

New Specification



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ADVANCED SUBSIDIARY (AS)
General Certificate of Education
January 2009

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Centre Number
71

Candidate Number

Geography
Assessment Unit AS 2
assessing
Human Geography
[AG121]



FRIDAY 23 JANUARY, 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.

Section C: answer **any two** questions from this section.

You should write your answers in the spaces provided in this question paper.

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	
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Section A

Answer this section

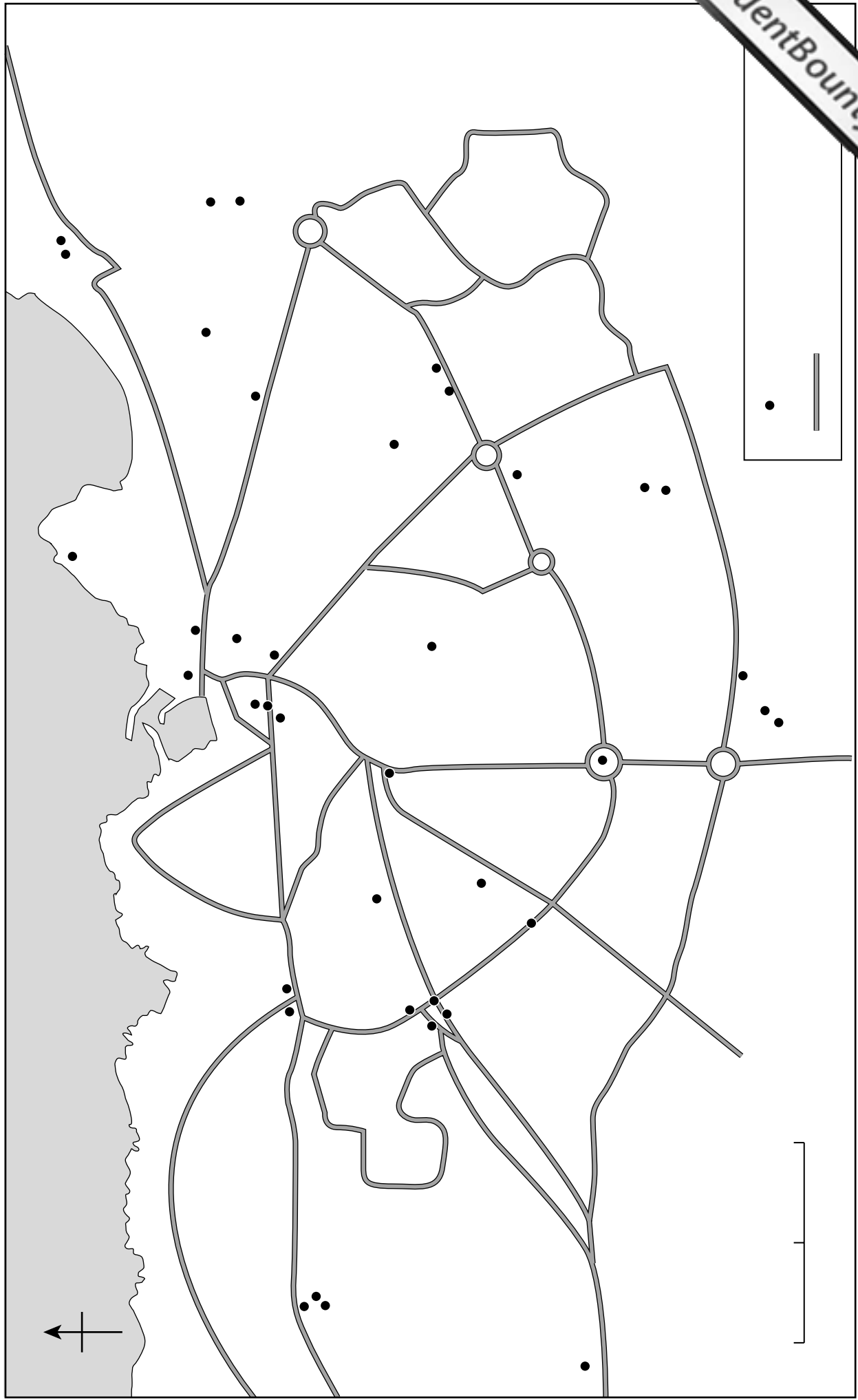
- 1 (a) A geographer used Nearest Neighbour Analysis to investigate the distribution pattern of mobile telephone base stations throughout the Bangor area in Co. Down. A base station is used for the transmission of mobile telephone signals. The following hypothesis was devised:

