Instructions

• Use black ink or ball-point pen.
• Fill in the boxes at the top of this page with your name, centre number and candidate number.
• In Section A answer either Question 1 or Question 2.
• In Section B answer either Question 3 or Question 4.
• In Section C answer all questions.
• Answer the questions in the spaces provided – there may be more space than you need.
• Where asked you must show all your working out with your answer clearly identified at the end of your solution.

Information

• The total mark for this paper is 64.
• The marks for each question are shown in brackets – use this as a guide as to how much time to spend on each question.
• The marks available for spelling, punctuation, grammar and use of specialist terminology are clearly indicated.

Advice

• Read each question carefully before you start to answer it.
• Check your answers if you have time at the end.
SECTION A
Geographical Investigations – Physical Environments

Answer EITHER Question 1 OR Question 2 in this section.
Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☑. If you change your mind about an
answer, put a line through the box ☑ and then mark your new answer with a cross ☑.

Question 1: Investigating Physical Environments (rivers)
If you answer Question 1 put a cross in the box ☑.

1 (a) You have studied a river as part of your own fieldwork.

(i) Explain one limitation of the quantitative fieldwork method you used when
investigating river discharge.

(2)

Named quantitative fieldwork method

(ii) Explain one way you could have improved the quantitative fieldwork method.

(2)
(b) Explain one way the qualitative fieldwork method you used supported your understanding of river landforms.

Named qualitative fieldwork method ..............................................

(c) Explain one way river processes might affect people living in the catchment area of the river you studied.

.......................................................................................................................... ... ..........................................................................................................................
.......................................................................................................................... ... ..........................................................................................................................
.......................................................................................................................... ... ..........................................................................................................................
.......................................................................................................................... ... ..........................................................................................................................
.......................................................................................................................... ... ..........................................................................................................................
.......................................................................................................................... ... ..........................................................................................................................
.......................................................................................................................... ... .........................................................................................................................
(d) Study Figure 1a and Figure 1b in the Resource Booklet.

Using both Figure 1a and Figure 1b, assess the possible conclusions that might be drawn from this river investigation.

(8)
Do not answer Question 2 if you have answered Question 1.

Question 2: Investigating Physical Environments (coasts)

If you answer Question 2 put a cross in the box □.

2 (a) You have studied a coast as part of your own fieldwork.

(i) Explain one limitation of the quantitative fieldwork method you used when investigating beach morphology.

(2)

Named quantitative fieldwork method

(ii) Explain one way you could have improved the quantitative fieldwork method.

(2)

(b) Explain one way the qualitative fieldwork method you used supported your understanding of coastal landforms.

(3)

Named qualitative fieldwork method
(c) Explain one way coastal processes might affect people living close to the coastline you studied.

..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
..................................................................................................................................
(d) Study Figure 2a and Figure 2b in the Resource Booklet.

Using both Figure 2a and Figure 2b, assess the possible conclusions that might be drawn from this coastal investigation.
SECTION B
Geographical Investigations – Human Landscapes

Answer EITHER Question 3 OR Question 4 in this section. Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☑. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☑.

Question 3: Investigating Human Landscapes (central/inner urban area)
If you answer Question 3 put a cross in the box ☑.

3 (a) Identify which one of the following is a type of qualitative data.

☐ A traffic count
☐ B newspaper article
☐ C pedestrian count
☐ D population census

(b) Study Figure 3a in the Resource Booklet.
A student was collecting views of residents about the quality of the environment in a central urban area.

(i) Explain one advantage and one disadvantage of the technique shown in Figure 3a.

Advantage

Disadvantage
(ii) The student used a random sampling strategy to collect the data.

   Explain one disadvantage of using this sampling strategy.

   (3)
(c) Study Figure 3b below. It shows a radial graph for an Environmental Quality Survey (EQS) completed at an urban location.

**Figure 3b**

Plot the data given in the table below by completing Figure 3b.

<table>
<thead>
<tr>
<th>EQS Category</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shops and services</td>
<td>8</td>
</tr>
<tr>
<td>Traffic</td>
<td>2</td>
</tr>
</tbody>
</table>
(d) You have studied an urban area as part of your fieldwork.

Evaluate the different techniques used to present your fieldwork data.
(Total for Question 3 = 18 marks)
Do not answer Question 4 if you have answered Question 3.

Question 4: Investigating Human Landscapes (rural settlements)

If you answer Question 4 put a cross in the box ☐.

4 (a) Identify which one of the following is a type of qualitative data.

☐ A traffic count
☐ B newspaper article
☐ C pedestrian count
☐ D population census

(b) Study Figure 4a in the Resource Booklet.

A student was collecting views of residents about the quality of the environment in a rural area.

(i) Explain one advantage and one disadvantage of the technique shown in Figure 4a.

Advantage

Disadvantage
(ii) The student used a random sampling strategy to collect the data.

Explain one disadvantage of using this sampling strategy. (3)
(c) Study Figure 4b below. It shows a radial graph for an Environmental Quality Survey (EQS) completed at a rural location.

**Figure 4b**

Plot the data given in the table below by completing the Figure 4b.

