A

AQA

Surname _____

Forename(s) _____

Centre Number _____

Candidate Number _____

Candidate Signature _____

I declare this is my own work.

GCSE

GEOGRAPHY

**Paper 2   Challenges in the
                  Human Environment**

8035/2

Friday 9 June 2023   Morning

Time allowed: 1 hour 30 minutes

At the top of the page, write your surname and forename(s), your centre number, your candidate number and add your signature.

[Turn over]

MATERIALS

For this paper you must have:
- the OS map key insert (enclosed)
- the insert (enclosed)
- a pencil
- a rubber
- a ruler.

You may use a calculator.

INSTRUCTIONS

- Use black ink or black ball-point pen.

- 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 on blank pages.

- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).

- **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 01.11.**

- **HIC is a higher income country.**

- **LIC is a lower income country.**

- **NEE is a newly emerging economy.**

DO NOT TURN OVER UNTIL TOLD TO DO SO

For the multiple-choice questions, shade the circle next to the correct answer.
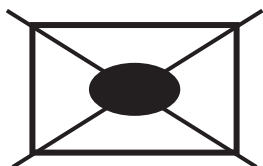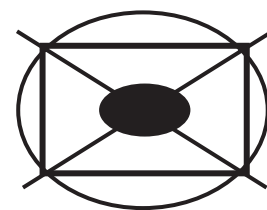
CORRECT METHOD

WRONG METHODS

If you want to change your answer you must cross out your original answer as shown.

If you wish to return to an answer previously crossed out, ring the answer you now wish to select as shown.

SECTION A   Urban issues and challenges

Answer ALL questions in this section.

QUESTION 1   Urban issues and challenges

| 0 | 1 | . | 1 |

Give ONE reason for the growth of megacities in LIC/NEEs. [1 mark]

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[Turn over]

Study FIGURE 1, a table showing the projected population of the world's ten largest cities in 2030.

FIGURE 1

CITY	Projected population in 2030 (millions)
Delhi, India	38.9
Tokyo, Japan	36.6
Shanghai, China	32.9
Dhaka, Bangladesh	28.0
Al-Qahirah (Cairo), Egypt	25.5
Mumbai (Bombay), India	24.6
Beijing, China	24.3
Mexico City, Mexico	24.1
Sao Paulo, Brazil	23.8
Kinshasa, Democratic Republic of the Congo	21.9

0 1 . 2

Calculate the mean size of the cities shown in FIGURE 1, opposite.

Answer to ONE decimal place.   [2 marks]

Show your working

Answer _____ millions

[Turn over]

Study FIGURE 2, below and on page 9, a graph showing selected crimes reported on Twitter in Mexico City, a city in a NEE, September 2016—April 2017.

0 1 . 3

Complete FIGURE 2 using the following data.   [1 mark]