Hypothesis

Mobile telephone base stations exhibit a significantly **regular** distribution pattern throughout the Bangor area.

The map, **Resource 1A**, shows the distribution of mobile telephone base stations in Bangor and the table, **Resource 1B** on page 4, is a partially completed Nearest Neighbour Analysis of their distribution.

- (i) Using **Resource 1A**, complete the table, **Resource 1B**, by filling in the missing values.



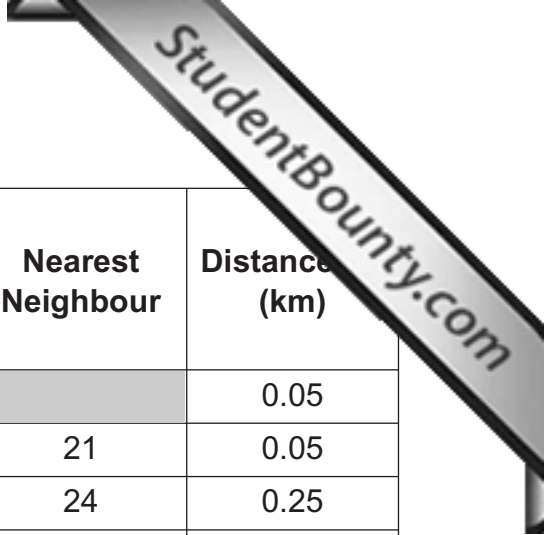
Main road

Resource 1A

25

metres

Resource 1B



Mobile Telephone Base Station	Nearest Neighbour	Distance (d) (km)
1		0.75
2	3	0.20
3	2	0.20
4	3	0.20
5	6	0.05
6	7	0.04
7	6	0.04
8	4	0.22
9	10	0.43
10	9	0.43
11	12	0.15
12	11	0.15
13	14	0.05
14	13	0.05
15	17	0.43
16	17	0.14
17	16	0.14
18	17	0.53
19	39	0.70
20	23	0.80

Mobile Telephone Base Station	Nearest Neighbour	Distance (d) (km)
21		0.05
22	21	0.05
23	24	0.25
24	25	0.05
25	24	0.05
26	27	0.32
27	26	0.32
28		0.55
29	32	0.10
30	31	0.05
31	30	0.05
32	31	0.06
33	34	0.10
34	33	0.10
35	36	0.03
36	37	0.01
37	36	0.01
38	35	1.40
39	7	0.63

Sum 9.88

Land area = 24.68 km ²

[3]

- (ii) In the space below, complete the Nearest Neighbour Analysis (Rn calculation) and state the type of distribution shown on **Resource 1A**. (The Nearest Neighbour Index Equation and Significance Graph are presented in **Resource 1C** on page 6). Comment on what this result indicates about the hypothesis stated.

<p><u>Calculation</u></p> <p style="text-align: right;">Land area = 24.68 km²</p> <p style="text-align: right;">Rn = _____</p> <p>Type of distribution _____</p> <p>Comment about hypothesis _____</p> <p>_____</p> <p>_____</p>

[6]

- (iii) Explain how the size of this map area, shown in **Resource 1A**, influenced the type of distribution pattern found.

