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EDEXCEL INTERNATIONAL GCSE GEOGRAPHY: QUESTIONS BY TOPIC

Urban Environments (Topic 6)

International GCSE Geography Topic 6

32 questions · 688 marks · Mark schemes included

Pearson Edexcel International GCSE (9–1) Geography 4GE1, Papers 1, 1R, 2 & 2R, June 2019 - June 2025

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HOW TO USE THIS BOOKLET

Questions are grouped by sub-topic (exam questions, then fieldwork), oldest paper first.
Click any heading or question row below to jump straight to it.
On every question page, click ANSWER in the top-right corner to jump to its mark scheme.
Diagrams, graphs, tables and data are printed exactly as they appeared in the original papers.

	QUESTION	SOURCE	MARKS	PAGE
URBAN ENVIRONMENTS: EXAM QUESTIONS		16 questions · 400 marks		3
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3.	**Q3**	Paper 2 November 2020	25	16
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19.	**Q6**	Paper 2 November 2020	20	105
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21.	**Q6**	Paper 2 June 2021	12	111
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23.	**Q6**	Paper 2 June 2022	12	120
24.	**Q6**	Paper 2R June 2022	12	123
25.	**Q6**	Paper 2 June 2023	20	125
26.	**Q6**	Paper 2R June 2023	20	130
27.	**Q6**	Paper 2 November 2023	20	135
28.	**Q6**	Paper 2 June 2024	20	139
29.	**Q6**	Paper 2R June 2024	20	143
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QUESTIONS

32 questions · 688 marks · grouped by sub-topic

SUB-TOPIC

URBAN ENVIRONMENTS: EXAM QUESTIONS

16 questions in this booklet

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

3 Urban environments.

(a) Identify the meaning of the term **counter-urbanisation**.

(1)

☒	**A** increasing proportion of people living in urban areas
☒	**B** population movement from one country to another
☒	**C** increasing population growth on the edge of urban areas
☒	**D** population movement from urban areas to the countryside

(b) Define the term **segregation**.

(1)

(c) Identify the meaning of the term **megacity**.

(1)

☒	**A** a very large urban area
☒	**B** a city with a population over 1 million
☒	**C** a city with a population over 10 million
☒	**D** a very large rural area

(d) Study Figure 3a in the Resource Booklet.

Suggest **one** piece of evidence from the photograph that shows this area has challenges associated with rapid urbanisation.

(2)

(e) State **one** group or organisation involved in managing urban challenges.

(1)

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(f) Explain **two** ways in which urban challenges have been managed.

(4)

1 .....

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2 .....

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(g) Study Figure 3b in the Resource Booklet.

Explain how **one** factor affects quality of life.

(3)

Factor selected .....

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(h) For a named developed country, explain **two** ways the rural-urban fringe has been developed.

(4)

Named developed country .....

1 .....

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(i) Study Figure 3c in the Resource Booklet.

Analyse the reasons for the changes in the global **urban** population.

(8)

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Figure 3a

An urban area in part of Nairobi, Kenya

(Source: © David Holmes)



Figure 3b

Six factors that can influence quality of life

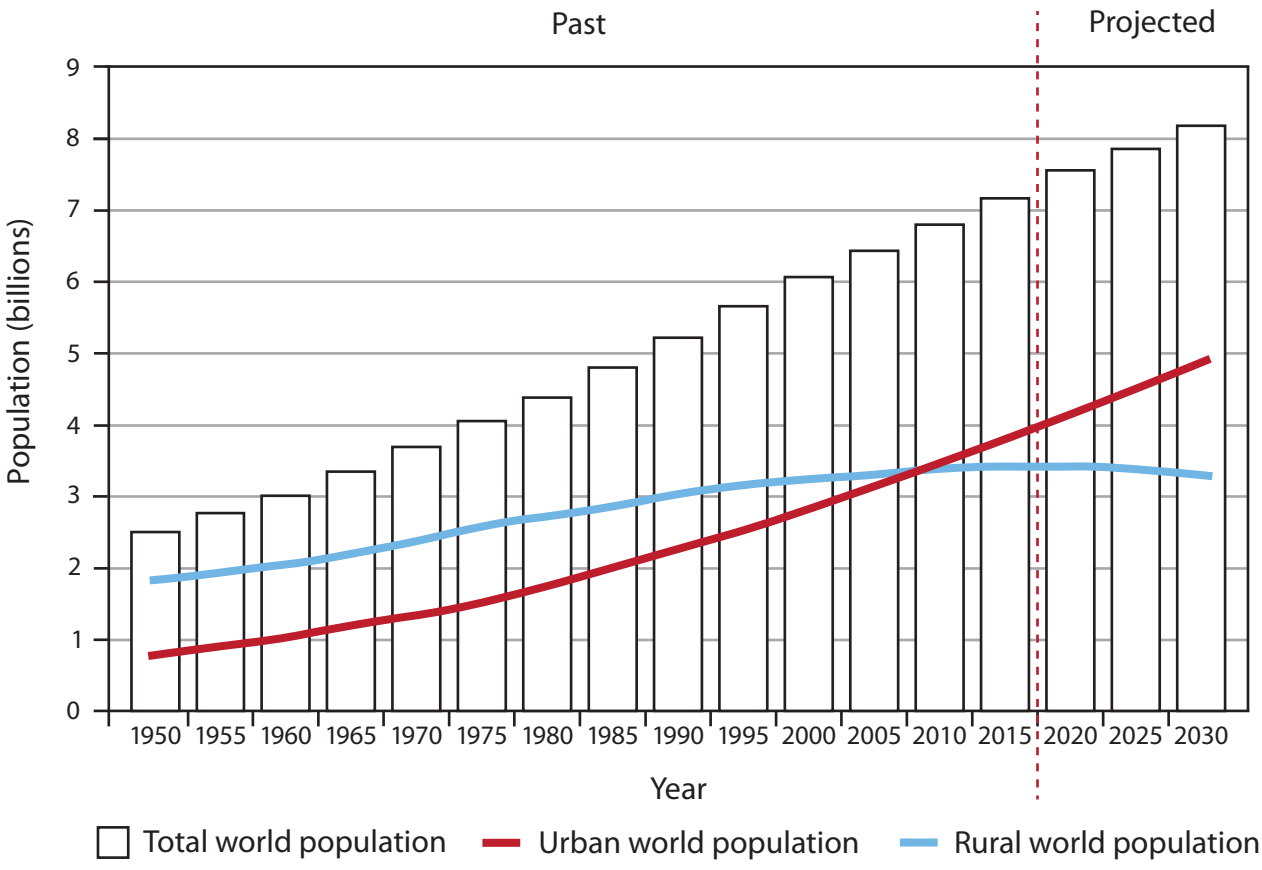


Figure 3c

Changing global urban and rural population estimates: past and projected

(Source: from http://www.un.org/esa/population/publications/WUP2005/2005wup.htm)

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

3 Urban environments.

(a) Identify the meaning of the term **urbanisation.**

(1)

☒	**A** increasing proportion of people living in urban areas
☒	**B** population movement from one country to another
☒	**C** increasing population growth on the edge of urban areas
☒	**D** population movement from one urban area to another

(b) Define the term **megacity**.

(1)

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.....

(c) Identify **one** characteristic of a squatter settlement.

(1)

☒	**A** a location that has previously been built on
☒	**B** a location that has high-rise development
☒	**C** a location that has illegally built housing
☒	**D** a location that has a planned housing development

(d) Study Figure 3a in the Resource Booklet.

Explain **one** piece of evidence that shows this urban area has transport challenges.

(2)

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(e) State **one** environmental issue associated with the rapid growth of megacities.

(1)

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(f) Explain **two** reasons why urban land use patterns vary.

(4)

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(g) Study Figure 3b in the Resource Booklet.

Explain **one** reason for the differences in quality of life shown.

(3)

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(h) For a named **developing** or **emerging** country, explain how **two** different groups managed challenges within urban environments.

(4)

Named developing or emerging country .....

Group 1

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Group 2

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(i) Study Figure 3c in the Resource Booklet.

Analyse the reasons for the distribution of the world's largest cities.

(8)

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(Source: © David Holmes)

Figure 3a

An urban district in Dhaka, Bangladesh



(Source: newscientist.com)

Figure 3b

Quality of life indicators in two different districts of Chicago, USA



(Source: http://www.economist.com/node/21642053?fsrc=scn%2Ftw_ec%2Fbright_lights_big_cities)

Figure 3c

The world's largest cities by population (millions), 2015

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

3 Urban environments

(a) Identify the meaning of the term **urbanisation**.

(1)

☒	**A** population movement from one urban area to another
☒	**B** population movement from one country to another
☒	**C** increasing population growth on the edge of urban areas
☒	**D** increasing proportion of people living in urban areas

(b) Define the term **rural-urban fringe**.

(1)

(c) Identify the meaning of the term **brownfield** site.

(1)

☒	**A** a location that has been previously built on
☒	**B** a location that has high-rise development
☒	**C** a location that has illegally built housing
☒	**D** a location that has never been built on

(d) Study Figure 3a in the Resource Booklet.

Suggest **one** piece of evidence that shows this urban area may experience problems associated with rapid urbanisation.

(2)

(e) State **one** example of a group involved in managing urban challenges.

(1)

(f) Explain **two** reasons why urban land values vary.

(4)

1

2

(g) Study Figure 3b in the Resource Booklet.

Suggest **one** reason for the change in the number of city 'public-use bicycles'.

(3)

(h) For a named **developing or emerging** country, explain how health and education have been improved in the urban environment.

(4)

Named developing or emerging country .....

Health

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Education

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(i) Study Figure 3c in the Resource Booklet.

Analyse the factors leading to the different patterns of urbanisation shown in Figure 3c.

(8)

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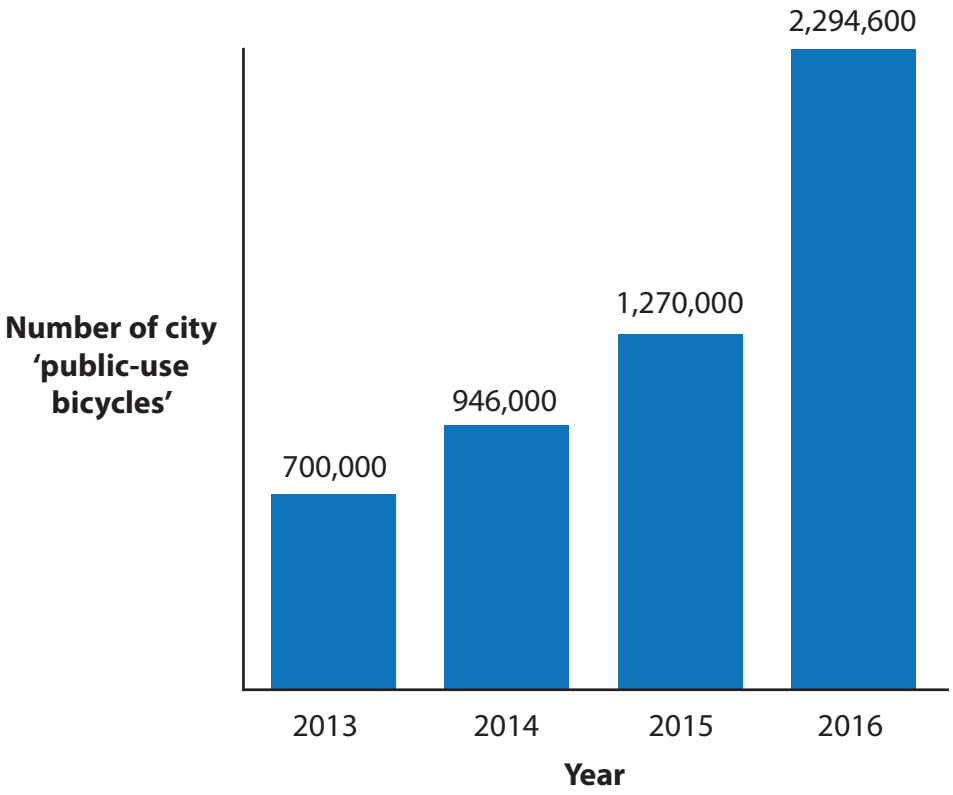


(Source: © David Holmes Geography)

Figure 3a

An urban area in Taiwan, south-east Asia

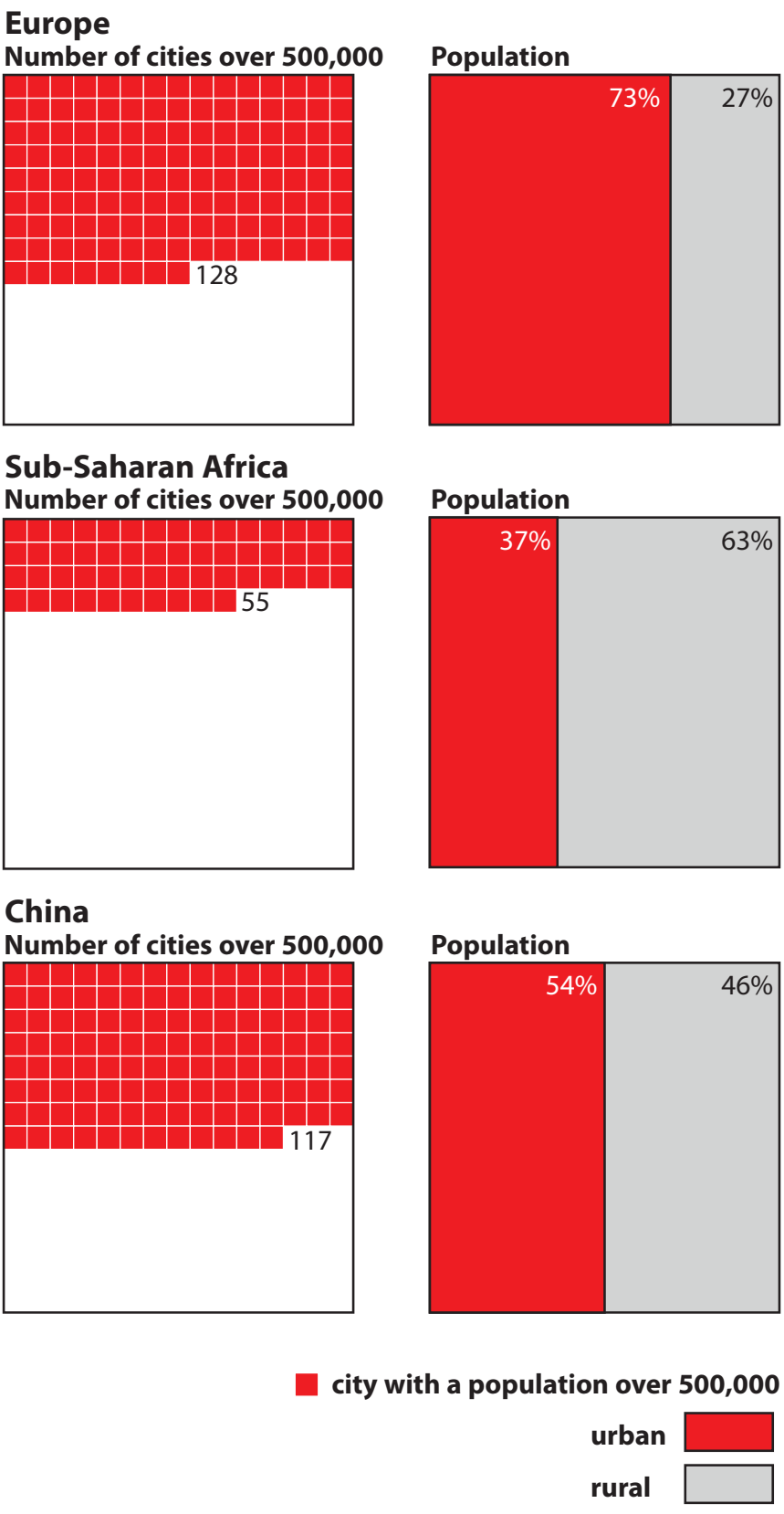




(Source: https://www.statista.com/chart/13483/bike-sharing-programs/)
(Picture source: © David Holmes Geography)

Figure 3b

Worldwide number of city 'public-use bicycles', 2013–2016



(Source: https://www.theguardian.com/cities/2015/nov/23/cities-in-numbers-how-patterns-of-urban-growth-change-the-world#img-4)

Figure 3c

Cities with a population over 500,000 and the percentage of urban-rural population (2015)

3 Urban environments

(a) Identify the meaning of the term **megacity**.

(1)

☒	**A** a city with a population of more than 2 million
☒	**B** a city with a population of more than 5 million
☒	**C** a city with a population of more than 10 million
☒	**D** a city with a population of more than 20 million

(b) Define the term **urbanisation**.

(1)

(c) Identify **one** characteristic of a **greenfield site**.

(1)

☒	**A** a location that has never been built on
☒	**B** a location that has high-rise development
☒	**C** a location that has illegally-built housing
☒	**D** a location that has previously been built on

(d) Study Figure 3a in the Resource Booklet.

Suggest **one** piece of evidence that shows this urban area experiences transport problems.

(2)

(e) State **one** land use associated with development of the rural–urban fringe.

(1)

(f) Explain **two** reasons why urban land use patterns vary.

(4)

1

2

(g) Study Figure 3b in the Resource Booklet.

Suggest **one** reason for the differences in pollution levels between Dubai and Delhi.

(3)

(h) Explain how waste disposal and housing have been improved in an urban environment for a named **developing or emerging country**.

(4)

Named developing or emerging country .....

Waste disposal

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Housing

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(i) Study Figure 3c in the Resource Booklet.

Analyse the possible factors leading to the population changes.