CRIME	Number of reports Sept 2016—Apr 2017
Theft of motor vehicle	350

FIGURE 2

KEY
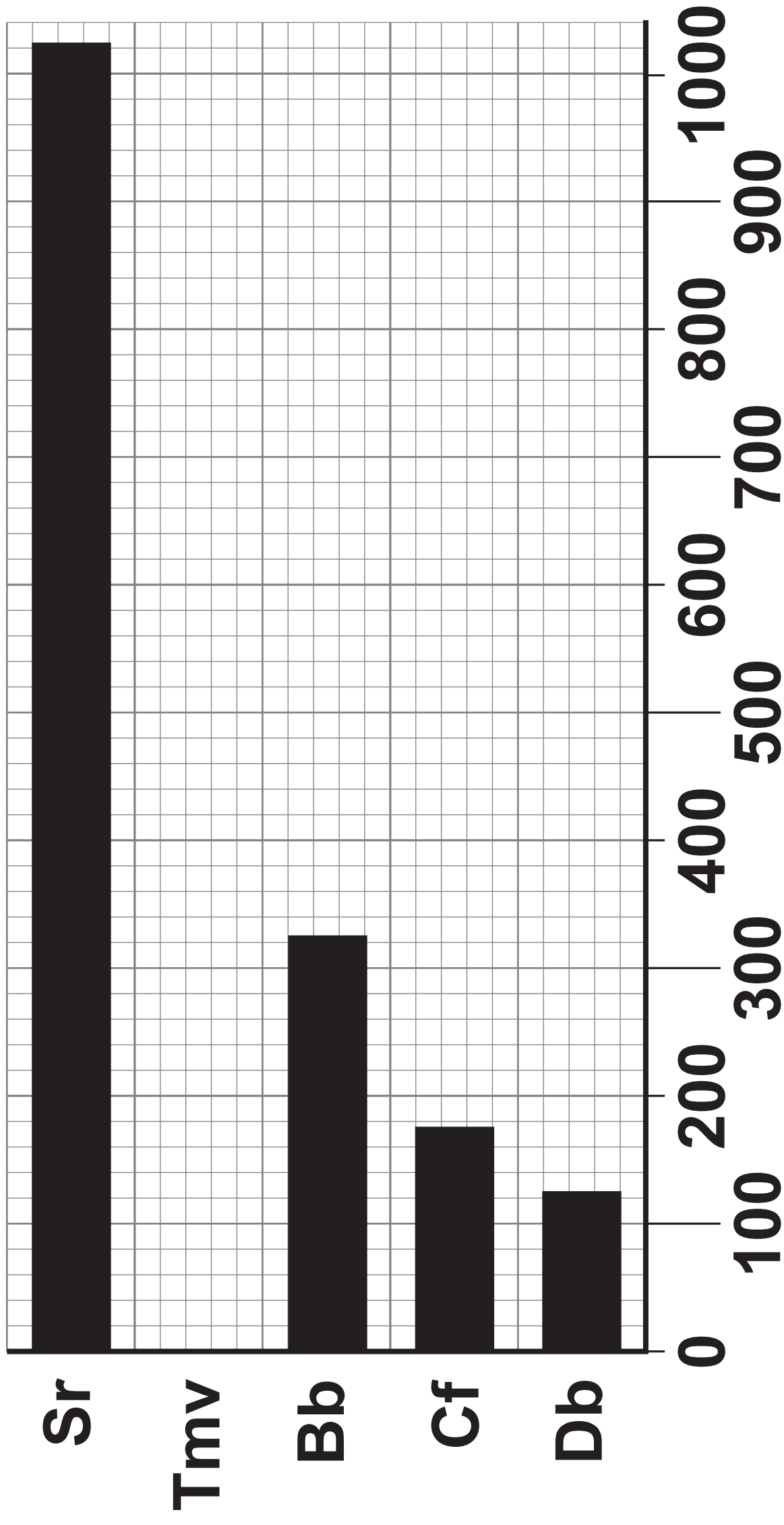Sr = Street robbery
Tmv = Theft of motor vehicle
Bb = Business burglary
Cf = Card fraud
Db = Domestic burglary

Type of crime reported

Number of reports

| 0 | 1 | . | 4 |

Approximately how much more frequent is street robbery than business burglary?

Shade ONE circle only. [1 mark]

⬭ **A 2 times**

⬭ **B 3 times**

⬭ **C 4 times**

⬭ **D 5 times**

0 1 . 5

**Outline ONE reason why reducing crime is a challenge in some LIC/NEE cities.
[2 marks]**

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[Turn over]

Study FIGURE 3, on page 3 of the insert, a photograph of a street class run by volunteers in Mexico City.

| 0 | 1 | . | 6 |

To what extent has urban growth created social opportunities?

Use FIGURE 3 and a LIC/NEE example you have studied. [6 marks]

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Study FIGURE 4, on pages 4 and 5 of the insert, a map of Leicester's cycle routes in 2020.

0 1 . 7

Which route would you use to travel south west from the bike park?

Shade ONE circle only. [1 mark]

⬭ **A   A47 Hinckley Road**

⬭ **B   A50 Groby Road**

⬭ **C   Mill Lane Bridge**

⬭ **D   Oadby Racecourse**

[Turn over]

0 1 . 8

How long would it take to cycle from the bike park to Evington Library? [1 mark]

_____ **minutes**

0 1 . 9

Suggest how urban transport strategies can be used to reduce traffic congestion.

