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 four questions from this section.

**Question 1: Lithosphere**

(a) Study the Ordnance Survey Map Extract number 2112/157 & 158: Pembrokeshire Coast (separate item).

**Describe** the map evidence that shows the Pembrokeshire coastline from 860010 to 040980 is an area of coastal erosion. 10

(b) With the aid of annotated diagrams, **explain** the various stages and processes involved in the formation of a stack. 8

**Question 2: Hydrosphere**

(a) With the aid of an annotated diagram, **describe** the global hydrological cycle. 6

(b) Study Table Q2.

Select **one** upper course and **one** lower course feature from the table below. **Describe** and **explain** the formation of each of these features. Annotated diagrams may be used. 12

**Table Q2: Selected River features from the Upper and Lower Course**

<table>
<thead>
<tr>
<th>Upper Course</th>
<th>Lower Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>River waterfall</td>
<td>Delta</td>
</tr>
<tr>
<td>V-shaped valley</td>
<td>Floodplain and natural levees</td>
</tr>
</tbody>
</table>
Question 3: Population

(a) Study Diagram Q3.

**Describe** the changes projected to take place in Scotland’s population structure and **suggest problems** that the government may face as a result of these changes.

Diagram Q3: Projected change in Scotland’s population 2015 – 2035

(b) This population information was projected from data collected in the 2011 census carried out in the UK. **Explain** why carrying out a census may be more difficult and the results less reliable in Developing Countries.
**Question 4: Urban**

Study Diagram Q4.

Referring to any named Developed World city you have studied:

(a) **describe** and **explain** the advantages of locating modern business and/or retail parks in the Outer Suburbs of your chosen city;  

(b) **describe** and **explain** the changes which have taken place in the Central Business District (CBD) over the past few decades. You may include changes to transport, employment, shopping and other land uses.

---

**Diagram Q4**

- Motorway
- Central Business District
- Modern Industrial Estate
- Outer Suburbs
- Retail Park

---
SECTION B: Answer ONE question from this section, ie either Question 5 or Question 6.

Question 5: Atmosphere

(a) Study Map Q5.

**Describe and explain** the pattern of ocean currents for either the Pacific Ocean or the Atlantic Ocean.

**Map Q5: Selected Ocean Currents**

(b) Study Diagram Q5 which shows surface winds and pressure zones.

**Explain** how the circulation cells A, B and C and the associated surface winds assist in the transfer of energy between areas of surplus and deficit.

**Diagram Q5: Surface winds and pressure zones**
DO NOT ANSWER THIS QUESTION IF YOU HAVE ALREADY ANSWERED QUESTION 5

Question 6: Biosphere

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

(b) Study Diagram Q6, which shows a soil profile of a gley soil.

**Explain** how factors such as natural vegetation, soil organisms, climate, relief and drainage have contributed to the formation and characteristics of a gley soil.

Diagram Q6: A Gley Soil
SECTION C: Answer ONE question from this section, ie either Question 7 or Question 8.

Question 7: Rural

(a) Study Photograph Q7.

Describe and explain the main features of commercial arable farming.

Photograph Q7: Commercial Arable Farming

(b) Referring to an area you have studied, describe and explain the recent changes that have taken place in an intensive peasant farming system.

[Turn over for Question 8 on Page eight]
Question 8: Industry

Study the Ordnance Survey Map Extract number 2112/157 & 158: Pembrokeshire Coast (separate item) and Map Q8.

(a) With the aid of map evidence, **describe** and **explain** the physical **and** human factors that have encouraged industry to locate in Area A.

(b) **Describe** the potential environmental consequences of the industrial concentration in Area A.

Map Q8: Milford Haven Industrial Area

[End of Question Paper]
ACKNOWLEDGEMENT

Paper 1 Section C Photograph Q7 – Tootles/shutterstock.co
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.
Questions 1: Rural Land Resources

The Cairngorms National Park was designated in 2003. It is the UK’s largest National Park covering 4528 square kilometres and includes stunning glacial scenery.

(a) **Describe** and **explain**, with the aid of annotated diagrams, the formation of the main features of glacial erosion in the Cairngorms National Park or any other glaciated upland area which you have studied.