(8)

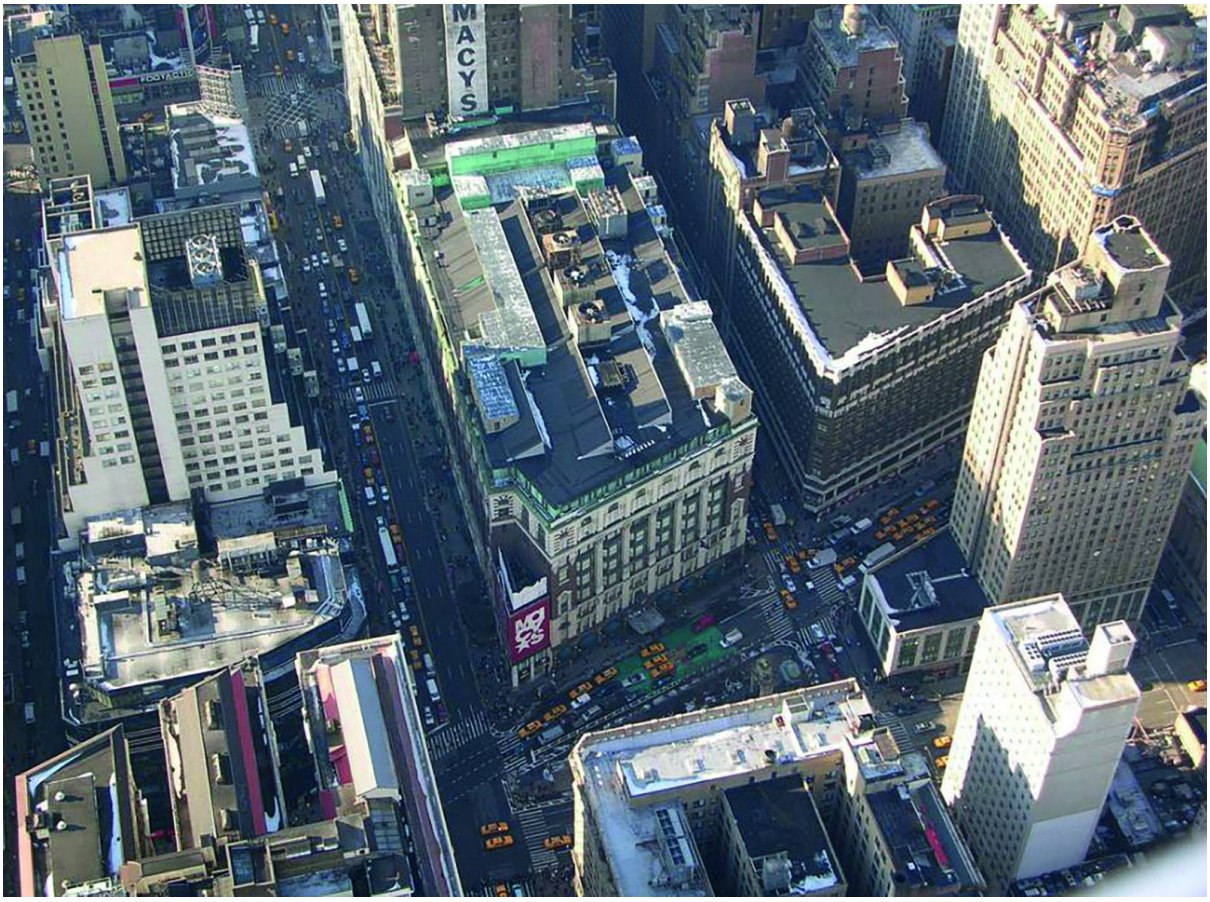
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(Source: © David Holmes Geography)

Figure 3a

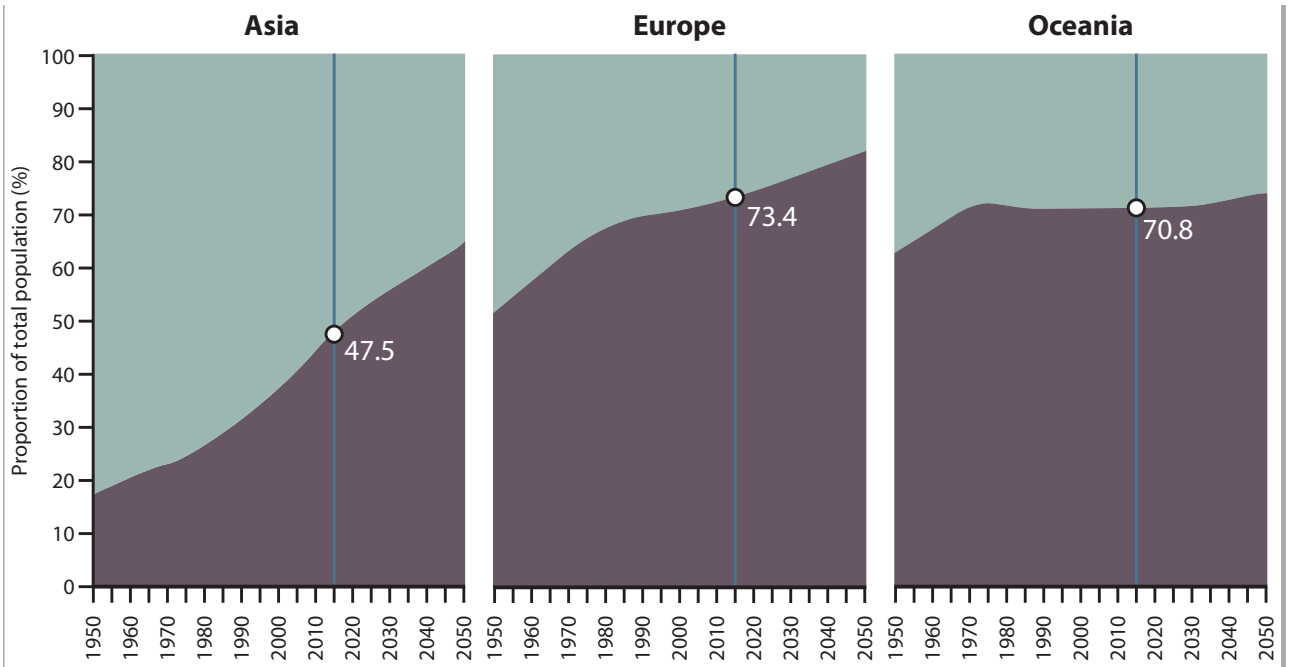
An urban area in the USA

	Dubai		Delhi	
Air pollution	Moderate	55.00	Very High	88.23
Drinking water pollution	Low	37.56	High	64.39
Problems with rubbish disposal	Low	30.99	High	75.90
Dirty and untidy	Low	25.38	High	73.22
Noise and light pollution	Moderate	54.72	High	65.40
Water pollution	Moderate	42.80	High	77.68

(Source: https://www.numbeo.com/pollution/compare_cities.jsp?country1=United+Arab+Emirates&country2=India&city1=Dubai&city2=Delhi)

Figure 3b

Pollution indicators for Dubai and Delhi (index out of 100)



(Source: https://esa.un.org/unpd/wup/publications/files/wup2014-highlights.pdf)

Figure 3c

Urban and rural population changes 1950–2050 (projected) for global regions

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

3 Urban environments

(a) (i) Define the term **counter-urbanisation**.

(1)

(ii) Identify **two** environmental problems associated with rapid urban growth.

(2)

☒	**A** Air pollution
☒	**B** Lack of housing
☒	**C** Overcrowding
☒	**D** Poor services
☒	**E** Ethnic segregation
☒	**F** Water contamination

(b) Study Figure 3a in the Resource Booklet.

(i) Suggest **one** reason why this area is likely to be part of a central urban area.

(2)

(ii) Identify the meaning of the term **rural-urban fringe**.

(1)

☒	**A** The area where factory developments dominate the landscape.
☒	**B** The area where farming activities dominate the landscape.
☒	**C** The land around the city centre.
☒	**D** The land at the edge of an urban area where the rural area begins.

(c) For urban environments in **developed** countries, explain how transport and housing strategies could improve quality of life.

(4)

Transport

Housing

(d) Study Figure 3b below.

(i) Label the box with an X to show which city was a megacity in 2018.

(1)

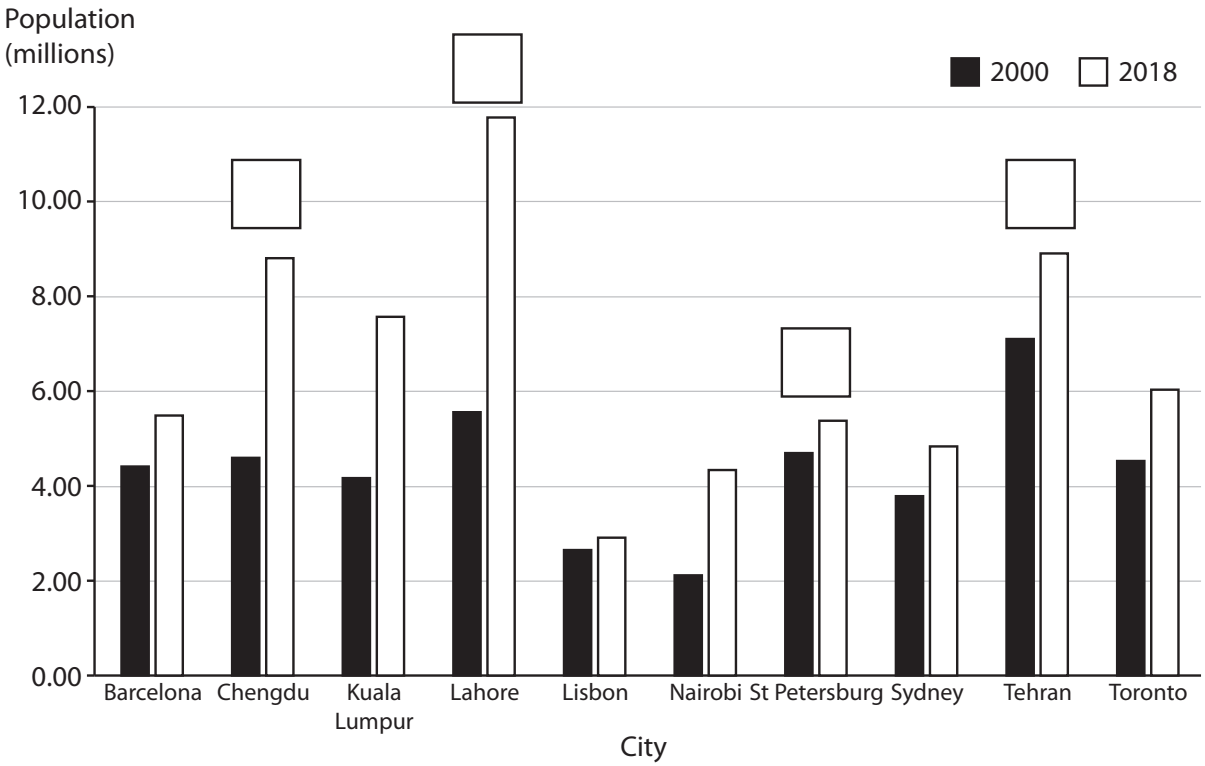


Figure 3b

Population sizes for selected cities in 2000 and 2018

(ii) Identify the city, from selected cities below, that has experienced the greatest growth between 2000 and 2018.

(1)

☒	**A** Chengdu
☒	**B** Lisbon
☒	**C** St Petersburg
☒	**D** Toronto

(iii) State **one** factor that affects the emergence of megacities.

(1)

(e) For an urban area in a named developing or emerging country explain how **two** different groups of people manage social challenges.

(4)

Named developing or emerging country .....

Group 1

Group 2

(f) Study Figure 3c in the Resource Booklet.

Analyse the reasons why there are varied patterns of urban growth.

(8)



Figure 3a

An urban area

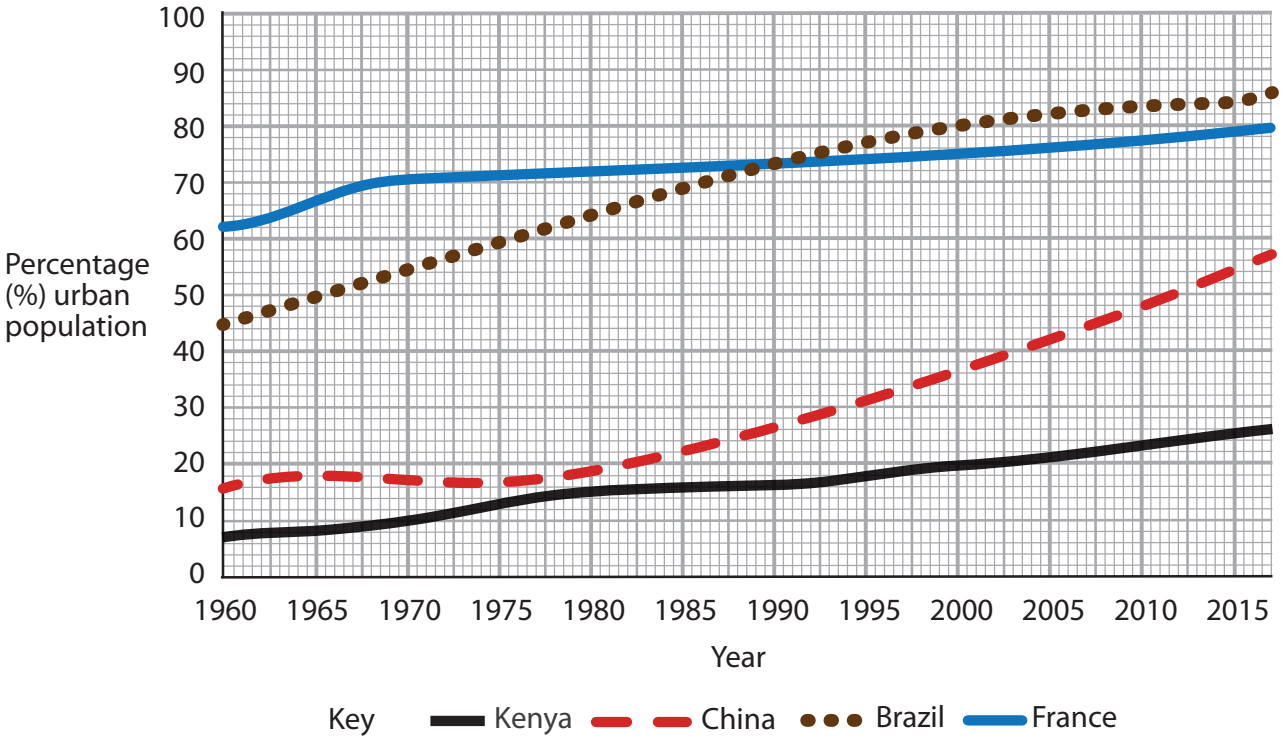


Figure 3c

Trends in urban population for selected countries, 1960–2016

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

3 Urban environments

(a) (i) Define the term **suburbanisation**.

(1)

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(ii) Identify **two** problems associated with rapid urban growth.

(2)

☒	**A** Increased traffic congestion
☒	**B** Increased availability of transport routes
☒	**C** Increased pesticide use
☒	**D** Reduced access to health services
☒	**E** Reduced leisure facilities
☒	**F** Reduced air pollution

(b) Study Figure 3a in the Resource Booklet.

(i) Suggest **one** reason why this area is likely to be part of a rural-urban fringe.

(2)

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(ii) Identify the meaning of the term **brownfield site**.

(1)

☒	**A** Rural land allocated specifically for a new development.
☒	**B** Land that has been previously used for industrial or commercial purposes, abandoned and now waits new use.
☒	**C** Urban park land that has been designated for industrial or commercial purposes.
☒	**D** Land that has never been used and awaits new use for industrial or commercial purposes.

(c) Explain **two** factors that can affect urban land use patterns.

(4)

1 .....

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(d) Study Figure 3b below.

(i) Label, with an X in the box, the city with the PM10 (particulate matter) levels between 50 and 100 µg/m^3.

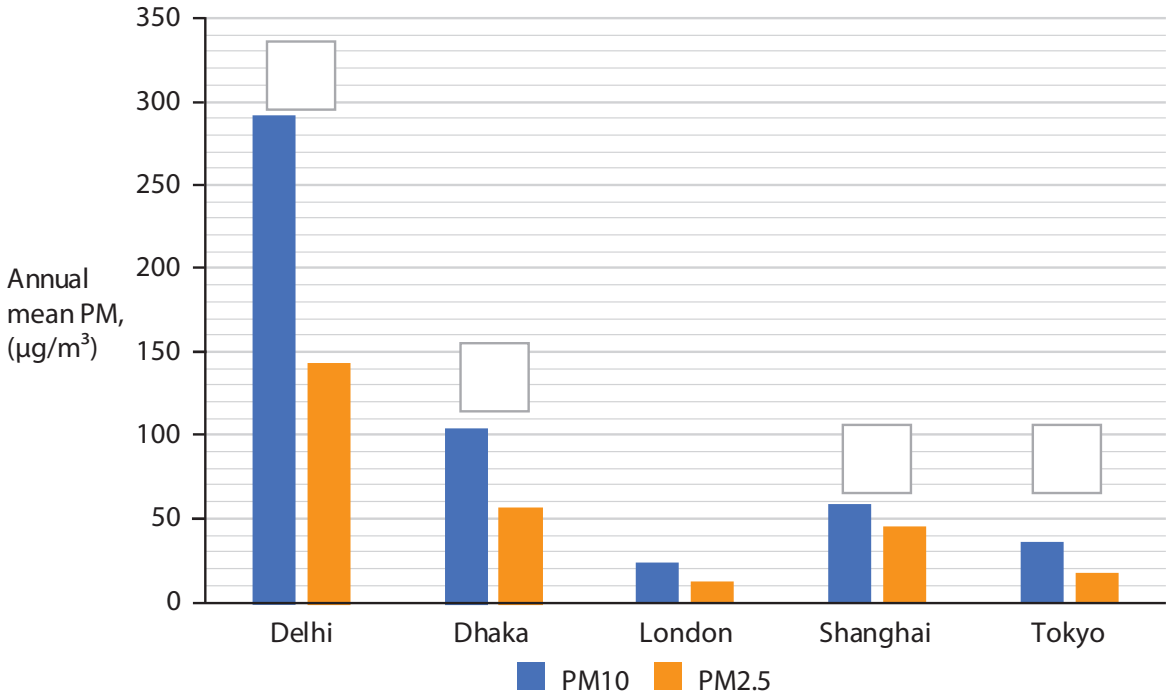


Figure 3b

Air pollution (particulate matter – PM) in selected cities, 2016

(1)

(ii) Identify the city that has the greatest difference between PM10 and PM2.5 levels.

(1)

☒	**A** Delhi
☒	**B** Dhaka
☒	**C** London
☒	**D** Shanghai

(iii) State **one** cause of air pollution in urban areas.

(1)

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(e) For a named developing or emerging country, explain **two** strategies used to improve quality of life in an urban area.

(4)

Named developing or emerging country .....

Strategy 1

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Strategy 2

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(f) Study Figure 3c in the Resource Booklet.

Analyse the factors that affect the growth of megacities.

(8)

