Write your name here

Surname		Other names

Centre Number

Candidate Number

Geography
Unit: KGE0 4GE0
Paper: 01

Monday 22 May 2017 – Afternoon
Time: 3 hours

Paper Reference
KGE0/01
4GE0/01

You must have:
Ruler, pencil and pen

Total Marks

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.
- Answer **seven** questions
  - Answer **two** questions in Section A
  - Answer **two** questions in Section B
  - Answer **two** questions in Section C – **either** Question 7 **or** 8 **AND either** Question 9 **or** 10
  - Answer **one** question in Section D
- Answer the questions in the spaces provided
  - *there may be more space than you need.*

Information

- The total mark for this paper is **180**.
- 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 following abbreviations are used:
  - LIC – Low-income country
  - HIC – High-income country
  - NIC – Newly-industrialised country
  - CBD – Central Business District
  - TNC – Transnational corporation.

Advice

- Write your answers neatly and in good English.
- Check your answers if you have time at the end.

Turn over ▶

P 4 8 1 6 2 R A 0 1 6 4

Pearson

SECTION A – THE NATURAL ENVIRONMENT AND PEOPLE

Answer TWO questions only from this section.

Indicate which question you are answering by marking a cross in the box ⊠. If you change your mind, put a line through the box ⊠ and then indicate your new question with a cross ⊠.

If you answer Question 1 put a cross in the box ☐ .

1   River environments

(a) Study Figure 1 which shows the upper course of a river.

Figure 1

(i)   Identify **three** features of the upper course of this river.

(3)

1 ....

2 ....

3 ....

(ii) Which **one** of the following is the most important process in this river's upper course?

(1)

⊠   **A**   deposition

⊠   **B**   headward erosion

⊠   **C**   lateral erosion

⊠   **D**   vertical erosion

(b) (i) What is a **hydrograph**?

(2)

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(ii) Outline **two** factors that might affect the shape of a hydrograph.

(4)

1 ....

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(c) Explain how different methods are used to control river flooding.

(6)

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(d) Discuss the consequences of a rising demand for water in **one** named country.

(9)

Named country ....

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(Total for Question 1 = 25 marks)

2 Coastal environments

(a) Study Figure 2 which shows a stretch of tropical coastline.

Figure 2

(i) Identify the coastal ecosystem at **X**.

(1)

☒ **A** coral reef

☒ **B** mangrove

☒ **C** salt marsh

☒ **D** sand dune

(ii) Identify **two** other physical features of this coastline.

(2)

1 ....

2 ....

(iii) Suggest **one** way in which vegetation can affect this coastline.

(1)

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(b) (i) What is meant by the term **sea-level change**?

(2)

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(ii) Outline **two** impacts that sea-level changes can have on coastlines.

(4)

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(c) Explain how different physical processes operate along a coastline.

(6)

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(d) Discuss the conflicting views that affect the choice of management for **one** named stretch of coastline.

(9)

Named stretch of coastline ....

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(Total for Question 2 = 25 marks)

If you answer Question 3 put a cross in the box ☒ .

3 Hazardous environments

(a) Study Figure 3 which shows an area of Kathmandu, Nepal, before and after a hazard event which affected much of the country.

Figure 3

(i) Identify **one** short-term impact of this hazard event.

(1)

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(ii) Which **one** of the following is the most likely cause of this hazard event?

(1)

☒ **A** earthquake

☒ **B** coastal flooding

☒ **C** heavy rainfall

☒ **D** volcanic eruption

(iii) Suggest how the scale of this event might have affected its long-term impact.

(2)

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(b) (i) What is meant by the term **weather conditions**?

(2)

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(ii) Outline **two** methods of monitoring weather conditions.

(4)

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(c) Explain how tropical storms are caused.

(6)

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(d) Discuss the challenges of managing a tectonic event in **one** named country.

(9)

Named country ....

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(Total for Question 3 = 25 marks)

TOTAL FOR SECTION A = 50 MARKS

P 4 8 1 6 2 R A 0 1 3 6 4

SECTION B – PEOPLE AND THEIR ENVIRONMENTS

Answer TWO questions only from this section.

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

4   **Economic activity and energy**

(a) Study Figure 4, an Ordnance Survey map extract which shows a Motor Works.
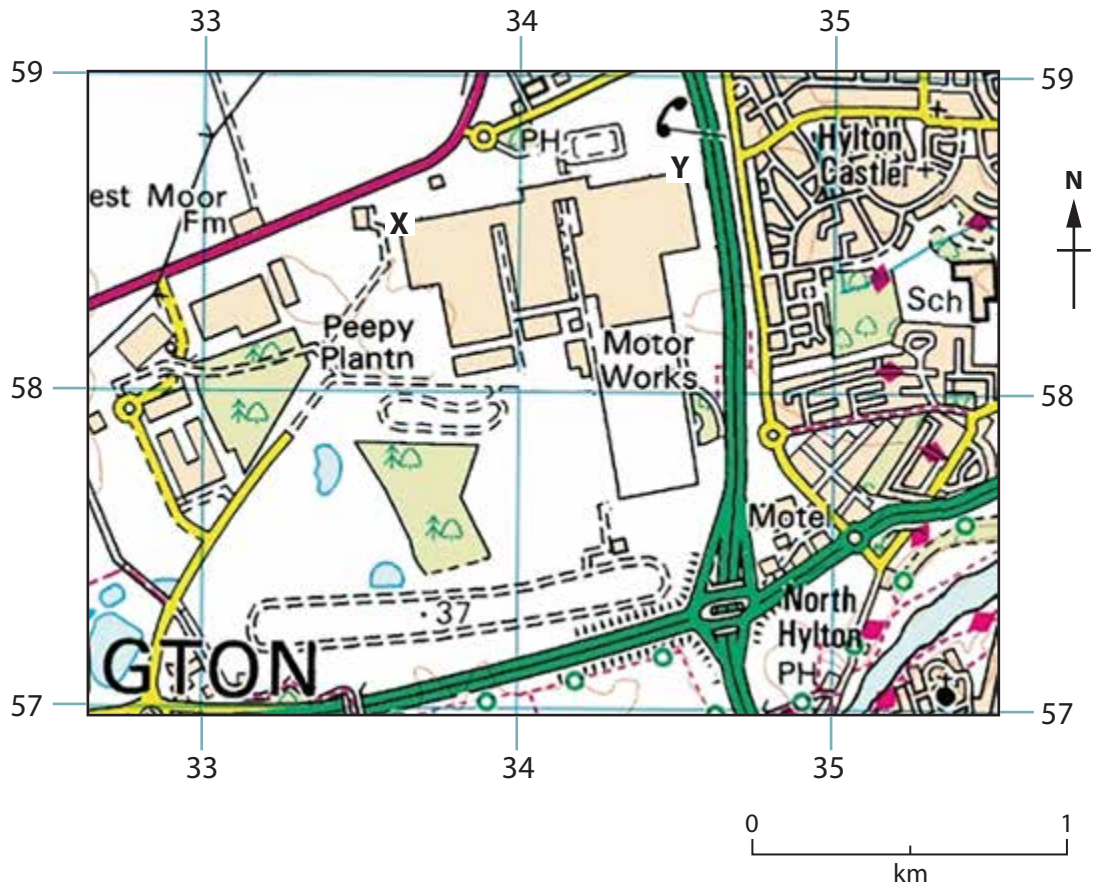
(Source: © Crown copyright and database rights 2016 Ordnance Survey)

Figure 4

(i)   What is the straight line distance between the western (X) and eastern (Y)
edges of the Motor Works?

