

New Specification



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ADVANCED SUBSIDIARY (AS)
General Certificate of Education
January 2010

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71	
Candidate Number	
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Geography
Assessment Unit AS 2
assessing
Human Geography
[AG121]



FRIDAY 22 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.

You are provided with an insert sheet for use with question **1(b)**.

Do not write your answers on this insert.

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	

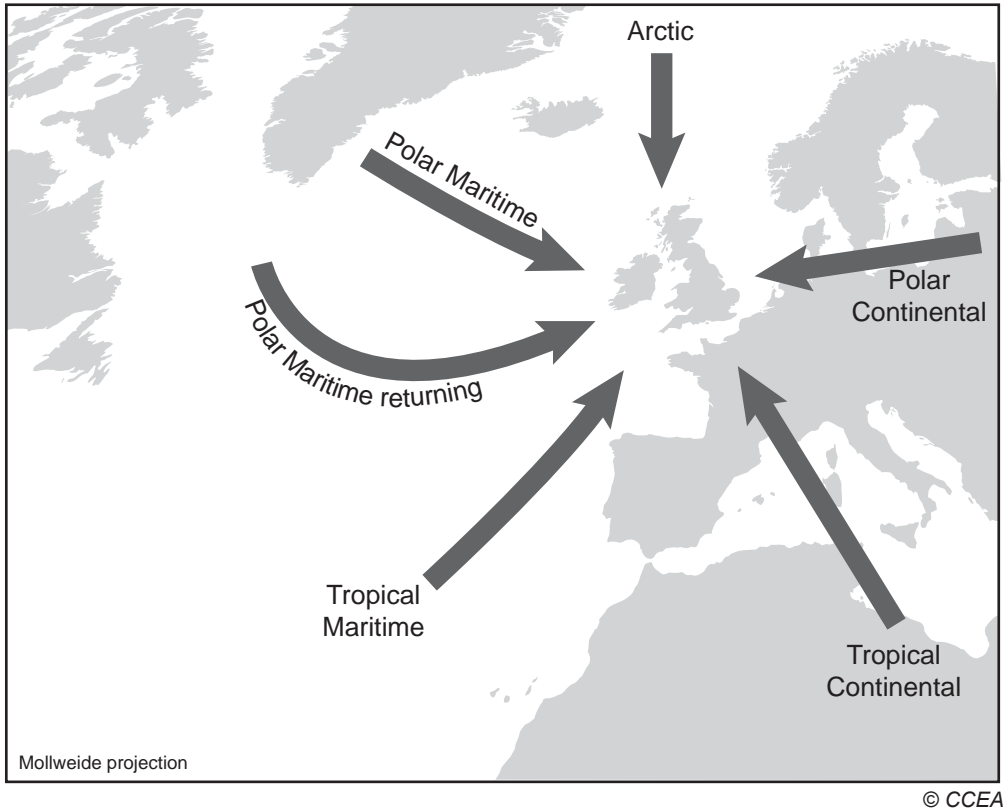
Total Marks	
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Section A

Answer this section

- 1 (a) Study **Resource 1A**, which illustrates the source regions and air masses that affect the British Isles, and **Resource 1B**, a table showing their frequency.

Resource 1A



Resource 1B

Dominant Air Mass	% Frequency *
Polar Maritime returning	16
Polar Continental	1
Polar Maritime	32
Tropical Maritime	9
Tropical Continental	1
Arctic	11

