Rewarding Learning

REVISED GCE AS LEVEL

Exemplifying Examination Performance

Geography

For first teaching from September 2008

This is an exemplification of candidates' performance in AS examinations (Summer Series 2009) to support the teaching and learning of the Geography specification

Contents

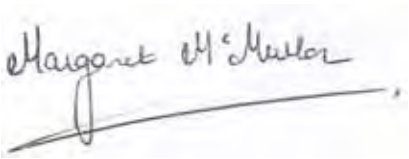
1 Introduction

CCEA is committed to providing a comprehensive and innovative support package for all teachers and learners. This document has been designed to exemplify examination performance and to support you in the teaching of CCEA GCE AS Geography. It contains examples of candidates' responses from the 2009 series of AS examinations. Each candidate response carries a commentary by a senior examiner.

I hope you find this support useful in your teaching.

For further details of our support package, please visit our website at www.ccea.org.uk.

Best wishes



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Subject Officer
Geography

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2 Assessment Unit AS 1 (AG111)

Exemplification of Good and Poor Exam Technique Responses

This section contains:

Unit AS 1: Question Paper

Unit AS 1: Good Exam Technique Response Commentary

Unit AS 1: Poor Exam Technique Response Commentary

Note that this exercise deals with consolidated papers made up from the work of a number of different candidates. All three of the essay questions in Section C are included in each case. The selected answers are bundled into four scripts: two exemplifying good exam technique and two exemplifying poor exam technique.

Unit AS 1:
Question Paper

New Specification

Rewarding Learning

Centre Number

71	

Candidate Number

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2009

Geography

Assessment Unit AS 1

assessing

Physical Geography

[AG111]

AG111

FRIDAY 5 JUNE, MORNING

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Section A: candidates must answer this section.
Section B: answer **all three** questions in this section, you should write your answers in the spaces provided in this question paper.
Section C: answer any **two** questions from this section. Write your answers to Section C on the lined paper at the end of this booklet.
At the end of the examination your summary of fieldwork and table of data should be attached securely to this paper using the treasury tag supplied.

INFORMATION FOR CANDIDATES

The total mark for this paper is 90.
Quality of written communication will be assessed in **all** questions.
Figures in brackets printed down the right-hand side of the pages indicate the marks awarded to each question or part question.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
Total Marks	

Section A

Answer this section.

Submitted summary of fieldwork and table of data.
At the end of the examination these should be attached securely to this paper using the treasury tag supplied.

Examiner Only	
Marks	Remark

1 **(a)** With reference to **one** potential hazard associated with your fieldwork, discuss how it was identified and the efforts made to manage this risk.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ [5]

(b) (i) Describe in detail **two** of the primary data collection methods used in your fieldwork.

Examiner Only	
Marks	Remark

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ [6]

(ii) Discuss possible strengths and limitations for **one** of these methods.

_____

_____

_____

_____

_____

_____ [3]

Examiner Only	
Marks	Remark

(c) (i) Select **one** of the following statistical techniques relevant to the aim of your investigation. In the box below apply this technique to your data and, if relevant, comment on the statistical significance of the outcome.

- Spearman's Rank Correlation
- Nearest Neighbour Analysis
- Measures of Central Tendency **and** Dispersion (mean, median, mode **and** range) [7]

Formulae, significance graphs and tables are provided in **Resource 1A** and **1B** on pages 6 and 7.

Chosen Technique: _____ [no mark]

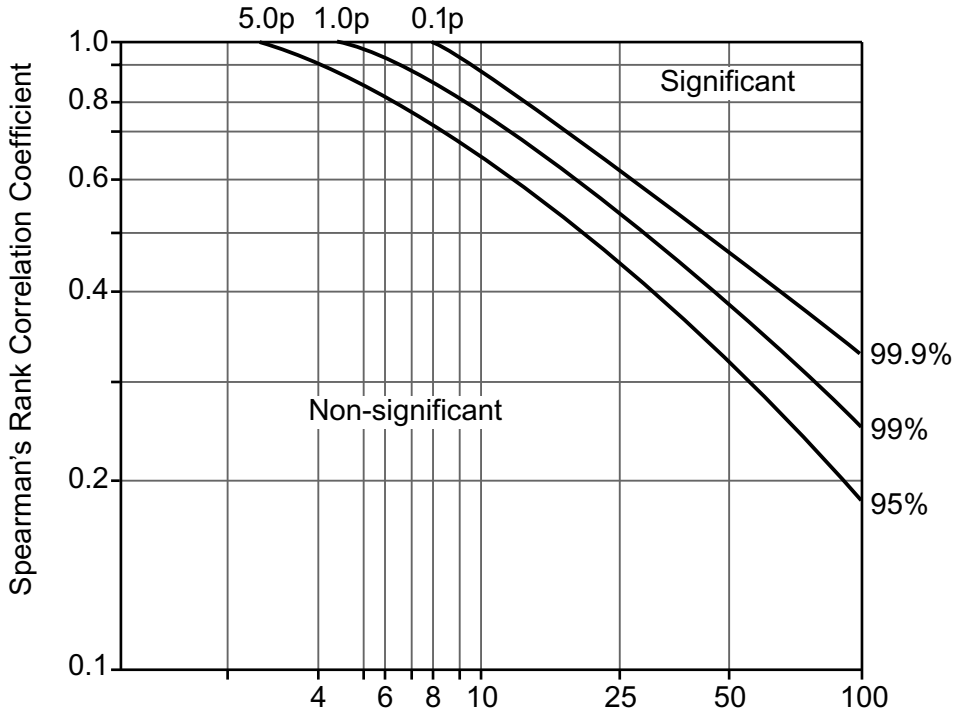
Resource 1A

Spearman's Rank Correlation Equation and Significance Charts

Formula: $$r_s = 1 - \left(\frac{6\Sigma d^2}{n^3 - n} \right)$$

where d = the difference in rank of the values of each matched pair
n = the number of ranked pairs
Σ = the sum of

Spearman's Rank Correlation Significance Graph and Table



Degrees of freedom [Number of ranked pairs (n) – 2]

Critical values of Spearman's Rank Correlation Coefficient, r_s

	Significance level	
degrees of freedom	**0.05 (5%)**	**0.01 (1%)**
4	0.88	1.00
5	0.83	0.96
6	0.80	0.91
7	0.77	0.87
8	0.72	0.84
9	0.68	0.80
10	0.64	0.77
11	0.60	0.74
12	0.57	0.71
15	0.50	0.65
20	0.47	0.59
25	0.44	0.54
30	0.39	0.48
40	0.35	0.43
50	0.31	0.38

Resource 1B

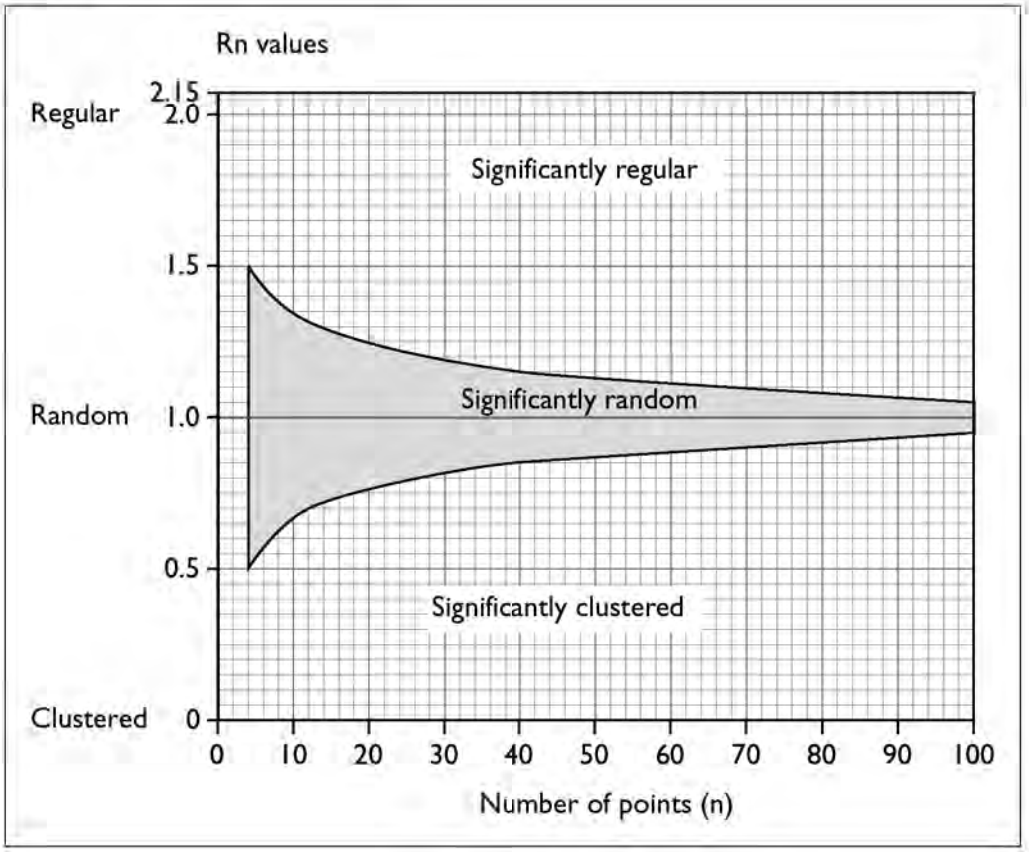
Nearest Neighbour Index Equation and Significance Graph

Formula:

$$Rn = 2\bar{d}\sqrt{\frac{n}{A}}$$

where $\bar{d}$ = the mean distance between nearest neighbours
n = number of points
A = area in question

Significance Graph



Examiner Only	
Marks	Remark

(ii) With reference to relevant theory and the aim of your fieldwork, discuss the **geographical** conclusion(s) which can be drawn from this statistical analysis.

[6]

(d) Outline **one** way in which your investigation could be modified, or improved, and explain how this could provide a more reliable conclusion.

[3]

Section B

Answer **all three** questions in this section.

Examiner Only	
Marks	Remark

2 (a) Choose **any two** of the following factors and explain how they affect river discharge and the storm hydrograph.

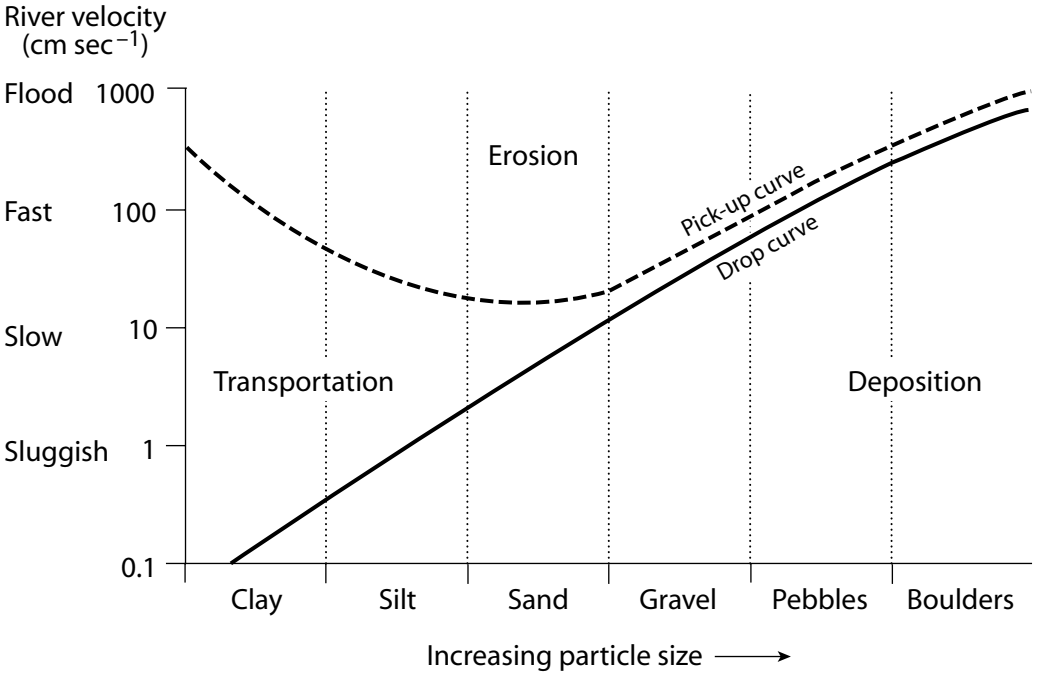
soil
geology
land use
precipitation
drainage density

[6]

(b) Study **Resource 2**, which shows the Hjulstrom curves.

Examiner Only	
Marks	Remark

Resource 2



Source: adapted from widely available sources

(i) When a river's velocity is 10 cm sec^{-1} what is the largest type of particle that can be transported?

_____ [1]

(ii) Following a storm, the river's velocity falls from over 100 to 1 cm sec^{-1}.

Using information from **Resource 2**, describe and explain what happens to the river's load during this period.

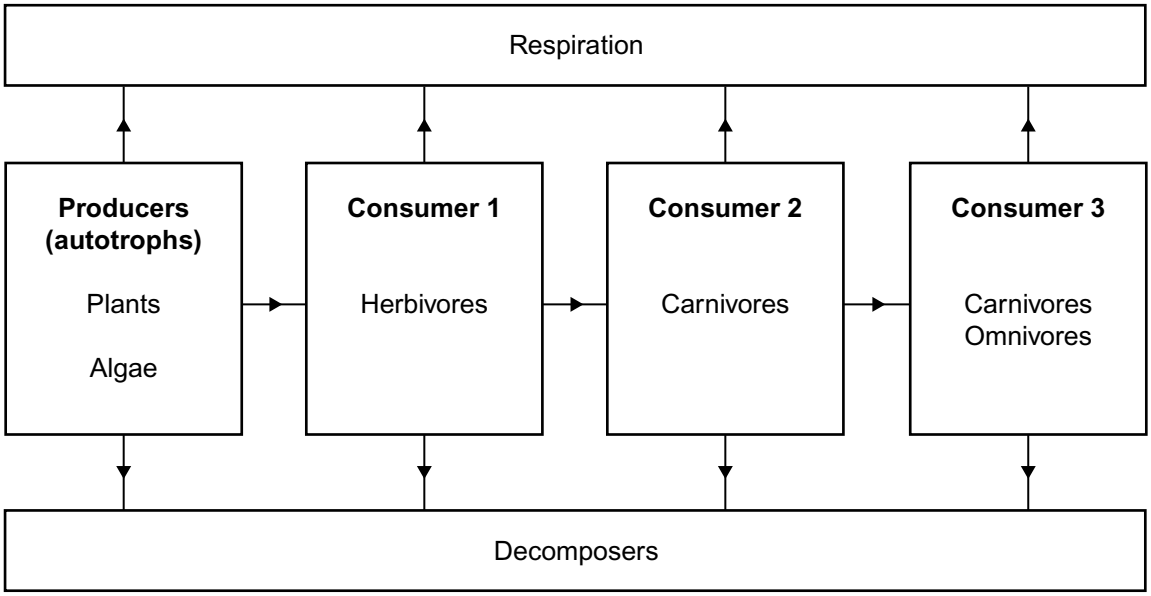
[5]

Examiner Only	
Marks	Remark

3 Study **Resource 3** showing the energy flow in an ecosystem.

Examiner Only	
Marks	Remark

Resource 3



Source: adapted from widely available sources

(a) Using **Resource 3**, describe and explain the movement of energy through the named small scale ecosystem you have studied.

[6]

(b) Describe and explain any **two** characteristics of mid-latitude grassland ecosystems.

Examiner Only	
Marks	Remark

[6]

4 **(a)** Draw an annotated diagram of a hurricane in the box below. With reference to your diagram, describe the structure of a hurricane.

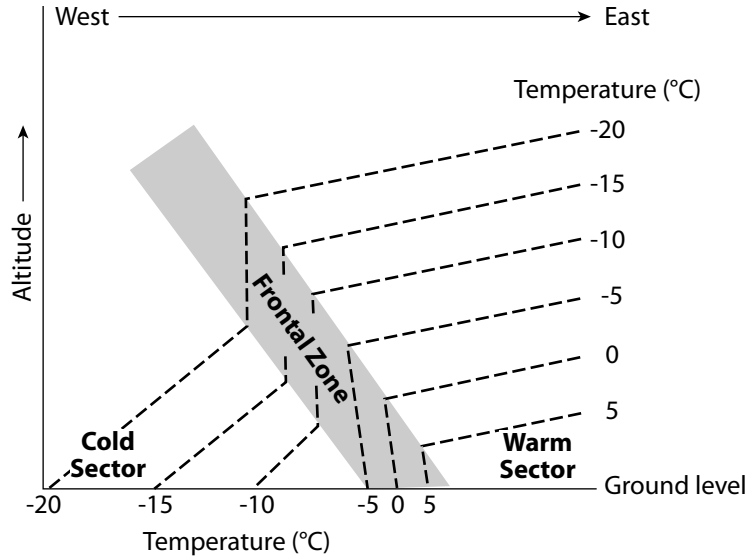
Examiner Only	
Marks	Remark

[8]

Examiner Only	
Marks	Remark

(b) Study **Resource 4** which shows the cross-section of one of the fronts of a mid latitude depression in the northern hemisphere.

Resource 4



Source: Advanced Geography Revision Handbook, Nagle and Spencer, ISBN 0-19-914668-3

(i) What type of front is shown in **Resource 4**?

_____ [1]

(ii) Using information from **Resource 4**, describe how temperature changes horizontally (at ground level), and vertically.

_____

_____

_____

_____

_____

_____ [3]

Section C

Answer **any two** questions in this section.

Examiner Only	
Marks	Remark

5 With reference to a case study of flooding in a large scale drainage basin or its delta, describe and explain the physical and human causes of the flooding. [12]

6 Describe and explain the characteristics of one vegetation succession you have studied. [12]

7 Describe the formation of an anticyclone. Explain the weather associated with a winter anticyclone and discuss its impacts on people. [12]

Unit AS 1:
Good Exam Technique Response

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For Examiner's use only	
Question Number	Marks
1	28
2	12
3	12
4	12
5	11
6	11
7	12
Total Marks	98

Section A

Answer this section.

Submitted summary of fieldwork and table of data.
At the end of the examination these should be attached securely to this paper using the treasury tag supplied.

Examiner Only	
Marks	Remark
28	

1 (a) With reference to **one** potential hazard associated with your fieldwork, discuss how it was identified and the efforts made to manage this risk.

Drowning ✓H was one potential hazard. We identified sites that were safe an accessible at the Glen river by conducting a pilot study I. to assess the safest and most accessible sites. We were also given a safety talk ✓m beforehand by a guide of the forest to tell us to safety precautions around the river. We were given boots/ wellies to m wear which provided us with the appropriate equipment m. to prevent falling into the river. and drowning. [5]

H-1
I-1
M-3

5/5

(b) (i) Describe in detail **two** of the primary data collection methods used in your fieldwork.

a.) Bedload. To measure this we collected 25 stones randomly from the river. We lined them up according to size largest to smallest. Then we took a ruler and measured the length, breadth and height. We used the stone board index to find if it was circular, angular or rounded and placed then back into the river after recording the answer. This was random sampling which we used.

3/3.

b.) Velocity To measure the speed of the river we measured a 5km stretch of water. Person one stood at the top with the measuring (page 17) Seen [6]

3/3

(ii) Discuss possible strengths and limitations for **one** of these methods.

Strengths of velocity was that it was quick and easy to use. It involved three people so using the best use of resources. However sometimes the velocity float - the cork got stuck on rocks and this waisted time. A velocity flow meter in this case would have proved to be much more beneficial. [3]

limitation developed

3/3

Examiner Only

Marks	Remark
6/6.	
3/3	

(c) (i) Select **one** of the following statistical techniques relevant to the aim of your investigation. In the box below apply this technique to your data and, if relevant, comment on the statistical significance of the outcome.

- Spearman's Rank Correlation
- Nearest Neighbour Analysis
- Measures of Central Tendency **and** Dispersion (mean, median, mode **and** range) [7]

Formulae, significance graphs and tables are provided in **Resource 1A** and **1B** on pages 6 and 7.

Examiner Only	
Marks	Remark
7/7	

Chosen Technique: Spearman's Rank Correlation [no mark]

Site No.	Distance from source (km) (x)	Discharge (cm^3s^{-1}) (y)	Rank (x)	Rank (y)	Difference in Ranks (D)	D^2
1	0.25	0.98	10 ✓	10 ✓	0	0 ✓
2	0.75	3.43	9 ✓	8 ✓	1	1 ✓
3	1.0	2.31	8 ✓	9 ✓	-1	1 ✓
4	1.5	14.36	7 ✓	6 ✓	1	1 ✓
5	1.75	7.24	6 ✓	7 ✓	-1	1 ✓
6	2.9	15.24	5 ✓	5 ✓	0	0 ✓
7	3.75	38.62	4 ✓	2 ✓	2	4 ✓
8	4.5	32.80	3 ✓	4 ✓	-1	1 ✓
9	5.0	58.34	2 ✓	1 ✓	1	1 ✓
10	6.5	34.13	1 ✓	3 ✓	-2	4 ✓
						$\Sigma = 14$ ✓

$$r_s = 1 - \left(\frac{6\Sigma d^2}{n^3 - n}\right)$$

$$r_s = 1 - \frac{6 \times 14}{1000 - 10}$$

$$r_s = 1 - \frac{84}{990}$$ ✓

$$r_s = 1 - 0.0848$$

$$r_s = 0.915$$ ✓

This number 0.915 shows a strong positive correlation. As distance from source increases so to does river discharge In order to be really reliable you must test for significance The degrees of freedom are $n - 2$

$10 - 2 = 8$

At the 99% level of significance this figure is significant such that it is not due to chance factors.

(99% level mean that 1 time out of 100 it may have occured by chance.)

C = 5

I = 2.

Resource 1A

Spearman's Rank Correlation Equation and Significance Charts

Formula:

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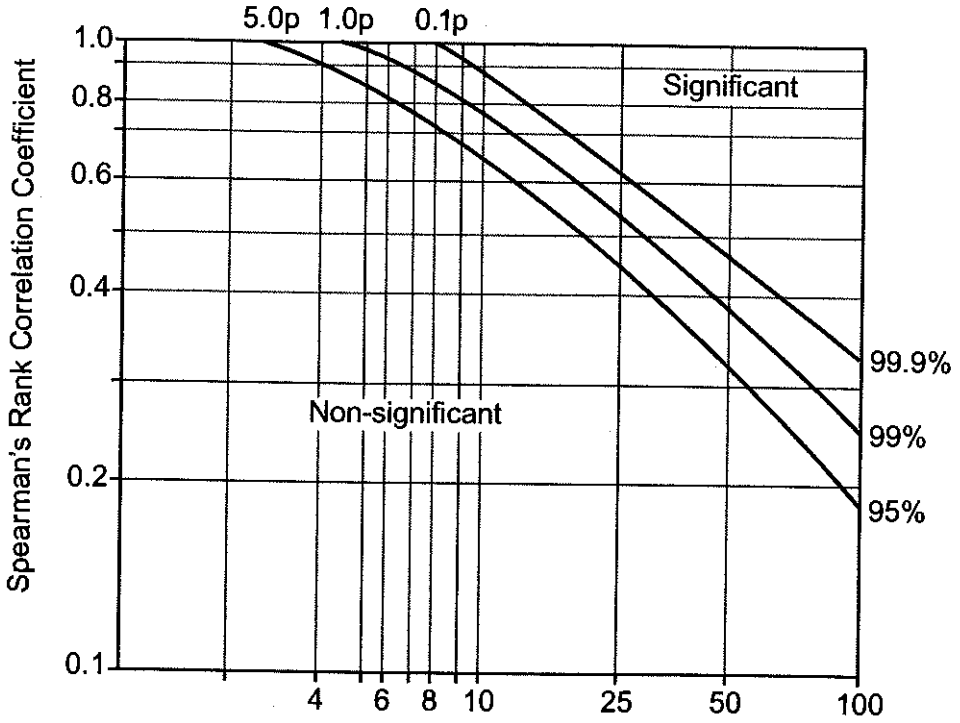
Σ = the sum of

Spearman's Rank Correlation Significance Graph and Table

Critical values for r_s



Degrees of freedom [Number of ranked pairs (n) – 2]

Critical values of Spearman's Rank Correlation Coefficient, r_s

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50	0.31	0.38

Resource 1B

Nearest Neighbour Index Equation and Significance Graph

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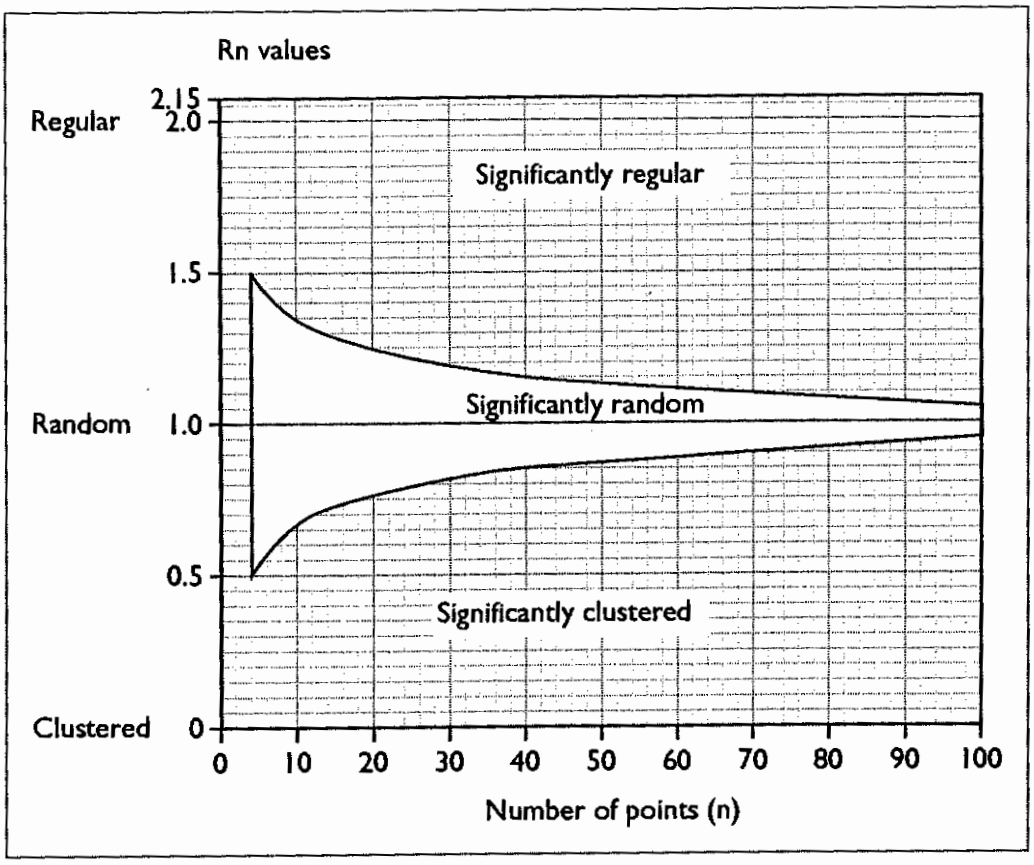
where $\bar{d}$ = the mean distance between nearest neighbours
n = number of points
A = area in question

Significance Graph



(ii) With reference to relevant theory and the aim of your fieldwork, discuss the **geographical** conclusion(s) which can be drawn from this statistical analysis.

Examiner Only | Marks | Remark

As distance from source increases so to does river discharge. Discharge is the amount of water passing at a gauging station at a river in a given time. Measured by cross sectional area x velocity. At the start of a river the river doesn't have a lot of energy to erode here 95% of the energy is used to overcome friction by large boulders and transport large pieces of sediment. Erosion is vertical erosion. Further downstream the velocity increases due to an increase in river depth and wider channel. Erosion takes place due to more energy and you have abrasion, attrition, hydraulic [6]
action and solution wearing away the bank and bed of the river. ⊕.

4/6

⊕ The middle course may cause a meander. On outside bend due to greater velocity and depth there is erosion and river cliff. On inside bend velocity is reduced as it goes around a bend and water is shallower.

Detailed exp of Velocity but no exp. of Water Volume (CSA) :. Max L2 for partial ans

(d) Outline **one** way in which your investigation could be modified, or improved, and explain how this could provide a more reliable conclusion.

Investigation could be improved by carrying out two river studies and by seeing the changes this has to the final overall conclusion. If you carried out a study in Autumn trees loose their leaves and there is less interception so much more discharge. In Spring the trees have leaves so more [3]
interception and evapotranspiration so less discharge in river. This will have an adverse effect and can produce an more reliable conclusion.

✓ Could relate to present hypotheses

yes – modify. explained fully

3/3

Section B

Examiner Only
Marks | Remark
9

Answer **all three** questions in this section.

2 (a) Choose **any two** of the following factors and explain how they affect river discharge and the storm hydrograph.

soil
geology
land use
precipitation
drainage density

Discharge is the amount of water passing a gauging station at a given point in time. A storm hydrograph records how well the storm answers to a time of heavy flooding.

