secondary sources. Discussions are detailed and show a clear understanding of the nature of the strengths and weaknesses identified. An assessment of the importance of these strengths and weaknesses is clear. The whole answer is clearly built around the candidate's own investigation.

L3 (10–12 marks)
Candidates cover a range of possible strengths and weaknesses of both primary and secondary sources. Discussions are detailed and show an understanding of the nature of the strengths and weaknesses identified, but may show an imbalance between primary and secondary sources or between strengths and weaknesses. An assessment of the importance of these strengths and weaknesses is present. The answer makes appropriate reference to the candidate's own investigation.

L2 (7–9 marks)
Candidates cover a narrow range of possible strengths and weaknesses of both primary and secondary sources. Discussions are sound and show some understanding of the nature of the strengths and weaknesses identified, but show an imbalance between primary and secondary sources or between strengths and weaknesses. An assessment of the importance of these strengths and weaknesses is present, but lacks any development. The answer makes appropriate reference to the candidate's own investigation, but some points made are rather generalised.

L1 (0–6 marks)
Candidates cover a narrow range of possible strengths and weaknesses and may concentrate on either primary or secondary sources. Discussions lack detail but show some understanding of the nature of the strengths and weaknesses identified. An assessment of the importance of these strengths and weaknesses is likely to be absent. The answer makes little appropriate reference to the candidate's own investigation, but some points made are rather generalised.

12 In your own investigation of retail patterns, to what extent could the variations you found be explained?

Begin by stating the question or hypothesis you investigated. [15]

Candidates should base their responses firmly in the results of their own investigation and quote evidence from that investigation to establish clearly the variations observed. Variations observed could be spatial or temporal in nature or could represent variations from the expected pattern derived from theoretical or conceptual ideas. Explanations for the observed variations might relate to the underlying theories or concepts, the local geographical conditions or methodological issues. Candidates should evaluate how far these explanations help to explain the variations observed.

Variations could relate to:
- changes in the size and provision of retail functions from place to place;
- spatial patterns of retail provision within retail centres;
- differences in retail provision between different locations or at different times;
- the identification of anomalies to the normal or expected pattern.

Explanations could be based on one or more of the following:
- theoretical or conceptual ideas about expected spatial and temporal variations in retail patterns, such as hierarchy, range and threshold;
- identification of specific geographical factors that might influence variations, such as competition, accessibility and new retail developments;
- methodological issues relating to the reliability of the techniques used.

L4 (13–15 marks)
Candidates cover a range of possible explanations for the variations identified. Explanations are detailed and show a clear understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations. They are able to evaluate the relative importance of different factors in explaining variations. The whole answer is clearly built around the candidate's own investigation.

L3 (10–12 marks)
Candidates cover a range of possible explanations for the variations identified. Explanations are detailed and show an understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations. There is an attempt to evaluate the relative importance of different factors in explaining variations. The answer makes appropriate reference to the candidate's own investigation.

L2 (7–9 marks)
Candidates cover a narrow range of possible explanations for the variations identified. Explanations are sound and show some understanding of the underlying theoretical or conceptual ideas, other geographical factors and methodological issues relevant to their explanations, or a detailed understanding of one of these areas. The evaluation of the relative importance of different factors in explaining variations is present but lacks development. The answer makes appropriate reference to the candidate's own investigation, but some points made are rather generalised.

L1 (0–6 marks)
Candidates cover a narrow range of possible explanations for the variations identified. Explanations lack detail but show some understanding of the either underlying theoretical or conceptual ideas or other geographical factors or methodological issues relevant to their explanations. The answer provides explanations for variations, but includes little or no evaluation of these explanations. The answer makes little appropriate reference to the candidate's own investigation, but some points made are rather generalised.