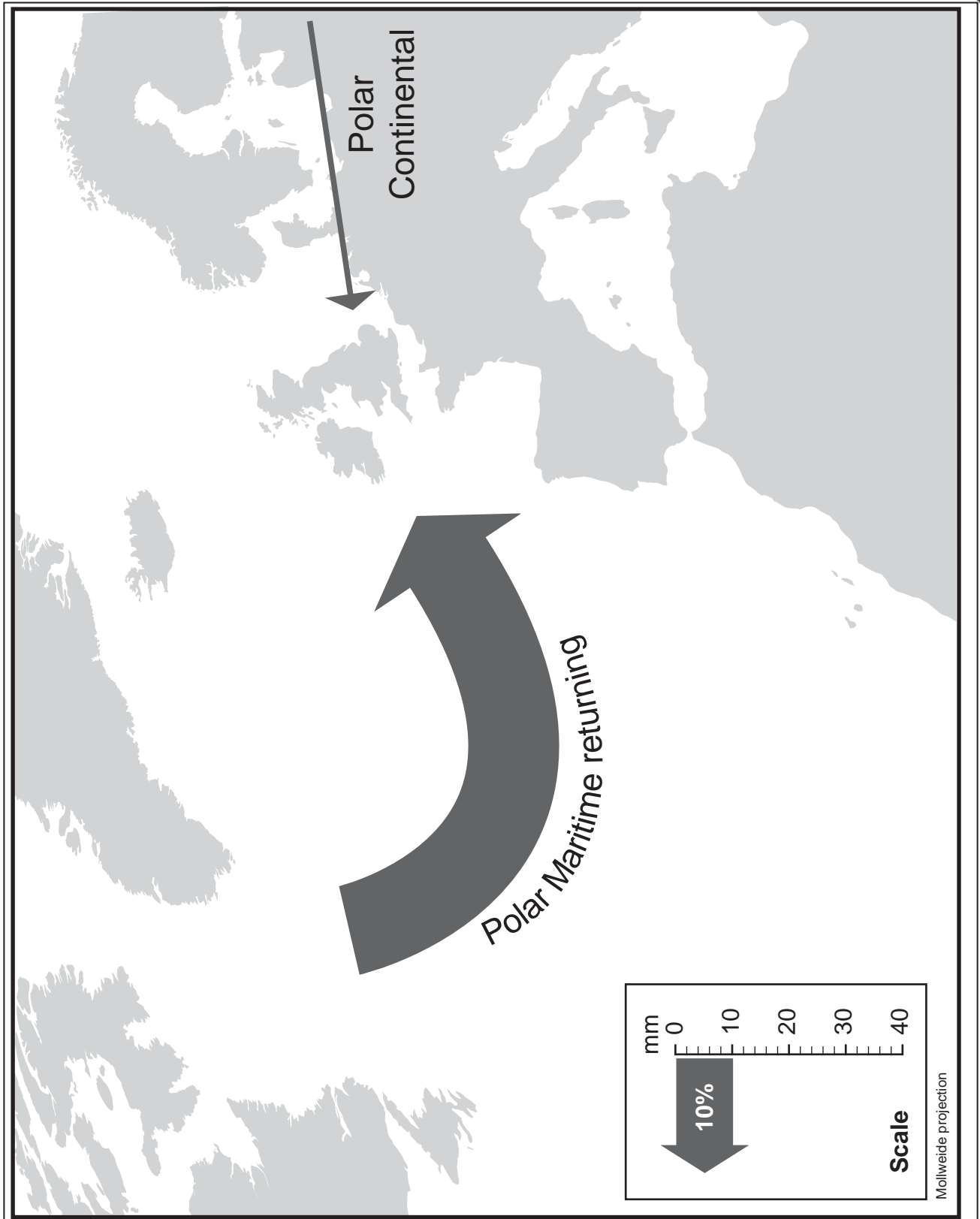
* Dominant air masses prevail for only 70% of the time

Source: Advanced Geography (Adapted)

For Only
mark

- (i) Complete **Resource 1C** as a flow chart showing air mass frequency, by adding the proportional flow lines, directions and annotation. The first two have been done for you. [6]

Resource 1C



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(ii) State any **two** measurable variables which should help show differences in the characteristics of air masses.

1. _____ [1]

2. _____ [1]

Teacher Only	Mark

(b) A geography student, carrying out an urban residential study in Belfast, proposed the following hypothesis:

“Environmental quality increases significantly with distance from the edge of the CBD.”

Ten sites were systematically sampled along two transect routes outwards from the edge of the CBD (as illustrated on **Resource 1D**, see insert sheet). The environmental quality score for each site was obtained using the Evaluation Matrix shown in **Resource 1E**. Study **Resource 1F** which relates to a statistical investigation of the hypothesis.

Resource 1E

Evaluation Matrix (completed for site A1)

	1	2	3	4	5	
low value housing			✓			high value housing
housing in poor condition				✓		housing in good condition
housing allows little privacy	✓					housing allows total privacy
housing has no gardens	✓					housing has large gardens
a grey environment		✓				a green environment
an ugly environment			✓			an attractive environment
no trees			✓			well wooded
congested	✓					spacious
a lot of litter		✓				no litter
a lot of vandalism				✓		no vandalism
probably unsafe at night	✓					probably safe at night
noisy	✓					peaceful

Total score = 26

© The Urban Challenge by G Drake and C Lee, published by Hodder & Stoughton, 2000, ISBN 0340737344 reproduced by permission of Hodder Education

Resource 1F

Site (shown in Resource 1D)	X Distance from edge of CBD (km)	Rank X	Y Environmental quality score	Rank Y	d	d ²
A1	0	9.5	26	4	5.5	30.25
B1	0	9.5	25	5	4.5	20.25
A2	0.7	7	15	10	-3	9
B2	0.65	8	16	9	-1	1
A3	1.4	5	17	8	-3	9
B3	1.3	6	24	6	0	0
A4	2.1	3	45	3	0	0
B4	1.95	4	23	7	-3	9
A5	2.8	1	46	2	-1	1
B5	2.6	2	48	1	1	1

$\Sigma d^2 = 80.5$

- (i) In the space below, complete the Spearman's Rank calculation and comment on the statistical significance of the outcome in relation to the hypothesis. Formula and significance charts are presented in **Resource 1G** (page 7).

