Six questions should be attempted, namely:
all four questions in Section A (Questions 1, 2, 3 and 4);
one question from Section B (Question 5 or Question 6);
one question from Section C (Question 7 or Question 8).

Write the numbers of the six questions you have attempted in the marks grid on the back cover of your answer booklet.

The value attached to each question is shown in the margin.

Credit will be given for appropriate maps and diagrams, and for reference to named examples.

Questions should be answered in sentences.

Note The reference maps and diagrams in this paper have been printed in black only: no other colours have been used.
SECTION A: Answer ALL questions in this section

Question 1: Hydrosphere

Study OS Map Extract number 1745/98: Upper Wharfedale (separate item).

(a) Using appropriate grid references, describe the physical characteristics of the River Wharfe and its valley from 978690 to 040603.  

(b) Explain, with the aid of a diagram or diagrams, how a waterfall is formed in the upper course of a river valley.
Question 2: Biosphere

(a) **Draw** and **fully annotate** a soil profile of a **podzol** to show its main characteristics (including horizons, colour, texture and drainage) and associated vegetation.  

Study Reference Diagram Q2 which shows a soil profile of a brown earth soil.

(b) **Describe** and **explain** the formation and characteristics of a **brown earth soil**.

Reference Diagram Q2
Question 3: Rural Geography

(a) Study Reference Table Q3.

Describe and explain, with the aid of the data in the table, the differences between intensive peasant farming and commercial arable farming. 10

Reference Table Q3 (Types of farming and selected data)

<table>
<thead>
<tr>
<th>Farm type</th>
<th>Bangladesh</th>
<th>Canada</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive peasant farming</td>
<td>158</td>
<td>13 034</td>
</tr>
<tr>
<td>Commercial arable farming</td>
<td>48</td>
<td>3</td>
</tr>
<tr>
<td>GDP per capita ($US)</td>
<td>82</td>
<td>4</td>
</tr>
<tr>
<td>% GDP from farming</td>
<td>26</td>
<td>32</td>
</tr>
<tr>
<td>People per tractor</td>
<td>20 581</td>
<td>38</td>
</tr>
</tbody>
</table>

(b) Areas of intensive peasant farming such as those in Bangladesh have undergone changes in recent years.

Referring to an area you have studied:

(i) **describe** these changes, and

(ii) **outline** the impact of these changes on the people and the farming landscape. 10
Question 4: Industrial Geography

“Many industrial concentrations within the European Union have undergone a great transformation in the last 50 years. These changes are most marked in the types of industries, the industrial landscape and in employment patterns.”

Referring to a named industrial concentration in the European Union that you have studied:

(i) describe and account for the main characteristics of a typical “new” industrial landscape;

(ii) suggest ways in which the national government and the European Union have helped to attract new industries to your chosen area.

[Turn over]
SECTION B: Answer ONE question from this section, ie either Question 5 or Question 6.

Question 5: Atmosphere

“Energy is transferred from areas of surplus, between 35°N and 35°S, to areas of deficit, polewards from 35°N and 35°S, by both oceanic and atmospheric circulation.”

Study Reference Map Q5 which shows selected ocean currents in the North Atlantic Ocean.

(a) (i) **Describe** the pattern of ocean currents in the North Atlantic Ocean, and

(ii) **explain** how they help to maintain the global energy balance.

Reference Map Q5 (Selected ocean currents in the North Atlantic Ocean)
Question 5: Atmosphere (continued)

Study Reference Diagram Q5 which shows surface winds and pressure zones.

(b) **Explain** how circulation cells in the atmosphere and the associated surface winds assist in the transfer of energy between areas of surplus and deficit.
Question 6: Lithosphere

Study OS Map Extract number 1745/98: Upper Wharfedale (separate item), and Reference Map Q6.

The map extract covers part of the Yorkshire Dales National Park, an area famed for its Carboniferous Limestone scenery, characterised by distinctive surface features, drainage patterns and underground landforms.

(a) Describe the evidence which suggests that Area A, shown on Reference Map Q6, is a Carboniferous Limestone landscape.  
(You should refer to named features and make use of grid references.)  

(b) Choose any one Carboniferous Limestone feature described in your answer to part (a) and, with the aid of annotated diagrams, explain how it was formed.
SECTION C: Answer ONE question from this section, ie either Question 7 or Question 8.

Question 7: Population

Italy has a population structure that is typical of many EMDCs (Economically More Developed Countries).

Study Reference Diagrams Q7A and Q7B.

(a) Describe and account for the changes between the population structure in 2000 and that projected for 2050.

(b) Discuss the consequences of the 2050 population structure for the future economy of the country and the welfare of its citizens.

Reference Diagram Q7A (Italy: Population pyramid for 2000)

Reference Diagram Q7B (Italy: Population pyramid for 2050)
Question 8: Urban Geography

Study Reference Photograph Q8A which shows Buchanan Galleries shopping centre in Glasgow’s CBD and Reference Photograph Q8B which shows Braehead, an out-of-town shopping centre situated at the south-west edge of Glasgow.