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Figure 3a

Photograph of a UK landscape

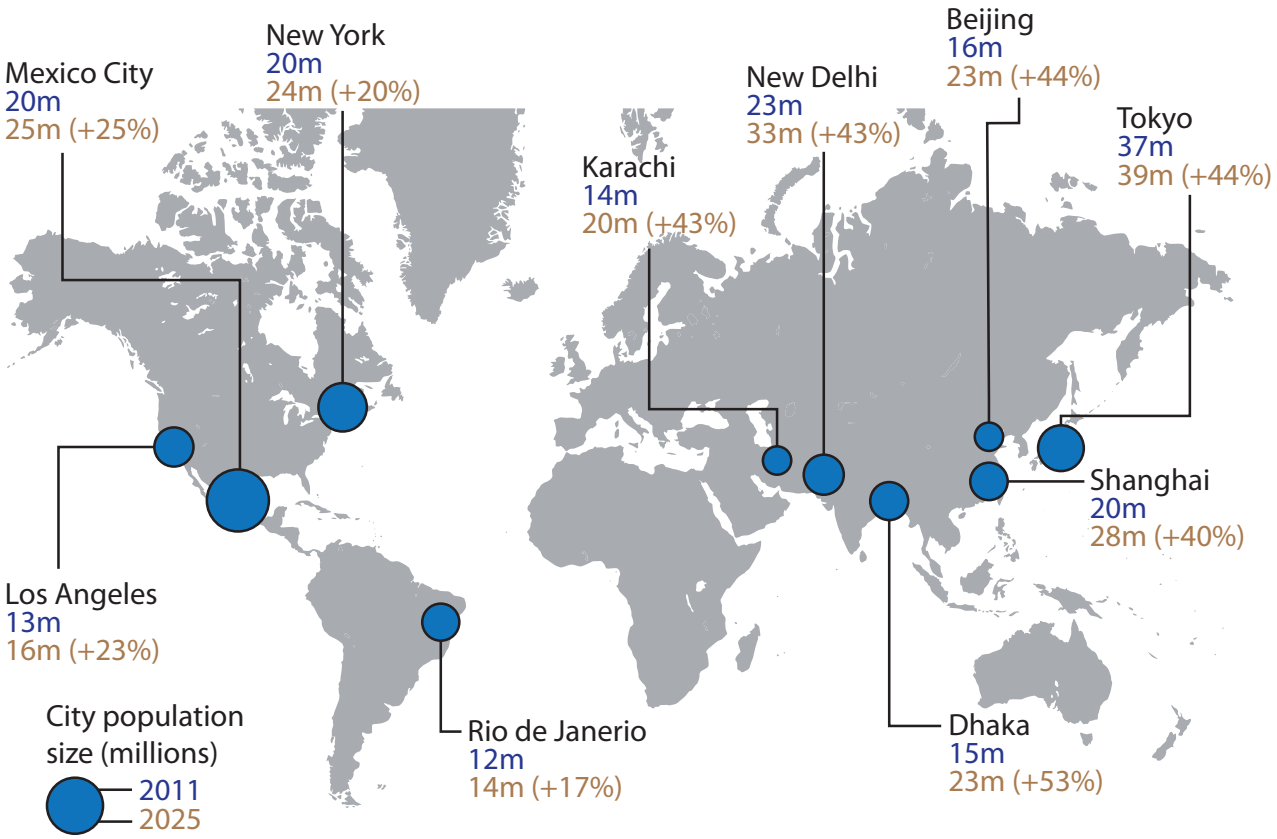


Figure 3c

Global map of predicted population growth in selected megacities



Figure 3a

Photograph of a UK landscape

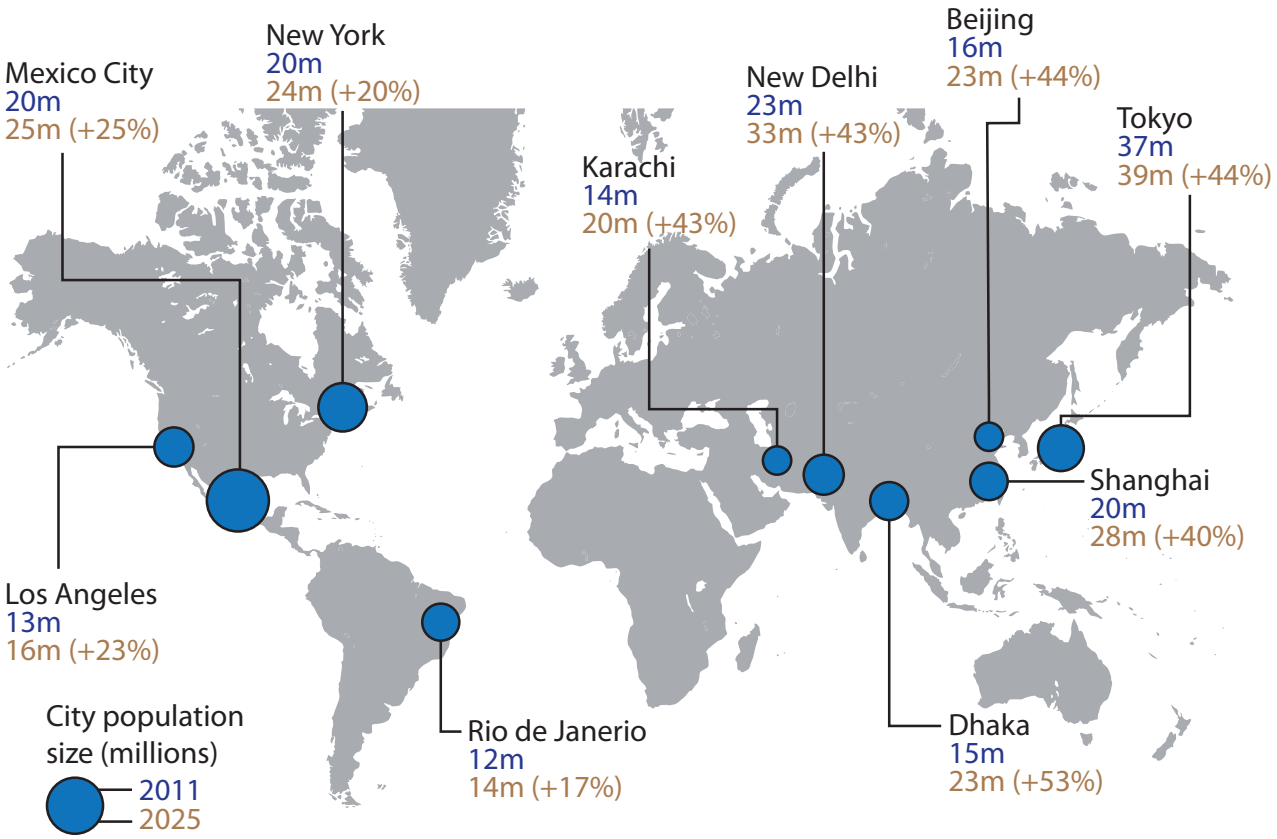


Figure 3c

Global map of predicted population growth in selected megacities

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

3 Urban environments

(a) (i) Identify **one** advantage of building on a brownfield site.

(1)

- ☒ **A** land and buildings need to be cleared first.
- ☒ **B** reduces loss of countryside.
- ☒ **C** may need to remove contaminated material.
- ☒ **D** involves building on the greenbelt.

(ii) State **one** problem associated with rapid urbanisation.

(1)

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(b) Identify **one** feature often found in the rural-urban fringe.

(1)

- ☒ **A** business park
- ☒ **B** high street shops
- ☒ **C** bus station
- ☒ **D** skyscraper buildings

(c) Study Figure 3a in the Resource Booklet.

Suggest **one** factor that may have affected the decision to locate the factory in this area.

(2)

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(d) Define the term **megacity**.

(1)

(e) Explain **two** factors that have led to suburbanisation.

(4)

1

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(f) Study Figure 3b in the Resource Booklet.

Suggest **one** reason for the trends shown.

(3)

(g) Explain **two** strategies used to manage challenges in squatter settlements.

(4)

1

2

(h) Study Figure 3c in the Resource Booklet.

Analyse the environmental challenges facing urban areas in developed countries. **(8)**



Figure 3a

Aerial photo of a factory in New Orleans, United States of America

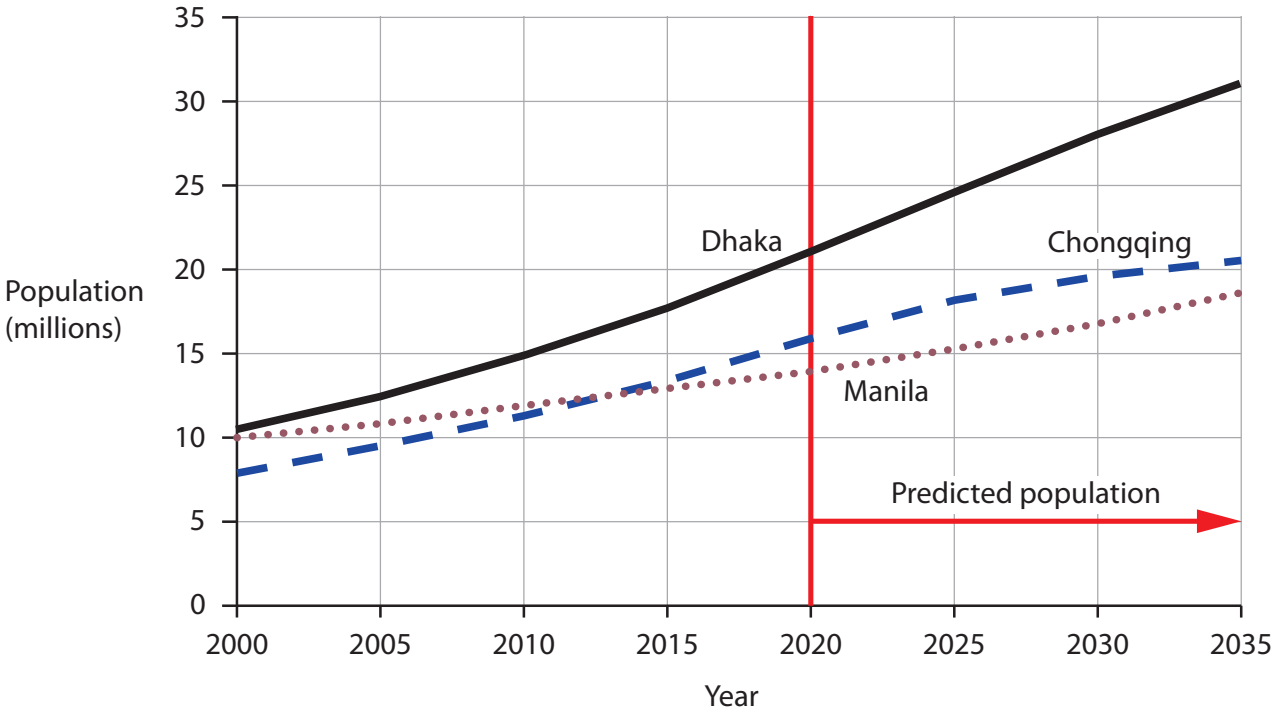


Figure 3b

Population and predicted population of selected megacities, 2000–2035

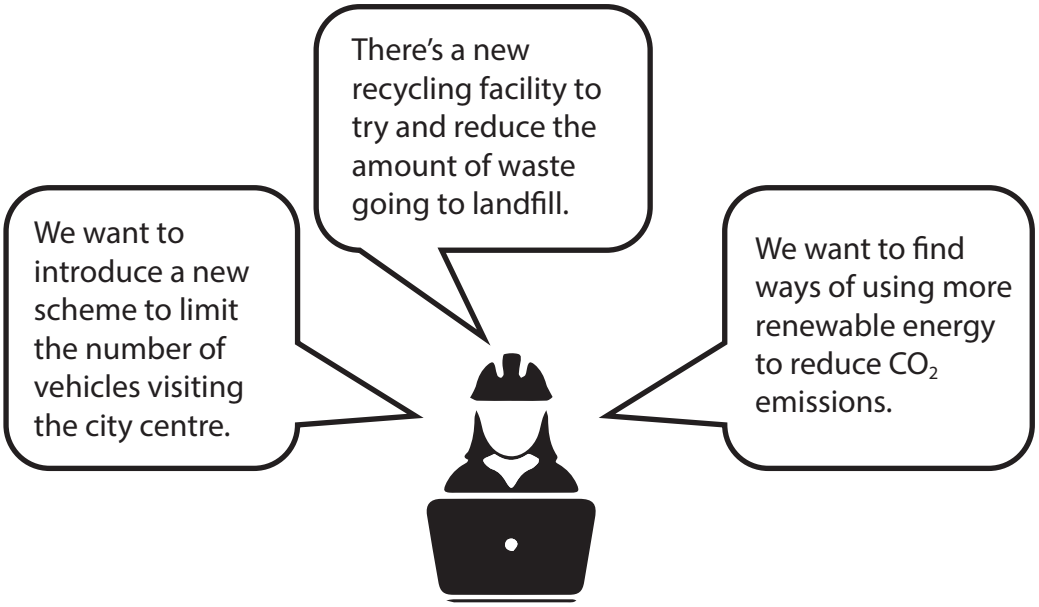


Figure 3c

Comments from a planner in London, United Kingdom

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

3 Urban environments

(a) (i) Identify **one** advantage of building on a greenfield site.

(1)

- ☒ **A** It is more expensive to build on.
- ☒ **B** It is cheaper to build on.
- ☒ **C** Infrastructure will need to be installed.
- ☒ **D** Wildlife and habitats are lost.

(ii) State **one** factor affecting the rate of urbanisation.

(1)

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(b) Identify the minimum population of a megacity.

(1)

- ☒ **A** 1 million people
- ☒ **B** 5 million people
- ☒ **C** 10 million people
- ☒ **D** 20 million people

(c) Study Figure 3a in the Resource Booklet.

Suggest **one** piece of evidence that shows this urban area may have experienced rapid urbanisation.

(2)

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(d) Define the term **informal employment**.

(1)

(e) Explain **two** factors that have contributed to counter-urbanisation.

(4)

1

2

(f) Study Figure 3b in the Resource Booklet.

Suggest **one** reason for the trend shown.

(3)

(g) Explain **two** strategies designed to improve quality of life in urban areas in a developed country.

(4)

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(h) Study Figure 3c in the Resource Booklet.

Analyse the social challenges facing urban areas in developing or emerging countries.

(8)

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Figure 3a

An urban area in São Paulo, Brazil

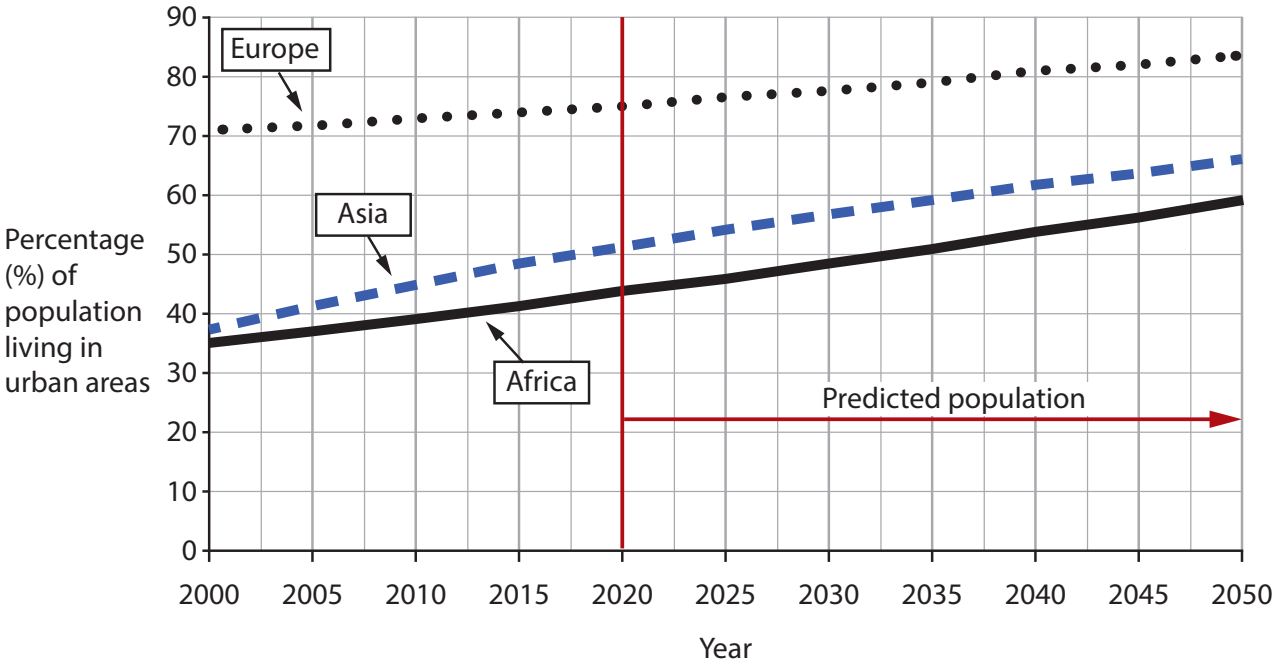


Figure 3b

Percentage (%) of population, and predicted population, living in urban areas for selected regions, 2000–2050



Figure 3c

Comments from a city official in Dhaka, Bangladesh

3 Urban environments

(a) (i) Identify the location where you would usually find a science park.

(1)

- ☒ **A** central business district
- ☒ **B** city centre
- ☒ **C** remote rural location
- ☒ **D** rural-urban fringe

(ii) State **one** reason why suburbanisation occurs.

(1)

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(b) Identify a factor that can affect urban land use values.

(1)

- ☒ **A** food supplies
- ☒ **B** temperature
- ☒ **C** international aid
- ☒ **D** transport connections

(c) Study Figure 3a in the Resource Booklet.

Explain **one** advantage of building on a brownfield site.

(2)

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(d) Define the term **segregation**.

(1)

(e) Explain **two** factors that have led to the emergence of megacities.

(4)

1

2

(f) Study Figure 3b in the Resource Booklet.

Suggest **one** reason for a trend shown.

(3)

(g) For a named developed country, explain how **two** different groups of people manage environmental urban challenges.

(4)

Named developed country

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(h) Study Figure 3c in the Resource Booklet.

Analyse the environmental problems associated with rapid urbanisation.

Refer to the resource in your answer.

(8)

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(Source: © Hans Blossey/Alamy Stock Photo)

Figure 3a

Photograph of a brownfield site in Mülheim Ruhr harbour, Germany

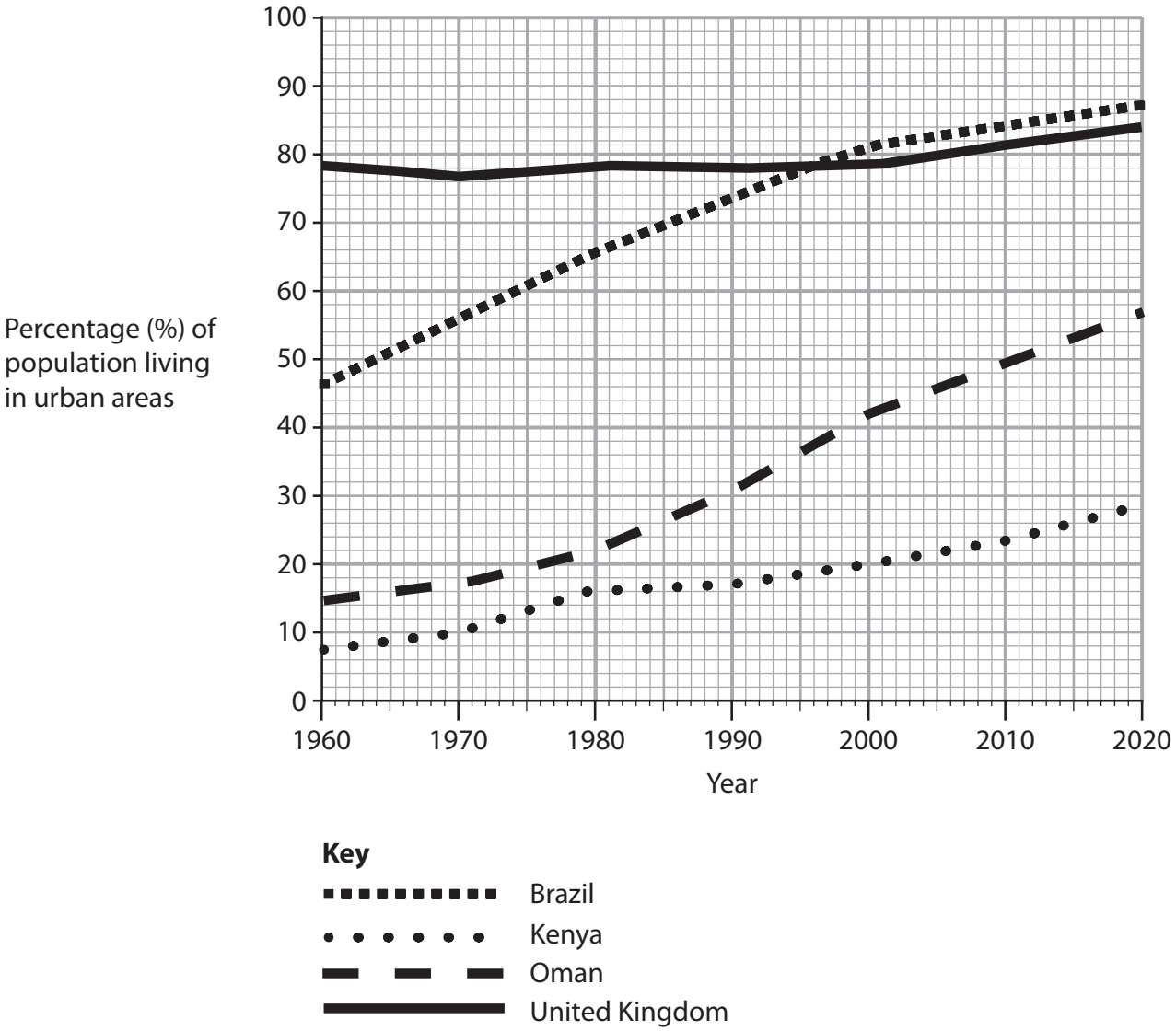


Figure 3b

Percentage (%) of population living in urban areas in selected countries, 1960–2020

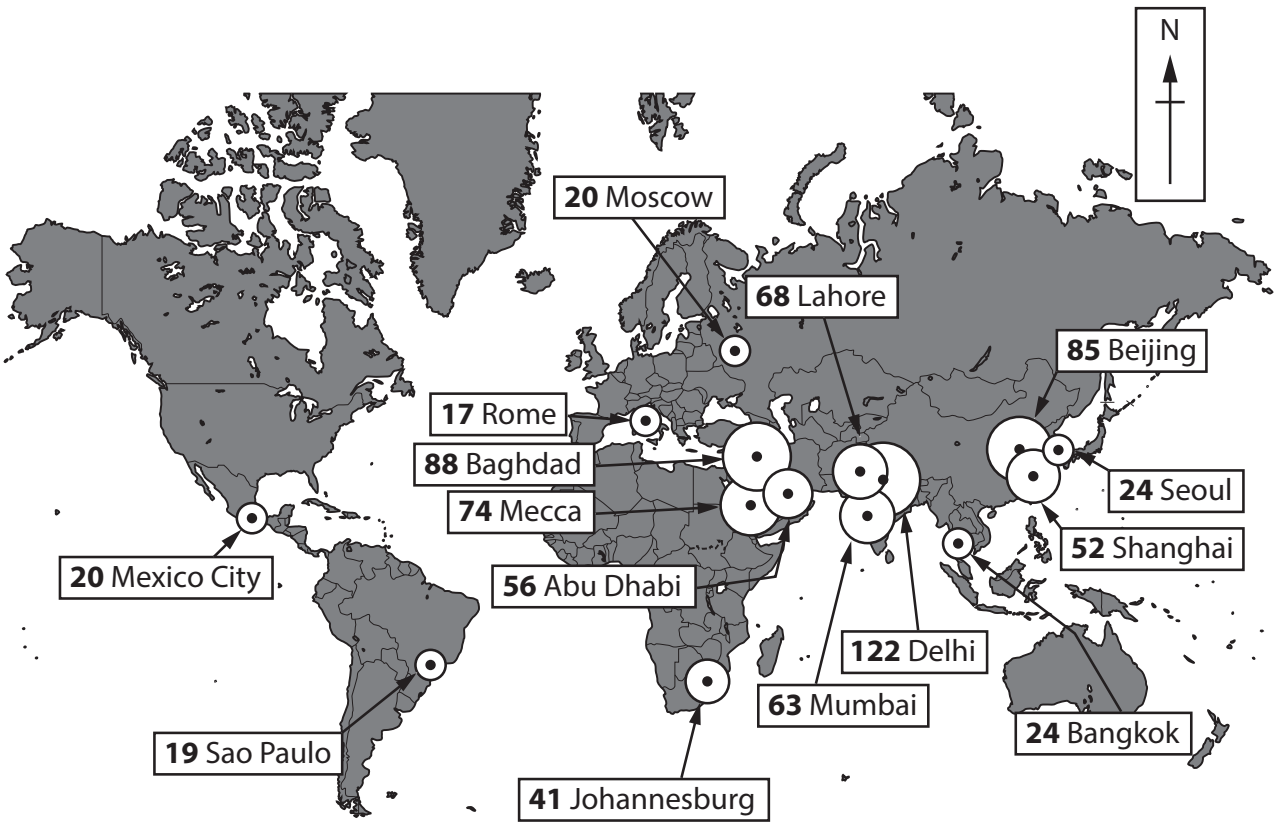


Figure 3c

Map of how air pollution varies across the world's cities, 2019
(PM 2.5 fine particulate material in the air contributing to air pollution)

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

3 Urban environments

(a) (i) Identify the feature you would expect to find in a city centre.