<table>
<thead>
<tr>
<th>EQS Category</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shops and services</td>
<td>4</td>
</tr>
<tr>
<td>Traffic</td>
<td>8</td>
</tr>
</tbody>
</table>

**Key:**

0 = poor
10 = excellent
(d) You have studied a rural area as part of your fieldwork.

Evaluate the different techniques used to present your fieldwork data. (8)
SECTION C
UK Challenges

Answer ALL questions in this section.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

Spelling, punctuation, grammar and specialist terminology will be assessed in Question 5(f).

5 (a) Study Figure 5a in the Resource Booklet.
Identify the decrease in annual CO₂ emissions per capita from 1990 to 2030. (1)

☐ A 0.3 tonnes
☐ B 0.5 tonnes
☐ C 0.7 tonnes
☐ D 0.9 tonnes

(b) State two reasons for the use of sustainable transport schemes in the UK. (2)

1 .......................................................................................................................... ...

2 .......................................................................................................................... ...

(c) (i) Study Figure 5b in the Resource Booklet.
Identify the projected population of the United Kingdom in 2025. (1)

☐ A 50 million
☐ B 62 million
☐ C 69 million
☐ D 74 million
(ii) Explain **one** reason why an increase in the UK population could lead to pressure on resource consumption.

..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................

(d) Santander supports the hiring of bikes, a sustainable transport scheme in London.

Study Figure 5c below.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total membership June 2015</td>
<td>178 893</td>
</tr>
<tr>
<td>Total membership March 2016</td>
<td>208 957</td>
</tr>
</tbody>
</table>

**Figure 5c**

Calculate the increase in the total membership for the Santander bike scheme between June 2015 and March 2016.

..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................
..........................................................................................................................

(e) Explain **two** advantages of building on brownfield sites.

1........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................

2........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
...........................................................................................................................................
In this question, up to four additional marks will be awarded for your spelling, punctuation, grammar, and use of specialist terminology.

(f) Use the information from the Resource Booklet (Figures 5d to 5f) as well as knowledge and understanding from the rest of your geography course.

‘The use of sustainable transport schemes will significantly improve the environment.’

Discuss this view.

(12)
SECTION A

Location of sample sites for a river investigation

Figure 1a
Plotted cross-sections of river channel at Site 1 and Site 5
Figure 1b

Powers scale of roundness chart for bedload sample at Site 1 and Site 5
Figure 2a

Plotted cross-sections of beach profile at Site 1 and Site 5
Figure 2b

Powers scale of roundness chart for sediment sample at Site 1 and Site 5
Figure 3a
Student conducting a questionnaire about environmental quality for an urban study
Figure 4a

Student conducting a questionnaire about environmental quality for a rural study
SECTION C

<table>
<thead>
<tr>
<th>Year</th>
<th>CO₂ per capita (tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>1.4</td>
</tr>
<tr>
<td>2010</td>
<td>1.1</td>
</tr>
<tr>
<td>2015</td>
<td>1.08</td>
</tr>
<tr>
<td>2025</td>
<td>0.95</td>
</tr>
<tr>
<td>2030</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Figure 5a
Past and projected CO₂ emissions from transport in Greater London (2010)

Figure 5b
Population change for the UK from 2000 to 2035
The new Routemasters (shown below) use diesel-electric hybrid technology which will reduce annual carbon dioxide (CO₂) emissions by around 20,600 tonnes.

Average fuel consumption of the new Routemaster hybrid buses is almost 50 per cent lower than other buses.

All drivers complete the smarter driving course, encouraging more efficient driving reducing carbon emissions.

The Transport for London bus network has approximately 2.3 billion passenger journeys every year.

**Figure 5d**

Transport for London’s new Routemaster buses
Domestic: 37%
Industry and Commercial: 42%
Transport: 21%
Car and Motorcycle: 47%
Taxi: 2%
Bus and Coach: 6%
Van: 7%
Lorry: 9%
National Rail: 10%
London Underground: 7%
Other: 12%

Figure 5e
CO₂ emissions in Greater London (2010)
The new tram system in Nottingham has contributed to boosting the city’s image and encouraged regeneration. The trams have significantly reduced traffic congestion and air pollution.

Air pollution has an impact on the growth of vegetation. Reducing air pollution will help to protect natural habitats and increase biodiversity in the UK.

Park and ride systems like the one in Cambridge contribute towards the reduction of vehicles in the city centre. This reduces the level of CO₂ emissions within the city centre and improves air quality for visitors.

In Manchester, on the Godley Reservoir, a floating solar panel system has been constructed, producing clean, renewable energy with no carbon emissions.

Many businesses are adopting sustainable practices in their operations. For example, Costa have built an ‘Eco Pod’ zero energy restaurant in Telford.

Figure 5f
Strategies used to promote sustainability in the UK
Pearson Education Ltd. gratefully acknowledges all following sources used in the preparation of this paper:

Figure 1b & 2b - © The Natural History Museum (London)

Figure 3a - © Michael Chiles

Figure 4a - © Michael Chiles

Figure 5d - © TERRY BLACKMAN / Alamy Stock Photo

Figure 5f - Source from https://www.whitbread.co.uk/media/news-press-releases/costa-ecopod-telford.html

Every effort has been made to contact copyright holders to obtain their permission for the use of copyright material. Pearson Education Ltd. will, if notified, be happy to rectify any errors or omissions and include any such rectifications in future editions.