Referring to Glasgow, or any other named city you have studied in an Economically More Developed Country (EMDC):

(i) **suggest** the impact that an out-of-town shopping centre may have had on shopping in the traditional CBD;

(ii) **describe** and **explain** the changes, other than shopping, which have taken place in the CBD over the past few decades.

Reference Photograph Q8A

Reference Photograph Q8B

[END OF QUESTION PAPER]
ACKNOWLEDGEMENTS

Reference Photograph Q8A—Photograph is reproduced by kind permission of Buchanan Galleries.

Reference Photograph Q8B—Photograph is reproduced by kind permission of Braehead Shopping Centre.
Answer any two questions.

Write the numbers of the two questions you have attempted in the marks grid on the back cover of your answer booklet.

The value attached to each question is shown in the margin.

Credit will be given for appropriate maps and diagrams, and for reference to named examples.

Questions should be answered in sentences.

Note  The reference maps and diagrams in this paper have been printed in black only: no other colours have been used.
Question 1 (Rural Land Resources)

Loch Lomond and the Trossachs became Scotland's first National Park in 2002. It covers 1865 square kilometres of lowland, river, loch, forest and mountain landscapes.

(a) Describe and explain, with the aid of annotated diagrams, the formation of the main glacial features of the Loch Lomond and the Trossachs National Park or any other glaciated upland area in the UK that you have studied.

(b) With reference to Loch Lomond and the Trossachs or any other named upland area that you have studied, explain the social and economic opportunities created by the landscape.

(c) Study Reference Diagram Q1.

Reference Diagram Q1 shows the Loch Lomond and the Trossachs National Park to be under intense environmental pressure in certain key areas. With reference to this area or any named upland area you have studied:

(i) describe and explain the environmental conflicts that may occur (you should refer to named locations within your chosen upland landscape);

(ii) describe specific solutions to these environmental conflicts commenting on their effectiveness.

(50)
Question 1 – continued

Reference Diagram Q1 (Loch Lomond and the Trossachs: Environmental Activity and Pressure)

- Intense activity and environmental pressure
- Moderate activity and environmental pressure
- Low activity and environmental pressure

[Diagram of Loch Lomond and the Trossachs with place names and activity levels shaded appropriately]

[Turn over]
Question 2 (Rural Land Degradation)

The Sahel is a 500 kilometre wide zone which runs across Africa along the southern edge of the Sahara Desert. The Sahel is under intense pressure from human activity which, combined with climate change, has created a “spiral of desertification”.

(a) Study Reference Diagram Q2.
   
   **Describe** the changes in rainfall patterns shown on Reference Diagram Q2. 6

(b) For either Africa north of the Equator or the Amazon Basin:
   
   (i) **explain** how human activities, including inappropriate farming techniques, have contributed to land degradation; and 18

   (ii) **describe** some of the consequences of land degradation on the people and their environment. 10

(c) Referring to named areas of North America which you have studied:
   
   (i) **describe** some of the measures which have been taken to conserve soil and limit land degradation; and 16

   (ii) **comment on** the effectiveness of these measures. (50)
Question 2 – continued

Reference Diagram Q2 (Rainfall Variability in the Sahel)
Question 3 (River Basin Management)

(a) Study Reference Table Q3 and Reference Map Q3.
    
    Explain the need for water management in the Colorado Basin.  
    
    (b) Explain the physical and human factors that have to be considered when selecting sites for dams and their associated reservoirs.
    
    (c) Study Reference Diagram Q3 and Reference Map Q3.
    
    For the Colorado River Basin, or another river basin in North America, or in Africa, or in Asia, that you have studied:
    
    (i) describe the problems caused by the river flowing through more than one state or country;
    
    (ii) suggest ways in which these problems may be overcome.
    
    (d) Describe and explain the social, economic and environmental benefits of a named water control project in North America or Africa or Asia.

Reference Table Q3 (Population Growth in Las Vegas and Phoenix)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Phoenix</td>
<td>2 238 480</td>
<td>3 251 876</td>
<td>+45%</td>
</tr>
<tr>
<td>Las Vegas</td>
<td>741 459</td>
<td>1 375 765</td>
<td>+85%</td>
</tr>
</tbody>
</table>

Reference Diagram Q3 (The Colorado River Water Allocation)

Upper Basin—Water allocation

Lower Basin—Water allocation
Question 3 – continued

Reference Map Q3 (The Colorado River Basin)
Question 4 (Urban Change and its Management)

(a) Study Reference Map Q4A.

Describe and account for the distribution of major cities in either Spain or any other EMDC (Economically More Developed Country) that you have studied.  

(b) “Kibera is one of almost 100 shanty towns in Nairobi, the capital city of Kenya. More than half of Nairobi’s 3 million people live in these shanties, which in total occupy less than 2% of the city’s land area.”

With reference to a named city that you have studied in an ELDC (Economically Less Developed Country):

(i) describe the social, economic and environmental problems often found in these shanty town areas;  

(ii) describe the methods the shanty dwellers and the city authorities might use to tackle these problems, and comment on the effectiveness of these methods.  