(1)

- ☒ **A** theme park
- ☒ **B** houses with large gardens
- ☒ **C** business park
- ☒ **D** financial district

(ii) State **one** reason for changing land values in different areas of a city.

(1)

.....

.....

(b) Identify a factor that can affect land use patterns.

(1)

- ☒ **A** infrastructure
- ☒ **B** international agreements
- ☒ **C** GDP per capita
- ☒ **D** weather

(c) Study Figure 3a in the Resource Booklet.

Suggest **one** advantage of building on the greenfield site shown.

(2)

.....

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.....

(d) Define the term **counter-urbanisation**.

(1)

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.....

(e) Explain **two** factors that affect the rate of urbanisation.

(4)

1 .....

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2 .....

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(f) Study Figure 3b in the Resource Booklet.

Suggest **one** reason for a trend shown.

(3)

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(g) For a named developing or emerging country, explain how **two** groups of stakeholders are trying to manage environmental urban challenges.

(4)

Named developing or emerging country

.....

1 .....

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(h) Study Figure 3c in the Resource Booklet.

Analyse the transport problems associated with rapid urbanisation.

Refer to the resource in your answer.

(8)



(Source: © mauritius images GmbH/Alamy Stock Photo)

Figure 3a

Photograph of a greenfield site in North Rhine-Westphalia, Germany

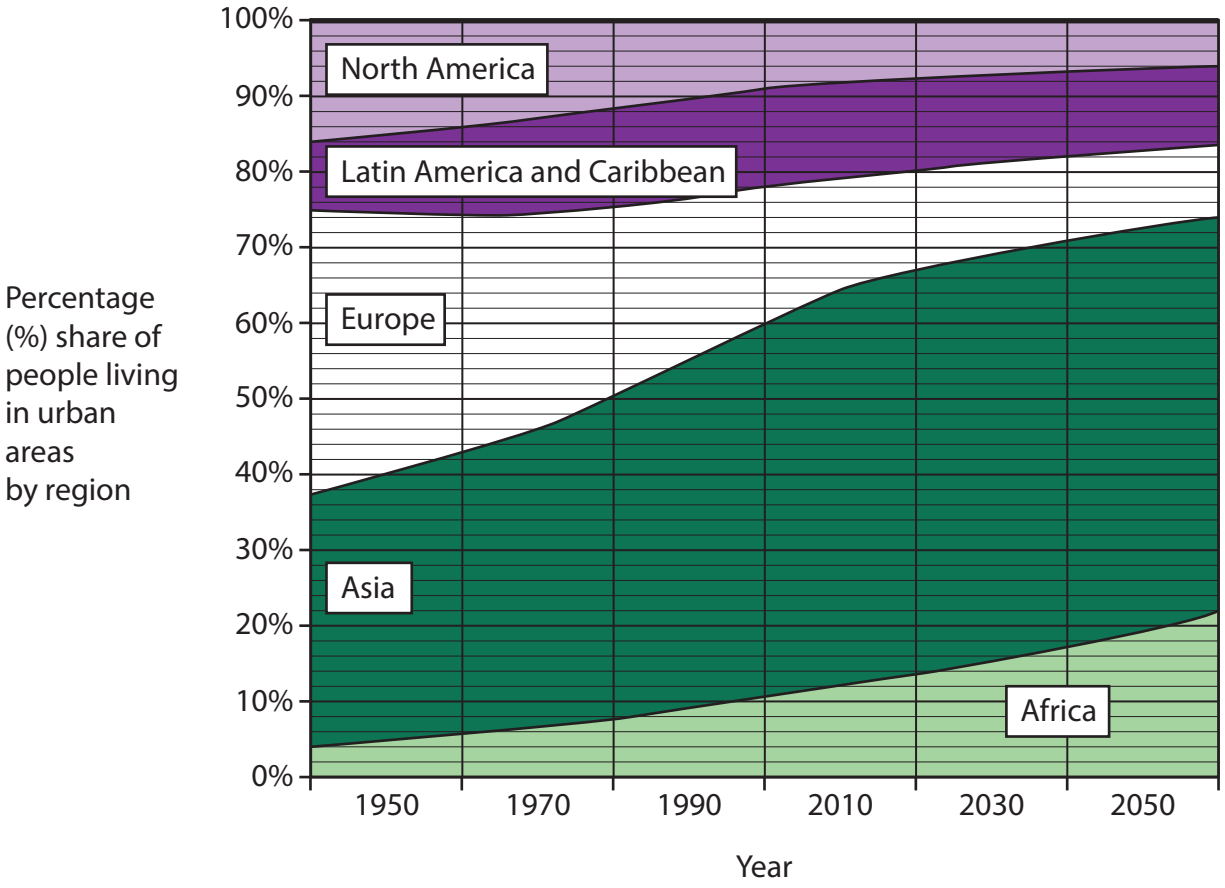
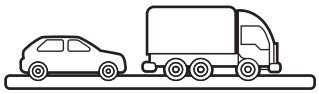


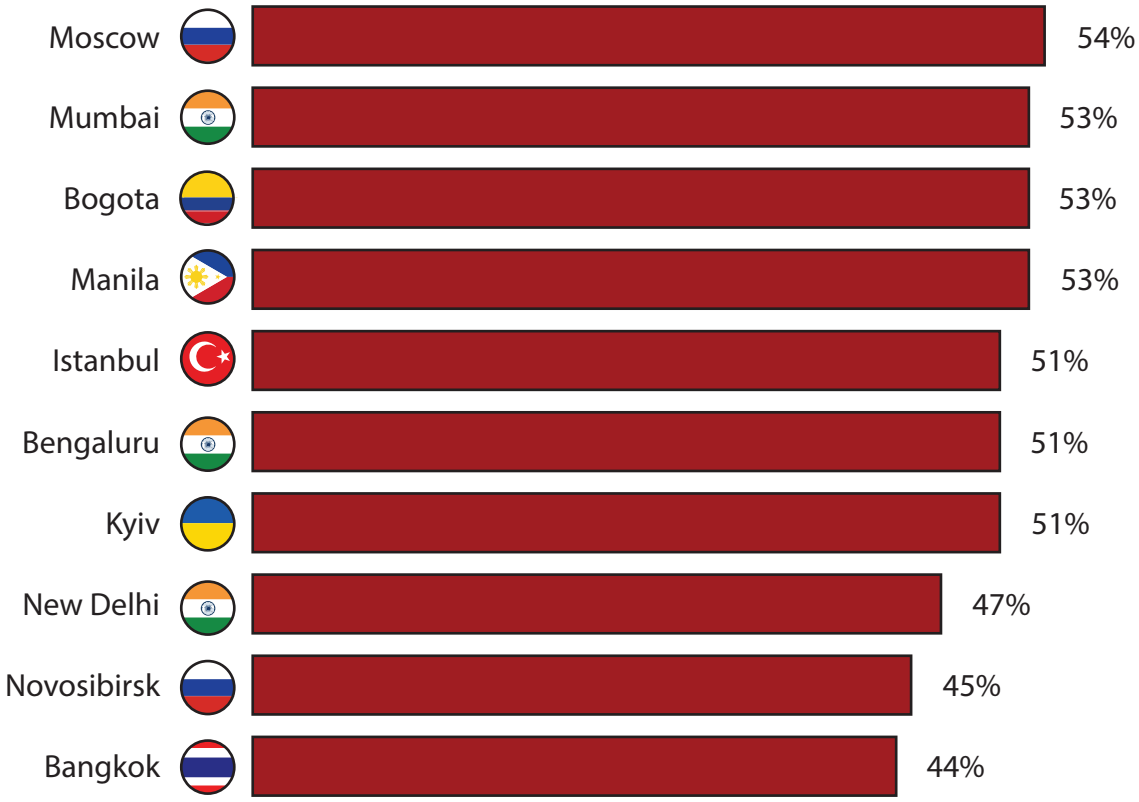
Figure 3b

Percentage (%) of population living in urban areas by region, 1950–2020 and projection to 2050

The cities with the worst traffic congestion

Cities with the highest average traffic congestion levels in 2020*





*0% = uncongested free flow of traffic –
e.g. 35% congestion means the extra travel time is 35% more than the average trip in uncongested conditions.

Figure 3c

Information on traffic congestion in selected cities

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

3 Urban environments

(a) (i) Identify **one** strategy used to make cities more environmentally sustainable.

(1)

- ☒ **A** increased number of car parks
- ☒ **B** increased network of cycle lanes
- ☒ **C** increased shopping facilities
- ☒ **D** increased healthcare services

(ii) State **one** way politicians can manage challenges in a city.

(1)

.....

.....

(b) Identify **one** factor that can lead to increased urbanisation.

(1)

- ☒ **A** air pollution
- ☒ **B** farm diversification
- ☒ **C** high urban crime rate
- ☒ **D** employment

(c) Study Figure 3a which shows a land use map for an area of Virginia, USA.

Suggest **one** factor that may have affected the land use patterns shown.

(2)

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.....

(d) State where in an urban area you would be most likely to find a science park.

(1)

.....

(e) Explain **one** advantage and **one** disadvantage of building housing estates on the rural-urban fringe.

(4)

Advantage

Disadvantage

(f) Study Figure 3b in the Resource Booklet which shows urban and rural populations in the United States.

Suggest **one** factor that may have caused the trend shown.

(3)

(g) For a named developing or emerging country, explain **two** challenges caused by rapid urbanisation.

(4)

Named developing or emerging country

1

(h) Study Figure 3c in the Resource Booklet.

Analyse the benefits of building on brownfield sites.

Refer to the resource in your answer.

(8)

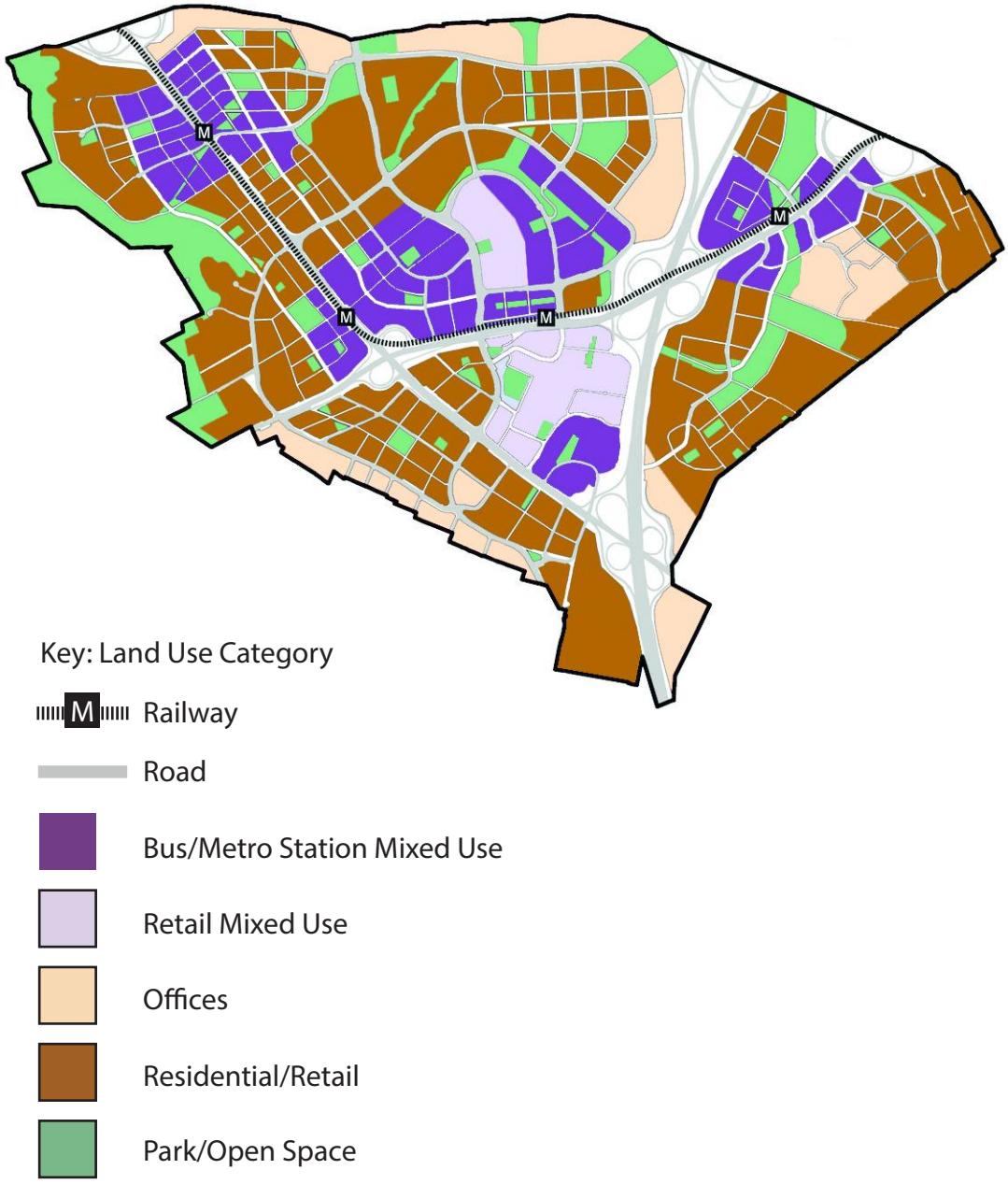


Figure 3a

Land use map of an urban area in Virginia, United States

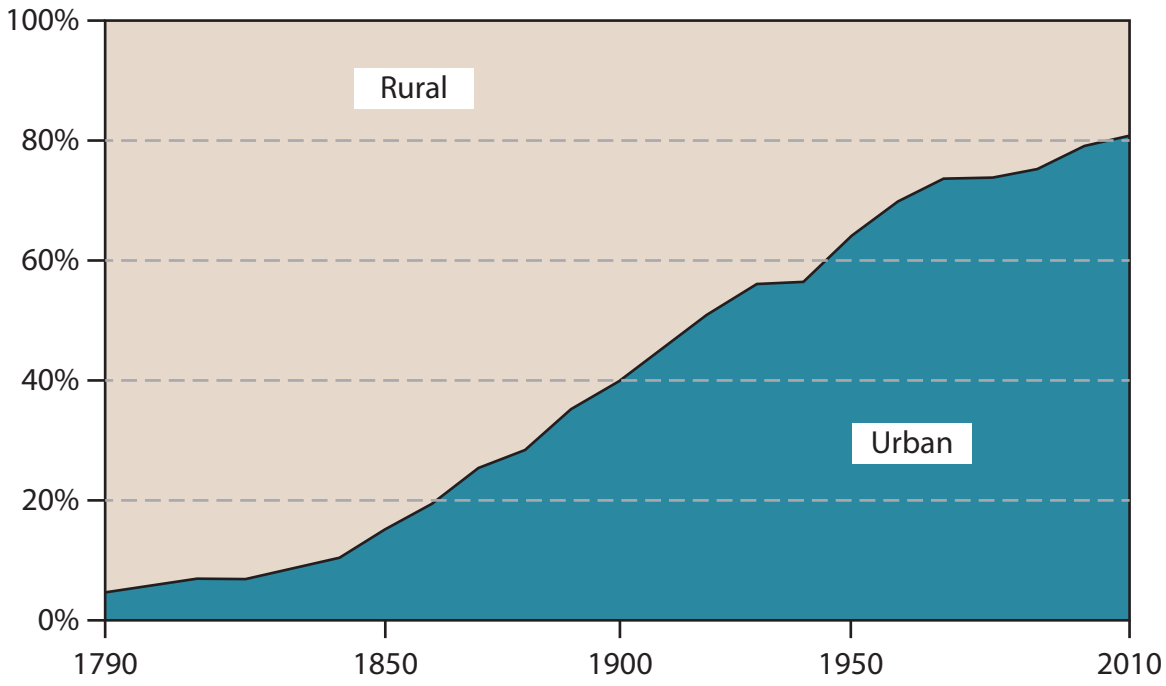


Figure 3b

Urban and rural populations in the United States, 1790–2010

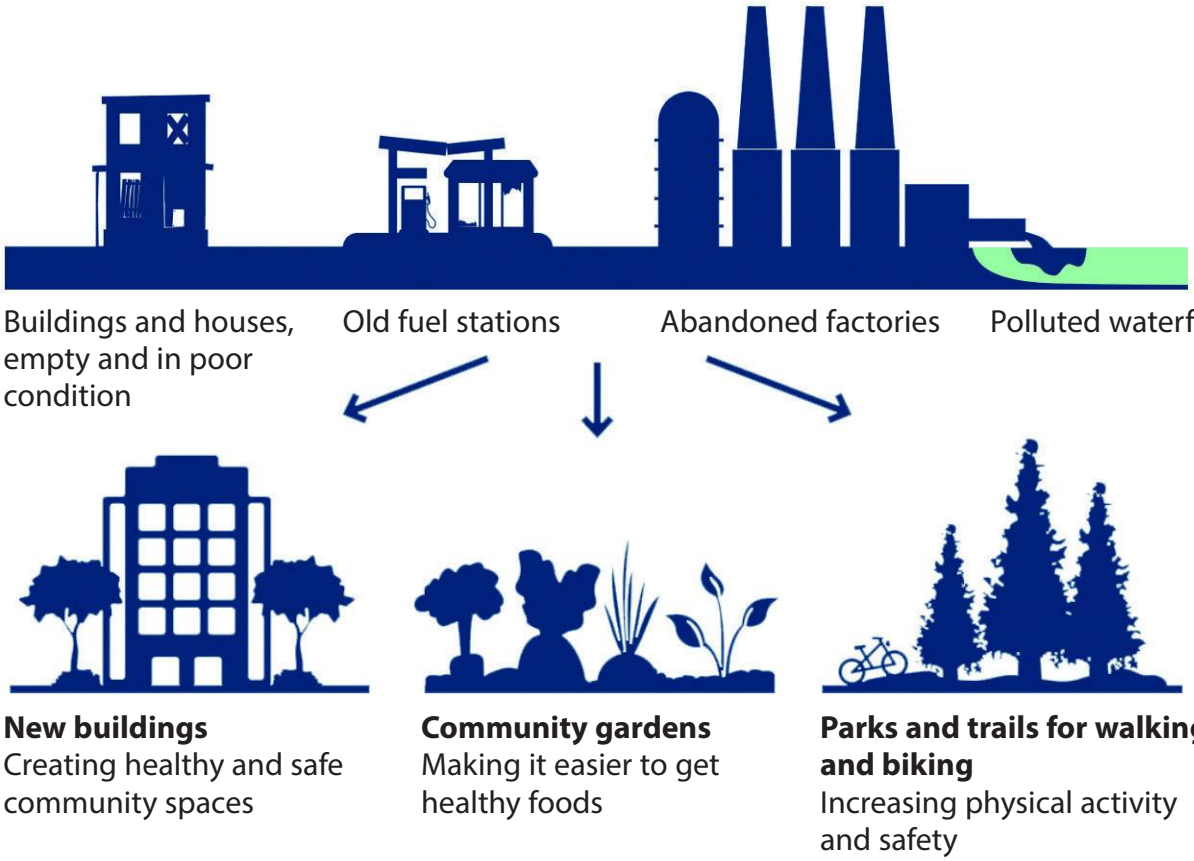


Figure 3c

Information about brownfield site developments in the United States

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

3 Urban environments

(a) (i) Identify which **one** of the following cities is a megacity.