(1)

☒   **A**   0.7 km

☒   **B**   0.9 km

☒   **C**   1.1 km

☒   **D**   1.3 km

(ii) Suggest **three** reasons why this location was chosen for the Motor Works.

(3)

1 ....

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3 ....

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(b) (i) What is meant by the term **energy efficiency**?

(2)

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(ii) Outline **two** reasons why energy efficiency is needed.

(4)

1 ....

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(c) Explain how the economic sectors vary in importance between HICs and LICs.

(6)

(d) Discuss which of the factors affecting the development of **one** named high-tech industry is the most important.

(9)

Named high-tech industry ....

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(Total for Question 4 = 25 marks)

5 Ecosystems and rural environments

(a) Study Figure 5 which shows the location of Fair Isle and gives some information about the island.

Fair Isle

Population	1900 = 400
	2015 = 55
Employment	farming, knitting & tourism
Services	1 shop; 1 primary school; 1 community hall; 1 nurse; 1 bar (summer); 3 guest houses; 1 fire engine.
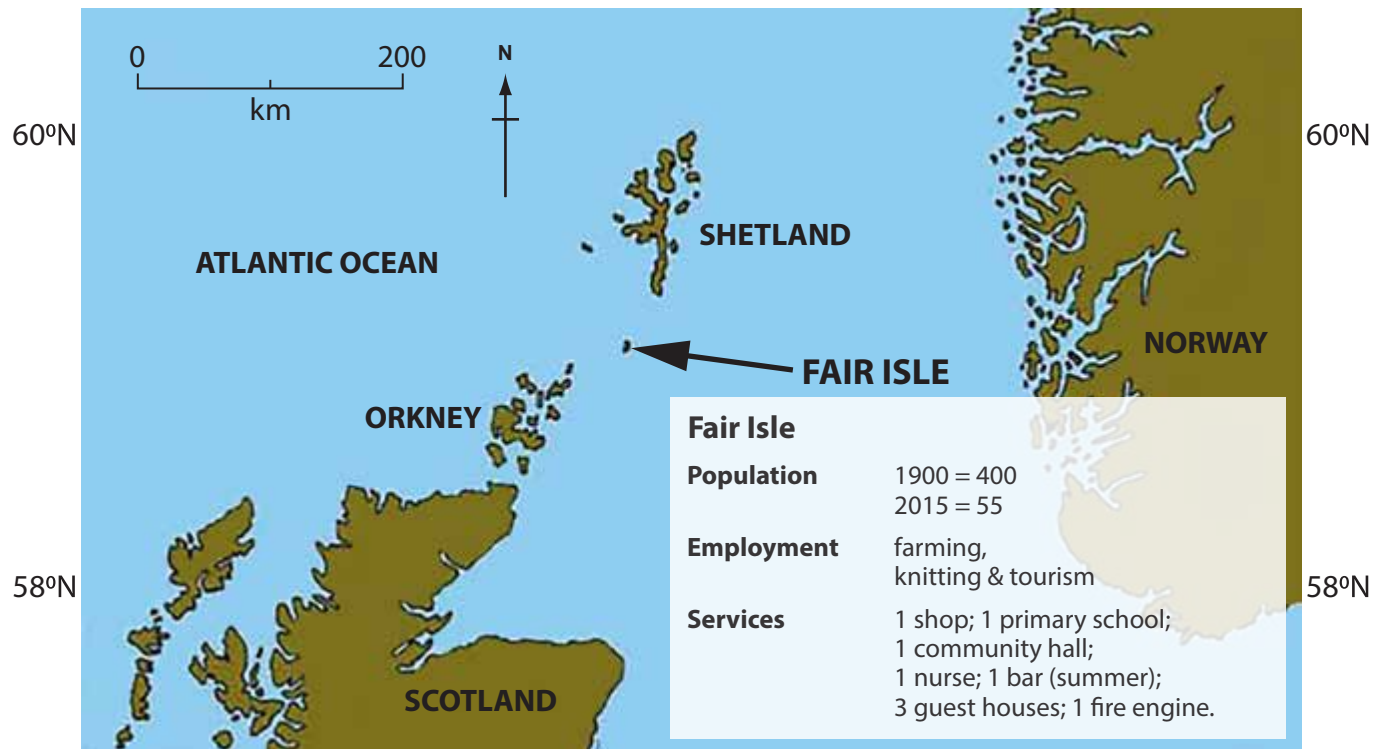
Figure 5

(i) What is the distance between Fair Isle and the southern tip of Shetland?

(1)

☒ **A** 20 km

☒ **B** 40 km

☒ **C** 60 km

☒ **D** 80 km

(ii) State the evidence for the depopulation of Fair Isle since 1900.

(1)

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(iii) Suggest **two** factors that might have encouraged the depopulation of this island.

(2)

1 ....

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2 ....

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(b) (i) What is meant by the term **conservation**?

(2)

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(ii) Outline **two** reasons for conservation in rural environments.

(4)

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(c) Explain the causes of food shortages.

(6)

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P 4 8 1 6 2 R A 0 2 0 6 4

(d) Discuss the main ecological processes affecting the biodiversity of **one** named ecosystem.

(9)

Named ecosystem ....

(Total for Question 5 = 25 marks)

If you answer Question 6 put a cross in the box ☒ .

