GCSE GEOGRAPHY
Paper 2 Challenges in the human environment

Specimen

Time allowed: 1 hour 30 minutes

Materials
For this paper you must have:
- a pencil
- a ruler.

Instructions
- Use black ink or black ball-point pen.
- Fill in the boxes at the bottom of this page.
- Answer all questions in Section A and Section B.
- Answer Question 3 and one other question in Section C.
- You must answer the questions on the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information
- The marks for questions are shown in brackets.
- The total number of marks available for this paper is 88.
- Spelling, punctuation, grammar and specialist terminology will be assessed in Question 01.8.

Advice
For the multiple-choice questions, completely fill in the circle alongside the appropriate answer(s).

Please write clearly, in block capitals, to allow character computer recognition.

Centre number  
Candidate number  
Surname  
Forename(s)  
Candidate signature  
Question 1 Urban issues and challenges

Study Figure 1, a map showing the percentage of the population living in urban settlements in different parts of the world.

Figure 1

Key
Percentage of population in urban settlements
- 80 and over
- 60 – 79
- 40 – 59
- 20 – 39
- Less than 20

Describe two differences in the percentage of population living in urban settlements in Africa and South America.

[2 marks]

Difference 1:

________________________________________________________________________

________________________________________________________________________

Difference 2:

________________________________________________________________________

________________________________________________________________________
Study Figure 2, a graph showing changes in the world’s rural and urban population from 1950 to 2050 (predicted).

Figure 2

Using Figure 2, which two of the following statements about the world’s rural and urban population are true?

Shade two circles only.

A. The rural population grew fastest between 2000 and 2010.

B. The urban population grew more rapidly than the rural population between 1950 and 2000.

C. The urban population is expected to grow more slowly than the rural population from 2015 onwards.

D. The urban population increased by over 2000 million between 1950 and 2010.

E. The world’s total population doubled between 1950 and 1980.

[2 marks]
Suggest two reasons for the slow rate of urban growth in many higher income countries (HICs).

[2 marks]

Reason 1

____________________________________________________________________________________
____________________________________________________________________________________

Reason 2

____________________________________________________________________________________
____________________________________________________________________________________

To what extent do urban areas in lower income countries (LICs) or newly emerging economies (NEEs) provide social and economic opportunities for people?

[6 marks]

____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________
____________________________________________________________________________________

Question 1 continues on page 6
Question 1 continues on the next page
Study Figure 3, a 1:50 000 map of Dundee, a city in Scotland.
Which grid square shows part of the rural–urban fringe of Dundee?

Shade one circle only.

A 3630
B 3833
C 3930
D 3934

[1 mark]

Discuss the effects of urban sprawl on people and the environment.

Use Figure 3 and a case study of a major city in the UK.

[6 marks]

Question 1 continues on the next page
01.7 Explain one economic problem caused by traffic congestion. [2 marks]

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

01.8 Evaluate the effectiveness of an urban transport scheme(s) you have studied. [9 marks] [+ 3 SPaG marks]

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
Question 2  The changing economic world

Study Figure 4, a world map showing the global distribution of Human Development Index (HDI) values.

HDI combines data on life expectancy, educational levels and income, with values ranging from 0 (worst) to 1 (best).

Using Figure 4, compare HDI values in Africa and South America.

[2 marks]
Outline one disadvantage of using a single measure of development such as income.

[2 marks]

Study Figure 5, a table showing indicators of development for three countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>GNI (US$)</th>
<th>Life expectancy (years)</th>
<th>Adult literacy rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>3 650</td>
<td>75</td>
<td>95</td>
</tr>
<tr>
<td>Sierra Leone</td>
<td>240</td>
<td>45</td>
<td>43</td>
</tr>
<tr>
<td>Italy</td>
<td>35 110</td>
<td>83</td>
<td>99</td>
</tr>
</tbody>
</table>

Explain how one of the indicators of development in Figure 5 shows the differences in the quality of life between the three countries.

[4 marks]

Question 2 continues on the next page
Study Figure 6, maps showing the location of the Cambridge Science Park in the UK.

**Figure 6**

Using Figure 6, measure the direct distance between the Cambridge Science Park and junction 14 of the M11.

[1 mark]

_______ km

Using Figure 6, explain the advantages of this location for the Cambridge Science Park.

[4 marks]

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________

__________________________________________________________________________________________
Give two reasons why there has been a growth in the number of science parks in the UK.

[2 marks]

Reason 1:

Reason 2:

Question 2 continues on the next page
Study **Figure 7**, information about Fairtrade bananas.

### Retail sales value of Fairtrade bananas in the UK

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Retail sales value (£ millions)</strong></td>
<td>8.1</td>
<td>24.3</td>
<td>65.6</td>
<td>215.5</td>
<td>242.5</td>
</tr>
</tbody>
</table>
Using Figure 7

- Compare the percentage of the price received by the Fairtrade banana producer with that of a non-Fairtrade banana producer.