Use FIGURE 4 and your own understanding. [4 marks]

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_____

17

| 0 | 1 | . | 1 | 0 |

Outline ONE way in which a UK city you have studied is important in the UK.
[2 marks]

Name of UK city

_____

_____

Importance

_____

_____

_____

_____

_____

0 1 . 1 1

'Urban change in the UK has created more economic opportunities than social opportunities.'

Evaluate this statement.

Use a UK city you have studied.

[9 marks] [+ 3 SPaG marks]

Name of UK city

_____

_____

_____

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_____

[Turn over]

[End of Section A]

[Turn over for Section B]

SECTION B   The changing economic world

Answer ALL questions in this section.

QUESTION 2   The changing economic world

Study FIGURE 5, on page 6 of the insert, an Ordnance Survey map of an area of Southampton, a city in the UK.

| 0 | 2 | . | 1 |

Using FIGURE 5, give the direction from the Southampton Science Park in grid square 4018 to the university in grid square 4215.

Shade ONE circle only. [1 mark]

| ⬭ | A   North East |

| ⬭ | B   North West |

| ⬭ | C   South East |

| ⬭ | D   South West |

0 2 . 2

Using FIGURE 5, complete the table to give TWO pieces of map evidence showing why the site in grid square 4018 is a good location for the science park.

An example has been completed for you. [2 marks]

EVIDENCE	GRID SQUARE
Near university	4215

[Turn over]

Study FIGURE 6, on pages 8 and 9 of the insert, for information about the Southampton Science Park.

| 0 | 2 | . | 3 |

To what extent are modern industrial developments environmentally sustainable?

Use FIGURE 6 and your own understanding. [6 marks]

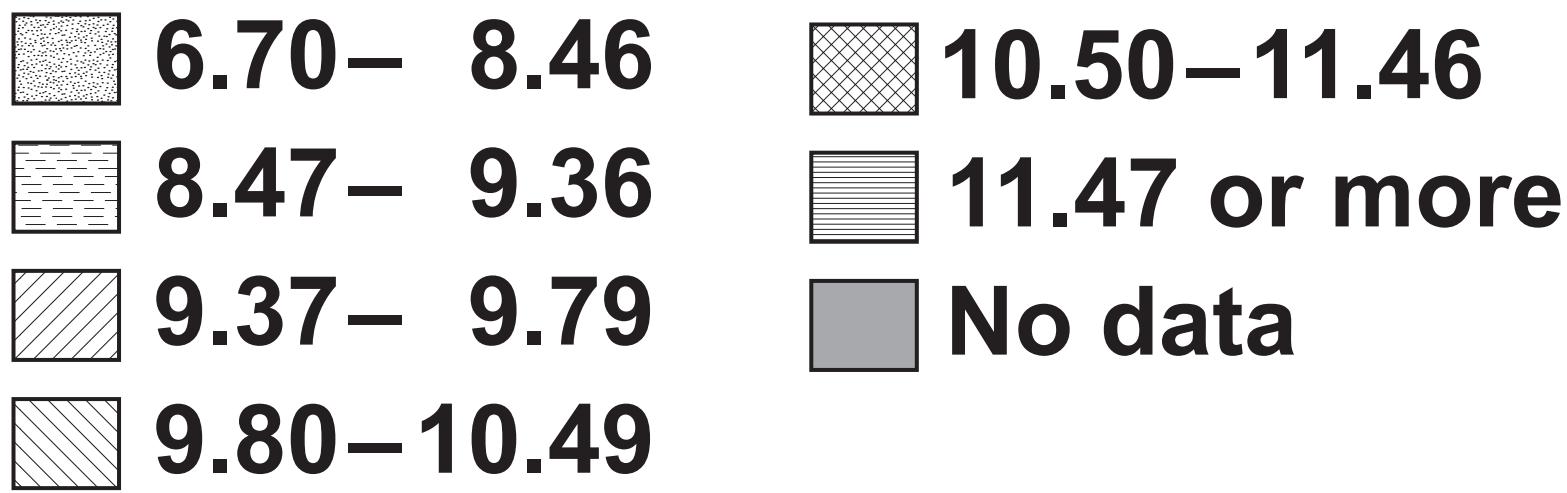_____

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[Turn over]

Study FIGURE 7, a map showing birth rates in Europe (excluding Russia) in 2019.