(c) Study Reference Map Q4B.

The map shows the Aberdeen Western Peripheral Route (AWPR), a proposed new road to improve traffic management in and around Aberdeen and the North-east of Scotland.

For Aberdeen, or a named city that you have studied in an EMDC:

(i) describe and explain why it suffers from traffic congestion;  

(ii) suggest why the building of major new roads such as the AWPR may lead to protests and land-use conflicts.  

Marks

10  

12  

8  

12  

(50)
Reference Map Q4A (Largest Cities in Spain)

Reference Map Q4B (Aberdeen Western Peripheral Route (AWPR))
Question 5 (European Regional Inequalities)

(a) Study Reference Table Q5.

**Describe** and **suggest reasons** for the differences in levels of development between the pre-2000 EU member states and the post-2000 EU member states. 10 Marks

(b) Study Reference Map Q5.

(i) **Describe** the distribution of the regions which were eligible for European grants under Objective 1 support (2000–2006). 8 Marks

(ii) **Explain** how EU initiatives such as Objective 1 support might improve the less prosperous regions of the European Union. 8 Marks

(c) “The European Cohesion policy (2007–2013) aims to contribute towards economic and social cohesion within the EU by reducing regional differences and human inequality within member states.”

For any named country you have studied in the European Union:

(i) **describe** the physical and human factors which have led to regional inequalities; 18 Marks

(ii) **outline** the steps taken by the national government to tackle these regional inequalities. 6 Marks

Reference Map Q5 (European Union Objective 1 Funding)

Regions eligible under Objective 1

(Objective 1: Supporting development in less prosperous regions)
**Reference Table Q5 (European Union Statistics Ranked in Order)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of EU membership</th>
<th>GDP (ranked)*</th>
<th>HDI (ranked)*</th>
<th>Country</th>
<th>Year of EU membership</th>
<th>GDP (ranked)*</th>
<th>HDI (ranked)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>1957</td>
<td>6</td>
<td>6</td>
<td>Cyprus</td>
<td>2004</td>
<td>14</td>
<td>17</td>
</tr>
<tr>
<td>France</td>
<td>1957</td>
<td>11</td>
<td>9</td>
<td>Czech Rep</td>
<td>2004</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Germany</td>
<td>1957</td>
<td>10</td>
<td>13</td>
<td>Estonia</td>
<td>2004</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>Italy</td>
<td>1957</td>
<td>12</td>
<td>10</td>
<td>Hungary</td>
<td>2004</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>1957</td>
<td>1</td>
<td>5</td>
<td>Latvia</td>
<td>2004</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1957</td>
<td>3</td>
<td>3</td>
<td>Lithuania</td>
<td>2004</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Denmark</td>
<td>1973</td>
<td>5</td>
<td>8</td>
<td>Malta</td>
<td>2004</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>Ireland</td>
<td>1973</td>
<td>2</td>
<td>1</td>
<td>Poland</td>
<td>2004</td>
<td>25</td>
<td>21</td>
</tr>
<tr>
<td>UK</td>
<td>1973</td>
<td>8</td>
<td>11</td>
<td>Slovakia</td>
<td>2004</td>
<td>22</td>
<td>24</td>
</tr>
<tr>
<td>Greece</td>
<td>1981</td>
<td>15</td>
<td>14</td>
<td>Slovenia</td>
<td>2004</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>Portugal</td>
<td>1986</td>
<td>19</td>
<td>16</td>
<td>Bulgaria</td>
<td>2007</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Spain</td>
<td>1986</td>
<td>13</td>
<td>12</td>
<td>Romania</td>
<td>2007</td>
<td>27</td>
<td>27</td>
</tr>
<tr>
<td>Finland</td>
<td>1995</td>
<td>9</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>1995</td>
<td>7</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>1995</td>
<td>4</td>
<td>7</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

GDP Gross Domestic Product per capita reflects total of all goods and services per head of population

HDI Human Development Index (covering poverty, education, health)

*Ranking 1–27 with 1 best and 27 worst

[Turn over]
Question 6 (Development and Health)

(a) Study Reference Map Q6 which shows the Human Development Index (HDI) for countries of the world.

**Explain** the advantages of using a composite indicator of development such as the HDI rather than a single indicator.  

(b) Referring to named examples, **suggest reasons** why there is such a wide range in levels of development **between** different ELDCs (Economically Less Developed Countries).  

(c) For malaria, or bilharzia, or cholera:

(i) **describe** the human and environmental factors that can contribute to the spread of the disease;  

(ii) **describe** the measures that have been taken to combat the disease;  

(iii) **explain** how the eradication or control of the disease would benefit ELDCs.  

(d) “**Resources need to be targeted at improving Primary Health Care if we are ever going to improve the health of people in ELDCs.**” Aid worker

**Describe** some of the strategies involved in Primary Health Care and **explain** why these strategies for improving health standards are suited to people living in ELDCs.
The Human Development Index measures development by combining three individual measures. These measures are:

• adult literacy rate;
• life expectancy;
• real Gross Domestic Product (ie what an income will actually buy in a country).