- Calculate the increase in retail sales value of Fairtrade bananas between 2000 and 2012.

Outline one way that Fairtrade helps to deal with the problems of unequal development.

Suggest one reason why Fairtrade schemes are not always successful.

Question 2 continues on the next page
‘Transnational corporations (TNCs) only bring advantages to the host country.’

Do you agree with this statement?

Yes [ ] No [ ]

Justify your decision.

[9 marks]
Turn over for Section C
Section C  The challenge of resource management

Answer Question 3 and either Question 4 or Question 5 or Question 6.

Question 3  The challenge of resource management

Study Figures 8 and 9, information about fracking for gas in the UK.

Figure 8

Fracking or fracturing uses high-pressure water mixed with chemicals to shatter shale rocks and release natural gas. The gas is then piped to the surface. Fracking uses massive amounts of water and may create environmental concerns including the possibility of contaminated groundwater, polluted drinking water, air pollution and minor earth tremors. Fracking of shale gas could contribute significantly to the UK's future energy needs and provide much needed employment. Electricity can be generated at half the carbon dioxide emissions of coal, and much more cheaply than some renewable sources.
03.1 Suggest one reason for the development of fracking in the UK. [1 mark]

03.2 Using Figure 9, describe the distribution of areas with existing licences for fracking in the UK. [2 marks]

03.3 With the help of Figures 8 and 9, explain why the process of fracking for gas causes conflict between different groups of people. [6 marks]

Question 3 continues on the next page
Study **Figure 10**, rainfall graphs for Dartmoor and London in the UK.
Using Figure 10, complete the graph for Dartmoor using the following data for rainfall.

December rainfall  210 mm

[1 mark]

State the difference in rainfall between Dartmoor and London in January.

Shade one circle only.

A  140 mm  
B  160 mm  
C  180 mm  
D  200 mm  

[1 mark]

Question 3 continues on the next page
Study Figure 11, a map showing average annual rainfall in the UK.
Study Figure 12, a map showing population density in the UK.

**Figure 12**

Using Figures 11 and 12, suggest why there might be a need for water transfer from one part of the UK to another.

[3 marks]
Answer *either* Question 4 (Food) *or* Question 5 (Water) *or* Question 6 (Energy).

Shade the circle below to indicate which optional question you will answer.

**Question 0 4**  
**Question 0 5**  
**Question 0 6**

**CORRECT METHOD**  
**WRONG METHODS**

**Question 4  Food**

Study Figure 13, a map showing the percentage of population that was undernourished in Africa in 2014.

**Figure 13**

![Map of Africa showing undernourishment percentages](image)

- **Key**
  - Percentage of population undernourished
  - More than 35 (very high)
  - 25 – 35 (high)
  - 15 – 24.9 (moderately high)
  - 5 – 14.9 (moderately low)
  - Less than 5 (very low)
  - No data

**0 4 . 1** What percentage of the population in Chad was undernourished in 2014? Shade one circle only.

- **A** 5–14.9%
- **B** 15–24.9%
- **C** 25–35%
- **D** More than 35%

[1 mark]
Using **Figure 13**, describe the distribution of countries in Africa where there are high and very high levels of undernourishment.  

[2 marks]

Give **two** causes of food insecurity.  

[2 marks]

**Cause 1:**

**Cause 2:**

Explain how food security can be improved.  

[6 marks]
Question 5  Water

Study Figure 14, a map showing the total amount of water available per person in Africa in 2010.

Figure 14

What was the total amount of water per person in Ethiopia in 2010?

Shade one circle only.

A  Less than 1000 cubic metres per person per year

B  1000–2500 cubic metres per person per year

C  2501–10 000 cubic metres per person per year

D  10 001–25 000 cubic metres per person per year

[1 mark]
Using Figure 14, describe the distribution of countries in Africa where there was less than 1000 cubic metres of water per person per year in 2010.

[2 marks]

Give two causes of water insecurity.

[2 marks]

Cause 1:

Cause 2:

Explain how water security can be improved.

[6 marks]
Question 6  Energy

Study Figure 15, a map showing the percentage of electricity from hydroelectric power in Africa.

Figure 15

What is the percentage of electricity from hydroelectric power in Mauritania?

Shade one circle only.

A 30–49%
B 50–69%
C 70–84%
D 85–100%

[1 mark]
Using Figure 15, describe the distribution of countries in Africa where the percentage of electricity from hydroelectric power is 85% or more.

[2 marks]

Give two causes of energy insecurity.

[2 marks]

Cause 1:

Cause 2:

Explain how energy security can be improved.

[6 marks]