(1)

- ☒ **A** Chennai, India – 11.9 million people
- ☒ **B** Luanda, Angola – 7.8 million people
- ☒ **C** Rome, Italy – 4.3 million people
- ☒ **D** Toronto, Canada – 6.4 million people

(ii) Define the term **suburbanisation**.

(1)

.....

.....

(b) Identify **one** reason for building on the rural-urban fringe.

(1)

- ☒ **A** to support biodiversity in the area
- ☒ **B** to preserve the greenbelt
- ☒ **C** population growth
- ☒ **D** to be close to the Central Business District (CBD)

(c) Study Figure 3a in the Resource Booklet.

Suggest **one** reason for a type of land use that could be found in the urban area shown.

(2)

.....

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(d) State **one** group of stakeholders who can help improve the quality of life in urban areas.

(1)

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(e) Explain **two** challenges caused by the informal economy in cities.

(4)

1 .....

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2 .....

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(f) Study Figure 3b in the Resource Booklet.

Suggest **one** way rapid urbanisation could have affected a trend shown.

(3)

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(g) For a named developing or emerging country, explain **two** ways transport has been improved in urban areas.

(4)

Named developing or emerging country

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1 .....

.....

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(h) Study Figure 3c in the Resource Booklet.

Analyse the possible reasons for the changes shown.

You **must** refer to the resource in your answer.

(8)

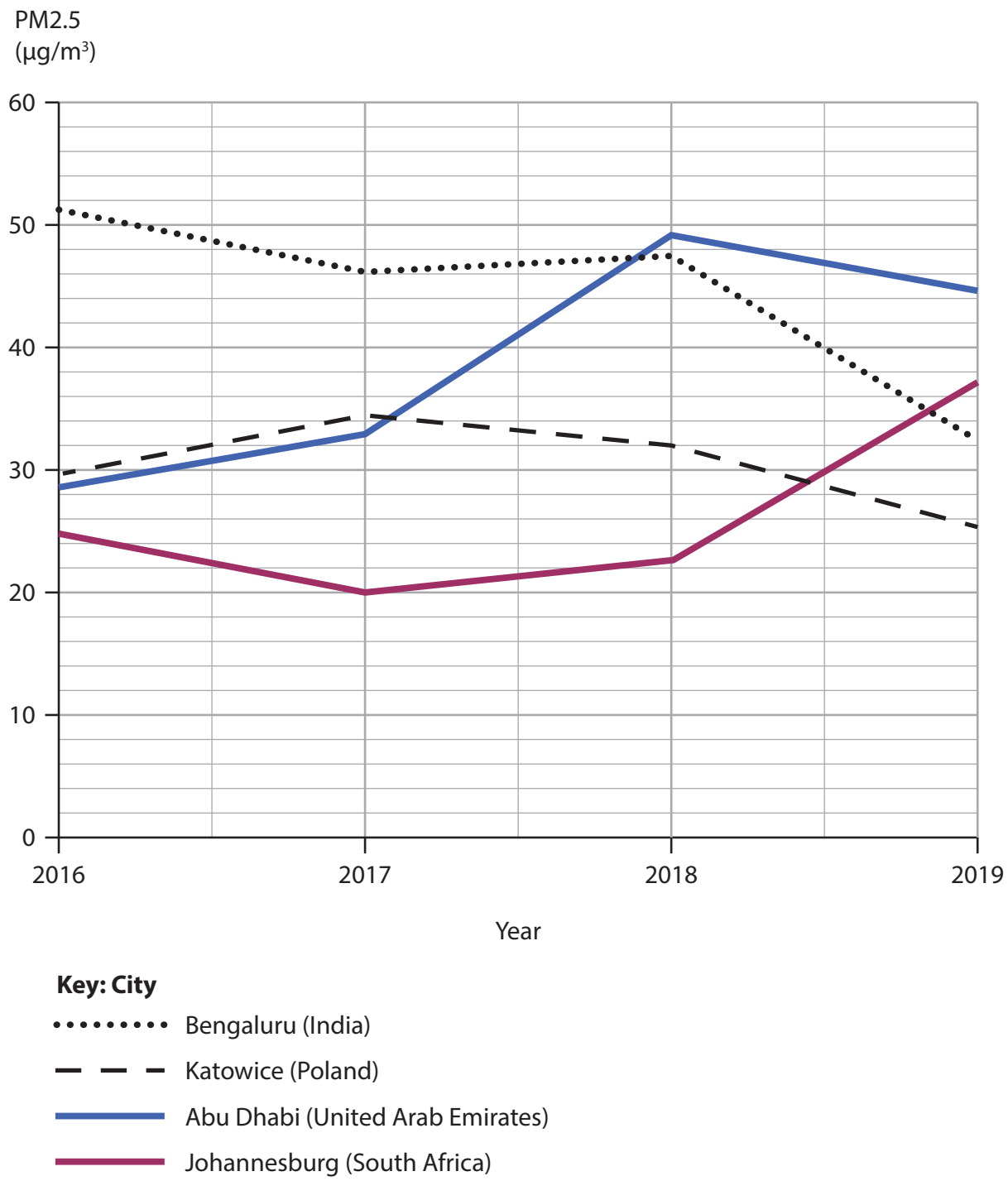


Figure 3b

Air quality in selected cities

Note: Particulate matter 2.5 (PM2.5), refers to tiny particles or droplets in the air that are 2.5 microns or less in width.

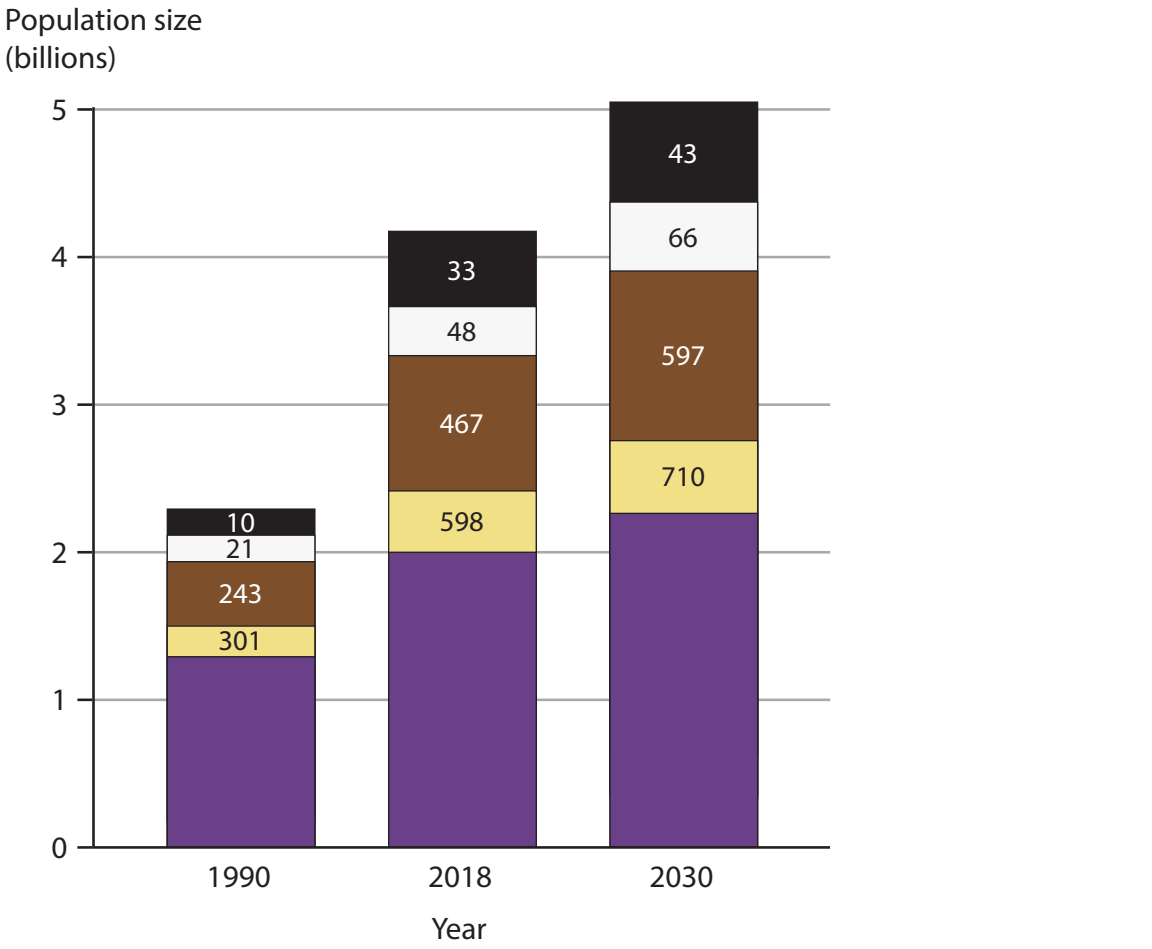


Figure 3c

Global urban population and city numbers, 1990, 2018 and projections to 2030, by size of city

Note: numbers on bars indicate the number of each city type
*Number in Small cities category unknown

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Acknowledgements

Pearson Education Ltd. gratefully acknowledges all the following sources used in the preparation of this paper:

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Figure 3a: https://en.m.wikipedia.org/wiki/File:Frankfurt_am_Main,_Germany,_March_25,_2018_SkySat.jpg

Figure 7c: © GraphicsRF.com/Shutterstock

3 Urban environments

(a) (i) Identify which **one** of the following cities is a megacity.

(1)

- ☒ **A** Bogota, Colombia – 7.4 million
- ☒ **B** Chattogram, Bangladesh – 5.4 million people
- ☒ **C** Lahore, Pakistan – 11.1 million people
- ☒ **D** Zhengzhou, China – 6.7 million people

(ii) Define the term **counter-urbanisation**.

(1)

.....

.....

(b) Identify **one** reason for developing a brownfield site.

(1)

- ☒ **A** land has never been used before
- ☒ **B** costly removal of contaminated waste
- ☒ **C** existing roads and electricity present
- ☒ **D** lots of room to expand

(c) Study Figure 3a in the Resource Booklet.

Suggest **one** factor that has affected the land uses shown.

(2)

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(d) State **one** source of air pollution in cities.

(1)

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(e) Explain **two** ways urbanisation can sometimes cause housing challenges in cities that are growing rapidly.

(4)

1 .....

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2 .....

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(f) Study Figure 3b in the Resource Booklet.

Suggest **one** cause of the percentage of informal employment shown on the resource.

(3)

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(g) For a named developed country, explain **two** strategies used to improve quality of life in urban areas.

(4)

Named developed country

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1 .....

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(h) Study Figure 3c in the Resource Booklet.

Analyse the reasons for rates of past and projected urbanisation.

You **must** refer to the resource in your answer.

(8)

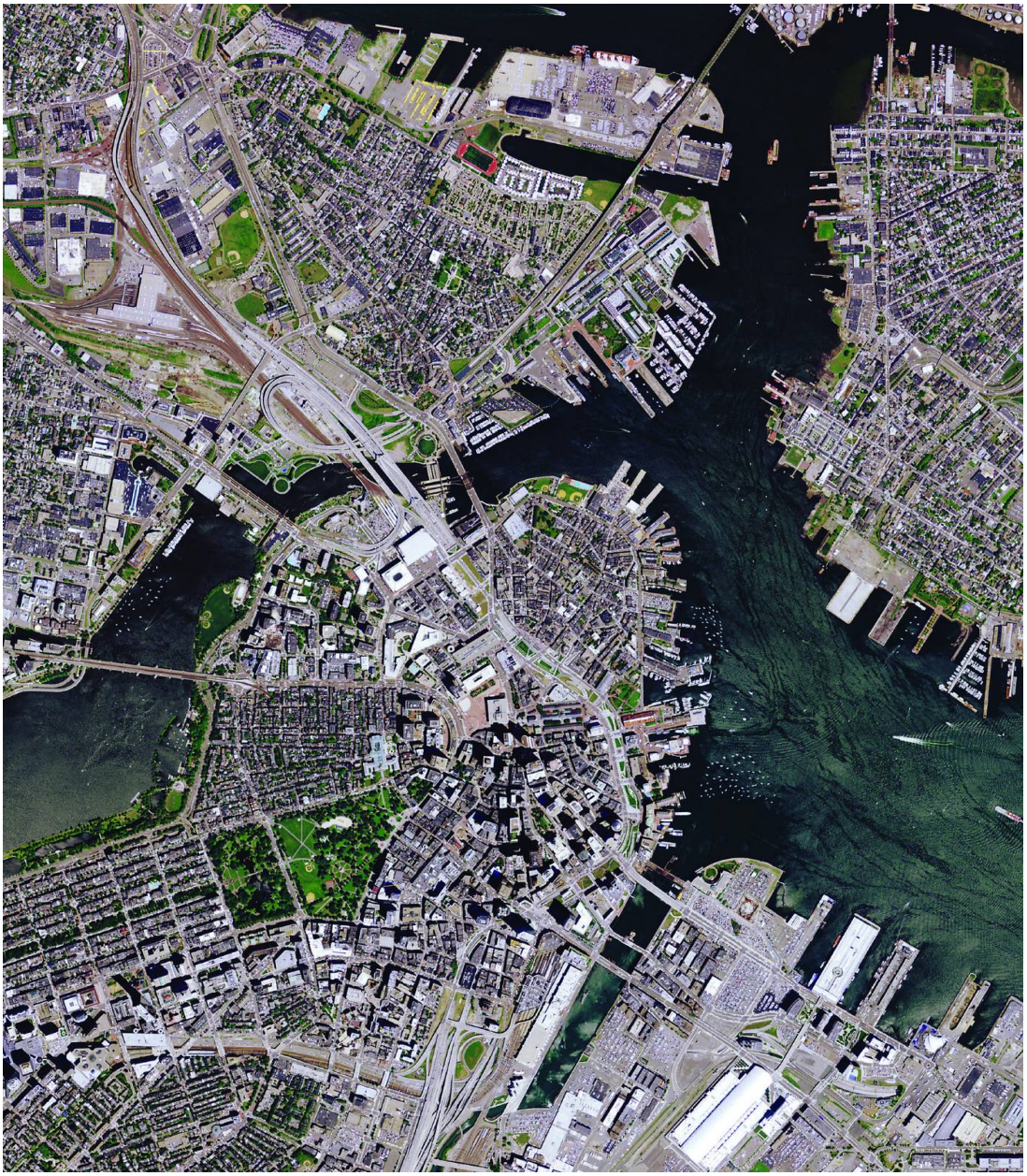


Figure 3a

Aerial photograph of Boston, USA

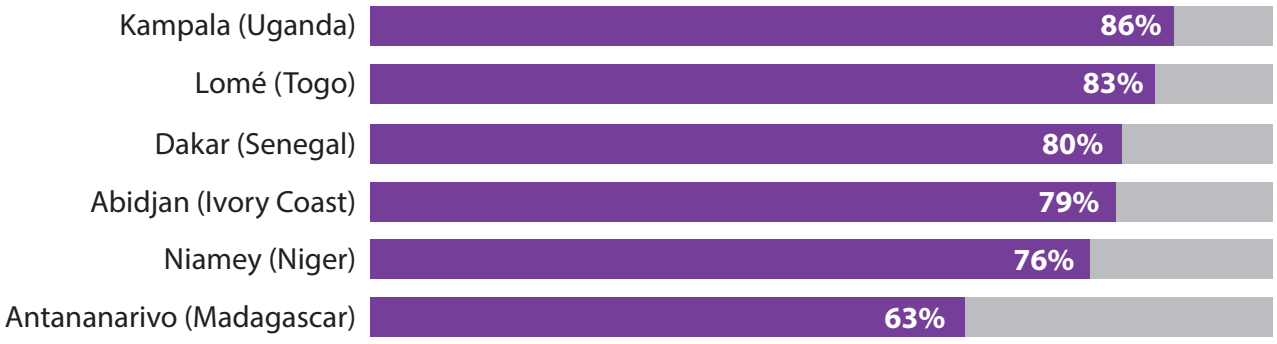


Figure 3b

Informal employment in selected African cities, 2018

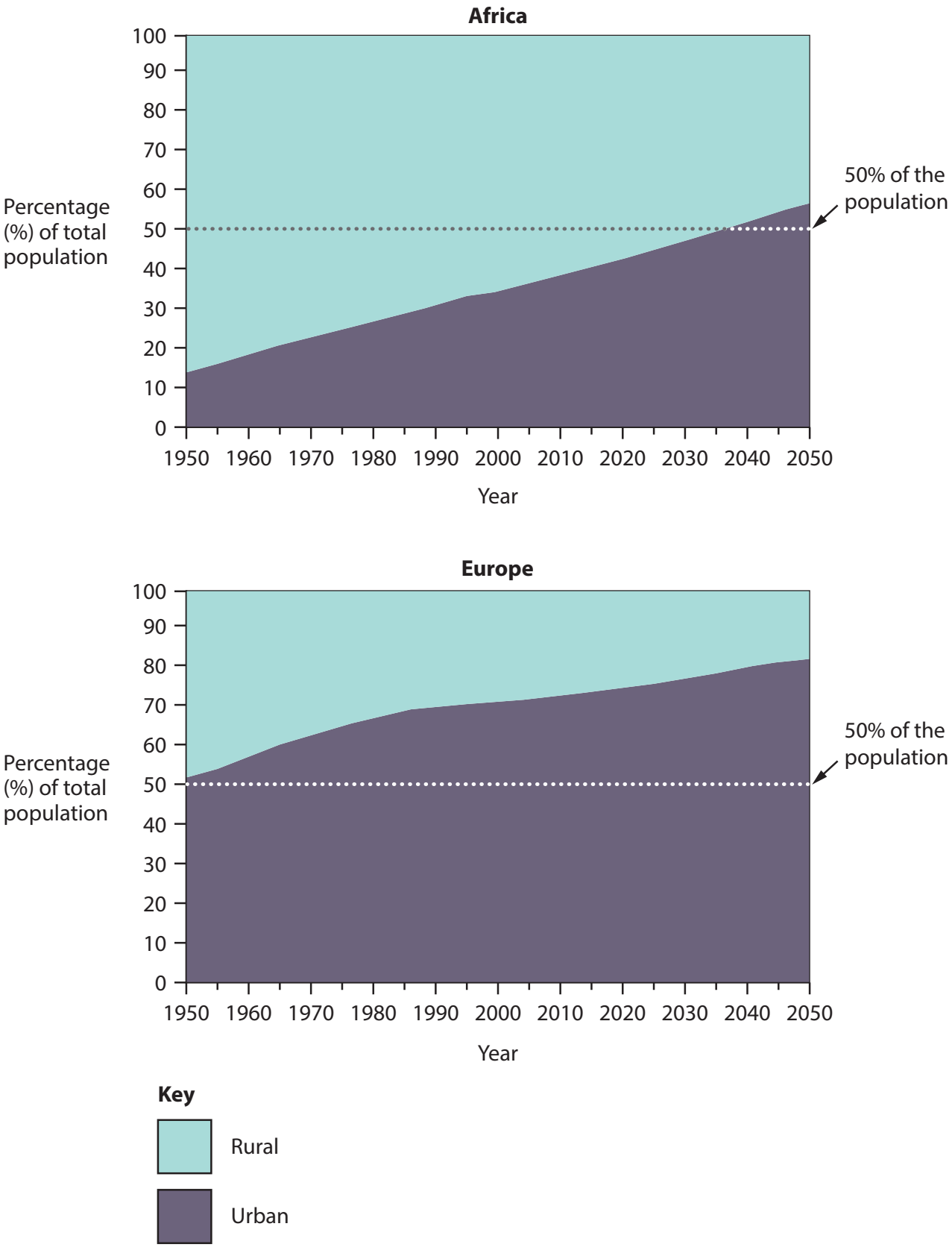


Figure 3c

Rates of past and projected urbanisation in Africa and Europe, 1950–2050

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

3 Urban environments

(a) (i) Identify **one** factor that has slowed down the rate of urbanisation for some areas.