Geology can have an effect on river discharge. If the underlying rock type is permeable such as limestone this means that it can hold water so less discharge. This will have a "flat" hydrograph with a long lag time and long base flow. If underlying rock is more permeable it will not let percolation take place. This will be characterised by a 'flashy' hydrograph of high discharge, steep slopes and a short lag time. Land use can also have an effect on [6]
hydrograph

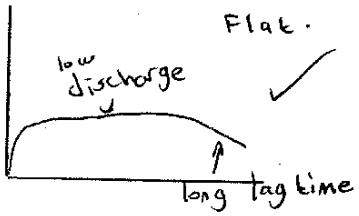
the hydrograph. If land is in a vegetated area eg a forestry there will be much more interception and so less discharge this has the 'flat' characteristic. If it is an urbanised area the concrete and tarmac have replaced the vegetation and so are impermeable. this results in surface runoff just like the 'flashy flood'.

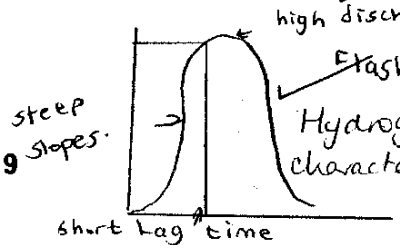
3/3.

Detailed ans.

3/3.

6/6





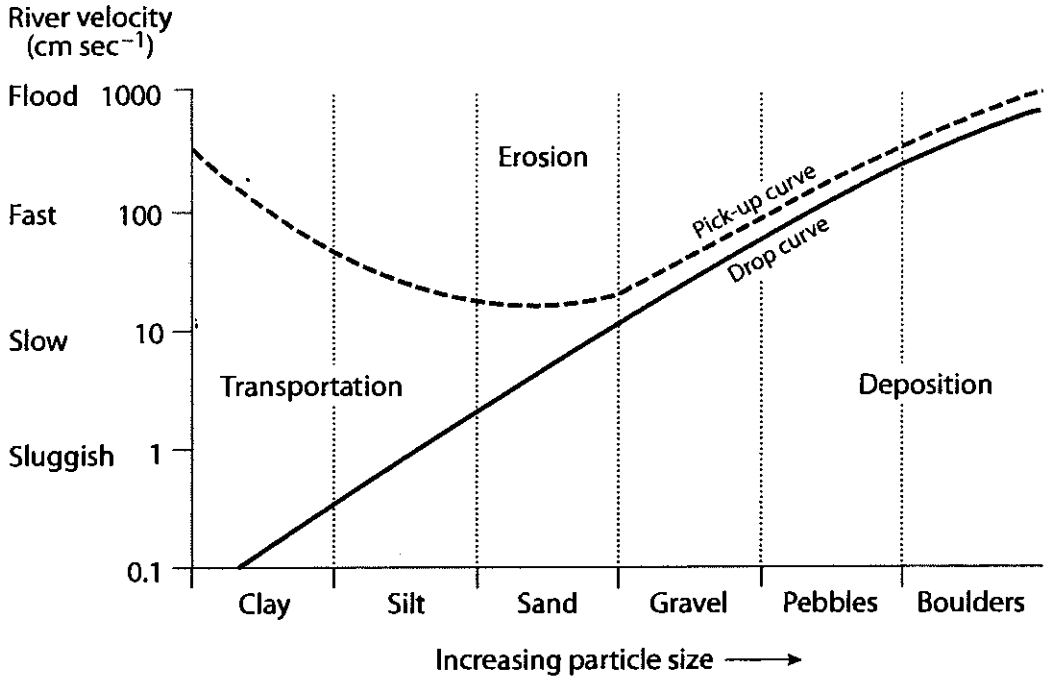
4978

9

[Turn over

(b) Study **Resource 2**, which shows the Hjulstrom curves.

Resource 2



Source: adapted from widely available sources

(i) When a river's velocity is 10 cm sec^{-1} what is the largest type of particle that can be transported?

Sand ✓ [1]

1/1

Examiner Only

Marks	Remark

(ii) Following a storm, the river's velocity falls from over 100 to 1 cm sec^{-1}.

Using information from **Resource 2**, describe and explain what happens to the river's load during this period.

The dramatic fall in velocity means the river has less energy to carry heavier material and so the material is dropped starting with the heaviest, Pebbles at first under 100 cm sec^{-1}, Gravel is the next bedload particle to be dropped at approximately 75 cm sec^{-1}, followed by Sand at just over 10 cm sec^{-1} and Silt at around 3.5 cm sec^{-1}. Clay, however, stays in suspension as its particular size is very small and although it takes [5]

a lot of energy to pull it up due to its cohesive nature, once in suspension, it can stay in the river until it nearly becomes Static!

Good understanding & Res. ref.

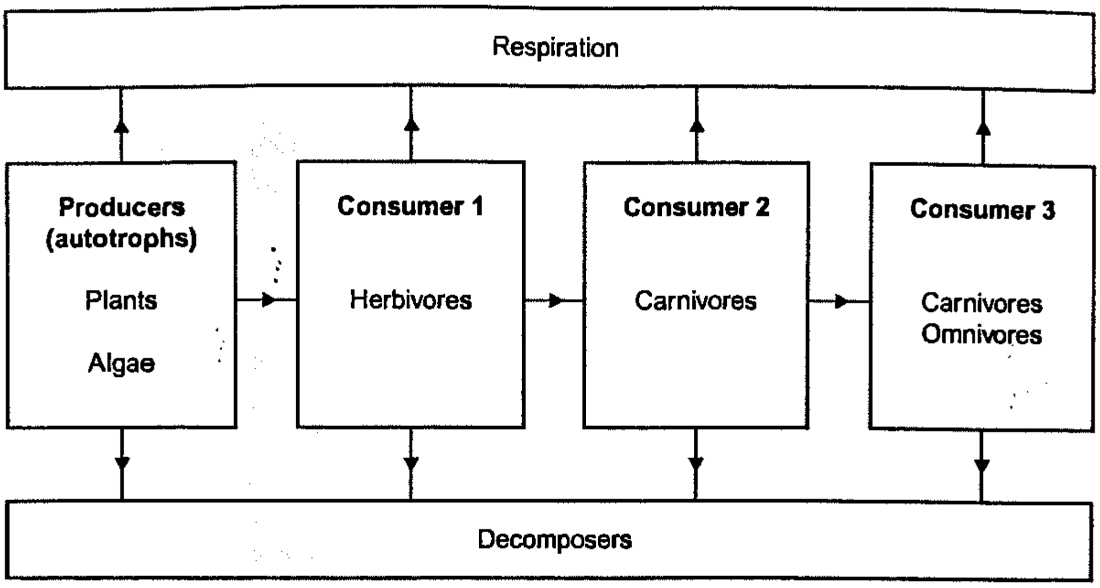
Examiner Only	
Marks	Remark
5/5	

3 Study **Resource 3** showing the energy flow in an ecosystem.

Examiner Only
Marks | Remark

9

Resource 3



Source: adapted from widely available sources

(a) Using **Resource 3**, describe and explain the movement of energy through the named small scale ecosystem you have studied.

Breen wood, ~~or~~ fairy Palace in Irish Gaelic, is an oak forest. An example of an autotroph would be Hawthorn or oak trees. These autotrophs can produce their own energy from the sun through the process of photosynthesis. A leave of the oak tree may be eaten by a ~~small~~ orange tipped butterfly, ~~which~~ a herbivore, which may be eaten by a golden tit, a carnivore, and eventually eaten by a fox or stout which are **[6]** carnivores and omnivores. At each stage energy is lost due to respiration, growth, movement and excretion. When the organisms die the energy and nutrients are recycled by biota ~~which~~ such as the earthworm. The number of organisms gets smaller as you

sp fixation sp sp sp Loss L3 6/6.

(b) Describe and explain any **two** characteristics of mid-latitude grassland ecosystems.

Mid latitude grassland ecosystems have very ~~dark brown~~ even black soils and this is due to the seasonal influx of nutricients the litter layer of herbaceous plants and grasses ~~which~~ which are broken down by soil fauna and detrivores maintaining the dark colour. ~~This ecosystem also ... this ecosystem ... variations in rainfall as the ...~~ ~~Better~~ Mid latitude ecosystems have ideal soils between 1-2 m, compared to the 30-40cm of garden soils. This is due to **[6]**

3/3

the recycling of litter material and the active soil fauna as well as the base rock which contributes nutrients to these post ice ~~age~~ soils, through capillary action in many cases.

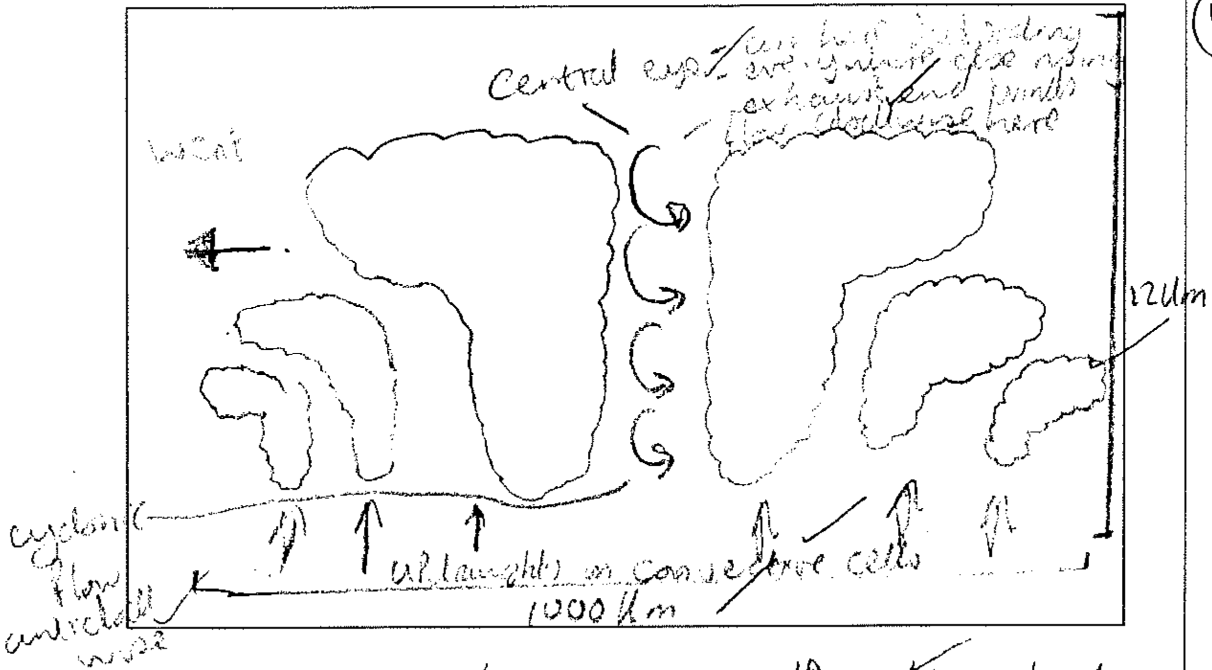
3/3

Examiner Only	
Marks	Remark
6/6 4 mR	

up the food chain due to energy loss

4 (a) Draw an annotated diagram of a hurricane in the box below. With reference to your diagram, describe the structure of a hurricane.

Examiner Only	
Marks	Remark
(12)	



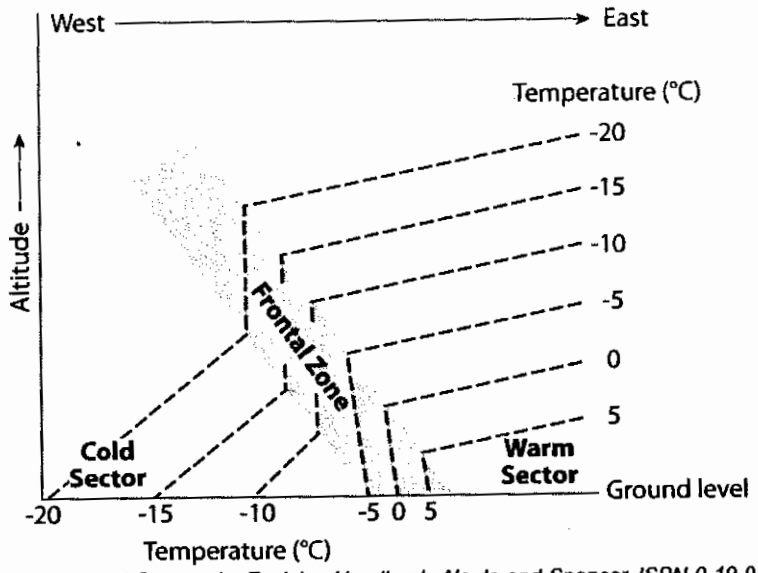
Hurricanes have cumulo nimbus clouds extending 12 km high up into the troposphere due to the release of latent energy from rising damp air. They are commonly 500 – 1000 km in width and they travel westward away from the equator. They have a central eye with light winds and clear skies where air is subsiding everywhere else it is rising in updraughts in convective cells. at the surface the air flows inwards and anticlockwise, cyclonic flow. Aloft it flows outwards and clockwise. Hurricanes only die when their fuel of warm damp air is cut off ie air under 26°c to a depth of 60m or over land. **[8]**

scale
horiz. scale
L3 8/8

Examiner Only	
Marks	Remark

(b) Study **Resource 4** which shows the cross-section of one of the fronts of a mid latitude depression in the northern hemisphere.

Resource 4



Source: Advanced Geography Revision Handbook, Nagle and Spencer, ISBN 0-19-914668-3

(i) What type of front is shown in **Resource 4**?

Cold front ✓ [1]

1/1

(ii) Using information from **Resource 4**, describe how temperature changes horizontally (at ground level), and vertically.

With increasing ~~As the air rises~~ altitude the air cools adiabatically from 5°C in the warm sector near the ground ✓ to -20°C higher in the atmosphere. This is due to the air expanding. The temperature changes horizontally as in the warm sector it is about 5°C, but in the cold sector it is as low as -20°C. [3]

As the cold sector moves in, it displaces the warm sector causing lower temperatures along the ground. Both trends, with values

3/3

Section C

Answer **any two** questions in this section.

Examiner Only	
Marks	Remark

5 With reference to a case study of flooding in a large scale drainage basin or its delta, describe and explain the physical and human causes of the flooding. [12]

6 Describe and explain the characteristics of one vegetation succession you have studied. [12]

7 Describe the formation of an anticyclone. Explain the weather associated with a winter anticyclone and discuss its impacts on people. [12]

Question Number

Number your answers clearly

(1bi) and person two to catch the float. Person 3 was there to start the timer. The cork was placed in the left hand side of the bank and person 3 started the timer. The same idea was took when measuring middle coarse and right hand side bank. we recorded the results.

Seen - marks on Page 4

Question Number

Number your answers clearly

11

5. Bangladesh is located in southern Asia. It is found around the land of Bengal. 80% of the land is extremely low lying (P) ✓ Relief which make it suspectible to flooding. Here in Bangladesh it is whereby two rivers meet the (P) ✓ Confluence Ganges and the Bramaputra rivers. This means that there is an increase in discharge running through ✓ Bangladesh. It also lies just 1m above sea level. (P) ✓ Altitude

Some of the physical causes which led to the flooding of Bangladesh in the summer of 1998 was firstly spring (P) ✓ Snowmelt. Bangladesh lies just under the Himalayas mountains. These mountains have 6,000 peaks of snow. Due to an increase in spring temperatures in April to may to about 25 - 29° c ✓ these mountains melted. This resulted in 1320 million tonnes ✓ of alluvial sediment running down the 2500 km length rivers in Bangladesh. The soils became extremely saturated and the water table increased ✓ --> SC. One benefit from this however was that it did deposit alluvial sediment for growing crops to create Bengal the Golden.

A second cause was the (P) ✓ Monsoon rains. This climate in Banglash is warm and wet. The monsoon rains of 1250- 1350mm ✓ of rainfall in the six months of summer and from November to April ✓ 300- 400mm cause a huge

Question Number

Number your answers clearly

amount of ungolog water at the one time. The soils cannot infiltrate it in and they become waterlogged. This results in surface runoff and increased discharge running into the rivers where the Ganges burst it's banks.

Causes can also be put onto human activities. One such cause is the straightening of a river. (H) Channelisation ✓ Which? Where? Straightening a river moves the problem further downstream and so causes flooding. ✓ Dams and reservoirs (H) act as a storage for water. The Indian government built the Dhaka Dam on the ganges river. But what happened was that it held the water back in the dry season, but in the wet season caused flooding. ✓ Raising levees (H) can also give way and collapse again leading to flooding.

Another cause was deforestation (H). The city of Nepal? had grown in last 30 years at a land clearance of 3·3%. This removes vegetation which is needed to intercept water and act as a barrier to prevent soil splash and soil erosion. There is more discharge on the land due to know interception and greater surface runoff. This also lowers the water table.

Urbanisation (H) which has also resulted in flooding. 14 million people lived in Bangladesh in 2008 at 1045 people per km². This removes the permeable surfaces and

Question Number

Number your answers clearly

replaced them by impermeable ones such as tarmac and concrete. This again causes more water in the river.

Humans can have an impact by the impact they have on climate (H) change. This is causes sea levels to rise by 20-30 metres and is one reason why the city Dhaka was knetr underwater.

L3 11/12 Excellent detail on a range of Phy & Human causes

Question Number

6)

Number your answers clearly

Magilligan Strand is a Psamosere found in County Londonderry in Northern Ireland. It consists of an embryo, fore, grey and stable dune.

The embryo dune is the dune closest to the sea. It is the location of pioneer community which consists of Lyme grass, Sea Couch and Sand Couch (sp). This dune is less than 5 years old. It is created when sand is caught between the plants - this sand builds up over time and creates the dune. The sand is always shifting on this dune so it is said to be dynamic. The dune is open to the harsh winds and sea. Sand Couch adapts itself to this by burying itself in the sand. This also helps it to grow. The soil here is an alkiline due to large amounts of sea shells. Only 20% of the land here is covered by vegetation.

The second dune is the fore dune. It is around 10 years old. 80% of the land on the fore dune is covered by vegetation. The vegetation found here is marram grass (sp), yorkshire fog (sp) and Fescue (sp). As there is little water on this dune, the marram grass has a large root system that goes horizontal, vertical and lateral. Its roots are very long so it can pick up water from the underlying rocks. Marram grass also grows itself in the direction of the prevailing winds and rolls it's leaves up and has tiny hairs on its leaves to reduce water loss. The fore dune is more stable than the embryo dune.

Question Number

Number your answers clearly

The third dune is the grey dune. Rosettes such as dandelion and sow thistle grow here. The rosettes create their own micro-climate by hugging the ground closely. This means they can retain moisture and when they fallout as litter they add a layer of humus to soil to grow. As a result the soil here is fertile as it is rich in nutrients and organic matter. This therefore allows much plant life to grow here. The soil is also quite deep which allows for small trees to grow. The grey dune is stable as there is plenty of roots to bind the soil together and hold it.

The final dune is the stable dune. This is where the vegetation climatic climax is found in the form of an indegenious tempary deciduous forest. Oak and hazel trees grow here due to high fertility of the soil.

11

4.3 12 Detailed description of seral communities with some development of processes which have allowed for site modification. Good inclusion of key terms & species types.

(12)

Question Number

Number your answers clearly

7. An anticyclone forms from the troposhere of the F Source atmosphere. This is due to the 8km high of air divergens. An anticyclone is weather formation associated with a high pressure system. Here warm air is falling and sinking to the ground. F. This constant sinking to the ground picks up convection due to water vapour of 4% at all times. Convection is a process of vertical heat transfer caused by contact by objects. Anticyclones move in a clockwise direction.

In a winter anticyclone the weather will be cold and dry. W This is brought by the polar continental effect. This is blowing in from the North and polar bring cold, sharp conditions and the continental over land make it bring dry weather. The sun has a low angle in the sky and temperatures are about 4°c or lower. Due to convection near to the ground this will cause frost W and the convection may rise up causing fog. W During the night due to the absence in cloud cover this air is lost and clouds cannot store it. This causes sub-zero W conditions at night due to the clouds not being able to act as a thermal blanket and so air is lost to outerspace as it will rise

Question Number

Number your answers clearly

back up again. This has the effect of causing frosts. ✓ Weather described & fully understood.

(Anticyclones in summer bring the weather everyone wants to see.) But a winter anticyclone will be meaning that night time temperatures fall. Due to present Repetition economic crisis people may not be able to buy heating oil and can get hypothermia. ✓E Pipes can freeze, expand and burst. ✓E Frosty, icy pavements will mean walking conditions are worsened ✓E and can cause a higher rate of accidents. Fog and ice may mean transport by car, train and air will be curtailed and air flights ✓ can be delayed. ✓

12 ✓

Air is sinking. ↓ No condensation ↓ No clouds ↓ No Rain ✓	L3 12. Formation explained Weather explained
Sun's low angle in sky ✓ ↓ cause frost ↓ fog ↓ sub-zero conditions	Range of valid effects outlined

Unit AS 1:
Good Exam Technique Commentary

Commentary on Good Exam Technique response for Assessment Unit AS 1

Section A

Question 1: 30 marks possible
28 marks awarded

(a) The hazard is clearly stated straight away, which is good practice. Efforts to overcome this are given; a series of measures clearly stated.
5/5 marks

(b)(i) Bedload is covered in sufficient detail as to what should be measured. There might have been more about how the random selection procedure worked. The velocity measurements are clearly explained.
6/6 marks

(ii) A limitation is identified together with a suggested way round it. The strength is not as good but for 3/3 an answer does not have to be perfect.
3/3 marks

(c)(i) This is all we could wish to see: correct and full calculations and a clear text about the statistical meaning.
7/7 marks

(ii) There is a little confusion about transportation in what becomes a rather sprawling answer. Its strength is the focus on geography, not statistics.
4/6 marks

(d) The response conveys, like most, the idea that more is better, and gets full marks because it details why further study in different seasons would lead to a more reliable conclusion overall.
3/3 marks

Section B

Question 2: 12 marks possible
12 marks awarded

(a) Discharge is defined, which helps but was not really necessary. Under geology there is a focus on why permeability is important. The land use effects are clearly explained and all is topped off by two useful diagrams.
6/6 marks

(b)(i) Correct.
1/1 marks

(ii) The answer displays good understanding and has sufficient reference to the Resource, with nice detail.
5/5 marks

Question 3 12 marks possible
12 marks awarded

(a) There is full understanding of the movement of energy. However, the response also includes energy loss and the number of organisms, which is not really needed. The ecosystem is tied into the example of Breen Wood as the question required.
6/6 marks

(b) This answer identifies the characteristics clearly and then explains how they come about in a logical way. Good focus on explanation.
6/6 marks

Question 4 12 marks possible
12 marks awarded

(a) There is a clear diagram, properly annotated, supported by a rich text which has good detail and keeps up a clear focus on structure as required, except for the very end.
8/8 marks

(b)(i) Correct.
1/1 marks

(ii) Both trends are expressed with values, plus there is some explanation which might even go beyond what was needed, as with 4 (a). Candidates should beware of using up time with material that is not required.
3/3 marks

Section C

Question 5

The case study is identified before going straight into the physical description which helps with the causes of flooding: flat, low-lying and a confluence. The answer moves on to a particular flood, which is a good strategy as it allows details to be given. The human causes of flooding come afterwards, which is logical enough. These are weaker, there is less detail and a couple of slips: Nepal is referred to as a city and having a surprisingly high sea level change, but on the whole this is clearly a good Level 3 answer.

Level 3: 11/12 marks

Question 6

This answer has an excellent structure. The examiner is taken on a journey through the various types of dune, with good descriptions and different plant species identified and their characteristics explained. The material at the end on processes is getting a little beyond characteristics but does have explanatory power. The inclusion of key terms and species types was highlighted by the examiner in their comments.

Level 3: 11/12 marks

Question 7

The answer here has a good structure. The formation of a winter anticyclone is described, and then it moves on to consider the specific hazards of frost and fog, explaining their causes. The answer then moves on to falls, bursts, transport problems etc. Finally the response is illustrated with a couple of diagrams. This is an answer which clearly addresses the question set.

Level 3: 12/12 marks

Unit AS 1:
Poor Exam Technique Response

New Specification

Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2009

Geography

Assessment Unit AS 1

assessing

Physical Geography

[AG111]

AG111

FRIDAY 5 JUNE, MORNING

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Section A: candidates must answer this section.
Section B: answer **all three** questions in this section, you should write your answers in the spaces provided in this question paper.
Section C: answer any **two** questions from this section. Write your answers to Section C on the lined paper at the end of this booklet.
At the end of the examination your summary of fieldwork and table of data should be attached securely to this paper using the treasury tag supplied.

INFORMATION FOR CANDIDATES

The total mark for this paper is 90.
Quality of written communication will be assessed in **all** questions.
Figures in brackets printed down the right-hand side of the pages indicate the marks awarded to each question or part question.

For Examiner's use only	
Question Number	Marks
1	8
2	4
3	5
4	4
5	4
6	3
7	4
Total Marks	32

Section A

Answer this section.

Submitted summary of fieldwork and table of data.
At the end of the examination these should be attached securely to this paper using the treasury tag supplied.

Examiner Only	
Marks	Remark

1 **(a)** With reference to **one** potential hazard associated with your fieldwork, discuss how it was identified and the efforts made to manage this risk.

A potential hazard linked to my fieldwork is the safety of my data collection. As we moved further down the river the velocity started to increase and because of this we all had to wear a life jacket. I also had to wear a helmet incase I slipped on a rock. These were good efforts to take for my safety.

[5]

8

1/5

H - 0

I - 0

M - 1 General safety but not relating to any specific hazard.

(b) (i) Describe in detail **two** of the primary data collection methods used in your fieldwork.

The first primary data collection was comparing the size of the stones in different parts to see different sizes + different shape. This was done using a ruler + a graph that show rock shapes. (powers index)
Our second primary data collection was measuring the depth of the river. This was done 10 times across the river + then an average depth was found [6]

1/3 procedure not clearly outlined.

1/3

but how -->

2/6.

(ii) Discuss possible strengths and limitations for **one** of these methods.

A strenght of measuring the type of rock was that it was easy to read + use ✓S
A limitation was that it ~~was~~ comes to personal judgement + each person could think different when measuring raundness etc. (powers index) ✓L. [3]

2/3

Examiner Only

Marks	Remark

(c) (i) Select **one** of the following statistical techniques relevant to the aim of your investigation. In the box below apply this technique to your data and, if relevant, comment on the statistical significance of the outcome.

- Spearman's Rank Correlation
- Nearest Neighbour Analysis
- Measures of Central Tendency **and** Dispersion (mean, median, mode **and** range) [7]

Formulae, significance graphs and tables are provided in **Resource 1A** and **1B** on pages 6 and 7.

Examiner Only	
Marks	Remark
2/7	

Chosen Technique: Spearman RANK Correlation [no mark]

Ranks have not been subtracted.

X	RANK	Y	RANK	(d)	d^2	r_s
0.5	1 ✓	0.04	2 ✓	0.46	0.21	0.99
1	2 ✓	0.03	1 ✓	0.97	0.94	0.99
1.5	3 ✓	0.16	3 ✓	1.34	1.79	0.99
2	4 ✓	0.22	4 ✓	1.78	3.17	0.99
2.5	5 ✓	0.51	6 ✓	1.99	3.96	0.99
3	6 ✓	0.34	5 ✓	2.66	7.07	0.99
3.5	7 ✓	1.02	7 ✓	2.48	6.15	0.99
4	8 ✓	1.08	8 ✓	2.92	8.52	0.99
4.5	9 ✓	1.59	9 ✓	~~2.~~ 91	8.46	0.99
5	10 ✓	1.83	10 ✓	3.17	10.04	0.99

X = distance

Y = discharge

$r_s = \frac{1(6\Sigma d^2}{n^3 - n}$ $\frac{1-(6 \times d^2)}{990}$

99.9% Significant at the 0.01 p

no r_s value

C = 2

I = 0.