$r_s =$ _____

Comment on statistical significance in relation to the hypothesis

[6]

Resource 1G

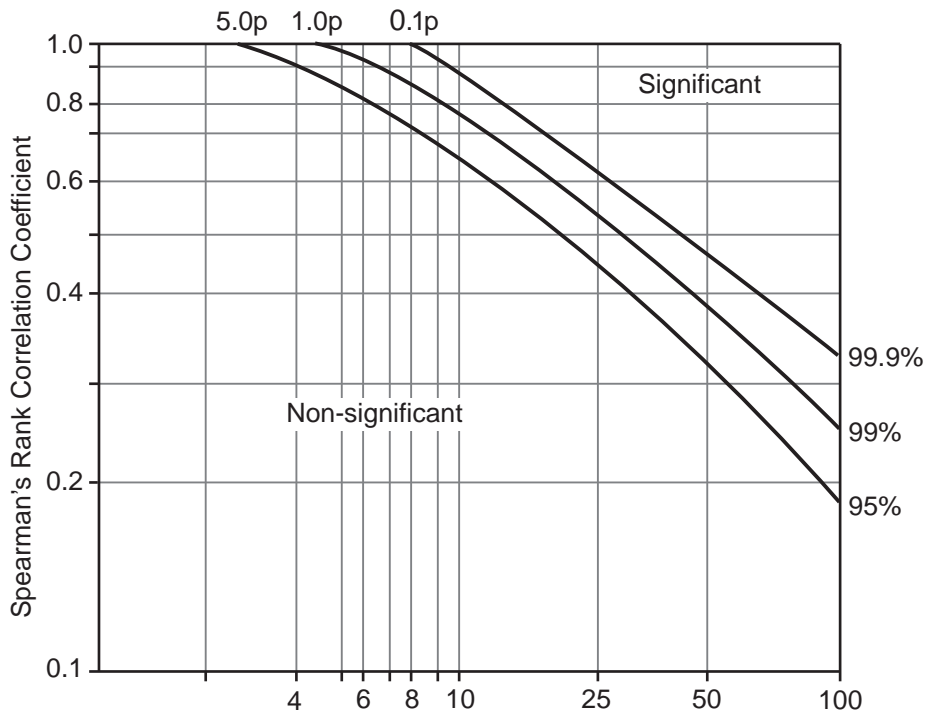
Spearman's Rank Correlation Equation and Significance Charts