FIGURE 7

KEY

Birth rate per 1000 population

▢	6.70 – 8.46	▢	10.50 – 11.46
▢	8.47 – 9.36	▢	11.47 or more
▢	9.37 – 9.79	▢	No data
▢	9.80 – 10.49		

N
↑

0   800 km

[Turn over]

0 2 . 4

Complete FIGURE 7, on page 30, using the following data. [1 mark]

COUNTRY	BIRTH RATE
Iceland	12.3

0 2 . 5

Outline ONE disadvantage of using birth rates as a measure of development. [2 marks]

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0 2 . 6

Which measure of development combines income, life expectancy and education levels?

Shade ONE circle only. [1 mark]

A **Gross National Income (GNI) per head**

B **Human Development Index (HDI)**

C **Infant mortality rate (IMR)**

D **People per doctor**

[Turn over]

| 0 | 2 | . | 7 |

Outline ONE physical cause of uneven development. [2 marks]

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Study **FIGURE 8**, a table showing the debt of selected countries in 2019.

FIGURE 8

COUNTRY	Total debt (millions US$)
Brazil	569 398
India	560 035
South Africa	188 102
Egypt	115 080
Peru	64 204
Bangladesh	57 088
Jordan	33 683

0 2 . 8

Calculate the interquartile range for the data in FIGURE 8. [2 marks]

Show your working

Answer: interquartile range

_____

[Turn over]

Study FIGURE 9, information from a report on debt.

FIGURE 9

Figure 9 cannot be reproduced here due to third-party copyright restrictions

0	2	.	9

Suggest how debt relief can help reduce the development gap.

Use FIGURE 9 and your own understanding. [4 marks]

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0 2 . 1 0

Suggest how economic development can bring improvements to quality of life but at a cost to the environment.

Use a case study of a LIC/NEE in your answer. [9 marks]

Name of LIC/NEE _____

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[Turn over]

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30

[End of Section B]

[Turn over for Section C]

SECTION C   The challenge of resource management

Answer **QUESTION 3 and**

EITHER Question 4 (Food), OR Question 5 (Water), OR Question 6 (Energy).

QUESTION 3   The challenge of resource management

Study FIGURE 10, on page 10 of the insert, for information showing the major sources of the UK's electricity at 3.20 pm on 27 October 2020.

| 0 | 3 | . | 1 |

What is solar energy? [1 mark]

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| 0 | 3 | . | 2 |

Suggest how the energy mix used to generate the UK's electricity has changed in the last 30 years.

Use FIGURE 10 and your own understanding. [2 marks]

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[Turn over]

0 3 . 3

Explain why demand for different energy sources has changed in the UK. [3 marks]

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48

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[Turn over]

Study **FIGURE 11a**, on page 12 of the insert, and **FIGURE 11b**, on page 13 of the insert.

FIGURE 11a is a cartoon about sources of food in the UK.

FIGURE 11b is a pie chart showing carbon emissions from stages of the food supply chain.

| 0 | 3 | . | 4 |

'Trying to reduce the carbon footprint of food in the UK creates opportunities and challenges.'

Use **FIGURE 11a** and **FIGURE 11b** to explain this statement. [6 marks]

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[End of Question 3]

**Answer EITHER Question 4 (Food)
OR Question 5 (Water) OR Question 6
(Energy).**

QUESTION 4   FOOD

**Study FIGURE 12, on pages 14 and 15 of
the insert, a map of parts of Africa, Asia
and the Middle East. The map shows the
locust forecast for May–July 2020.**

[Turn over]

| 0 | 4 | . | 1 |

How many of the countries shown in FIGURE 12 had a serious threat level?