_____ [2]

Resource 1C

Nearest Neighbour Index Equation and Significance Graph

Formula:

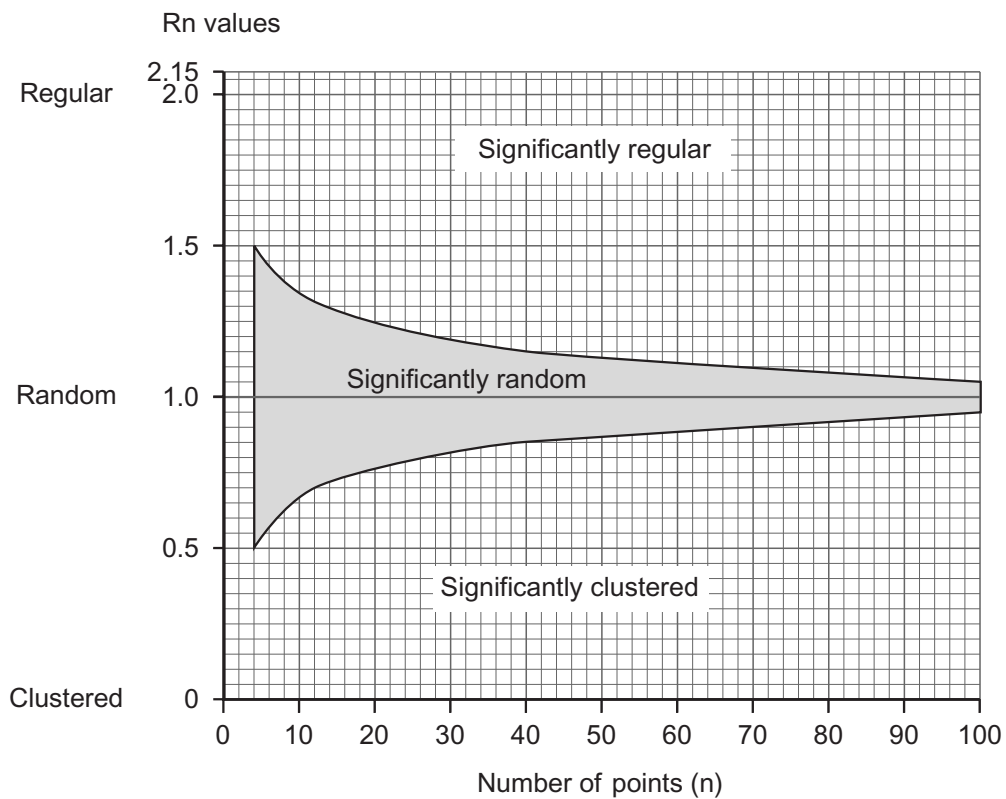
$$R_n = 2\bar{d}\sqrt{\frac{n}{A}}$$

where \bar{d} = the mean distance between nearest neighbours

n = number of points

A = area in question

Significance Graph

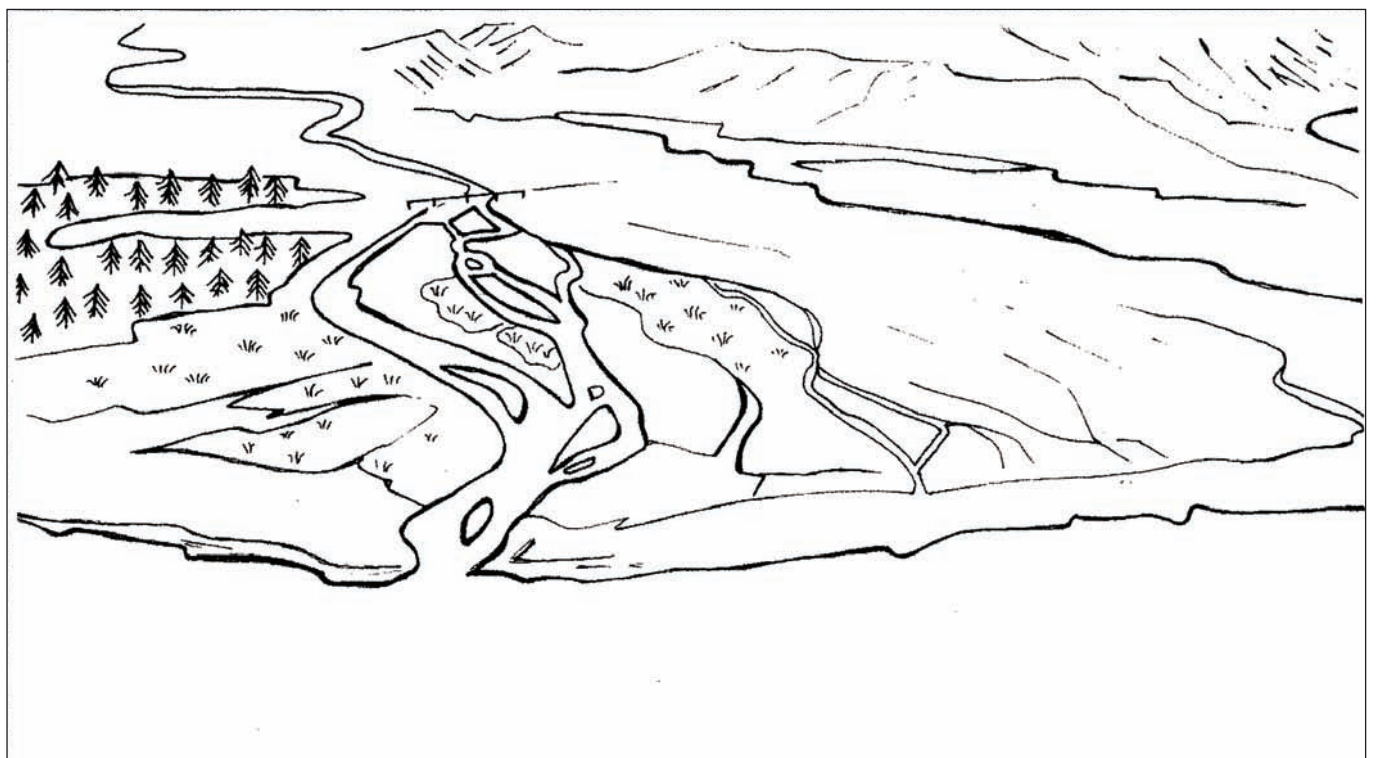


(b) Study **Resource 1D** which illustrates the Clarence River delta in Marlborough, New Zealand. Add **four** labels to **Resource 1E**, a field sketch, to describe typical characteristics of the relief **and** river shown. [4]

Resource 1D



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- (c) Study **Resource 1F**, a table illustrating the contribution of agriculture, industry and services to the total GDP for a selection of countries. **Resource 1G**, on page 9, is a partially completed triangular graph to illustrate the data.

Resource 1F

Country Number	Country Name	% Agriculture	% Industry	% Services
1	Benin	33	15	52
2	Mali	45		
3	Chad	22	47	31
4	Ethiopia	49	13	38
5	France			77
6	Austria	2	31	67
7	UK	1	24	75
8	Germany	1	30	69

Source: adapted from CIA World Fact Book

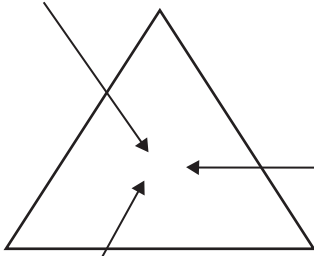
- (i) Complete the table, **Resource 1F**, by filling in the missing values using the triangular graph (**Resource 1G**). [4]
- (ii) On the triangular graph, **Resource 1G**, plot accurately and label the point for Chad, using the data from **Resource 1F**. [3]
- (iii) Describe how this triangular graph can be used to identify contrasts between LEDCs and MEDCs.