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

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

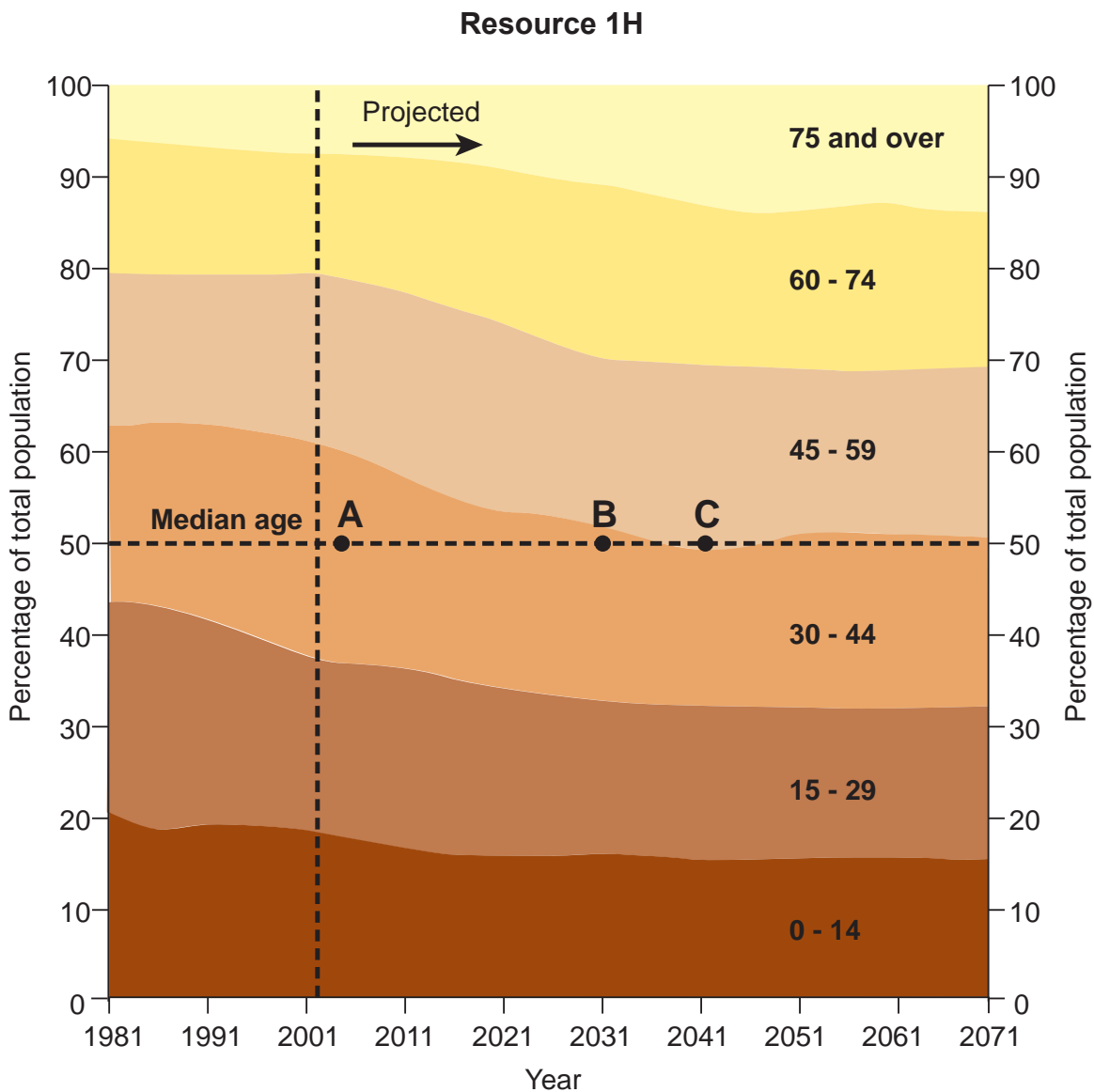
(ii) Explain why **systematic** sampling along each route, as shown in **Resource 1D** (see insert sheet), was selected as more appropriate than random sampling for this investigation.

[4]

(iii) With reference to the Evaluation Matrix, **Resource 1E**, outline and explain any **two** limitations or weaknesses which may have influenced the reliability of the environmental quality data collected.

[6]

(c) Study **Resource 1H** which illustrates the actual and projected age distribution and median age of the population in the UK (between 1981 with projections to 2071).



Key (Median age of population)
A = 38.2 years (2002)
B = 43.3 years (2031)
C = 45.0 years (2041)

Adapted from Population Trends Vol. 107 page 10 Office for National Statistics © Crown Copyright

(i) Explain how the median value of a data set is obtained.

[2]

(ii) Using only **Resource 1H**, discuss why the median age of the population in the UK is projected to increase.

[4]

Section B

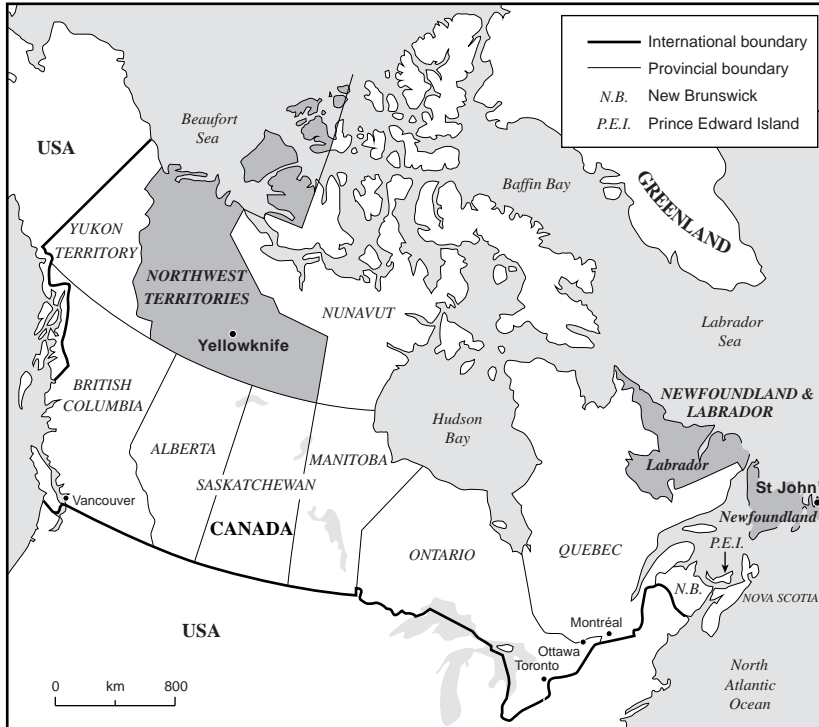
Answer **all three** questions in this section

- 2 (a) In relation to population, distinguish between natural change and migration balance.