APPENDIX: Generic levels for essay questions on Papers 1, 2 and 3

Level	Marks	Assessment criteria
5	22–25	• Wide-ranging, detailed and accurate knowledge and clear, high order understanding of the subject content • Relevant, detailed and accurate exemplification used effectively • Logical and clear organisation; good English expression; full and accurate use of geographical terminology • Well annotated and executed sketch maps/diagrams integrated fully with the text • Fully focused on the specific demands of the question • Systematic analysis and a critical approach to evaluation; appropriate application of concepts and theories • Conclusion shows high level insight and is logical and well founded on evidence and argument
4	18–21	• Good knowledge and depth of understanding of the subject content • Appropriate and well developed exemplification • Logical organisation; sound English expression; appropriate use of geographical terminology • Clearly annotated sketch maps/diagrams well integrated with the text • Well focused on the demands of the question • Elements of systematic analysis and ability to evaluate; generally appropriate application of concepts and theories • Conclusion is sound and based on evidence and argument
3	14–17	• Sound knowledge and understanding of the subject content lacking depth in some areas • Appropriate but partial exemplification, may not be integrated with the text • Generally clear communication but lacking some organisation; English expression and use of geographical terminology are mostly accurate • Sketch maps/diagrams generally used effectively and appropriately • Specific demands of the question mostly met • Some ability to analyse and evaluate; limited application of concepts and theories • Conclusion is limited and has some links to the rest of the response
2	10–13	• Some knowledge and understanding of the subject content lacking depth and detail • Exemplification used may be limited or not fully appropriate • Limited organisation; English expression is basic with some accurate use of geographical terminology • Sketch maps/diagrams may have inaccuracies and limited relevance • Question is addressed broadly or partially • Analysis, evaluation and application of concepts and theories are limited and may be superficial • Conclusion is basic and may not be linked to the rest of the response
1	0–9	• A little knowledge and understanding of the subject content; response may also contain unconnected material • Exemplification, if used, is simple and poorly related to the text or may not be relevant • Lack of clarity and organisation; English expression is simple with inaccuracies; geographical terminology, if used, is basic or not understood • Sketch maps/diagrams are limited or poorly executed and may lack relevance • Question is understood weakly and may be addressed slightly • Superficial statements replace analysis and evaluation; application may be minimal or absent • Conclusion may be absent or simply asserted

Use of the Generic Mark Scheme

The Generic Mark Scheme is used together with the indicative content for each essay question.

Responses may be placed in any level without fulfilling all the descriptors for that mark band, for example where the essay does not lend itself to the use of sketch maps and diagrams. Responses may exhibit characteristics of more than one Level and so examiners use the principle of best fit in determining response quality. The grid below gives an indication of the relative weightings of the Assessment Objectives at each Level.

Level	Marks	AO1 Knowledge and Understanding	AO2 Skills	AO3 Analysis and Evaluation
5	**22–25**	15	3	7
4	**18–21**	14	2	5
3	**14–17**	12	2	3
2	**10–13**	10	1	2
1	**0–9**	8	0	1
Total		15	3	7

Specification Grid for Pre-U Geography

Specimen Papers 2008 **Paper 1 Geographical Issues**

Assessment Objectives		AO1 Knowledge and Understanding	AO2 Skills	AO3 Analysis and Evaluation
Specified total for the paper = 105 Total marks per question Section A–B = 20, Section C = 25 Total per Q in Sections A–B Total per Q in Section C		51 marks 9 marks 15 marks	27 marks 6 marks 3 marks	27 marks 5 marks 7 marks
Section A **Tectonic Hazards** Q. 1	(a) [2] (b) [4] (c) [5] (d) [9]	2 2 - 5	- 2 2 2	- - 3 2
Hazardous Weather Q. 2	(a) [2] (b) [4] (c) [5] (d) [9]	2 - 2 5	- 3 2 1	- 1 1 3
Hydrological Hazards Q. 3	(a) [2] (c) [4] (d) [5] (e) [9]	2 - 1 6	- 2 3 1	- 2 1 2
Section B **The Geography of Crime** Q. 4	(a) [2] (b) [4] (c) [5] (d) [9]	2 - 2 5	- 4 1 1	- - 2 3
Health and Disease Q. 5	(a) [2] (b) [4] (c) [5] (d) [9]	2 - 2 5	- 2 3 1	- 2 - 3
Spatial Inequality and Poverty Q. 6	(a) [2] (b) [4] (c) [5] (d) [9]	- 1 3 5	2 2 1 1	- 1 1 3
Section C Q. 7, 8 and 9		15	3	7

Instructions for completion by the setter(s)

Please refer to the relevant pages of the syllabus document in order to ensure that the question paper complies with the assessment requirements.