Resource 1A

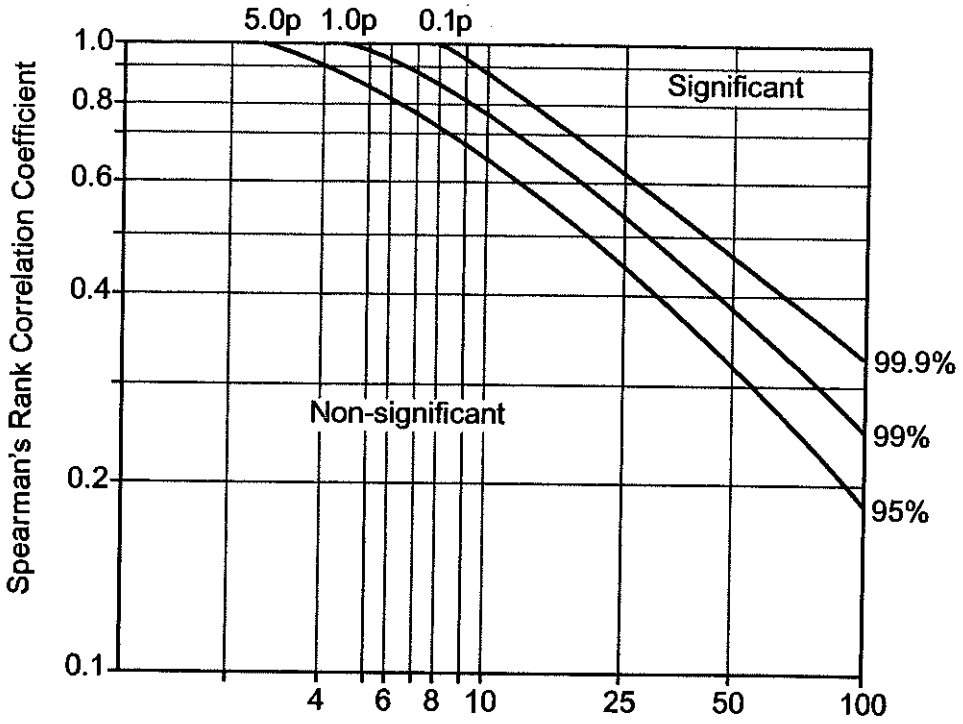
Spearman's Rank Correlation Equation and Significance Charts

Formula: $$r_s = 1 - \left(\frac{6\Sigma d^2}{n^3 - n} \right)$$

where d = the difference in rank of the values of each matched pair
n = the number of ranked pairs
Σ = the sum of

Spearman's Rank Correlation Significance Graph and Table

Critical values for r_s



Degrees of freedom [Number of ranked pairs (n) – 2]

Critical values of Spearman's Rank Correlation Coefficient, r_s

	Significance level	
degrees of freedom	**0.05 (5%)**	**0.01 (1%)**
4	0.88	1.00
5	0.83	0.96
6	0.80	0.91
7	0.77	0.87
8	0.72	0.84
9	0.68	0.80
10	0.64	0.77
11	0.60	0.74
12	0.57	0.71
15	0.50	0.65
20	0.47	0.59
25	0.44	0.54
30	0.39	0.48
40	0.35	0.43
50	0.31	0.38

Resource 1B

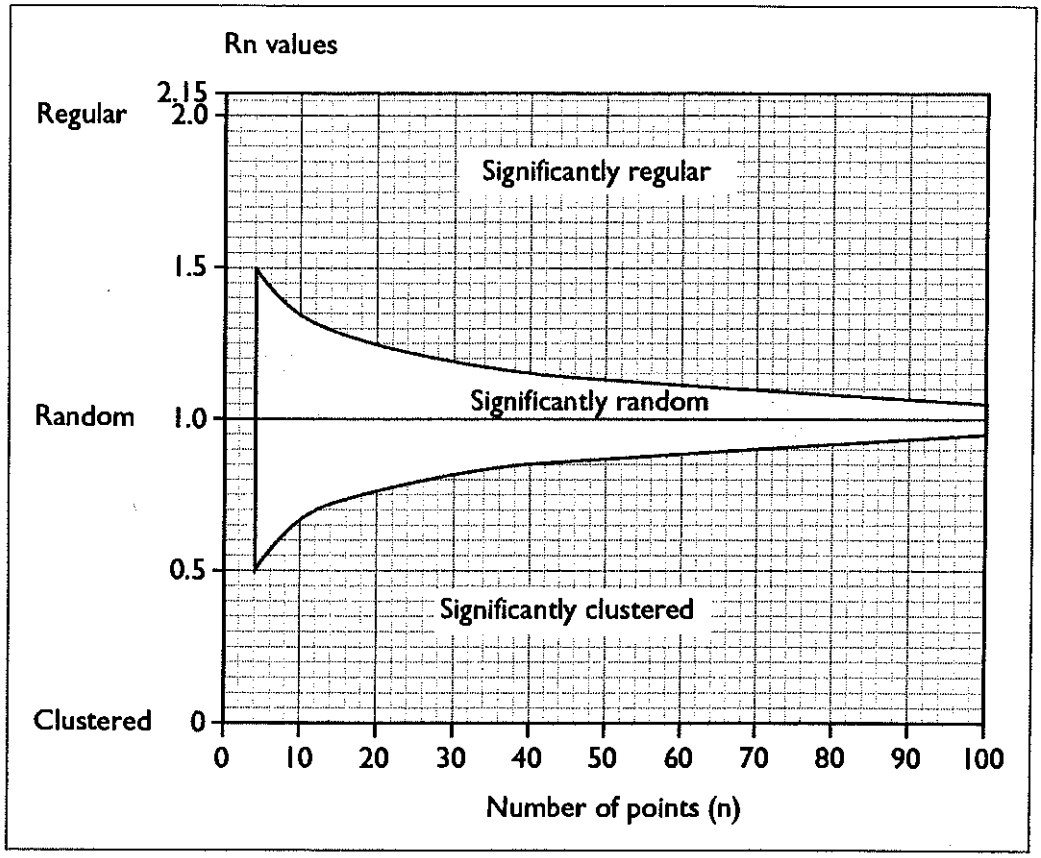
Nearest Neighbour Index Equation and Significance Graph

Formula:

$$Rn = 2\bar{d}\sqrt{\frac{n}{A}}$$

where $\bar{d}$ =.the mean distance between nearest neighbours
n = number of points
A = area in question

Significance Graph



(ii) With reference to relevant theory and the aim of your fieldwork, discuss the **geographical** conclusion(s) which can be drawn from this statistical analysis.

My statistical analysis shows me that my conclusion is proved significant in the 99.9 percentage. This shows that discharge is affected by distance from the source. The further away from the source the bigger the discharge gets. E.g. 2 KM from source the discharge is 0.22 cumecs and at 5KM away the discharge is 0.83 cumecs. This clearly proves that the hypothesis is correct.

No geog reasons. [6]

Examiner Only
Marks | Remark

0/6

(d) Outline **one** way in which your investigation could be modified, or improved, and explain how this could provide a more reliable conclusion.

My investigation could have been modified in some ways. We could have collected our data over two days to get a broader (vague) picture. We could have compared two rivers or the same river at different times. In this way we could have seen the affect that the factors would place on the river. [3]

✓

Several modifications – one credited.
None explained.

1/3

Section B

Answer **all three** questions in this section.

Examiner Only	
Marks	Remark
4	

2 (a) Choose **any two** of the following factors and explain how they affect river discharge and the storm hydrograph.

soil
geology
land use
precipitation
drainage density

The land use will affect the river discharge and the storm hydrograph more significantly than most of the others because if it is an urbanised area then the storm hydrograph will show a really fast lag time (short?) between peek rainfall and peek discharge. The river discharge will also increase largely in a short period of time. This would be different if it was just farmland, You would get the opposite happening. The Geology of the land will also affect the river discharge and storm hydrograph because if you have impervious rocks then the river discharge would increase quicker and there would also be a shorter lag time on your storm hydrograph. The opposite would occur if you have pervious rock. Discharge -->. [6]

1/3 — lacks exp.

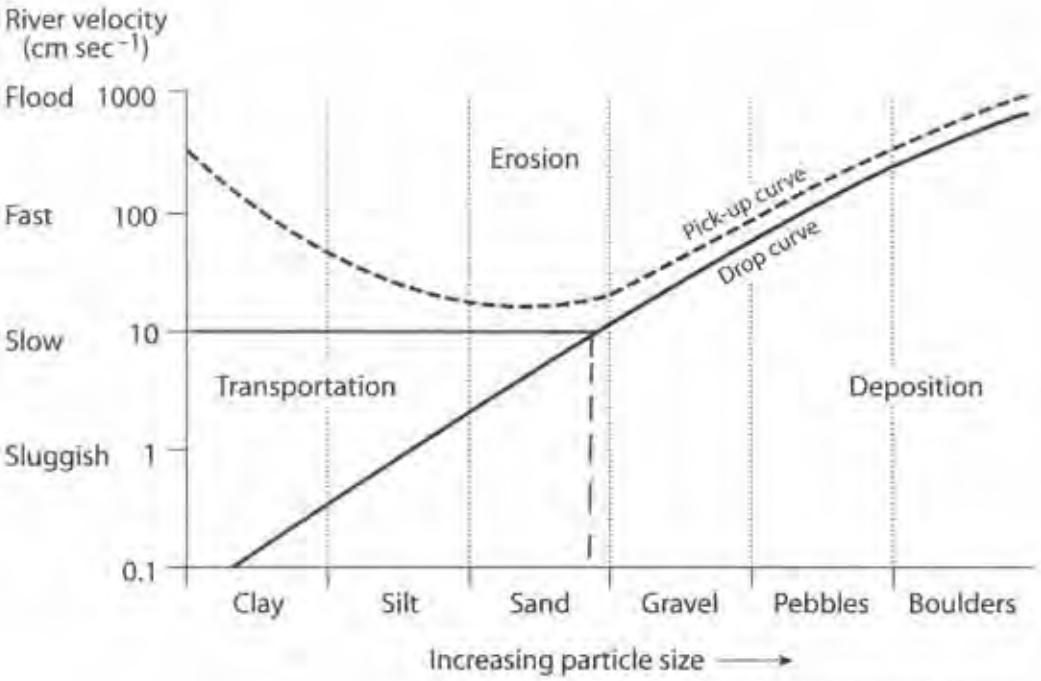
1/3 — lacks exp.

2/6

(b) Study **Resource 2**, which shows the Hjulstrom curves.

Examiner Only	
Marks	Remark

Resource 2



Source: adapted from widely available sources

(i) When a river's velocity is 10 cm sec^{-1} what is the largest type of particle that can be transported?

SAND [1]

1/1

(ii) Following a storm, the river's velocity falls from over 100 to 1 cm sec^{-1}.

Using information from **Resource 2**, describe and explain what happens to the river's load during this period.

The rivers load is getting heavier because the velocity of the water is getting faster and this means the river can pick up more stones and pebbles dragging them along the bed of the river. The river also carries lots of sand and silt in the load of the river and carries this for miles downstream. The boulders are moved along fast because the river flows fast and this causes them to bang against other boulders causing chips to come of and the boulder to get smoother. [5]

Some idea that load is greater / larger when velocity is higher.

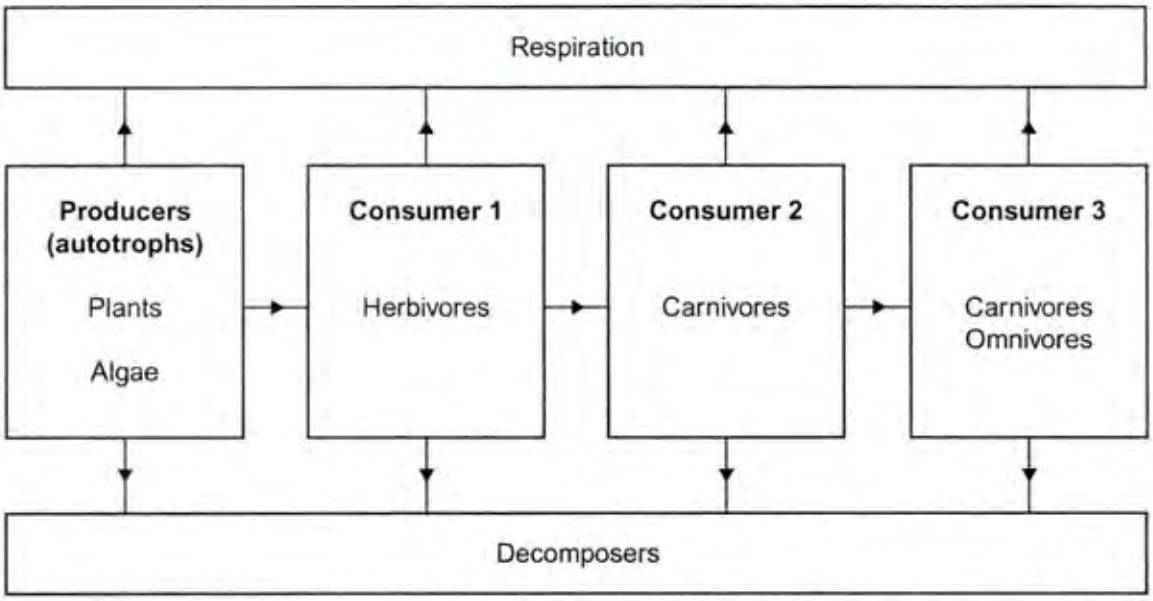
not related to Q.

1/5

Examiner Only	
Marks	Remark

3 Study **Resource 3** showing the energy flow in an ecosystem.

Resource 3



Source: adapted from widely available sources

(a) Using **Resource 3**, describe and explain the movement of energy through the named small scale ecosystem you have studied.

In Tollymore Forest the producers which are mainly trees and some shrubs use energy from the sun to grow. The producers are eaten by herbivores e.g. insects. In turn the insects are eaten by birds and the birds get eaten by the foxes. As these are being eaten energy is lost by respiration. There is also leaf litter and animal waste produced which is decomposed by decomposers into the soil giving new energy for the plant life.

L2: Limited reference to species.

[6]

Examiner Only
Marks | Remark

5

3/6

(b) Describe and explain any **two** characteristics of mid-latitude grassland ecosystems.

In mid latitude grasslands the soil is a chernozem which is high in nutrients. Why?

The soil is used to grow crops because it has a high nutrient content. Tall grass and wildlife is supported. The soil is deep and black in colour and there is not much erosion 1/3

same point

Most of the nutrients are stored in the soil itself. Very little is stored in the litter because grass dosn't loose many leaves and only a small amount is in the Biomass. Why? 1/3

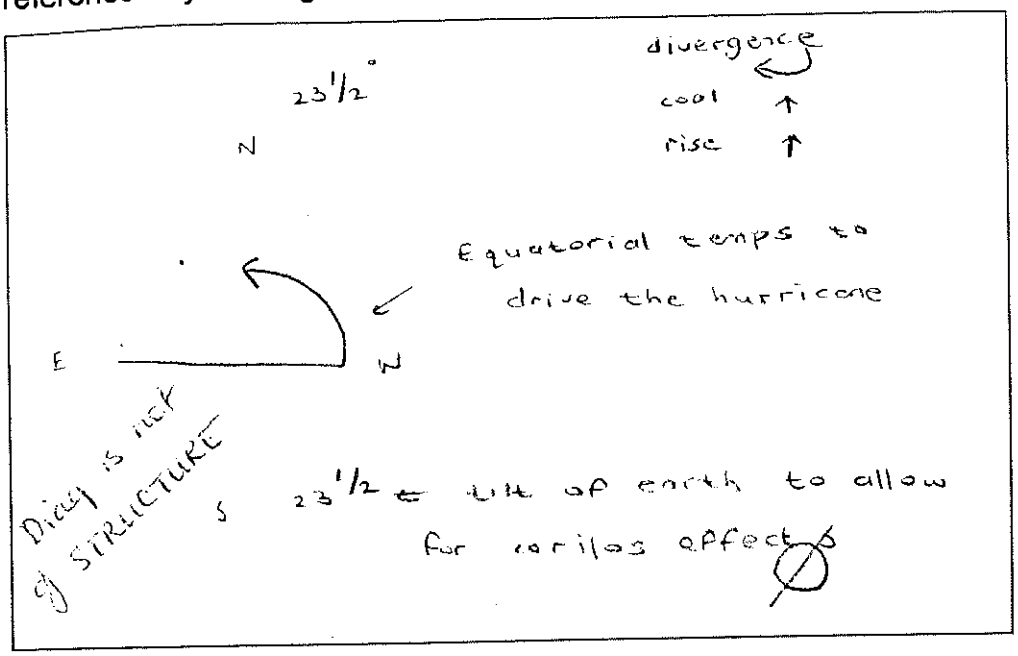
[6]

2/6

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark
4	

4 (a) Draw an annotated diagram of a hurricane in the box below. With reference to your diagram, describe the structure of a hurricane.



Hurricanes are a natural event of low pressure and cause a considerable amount of rainfall. They form in Northern hemisphere from late August to early October and is southern hemisphere from Late January to early March. They form over a large body of water and need to be within 23 1/2° North and 23 1/2° South of the equator but never 5°. This is so as the earth is tilted and can give enough force to let the friction drive under the air to produce the coriolis effect. They need a warm temperature of 27°. This warm air is what drives the hurricane towards as well. Water depth must be 60m and humidity greater than 60. Once the hurricane reaches land it will die out. This warm air rises and cools and will finally result in a divergence where it will die out. [8]

well relates to formation

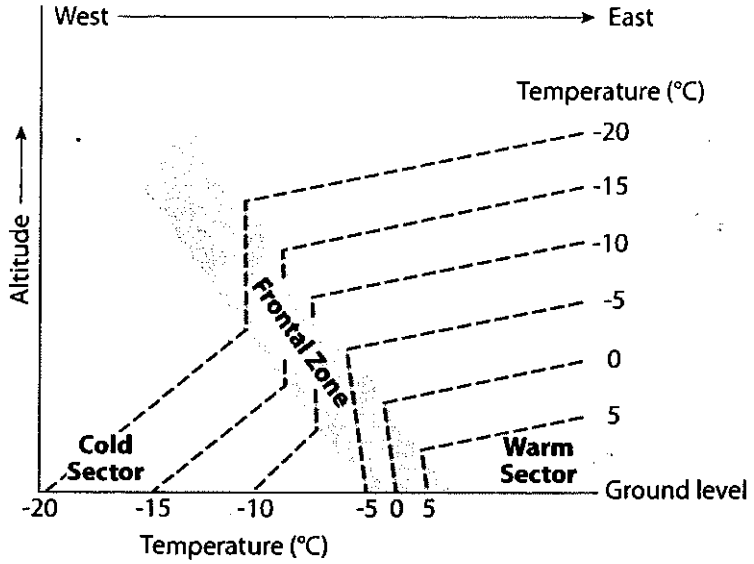
little/no ref to STRUCTURE

Some reference to structure.

L1 4/8

(b) Study **Resource 4** which shows the cross-section of one of the fronts of a mid latitude depression in the northern hemisphere.

Resource 4



Source: Advanced Geography Revision Handbook, Nagle and Spencer, ISBN 0-19-914668-3

(i) What type of front is shown in **Resource 4**?

cold front ✓ [1]

1/1

(ii) Using information from **Resource 4**, describe how temperature changes horizontally (at ground level), and vertically.

As the cold front passes over it cools the air horizontally changing the temperatures from 5°C to -5°C ✓ and even colder. The ✓ same happens vertically with the air cooling down the higher up ✓ value you go.

[3]

2/3

Examiner Only

Marks	Remark

Section C

Answer **any two** questions in this section.

Examiner Only	
Marks	Remark

5 With reference to a case study of flooding in a large scale drainage basin or its delta, describe and explain the physical and human causes of the flooding. [12]

6 Describe and explain the characteristics of one vegetation succession you have studied. [12]

7 Describe the formation of an anticyclone. Explain the weather associated with a winter anticyclone and discuss its impacts on people. [12]

Question Number 5.

Number your answers clearly

(4)

The Bangladesh flood of 1998 was one of the worst to ever hit the country. The country has 3 main rivers which then lead into its large delta. Because of this about 70% of the country is 1m above sea level (P) so it is very prone to flooding. That along with monsoons which bring heavy rainfall to the country means it floods regularly.

The physical causes of the flood is that, as I mentioned earlier, about 70% of the country lies about 1m above sea level and this makes it very prone to flooding. Also the fact that much of the land is a delta and flood regularly to give nutrients to the soil. Also with large scale deforestation (H) going on further up the river (vague) means less water is being soaked up, that along with the spring snowmelt (P) means a large volume of water will be flowing down the rivers. There is also the fact that there is a Dam (H) further upstream in India and they don't tell Bangladesh when they are letting more water out so they then can't prepare for it.

The human causes of the flooding is that they have a large population ~~density~~ density and this means more people can be hurt. Also as mentioned above large scale (same) deforestation is causing flooding to happen more regularly. The other reason could also be urbanisation (H) of towns and (which) cities means water flows into the rivers quicker so they could flood mac easily.

L1 4/12 Some valid factors but explanation v. simplistic.

Question Number

Number your answers clearly

6. The vegetation succession that I have studied is the Heather moorland in the 'Flow country' of Caithness and Sunterland in Northern Scotland.

The characteristics of this vegetation succession is that it became a ~~pine~~ pine forest because oats couldn't grow there because of the climate. This was the primary succession. As the land became peaty and wetter the trees couldn't grow and then when man deforested the rest of the forest a secondary succession begun. This resulted in a plagioclimax of the heather, and this is kept today with burning every 10 years to make sure that the heather stays as the plagioclimax and it doesn't reach its climatic climax of a pine forest. The climate is cool, wet and very damp during it to be lying in the very Northern Hemsphere it is cold and very wet because of that. The soil was once rich with nutrients but now because of the ~~condition~~ conditions of the climate the soil have very few nutrients and is a bogland with very peaty wet soils.

Ans largely restricted to the formation of the Plagioclimax. Subsequent seral stages (following deforestation) are not fully described.

Exp. of ~~antrogen~~ site modification processes neglected.

L1 3/12

(4)

Question Number 7

Number your answers clearly

An anticyclone is ~~a~~ a weather system that has a high pressure. ✓ Farmahoit → ?

In winter is brings short days with little sunshine. Low temperatures but little precipatation. Frost and ice can be found on high mountains. ✓

Weather

It can have huge impacts on people. One of the main ones would be the cost of heating ✓ I bill. This is more of a worry now-a-days due to the price of oil/gas and even coal/firewood. Therefore more money ~~have~~ has to be spent out, and with todays economy this could be a huge problem. ✓

Another impact that it can have on people would be on the elderly. Due to the low temperatures it can promote ~~hypo~~ ~~hypo~~ colds and flus. ? I allow

However in the summer, anticyclonic weather can have far fitter impacts. For example, due to the high temperature and low precipatation, more people takes part in outdoor recreation which can lead to a fitter Britain as there is less sedinatary lifestyles. Summer not relev.

Question Number

Number your answers clearly

However, this can have an effect on retail as people are not going on shopping trips. However, there is a huge demand for drinks, espically light alcoholic and soft drinks.

Also due to the weather, many people are coming from abroad, ~~abroad~~ and many residents staged at home and done a local holiday. This put the roads and secuces under stress. Because of the influx of people, there was many problems such as traffic jams. This is what happened in the summer of 1995

Formation - not developed.

Some weather characterishes listed - not explained.

Some valid effects but lengthy inclusion of irrelevant Summer effects.

4

L1 12

Unit AS 1:
Poor Exam Technique Commentary

Commentary on Poor Exam Technique response for Assessment Unit AS 1

Section A

Question 1 30 marks possible
8 marks awarded

(a) The hazard here is not stated. Candidates should not leave it to the examiner to work out what might be the danger. The answer is not specific and the limited credit given is for the general advice about the wearing of helmets and life jackets. The question demanded reference to one particular hazard; the answer ignored this instruction.
1/5 marks

(b)(i) Comparing the size of the stones to 'see different sizes' is circular and tells us nothing. Power's Index is not a graph. The response shows poor understanding here. The second method about measuring depth in a stream is not given. Answers have to go further than this.
2/6 marks

(ii) The exercise was not measuring the 'type of rock', rather the shape of stones. There is valid material here relating to inconsistency for which credit was given.
2/3 marks

(c)(i) The Spearman's Rank is performed incorrectly. The calculation of 'd' is incorrect in each case and so because of the dependent nature of the question the rest of the response was incorrect. Partial marks only were awarded. Candidates must be aware that it is likely that they will be asked to carry out a calculation on the table of data they bring into the examination. Correct calculations are critical to ensure the maximum number of marks are awarded, and so practising calculations before the examination would perhaps help to improve a candidate's performance.
2/7 marks

(ii) This answer exemplifies a common flawed approach to this question. Despite the examiners putting geographical in bold, only statistical conclusions were dealt with. 'No geog reasons' wrote the examiner who marked it, adding the wiggly line down the left hand margin which identifies irrelevant material.
0/6 marks

(d) Getting a 'broader picture' is not sufficiently precise and then a range of measures is suggested. The question demanded one method and this should have been identified and answered in detail.
1/3 marks

Section B

Question 2 12 marks possible
4 marks awarded

(a) Two factors are chosen but there is a lack of command of the topic: 'fast' lag time is not an appropriate term, although 'short' does appear subsequently. The urban vs farmland distinction is correct but the response does not address why the differences occur. Regarding geology, again the correct relationship has been identified but what happens to bring about the difference needs to be detailed. The command word for this question was 'explain'. The response does not do this sufficiently.
2/6 marks

(b)(i) Correct.
1/1 marks

(ii) There is confusion here. The velocity is falling, not 'speeding up'. The answer really seems to be looking at how movement takes place, which is not what was asked. The single mark is for the realisation that velocity has an effect on load carried.
1/5 marks

Question 3 12 marks possible
5 marks awarded

(a) The ecosystem is named straight away, which is good practice, however, more detail is needed. What is specific to the Glenariff Forest, the selected ecosystem? There is no reference to any species living there; the answer is just a general explanation. Place-specific details are required for a question set in this form.
3/6 marks

(b) The question has 'describe and explain'. This answer carries out the former better than the latter: the soil is 'thick and dark so soil erosion is low'. Why? The second characteristic also deals with nutrients so there is repetition here and there is some confusion.
2/6 marks

Question 4 12 marks possible
4 marks awarded

(a) The question asks about the structure of a hurricane. The answer, both the diagram and the text, does not focus on this, instead concentrating on formation. Only in the last sentence is there material on the structure and that is where the single mark is awarded. This is a prime example of one of the most common faults of weaker candidates; that they do not answer the question set.
1/8 marks

(b)(i) Correct
1/1 marks

(ii) Not a bad answer; the mark is lost for there being no value given for the vertical

changes.
2/3 marks

Section C

Question 5
The case study is identified straight away, which is good practice. Elsewhere good practice is not so evident. There is a realisation that the response is repetitive, 'as I mentioned earlier'. There is a range of causes of flooding mentioned but there is insufficient of the required 'explanation'. The response then goes off the point: a high population density in Bangladesh does mean that 'more people can be hurt', but the question is on causes of flooding, not upon impacts. It would have been better to have gone more deeply into the way urbanisation affects flooding, which is mentioned but not explained fully. The answer is somewhat 'simplistic' as the examiner observed in their comments.
Level 1: 4/12 marks

Question 6
This is a very short answer; we would really expect to see more than just a few lines. The style is rather cumbersome, so not all the few words written actually add to the answer, a problem shared by the repetition. The answer does not deal fully with the succession elements and some parts of the explanation might be questioned. There is little command here, the explanation of the site modification processes are neglected.
Level 1: 3/12 marks

Question 7
An anticyclone is defined as having high pressure but the question relates to how it forms, which is not covered. Some statements are questionable. The shortness of the day in winter has nothing to do with pressure systems and in a winter anticyclone you can get sunshine if the mists and fog lift. The weather section here is not convincing. The impacts section starts better with the need for heating, but it does not go much further; the statement about illness is not convincing. Then the response moves on to material about summer anticyclones and the last part of the question attracts the wiggly line down the side for irrelevance. The response fails to answer the question set.
Level 1: 4/12 marks

Exemplars of Summary Fieldwork Reports and Tables of data

The reports are not assessed. Four are included here just to demonstrate the type of thing that is needed. The location of the field study, its type, the aims/hypotheses and the necessary table of data, which must have no calculations already made. One brought in a map, which was not necessary.

Exemplar 1. A Study of Downstream Changes in the River Roe Drainage Basin

Exemplar 2. An Investigation into the changes in the hydraulic geometry of the River Shimna as you move downstream

Exemplar 3. Psammosere at White Park Bay

Exemplar 4. Changes in the downstream flow of the Colin River

Title: A study of Downstream Changes in the River Roe Drainage Basin.

Aim: The aim of this fieldwork exercise is to investigate how a range of variables alter with distance downstream on the Curly burn river which is a tributary of the river Roe.

Hypotheses:

- Channel width and depth increases with distance downstream.
- Velocity increases with distance downstream.
- Discharge increases with distance downstream.
- Slope of the river bed decreases with distance downstream.
- Bedload size varies with distance downstream.

Location: Magilligan Field Centre, Limavady, County Londonderry, Northern Ireland.

Table showing how characteristics of the Curly Burn River vary with distance downstream.

Results Table March '09									
Site No.	Site Name	Distance Downstream (km)	Width (m)	Average Depth (m)	Float Velocity (m/sec)	Discharge (cumecs)	Average Bedload Size Length (mm)	Average Bedload Shape (Power's Roundness Index	Slope (Degrees)
1	Grange Pk. Wood	0.33	0.90	0.10	0.36	0.039	84.3	0.25	3.00
2	Windy Hill Rd.	1.30	1.10	0.10	0.36	0.033	101.7	0.21	5.00
3	Largantea Picnic Site	2.10	0.40	0.17	0.40	0.160	104.4	0.37	7.50
4	Largantea Bridge	2.90	3.80	0.24	0.54	0.221	116.0	0.42	1.50
5	Metal Bridge	3.75	4.50	0.25	1.25	0.514	53.0	0.40	4.00
6	Gallow's Knowe	4.00	3.80	0.26	0.38	0.335	99.1	0.48	6.50
7	Lady O'Cahan's Bridge	4.25	5.50	0.27	1.18	1.020	111.9	0.39	3.00
8	Bolea	6.23	7.30	0.35	1.60	1.080	88.2	0.52	2.50
9	Streeve	9.11	8.40	0.33	1.36	1.590	21.9	0.46	2.50
10	Artikelly	10.25	8.45	0.43	0.97	1.825	25.5	0.70	2.10

Power's Index	
Very Angular	0.15
Angular	0.21
Sub-angular	0.30
Sub-rounded	0.42
Rounded	0.60
Well rounded	0.85

Exemplar 2. An Investigation into the changes in the hydraulic geometry of the River Shimna as you move downstream

Exemplar 2

An investigation into the changes in the hydraulic geometry of the River Shimna as you move downstream

Location

The chosen location for our study was the Shimna River, Newcastle, Co. Down. This river flows from its source in the Mourne Mountains down into the Irish Sea at Newcastle.