[3]

Resource 1G

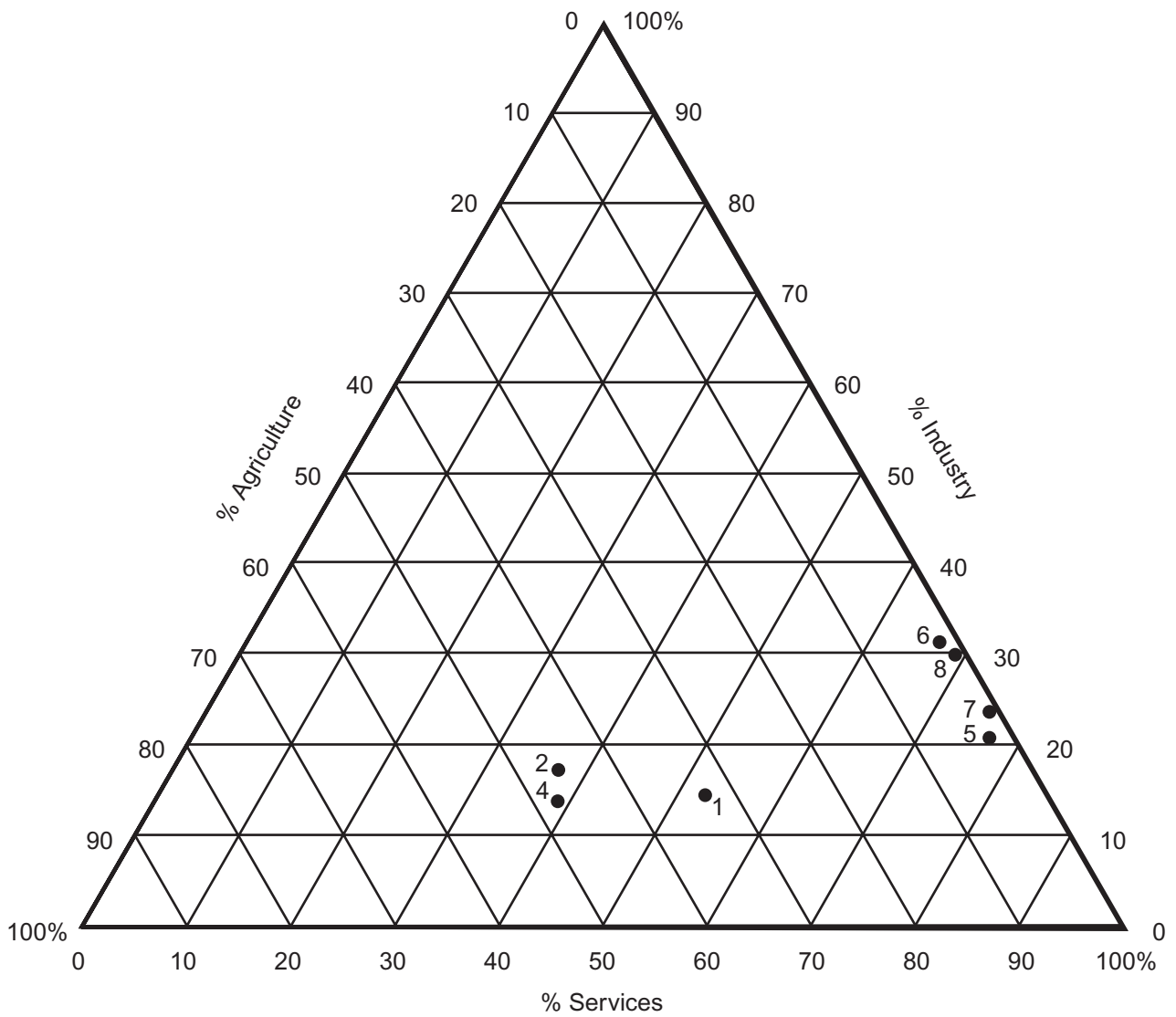
Key

% Agriculture



% Industry

% Services



- (d) Researchers studying fertility in Belize, Central America, required a sample of 1000 people. After analysing **Resource 1H**, which shows the population characteristics of the country, they decided to use **stratified sampling** for their survey.

Resource 1H

Ethnic Groups in Belize	Population Number	Percentage
Mestizo	144 249	49
Creole	73 596	25
Maya	32 382	11
Garifuna	17 663	6
Other	26 495	9

Source: Adapted from www.cia.gov (2008 est)

Define what is meant by stratified sampling and explain how it could be applied in this study in Belize.

[5]

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(Section B starts overleaf)

Section B

Answer **all three** questions in this section

- 2 (a) Study **Resource 2** showing age structure in the United Kingdom from 1981–2051 (projected).