[3]

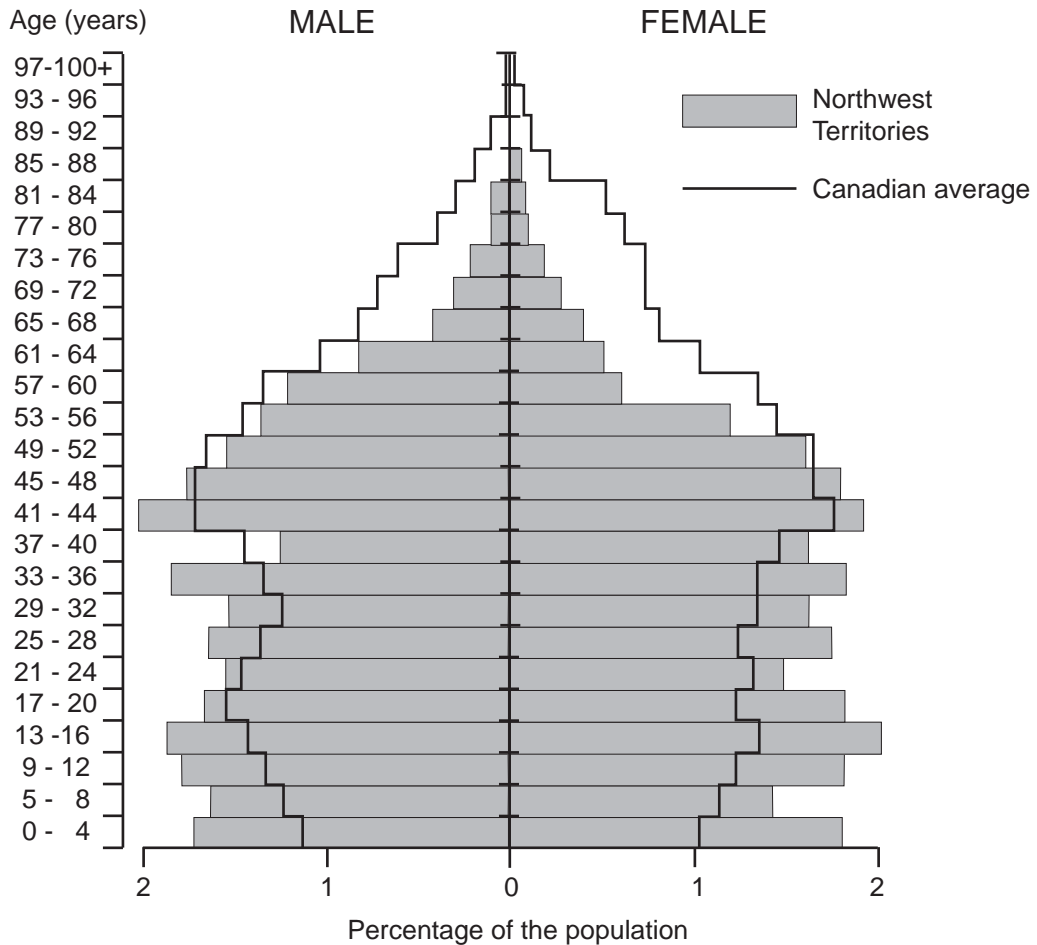
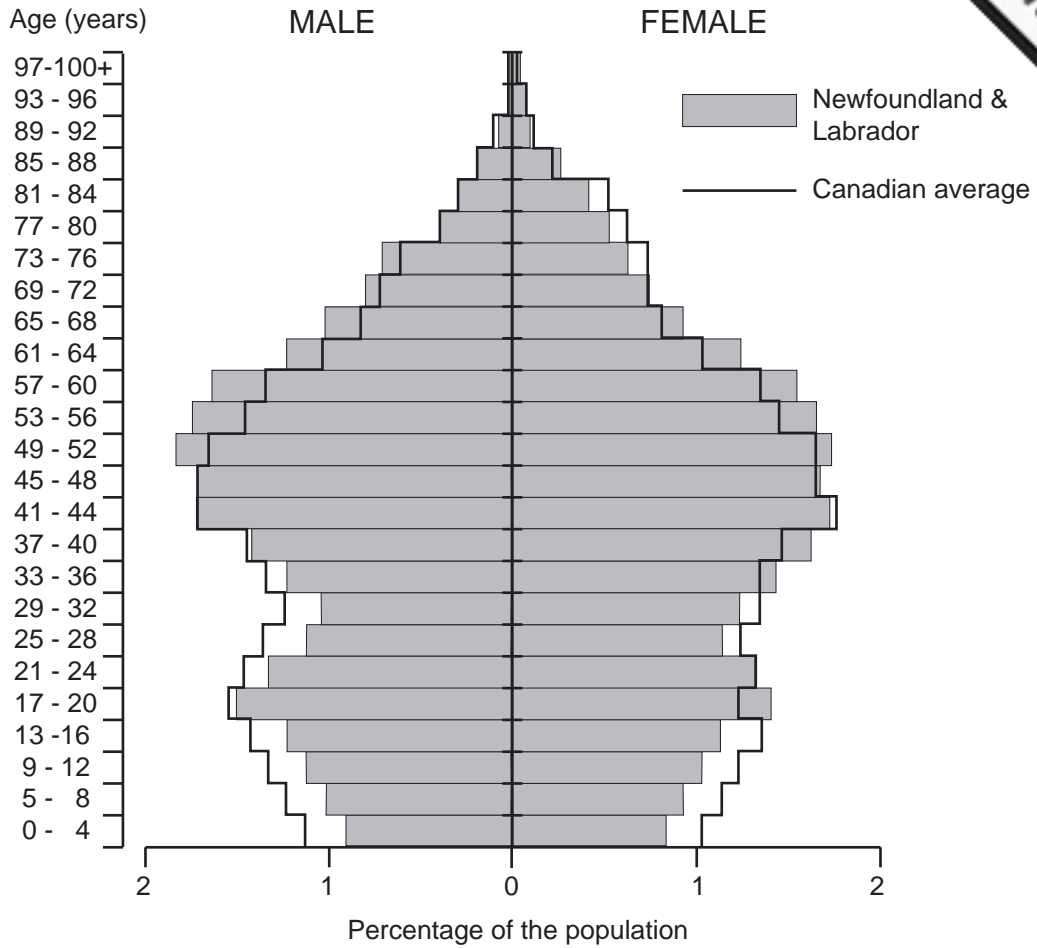
- (b) Study **Resource 2A and 2B** (on the next page) which show population pyramids for two regions in Canada (Newfoundland & Labrador and the Northwest Territories).