(b) With reference to the Cairngorms National Park, or any other named upland area you have studied, **explain** the social and economic opportunities created by the landscape.

(c) Study Map Q1 and Diagram Q1.

“‘The construction of the first of nearly 600 pylons which will carry the controversial Beauly to Denny power line was completed yesterday . . . almost 10 years since the project was first discussed.’

Herald, 1 March 2012

Environmental conflicts, such as the construction of this power line across the Cairngorms National Park, may occur in upland landscapes.

With reference to any named upland landscape you have studied:

(i) **describe** and **explain** the environmental conflicts;

(ii) **describe** the measures taken to resolve these environmental conflicts and **comment on** their effectiveness.
Question 1 – continued

Map Q1: Location of Beauly to Denny Power Line

Diagram Q1: Size difference between existing and new pylons
Question 2: Rural Land Degradation

(a) Study Map Q2 and Graphs Q2A and Q2B.

Describe the climatic conditions found in Sudan and explain why such physical conditions may lead to the degradation of rural land.
(b) **Describe** and **explain** the processes of water and wind erosion which lead to soil degradation.

(c) Referring to named locations in either Africa north of the equator, or the Amazon Basin, **describe** the social and economic impact of land degradation on the people and economy.

(d) For named areas of North America, **describe** and **explain** soil conservation strategies that have reduced land degradation.
Question 3: River Basin Management

(a) “85% of the area of the Nile river basin is found within the African countries of Ethiopia, South Sudan, Sudan and Egypt.”

Study Table Q3 and Map Q3.

Describe and explain why there is a need for water management within these four countries of the Nile River Basin.  

(b) Describe and explain the physical factors which should be considered when selecting the site for a major dam and its associated reservoir.

(c) Describe and account for the social, economic and environmental benefits and adverse consequences of a named water control project in Africa or North America or Asia.

(d) Explain why political problems can occur as a result of water control projects.

Table Q3 – Nile River Basin statistics

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of River Basin area</th>
<th>Population (millions) 2012</th>
<th>Projected Population (millions) 2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>12</td>
<td>94</td>
<td>127</td>
</tr>
<tr>
<td>South Sudan</td>
<td>29</td>
<td>10</td>
<td>18</td>
</tr>
<tr>
<td>Sudan</td>
<td>34</td>
<td>24</td>
<td>40</td>
</tr>
<tr>
<td>Egypt</td>
<td>10</td>
<td>84</td>
<td>97</td>
</tr>
</tbody>
</table>

Marks

(a) 12
(b) 8
(c) 24
(d) 6

(50)
Map Q3: Nile River Basin with selected climate graphs

Key
- Location of climate stations
- Dam
- High land

Aswan

Temperature (°C)
Precipitation (mm)

Bahir Dar

Temperature (°C)
Precipitation (mm)

Juba

Temperature (°C)
Precipitation (mm)

EGYPT
SUDAN
SOUTH SUDAN
UGANDA
KENYA

Indian Ocean

500 km

<table>
<thead>
<tr>
<th>J F M A M J J A S O N D</th>
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<tbody>
<tr>
<td>500</td>
</tr>
<tr>
<td>450</td>
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<tr>
<td>100</td>
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<tr>
<td>50</td>
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</table>

Temperature (°C)
Precipitation (mm)

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<tr>
<th>J F M A M J J A S O N D</th>
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<tbody>
<tr>
<td>50</td>
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<td>20</td>
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Temperature (°C)
Precipitation (mm)

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<tr>
<td>20</td>
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<tr>
<td>10</td>
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<tr>
<td>0</td>
</tr>
</tbody>
</table>

Temperature (°C)
Precipitation (mm)
Question 4: Urban Change Management

(a) Study Map Q4.

Describe and account for the distribution of major cities in either France or any other Developed World country that you have studied.  

(b) For any named city that you have studied in the Developed World, describe and explain why it suffers from traffic congestion.  

(c) In 1947 Mumbai’s population was 4 million. It is now a megacity with over 12 million people. The population density is estimated to be about 22,000 persons per square kilometre.