Aims

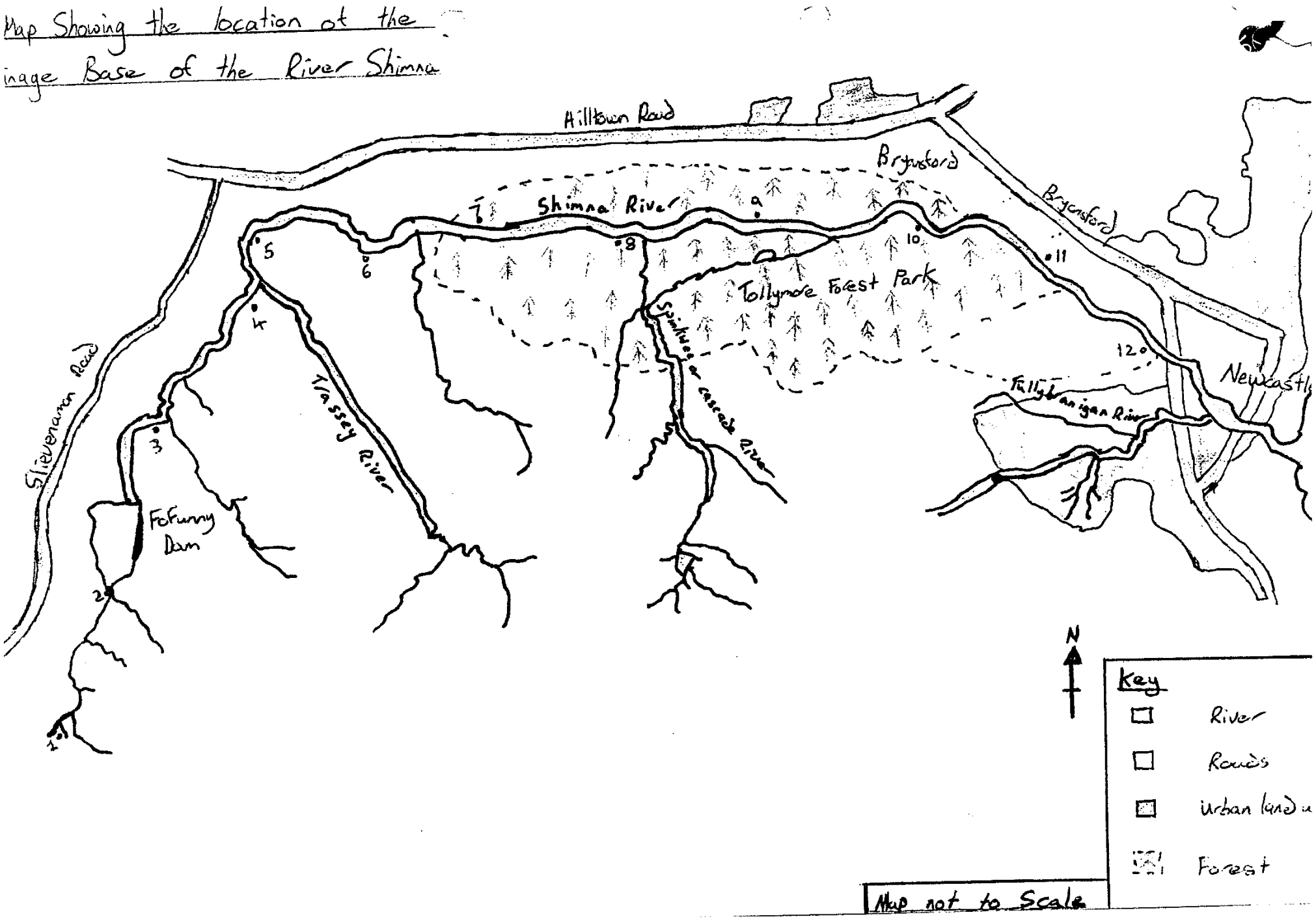
The main aim of our investigation was to identify changes in the river's hydraulic geometry as you move in a downstream direction. To achieve this we devised three hypotheses to investigate:

1. **River discharge increases with distance downstream**
2. **River velocity increases with distance downstream**
3. **River gradient increases with distance downstream**

Table showing the changes in the hydraulic geometry of the River Shimna as you move from source to mouth

site	Distance Downstream (Km)	description	Grid Reference	Discharge cumecs	Velocity (m/sec)	Gradient (degrees)
1	0.5	source	285274	0.0366	0.15	14.6
2	1.3	Fofanny	286286	0.443	0.328	9.4
3	1.9	Happy Valley	289297	0.382	0.144	12.8
4	2.1	Trassey Confluence	308313	0.732	0.344	8.4
5	4.7	Clonachullion Bridge	312318	2.674	0.514	15.4
6	4.9	Salmon Leap	318317	2.53	0.516	7.4
7	5.3	Boundary Bridge	324319	1.84	0.489	4.2
8	8	Meeting of the waters	338320	1.96	0.789	6.2
9	11.2	Footstick bridge	345324	1.665	0.812	13.6
10	13.3	Ivy Bridge	353324	2.265	0.9	3.8
11	14	Priests Bridge	360322	2.257	0.896	8.6
12	14.1	Tipperary wood	371317	3.12	0.912	3.4

Map Showing the location of the inage Base of the River Shimna



Psammosere at White Park Bay Sand Dunes – Field Report

Psammosere at White Park Bay – Written Report

Location:

White Park Bay is situated along the North Antrim coast, Northern Ireland. It is located a few miles east of the Giant's Causeway, which is a World Heritage Site, and is owned by the National Trust.

Aim:

The aim of the fieldwork is to investigate if a Psammosere exists at White Park Bay by studying vegetation cover, biodiversity, soil moisture and organic content and soil acidity.
Whether or not a Psammosere exists can be investigated using the following hypothesis:
'The vegetation cover, biodiversity, moisture content and organic content will all increase while the pH decreases as distance from the high water mark increases'.

Psammosere at White Park Bay Sand Dunes - Field Report

Square Quadrat	Distance (m)	% Soil Organic Content	% Soil Moisture Content	Soil PH	% Vegetation Cover	No.of Veg Species	Type of Vegetation Cover and % Cover				
1	0	0.12	4.12	7.5	5	1	mg 5%				
2	10	0.30	3.03	7.0	100	4	mg 85%	mw.g 12%	c 1%	m 2%	
3	20	0.41	1.52	7.0	100	5	mw.g 40%	c 1%	wt 3%	w 5%	co 51%
4	30	0.24	3.9	7.5	100	4	mg 65%	mw.g 15%	hg 10%	m 10%	
5	40	0.18	7.54	7.5	100	3	mw.g 75%	m 12%	p 13%		
6	50	0.06	12.5	7.5	100	3	mw.g 18%	m 76%	c 6%		
7	60	0.24	9.8	7.5	100	5	mw.g 6%	m 80%	c 5%	p 3%	d 6%
8	70	1.05	8.25	7.5	100	3	m 93%	t 3%	b 4%		
9	80	1.34	7.04	7.0	100	3	mw.g 7%	m 89%	b 4%		
10	90	0.97	17.01	6.0	100	4	mg 76%	mw.g 14%	ws 1%	f 9%	
11	100	1.34	18.6	7.0	100	4	mw.g 35%	m 50%	la 10%	p 5%	
12	110	1.34	25.36	7.0	100	4	mg 35%	m 55%	p 5%	d 5%	
13	120	0.79	28.37	7.5	100	4	mw.g 80%	m 5%	d 10%	da 5%	

Vegetation Key

mg = marram grass	p = plantain
mw.g= meadow grass	d = daisy
m = moss	t = trefoil
c = clover	b = benweed
co = cocksfoot	ws = wild strawberry
w = woodrush	f = fescue
wt = wild thyme	la = latsear
hg = hair grass	da = dandelion

Slope Profile

Angle (°)	Distance (m)
20	7
-10	10
-8	3
-4	12
1	16.4
6	40
-11	2
20	5.2
8	12

Field Report

Background information

Our field trip was on the 24th of November 2008, were we collected information on the Colin River. Afterwards an analysis took place to explain how and why characteristics change downstream form the river source to the river mouth.

Location

Our study area was the Colin River in west Belfast, with its source based on the Divis Mountain. This area is mainly bog land and as the river flows downstream it passes over many different rock types. The river is a spate river, rising and falling quickly as a result of precipitation and at some points management strategies are required at various points to prevent erosion.

Aim

The aim of our study was to examine the characteristic changes in the downstream flow of the Colin River.

Hypotheses

Hypothesis 1- The discharge will increase with distance downstream

Hypothesis 2- The hydraulic radius will increase with distance downstream

Hypothesis 3- The wetted perimeter will increase with distance downstream

Data Collection Results for Colin River

Site No	Distance Downstream (km)	Width(m)	Depth (cm)	Velocity (m/s)	Cross sectional area (m^2)	Discharge (cumecs)	Wetted Perimeter (m)	Hydraulic Radius (m)
1	0.80	5.0	6.45	0.23	0.32	0.07	3.9	0.08
2	2.60	3.8	6.25	0.22	0.24	0.05	3.6	0.07
3	2.70	3.3	7.13	0.35	0.24	0.08	2.3	0.10
4	3.89	9.9	13.70	0.18	1.36	0.24	6.0	0.23
5	4.20	8.1	7.29	0.44	0.59	0.26	5.4	0.11
6	4.44	12	9.20	0.36	1.10	0.40	7.2	0.15
7	4.49	4.6	13.40	0.44	0.62	0.27	4.2	0.15
8	4.74	9.4	8.25	0.37	0.78	0.29	7.6	0.10
9	5.04	16.2	5.56	0.20	0.90	0.18	5.6	0.16
10	5.28	24.5	7.62	0.23	1.87	0.43	12.1	0.15
11	5.37	9.4	9.58	0.38	0.90	0.34	6.7	0.13
12	6.61	10	10.76	0.31	1.80	0.34	6.8	0.16

3 Assessment Unit AS 2 (AG121)

Exemplification of Good and Poor Exam Technique Responses

This section contains:

Unit AS 2: Question Paper

Unit AS 2: Good Exam Technique Response Commentary

Unit AS 2: Poor Exam Technique Response Commentary

New Specification

Rewarding Learning

Centre Number

71	

Candidate Number

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2009

Geography

Assessment Unit AS 2

assessing

Human Geography

[AG121]

AG121

THURSDAY 11 JUNE, AFTERNOON

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Section A: candidates must answer this section
Section B: answer **all three** questions in this section, you should write your answers in the space provided in this question paper.
Section C: answer **any two** questions from this section.

INFORMATION FOR CANDIDATES

The total mark for this paper is 90.
Quality of written communication will be assessed in **all** questions.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only	
Question Number	Marks
1	
2	
3	
4	
5	
6	
7	
Total Marks	

Section A

Answer this section

Examiner Only	
Marks	Remark

1 (a) Study **Resource 1A** on page 3, which illustrates a partially completed isoline map of the velocity distribution in a river channel at a meander bend (drawn along cross-section X–Y).

(i) Plot the two velocity readings recorded in the channel at a distance of **5 m** from river bank X. [2]

(ii) Complete the four isovels (lines joining points of equal velocity) at intervals of $0.1\,m\,s^{-1}$. [4]

(iii) Explain the isoline pattern for velocity throughout the channel area in **Resource 1A**.

_____

_____

_____

_____

_____

_____

_____

_____ [4]

(iv) What type of statistical technique could be used to investigate the relationship between the average velocity of the river and distance from the left bank of the meander bend? Justify your choice. (No calculations are required)

_____

_____

_____

_____

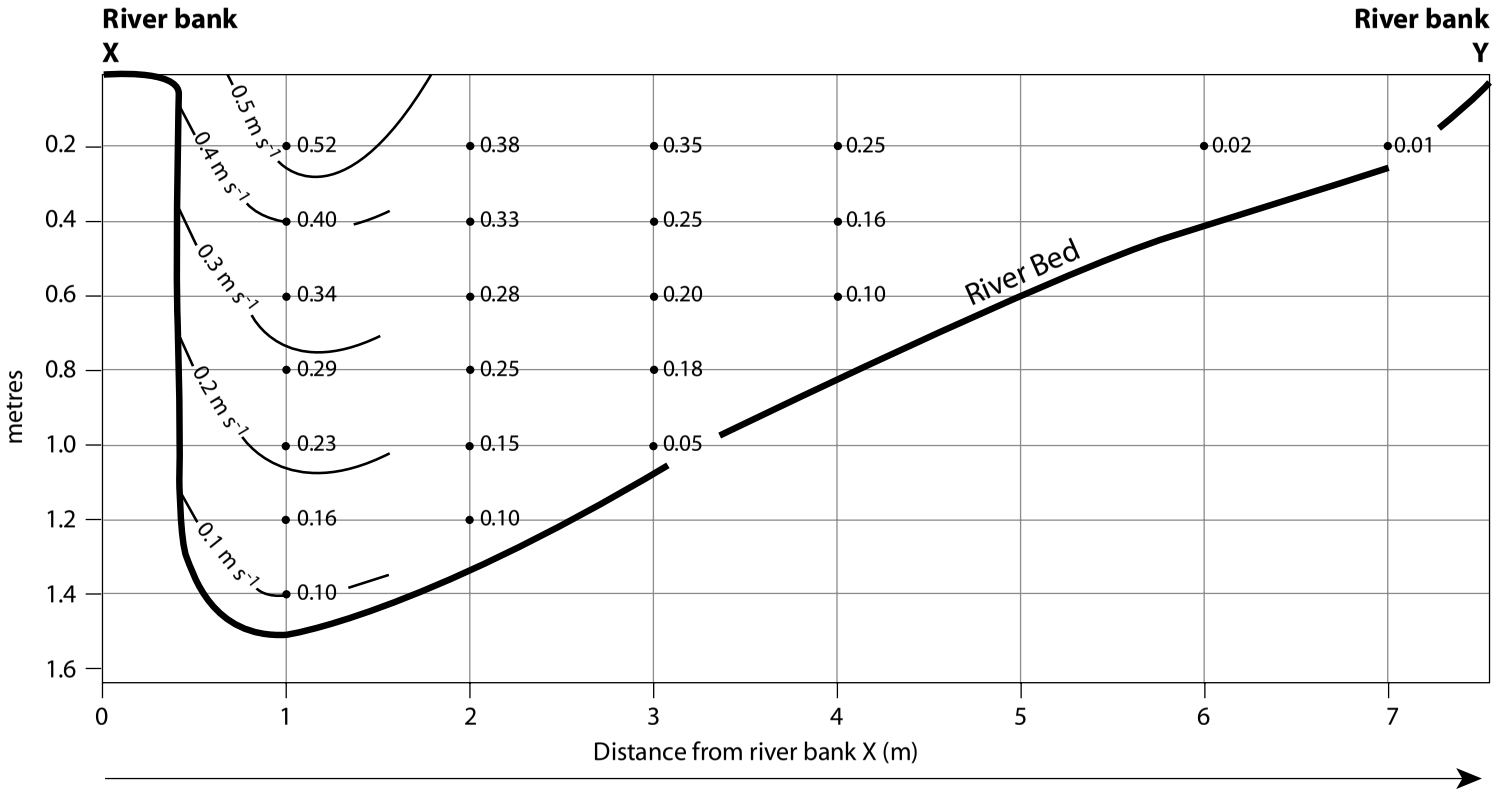
_____

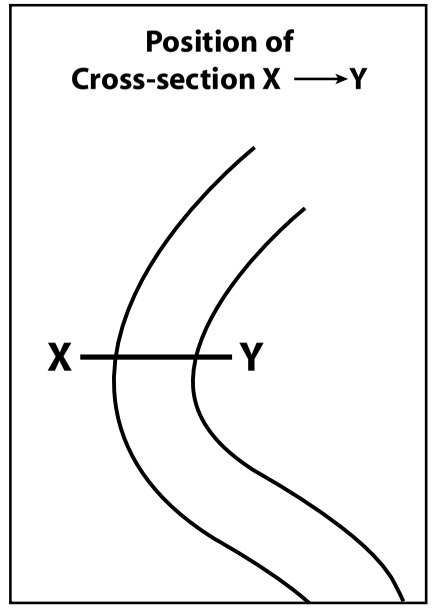
_____ [3]

Resource 1A

Distance from river bank X

Depth	1 m	2 m	3 m	4 m	5 m	6 m	7 m
0.2 m	0.52 m s^{-1}	0.38 m s^{-1}	0.35 m s^{-1}	0.25 m s^{-1}	0.14 m s^{-1}	0.02 m s^{-1}	0.01 m s^{-1}
0.4 m	0.40 m s^{-1}	0.33 m s^{-1}	0.25 m s^{-1}	0.16 m s^{-1}	0.02 m s^{-1}		
0.6 m	0.34 m s^{-1}	0.28 m s^{-1}	0.20 m s^{-1}	0.10 m s^{-1}			
0.8 m	0.29 m s^{-1}	0.25 m s^{-1}	0.18 m s^{-1}				
1.0 m	0.23 m s^{-1}	0.15 m s^{-1}	0.05 m s^{-1}				
1.2 m	0.16 m s^{-1}	0.10 m s^{-1}					
1.4 m	0.10 m s^{-1}						





— 0.1m s^{-1} — Isovel (isoline) line joining points of equal velocity

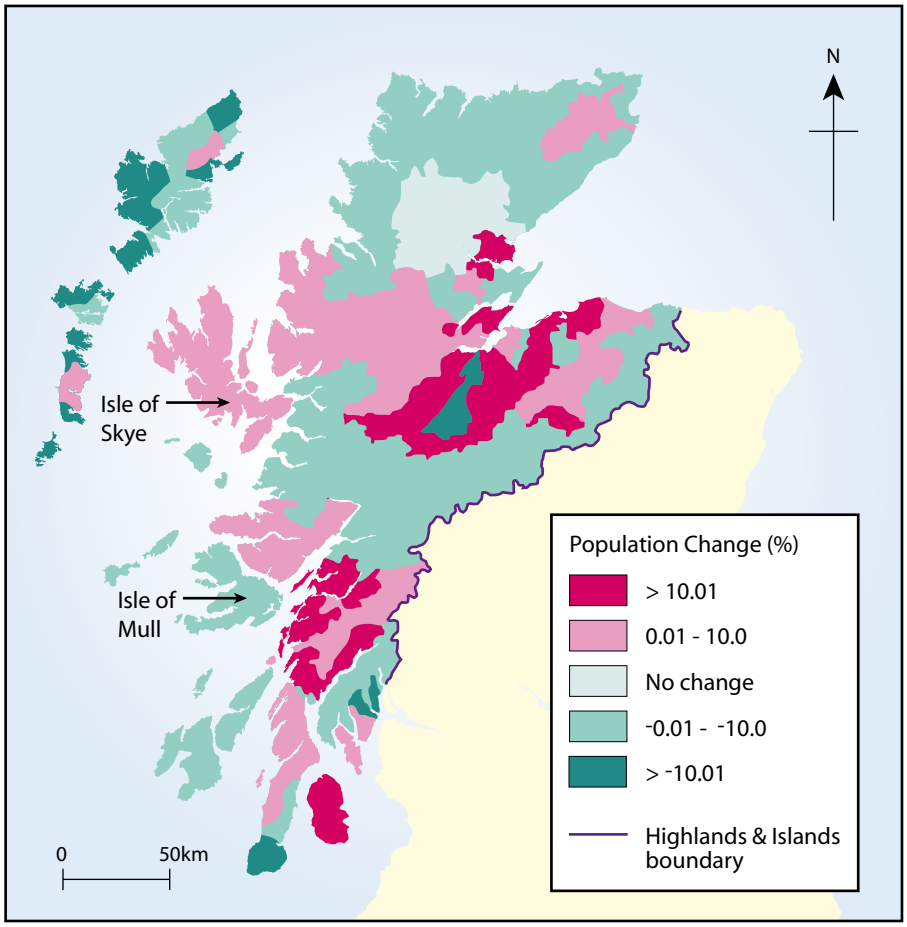
• 0.15 River Velocity (m s^{-1})

[Turn over

Examiner Only	
Marks	Remark

(b) Study **Resource 1B**, which illustrates population change in the Highlands and Islands of Scotland between 1991 and 2001.

Resource 1B



Source: Adapted from Geography Review Vol 18 No.2

(i) State how the rate of population change differs on the Isle of Mull compared to the Isle of Skye.

_____

_____

_____

_____ [2]

(ii) Name the mapping technique used in **Resource 1B** and discuss **one** strength and **one** limitation of this technique.

Examiner Only	
Marks	Remark

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ [5]

(iii) Study **Resource 1C**, which illustrates the age profile for the Highlands and Islands region compared to Scotland as a whole.

Examiner Only	
Marks	Remark

Resource 1C

Source: Adapted from Geography Review Vol 10 No.2

1. Which age group, in the Highlands and Islands, differs most from the age profile for Scotland?

_____ [1]

2. Which age group, in the Highlands and Islands, shows the greatest over-representation compared to Scotland as a whole?

_____ [1]

3. Using evidence from **Resource 1C** explain **one** potential problem, created by the age profile, for the development of the Highlands and Islands region.

_____

_____

_____

_____

_____

_____ [3]

(c) Study **Resource 1D**, which is a satellite (remotely sensed) image of Hurricane Katrina in the Atlantic Ocean in August 2005.

Examiner Only	
Marks	Remark

(i) Hurricanes form under specific conditions. Using **Resource 1D**, identify and explain any **two** of these which are evident on the satellite image.

_____

_____

_____

_____

_____

_____

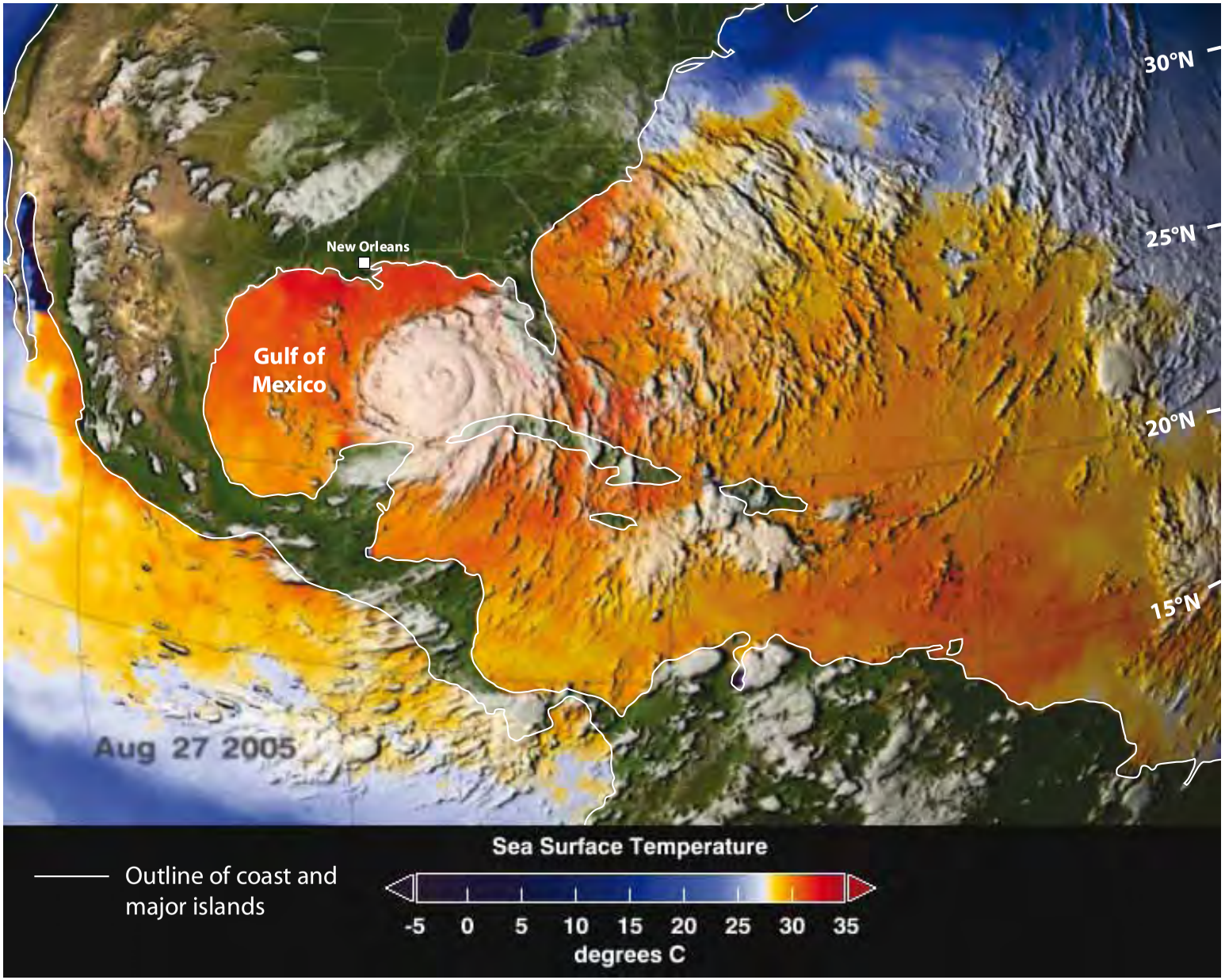
_____

_____ [4]

(ii) Apart from weather monitoring, state **one** use of satellite (remotely sensed) imagery in **geographical** studies.

_____ [1]

Resource 1D



Source: Adapted from NASA satellite image

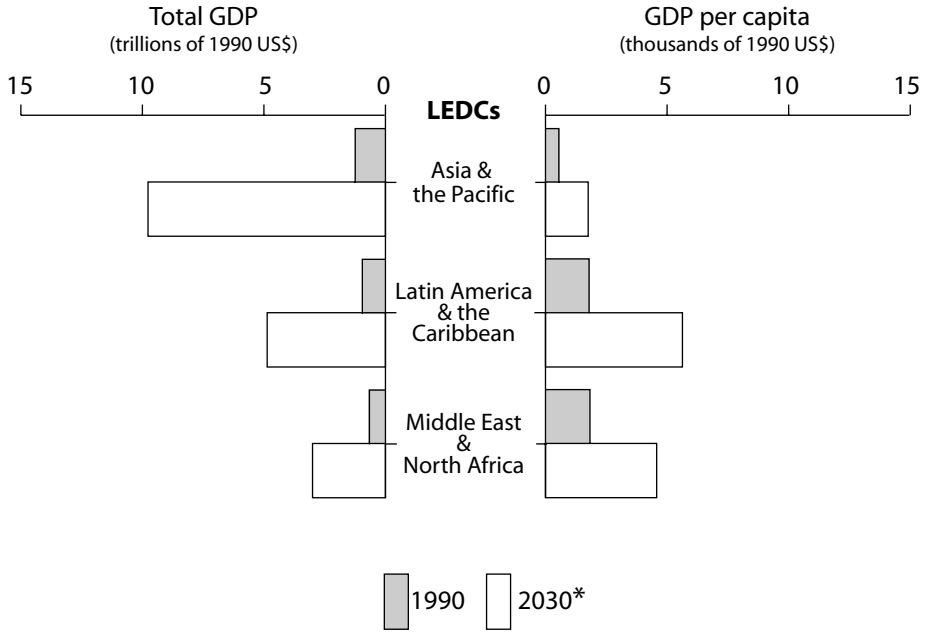
Section B

Answer all **three** questions in this section

Examiner Only	
Marks	Remark

2 Study **Resource 2** which shows total GDP and GDP per capita in selected regions in 1990 and projected for 2030.

Resource 2



*Data for 2030 are projections

Source: Adapted from: New Patterns: Process and Change in Human Geography/Michael Corr/1997

(a) (i) State the increase in **total GDP** in Asia and the Pacific between 1990 and 2030.

_____ [1]

(ii) State the increase in **GDP per capita** in Asia and the Pacific between 1990 and 2030.

_____ [1]

(iii) Discuss how natural population increase may contribute to the differences over time in total GDP and GDP per capita in the regions shown in **Resource 2**.

[4]

(b) Describe how age dependency in a LEDC would differ from that in a MEDC and outline **two** economic implications for a LEDC.