Resource 2A



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Resource 2B



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(i) Describe **two** differences in the population structure of the two regions in Canada, as shown in the population pyramids.

[4]

(ii) Suggest a possible reason for **one** of the differences you have described above.

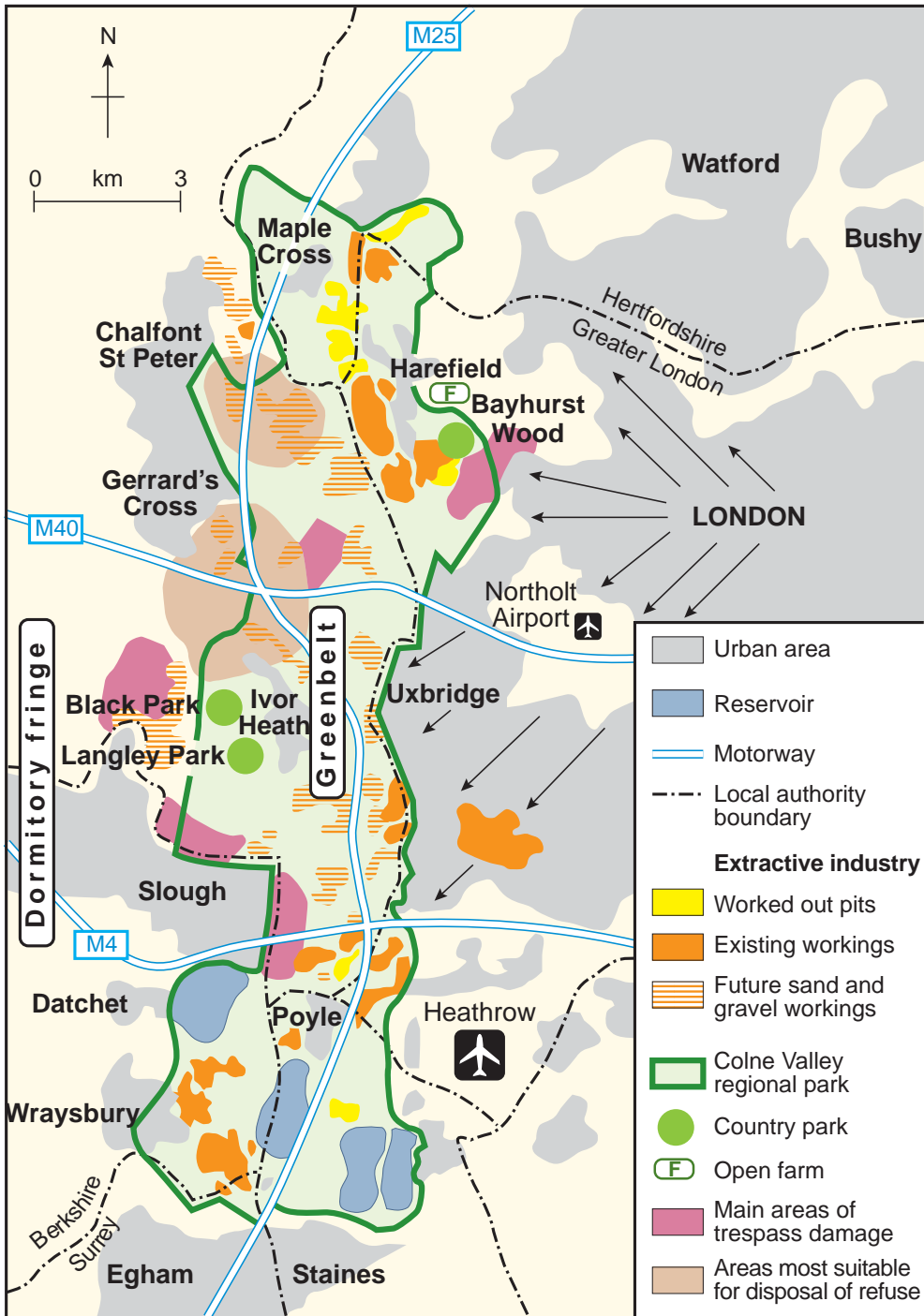
[2]

(c) Population distribution is affected by physical and human resources. Describe how one **physical** resource has affected population distribution in the national case study you have studied.

[3]

3 (a) Study **Resource 3** showing pressures and opportunities on the western urban-rural fringe of London.