(1)

- ☒ **A** counter-urbanisation
- ☒ **B** parking restrictions
- ☒ **C** rural isolation
- ☒ **D** waste disposal facilities

(ii) State **one** cause of megacity growth.

(1)

.....

.....

(b) Identify **one** region of the world which had the highest rate of urbanisation in the 2020s.

(1)

- ☒ **A** Eastern Europe
- ☒ **B** North America
- ☒ **C** Southeast Asia
- ☒ **D** Western Europe

(c) Study Figure 3a in the Resource Booklet.

Suggest **one** reason why transport is a challenge in urban areas.

(2)

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(d) State **one** food-related challenge for people living in cities.

(1)

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

(4)

1 .....

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2 .....

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(f) Study Figure 3b in the Resource Booklet.

Suggest how a change shown could improve quality of life in cities.

(3)

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(g) There are different groups of people who manage social challenges in cities.

Explain **one** way planners and **one** way property developers manage such challenges.

(4)

planners

property developers

(h) Study Figure 3c in the Resource Booklet.

Analyse the reasons why there are land use changes in cities.

You **must** refer to the resource in your answer.

(8)



Figure 3a

A street in Mumbai, India

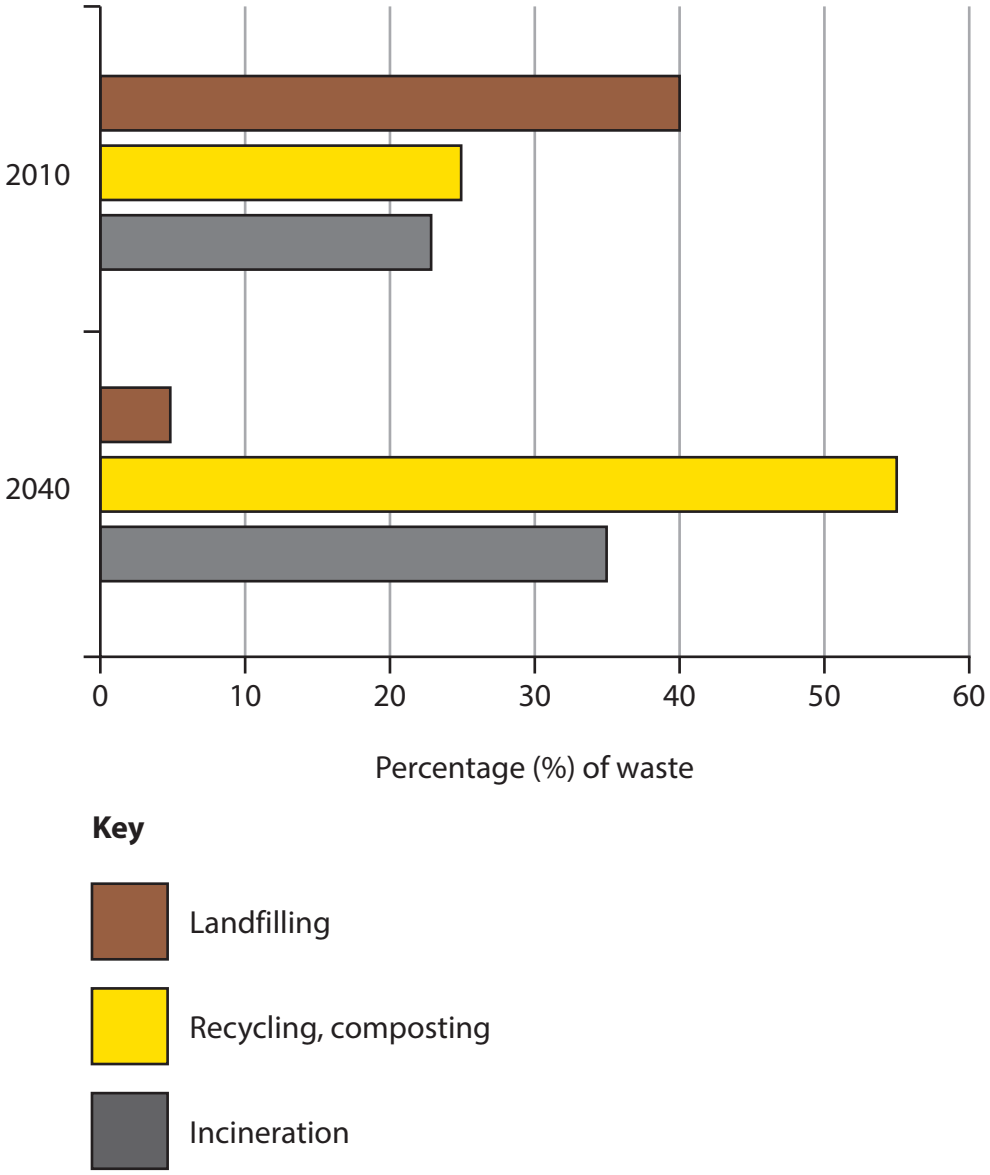


Figure 3b

Predicted changes for waste management for a city in the USA

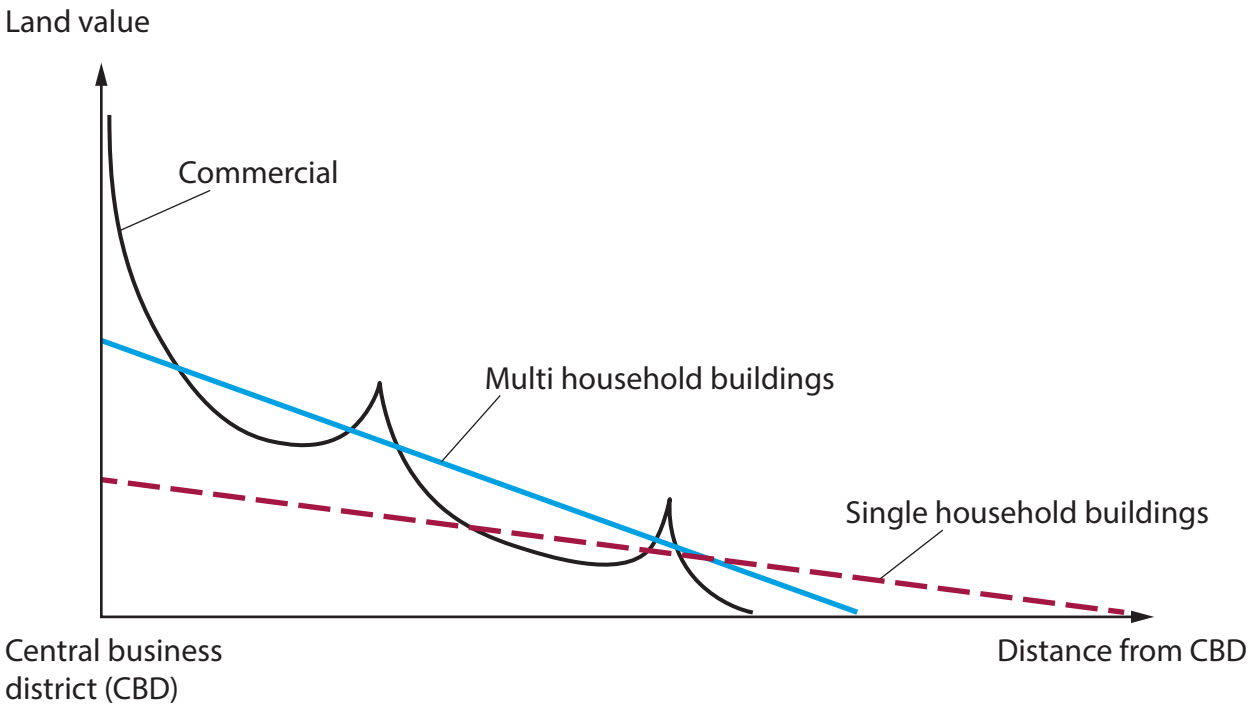


Figure 3c

Land use and land value change in a city

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

3 Urban environments

(a) (i) Identify the correct definition of a megacity.

(1)

- ☒ **A** a city with a population over 1 million people
- ☒ **B** a city with a population over 5 million people
- ☒ **C** a city with a population over 8 million people
- ☒ **D** a city with a population over 10 million people

(ii) State **one** factor that has led to the growth of megacities.

(1)

.....

.....

(b) Identify **one** cause of air pollution in cities.

(1)

- ☒ **A** coal-fired power stations
- ☒ **B** installation of solar panels
- ☒ **C** palm oil plantations
- ☒ **D** use of electric cars

(c) Study Figure 3a in the Resource Booklet.

Suggest **one** way politicians could manage an environmental challenge in this urban area.

You **must** refer to the resource in your answer.

(2)

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(d) State **one** reason why segregation of groups of people in cities can be a challenge.

(1)

(e) Explain **two** reasons for counter-urbanisation.

(4)

1

2

(f) Study Figure 3b in the Resource Booklet.

Suggest **one** way the growth of informal settlements (squatter settlements) may create challenges in urban areas.

You **must** refer to the resource in your answer.

(3)

(g) Explain **two** reasons for the development of the rural-urban fringe.

(4)

1 .....

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2 .....

(h) Study Figure 3c in the Resource Booklet.

Analyse why the strategies shown could improve the quality of life in cities in developing or emerging countries.

You **must** refer to the resource in your answer.

(8)

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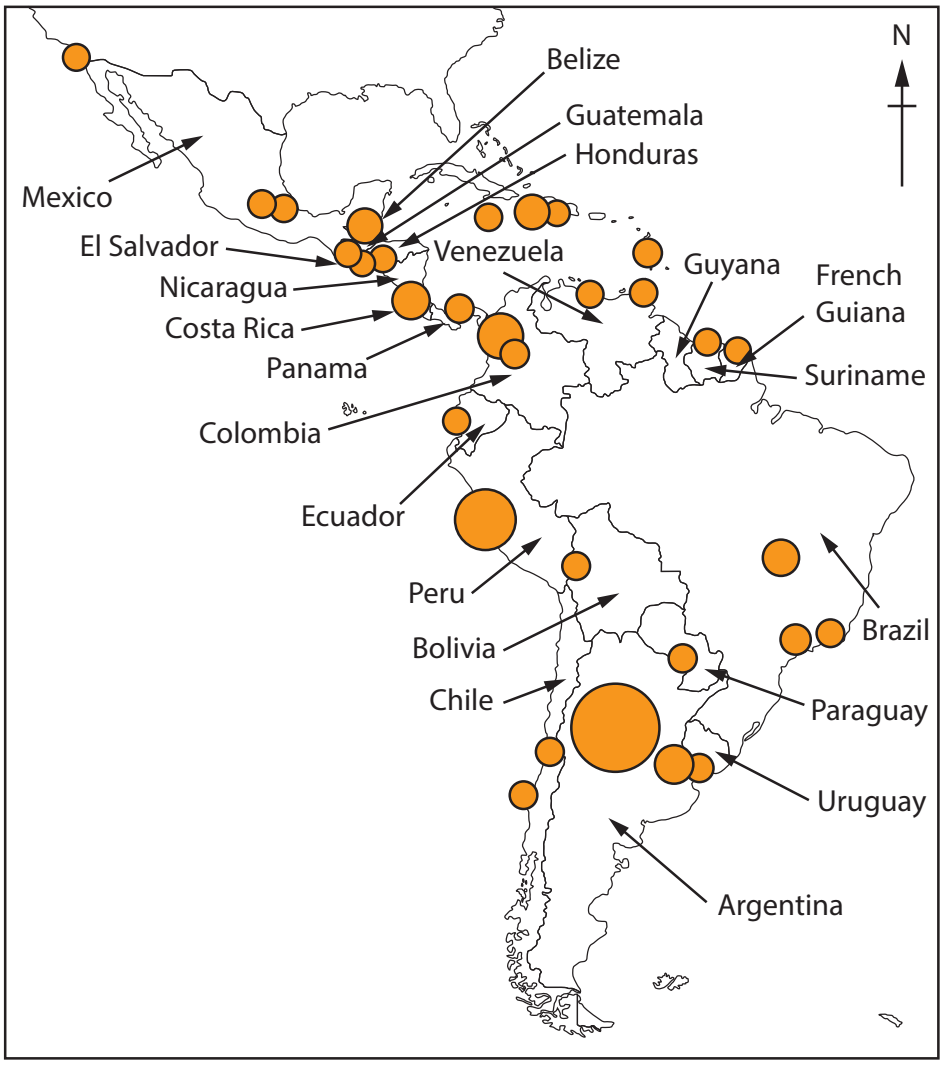
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Figure 3a

River in an urban area



Key: Percentage growth per year

- 0 – 4
- 4.1 – 17
- 17.1 – 44
- 44.1 – 120
- 120.1 – 200
- 200.1 – 600

Figure 3b

Informal settlement (squatter settlement) annual percentage (%) growth in urban areas in Central and South America

Improvements in transportation	Improvements in electricity supply
	
Dhaka Mass Rapid Transit (MRT), Bangladesh	**Distributed access through renewable energy scale-up Project (DARES), Africa**
• Dhaka is Bangladesh's largest city, one of the most congested cities in the world.	• 600 million people in Africa do not have access to electricity connections.
• Several rail lines connecting key areas of the city are being developed. • For example, Line 6 to government offices and hospitals in the north.	• The World Bank, with other investors, is improving electrification of areas. • For example, installing solar mini grids and solar home systems.
"A lot of time is wasted by traffic congestion. Giving us access to public transport is life changing."	*"Electricity (through DARES) helps to improve other things in our lives from food insecurity to gender equality."*

Figure 3c

Strategies to improve quality of life in cities

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

3 Urban environments

(a) Identify the correct definition of urbanisation.

(1)

- ☒ **A** decrease in the proportion of people living in megacities
- ☒ **B** decrease in the proportion of people living in towns and cities
- ☒ **C** increase in the proportion of people living in towns and cities
- ☒ **D** increase in the proportion of people living in rural areas

(b) (i) State **one** factor that contributes to rapid urbanisation.

(1)

.....

.....

(ii) Identify **one** possible problem caused by rapid urbanisation.

(1)

- ☒ **A** competition for jobs
- ☒ **B** installation of solar panels
- ☒ **C** introduction of irrigation
- ☒ **D** use of electric cars

(c) Study Figure 3a in the Resource Booklet.

Suggest **one** piece of evidence from the photograph that suggests this area might have a high land value.

You **must** refer to the resource in your answer.

(2)

.....

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.....

.....

(d) State **one** reason some people in cities do not have enough food.

(1)

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.....

(e) Explain **two** reasons for the growth of suburbs in many cities.

(4)

1 .....

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2 .....

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(f) Study Figure 3b in the Resource Booklet.

Suggest **one** reason why traffic congestion has led to economic losses for the cities shown.

You **must** refer to the resource in your answer.

(3)

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(g) Explain **one** advantage and **one** disadvantage of building on brownfield sites.

(4)

advantage

disadvantage

(h) Study Figure 3c in the Resource Booklet.

Analyse the benefits of improved waste disposal for cities in developed countries.

You **must** refer to the resource in your answer.

(8)



Figure 3a

Macau city centre, China

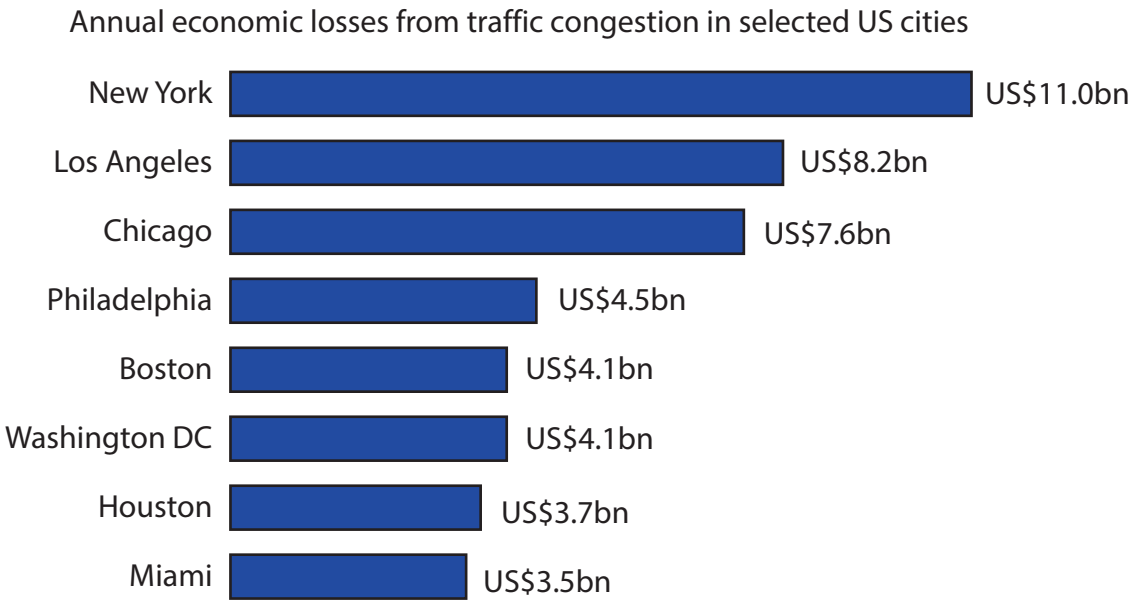


Figure 3b

Annual economic losses from traffic congestion in selected cities in the United States of America (USA), 2019

Reducing household waste, Australia	Coffee cup reuse scheme, Germany
	
Increasing charges for household waste disposal	**Re-cup: A coffee cup reuse scheme**
• Food waste costs the Australian economy AU$36.6 billion each year.	• In Germany, 2.8 billion disposable coffee cups are thrown away each year.
• Households in Australia may be charged an extra AU$600 if they do not improve their household recycling activity.	• A coffee cup reuse scheme is used in many cities in Germany where recycled plastic cups can be returned and reused in participating stores.
"Our strategy will help residents recycle and reduce the volume of waste that ends up in landfill."	*"It's helped to reduce waste for the city and litter on the streets. It also means that less material is used to make disposable cups in the first place."*

Figure 3c

Information on strategies to improve waste disposal in cities

SUB-TOPIC

FIELDWORK: INVESTIGATING URBAN ENVIRONMENTS

16 questions in this booklet

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

6 Investigating urban environments.

You have studied urban environments as part of your own geographical enquiry.

State the title of your geographical enquiry.

.....

(a) (i) State **one** type of sampling you used in your geographical enquiry.

(1)

.....

(ii) Explain **one** way this sampling technique helped you to collect reliable data or information.

(2)

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(b) Explain **one** way you managed a risk associated with your primary data collection.

(2)

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(c) Draw an annotated sketch map or annotated diagram to show how you selected locations to collect your fieldwork data.

(3)

(d) Explain **two** limitations of the method that you used to collect **qualitative data**.

(4)

1 .....

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2 .....

(e) Study Figures 6a, 6b and 6c in the Resource Booklet. They show three different data presentation techniques from a student's investigation into the changing use of urban environments.

The aim of the student's enquiry was to investigate the attitudes towards the plans for a new urban waste incinerator in Copenhagen, Denmark, on the edge of the city.

The student used three different presentation techniques to help understand people's opinions towards the proposed urban waste incinerator development.

Evaluate how effective the techniques were in presenting the data and information collected.