6 Urban environments

(a) Study Figure 6 which shows the location of nine urban regeneration projects in the centre of Sheffield, UK.
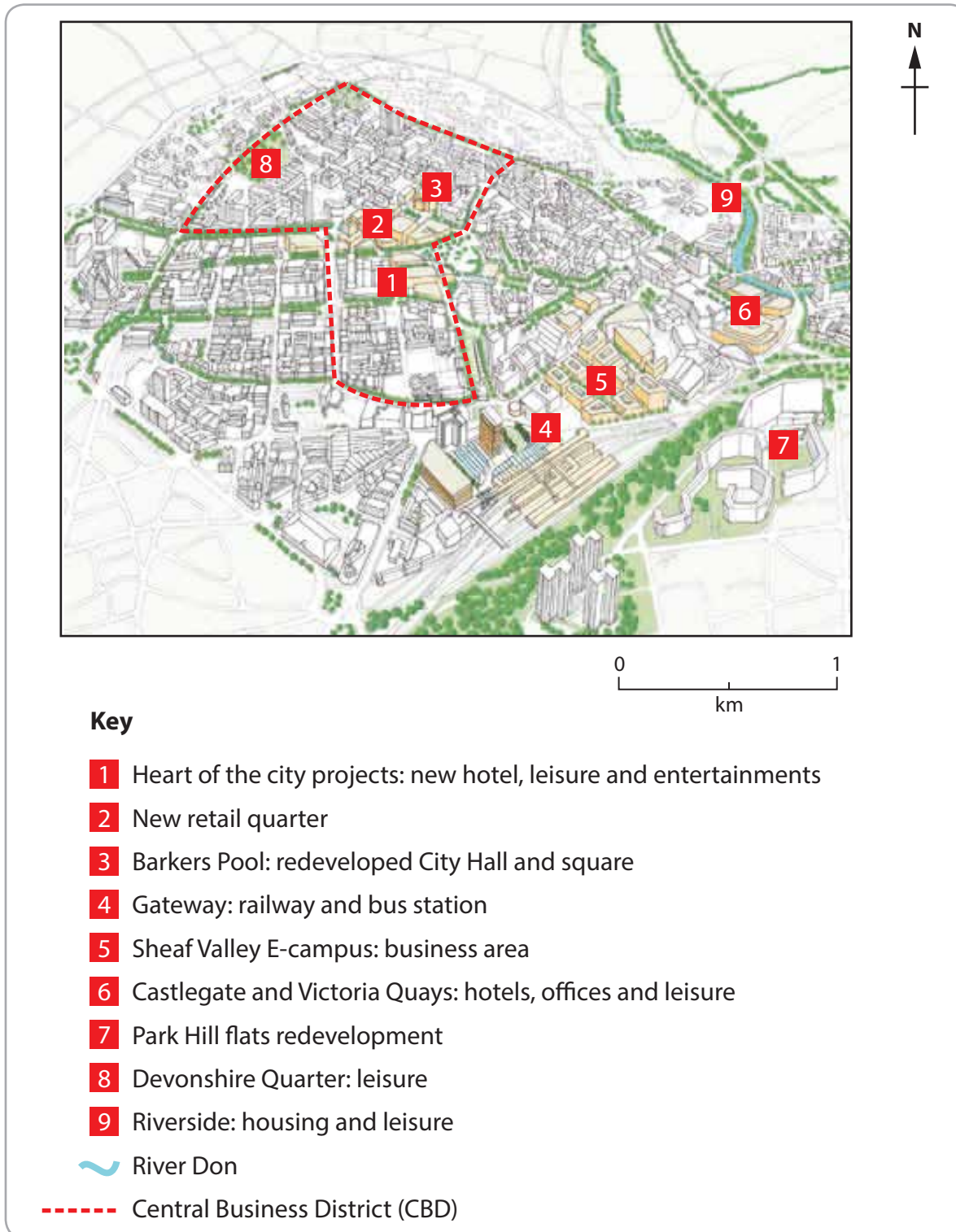
Key

1	Heart of the city projects: new hotel, leisure and entertainments
2	New retail quarter
3	Barkers Pool: redeveloped City Hall and square
4	Gateway: railway and bus station
5	Sheaf Valley E-campus: business area
6	Castlegate and Victoria Quays: hotels, offices and leisure
7	Park Hill flats redevelopment
8	Devonshire Quarter: leisure
9	Riverside: housing and leisure
∿	River Don
- - - - -	Central Business District (CBD)

Figure 6

P4 8 1 6 2 R A 0 2 2 6 4

(i) What is the approximate distance between the sites of project 4 and project 8?

(1)

$\boxtimes$ **A** 1.3 km

$\boxtimes$ **B** 1.8 km

$\boxtimes$ **C** 2.3 km

$\boxtimes$ **D** 2.8 km

(ii) Suggest **one** reason why project 4 was important to the regeneration of the city centre.

(1)

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(iii) Describe how the type of regeneration projects in the city's CBD are different from the other projects in the centre of Sheffield.

(2)

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(b) (i) What is meant by the term **shanty town**?

(2)

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(ii) Outline **two** strategies for improving shanty towns.

(4)

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(c) Explain the changes taking place at the edges of HIC cities.

(6)

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(d) Discuss why the population is distributed according to its socio-economic and ethnic background in **one** named city.

(9)

Named city ....

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(Total for Question 6 = 25 marks)

TOTAL FOR SECTION B = 50 MARKS

7 River environments fieldwork

(a) Study Figure 7a which is a student's sketch map showing the locations of three sampling sites for a river channel investigation.

● = Sampling sites

≡ = Valley sides
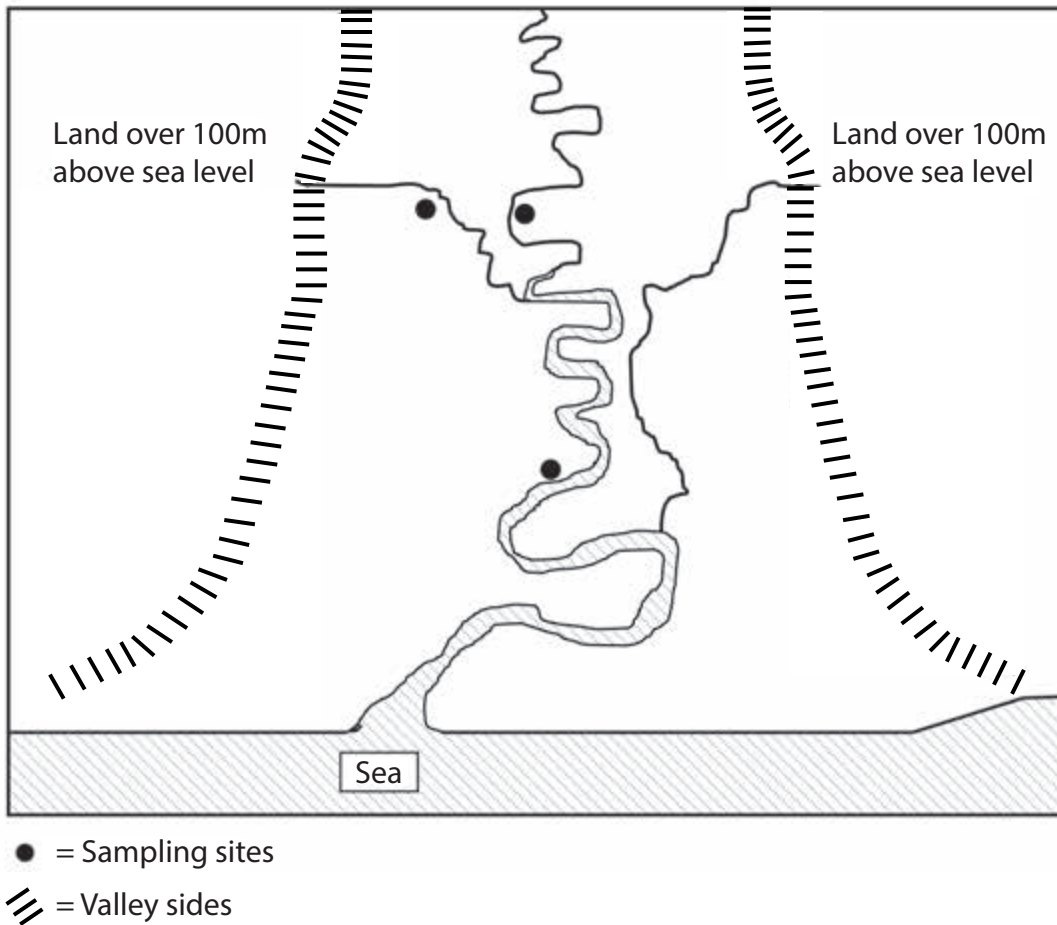
Figure 7a

(i) Why is group work often better suited to river channel investigations than an individual working alone?