Resource 3



© Adapted with the permission of Nelson Thornes Ltd from *New Patterns: process and change in Human geography* ISBN 0174386818 by Michael Carr first published in 1997.

(b) With reference to an urban area you have studied, discuss the issues of social and economic deprivation in inner city areas of MEDCs.

[6]

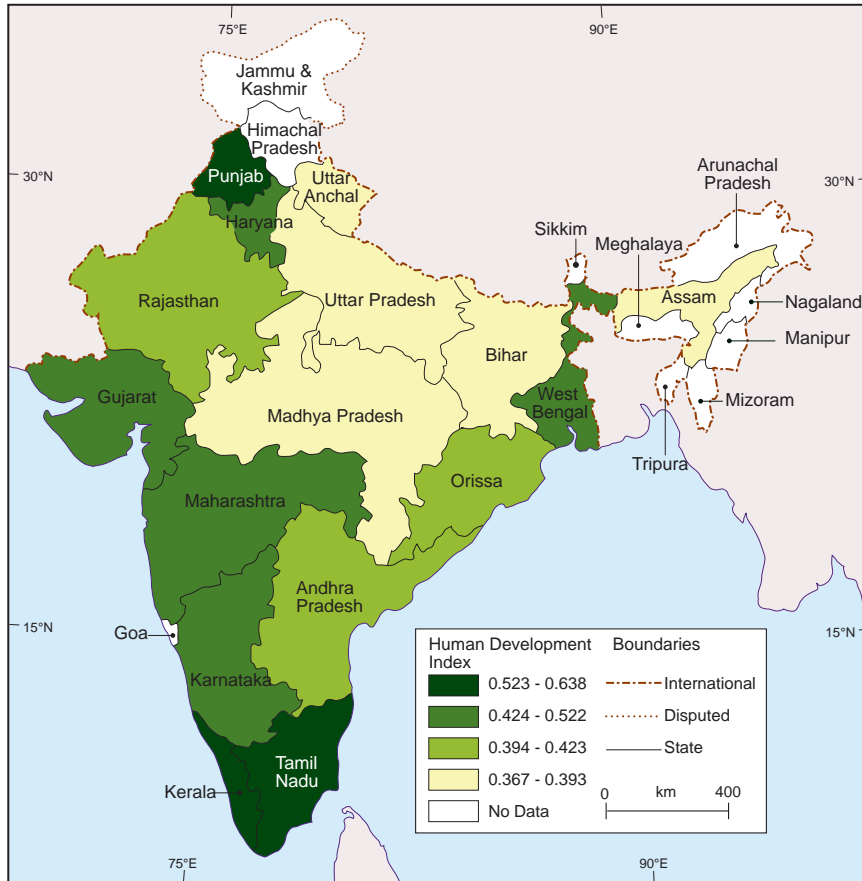
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(Questions continue overleaf)

- 4 (a) Study **Resource 4A** which shows the pattern of Human Development Index across India in 2001 and **Resource 4B** which shows the pattern of the percentage of children underweight in India in 1999.