(8)

Question number	People's views				Total
	Strongly disagree	Slight disagreement	Not sure	Slight agreement	
1				3	3
2				7	7
3	2	5	3		20
4	6	1	3		10
5	2	2	2	2	8
6		5	5		10
7	1	6	3		10
8			1	2	9

Figure 6a

Results from a survey of people's views on a new waste incinerator



Figure 6b

Photographic results evidence lorry traffic on small roads

(Source: © Kumar Sriskandan / Alamy Stock Photo)

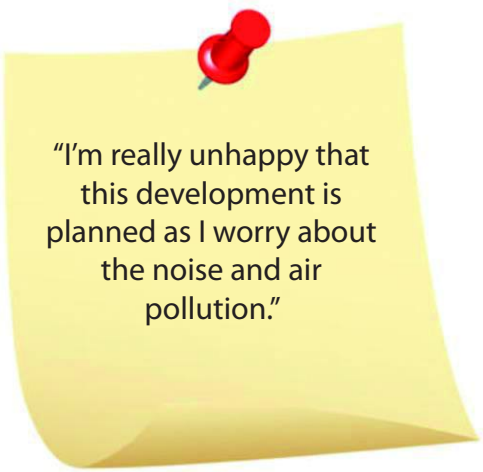


Figure 6c

Presentation of attitudes towards the waste incinerator

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

6 Investigating urban environments.

You have studied the use of central/inner urban environments as part of your own geographical enquiry.

(a) (i) State **one** type of secondary data you used in your geographical enquiry.

(1)

.....

(ii) Explain **one** way this secondary data helped you when investigating the use of central/inner urban environments.

(2)

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(b) State the title of your geographical enquiry.

.....

Explain **one** reason why this title was suitable for your geographical enquiry.

(2)

.....

.....

.....

.....

(c) Explain **one** limitation of a method that you used to collect **quantitative data**.

(3)

(d) Explain **two** methods you used to analyse some of your fieldwork data.

(4)

Method 1

Method 2

(e) Study Figures 6a and 6b in the Resource Booklet. They show two different data presentation techniques from a student's fieldwork into central/inner urban environments.

The aim of the student's investigation was to investigate the attitudes towards the plans for a new urban waste incinerator in Dubai, UAE.

The student carried out two different types of surveys into people's opinions and attitudes towards the proposed urban waste incinerator development.

Evaluate the student's data presentation techniques.

(8)

Question number	Peoples' Responses				Total
	Strongly disagree	Slight disagreement	Not sure	Slight agreement	
1				3	3
2				7	7
3	2	5	3		20
4	6	1	3		10
5	2	2	2	2	8
6		5	5		10
7	1	6	3		10
8			1	2	9

Figure 6a

Results from a questionnaire survey into a new waste incinerator

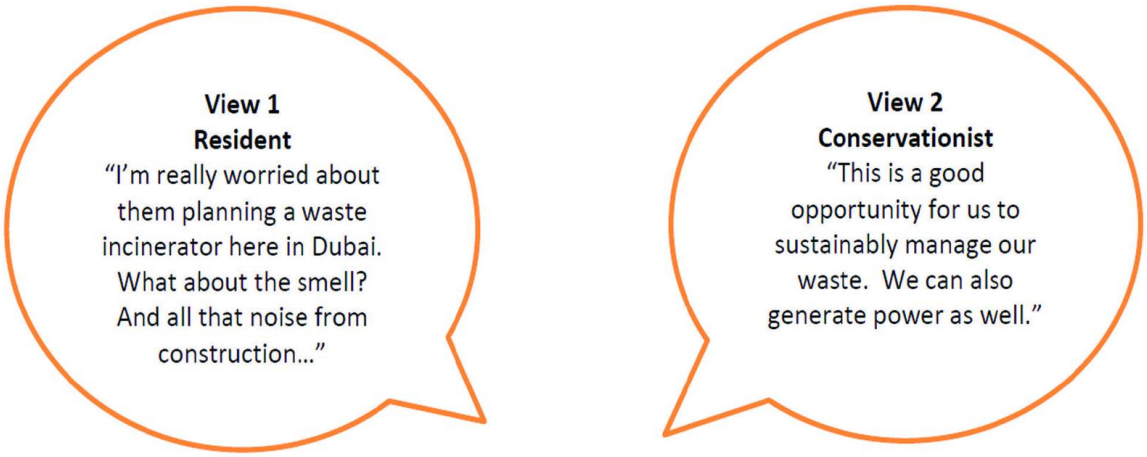


Figure 6b

Interview results of the proposed waste incinerator

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

6 Investigating urban environments

You have studied the use of central/inner urban environments as part of your own geographical enquiry.

State the title of your geographical enquiry.

(a) (i) State **one** type of **primary** data you used in your geographical enquiry.

(1)

(ii) Explain **one** way this **primary** data helped you when investigating urban environments.

(2)

(b) State the location of your geographical enquiry.

Explain **one** reason why this location was suitable for your geographical enquiry.

(2)

(c) Explain **one** way you used **secondary** data to support your geographical enquiry.

(3)

(d) Explain **two** techniques you used to analyse some of your fieldwork data.

(4)

1

2

(e) Study Figures 6a and 6b in the Resource Booklet. They show an extract from a student's conclusion and evaluation into the changing use of urban environments, and an annotated photograph.

> The aim of the student's enquiry was to investigate the attitudes towards the changing use of urban areas in Birmingham, UK.
>
> The student carried out a questionnaire, environmental quality survey and took photographs, which the student annotated.

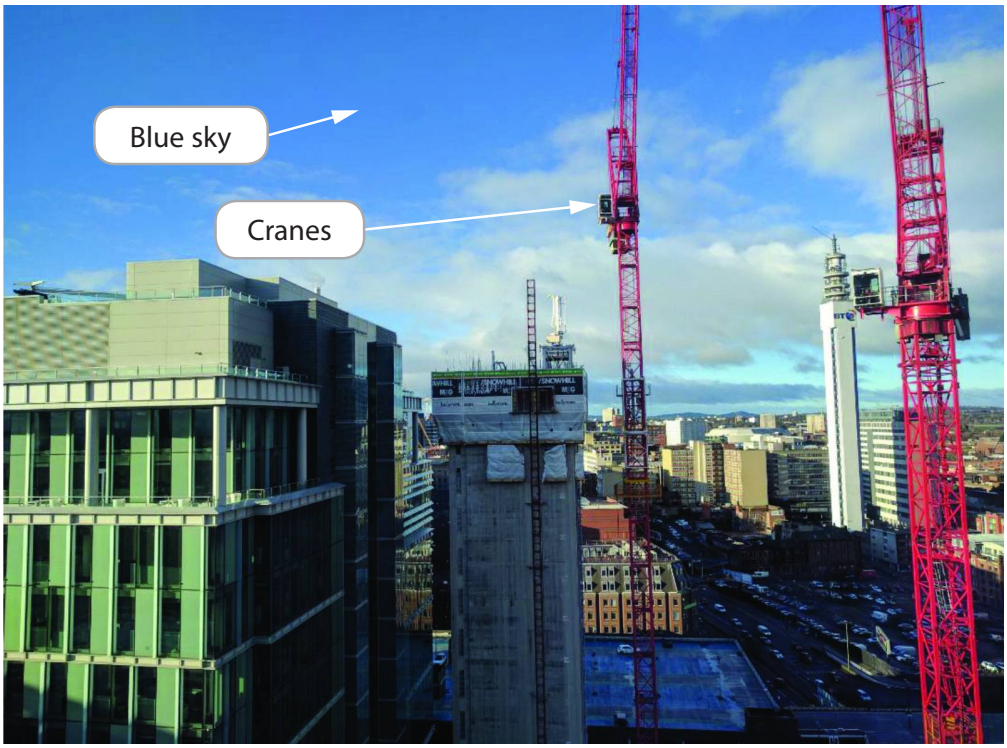
Evaluate the student's written conclusions, evaluation and annotated photograph.

(8)

Comments	Conclusions
1	I found that there were lots of differences in the environmental quality survey between the areas.
2	The questionnaire showed urban areas are having a lot of changes at the moment.
3	There is a big difference in the areas based on how they look.
	Evaluations
4	I think my results were very reliable but if I had more time I would have had a larger questionnaire sample.
5	The environmental quality survey worked well but we should have used other people to fill in the forms.
6	Overall the fieldwork was very beneficial to my knowledge of geography and I enjoyed the investigation.

Figure 6a

An extract from a student's conclusions and evaluations



(Source: © David Holmes Geography)

Figure 6b

An annotated photograph that was used as part of the conclusion

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

6 Investigating urban environments

You have studied the use of central/inner urban environments as part of your geographical enquiry.

State the title of your geographical enquiry.

.....

.....

(a) Explain how you managed **one** risk associated with your geographical enquiry.

(2)

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.....

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.....

(b) (i) Explain **one** limitation of a method that you used to collect **qualitative** data.

(2)

Qualitative method .....

.....

.....

.....

.....

(ii) Explain **one** way you could have improved the collection of your qualitative data.

(2)

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.....

.....

.....

(c) Explain **one** way secondary data was used to support your geographical enquiry.

(2)

(d) Explain **two** methods you used to present some of your fieldwork data.

(4)

1

2

(e) Study Figures 6a and 6b in the Resource Booklet. These show extracts from a student's methods and techniques used to investigate the changing use of central/inner urban environments.

> The aim of the student's enquiry was to investigate the attitudes and perceptions about the changing use of urban environments.
>
> The student designed a method and carried out a questionnaire.

Evaluate the student's data collection methods.

(8)

- Sample size will be 5–10 questionnaires to local people and visitors.
- Questionnaires undertaken at lunchtime.
- I will ask every 8th person that I see in the street.

Figure 6a

The student's proposed design methodology

Hello, I'm a student on a GCSE Geography field trip. I would like to ask you a few questions. It won't take long.

1. **What do you think of the new high-rise flats being built here? Do you like the idea?**
Mark only one oval.

	1	2	3	4	5	
Yes, I'm really happy	◯	◯	◯	◯	◯	No, I really don't want it

2. **Lots of people are worried about air pollution. How do you think it will affect this area?**
Mark only one oval.

- ◯ More noise
- ◯ More flooding
- ◯ More breathing problems
- ◯ More earthquakes
- ◯ Not sure

3. **How old are you?**
Check all that apply.

- ☐ 0-10
- ☐ 10-20
- ☐ 20-30
- ☐ 30+

4. **Do you think it's a good idea to build more schools in this area?**
Check all that apply.

- ☐ Yes
- ☐ No
- ☐ Don't know

Figure 6b

An extract from a student's questionnaire

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

6 Investigating urban environments

(a) Study Figure 6a in the Resource Booklet.

(i) State **one** piece of secondary data that would be useful to investigate this urban environment.

(1)

.....

.....

(ii) Explain why photographs are a useful source of primary data.

(2)

.....

.....

.....

.....

(b) Study Figure 6c below. It shows data from an environmental quality survey carried out in five sites around an urban area being regenerated.

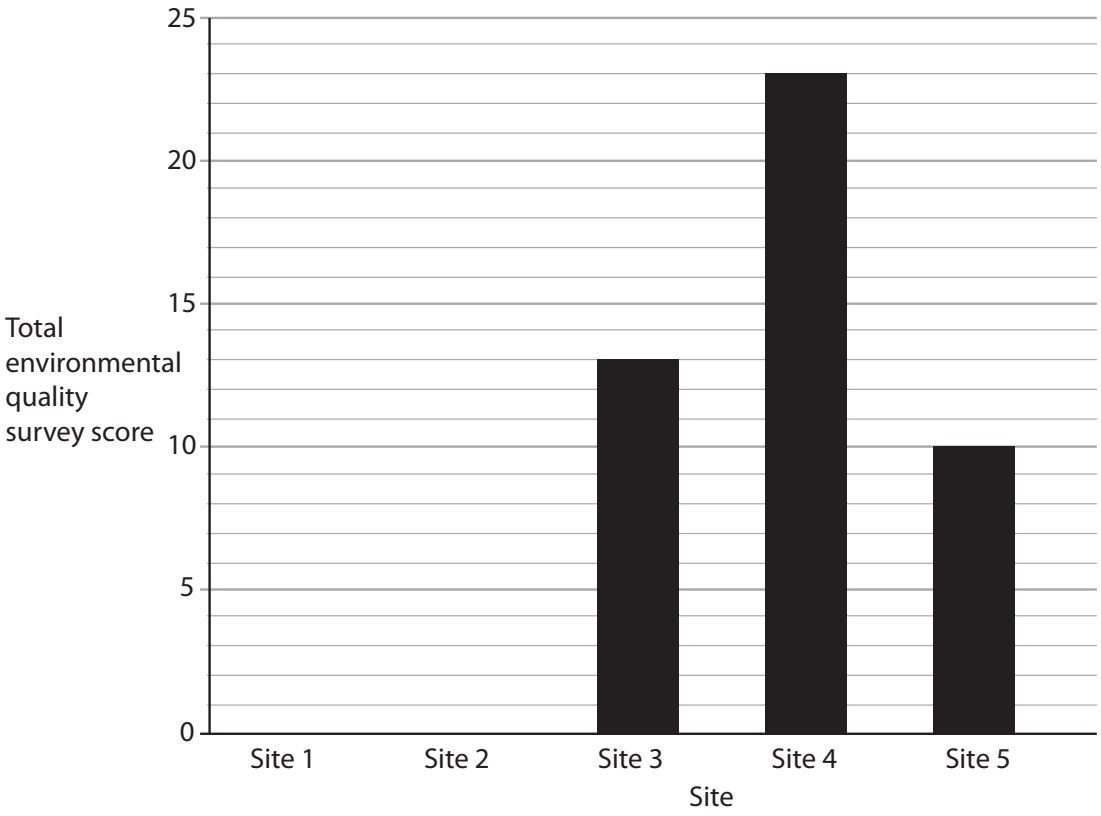


Figure 6c

A graph of environmental quality survey data

(i) Plot the data for sites 1 and 2 (from Figure 6b in the Resource Booklet) to complete the graph above (Figure 6c).

Some data has been plotted for you.

(2)

(ii) Identify the type of graph shown in Figure 6c.

(1)

☒	**A** Bar
☒	**B** Line
☒	**C** Pie
☒	**D** Scatter

(iii) Identify the site in Figure 6c that has the highest environmental quality score.

(1)

.....

(iv) Calculate the range in environmental quality scores.

Show all your workings.

(2)

(c) Explain **one** way you could manage a risk during fieldwork in a regenerated urban area.

(3)



Figure 6a

Photograph of a regenerated urban area

Environmental quality indicator	Site 1	Site 2	Site 3	Site 4	Site 5
Building condition (1 = Poor condition/5 = Good condition)	4	5	3	5	2
Road quality (1 = Poor condition/5 = Good condition)	4	2	3	5	2
Noise (1 = Very noisy/5 = No noise)	4	3	3	4	1
Litter (1 = A lot of litter/5 = No litter)	4	4	3	5	3
Air pollution (1 = Poor air quality/5 = Good air quality)	4	1	1	4	2
Total environmental quality score	20	15	13	23	10

Figure 6b

Extract from a table of results from an environmental quality survey

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

6 Investigating urban environments

(a) Study Figure 6a in the Resource Booklet.

(i) Identify **one** type of qualitative data collection in this enquiry.

(1)

.....

.....

(ii) Explain **one** type of sampling method chosen by the student.

(2)

.....

.....

(b) Study Figure 6b in the Resource Booklet. It shows results from a questionnaire carried out as part of a student's geographical enquiry.

(i) Plot the data for the questionnaire for **Question 2** (Figure 6b in the Resource Booklet) to complete Figure 6c below.

(2)

Some data has been plotted for you as an example.

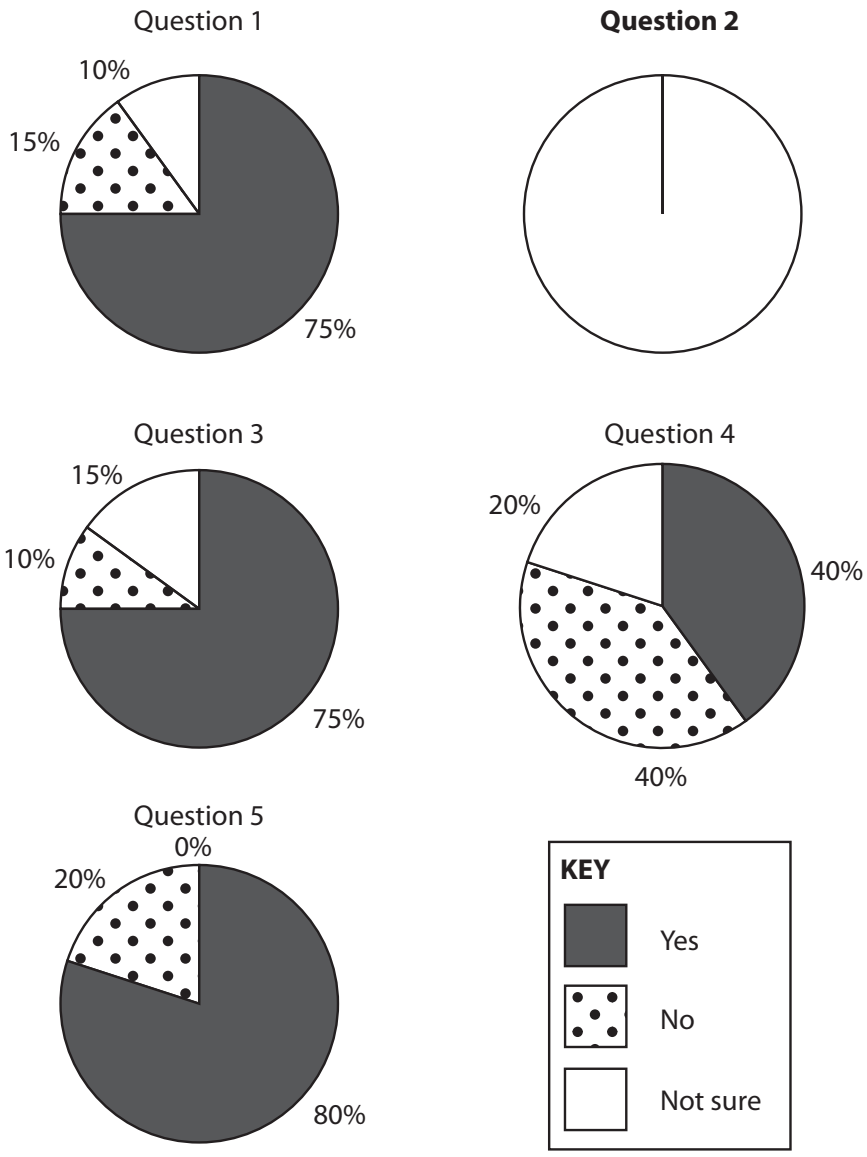


Figure 6c

Results from a questionnaire displayed in pie charts

(ii) Identify **one** advantage of using a questionnaire.

(1)

☒	**A** An expensive data collection method compared to other methods.
☒	**B** Guarantees responses from people.
☒	**C** Potential to generate a mixture of qualitative and quantitative data.
☒	**D** Provides data about everything you need to know.

(iii) Identify the correct statement below.

(1)

☒	**A** The mean percentage for people who answered 'not sure' was 1.
☒	**B** The mean percentage for people who answered 'not sure' was 11.
☒	**C** The mean percentage for people who answered 'not sure' was 21.
☒	**D** The mean percentage for people who answered 'not sure' was 31.

(iv) Suggest **one** way the data collection for this enquiry could be improved.

(2)

.....

.....

(c) Explain **one** advantage of using secondary data as part of this enquiry.

(3)

.....

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.....

Method	Purpose	Details
Secondary data from websites and newspapers	To provide background information on the study site.	Conduct web search using Google and Google Scholar for selected key words.
Photographs/Field sketches	To provide a visual record of the different parts of the enquiry site.	Take photos and field sketches where possible.
Environmental Quality Survey	To provide an understanding of how environmental quality varies across the site.	To be conducted at five sites at regular intervals along a road.
Questionnaire	To understand different views of the developments taking place.	Complete 10 questionnaires. Two at each site.