(1)

⊠ **A** Some rivers are polluted.

⊠ **B** One person can carry the refreshments.

⊠ **C** One person can record while others use the equipment.

⊠ **D** The measuring equipment is heavy.

(ii) Outline **three** factors that should be considered when choosing a suitable sampling site for a river channel investigation.

(6)

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P 4 8 1 6 2 R A 0 2 7 6 4

(iii) Describe **two** sources of secondary information that might be useful in planning a river channel investigation.

(4)

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(b) (i) Outline each of the **three** following sampling methods used in geographical investigations.

(6)

random sampling

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stratified sampling

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systematic sampling

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(ii) Suggest why **one** of the sampling methods named in (b)(i) would be appropriate to use in a river channel investigation.

(3)

Sampling method ....

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(c) (i) Suggest **one** possible aim of a river channel investigation.

(2)

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(ii) Identify **three** reasons why a river channel investigation might **not** achieve the aim given in (c)(i).

(3)

1 ....

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2 ....

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3 ....

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(Total for Question 7 = 25 marks)

8   Hazardous environments fieldwork

(a) Study Figure 8a which is a sketch map showing the locations of three sampling
sites used in an investigation of the microclimate of a village.
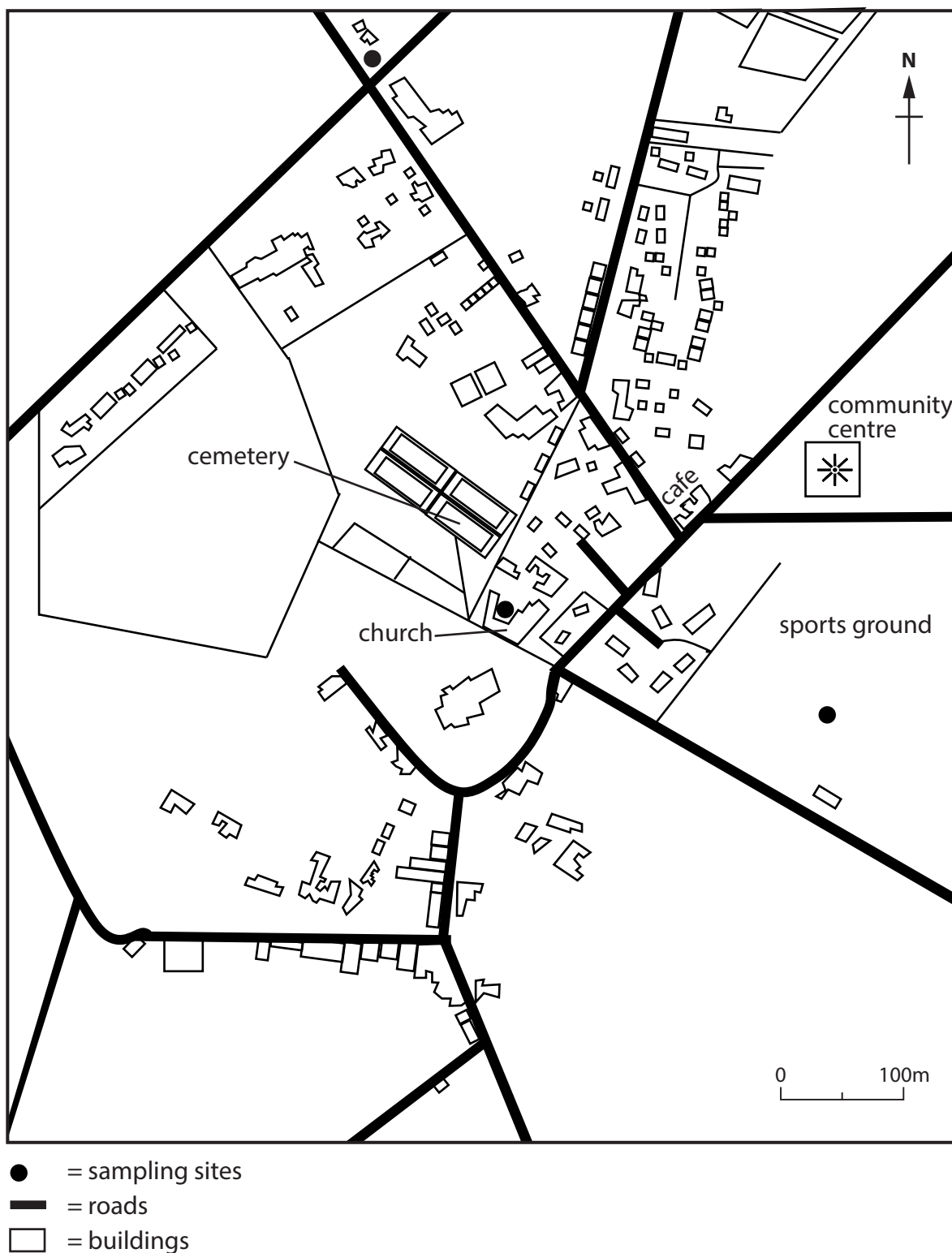
● = sampling sites

▬ = roads

☐ = buildings

Figure 8a

(i) Why is group work often better suited to microclimate investigations than an individual working alone?

(1)

⊠ **A** Some villages are polluted.

⊠ **B** One person can carry the refreshments.

⊠ **C** One person can record while others use equipment.

⊠ **D** The measuring equipment is heavy.

(ii) Outline **three** factors that should be considered when choosing a suitable sampling site for a microclimate investigation.

(6)

1 ....

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2 ....

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3 ....

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(iii) Describe **two** sources of secondary information that might be useful in planning a microclimate investigation.

(4)

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(b) (i) Outline each of the **three** following sampling methods used in geographical investigations.

(6)

random sampling

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....

stratified sampling

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systematic sampling

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(ii) Suggest why **one** of the sampling methods named in (b)(i) would be appropriate to use in a microclimate investigation.

(3)

Sampling method ....

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(c) (i) Suggest **one** possible aim of a microclimate investigation.

(2)

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(ii) Identify **three** reasons why a microclimate investigation might **not** achieve the aim given in (c)(i).

(3)

1 ....

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3 ....

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(Total for Question 8 = 25 marks)

If you answer Question 9 put a cross in the box ☒ .

9   Economic activity and energy fieldwork

(a) Study Figure 9a which shows a student using a questionnaire to collect opinions on energy sources.

Figure 9a

(i)   How is the student collecting opinions?

(1)

☒ **A** Going to homes and asking people to complete a questionnaire.

☒ **B** Creating an online questionnaire.

☒ **C** Stopping people in the street to complete a questionnaire.

☒ **D** Sending a questionnaire by post.

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(ii) Describe the factors to be considered in preparing a questionnaire.