Resource 2

	YOUNG DEPENDENTS (0–15) % of working age people	AGED DEPENDENTS (60+) % of working age people
1981	37.1	29.7
1991	33.2	30.0
2001	32.6	29.8
2011	29.2	31.7
2031	28.6	38.2
2051	27.9	43.6

Source: adapted from www.optimumpopulation.org

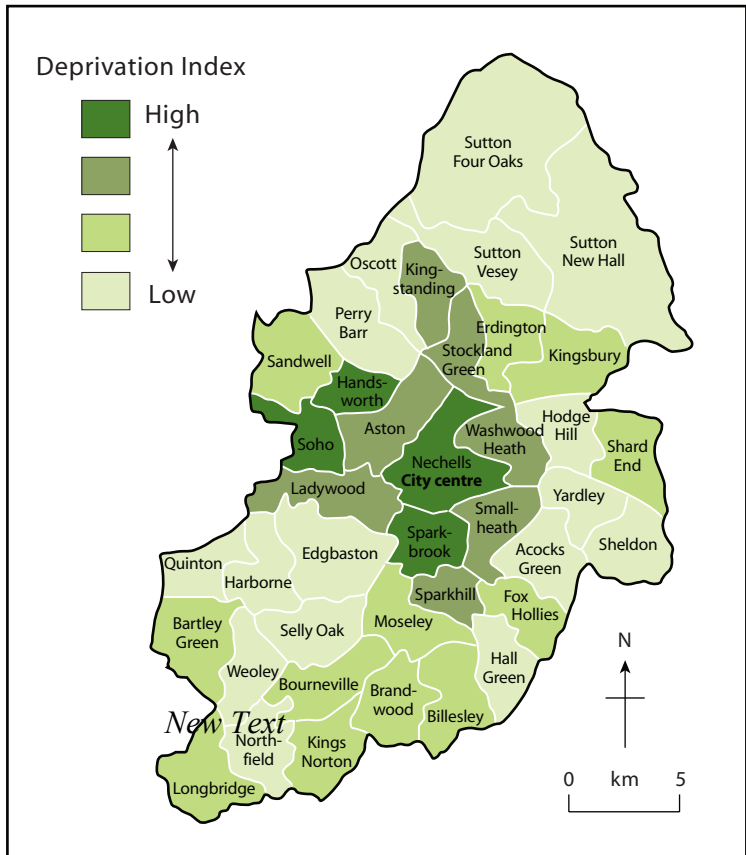
Outline the trends shown in **Resource 2** and identify their economic implications.

[6]



3 (a) Study **Resource 3** which shows the pattern of social deprivation in Birmingham in 1991.