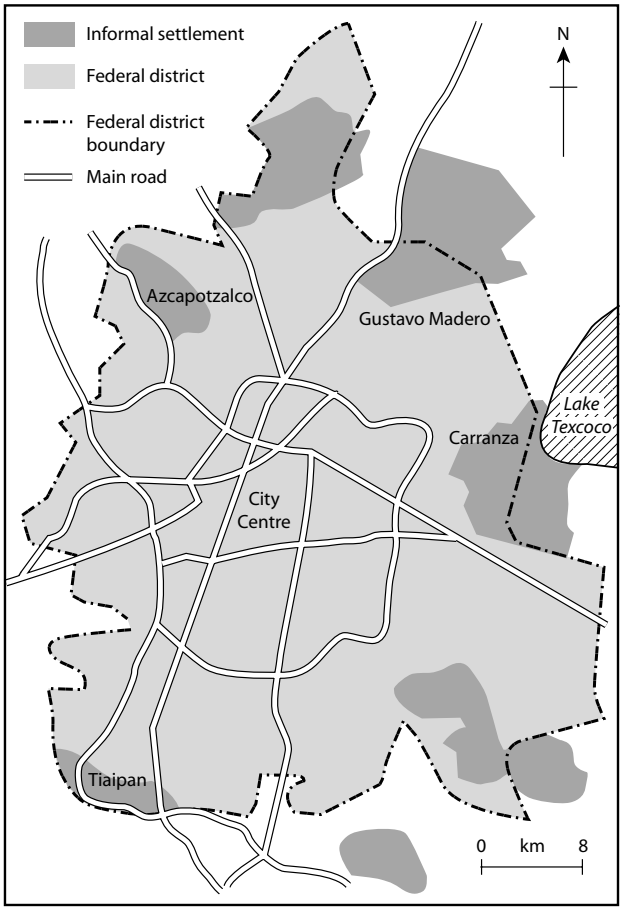
[6]

Examiner Only	
Marks	Remark

Examiner Only	
Marks	Remark

3 (a) Study **Resource 3** which shows the location of informal settlements in Mexico City.

Resource 3



Source: Urbanisation: Changing Environments/Collins Educational

Describe the location of informal settlements in Mexico City and discuss the levels of service provision and types of economic activity you would expect to find in such settlements.

Examiner Only	
Marks	Remark

[6]

(b) With reference to a MEDC case study, define **gentrification** and evaluate how this process has affected your chosen area.

[6]

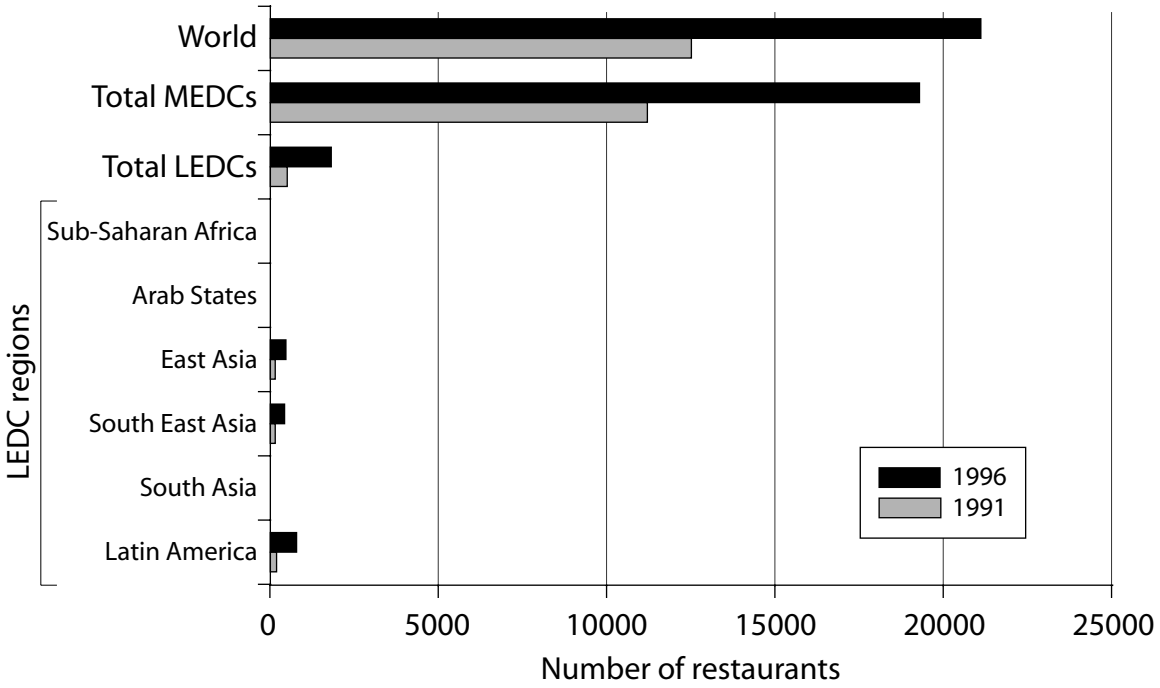
Examiner Only	
Marks	Remark

4 **(a)** Describe and evaluate one **social** measure of development.

[4]

(b) Study **Resource 4** which shows the number of McDonald's restaurants by region in 1991 and 1996.

Resource 4



Source: adapted from www.globalpolicy.org/globaliz/charts/mcdon2.htm

McDonald's is a transnational company. Describe the pattern shown in the resource and identify one **social** implication of this trend.

Examiner Only	
Marks	Remark

[3]

(c) Transnational companies like McDonald's are one symbol of globalisation. Discuss how globalisation can affect the **economic** development of a LEDC you have studied.

[5]

Section C

Answer **any two** questions

Examiner Only	
Marks	Remark

5 "Population distribution is related to the availability of physical and human resources." Discuss this statement with reference to a national case study. [12]

6 With reference to places for illustration, discuss **three** issues faced in the rural–urban fringe. [12]

7 Define **either** colonialism **or** neo-colonialism and discuss how your chosen process has affected the level of development of a LEDC you have studied. [12]

Unit AS 2:
Good Exam Technique Response

New Specification

Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2009

Geography

Assessment Unit AS 2

assessing

Human Geography

[AG121]

AG121

THURSDAY 11 JUNE, AFTERNOON

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

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INFORMATION FOR CANDIDATES

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For Examiner's use only	
Question Number	Marks
1	28
2	12
3	12
4	12
5	12
6	10
7	12
Total Marks	98

Section A

Answer this section

Examiner Only | Marks | Remark

28

1 (a) Study **Resource 1A** on page 3, which illustrates a partially completed isoline map of the velocity distribution in a river channel at a meander bend (drawn along cross-section X–Y).

(i) Plot the two velocity readings recorded in the channel at a distance of **5 m** from river bank X. [2]

2/2

(ii) Complete the four isovels (lines joining points of equal velocity) at intervals of 0.1 m s^{-1}. [4]

4/4

(iii) Explain the isoline pattern for velocity throughout the channel area in **Resource 1A**.

In shallow water, where the river is less deep and nearest the banks, water has the greatest velocity. As the water gets deeper, towards ~~the centre of the river channel~~ bank X, there is less friction with surfaces so the water can flow more quickly, at up to 0.52 ms^{-1}. In shallow areas, near bank Y and at the low depths of point X, ie. on the river bed, there is more friction so the water flows more slowly, between about 0.1 ms^{-1} and 0.01 ms^{-1}. [4]

4/4

(iv) What type of statistical technique could be used to investigate the relationship between the average velocity of the river and distance from the left bank of the meander bend? Justify your choice. (No calculations are required)

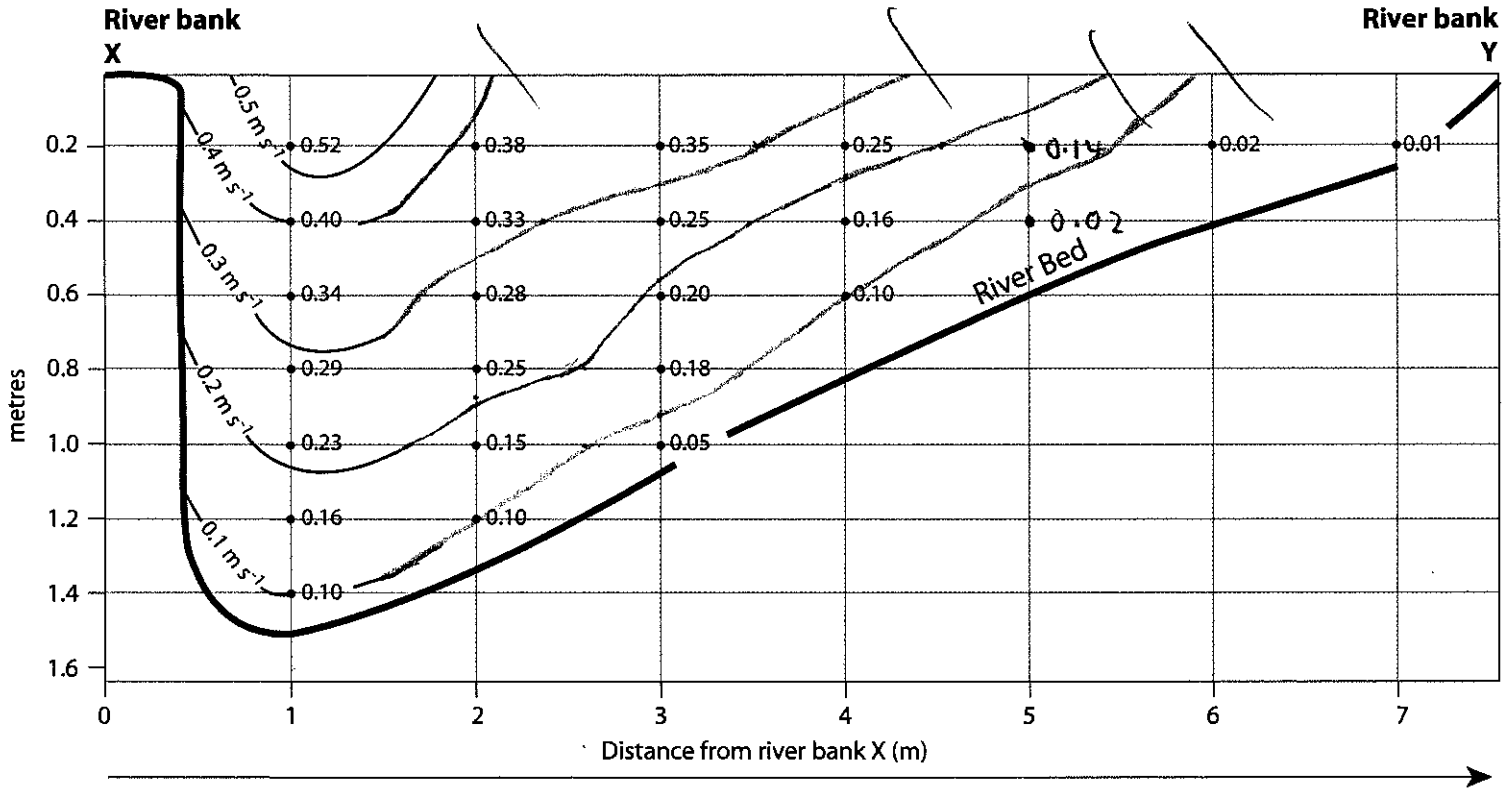
Spearman's Rank Correlation would work. The average velocity of the river could be calculated to give 7 values, then combined with distance X would show a strong or weak, positive or negative correlation between distance from river bank X and average velocity of the river. [3]

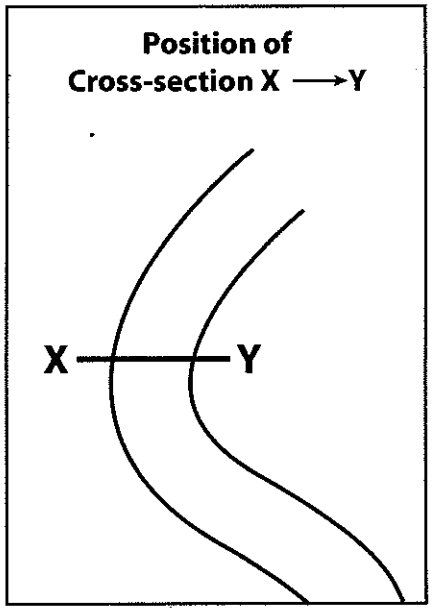
3/3

Resource 1A

Distance from river bank X

Depth	1 m	2 m	3 m	4 m	5 m	6 m	7 m
0.2 m	0.52 m s^{-1}	0.38 m s^{-1}	0.35 m s^{-1}	0.25 m s^{-1}	0.14 m s^{-1}	0.02 m s^{-1}	0.01 m s^{-1}
0.4 m	0.40 m s^{-1}	0.33 m s^{-1}	0.25 m s^{-1}	0.16 m s^{-1}	0.02 m s^{-1}		
0.6 m	0.34 m s^{-1}	0.28 m s^{-1}	0.20 m s^{-1}	0.10 m s^{-1}			
0.8 m	0.29 m s^{-1}	0.25 m s^{-1}	0.18 m s^{-1}				
1.0 m	0.23 m s^{-1}	0.15 m s^{-1}	0.05 m s^{-1}				
1.2 m	0.16 m s^{-1}	0.10 m s^{-1}					
1.4 m	0.10 m s^{-1}						





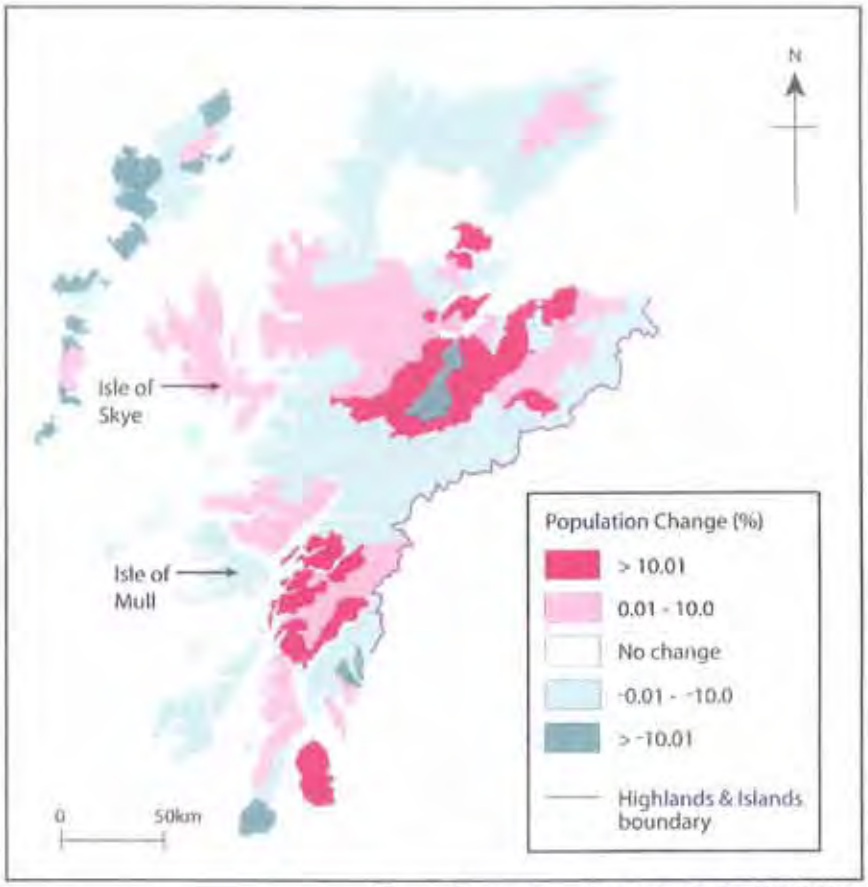
— 0.1m s^{-1} — Isovel (isoline) line joining points of equal velocity

• 0.15 River Velocity (m s^{-1})

(b) Study **Resource 1B**, which illustrates population change in the Highlands and Islands of Scotland between 1991 and 2001.

Examiner Only | Marks | Remark

Resource 1B



Source: Adapted from Geography Review Vol 18 No.2

(i) State how the rate of population change differs on the Isle of Mull compared to the Isle of Skye.

The population change on the Isle of Mull appears to be a small decline, between -0.01 and -10% change The population change on the Isle of Skye appears to have increased slightly, between 0.01% and 10% [2]

2
2

(ii) Name the mapping technique used in **Resource 1B** and discuss **one** strength and **one** limitation of this technique.

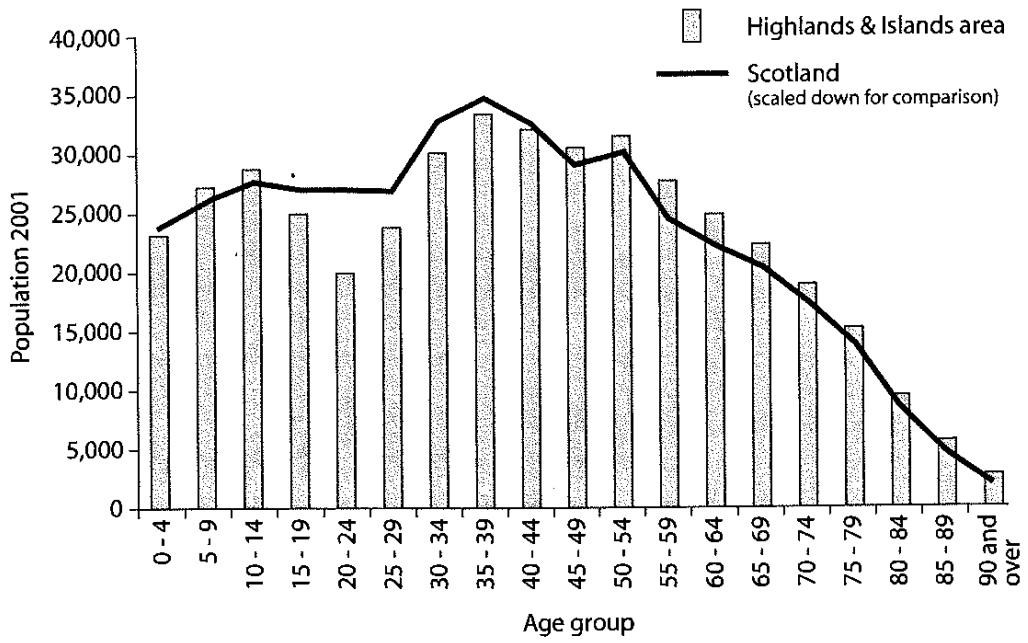
The mapping technique used in Resource 1B is a Choropleth map.
One strength of a choropleth map is that due to a simple colour scheme it can allow quick comparison of changes (in this case population) in different regions, with darker shades of a colour signifying greater change than lighter shades of a colour.
A limitation of this technique is the scales can be misleading. In this map one example is 0.01 - 10 % increase. This means populations which grow by 0.01 % are classed the same as those which grow by 10% (1000x more) so comparisons may not be very accurate. [5]

Examiner Only	
Marks	Remark
5/5	

(iii) Study **Resource 1C**, which illustrates the age profile for the Highlands and Islands region compared to Scotland as a whole.

Examiner Only | Marks | Remark

Resource 1C



Source: Adapted from Geography Review Vol 10 No.2

1. Which age group, in the Highlands and Islands, differs most from the age profile for Scotland?

20-24 [1]

1/1

2. Which age group, in the Highlands and Islands, shows the greatest over-representation compared to Scotland as a whole?

55-59 [1]

1/1

3. Using evidence from **Resource 1C** explain **one** potential problem, created by the age profile, for the development of the Highlands and Islands region.

One problem for the Highlands and Islands population is the out-migration of the youth population. Young people in the university and working age groups of 15-19, 20-24 and 25-29 are migrating away in search of jobs elsewhere, so it is harder for the businesses and economy of the Highlands and Islands area to develop further so . . . [3]

These figures are much lower than the Scotland average

2/3

5007

6

(c) Study **Resource 1D**, which is a satellite (remotely sensed) image of Hurricane Katrina in the Atlantic Ocean in August 2005.

Examiner Only	
Marks	Remark

(i) Hurricanes form under specific conditions. Using **Resource 1D**, identify and explain any **two** of these which are evident on the satellite image.

The centre of this hurricane is approximately 22½°N. While hurricanes form between 5°N and 5°S, they struggle to 'survive' above or below ~~the~~ The Tropic of Cancer and Tropic of Capricorn. Identify - Explain

Hurricanes also need the temperature of the sea to be approximately 26/27°C to a depth of about 30m to form and 1D shows the surface temperature of the water in the surrounding area to be over 27.5°C. [4]

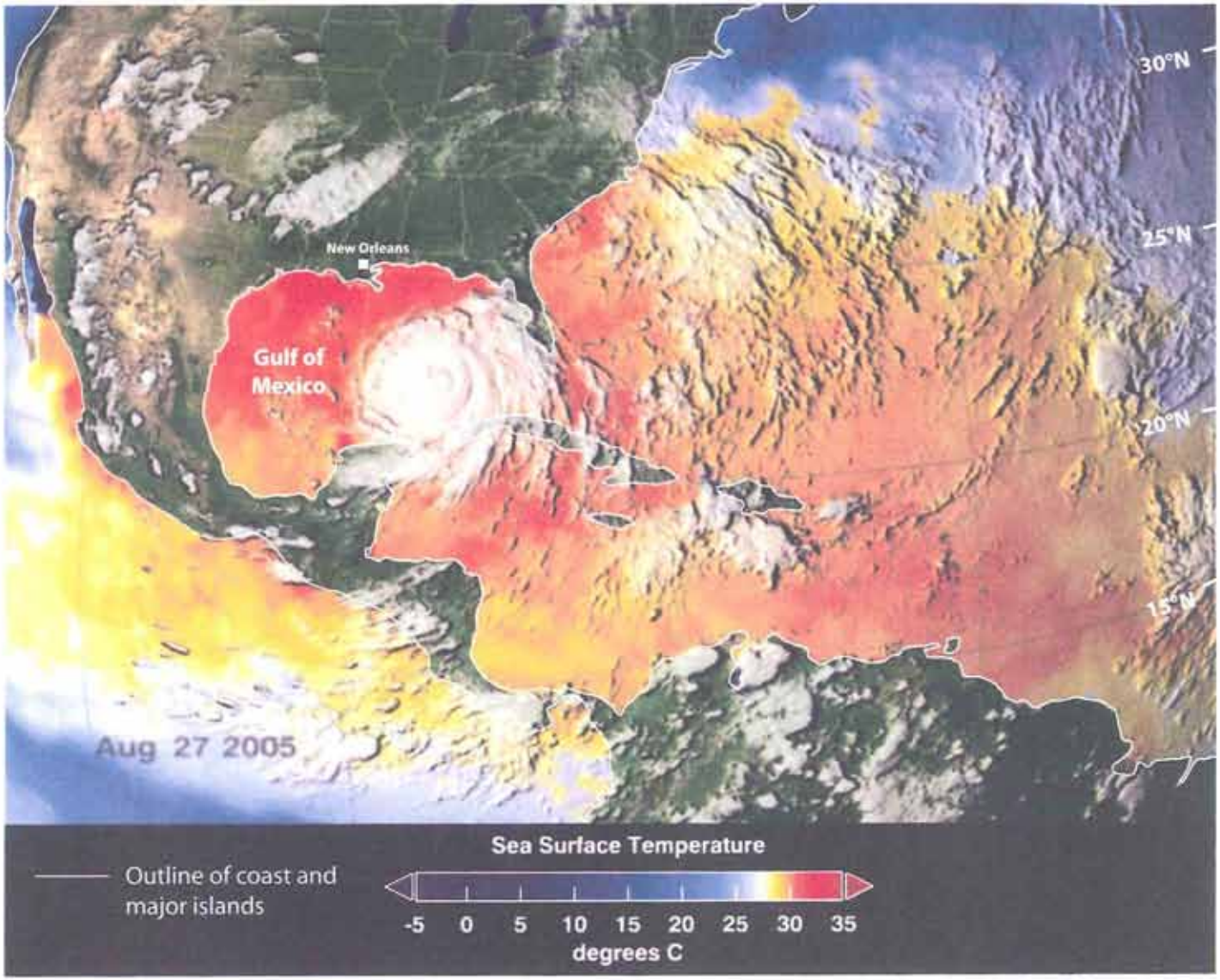
3/4

(ii) Apart from weather monitoring, state **one** use of satellite (remotely sensed) imagery in **geographical** studies.

Monitoring of effects of global warming [1]

1/1

Resource 1D



Source: Adapted from NASA satellite image

Section B

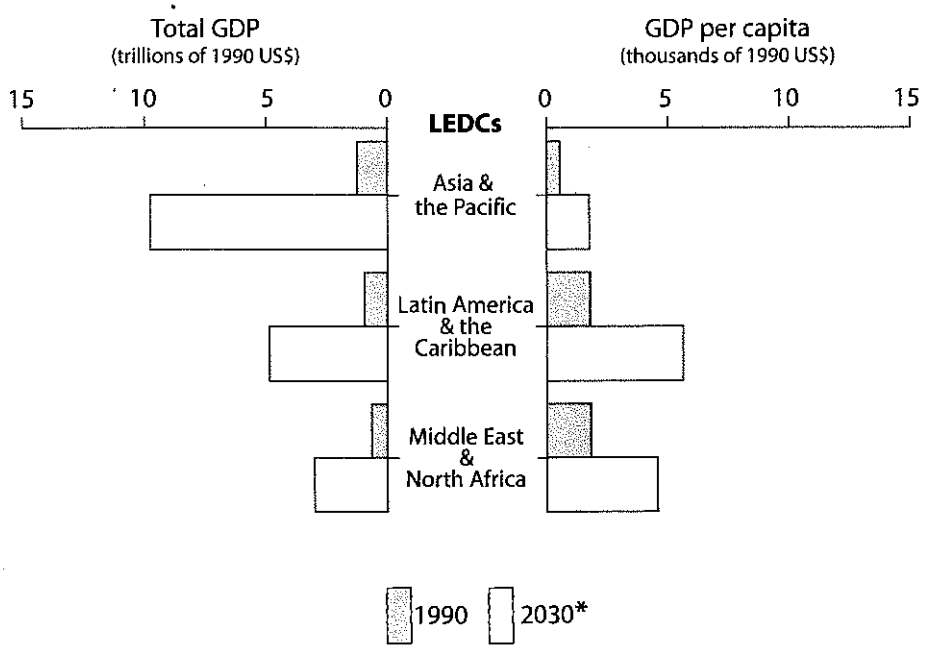
Answer all **three** questions in this section

Examiner Only

Marks	Remark
12	

2 Study **Resource 2** which shows total GDP and GDP per capita in selected regions in 1990 and projected for 2030.

Resource 2



*Data for 2030 are projections

Source: Adapted from: New Patterns: Process and Change in Human Geography/Michael Corr/1997

(a) (i) State the increase in **total GDP** in Asia and the Pacific between 1990 and 2030.

$8 trillion [1]

1/1

(ii) State the increase in **GDP per capita** in Asia and the Pacific between 1990 and 2030.

$1,000 [1]

1/1

(iii) Discuss how natural population increase may contribute to the differences over time in total GDP and GDP per capita in the regions shown in **Resource 2**.

In most of those areas population is growing and natural increase is high, this leads to large populations. As the total GDP increases, the GDP per capita will see a much lesser increase especially in poorly developed regions such as the majority of Asia.

However, in some areas such as Latin America and the Caribbean the development situation is improving and population growth is staring to slow therefore as total GDP increases, the GDP per capita should increase substansially as well. [4] Excellent.

Examiner Only

Marks	Remark
4/4	

(b) Describe how age dependency in a LEDC would differ from that in a MEDC and outline **two** economic implications for a LEDC.

In MEDCs, aged dependency is putting a huge strain on the government as death rates are low and life expectancy has increased rapidly, however, birth rates also remain low. However in LEDCs, youth dependency is a major problem as the birth rate is generally very high giving a large youth population and therefore huge potential for growth.

Youth dependency puts a huge financial strain on governments as they struggle to provide good enough education for the young people in their country. The costs of opening and running schools is huge and many LEDCs cannot afford this.

Also, the government also have to fund healthcare for those young people, infant mortality is high but governments do not have the money to provide enough or adequate healthcare in many regions. [6]

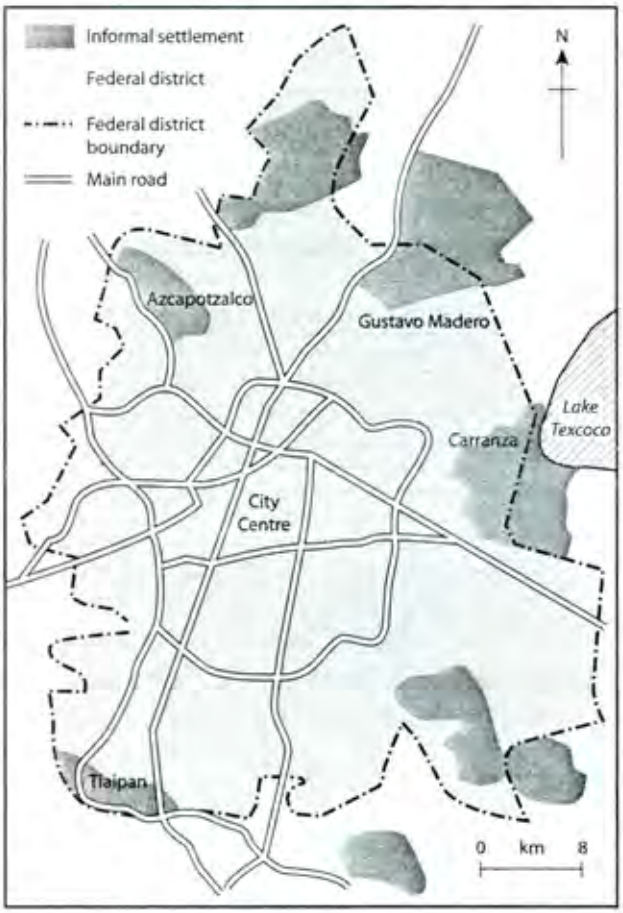
L3 Good focus

Marks	Remark
6/6	

3 (a) Study **Resource 3** which shows the location of informal settlements in Mexico City.