(4)

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(iii) Identify **two** health and safety risks of carrying out fieldwork in urban locations.

(2)

1 ....

2 ....

P 4 8 1 6 2 R A 0 3 7 6 4

(b) Study Figure 9b which shows some results of a survey about the use of four energy sources.

Age Group	Percentage (%) of age group opposing this source			
	Nuclear	**Onshore wind**	**Solar**	**Fracking***
16–24	26	5	2	14
25–34	20	4	2	16
35–44	25	5	2	26
45–54	37	10	6	24
55–64	26	16	8	30
65+	21	20	10	24

*gas from underground rocks

Figure 9b

(i) Complete Figure 9c by representing the data for nuclear and onshore wind.

(4)
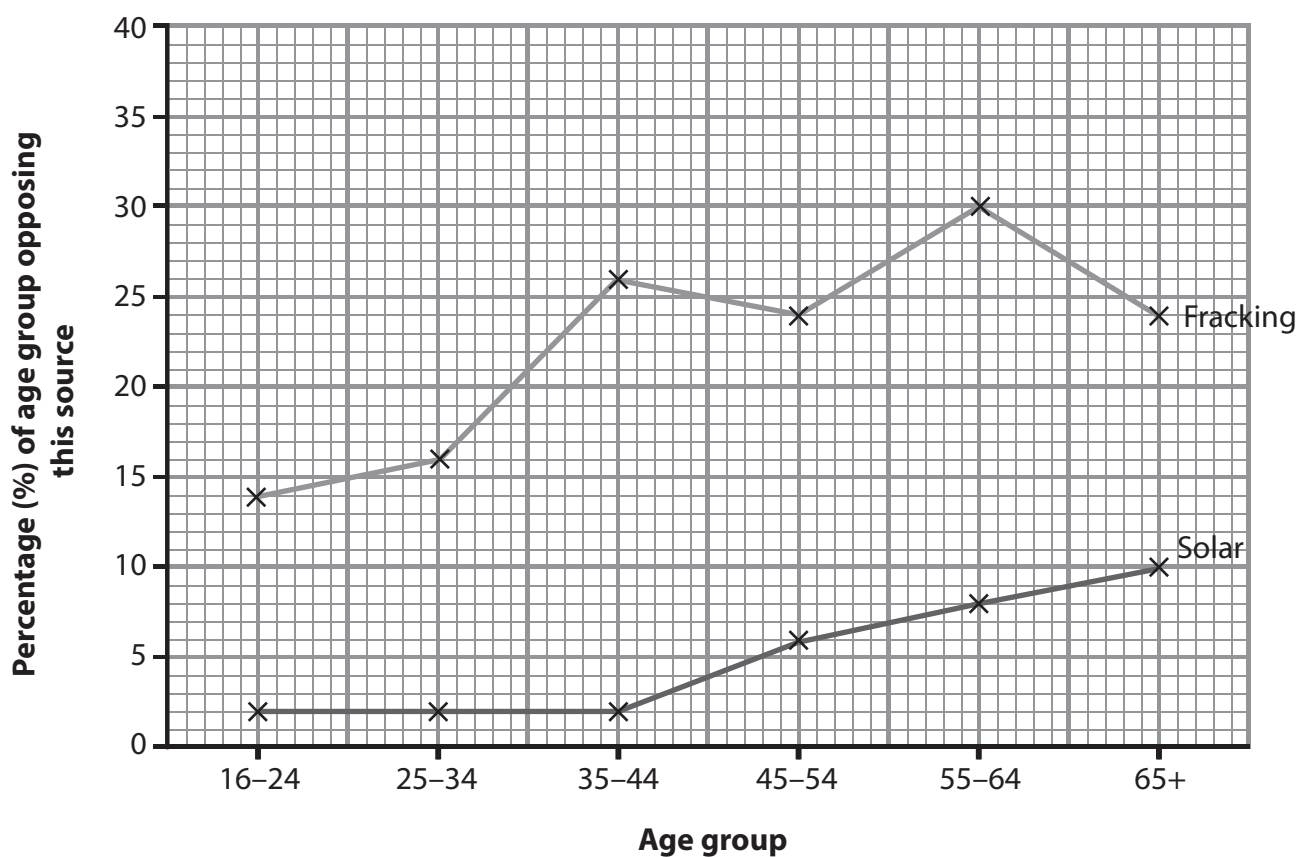
Figure 9c

(ii) Justify the technique used in Figure 9c to represent the results shown in Figure 9b.

(3)

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P 4 8 1 6 2 R A 0 3 9 6 4

(iii) What conclusions can be reached from an analysis of Figures 9b and 9c?

(8)

P 4 8 1 6 2 R A 0 4 0 6 4

(iv) Suggest additional information that might be collected to improve this investigation.

(3)

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(Total for Question 9 = 25 marks)

If you answer Question 10 put a cross in the box ☒ .

10 Urban environments fieldwork

(a) Study Figure 10a which shows a group of students surveying urban land use and environmental quality.

(Source: © David R. Frazier Photolibrary, Inc. / Alamy Stock Photo)

Figure 10a

(i)   How are the students recording the information?

(1)

☒ **A**   by looking at photos

☒ **B**   by reading online articles

☒ **C**   by making notes outdoors

☒ **D**   by having phone interviews

(ii) Describe the factors to be considered in preparing a recording sheet for an environmental quality survey.

(4)

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(iii) Identify **two** health and safety risks for students carrying out fieldwork in urban locations.

(2)

1 ....

2 ....

(b) Study Figure 10b which shows some results of a survey into land use and environmental quality (EQ score) along an urban transect.

| Site | Land use (%) | | | | | EQ* score |
	Housing	Commercial	Industry	Transport & public buildings	Open space	
1 Inner suburbs	60	15	0	5	20	75
2 Inner city	40	20	20	10	10	40
3 Outer CBD	30	35	10	20	5	60
4 CBD core	5	55	0	15	25	80

* EQ (environmental quality) total score out of 100 based on building quality, cleanliness and appearance.

Figure 10b

(i) Complete Figure 10c by representing the data for housing, open space and EQ score.

