GCSE
GEOGRAPHY

Paper 2 Challenges in the Human Environment

Wednesday 5 June 2019 Afternoon Time allowed: 1 hour 30 minutes

Materials
For this paper you must have:
• the OS key insert (enclosed)
• a pencil
• a rubber
• a ruler.
You may use a calculator.

Instructions
• Use black ink or black ball-point pen.
• Fill in the boxes at the top 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 in 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 01.10.
• HIC is a higher income country.
• LIC is a lower income country.
• NEE is a newly emerging economy.
Section A  Urban issues and challenges

Answer all questions in this section.

Question 1  Urban issues and challenges

Study Figure 1, a graph showing the average annual urban growth rates for selected African countries, 1960–2010.

Figure 1

Key
Urban growth from:
- Migration
- Natural increase

Country

Average growth (%)

Egypt | Algeria | Senegal | Ghana | Kenya | Mali | Malawi | Central African Republic | African average
01.1 Use the following data to complete Figure 1.

<table>
<thead>
<tr>
<th>Country</th>
<th>Natural increase (%)</th>
<th>Migration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central African Republic</td>
<td>2.4</td>
<td>1.1</td>
</tr>
</tbody>
</table>

[2 marks]

01.2 Outline one reason why rates of natural increase are high in many cities in LIC/NEEs.

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

[2 marks]

01.3 Give one way in which a major city in a LIC/NEE is internationally important.

Name of city: ________________________________

International importance: ________________________________

_______________________________________________________________________________

_______________________________________________________________________________

[1 mark]

Question 1 continues on the next page

Turn over
Study Figure 2, maps and information about the Kendal Industrial Park in Java, Indonesia.

Figure 2

Kendal Industrial Park information cannot be reproduced here due to third-party copyright restrictions.
Explain how urban industrial areas can help encourage development.

Use Figure 2 and your own understanding.

[6 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Extra space

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Question 1 continues on the next page
Study **Figure 3**, a 1:25 000 Ordnance Survey map showing part of Liverpool, a city in the UK.

Areas **X** and **Y** show two areas of urban regeneration.

**Figure 3**
01.5 What is the approximate area covered by Area Y?

Shade one circle only. [1 mark]

A 0.1 km²
B 0.4 km²
C 0.7 km²
D 1.0 km²

01.6 Give the four-figure grid reference for the Albert Dock. [1 mark]

_______________________________________________________________________________

01.7 Describe the location of Area X. [2 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Question 1 continues on the next page
Study Figure 4, showing some information about Area X and some photographs of Area Y.

**Figure 4**

**Area X: Granby Four Streets**
- Houses renovated for affordable rent and low-cost ownership
- Derelict houses turned into an ‘indoor garden’ with glass roof
- Monthly street market
- Regeneration scheme won the Turner Prize for art

**Area Y: Veolas Street before and after regeneration**

Explain how regeneration can help to solve urban problems.

Use Figure 4 and your own understanding. 

[4 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Extra space ____________________________________________________________________
_______________________________________________________________________________

0 1 8
01.9 Complete the following factfile for a UK city you have studied. [2 marks]

<table>
<thead>
<tr>
<th>Name of UK city</th>
<th>Location in the UK</th>
<th>Importance in the UK</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

01.10 To what extent has urban change created social and economic opportunities in a UK city you have studied? [9 marks] [+3 SPaG marks]

Name of UK city ________________________________

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
Turn over for the next question
Section B  The changing economic world

Answer all questions in this section.

Question 2  The changing economic world

Study Figure 5, a scattergraph showing Gross National Income (GNI) and birth rate for selected countries in 2016.

Figure 5
Plot the following data on to Figure 5.

<table>
<thead>
<tr>
<th>Country</th>
<th>Birth rate (per 1000/per year)</th>
<th>GNI (US$ per person)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>9</td>
<td>44 000</td>
</tr>
</tbody>
</table>

Draw a best fit line on Figure 5.

‘Japan is in stage 5 of the Demographic Transition Model (DTM) and is a highly developed country.’

Explain this statement.

Use Figure 5 and your own understanding.

Outline how one historical factor can lead to uneven development.

Question 2 continues on the next page
02.5 Explain how fairtrade can reduce the development gap. [4 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Extra space

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Question 2 continues on page 16
Study Figure 6, a 1:50 000 Ordnance Survey map of an area to the east of Sheffield, a city in the UK.

Using Figure 6, give the six-figure grid reference for the centre of the motorway junction.

Shade one circle only. [1 mark]

A 403870
B 423884
C 430891
D 433892

Using Figure 6, what is the straight line distance from the building labelled X to the railway station to the west?

Shade one circle only. [1 mark]

A 200 m
B 1 km
C 2 km
D 4 km
Study Figure 7, a photograph of part of the area shown in Figure 6.

Figure 7

Using Figure 6 and Figure 7, in which direction was the photographer facing when the photograph was taken?

Shade one circle only.

A  North west

B  North east

C  South west

D  South east

Figure 7 shows the location of Sheffield University’s Advanced Manufacturing Research Centre.

Use Figure 7 to describe one characteristic of the Centre’s location.

_______________________________________________________________________________
_______________________________________________________________________________

Question 2 continues on the next page
Study **Figure 8**, some information about Sheffield University’s Advanced Manufacturing Research Centre.

**Figure 8**

- Built on land reclaimed from coal mining
- A brownfield site
- Combines research and science firms
- Focuses on future technology
- Europe’s largest advanced manufacturing park

02.10 Suggest how the UK is moving towards a post-industrial economy.

Use **Figure 8** and your own understanding.

[6 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Extra space
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
Using a case study of a LIC/NEE, evaluate the effects of economic development on the population’s quality of life.