Examiner Only	
Marks	Remark
12	

Resource 3



Source: Urbanisation: Changing Environments/Collins Educational

Describe the location of informal settlements in Mexico City and discuss the levels of service provision and types of economic activity you would expect to find in such settlements.

The resource shows that informal settlements are found on the outskirts of Mexico City with some such as Carranza spilling over the Federal district boundary. Others are on main roads such as Azcapotzalco. Service provision will be generally poor, e.g. they may not have any sewage disposal or clean drinking water. Even the settlements built alongside main roads may not have good roads in the settlement. Many will be

Examiner Only	
Marks	Remark

employed in the ~~forested~~ informal sector or as casual workers. Only family-run small businesses (sp) are likely

L = 2
SP = 2
E = 2

[6]

6/6

(b) With reference to a MEDC case study, define **gentrification** and evaluate how this process has affected your chosen area.

The Lisburn Road area of Belfast has been affected by gentrification. This is when higher income middle class groups move into a poor area in a city. The new residents can afford to renovate the houses making them more expensive and the area becomes sought after. The new well-off residents have more disposable income and spend it on entertainment in the city centre and Golden Mile. The areas reputation is now better. But many of the poorer residents can feel left out and conflict might happen e.g. anti social behaviour.

[6]

6/6

4 (a) Describe and evaluate one **social** measure of development.

Examiner Only
Marks | Remark

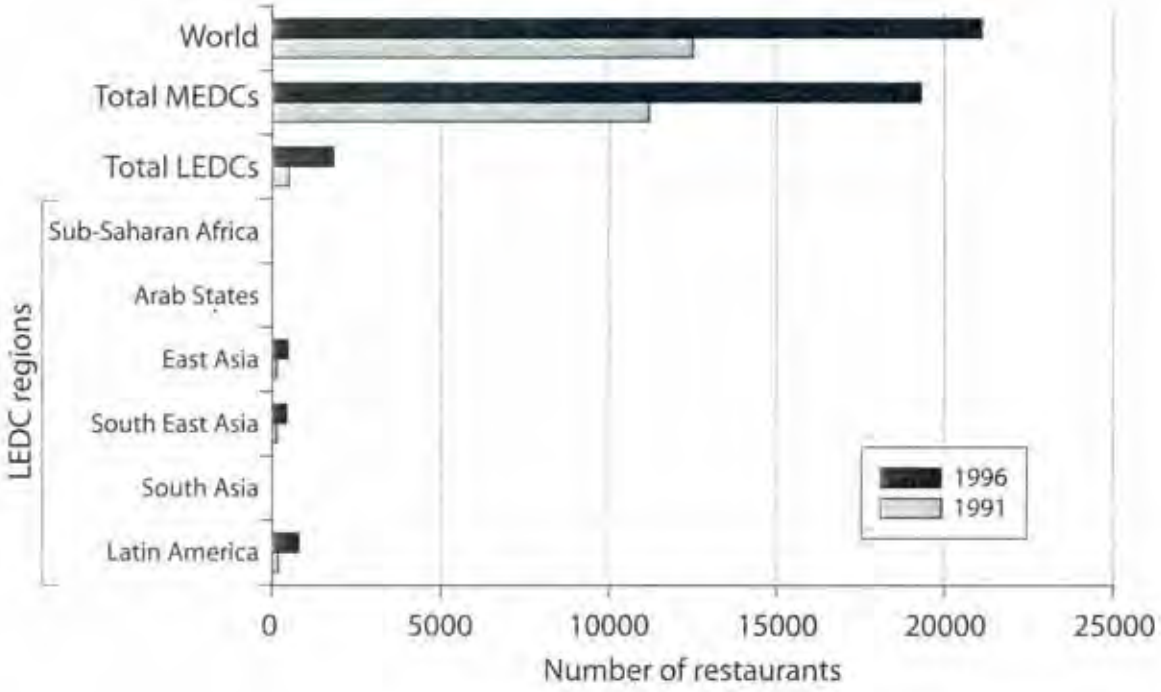
12

The Infant Mortality Rate is the number of infants who die before they reach their first birthday per 1000 live births. Because new born babies are very vulnerable this rate give us an insight into life in the country eg. health care for women, diet, levels of education and access to clean water. The infant mortality rate may not always be accurate as the registration of births and deaths in LEDCs may not be right. [4]

4/4

(b) Study **Resource 4** which shows the number of McDonald's restaurants by region in 1991 and 1996.

Resource 4



Source: adapted from www.globalpolicy.org/globaliz/charts/mcdon2.htm

McDonald's is a transnational company. Describe the pattern shown in the resource and identify one **social** implication of this trend.

Examiner Only

Marks	Remark

From 1991 to 1996 the number of McDonalds in MEDCs has increased far more than in LEDCs. By 1996 there were nearly 20000 McDonalds in MEDCs and less than 2000 in LEDCs. A social implication of this is that more people are eating fatty foods and their (Sp) is an increase in obesity worldwide. Go a TNC McDonalds has been accused of exploitation. [3]

3/3

(c) Transnational companies like McDonald's are one symbol of globalisation. Discuss how globalisation can affect the **economic** development of a LEDC you have studied.

Globalisation has helped the economic development of Ghana. It means new markets for produce from Ghana. The goverment of Ghana recently signed a deal with the TNC Cargill for cocoa. The TNCs usually buy primary resources and use cheap labour. Some TNCs have been accused of exploitating (Sp.) locals such as children and not paying good wages. But the wages can be spent locally encouraging the local economy

[5]

5/5

Section C

Answer **any two** questions

Examiner Only
Marks | Remark

5 "Population distribution is related to the availability of physical and human resources." Discuss this statement with reference to a national case study. [12]

6 With reference to places for illustration, discuss **three** issues faced in the rural–urban fringe. [12]

7 Define **either** colonialism **or** neo-colonialism and discuss how your chosen process has affected the level of development of a LEDC you have studied. [12]

Question Number

Number your answers clearly

12

5 Canada is an MEDC which is resource rich and located in N. Amer North America. It has a total population of 33 million, but they are not evenly distributed throughout the country. Their distribution is dependent on the availability of resources.

P Climate is a major restricting influence on population distribution. In the Northwest Territories, the climate is largely sub-arctic and due to the dry conditions (less than 300 mm rainfall annually) and poor soils, there is virtually no agriculture. This means food must be flown in making it around 95% more expensive than the Canadian average. This additional living costs discourages settlement, especially when the climate is much more moderate in the South. As a result the Northwest territories contains 0.03% of Canada's population. Most people, up to 90% live within 120 km of the US-Canada Border. This is largely because this is a major zone for trade. In such an environment, lots of businesses spring up and offer employment. Indeed around half the population of Ontario live in the Golden Horseshoe

Question Number

Number your answers clearly

on the opposite shore of Lake Toronto as the US. There is also the added bonus of tourism along the border which promotes employment on the border region.

A lot of the population live in urban areas. In Alberta, 81% of the population live urbanlly, this is due to because 76% of Canadians are employed in the service industry, and locate close to their workplace. Furthermore through the mechanisation of farming there was mass unemployment rurally in the 1930's and now the farming sector employs just 2% of the Canadian workforce. These unemployed the looked for jobs in the cities. Furthermore the industry of tree cutting is in decline due to low wages and the physical hardships of the job, again employing less than 2% of the population, hence people move to the cities.

Large urban areas also attract immigrants as 52% of all immigration in 2006 was to Ontario. These areas offer the prospect of well-paid jobs and so develop a momentum of increased population settlements.

In the North of the country people live urbanlly

Question Number

Number your answers clearly

because the climate is too harsh to live really and risk isolation. However resource towns do spring up, like Norman Wells in the Northwest Territories which is inhabited by 200 people.

Overall the majority of Canada's population live within 120 km of the US border and around 90% live in urban areas. The human resource and climate have the greatest influence on distribution.

L3 12/12. Detailed use of figs – both pop den & Resource & discussion of variety of locations.

Sound understanding.

Question Number

Number your answers clearly

10

6. The rural-urban fringe is the area where rural meets urban. Suburbanisation refers to the decentralisation of people goods and services. In the case of Belfast Suburbanisation has occurred as early as the 1900's and 1930s when rich merchants moved from densely populated areas in the centre to areas such as malone, stran millis and orma in the South.

Suburbanisation is reliant on public transport and the outer limit of Suburbanisation is determined by the outer limit of public transport. Issue 1

Many private developments have been built in the rural-urban fringe and areas such as cairshill exist today because of this.

One of the issues faced in the rural urban fringe is traffic congestion. The Belfast metropolitan area plan cites a 20% increase in traffic congestion by 2015. One of the Solutions to this problem is the building of a ring road connecting the M1 and the M2 New roads have been built around towns such as Hollywood Issue 2 Speeding up commuting time and therefore maintaining the economic competitiveness.

Because of this decrease in commuting time counter

Question Number

Number your answers clearly

-urbanisation it more evident nowadays. This process refers to the movement of people to small ~~or~~ rural areas within commuting distance of their work place.

The Second issuse facing the rural urban fringe is the growth of the city residential areas. A greenbelt area had been designated by the goverment. This area was the border-limit of the city and was unavailable for development. However, it was soon breached and areas such as poleglass now exist in its place

The third and final ixse I am going to discuss is the issuse of retail development on the greenfield sites. local residents oppose this because it increases traffic congestion and loss of revenue for local businesses. The people of Sprucepield Successfully opposed the building of a John lewis centre in the area, which is a major Scottish retailer. Issue 3

(L3) Clear explanation of 3 issues faced in rural-urban fringe.

(12)

Question Number

Number your answers clearly

(7) Colonialism is when one country imposes its rule on an indegionous society in another country. This occured in Ghana, when the British ruled the territory from 1902-57.

The British had influence in the region as early as the 18th Century and this has severe impacts on the trade and society of the region.

A major trade on the Gold coast was slaves up until 1810 and this allowed the Ashanti to gain power as they promoted the domestic slave trade. However by 1902, the British had conquered the Ashanti lands.

Furthermore the British promoted the production of cash crops in Ghana, e.g Cocoa. This meant that the British could import cheap raw materials from Ghana. However it impacted Ghanaian agriculture, as it meant the domestic production shifted from self-sufficiency to export. Hence there was less food being grown to feed its people. This means that now Ghana has to import 0.6bn $ worth of food for its people, yet Cocoa makes up around 40% of its exports in 1991.

Furthermore the results of colonialisation

disrupted the sociology of the region. Local tribes were agitated in the 1820's & 1870's as they fought for the prominent positions of trade with the British. Furthermore when Ghana was granted independence on the 6th March 1957, the country was formed regardless and not taking into consideration, pre-existing tribal boundaries, creating social tensions. - indeed there were 2 military coups between 1966-72 in Ghana.

With low prices ~~in~~ Through colonialisation no attempt was made to expend industry, hence they had to rely on low priced primary exports, which gave little money to invest in the country. However the British did build a plethera of railways between 1897-1924 and this helped open up the interior of the country to both economic and political development.

Currently Ghana is benifitting from its colonial past, it receives aid from the UK each year and it is part of the Commonwealth, which acts as a support structure trying to aid development. Furthermore events such as the Commonwealth games help to benifit Ghana's relationship with the commonwealth states and provides ~~use~~ an additional market platform for export.

Neo col?

Question Number

Number your answers clearly

Due to its colonial past, Ghana has ~~bee~~ emerged a united country and despite its problems, it has a HDI of 0.55 and is one of the more developed ~~country~~ countries in Africa. ~~It now has a~~

END

P.

L3 12/12. Clear understanding
Detailed look at effects - P&N.

Unit AS 2:
Good Exam Technique Commentary

Commentary on Good Exam Technique response for Assessment Unit AS 2

Section A

Question 1 30 marks possible
28 marks awarded

(a) (i) Correct.
2/2 marks

(ii) All correct. It is important that candidates pay sufficient attention to these mechanical tasks and pick up the marks on offer.
4/4 marks

(iii) The answer here has explanation as well as a sound description that cites figures from the Resource.
4/4 marks

(iv) A valid technique is identified straight away and then the response states why it is valid.
3/3 marks

(b) (i) The identification is correct and the comparison adequate.
2/2 marks

(ii) The correct technique is identified at the start and choropleth is correctly spelt. Naming the technique (or whatever is required) straight away is excellent practice. The answer has good depth, the colours do allow for quick comparison, and shades can denote meaning, whilst the limitations are particularly detailed, the '1000X more' is a very telling comment. Fine work.
5/5 marks

(iii) 1 Correct. 1/1 mark
2 Correct. 1/1 mark
3 It is not a good technique to end an answer with an ellipsis … We want things properly concluded. In addition the note about Scotland would have been more coherent had it been incorporated from the start.
2/3 marks

(c) (i) The identification is superior to the explanation here.
3/4 marks

(ii) A use is correctly identified, but it would have been better to have had another phrase saying why.
A generous 1/1 mark

Section B

Question 2 12 marks possible
12 marks awarded

(a) (i) Correct.
1/1 mark

(ii) Correct. It pays to be careful with these tasks and make sure the marks are picked up.
1/1 mark

(iii) The relationship between GDP and GDP pc is seen correctly and place is used well.
4/4 marks

(b) The answer clearly distinguishes between aged dependency and youth dependency. It focuses correctly on LEDCs and identifies the two economic implications, the cost of education and the cost of health care. Good structure.
6/6 marks

Question 3 12 marks possible
12 marks awarded

(a) The work on the location is good, secured by the use of place names, with the bonus of the correct transcription of the unusual and difficult names. A range of probable issues is then brought in from knowledge on water supply, transport and the informal economy.
6/6 marks

(b) The response clearly sets out what gentrification is and applies it to a place, not just a city, but an area within the city where gentrification is in operation. The detail is excellent even to suggesting where the gentrifier may want to go out. The response also deals with the issue of the people who lose out in this process. There is good command here.
6/6 marks

Question 4 12 marks possible
12 marks awarded

(a) Infant Mortality Rate works as a social measure as explained. The answer might perhaps have been fuller. The issue of the status of women is not there, but there is enough for full marks, especially given the evaluation and limitation of IMR at the end.
4/4 marks

(b) The answer has figures for the description and has a health (social) implication. The last point made was not necessarily needed. This answer just gets top marks.
3/3 marks

(c) The chosen LEDC is mentioned at the start and its value is enhanced by up to date material. It then wanders a little from economic to social and it could have been better focused.
5/5 marks

Section C

Question 5

This answer mentions distribution straight away. It is good practice to put key terms down at the start; there will be less chance of not answering the question thereafter. This is not a perfect answer, as the border region has more to offer. The fact that it was the prime area for colonial era settlement remains important, certainly as important as the 1930s situation mentioned. The focus on rural-urban migration is good, keeping the answer on distribution. There is good detail on places and overall a sound understanding.
Level 3: 12/12 marks

Question 6

The rural-urban fringe is defined with an example given straight away. The details of the example are a little out, the suburbanisation described was rather earlier. A few references to local places were misspelt. Traffic congestion is not specifically a suburban problem and there are problems with the housing material as well. The other two issues are handled more competently, especially at the end. The answer as a whole benefits from case study detail. It just gets into Level 3.
Level 3: 10/12

Question 7

Again it is stated straight away which was the choice, followed by a decent definition. The answer goes way back into history. There is always a danger that such an approach might take away from the modern situation but it is well brought back here. The comparison between food imports and cacao exports would have been much stronger had the units been the same. How does $0.6 billion relate to 40% of Ghana's exports? The social impacts are good and colonial boundary issues, tribalism and the military coups all help, although the transition from tribalism into a united country is a little too glib. There are benefits picked out too, especially the railways. In short, the answer is not perfect, however, full marks can be earned by candidates expressing the best that can be expected under examination conditions: here we see a good range of material, focus on the case study and useful detail.
Level 3: 12/12 marks

Unit AS 2:
Poor Exam Technique Response

New Specification

Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2009

Geography

Assessment Unit AS 2

assessing

Human Geography

[AG121]

AG121

THURSDAY 11 JUNE, AFTERNOON

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.
Section A: candidates must answer this section
Section B: answer **all three** questions in this section, you should write your answers in the space provided in this question paper.
Section C: answer **any two** questions from this section.

INFORMATION FOR CANDIDATES

The total mark for this paper is 90.
Quality of written communication will be assessed in **all** questions.
Figures in brackets printed down the right-hand side of pages indicate the marks awarded to each question or part question.

For Examiner's use only	
Question Number	Marks
1	9
2	3
3	2
4	4
5	0
6	2
7	3
Total Marks	23

Section A

Answer this section

Examiner Only	
Marks	Remark
9	

1 **(a)** Study **Resource 1A** on page 3, which illustrates a partially completed isoline map of the velocity distribution in a river channel at a meander bend (drawn along cross-section X–Y).

(i) Plot the two velocity readings recorded in the channel at a distance of **5 m** from river bank X. [2]

0/2

9 **(ii)** Complete the four isovels (lines joining points of equal velocity) at intervals of 0.1 m s^{-1}. [4]

0/4

7 **(iii)** Explain the isoline pattern for velocity throughout the channel area in **Resource 1A.**

The isoline pattern for velocity in resource 1A is highest when closer to the bank. e.g at 0.2 metres from the bank the velocity is 0.5 metres per second compared to the 0.1 metres per second at 1.4 metres out from the bank.

No explanation [4]

0/4

(iv) What type of statistical technique could be used to investigate the relationship between the average velocity of the river and distance from the left bank of the meander bend? Justify your choice. (No calculations are required)

I would use ~~Efficient~~ Spearmans Rank Correlation (1) coefficient to investigate this because it would give a true record of the points. This is helpful as you could record the velocity at evenly spaced intervals across the meander and then calculate an average velocity at the meander bend. [3]

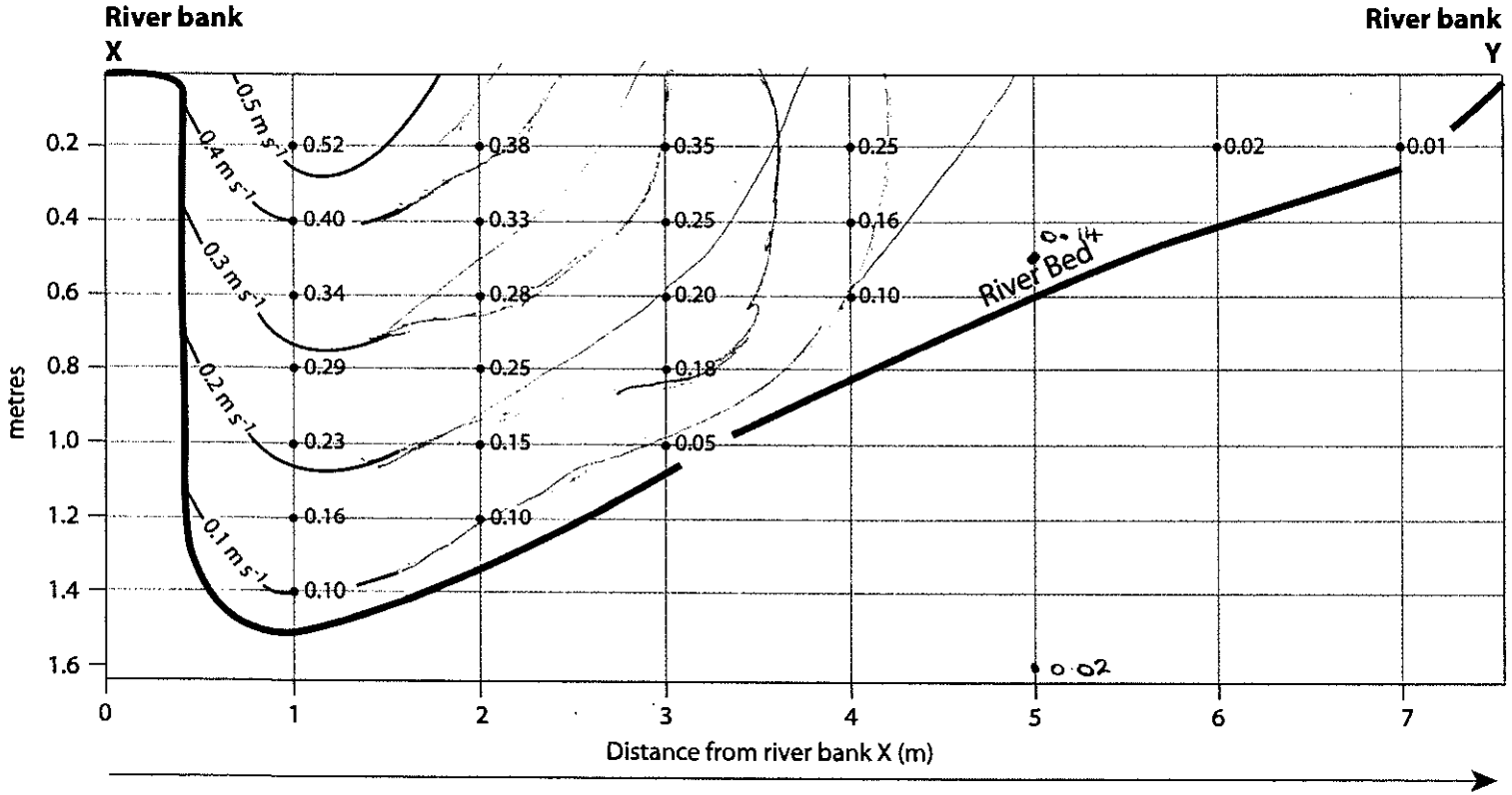
No acc Justification

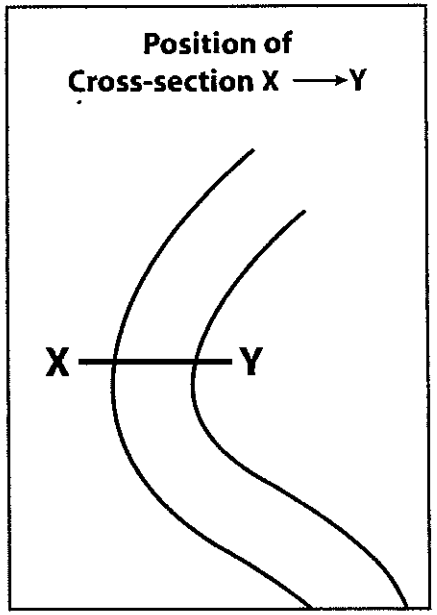
1/3

Resource 1A

Distance from river bank X

Depth	1 m	2 m	3 m	4 m	5 m	6 m	7 m
0.2 m	0.52 m s^{-1}	0.38 m s^{-1}	0.35 m s^{-1}	0.25 m s^{-1}	0.14 m s^{-1}	0.02 m s^{-1}	0.01 m s^{-1}
0.4 m	0.40 m s^{-1}	0.33 m s^{-1}	0.25 m s^{-1}	0.16 m s^{-1}	0.02 m s^{-1}		
0.6 m	0.34 m s^{-1}	0.28 m s^{-1}	0.20 m s^{-1}	0.10 m s^{-1}			
0.8 m	0.29 m s^{-1}	0.25 m s^{-1}	0.18 m s^{-1}				
1.0 m	0.23 m s^{-1}	0.15 m s^{-1}	0.05 m s^{-1}				
1.2 m	0.16 m s^{-1}	0.10 m s^{-1}					
1.4 m	0.10 m s^{-1}						





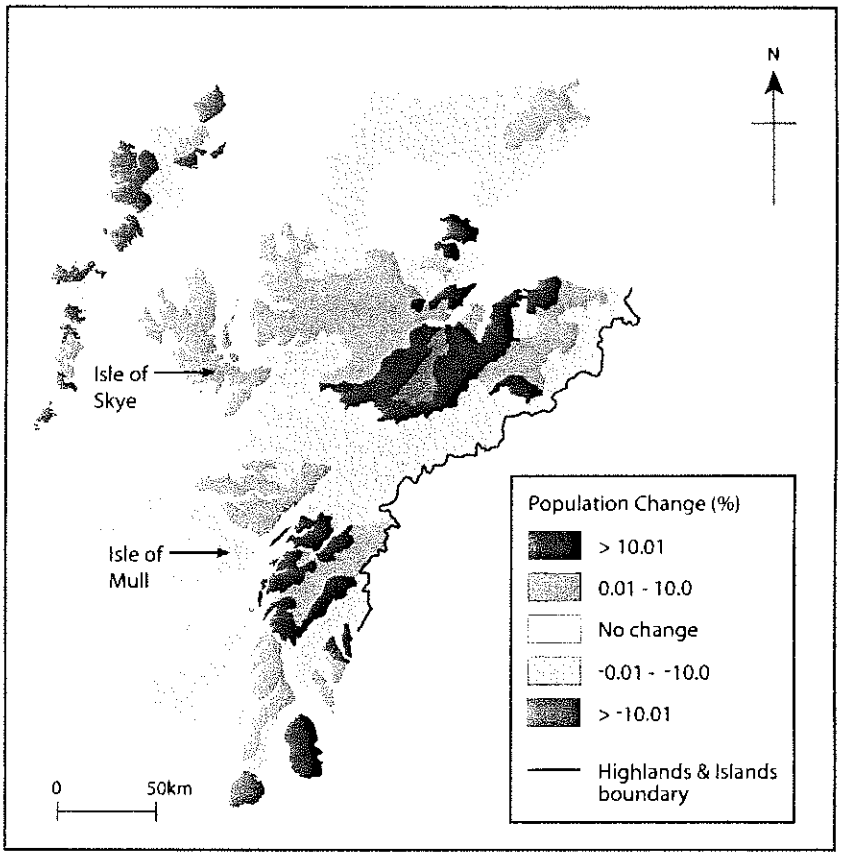
— 0.1m s^{-1} — Isovel (isoline) line joining points of equal velocity

• 0.15 River Velocity (m s^{-1})

(b) Study **Resource 1B**, which illustrates population change in the Highlands and Islands of Scotland between 1991 and 2001.

Examiner Only
Marks | Remark

Resource 1B



Source: Adapted from Geography Review Vol 18 No.2

(i) State how the rate of population change differs on the Isle of Mull compared to the Isle of Skye.

The population on the isle of Skye is >10.01% compared to the population of the isle of mull which has -0.01 - -10.0%. This is a difference of 20% [2]

(ii) Name the mapping technique used in **Resource 1B** and discuss **one** strength and **one** limitation of this technique.

One strenght of this technique is that geography people will be able to see at a quick glance how many people their is living in one specific area. This is helpful with the colour as it makes it easier to spot. The limitation to this is that the bigger the area in question the more colours a person will need which can become confusing when you look at it. This may lead to people using incorrect information in some tasks. [5]

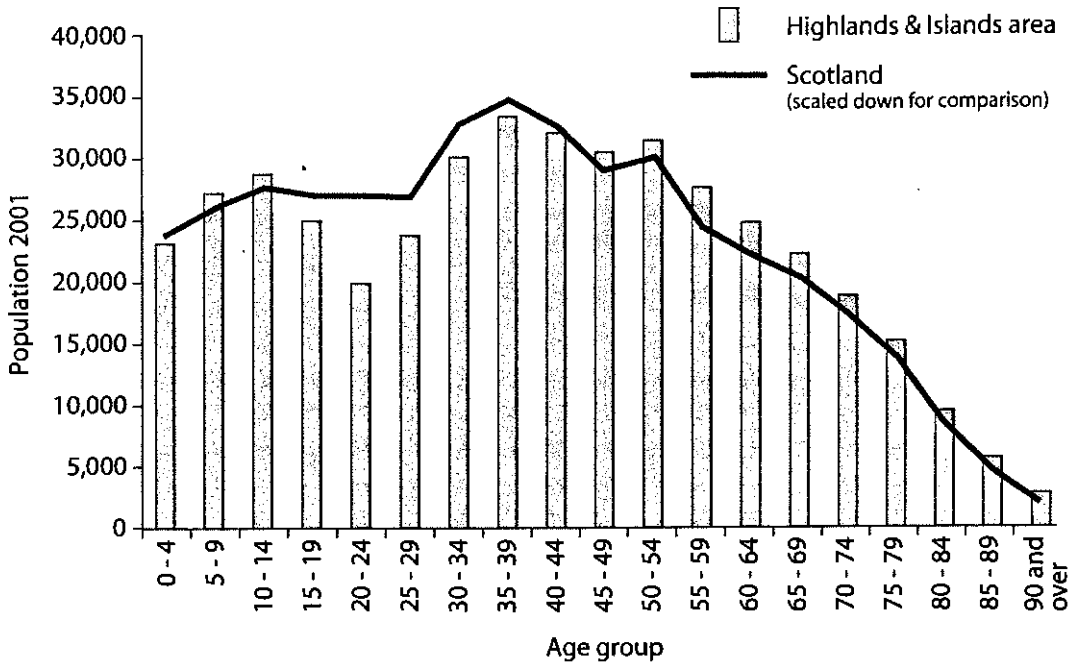
Limitation unclear
No technique

Examiner Only	
Marks	Remark
2/5	

(iii) Study **Resource 1C**, which illustrates the age profile for the Highlands and Islands region compared to Scotland as a whole.