With reference to Mumbai, or any named city that you have studied in a Developing Country:

(i) explain why your chosen city has grown so rapidly in terms of rural push/urban pull factors;  

(ii) describe the socio-economic and environmental problems which have resulted from this rapid growth;  

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

(50)
Question 4 – continued

Map Q4: Largest Cities in France

[Map showing largest cities in France including Paris, Marseille, Lyon, and other major cities]
Question 5: European Regional Inequalities

(a) Study Map Q5A.

Convergence Regions were the regions of the European Union (EU) designated for most financial assistance in recent years.

(i) **Describe** the distribution of these Convergence Regions.  

(ii) **Discuss** other ways in which less prosperous regions can receive help from the EU.

(b) Study Map Q5B and Table Q5.

“The **North-South divide** refers to the economic and cultural differences between the North and South of Italy.”

To what extent does the data provide evidence of regional inequalities within Italy?

(c) The UK is also said to have a North-South divide.

(i) **Describe** and **explain** the physical and human factors that have led to the regional inequalities within the UK.

(ii) **Describe** the steps taken by the UK government agencies to reduce regional inequalities.

---

Map Q5A: Convergence Regions of EU

![Map Q5A: Convergence Regions of EU](image-url)
Question 5 – continued

Map Q5B: Regions of Italy

Table Q5: Selected development indicators for regions of Italy

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>North-West</td>
<td>6·9</td>
<td>118</td>
<td>6·2</td>
<td>15</td>
</tr>
<tr>
<td>Lombardy</td>
<td>8·2</td>
<td>133</td>
<td>5·6</td>
<td>15</td>
</tr>
<tr>
<td>North-East</td>
<td>7·7</td>
<td>132</td>
<td>4·6</td>
<td>13</td>
</tr>
<tr>
<td>Emilia-Romagna</td>
<td>11·9</td>
<td>127</td>
<td>5·7</td>
<td>13</td>
</tr>
<tr>
<td>Central</td>
<td>9·5</td>
<td>105</td>
<td>6·1</td>
<td>18</td>
</tr>
<tr>
<td>Lazio</td>
<td>14·5</td>
<td>121</td>
<td>9·3</td>
<td>23</td>
</tr>
<tr>
<td>Abruzzi-Molise</td>
<td>4·9</td>
<td>85</td>
<td>8·6</td>
<td>29</td>
</tr>
<tr>
<td>Campania</td>
<td>−0·5</td>
<td>67</td>
<td>14·0</td>
<td>44</td>
</tr>
<tr>
<td>South</td>
<td>0·0</td>
<td>71</td>
<td>12·8</td>
<td>38</td>
</tr>
<tr>
<td>Sicily</td>
<td>1·1</td>
<td>68</td>
<td>14·7</td>
<td>46</td>
</tr>
<tr>
<td>Sardinia</td>
<td>3·0</td>
<td>68</td>
<td>14·1</td>
<td>24</td>
</tr>
<tr>
<td>Italy average</td>
<td>2·7</td>
<td>104</td>
<td>8·4</td>
<td>25</td>
</tr>
</tbody>
</table>

*PPS—Purchasing Power Standard. EU average is 100.
Question 6: Development and Health

(a) For any Developing Country you have studied, **describe** and **suggest reasons for** the regional variations in development which exist **within** the country.  

(b) “**Decades of experience tell us that primary health care produces better outcomes, at lower costs, and with higher user satisfaction.**”

Dr Margaret Chan, Director General of World Health Organisation

**Describe** some of the strategies involved in Primary Health Care and **explain** why these strategies for improving health are appropriate for people in Developing Countries.

(c) Study Map Q6.

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 of the disease would benefit Developing Countries.

Marks

12

10

8

14

6

(50)
Question 6 – continued

Map Q6: The fight against malaria

Areas affected by malaria
Key
- Before 1948
- 2010
- Cases 2009 (in millions)

Malaria Deaths worldwide

[END OF QUESTION PAPER]
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ACKNOWLEDGEMENT

Paper 2 Question 1(c) – Extract is adapted from “One down, 600 to go… landmark day for power line project” by David Ross, taken from The Herald, Thursday 1st March 2012. Reproduced by kind permission of the Herald and Times Group.
ORDNANCE SURVEY MAP

For Questions 1 and 8

Note: The colours used in the printing of this map extract are indicated in the four little boxes at the top of the map extract. Each box should contain a colour; if any does not, the map is incomplete and should be returned to the Invigilator.