[9 marks]

Name of country ________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

Extra space ________________________________

_______________________________________________________________________________

_______________________________________________________________________________
End of Section B
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 **Figure 9**, a table showing mango imports into the UK, 2012–2016.

**Figure 9**

<table>
<thead>
<tr>
<th>Year</th>
<th>Mango imports (1000 tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>38</td>
</tr>
<tr>
<td>2013</td>
<td>47</td>
</tr>
<tr>
<td>2014</td>
<td>47</td>
</tr>
<tr>
<td>2015</td>
<td>56</td>
</tr>
<tr>
<td>2016</td>
<td>66</td>
</tr>
</tbody>
</table>

**03.1** Calculate the percentage increase in mango imports into the UK between 2012 and 2016.

Answer to the nearest whole percentage.  

[2 marks]

Show your working

Nearest whole percentage =

**03.2** State one environmental effect of the increase shown in **Figure 9**.  

[1 mark]
Outline one advantage of sourcing food locally in the UK. [2 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Question 3 continues on the next page
Study **Figure 10**, comments from a government report into water quality and pollution in the UK.

**Figure 10**

The Environment Agency has asked water companies and farmers to reduce the number of pollution incidents harming England’s waters. They have also said penalties for pollution should be made tougher.

The number of serious pollution incidents has reduced since 2001, but there were still 317 in 2016.

The most common reasons for rivers having poor water quality were pollutants from farmland and sewage. These produce algae and reduce oxygen levels in the water.

The Environment Agency says population growth, climate change and plastic pollution are some of the main threats to water quality in the future.

Discuss the challenges of managing water quality and pollution in the UK.

Use **Figure 10** and your own understanding.

[6 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Extra space

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

G/Jun19/8035/2
End of Question 3

Turn over for the next question
Answer either Question 4 or Question 5 or Question 6.

Question 4 Food

Study Figure 11, a graph showing daily protein consumption for selected countries, 1960–2013.

What was the difference in protein consumption per person per day between China and the UK in 2013?

[1 mark]

Complete Figure 11 using the following data.

<table>
<thead>
<tr>
<th>Country</th>
<th>Daily protein consumption 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nigeria</td>
<td>64 grams</td>
</tr>
<tr>
<td>Mozambique</td>
<td>46 grams</td>
</tr>
</tbody>
</table>

[2 marks]
04.3
Describe the trend for China shown in Figure 11.

[2 marks]

04.4
Suggest why food consumption in a country might change over time.

[3 marks]

Question 4 continues on the next page
‘A large scale agricultural development can bring both advantages and disadvantages.’

Explain this statement using an example you have studied. [6 marks]

Name of development ________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

Extra space ___________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

End of Question 4
Question 5  Water

Study Figure 12, information about the water crisis in Cape Town, a city in South Africa, a LIC/NEE country.

**Figure 12**

Restrictions on the amount of water available per person per day:
- 19 May 2017–100 litres
- 3 Sep 2017–90 litres
- 1 Feb 2018–50 litres
- If the water crisis continues people will be rationed to 25 litres.

For comparison, the average Californian usage – 321 litres per person per day.

05.1 Calculate the difference between the average Californian usage and restrictions in Cape Town on 1 February 2018.

[1 mark]

Study Figure 13, a graph showing how the water restrictions in Cape Town have changed.

**Figure 13**

<table>
<thead>
<tr>
<th>Amount of water available per person per day (litres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 May 2017</td>
</tr>
<tr>
<td>100</td>
</tr>
</tbody>
</table>
05.2 Use the data in Figure 12 to complete the graph in Figure 13. [2 marks]

05.3 Describe the trend shown in Figure 13. [2 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

05.4 Outline one or more likely impacts of water insecurity. [3 marks]

_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________
_______________________________________________________________________________

Question 5 continues on the next page
‘A large scale water transfer scheme can bring both advantages and disadvantages.’

Explain this statement using an example you have studied. [6 marks]

Name of scheme ________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

Extra space ________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

End of Question 5
Question 6  Energy

Study Figure 14, a graph showing the percentage of energy from renewable sources in the Balearic Islands, a region of Spain.

![Figure 14](graph.png)

06.1 Complete Figure 14 using the following data.

<table>
<thead>
<tr>
<th>Year</th>
<th>Renewable energy (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>4</td>
</tr>
<tr>
<td>2035 target</td>
<td>35</td>
</tr>
</tbody>
</table>

[2 marks]

06.2 Calculate the difference between the 2018 percentage from renewable energy and the 2035 target.

_______________________________________________________________________________

[1 mark]
Study Figure 15, a newspaper article about energy in the Balearic Islands.

**Figure 15**

**Balearic Islands turn to sunshine in shift to 100% green energy**

The Balearics rely heavily on expensive and dirty fossil fuels. The local government has a plan to use 100% renewable energy by 2050.

New diesel cars will be banned. There will be charging points for electric cars and street lights will use LEDs.

There are plans for large solar energy farms across the islands. Some people are against these plans.

Conservation groups have instead suggested solar panels on rooftops. The Spanish government prefers to expand renewable energy on the mainland and export it to the islands with undersea cables.

State **two** alternatives to large solar energy farms suggested in **Figure 15**.

[2 marks]

1. ____________________________________________

2. ____________________________________________

Suggest how energy supply issues can lead to conflict.

[3 marks]

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________

_________________________________________________________________________
‘Extraction of fossil fuels can bring both advantages and disadvantages.’

Explain this statement using an example you have studied. [6 marks]

Name of fossil fuel ________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

Extra space ________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

_______________________________________________________________________________

END OF QUESTIONS
There are no questions printed on this page