Examiner Only
Marks | Remark

Resource 1C



Source: Adapted from Geography Review Vol 10 No.2

1. Which age group, in the Highlands and Islands, differs most from the age profile for Scotland?

20-24 age group. ✓ [1] — 1/1

2. Which age group, in the Highlands and Islands, shows the greatest over-representation compared to Scotland as a whole?

55-59 age group ✓ [1] — 1/1

3. Using evidence from **Resource 1C** explain **one** potential problem, created by the age profile, for the development of the Highlands and Islands region.

as the age of the population in the highlands and
island regions is mainly older than that of
Scotland means that the highlands will find it
very difficult to attract new younger people there ✓
as the jobs will be lower and no entertainment then
as the older population die they will not be replaced [3] — 1/3

Vague

(c) Study **Resource 1D**, which is a satellite (remotely sensed) image of Hurricane Katrina in the Atlantic Ocean in August 2005.

Examiner Only
Marks | Remark

(i) Hurricanes form under specific conditions. Using **Resource 1D**, identify and explain any **two** of these which are evident on the satellite image.

Not sea temp.

Warm, updrafts of air from the land. Warm air above 30° degrees will help rotate the air in the upper troposphere and cause spiraling winds. Beyond 5° of the equator the coriolis effect will also cause clouds in the atmosphere to spin causing severe winds of up to 120 km/h.

Res use not clear.

1/4

[4]

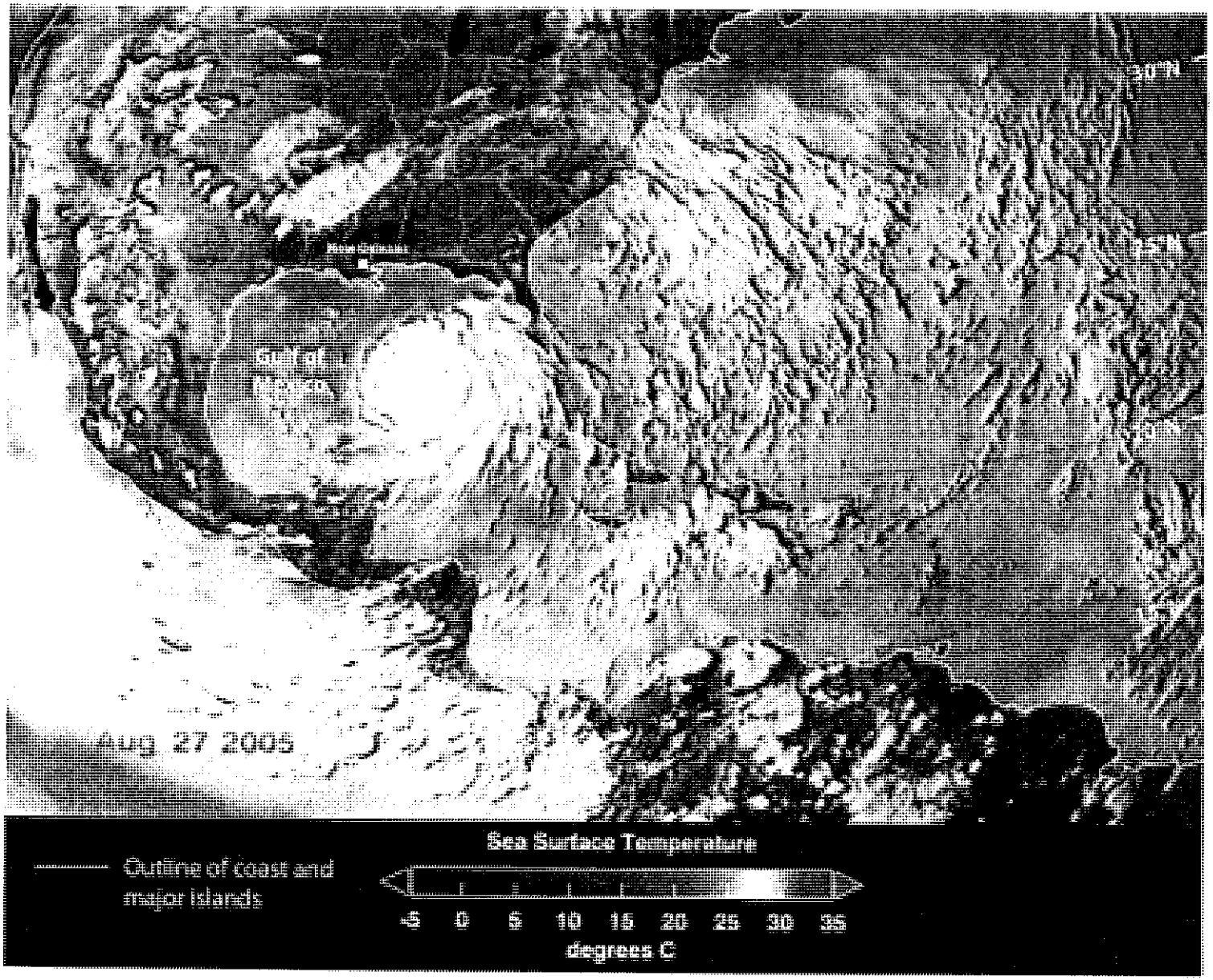
(ii) Apart from weather monitoring, state **one** use of satellite (remotely sensed) imagery in **geographical** studies.

Land use. (Mapping.)

1/1

[1]

Resource 1D



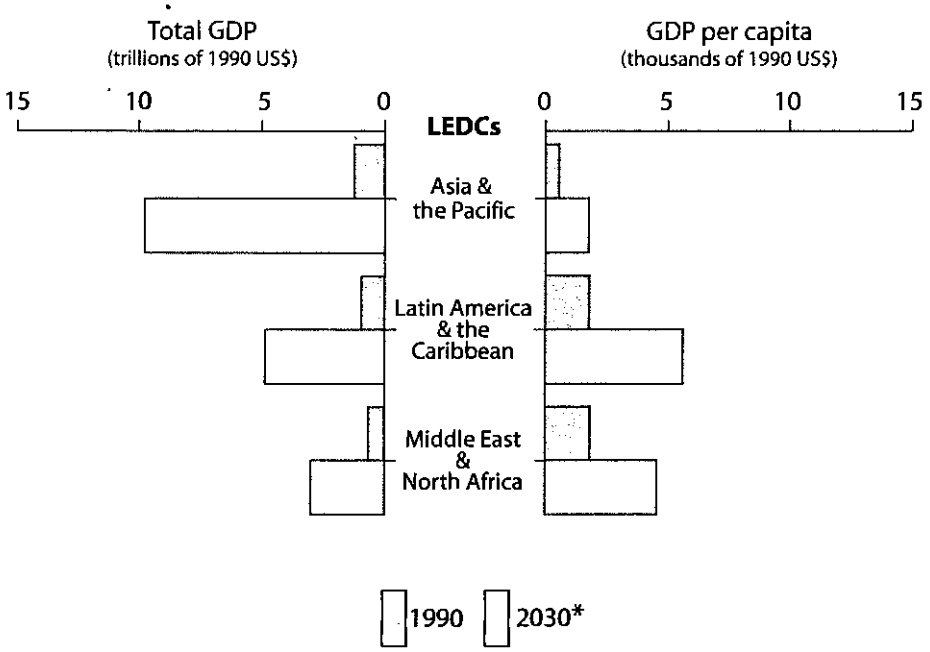
Source: Adapted from NASA satellite image

Section B

Answer all **three** questions in this section

2 Study **Resource 2** which shows total GDP and GDP per capita in selected regions in 1990 and projected for 2030.

Resource 2



*Data for 2030 are projections

Source: Adapted from: New Patterns: Process and Change in Human Geography/Michael Corr/1997

(a) (i) State the increase in **total GDP** in Asia and the Pacific between 1990 and 2030.

7 trillion US$ [1]

(ii) State the increase in **GDP per capita** in Asia and the Pacific between 1990 and 2030.

2,000 US$ [1]

Examiner Only
Marks | Remark

3

0/1

0/1

Examiner Only	
Marks	Remark
1/4	
2/6	

(iii) Discuss how natural population increase may contribute to the differences over time in total GDP and GDP per capita in the regions shown in **Resource 2**.

Natural population increase may contribute by there being more of a working population in these LEDC's. If the population increases then more people will be working which will bring more wealth into the country due to Companies relocating there because of lower wages. Vag [4]

(b) Describe how age dependency in a LEDC would differ from that in a MEDC and outline **two** economic implications for a LEDC.

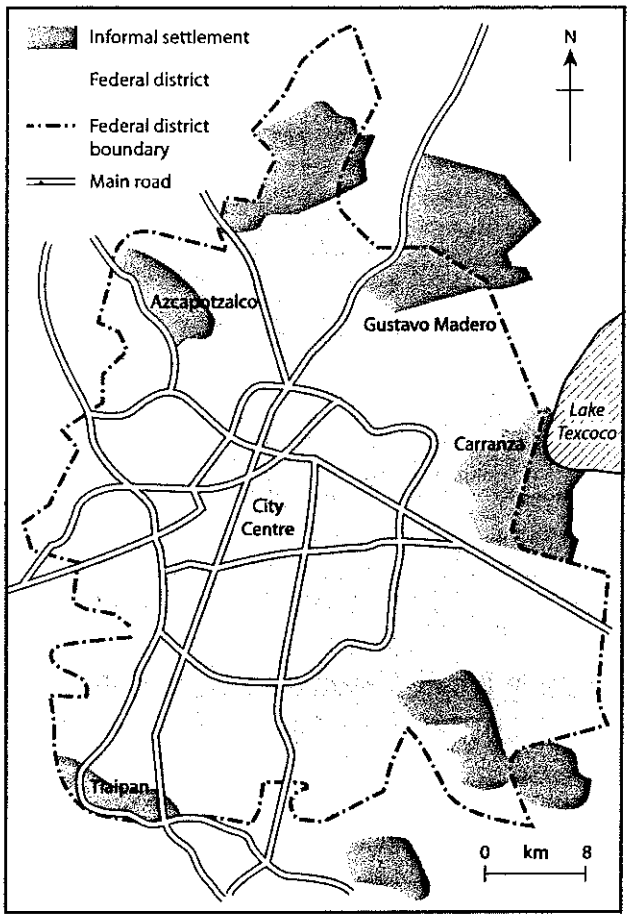
LEDC's generally have a youth dependant population. However the age dependand population will depend on the working population to provide them with the nessesary care as the health services may be poor. In An MEDC there is difference a Large age dependant population e.g. Japan. This is due to good health care and healthy lifestyle. Implications facing an LEDC would be the working population having to pay for nessesities for the non-working age population and also funding homes for them to live. [6]

L1 Diff only Imp vague

3 (a) Study **Resource 3** which shows the location of informal settlements in Mexico City.

Examiner Only	
Marks	Remark
2	

Resource 3



Source: Urbanisation: Changing Environments/Collins Educational

Describe the location of informal settlements in Mexico City and discuss the levels of service provision and types of economic activity you would expect to find in such settlements.

The location of informal settlements are all away from the city centre and all are very close to, or on the federal district boundary. They all quite far away from eachother, they are all very close to main roads and in some cases main roads go through or right beside these settlements. I would expect a high level of service provision because of their location, they

Examiner Only
Marks | Remark

L2
SP-0
EA-0

will have good transport to the city. There may be factories and other types of work in ~~this~~ these areas. footlose industries, and carranza is close to the lake for resources [6]

2/6

(b) With reference to a MEDC case study, define **gentrification** and evaluate how this process has affected your chosen area.

Gentrification is the process at which it builds the city back up with jobs, houses and people. Liverpool in 1937 was one of the most popular cites in the British Isles. This was due to the port and the position it was in to trade with ex Africa and America. However this changed in the 20th century as the port was no longer big enough and people were now trading with the EU. People started moving away from Liverpool. However in 2001 there has be some changes a scheme has formed Anfory neighbour which has developed skills in the area to educate people, produced housing and services for the area. This has been a great help as Liverpool is now an area where there is less crime, less people onemployed and it was given Cultural Capital in 2008. No fans

0/6

4 (a) Describe and evaluate one **social** measure of development.

PQLI

PQLI — ✓ personal quality living index will show how well off people are, the more well off the more developed the region is. Though factors used for its description are similar meaning all results are quite similar ✗

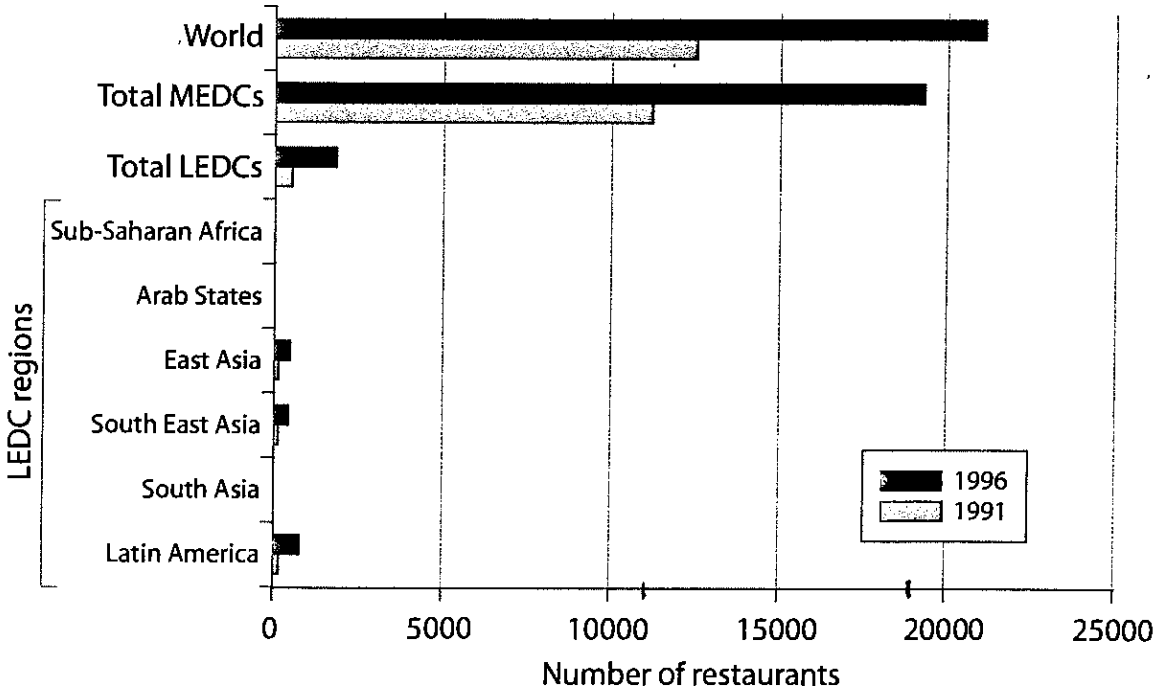
[4]

Examiner Only

Marks	Remark
4	
1/4	

(b) Study **Resource 4** which shows the number of McDonald's restaurants by region in 1991 and 1996.

Resource 4



Source: adapted from www.globalpolicy.org/globaliz/charts/mcdon2.htm

McDonald's is a transnational company. Describe the pattern shown in the resource and identify one **social** implication of this trend.

Since 1991 everywhere that had McDonalds, the numbers have increased. eg. total MEDCs in 1991 had around 11,000 restaurants and by 1996 there were 19,000 trend.

[3]

Examiner Only
Marks | Remark
1/3

(c) Transnational companies like McDonald's are one symbol of globalisation. Discuss how globalisation can affect the **economic** development of a LEDC you have studied.

Globalisation can provide jobs for people in LEDCs such as Ghana. Globalisation has benefited the economy of Ghana by creating more jobs for the people and therefore more money for the local economy by opening cocoa plantations.

[5]

3/5

Section C

Answer **any two** questions

Examiner Only	
Marks	Remark

5 "Population distribution is related to the availability of physical and human resources." Discuss this statement with reference to a national case study. [12]

6 With reference to places for illustration, discuss **three** issues faced in the rural–urban fringe. [12]

7 Define **either** colonialism **or** neo-colonialism and discuss how your chosen process has affected the level of development of a LEDC you have studied. [12]

Question Number

5

Number your answers clearly

0

Mauritius is a small island located 880 kms east of Madagascar in the Indian Ocean.
The island experienced severe overpopulation during the 1950s and 1960s. Between 1960 and 1965 the population grew by 4%. As a result there was too many people for the island to support. The people experienced high levels of unemployment, they had low living standards and income levels per capita were also low.
These problems were experienced right across the island.
The economy went into decline and there were severe social and economical effects.

The Government of Mauritius decided to set up a Development Plan for the island.
The aim of the plan was to reduce the over population.

Question Number

Number your answers clearly

The government decided to do two main things

- they decided to reduce the rate of population growth
- they planed to increase the sp economy.

Firstly to reduce the population growth family planning clinics were set up all over the island to educate people about family planning.

The use of contraceptives were encouraged to slow the population growth. This was opposed by the Catholic Church at the start but the Church later withdrew their sp. opossition.

A large proportion of the population in Mauritius is Hindu but there is also a large Christian population on the island as well.

Question Number

Number your answers clearly

The goverment also tried to improve the economy.
They decided that the best way to do this was to encourage outside investment from large companies.
They gave big incentives for companies to set up industry on the island.
The incentives included exemption from some taxes so lots of industries set up factories on the island.
These industries included clothing and manufacturing and engineering

Sp
Bisnesses were also attracted to Mauritus including off shore banking.

In this way the goverment hoped to attract inward investment. They hoped the investment would attract business in the secondary and tertiary sectors.

Question Number

Number your answers clearly

The plan proved successful. The population ~~has~~ growth has declined and the people are better off. There have been improvements in health care and education. The birth rate has declined for the whole population and there are many more jobs including in tourism.

0/12 A lot of detail but inappropriate case study.

Question Number

Number your answers clearly

6) The rural - urban fringe is the area seperates an urban area from a rural area. The rural - urban fringe is likely to face problems of the urban area trying to expand for housing. People want to live in the rural urban fringe because houses tend to be bigger and have more space with a garden and garage. These houses are better for bringing children up in. When an urban area expands it will result in ~~ecosystems~~ habitats being damaged as the urban area will try to expand into the rural area.

The rural - urban fringe will face problems from pollution. The added traffic from the urban area added to the ~~and~~ removal of plants can cause a build up of CO_2 as there are no plants to absorb it.

At the rural - urban fringe problems may also arrise from recreational use.

L1 2/12. Limited answer with no reference to place

Question Number

Number your answers clearly

7. Neo-colonialism is when a previously colonised country has been given its independence back but on the condition that it and its MEDC coloniser keep trade links open.

Ghana is a country that was once owned by Britain and ~~was~~ gained its independance quite back recently. When Britain ruled it, it started to industrialise factories were built and people were given jobs. Cocoa was its main product and after independance it continued to export cocoa and at a time was supplying 90% of the worlds cocoa. But because cocoa is Ghanas main raw material it has to import manufactured goods such as food from it's trade link MEDC, making the MEDC richer and Ghana poorer. This pushes Ghana into debt meaning the country must loan money from an MEDC and repay it with high amounts of interest on it over many years, pushing Ghana into even further debt. This means Ghana is unable to develop. It has no money to build schools

Question Number

Number your answers clearly

therefore peoples job prospects are lower.

L1 limited understandg of impacts 3/12

END

Unit AS 2:
Poor Exam Technique Commentary

Commentary on Poor Exam Technique response for Assessment Unit AS 2

Section A

Question 1 30 marks possible
9 marks awarded

(a) (i) The plotting is incorrect.
0/2 marks

(ii) The isolevels are not completed accurately. Candidates need to be careful with these mechanical tasks.
0/4 marks

(iii) The fault here is that the command word, 'explain', is not acted upon. The answer is just a description. Command words must be followed or marks are lost.
0/4 marks

(iv) An appropriate technique is given, but the response then describes how data is collected which is not the same as justifying the choice of the technique. The question asked must be the one answered.
1/3 marks

(b) (i) Here the key has been misread; Skye is in the second category, not the highest. This is a careless waste of a mark. The difference quoted is too precise; it would be up to 20%.
1/2 marks

(ii) No technique is named. The standard of English is weak and there is some confusion at the end. A choropleth map does not show how many people there are in an area, rather it identifies a range. There is valid mention of the ease of interpretation, but the limitations are unclear.
2/5 marks

(iii)
1 Correct. 1/1 mark
2 Correct. 1/1 mark
3 A valid problem is identified: that of an aged structure, but the development implication is weak and not necessarily valid. Why would there be no entertainment? The range of problems for this type of age structure are not well addressed.
1/3 mark

(c) (i) There is confusion here. Material was needed on things like sea temperatures and the answer lacks specific reference to the resource. It is the question set that must be answered.
1/4 marks

(ii) A use is correctly identified.
1/1 mark

Section B

Question 2 12 marks possible
3 marks awarded

(a) (i) Perhaps a careless mistake, presumably the 1990 figure was read as 3 rather than 2.
0/1 marks

(ii) Again, perhaps the scale has been misread.
0/1 marks

(iii) This is a partial answer to a challenging question. A basic point is made relating to total GDP but there is no mention of GDP per capita.
1/4 marks

(b) There is some confusion as age dependent is given twice. Presumably the answer relates to young age dependency for LEDCs and aged dependency for MEDCs. What are the 'necessities' mentioned?
2/6 marks

Question 3 12 marks possible
2 marks awarded

(a) The location is correct. The high level of service provision is not specific, good transport to the city is not related to service provision in the areas. There needed to be the candidate's own knowledge expressed here, this did not appear.
2/6 marks

(b) Things go wrong straight away. An incorrect definition for gentrification is given, which reads more like regeneration. The study itself is confused, it reads as if 1937 was prior to the 20th century. Candidates need to be able to answer with confidence and certainty about terms given in the specification.
0/6 marks

Question 4 12 marks possible
4 marks awarded

(a) An indicator is mentioned but the description thereof reads like GDP p.c. and then there is this general statement at the end. A disappointing answer.
1/4 marks

(b) The answer has the basic point that numbers rise but has no comparisons within that. It does not identify the social implications as required.
/3 marks

(c) There is little depth here. More jobs in 'cocoa' (properly cacao) plantations is a very basic point and the answer manages to become repetitive within its 37 words.
2/5 marks

Section C

Question 5

This is a long answer on Mauritius and it would have been a valid answer to a different question. There is nothing on population distribution, which was what the question asked. Candidates penalise themselves if they do not answer the question.

Level 1: 0/12 marks

Question 6

This is a short answer, which fails to address a major part of the question. It deals with housing pressure, but pollution is of doubtful validity as this would be more of an urban problem. The statement that there are no plants in the rural urban fringe is nonsense. There are no details on recreational use. There are no references to place. Overall this is a very weak answer.

Level 1: 2/12 marks

Question 7

Neo-colonialism was chosen but the response does not show a full understanding of the chosen process. The case study is valid but the statement that Ghana gained its independence quite recently is not correct. This happened in 1957. There is some confusion, 'manufactured goods such as food' needed clarification. The material on indebtedness is valid but there is no depth to the understanding, nor detail regarding the case study or the process of neo-colonialism.

Level 1: 3/12 marks

Appendix 1

Mark Schemes for:

- Unit AS 1
- Unit AS 2

NORTHERN IRELAND GENERAL CERTIFICATE OF SECONDARY EDUCATION (GCSE) AND NORTHERN IRELAND GENERAL CERTIFICATE OF EDUCATION (GCE)

MARK SCHEMES (2009)

Foreword

Introduction

Mark Schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of 16- and 18-year-old students in schools and colleges. The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes therefore are regarded as a part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

The Council hopes that the mark schemes will be viewed and used in a constructive way as a further support to the teaching and learning processes.

New Specification

Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
Summer 2009

Geography

Assessment Unit AS 1

assessing

Physical Geography

[AG111]

FRIDAY 5 JUNE, MORNING

MARK SCHEME

MARK SCHEMES

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Introductory Remarks

The assessment objectives (AOs) for this specification are listed below. Students must:

AO1 demonstrate knowledge and understanding of the content, concepts and processes;

AO2 analyse, interpret and evaluate geographical information, issues and viewpoints and apply understanding in unfamiliar contexts;

AO3 select and use a variety of methods, skills and techniques (including the use of new technologies) to investigate questions and issues, reach conclusions and communicate findings.

General Instructions for Markers

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all markers are following exactly the same instructions and making the same judgements so far as this is possible. Markers must apply the mark scheme in a consistent manner and to the standard agreed at the standardising meeting.

It is important to recognise that in some cases there may be other correct responses that are equally acceptable to those included in this mark scheme. There may be instances where certain judgements have to be left to the experience of the examiner, for example, where there is no absolute, correct answer.

Markers are advised that there is no correlation between length and quality of response. Candidates may provide a very concise answer that fully addresses the requirements of the question and is therefore worthy of full or almost full marks. Alternatively, a candidate may provide a very long answer which also addresses the requirements of the question and is equally worthy of full or almost full marks. It is important, therefore, not to be influenced by the length of the candidate's response, but rather by the extent to which the requirements of the mark scheme have been met.

Some candidates may present answers in writing that is difficult to read. Makers should take time to establish what points are being expressed before deciding on a mark allocation. However, candidates should present answers which are legible and markers should not spend a disproportionate amount of time trying to decipher writing that is illegible.

Levels of Response

For questions with an allocation of six or more marks, three levels of response will be provided to help guide the marking process. General descriptions of the criteria governing levels of response mark schemes are set out on the next page. When deciding about the level of a response, a "best fit" approach should be taken. It will not be necessary for a response to meet the requirements of all the criteria within any given level for that level to be awarded. For example, a Level 3 response does not require all of the possible knowledge and understanding which might be realistically expected from an AS or AL candidate to be present in the answer.

Having decided what the level is, it is then important that a mark from within the range for that level, which accurately reflects the value of the candidate's answer, is awarded.

General Descriptions for Marking Criteria

Knowledge and Understanding	Skills	Quality of Written Communication	Level
The candidate will show a wide-ranging and accurate knowledge and a clear understanding of the concepts/ideas relevant to the question. All or most of the knowledge and understanding that can be expected is given.	The candidate will display a high level of ability through insightful analysis and interpretation of the resource material with little or no gaps, errors or misapprehensions. All that is significant is extracted from the resource material.	The candidate will express complex subject matter using an appropriate form and style of writing. Material included in the answers will be relevant and clearly organised. It will involve the use of specialist vocabulary and be written legibly and with few, if any, errors in spelling, punctuation and grammar.	3
The candidate will display an accurate to good knowledge and understanding of many of the relevant concepts/ ideas. Much of the body of knowledge that can be expected is given.	The candidate will display evidence of the ability to analyse and interpret the resource material but gaps, errors or misapprehensions may be in evidence.	The candidate will express ideas using an appropriate form and style of writing. Material included will be relevant and organised but arguments may stray from the main point. Some specialist terms will be used and there may be occasional errors in spelling, punctuation and grammar. Legibility is satisfactory.	2
The candidate will display some accurate knowledge and understanding but alongside errors and significant gaps. The relevance of the information to the question may be tenuous.	The candidate will be able to show only limited ability to analyse and interpret the resource material and gaps, errors or misapprehensions may be clearly evidenced.	The candidate will have a form and style of writing which is not fluent. Only relatively simple ideas can be dealt with competently. Material included may have dubious relevance. There will be noticeable errors in spelling, punctuation and grammar. Writing may be illegible in places.	1

AVAILABLE MARKS

Section A

1 **(a)** The hazard identified will obviously depend on the field study undertaken – potential hazards can be identified in all environments and risk management is a vital element of fieldwork planning.

Mark Breakdown
Valid Hazard – if stated clearly and relevant to the field study **[1]**

Identification – **Award [1]** if a risk identification method is clarified. This may involve a discussion of risk assessment (e.g. pre-site visit, risk assessment survey, etc.) adopted as part of fieldwork planning.

Risk management/minimisation – **Award [3]** for detailed discussion of risk management/minimisation strategies relevant to hazard specified.
Award [2] or [1] if only one strategy is outlined, or alternatively, if strategies are general in nature and do not link explicitly with hazard. [5]

(b) **(i)** The primary data collection methods selected for description must be relevant to the fieldwork and this must be cross-referenced with the report submitted.

For each method:
Award [3] for a detailed description of a primary data collection method with explicit and convincing reference to the fieldwork undertaken.
Award [2] or [1] when the methodology described lacks depth and reference to the fieldwork is more general and less explicit.
2 × [3] [6]

(ii)
- **Strengths** – these will vary, but may relate to factors such as the nature of the equipment, representative sampling, a rigorous approach in the field, etc.
- **Limitations** – limitations relate to weaknesses in the method which may obviously influence the reliability of the data collected. A range of factors are possible depending on the fieldwork activity.