Resource 3



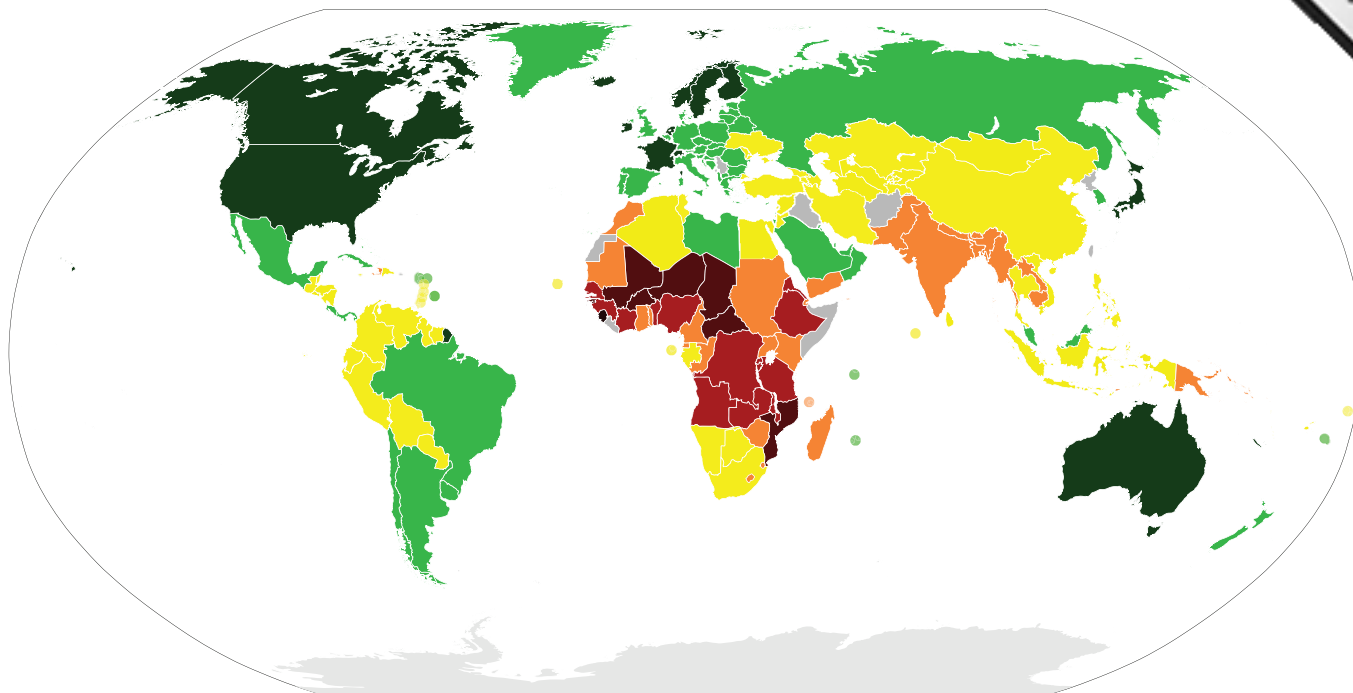
© Urbanisation: Changing Environments by Corrin Flint and David Flint, 2001, ISBN 0007114273.
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Describe the pattern of social deprivation in Birmingham.

[2]

4 (a) Study **Resource 4** showing the global pattern of the Human Development Index in 2007.

Resource 4



HIGH	MEDIUM	LOW	
0.950 and above	0.650–0.799	0.400–0.499	not available
0.800–0.949	0.500–0.649	0.399 and below	

© Adapted from Data in UN Development Program's Human Development Report 2007/2008 reproduced with the permission of Palgrave MacMillan

Describe the global pattern of development in 2007, as shown in **Resource 4**.

[2]

Examiner Only	
Marks	Remark

(b) Describe and evaluate **one** other composite measure of development.

[4]

(c) Discuss the positive and negative effects of aid for development in LEDCs.

[6]



Teacher Only
Mark

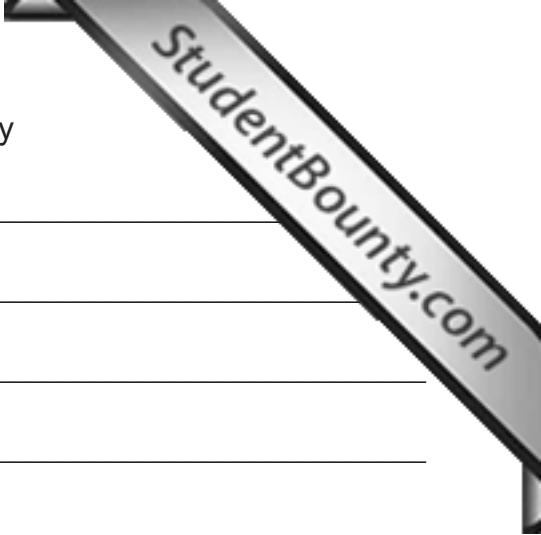
Section C

Answer **any two** questions from this section

- 5 With reference to a national case study, describe and explain how population structure, as shown by population pyramids, can change over time. [12]
- 6 Discuss, with reference to places for illustration, the issues faced in remote rural environments. [12]
- 7 With reference to one national case study, describe and explain the regional contrasts in development. [12]

Number your answers clearly

Question
Number



Number your answers clearly

Question
Number

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