Shade ONE circle only.

| ⬭ | **A** | **3** |

| ⬭ | **B** | **4** |

| ⬭ | **C** | **5** |

| ⬭ | **D** | **6** |

What percentage of the 25 countries shown had a serious threat level?
[2 marks]

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0 4 . 2

Describe the pattern of the threat from locusts shown in FIGURE 12. [2 marks]

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0 4 . 3

What is food insecurity? [1 mark]

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[Turn over]

0 4 . 4

Explain how pests and diseases can affect food supply. [2 marks]

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Study FIGURE 13, on page 16 of the insert, for information about appropriate technology being used to improve farming in parts of Africa.

| 0 | 4 | . | 5 |

To what extent can appropriate technology and other strategies increase food supply?

Use FIGURE 13 and your own knowledge.
[6 marks]

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[Turn over]

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<div align="right">13</div>

[End of Question 4]

[IF YOU HAVE ANSWERED QUESTION 4, DO NOT ANSWER QUESTION 5 OR 6]

[Turn over]

QUESTION 5   WATER

Study FIGURE 14, on pages 18 and 19 of the insert, a map of Africa showing the risk of water insecurity in 2019.

| 0 | 5 | . | 1 |

How many of the African countries shown in FIGURE 14 had a high risk of water insecurity in 2019?

Shade ONE circle only.

⬭ **A   8**

⬭ **B   9**

⬭ **C   10**

⬭ **D   11**

What percentage of the 48 countries in Africa shown had a high risk of water insecurity in 2019?

Answer to ONE decimal place. [2 marks]

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[Turn over]

| 0 5 | . | 2 |

Describe the distribution of countries which had a very low risk of water insecurity shown in FIGURE 14. [2 marks]

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| 0 5 | . | 3 |

What is water insecurity? [1 mark]

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0 5 . 4

Explain how limited infrastructure can affect water supply. [2 marks]

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[Turn over]

Study FIGURE 15a, on page 20 of the insert, a photograph of a desalination plant in Dubai and FIGURE 15b, on page 21 of the insert, for information about the costs of desalination.

| 0 | 5 | . | 5 |

To what extent can desalination and other strategies increase water supply?

Use FIGURE 15a and FIGURE 15b and your own knowledge. [6 marks]

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[End of Question 5]

[IF YOU HAVE ANSWERED QUESTION 5, DO NOT ANSWER QUESTION 4 OR 6]

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[Turn over]

QUESTION 6   ENERGY

Study FIGURE 16, on pages 22 and 23 of the insert, a map of Europe (excluding Russia) showing the percentage of electricity produced from renewable sources in 2019.

| 0 | 6 | . | 1 |

How many of the countries shown in FIGURE 16 produced 41–60% of their electricity from renewable sources in 2019?

Shade ONE circle only.

A   6

B   7

C   8

D   9

What percentage of the 41 countries in Europe for which data is shown produced 41–60% of their electricity from renewable sources in 2019?

Answer to ONE decimal place. [2 marks]

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[Turn over]

0 6 . 2

Describe the distribution of countries which produced 0–20% of their electricity from renewable sources in 2019.
[2 marks]

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0 6 . 3

What is energy insecurity? [1 mark]

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0 6 . 4

Explain how political factors can affect energy supply. [2 mark]

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[Turn over]

7 1

Study FIGURE 17, on pages 24 and 25 of the insert, for information about some renewable energy sources in the UK.

| 0 | 6 | . | 5 |

To what extent can wind and tidal power and other strategies increase energy supply?

Use FIGURE 17 and your own knowledge.
[6 marks]

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13

[End of Question 6]

[IF YOU HAVE ANSWERED QUESTION 6, DO NOT ANSWER QUESTION 4 OR 5]

END OF QUESTIONS

75

Additional page, if required. Write the question numbers in the left-hand margin.

76

Additional page, if required. Write the question numbers in the left-hand margin.

Additional page, if required. Write the question numbers in the left-hand margin.

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