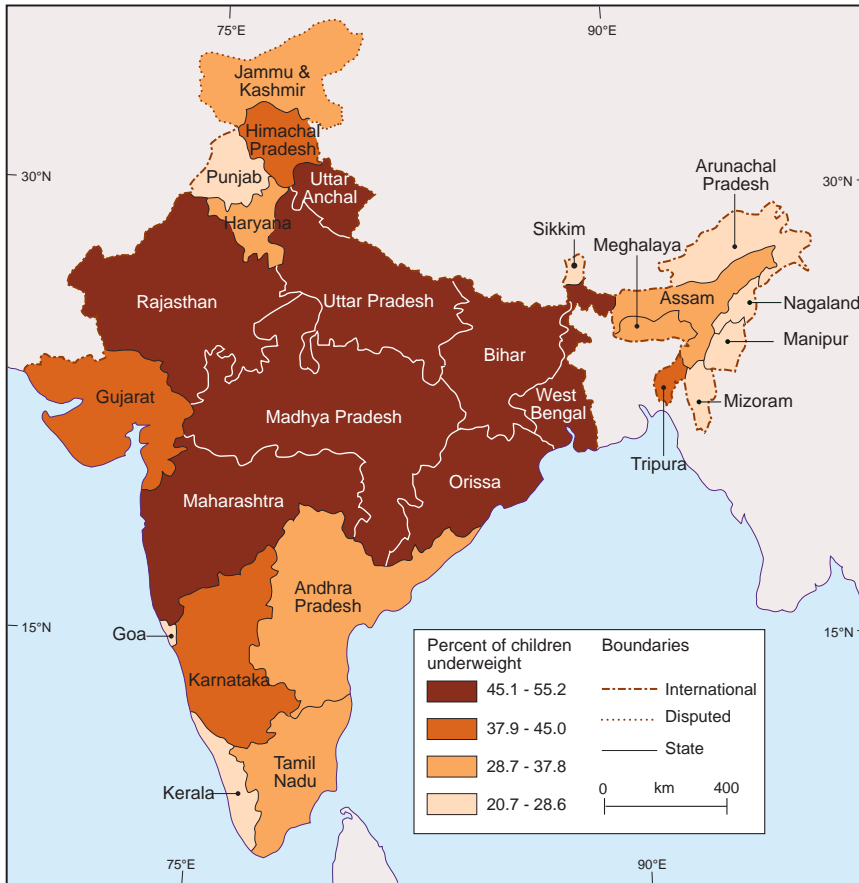
Resource 4A

The Human Development Index (HDI) measures the average figures for life expectancy, enrolment in education and purchasing power.



Source: http://earthtrends.wri.org/povlinks/map/m_85.php

Resource 4B



Source: http://earthtrends.wri.org/povlinks/map/m_104.php

(i) Using Resources 4A and 4B, describe the pattern of Human Development Index in India in 2001 and discuss how this relates to the pattern of the percentage of underweight children in India in 1999.

[5]

(ii) The Human Development Index is a composite index of development. Evaluate **one** other composite index of development you have studied.

[3]

(b) Distinguish between colonialism and neo-colonialism.

[4]

Section C

Answer **any two** questions from this section

5 Discuss the economic, social and political implications of the dependency ratios in MEDCs and LEDCs. [12]

6 **Either**

(a) With reference to your case study, discuss how economic regeneration is delivered to a remote rural area by a regional development agency. [12]

Or

(b) With reference to a protected area you have studied, discuss the attempts to manage it for conservation, recreation and tourism. [12]

7 Debt is an issue affecting many LEDCs. Outline some of the causes of such debt and discuss its impact on the development of LEDCs. [12]

Question
Number

Number your answers clearly

Horizontal lines for writing answers.

Question
Number

Number your answers clearly

Question
Number

Number your answers clearly

Answer lines (horizontal lines for writing)

Number your answers clearly

Question Number

Number your answers clearly

Question
Number

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RESOURCE 1D

For use with question 1(b) Do not write your answers on the insert