(4)

Figure 10c

P48162RA04464
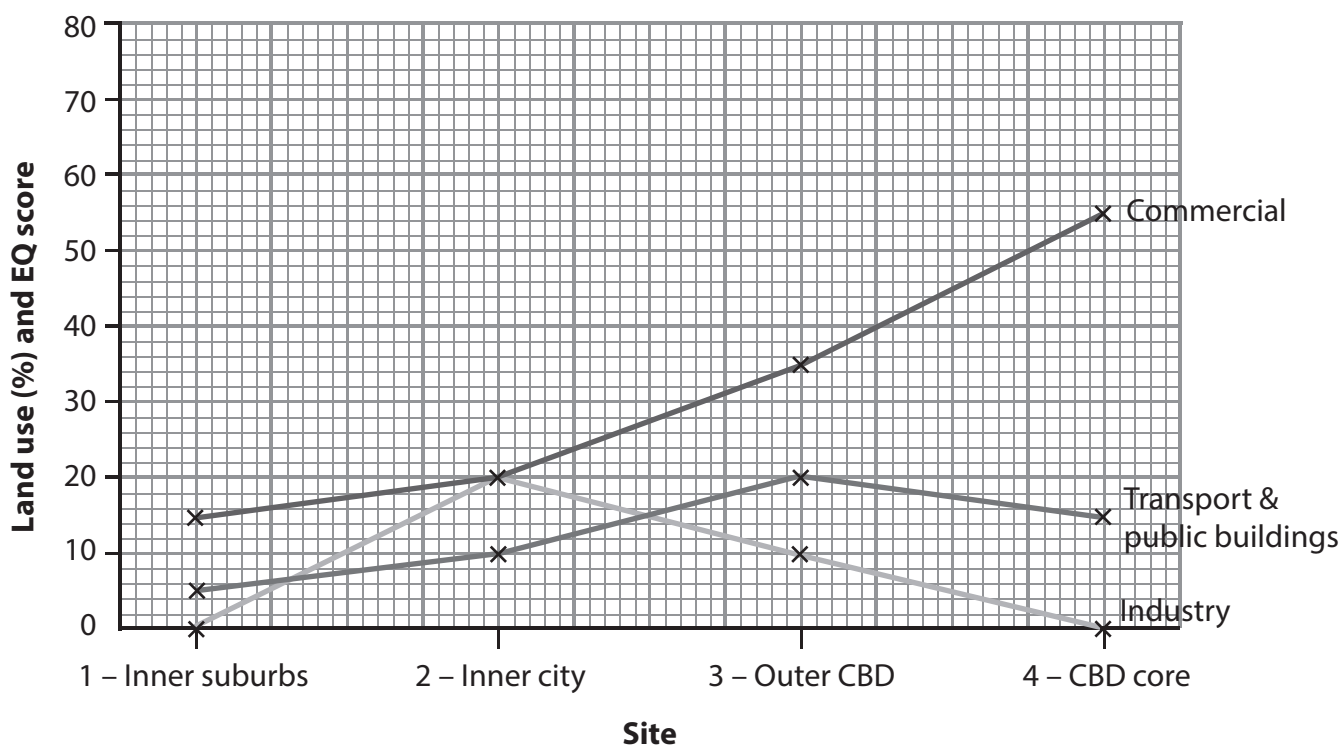
(ii) Justify the technique used in Figure 10c to represent the results shown in Figure 10b.

(3)

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(iii) What conclusions can be reached from an analysis of Figures 10b and 10c?

(8)

P48162RA04664

P 4 8 1 6 2 R A 0 4 6 6 4

(iv) Suggest additional information that might be collected to improve this investigation.

(3)

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(Total for Question 10 = 25 marks)

TOTAL FOR SECTION C = 50 MARKS

SECTION D – GLOBAL ISSUES

Answer ONE question only from this section.

If you answer Question 11 put a cross in the box ⊠ .

11 Fragile environments

(a) Study Figure 11a which shows annual deforestation in five states of Brazil between 2004 and 2013.
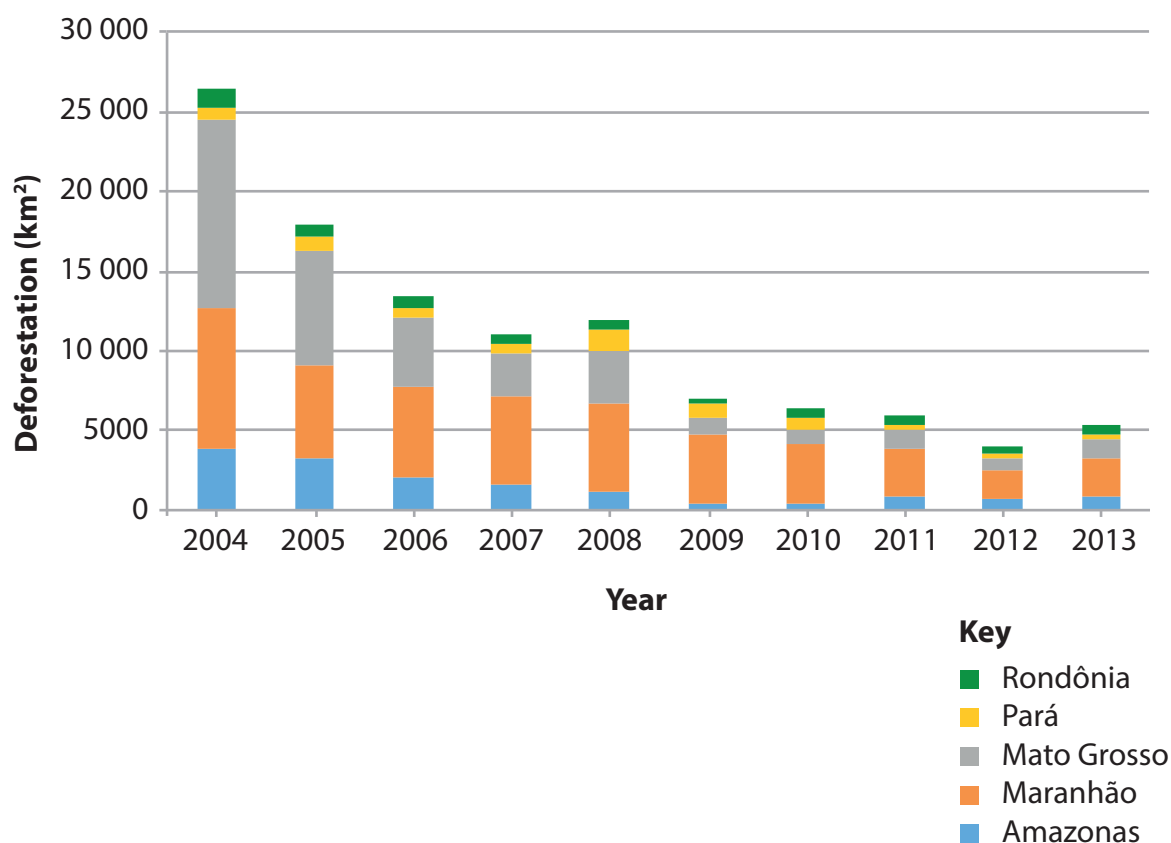
(Source: data from http://www.mongabay.com/brazil-state_deforestation.html)

Figure 11a

(i)   In which **one** of the following states was there most deforestation between 2004 and 2013?

(1)

⊠ **A** Rondônia

⊠ **B** Pará

⊠ **C** Mato Grosso

⊠ **D** Amazonas

(ii) Describe the trend in the rate of deforestation in Brazil between 2004 and 2013.

(2)

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(iii) Suggest **one** issue resulting from deforestation.

(2)

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(b) (i) What is meant by the term **desertification**?

(2)

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(ii) Outline **two** causes of desertification.

(4)

1 ....

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2 ....

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(iii) Describe how desertification is being managed in **one** named area.

(4)

Named area ....

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P48162RA05064

(c) Study Figure 11b which shows some pieces of evidence that the climate is currently changing.