The above table should be completed and submitted with the first draft. It should be amended in the light of any changes made to the question paper and a final version submitted with the final draft.

Ideally all questions should have a similar distribution of marks in relation to the Assessment Objectives 1–3

Instructions for the reviser

Please refer to the relevant pages of the syllabus document in order to ensure that the question paper complies with the assessment requirements.

The weightings provided by the setter(s) must be checked against the question paper and the setter(s) informed of any disagreement/difficulty. This should be checked at first draft, QPEC and first proof stages.

Specification Grid for Pre-U Geography

Specimen Papers 2008 **Paper 2 Global Environments**

Assessment Objectives	AO1 Knowledge and Understanding	AO2 Skills	AO3 Analysis and Evaluation
Specified total for the paper = 50	30 marks	6 marks	14 marks
Total marks per question = 25	15 marks	3 marks	7 marks

Instructions for completion by the setter(s)

Please refer to the relevant pages of the syllabus document in order to ensure that the question paper complies with the assessment requirements.

The above table should be completed and submitted with the first draft. It should be amended in the light of any changes made to the question paper and a final version submitted with the final draft.

Ideally all questions should have a similar distribution of marks in relation to the Assessment Objectives 1–3

Instructions for the reviser

Please refer to the relevant pages of the syllabus document in order to ensure that the question paper complies with the assessment requirements.

The weightings provided by the setter(s) must be checked against the question paper and the setter(s) informed of any disagreement/difficulty. This should be checked at first draft, QPEC and first proof stages.

Specification Grid for Pre-U Geography

Specimen Papers 2008 **Paper 3 Global Concerns**

Assessment Objectives	AO1 Knowledge and Understanding	AO2 Skills	AO3 Analysis and Evaluation
Specified total for the paper = 50	30 marks	6 marks	14 marks
Total marks per question = 25	15 marks	3 marks	7 marks

Instructions for completion by the setter(s)

Please refer to the relevant pages of the syllabus document in order to ensure that the question paper complies with the assessment requirements.

The above table should be completed and submitted with the first draft. It should be amended in the light of any changes made to the question paper and a final version submitted with the final draft.

Ideally all questions should have a similar distribution of marks in relation to the Assessment Objectives 1–3

Instructions for the reviser

Please refer to the relevant pages of the syllabus document in order to ensure that the question paper complies with the assessment requirements.

The weightings provided by the setter(s) must be checked against the question paper and the setter(s) informed of any disagreement/difficulty. This should be checked at first draft, QPEC and first proof stages.

Specification Grid for Pre-U Geography

Specimen Papers 2008 **Paper 4 Research Topic**

Assessment Objectives	AO1 Knowledge and Understanding	AO2 Skills	AO3 Analysis and Evaluation
Specified total for the paper = 50	10 marks	25 marks	15 marks
Total marks Qs 1, 5, 9 = 20	2 marks	10 marks	8 mark
Total marks Qs 2, 6, 10 = 15	5 marks	6 marks	4 marks
Total marks Qs 3, 4, 7, 8, 11, 12 = 15	3 marks	9 marks	3 marks
Section A **Fluvial Geography** Q. 1	2	10	8
Q. 2	5	6	4
Q. 3	3	9	3
Q. 4	3	9	3
Section B **Environmental Degradation** Q. 5	2	10	8
Q. 6	5	6	4
Q. 7	3	9	3
Q. 8	3	9	3
Section C **Retail Patterns** Q. 9	2	10	8
Q. 10	5	6	4
Q. 11	3	9	3
Q. 12	3	9	3

Instructions for completion by the setter(s)

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The above table should be completed and submitted with the first draft. It should be amended in the light of any changes made to the question paper and a final version submitted with the final draft.

Ideally all questions should have a similar distribution of marks in relation to the Assessment Objectives 1–3

Instructions for the reviser

Please refer to the relevant pages of the syllabus document in order to ensure that the question paper complies with the assessment requirements.

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