Award [1] for an answer which outlines a valid limitation.
Award [1] for an awareness of a valid strength.
Award [1] for development of either the strength or weakness. Alternatively this third mark can be awarded for a second strength or a second limitation. [3]

AVAILABLE MARKS

(c) (i) The statistical analysis performed will depend on the chosen technique, but it must be relevant to the aim of the investigation.

Measures of Central Tendency/Range
Calculation of Mean [2]
Calculation of Median [2]
Identification of the Mode [1]
Calculation of the Range [2]

Spearman's Rank or Nearest Neighbour Analysis
[5] for the accuracy of the calculations, method marks awarded appropriately.
Maximum [3] if error in ranks results in incorrect rs calculation.
Maximum [3] if Spearman's Rank is performed with less than 7 ranked pairs of values.
[2] for accurate statistical interpretation.
Credit interpretation – if accurate for an incorrect rs value.

N.B. Maximum [4] marks if selected statistical technique is inappropriate to investigate the aim stated. [7]

(ii) The statistical analysis stage should allow the candidate to progress to the geographical interpretation stage of the investigation. The candidate is now in a position to produce reliable conclusions which should integrate geographical theory, concepts and models.
Maximum Level 2 for an incorrect or incomplete statistical outcome from **(c)(i)**.
No credit for answers which relate entirely to statistical analysis.

Level 3 ([5]–[6]) – Geographical reasoning is expressed with clarity. There is thorough and detailed geographical understanding of the statistical outcome in relation to the aim/hypothesis. The use of key terminology is accurate and appropriate.

Level 2 ([3]–[4]) – There is a generally accurate explanation with a reasonable attempt to integrate geographical concepts in relation to the aim/hypothesis. A detailed but partial answer maybe at this level.

Level 1 ([1]–[2]) – Explanations are more limited and simplistic and at the lower band level may, in some part, lack clarity. Language used may be basic. [6]

		AVAILABLE MARKS
(d)	Answers will vary according to the field of study. Do not credit answers which relate to a different study. **Award [3]** for an answer which outlines a realistic modification/improvement and logically explains how the suggested amendment could increase the reliability of the conclusion. **Award [2]** for an answer which proposes a realistic amendment with a more general justification of how enhanced reliability could be achieved. **Award [1]** for an answer which proposes a modification which may be more general in nature. The proposed amendment may be less realistic or the explanation provided more limited. [3]	30
	Section A	**30**

AVAILABLE MARKS

Section B

2 (a) Candidates are required to explain how each of their two chosen factors affect both river discharge and the storm hydrograph.

Soil This controls the speed of infiltration and the rate of throughflow. Sandy soils, with large pore spaces, allow rapid infiltration. This means that surface runoff will be less and this slows transfer to the river and would reduce river discharge. Since throughflow is slower than surface runoff the storm hydrograph would have a more gently sloping rising limb and lower peak discharge. The opposite applies to clay soils which have much smaller pore spaces. This leads to less throughflow and more rapid overland flow, which increases river discharge. The storm hydrograph will have a steep rising limb and higher peak discharge.

Geology Rocks which allow water to pass through them, whether through pores such as in sandstone or chalk, or along joints (previous) as in some types of limestone, reduce surface runoff and delay water reaching the river channel. This leads to a reduction in discharge and a storm hydrograph with a gently sloping rising limb and lower peak discharge. In contrast impermeable rocks such as granite or basalt result in water reaching the river channel more rapidly. This increases river discharge and produces a storm hydrograph with a steeply rising limb and higher peak discharge.

Land use Since vegetation intercepts and stores rainfall, discharge will be much greater in bare or deforested areas than where the ground is covered in vegetation, whether natural or planted by man. Type or density of vegetation would also be a factor. Urbanisation also greatly increases the speed at which water reaches the river channel and so affects discharge and the storm hydrograph.

Precipitation Prolonged rainfall will cause an increase in river discharge as the ground becomes saturated and infiltration is replaced by surface runoff. This leads to a storm hydrograph with a steeper rising limb and higher peak discharge. Intense rainfall, such as in a thunderstorm, will also increase discharge as infiltration rates are exceeded and surface runoff becomes more rapid. Snowmelt, which releases water held in storage, will also increase discharge, especially if the ground remains frozen and no infiltration is possible.

Drainage density Drainage density is higher on impermeable rocks and clays, and lower on permeable rocks and sands. This would have the same effects on river discharge and the storm hydrograph as for **geology** [above].

Award up to [3] marks for each factor. For full marks the candidate must clearly explain how the factor affects both river discharge and the storm hydrograph. [3]+[3] [6]

		AVAILABLE MARKS
(b) (i)	**Sand** [1]	
(ii)	At a speed of 100 cm sec^{-1} the river is carrying particles up to the size of gravel. As the speed of flow decreases the river's carrying capacity will also gradually decrease and the load will be deposited in order of decreasing grain size. Gravel will be dropped first. When velocity falls to 10 cm sec^{-1} sand will start to be deposited, followed by silt. At a velocity of 1 cm sec^{-1} finer silt and clay will continue to be transported. **Award [5]** for a detailed and thorough answer which uses information from the Resource to describe and explain how the river would deposit its load as velocity gradually decreases. **Award [3]–[4]** for a general but accurate answer which describes and explains how the load is deposited. Use of the Resource may be limited. **Award [1]–[2]** for a limited answer which fails to clearly describe and explain how the load is deposited. [5]	12

3 (a) Solar radiation enters the ecosystem through the process of photosynthesis by green plants. These are the producers. The plants are consumed as food by the first consumers [herbivores]. The herbivores provide food for the second consumers [carnivores], which in turn provide food for the next trophic level [carnivores and omnivores].

The process of energy movement is not 100% efficient as energy is lost through processes such as respiration. This means that fewer organisms can be supported at successive levels.

At each stage the decomposers break down dead organic material and this can be recycled.

If no ecosystem is named, or scale is inappropriate maximum Level 2.

Level 3 ([5]–[6])
The candidate uses information from the Resource and appropriate terminology to describe and explain how energy moves through the small scale ecosystem they have named. There should be good reference to plant/ animal species and/or food chains.

Level 2 ([3]–[4])
The candidate provides a general but accurate answer which explains how energy moves through an ecosystem. The ecosystem may not be named and reference to species may be limited.

Level 1 ([1]–[2])
The candidate provides a limited response which fails to describe and explain clearly how energy moves through an ecosystem. There may be no reference to species in the ecosystem. [6]

(b) A wide range of answers is possible. An ecosystem reflects the inter-relationships between five main factors, plants, animals, soil conditions, geology and climate. Most candidates are likely to choose climatic or soil characteristics. Candidates could describe and explain any two of these characteristics for mid-latitude grassland ecosystems. Answers might include.

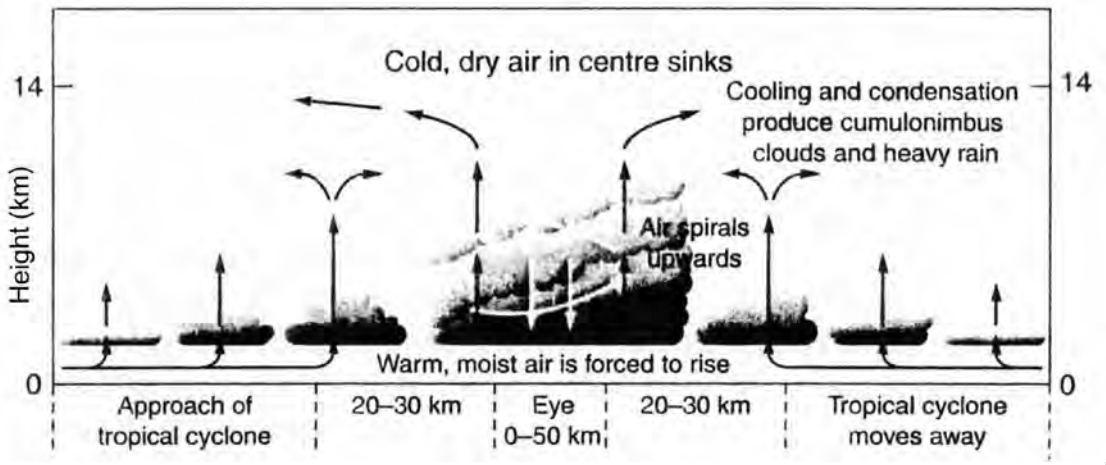
The annual range of temperature is high [35 °C] as there is no moderating influence from the sea.

Annual rainfall is low [500 mm] because of distance from the sea.

The thick grass cover provides a plentiful supply of mull humus which forms a black, crumbly topsoil.

For each of their chosen characteristics award up to [3] for a clear description and explanation. [3]+[3] [6] 12

4 **(a)** Hurricane structure is characterised by strong convergence at the lower surface, rapid upward movement in the vortex and divergence aloft. There is an outer convective ring of cumulus clouds and an inner ring of towering cumulonimbus clouds. At the heart of the hurricane is the eye zone which has descending air currents, no cloud and calm conditions. Candidates should produce a diagram which shows these main structural elements. There should also be a scale to the diagram.



Level 3 ([7]–[8])
The candidate produces a well annotated diagram and uses it to provide a clear and well developed description of the structure of a hurricane.

Level 2 ([4]–[6])
The candidate produces an adequate but less detailed diagram and provides a general but incomplete description of the structure of a hurricane or the candidate provides a well annotated diagram of the structure of a hurricane or the candidate fails to produce a diagram but provides a well developed description of the structure of a hurricane.

			AVAILABLE MARKS
	Level 1 ([1]–[3]) The candidate produces a poor or unclear diagram and the description of the structure of a hurricane is limited or incomplete or the candidate fails to produce a diagram and provides a limited description of the structure of a hurricane. [8]		
(b)	**(i)** The Resource shows a section through a **cold front**. [1]		
	(ii) The temperature decreases from east to west at ground level. In front of the Frontal zone the temperature is above 5 °C, as the front passes it decreases to –5 °C and after the front has passed it continues to decrease to below –15 °C. Some candidates may note the more rapid decrease at the Frontal zone. Vertically the temperature decreases with height from over 5 °C to below –20 °C. **(ii) Award up to [3]** for a clear description of how the temperature changes both horizontally [2] and vertically [1] across the front. No figures quoted, maximum [1]. [3]		12
	Section B		**36**

Section C

AVAILABLE MARKS

Answer **any two** questions

5 The details of the answer will depend on the case study chosen. Candidates must name a large-scale drainage basin or its delta to achieve Level 3. They should provide details of a range of both the physical and human causes of the flood event or events named.

Physical causes could include seasonal climatic changes, e.g. monsoon, rainfall or spring snowmelt, the impact of slope processes (topography), hurricane storm surges, etc.

Human factors might include deforestation, urbanisation, farming practices and channel alteration, dam building, etc.

Level 3 ([9]–[12])
The candidate provides a balanced answer, describing and exploring a number of both physical and human causes of flooding. The case study is clearly located and there is good reference to specific case study examples throughout the answer. Alternatively a sound answer which describes and explains theoretical causes without detailed reference to place can obtain full marks.

Level 2 ([5]–[8])
The candidate describes and explains one or two physical and human factors, but with little or no reference to case study material, or produces an unbalanced answer which concentrates on either the physical or the human causes of flooding. The answer may lack depth or be superficial.

Level 1 ([1]–[4])
The candidate provides a brief or very general answer. There may be no spatial context. The quality of communication may also be poor. [12] 12

6 The details of the answer will depend on the case study chosen. Candidates should describe and explain the characteristics of one vegetation succession. This would include how the succession began and developed through a series of changes to its present stage. Any type of succession, lithosere, psammosere, halosere, etc. is valid. Good candidates will establish the background conditions of climate and topography. The answer should include references to plant species at different stages in the succession and processes such as soil formation, stabilisation, etc. as the succession develops.

Level 3 ([9]–[12])
The candidate identifies a specific vegetation succession and describes and explains how it has developed over time. There is good reference to species present and processes involved.

Level 2 ([5]–[8])
A succession is identified, but the description and explanation of its formation are lacking in depth or clarity.

Level 1 ([1]–[4])
The candidate provides an answer which is very generalised with little reference to spatial context or process. The quality of communication may also be poor. [12] 12

		AVAILABLE MARKS
7	An anticyclone is a large mass of subsiding air. The source for this air is the upper atmosphere where there is little water vapour so the air is dry. As the air is descending it is warming adiabatically and therefore condensation does not occur. Cloud formation is suppressed and anticyclones are associated with clear skies and sunny weather. At ground level an area of high pressure is produced. Pressure gradients are gentle resulting in calm conditions with little or no wind. In winter, since the daylight hours are short and the sun is low in the sky there is little incoming radiation during the day and temperatures are low. At night the absence of clouds causes the temperatures to become very low and fog and frost can develop. These may take a long time to disperse the next day as the sun is so weak. These atmospheric conditions are likely to impact on people in a variety of ways. There may be traffic problems resulting from black ice on roads, asthma attacks due to the formation of photochemical smog in urban areas, more hospital admissions from accidents due to people falling on ice, cancellation of sporting fixtures, disruption to travel etc. Candidates may include case study references in their answer, but this is not a requirement of the question. **Level 3 ([9]–[12])** The candidate produces a balanced answer which clearly explains the formation of an anticyclone, explains the weather associated with an anticyclone in winter and discusses its impacts on people. **Level 2 ([5]–[8])** The candidate provides a less detailed or unbalanced answer which may not describe clearly the formation of an anticyclone or its weather conditions in winter and impacts on people. **Level 1 ([1]–[4])** The candidate provides an answer which shows limited knowledge of anticyclonic formation. Explanation of the weather conditions in winter may be unclear and there may be few examples of its impacts on people. The quality of communication may also be poor. [12]	12
	Section C	**24**
	Total	**90**

New Specification

Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2009

Geography

Assessment Unit AS 2

assessing

Human Geography

[AG121]

THURSDAY 11 JUNE, AFTERNOON

MARK SCHEME

MARK SCHEMES

Foreword

Introduction

Mark Schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of 16 and 18-year-old students in schools and colleges. The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes therefore are regarded as a part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

The Council hopes that the mark schemes will be viewed and used in a constructive way as a further support to the teaching and learning processes.

Introductory Remarks

The assessment objectives (AOs) for this specification are listed below. Students must:

AO1 demonstrate knowledge and understanding of the content, concepts and processes;

AO2 analyse, interpret and evaluate geographical information, issues and viewpoints and apply understanding in unfamiliar contexts;

AO3 select and use a variety of methods, skills and techniques (including the use of new technologies) to investigate questions and issues, reach conclusions and communicate findings.

General Instructions for Markers

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all markers are following exactly the same instructions and making the same judgements so far as this is possible. Markers must apply the mark scheme in a consistent manner and to the standard agreed at the standardising meeting.

It is important to recognise that in some cases there may be other correct responses that are equally acceptable to those included in this mark scheme. There may be instances where certain judgements have to be left to the experience of the examiner, for example, where there is no absolute, correct answer.

Markers are advised that there is no correlation between length and quality of response. Candidates may provide a very concise answer that fully addresses the requirements of the question and is therefore worthy of full or almost full marks. Alternatively, a candidate may provide a very long answer which also addresses the requirements of the question and is equally worthy of full or almost full marks. It is important, therefore, not to be influenced by the length of the candidate's response but rather by the extent to which the requirements of the mark scheme have been met.

Some candidates may present answers in writing that is difficult to read. Markers should take time to establish what points are being expressed before deciding on a mark allocation. However, candidates should present answers which are legible and markers should not spend a disproportionate amount of time trying to decipher writing that is illegible.

Levels of Response

For questions with an allocation of six or more marks three levels of response will be provided to help guide the marking process. General descriptions of the criteria governing levels of response mark schemes are set out on the next page. When deciding about the level of a response, a "best fit" approach should be taken. It will not be necessary for a response to meet the requirements of all the criteria within any given level for that level to be awarded. For example, a Level 3 response does not require all of the possible knowledge and understanding which might be realistically expected from an AS or AL candidate to be present in the answer.

Having decided what the level is, it is then important that a mark from within the range for that level, which accurately reflects the value of the candidate's answer, is awarded.

General Descriptions for Marking Criteria

Knowledge and Understanding	Skills	Quality of Written Communication	Level
The candidate will show a wide-ranging and accurate knowledge and a clear understanding of the concepts/ideas relevant to the question. All or most of the knowledge and understanding that can be expected is given.	The candidate will display a high level of ability through insightful analysis and interpretation of the resource material with little or no gaps, errors or misapprehensions. All that is significant is extracted from the resource material.	The candidate will express complex subject matter using an appropriate form and style of writing. Material included in the answers will be relevant and clearly organised. It will involve the use of specialist vocabulary and be written legibly and with few, if any, errors in spelling, punctuation and grammar.	3
The candidate will display an accurate to good knowledge and understanding of many of the relevant concepts/ ideas. Much of the body of knowledge that can be expected is given.	The candidate will display evidence of the ability to analyse and interpret the resource material but gaps, errors or misapprehensions may be in evidence.	The candidate will express ideas using an appropriate form and style of writing. Material included will be relevant and organised but arguments may stray from the main point. Some specialist terms will be used and there may be occasional errors in spelling, punctuation and grammar. Legibility is satisfactory.	2
The candidate will display some accurate knowledge and understanding but alongside errors and significant gaps. The relevance of the information to the question may be tenuous.	The candidate will be able to show only limited ability to analyse and interpret the resource material and gaps, errors or misapprehensions may be clearly evidenced.	The candidate will have a form and style of writing which is not fluent. Only relatively simple ideas can be dealt with competently. Material included may have dubious relevance. There will be noticeable errors in spelling, punctuation and grammar. Writing may be illegible in places.	1

AVAILABLE MARKS

Section A

1 (a) (i) Award [1] for the accurate plotting of each velocity value on **Resource 1A**.

- 0.14 m s^{-1} at a depth of 0.2 m
- 0.02 m s^{-1} at a depth of 0.4 m

2 × [1] [2]

(ii) Award [1] for the accurate completion (interpolation) of each of the following isovels.

- 0.4 m s^{-1}
- 0.3 m s^{-1}
- 0.2 m s^{-1}
- 0.1 m s^{-1} [4]

(iii) In an asymmetrical channel velocity is recognisably higher on the outside of the river bend (Bank X) where the helicoidal current flow spirals to the outer meander bank. In this zone of deeper water, a smaller proportion of the water is in contact with the river banks and bed, reducing energy loss through friction. The inside of the meander bend is characterised by lower velocity as energy loss through frictional resistance is considerably higher in this shallow water zone. The build-up, or aggradation, of point bar deposits on the inside bend contributes to energy loss through friction.

Level 2 ([3]–[4])
Candidate provides a detailed and sound understanding of velocity in relation to fluvial energy and frictional resistance. The answer clearly contrasts the inside and outside of the meander bend and employs specific geographical terminology.

Level 1 ([1]–[2])
Candidate provides a more general description or superficial, explanation of river velocity in the asymmetrical channel. At the lower mark there may be no attempt to contrast inside and outside river bank zones and some inaccuracy may be evident.

[4]

(iv) Spearman's Rank Correlation [1]
Justification [2]
Award [2] for an answer which recognises that Spearman's Rank is suitable to test the degree of association/relationship between the two variables. The **strength/significance** and **type** of relationship can be ascertained.
Award [1] for a valid, but less detailed, answer. [3]

(b) (i) Isle of Mull (population decrease) at a rate of 0.01–10% [1]
Isle of Skye (population gain) at a rate of 0.01–10% [1] [2]

AVAILABLE MARKS

(ii) Breakdown is as follows.

Technique [1]

- Candidates should recognise the mapping technique as choropleth.

Strengths/Advantages [2]

- Choropleth maps provide a striking visual representation of the data which aids, or simplifies, interpretation. The intensity of tone highlights regions with highest/lowest rates of population change.
- The technique allows positive and negative rates of population change to be visually represented, reducing complexity and thus aiding geographical interpretation.

Limitations [2]

- Oversimplification occurs as a regional zone is depicted as having a uniform value which eliminates intra-regional variations.
- Striking contrasts appear evident at boundary zones which can be unrealistic and non-existent in reality.
- A range of values for each regional zone disguises the actual single value appropriate for the location – thus reducing accuracy and precision.

Award [2] for each well expressed strength/limitation.
Award [1] for a valid strength/limitation which is less well developed.
2 × [2] [5]

(iii) 1. 20–24 years [1]

2. 55–59 years [1]

3. Population loss appears to be dominated by the young economically active sector resulting in a higher than average proportion of aged dependants. Potential development problems may result from underpopulation and rising dependency. Decreasing thresholds may result in service closures and consequently job losses. The shrinkage in the working population reduces tax payments and thus less money is generated to fund welfare provision. The negative multiplier hinders development.

   Award [3] for an answer which displays a clear understanding of how the resulting age structure may hinder potential development. Explicit resource use is evident.
   Award [2] or [1] for a more general explanation of one potential development problem with only limited, or no, reference to age structure or resource material. [3]

			AVAILABLE MARKS
(c)	**(i)**	• Large supplies of moisture available in the Atlantic Ocean to provide latent heat through condensation to drive the storm. • Sea temperatures which exceed 27 °C to provide a continuous source of heat to maintain rising air currents. • Low latitudes around 20 °N of the equator to allow the tropical storm to rotate as the Coriolis force is sufficient. • Anticlockwise rotation of air. Warm air is drawn into the system in a spiralling manner developing the intensity of the hurricane. • Image indicates the date (27 August 2005). In the Autumn season sea temperatures reach their maximum which aids the formation of the feature. Award [1] for identifying a condition visible on the resource and [1] for explanation. 2 × [2] with maximum [3] if no **overt** Resource use. [4]	
	(ii)	Satellite images have a wide range of geographical uses. These include: • Mapping of urban growth. • Monitoring deforestation, desertification, etc. • Mapping of hazards such as floods, fires, oil spills, volcanic activity, etc. • Location of minerals, oil reserves, etc. • Climate change Award [1] for an acceptable **geographical** use of remotely sensed images. Do not credit answers which relate to any aspects of weather/ climate monitoring. [1]	30
		Section A	**30**

AVAILABLE MARKS

Section B

2 (a) (i) Accept \$8–9 trillions. [1]

(ii) \$1000 (accept \$800 to \$1500). [1]

(iii) Asia and the Pacific have shown the largest increases in total GDP, increasing by 9 trillion dollars by 2030. However, they have had the second lowest increase in GDP per capita only increasing 1 thousand dollars. These areas are likely to have very high crude birth rates and considerable rates of natural increase. The increased wealth has to be shared among a greater number of people and thus the per capita figures are lowered [2].
In comparison, the Middle East and North Africa have increased their GDP total by 3 trillion dollars in the same period, but increased their GDP per capita by 3 thousand dollars. They are likely to have lower crude birth rates and lower rates of natural increase and thus the increased wealth is shared among a smaller number of people thus giving the greater increases in the per capita figures [2].
Description without discussion of natural change, maximum [2] [4]

(b) Dependency ratios would vary from LEDCs to MEDCs. A MEDC would show a very high old age dependency ratio whereas a LEDC would show a high youth dependency ratio [2].
There are many economic effects on a LEDC. For example the large numbers of young create problems in the cost of providing education, the difficulties in providing employment, the cost of training more teachers or midwives, etc. [2] × 2.
Accept answers which focus on aged dependency in a LEDC.

Level 3 ([5]–[6])
A good answer that fully understands the differences of age dependency in LEDCs and MEDCs. They have given two full economic impacts for a LEDC.

Level 2 ([3]–[4)
Candidates who have given inaccurate economic impacts or definitions will fall into this level. Their economic impacts may need more development.

Level 1 ([1]–[2])
Candidates who inaccurately describe the difference in dependency ratios in LEDCs and MEDCs will be placed in this level. Also candidates who do not give economic impacts will be placed here. [6] 12

AVAILABLE MARKS

3 **(a)** Spontaneous settlements in Mexico City are found on the outskirts of the city close to the city boundary; there are none in the city centre. [2]
The level of service provision is very poor. Housing is inadequate and built from packaging, scrap materials and other waste products that have been scavenged. Electricity might be tapped from overhead power lines, and water carried from a well or taps many miles away. Large numbers of people may share a communal tap and there is no sewage system. [2]

A large number of people working here will be employed in the informal sector. Work in the informal sector is irregular and casual, generally unregulated by the government or local authority. Mostly it is labour intensive, small scale, cash-based, and often unskilled. People might sell fruit or vegetables at stalls, or just by the road side. Some might shine shoes or sell matches. They have to work long hours for very little return. [2]
[2] + [2] + [2] [6]

(b) Gentrification is the process whereby an area of housing is renovated and, as a result, their value increases. It is a process which improves the quality of the housing stock and takes the area upmarket. Relatively affluent newcomers displace lower income groups. They need to identify an appropriate area which has experienced this process and evaluate its impact. The evaluation should include both the positive and negative impacts, but a balance is not required.
Answers which concentrate on evaluating redevelopment, maximum [3]

Level 3 ([5]–[6])
Candidates, who clearly understand the process, have identified an appropriate case study and have offered both the positive and negative impacts on their case study will be placed in this level. The case study goes further than simply naming a city.

Level 2 ([3]–[4])
Candidates still understand the term but their evaluation may be weaker or the case study may be very poor. Candidates who simply offer the name of a city as a case study will fall into this level. Similarly candidates who offer no case study and discuss the impact of gentrification in general terms will be limited to this level.

Level 1 ([1]–[2])
A poor answer that shows very little understanding of the meaning of the term and discusses either positive or negative effects only with no case study. [6]

12

			AVAILABLE MARKS
4	**(a)**	A wide range of measures are acceptable – percentage who can read and write, percentage in primary education, calorie intake, etc. The question asks for a social measure so those who offer an economic measure should be limited to [1]. Accept HDI as its components are social. [1] for naming a social measure. [1] for describing their chosen measure. [2] for evaluating their chosen measure. [4]	
	(b)	Each region has shown a large increase in the number of McDonalds restaurants from 1991 to 1996. Accept description of differences between regions [1]. Socially this means more people will be eating the same foods or have access to the same foods. Individual cultures may be corroded [2]. This is only one possible social effect, candidates may discuss others, e.g. obesity. [3]	
	(c)	Candidates need to discuss the effect of globalisation on a specific case study. Most will discuss TNCs. Candidates who do not use a case study and only generally discuss the effect of globalisation should be limited to [3]. Since aid is an aspect of gobalisation accept case study material on aid. [5]	12
		Section B	**36**

AVAILABLE MARKS

Section C

Answer **any two** questions

5 The pattern of population distribution needs to be described and then explained in terms of the available physical and human resources. Look for a detailed description that shows variations in population density throughout the country and a sound explanation that reveals a clear understanding of the relationship that exists between population distribution and resources. This is a case study question so we need to see reference to specific places and figures. Both physical and human resources must be addressed but there does not need to be a balance.

Level 3 ([9]–[12])
There is detailed and thorough description of population distribution with specific reference to figures and places. A clear picture is given of the resources in their chosen case study. There is a sound understanding of the relationship between population distribution and the resources. Both physical and human resources are discussed.

Level 2 ([5]–[8])
Candidate provides a general, though accurate description and explanation, but there is less factual detail and depth throughout or **one** aspect is only dealt with in a superficial manner.

Level 1 ([1]–[4])
Candidate provides a limited answer which may focus on description only. The answer is lacking in detail and depth on all aspects or there may be incorrect information. Answers with no case study or inappropriate case study would also fall into this level. [12] 12

6 The specification lists: green field developments, suburbanisation, counterurbanisation and transport infrastructure as the issues in the rural–urban fringe that need to be studied. Candidates should be able to discuss at least three issues. There does not need to be balance in the issues discussed, but three need to be included. They should be able to demonstrate their issues by referencing place for illustration.

Level 3 ([9]–[12])
Candidate shows a detailed and thorough explanation of the issues faced in the rural–urban fringe. They discuss at least three issues and have related these issues well to place for illustration purposes.

Level 2 ([5]–[8])
Candidate still provides a good answer, but the depth of knowledge may be less. They may only discuss one or two issues faced in the rural–urban fringe. Their reference to place for illustration may be poor.

Level 1 ([1]–[4])
A limited answer that lacks understanding of the issues expected. There may be inaccuracies and incorrect information. [12] 12

		AVAILABLE MARKS
7	Colonialism is taking political and economic control of a foreign country and establishing some form of administration in that country. Candidates will most likely focus on the removal of manufacturing industries in the colonies and the establishment of monoculture. They need to not only outline these processes, but make a clear attempt to address how such activities affected development in a LEDC they have studied. Neo-colonialism is economic control of a foreign and politically independent country through monetary loans or bilateral aid. Many will discuss transnational companies, but be wary of answers that simply outline the effects of transnational companies. They need to clearly describe how such activities have affected the level of development in a LEDC they have studied. **Level 3 ([9]–[12])** Candidate has a clear understanding of the meaning of the process they have selected. They show a solid outline of the effects of such process and are able to relate these effects to a specific LEDC. **Level 2 ([5]–[8])** Still a good answer, but the depth of knowledge may be less. They may be able to outline the effects, but do not connect these to the level of development in a specific place. **Level 1 ([1]–[4])** Candidate has inaccuracies in their answer. They may not have a full understanding of the process they are discussing and the impacts of such process are vague and limited. [12]	12
	Section C	**24**
	Total	**90**