Key

↑ = increase

↓ = decrease

↪ = change

Changing rainfall pattern

↑ Air temperatures

↓ Glaciers and ice sheets

↑ Sea surface temperatures

↑ Sea levels

↑ Intensity and frequency of extreme weather events
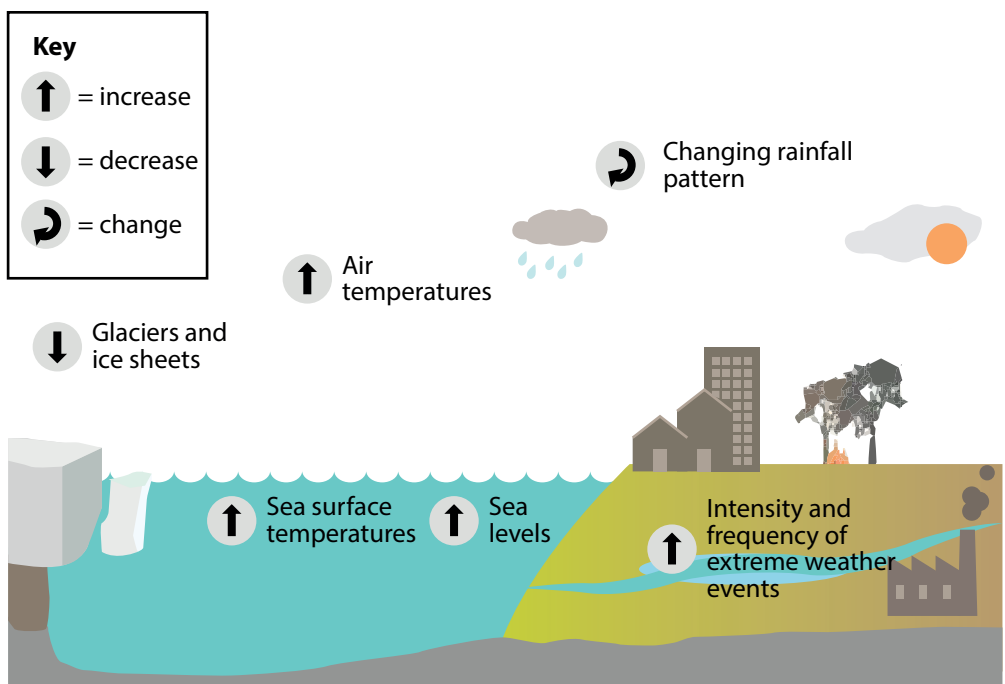
Figure 11b

Explain how **two** of these pieces of evidence show that the climate is currently changing.

(6)

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(d) Discuss the different opinions about the possible causes of global warming.

(9)

(Total for Question 11 = 30 marks)

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QUESTION 12 BEGINS ON THE NEXT PAGE.

12 Globalisation and migration

(a) Study Figure 12a which shows the continents of origin of refugees entering the USA between 1990 and 2010.

Key
■ Europe
■ Asia
■ Central and South America
■ Africa
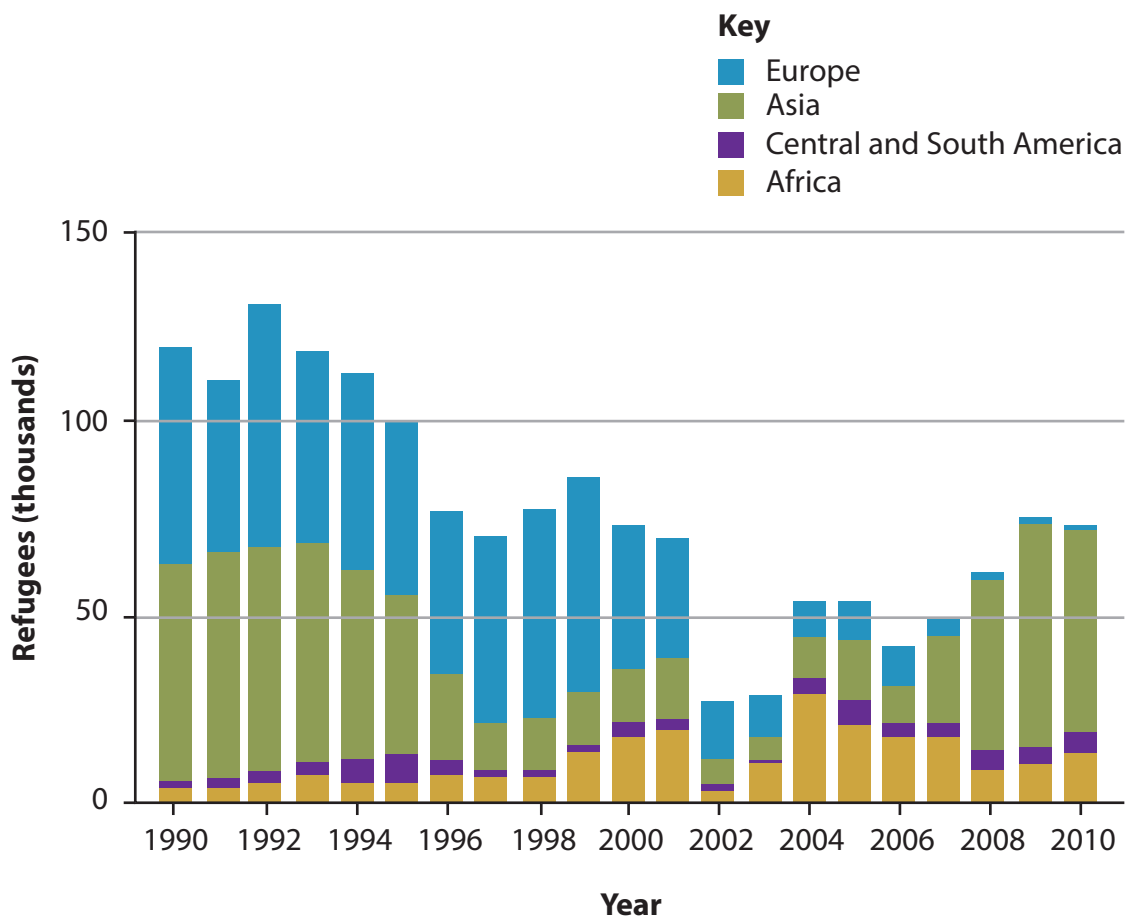
(Source: data from http://www.pewresearch.org/fact-tank/2015/09/24/how-the-u-s-compares-with-other-countries-taking-in-refugees/ft_15-09-23_refugeetousbyregion-2/)

Figure 12a

(i) The smallest number of refugees to the USA between 1990 and 2010 came from which continent?

(1)

☒ **A** Europe

☒ **B** Asia

☒ **C** Central and South America

☒ **D** Africa

(ii) Describe the trend in the rate of refugees entering the USA between 1990 and 2010.

(2)

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(iii) Suggest **one** issue resulting from refugees entering HICs like the USA.

(2)

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(b) (i) What is meant by the term **global economy**?

(2)

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(ii) Outline **two** reasons for the rise of the global economy.

(4)

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(iii) Describe the consequences for **either** China **or** India of its changing role in the global economy.

(4)

Chosen country ....

(c) Study Figure 12b which shows three benefits of the sustainable development of tourism.

Benefits of the Sustainable Development of Tourism

Economic ✚ Social ✚ Long-term ecological balance and safeguarding of culture

Figure 12b

Explain how **one** named sustainable tourism project offers **two** of these benefits.

(6)

Name of project ....

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2 ....

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(d) Discuss the costs and benefits that TNCs bring to countries in which they locate.

(9)

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(Total for Question 12 = 30 marks)

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QUESTION 13 BEGINS ON THE NEXT PAGE.

If you answer Question 13 put a cross in the box ☒ **.**

13 Development and human welfare

(a) Study Figure 13a which gives the population of the continents in 2015 and forecasts for 2100.

NORTH AMERICA

2015 **358m**   2100 **500m**

EUROPE

2015 **738m**   2100 **646m**

ASIA

2015 **4,393m**   2100 **4,889m**

CENTRAL AND SOUTH AMERICA

2015 **634m**   2100 **721m**

AFRICA

2015 **1,186m**   2100 **4,387m**

OCEANIA

2015 **39m**   2100 **71m**

Population

⬤ 2015

⬤ 2100 (forecast)

(Source: from http://indy100.independent.co.uk/article/these-will-be-the-10-mostpopulated-countries-on-earth-in-2100--bkyViNS8Vx)
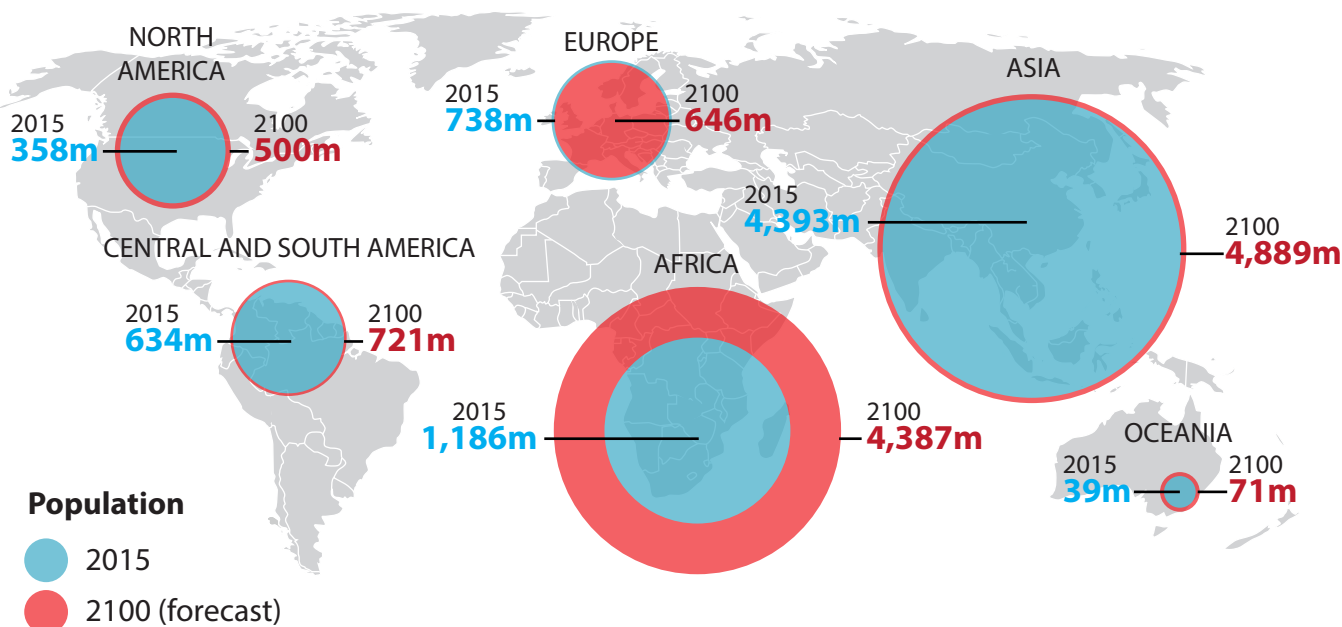
Figure 13a

(i) Which **one** of the following continents had the largest population in 2015?

(1)

☒ **A** North America

☒ **B** Africa

☒ **C** Asia

☒ **D** Europe

(ii) Describe the trends in the rate of population growth by 2100.

(2)

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(iii) Suggest **one** issue resulting from population change.

(2)

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(b) (i) What is meant by the term **appropriate aid**?

(2)

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(ii) Outline **two** examples of appropriate aid.

(4)

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(iii) Describe other ways in which disparities in development between countries might be reduced.

(4)

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P 4 8 1 6 2 R A 0 6 2 6 4

(c) Study Figure 13b which shows three factors affecting quality of life.
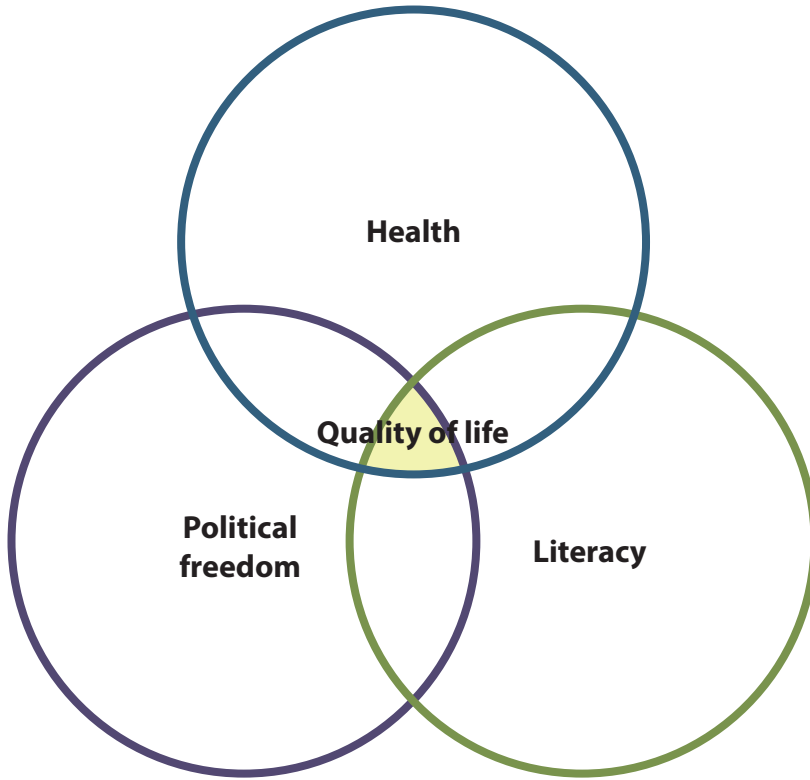
Figure 13b

Explain how **two** of these factors affect quality of life.

(6)

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(d) Discuss the management of regional disparities within **one** named country.

(9)

Named country ....

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(Total for Question 13 = 30 marks)

TOTAL FOR SECTION D = 30 MARKS
TOTAL FOR PAPER = 180 MARKS