Figure 6a

An extract from a student's methodology

	Yes (%)	No (%)	Not sure (%)
Question 1: Did you think this area needs to be improved?	75	15	10
Question 2: Do you think the developments have improved the area?	50	40	10
Question 3: Do you think further improvements need to be made?	75	10	15
Question 4: Do you think local government should be responsible for leading the development of this area?	40	40	20
Question 5: Are you local to this area?	80	20	0

Figure 6b

Extract from a student's questionnaire

Method	Purpose	Details
Secondary data from websites and newspapers	To provide background information on the study site.	Conduct web search using Google and Google Scholar for selected key words.
Photographs/Field sketches	To provide a visual record of the different parts of the enquiry site.	Take photos and field sketches where possible.
Environmental Quality Survey	To provide an understanding of how environmental quality varies across the site.	To be conducted at five sites at regular intervals along a road.
Questionnaire	To understand different views of the developments taking place.	Complete 10 questionnaires. Two at each site.

Figure 6a

An extract from a student's methodology

	Yes (%)	No (%)	Not sure (%)
Question 1: Did you think this area needs to be improved?	75	15	10
Question 2: Do you think the developments have improved the area?	50	40	10
Question 3: Do you think further improvements need to be made?	75	10	15
Question 4: Do you think local government should be responsible for leading the development of this area?	40	40	20
Question 5: Are you local to this area?	80	20	0

Figure 6b

Extract from a student's questionnaire

6 Investigating urban environments

Study Figures 6a and 6b in the Resource Booklet. These show extracts from a student's data collection and presentation methods.

> The aim of the student's investigation was to investigate attitudes to an old factory being redeveloped in Manchester, United Kingdom.
>
> The student carried out a questionnaire, took photographs of the factory being redeveloped, and used secondary data about property prices in the area.

(a) Identify **one** question in Figure 6a that would produce qualitative data.

(1)

(b) Identify **one** advantage of the presentation type shown in Figure 6b.

(1)

(c) Explain **one** type of sampling that could have been used in this investigation.

(2)

(d) Study Figures 6a and 6b in the Resource Booklet. It shows an extract from a student's data collection and presentation methods.

Evaluate the student's data collection and presentation methods.

(8)

Questionnaire: Investigating factory redevelopment

1. Do you think the factory needs to be redeveloped?

   Yes ☐ No ☐

2. Does this area need more space for businesses and a hotel?

   Yes ☐ No ☐

3. Why?

.....

.....

.....

4. How do you think the factory could be redeveloped to be useful to the local area?

.....

.....

.....

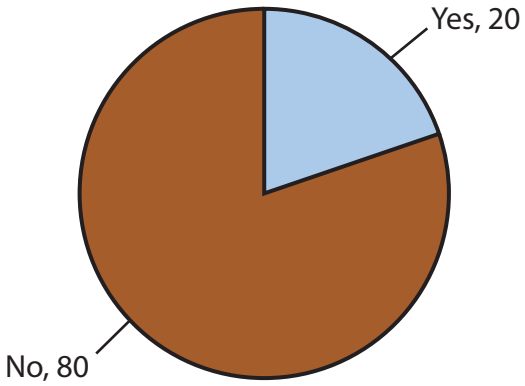
5. On a scale of 1–5 how likely are you to use the future businesses planned for this factory:

	1	2	3	4	5
Office space	☐	☐	☐	☐	☐
Gym	☐	☐	☐	☐	☐
Coffee shop	☐	☐	☐	☐	☐
Hotel	☐	☐	☐	☐	☐

Figure 6a

An extract from a student's questionnaire

Question 1. Do you think the factory needs to be redeveloped?



Question 2. Do you think this area needs more space for business and a hotel?

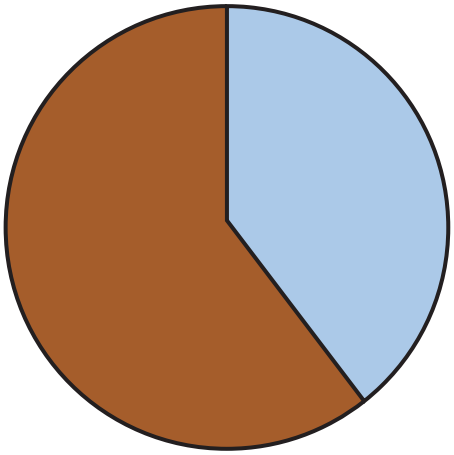


Figure 6b

An extract from a student's data presentation

If you answer Question 6 put a cross in the box ☐

6 Investigating urban environments

Study Figures 6a and 6b in the Resource Booklet. These show extracts from a student's data analysis, conclusions and evaluations about the changing use of urban environments.

> The aim of the student's investigation was to investigate local attitudes towards the development of a new retail building in Chicago, USA.
>
> The student carried out a questionnaire, environmental quality survey and took photographs, which they annotated, and collected newspaper articles including photos of the area.

(a) Identify **one** source of secondary data used by the student.

(1)

(b) Identify **one** advantage of using a questionnaire as a data collection method.

(1)

(c) Suggest **one** way the reliability of the data could have been affected.

(2)

(d) Study Figures 6a and 6b in the Resource Booklet.

Evaluate the student's data analysis and conclusions.

(8)



Figure 6a

Word cloud from questionnaire responses about the new retail building

Conclusions	
1	I found that there were a lot of views about the new development.
2	The questionnaire showed that most of the local people are against the redevelopment of the building.
3	The photographs show that the new retail building is quite a big feature in the local neighbourhood, compared to the other small businesses around it.
Evaluations	
4	I think my results were very reliable but if I had more time I would have asked more people to complete my questionnaire.
5	I was able to use newspaper articles about redeveloped factories to consider if the views from local people were similar.
6	The photographs were good to remind me of the place I visited on fieldwork, but I didn't know how to use them well to present my data.

Figure 6b

An extract from a student's written conclusion and evaluation

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

6 Investigating urban environments

(a) Study Figure 6b in the Resource Booklet.

(i) Identify **one** of the closed questions in the questionnaire.

(1)

.....

(ii) Explain why open questions can be useful in a questionnaire.

(2)

.....

.....

.....

.....

(b) Study Figure 6a in the Resource Booklet.

(i) Identify the type of sampling used for the questionnaire.

(1)

.....

(ii) Plot the remaining data for Site 1 (Figure 6c in the Resource Booklet) to complete the bar graph below (Figure 6d). Some data has been plotted for you as an example.

(2)

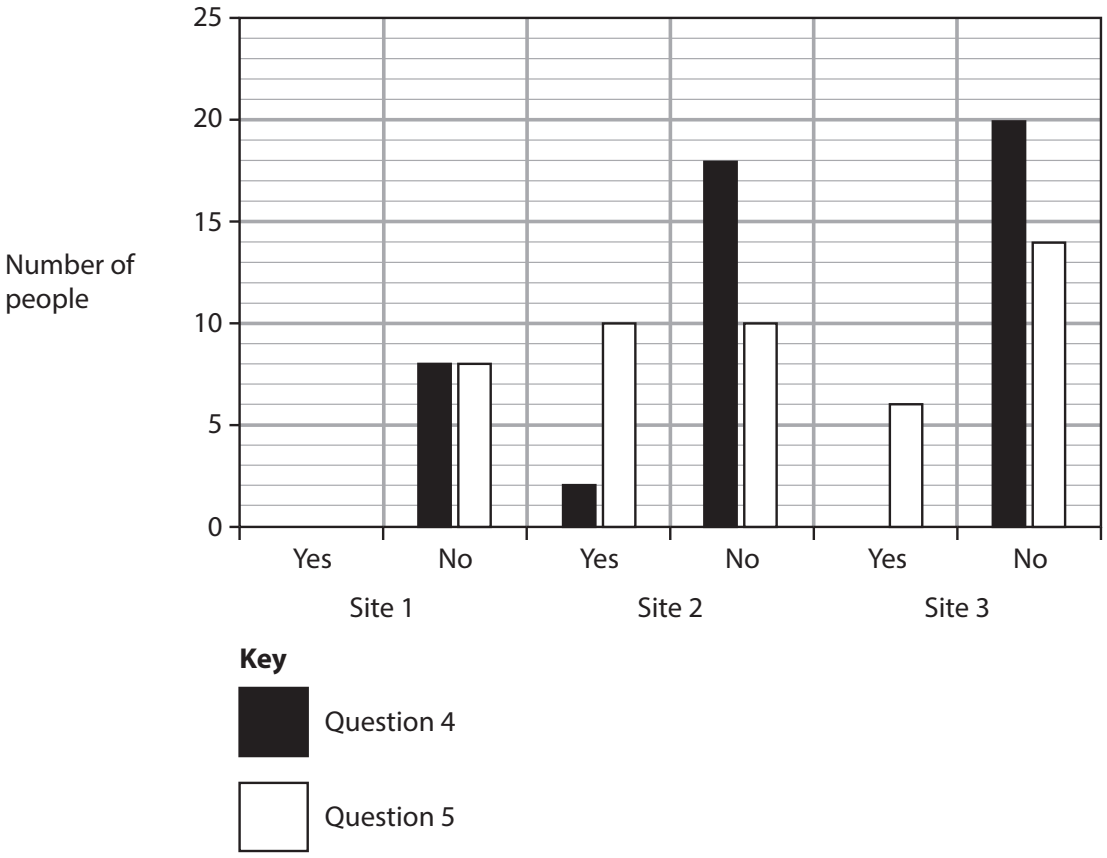


Figure 6d

Bar graph to show data from questionnaire

(iii) Identify the site that had the largest range for Question 1 in the questionnaire.

(1)

.....

(iv) Calculate the mean number of people who would like to recycle more (Question 5).

(2)

Write your answer to 1 decimal place.

Show all your workings.

.....

(c) Explain **one other** data collection method the students could have used in this enquiry.

(3)

(d) You have studied urban environments as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate the data presentation techniques you used.

(8)

Geographical enquiry title

Enquiry question: To what extent does the city encourage sustainable behaviour?

A questionnaire was conducted with a total of 60 people from 3 different areas. In each area we conducted 20 questionnaires selecting every 2nd person that we met.

Figure 6a

Information about the students' data collection

Q1. Do you recycle your rubbish when you are in the city?	**Yes** ☐ **No** ☐
Q2. Where do you usually deposit your rubbish?	....
Q3. Do you think recycling is the responsibility of the city council?	**Yes** ☐ **No** ☐
Q4. Do you own a reusable coffee cup?	**Yes** ☐ **No** ☐
Q5. Would you like to recycle more?	**Yes** ☐ **No** ☐
Q6. What would encourage you to recycle more in the city?	....

Figure 6b

Extract from the students' questionnaire

	Site 1		Site 2		Site 3	
	Yes	No	Yes	No	Yes	No
Question 1	16	4	4	16	2	18
Question 3	10	10	10	10	0	20
Question 4	4	8	2	18	0	20
Question 5	12	8	10	10	6	14

Figure 6c

Extract from the students' questionnaire results

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

6 Investigating urban environments

(a) Study Figure 6a in the Resource Booklet.

(i) Identify **one** of the open questions in the questionnaire.

(1)

.....

(ii) Explain why closed questions can be useful in a questionnaire.

(2)

.....

.....

.....

.....

(b) Study Figure 6b in the Resource Booklet. It shows environmental quality scores collected at regular distances from the new bus station.

(i) Plot the Environmental Quality Score for 40m and 60m (Figure 6b in the Resource Booklet) to complete the scatter graph below (Figure 6c). Some data has been plotted for you as an example.

(2)

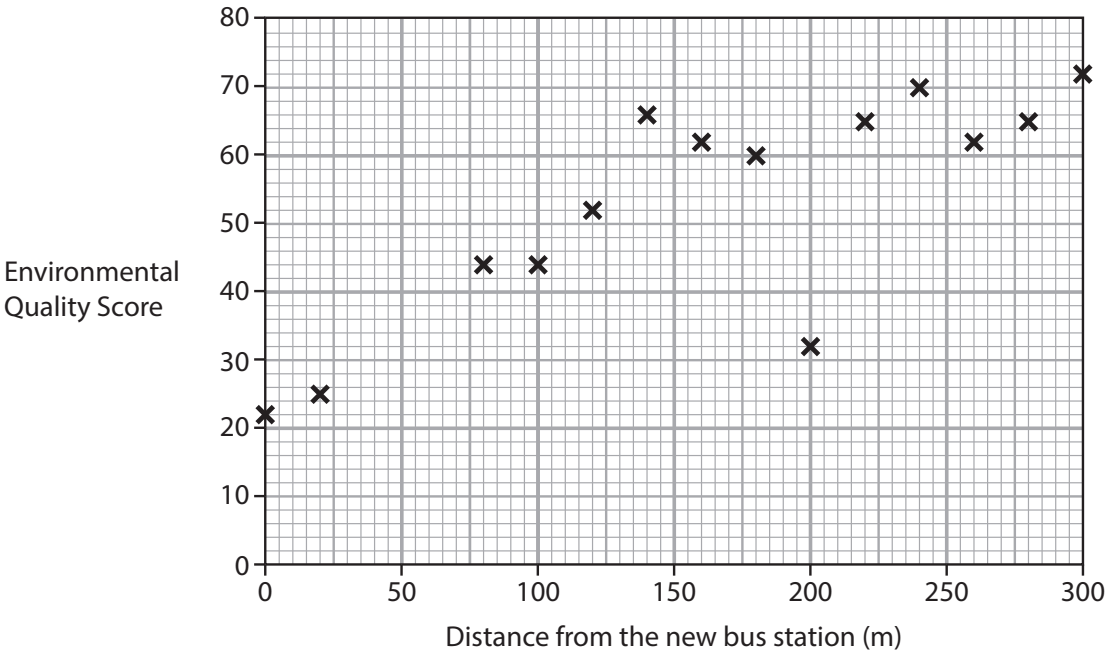


Figure 6c

(ii) Identify at which distance there is an anomaly.

(1)

.....

(iii) On Figure 6c, draw a line of best fit.

(1)

(iv) Calculate the median Environmental Quality Score (EQS).

(2)

Write your answer to one decimal place.

Show all your workings.

.....

(c) Explain how secondary data could have been used to support this enquiry.

(3)

(d) You have studied urban environments as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate how far your data collection methods allowed you to achieve your aim.

(8)

Geographical enquiry title

Enquiry question: How has the new bus station impacted the local area?

Q1. Do you think the new bus station is good for the area?	**Yes** ☐ **No** ☐
Q2. What benefits does it bring?	....
Q3. Do you think the new bus station will improve the local economy?	**Yes** ☐ **No** ☐
Q4. Do you think the new bus station will damage the environment?	**Yes** ☐ **No** ☐
Q5. Do you think the new bus station will affect house prices in the area?	**Yes** ☐ **No** ☐
Q6. What impact do you think the new bus station has had on the area?	....

Figure 6a

Extract from the student's questionnaire

Distance from the new bus station (m)	Total Environmental Quality Score (Max 80)
0	22
20	25
40	38
60	40
80	44
100	44
120	52
140	66
160	62
180	60
200	32
220	65
240	70
260	62
280	65
300	72

Figure 6b

Extract from the student's data collection

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

6 Investigating urban environments

(a) Study Figure 6a in the Resource Booklet.

(i) Identify **one** type of secondary data that could support this enquiry.

(1)

.....

(ii) Explain **one** advantage of using secondary data.

(2)

.....

.....

.....

.....

Study Figure 6b in the Resource Booklet. It shows some of the results from the Environmental Quality Survey (EQS).

(b) (i) Plot the data for the Environmental Quality Survey (Figure 6b in the Resource Booklet) to complete the radar graph below (Figure 6c). Some data has been plotted for you as an example.

(2)

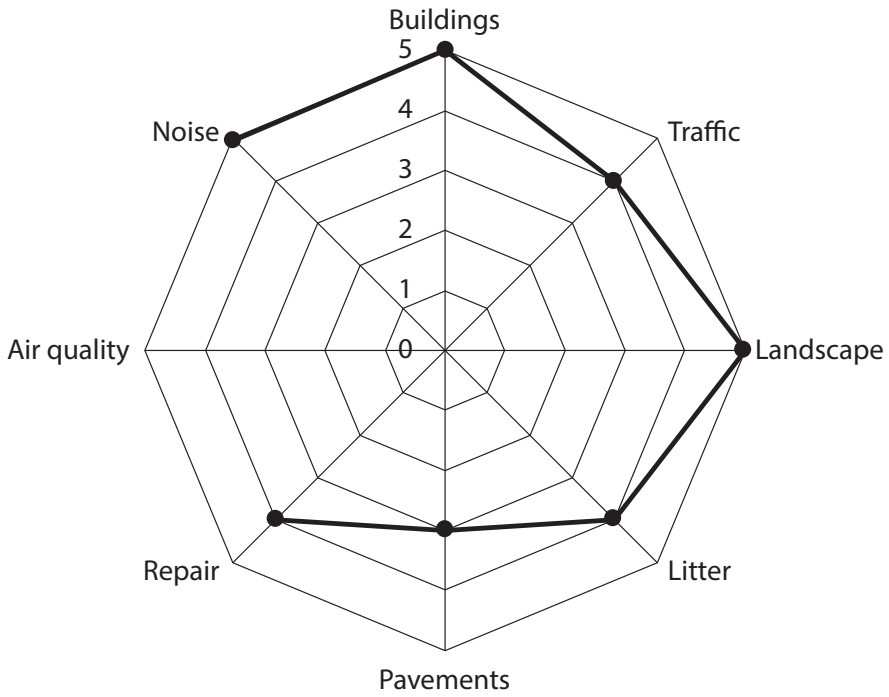


Figure 6c

Radar graph for Environmental Quality Survey

(ii) State **one** observation you can make from the data presented in Figure 6c.

(1)

.....

(iii) Identify **one** advantage of using this type of graph to present data.

(1)

.....

.....

(iv) Calculate the modal Environmental Quality Score for the data shown in Figure 6b.

Show all your workings.

(2)

(c) Explain how the student's own photographs could be used in this enquiry.

(3)

(d) You have studied urban environments as part of your own geographical enquiry.

State the title of your geographical enquiry.

Evaluate how the conclusions you made demonstrated you had answered your enquiry question.

(8)

Geographical Enquiry Title

Enquiry question: What are the impacts of new community garden in a city?

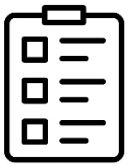
Primary data collected:



Observations of the community garden and its surroundings



Interviews with local residents



Environment Quality Survey near the community garden and nearby



Field sketches of the community garden

Figure 6a

Information about the students' enquiry and primary data collection

Indicator	Negative	1	2	3	4	5	Positive
Buildings	Buildings are in poor condition					X	Buildings are in good condition
Traffic	Large amount of traffic				X		Low amount of traffic
Landscape	Landscape is unattractive					X	Landscape is attractive
Litter	Large amount of litter				X		Small amount of litter
Pavements	Pavements are in poor condition			X			Pavements are in good condition
Repair	Many features in need of maintenance				X		Few features in need of maintenance
Air quality	Poor air quality				X		Good air quality
Noise	High noise levels					X	Low noise levels

Figure 6b

Environmental Quality Survey data from site near the community garden

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

6 Investigating urban environments

You have studied urban environments as part of your own geographical enquiry.

State the title of your geographical enquiry.

.....

.....

(a) (i) State **one** potential risk that you managed as part of your enquiry.

(1)

.....

.....

(ii) Explain **one** factor that affected the decision on the sites you chose to collect your data.

(2)

.....

.....

.....

.....

(b) Explain **one** way secondary data was used to support your enquiry.

(2)

.....

.....

.....

.....

(c) Explain **one** advantage and **one** disadvantage of a data presentation technique you used in your enquiry.

(4)

Advantage

Disadvantage

(d) Suggest **one** reason the conclusions from your enquiry were reliable.

(3)

(e) Study Figures 6a and 6b in the Resource Booklet. They show some of the equipment chosen and some of the data collection methods used, including an interview guide.

The aim of the student's enquiry was to investigate local residents' opinions towards the construction of a new train line to link some of the suburbs in Berlin, Germany.

Evaluate the choice of equipment and the data collection methods used.

You **must** refer to the resources in your answer.

(8)

Fieldwork equipment	Data collection methods
Mobile phone (with camera) Environmental quality survey sheet Interview guide	Review of newspaper articles Photographs Environmental quality survey Interviews

Figure 6a

Fieldwork equipment and data collection methods used

Interview guide	
Q1	To which age group do you belong? .....
Q2	How long have you lived in this area? Under a year ☐ 1–5 years ☐ 5–10 years ☐ 10 years + ☐
Q3	What are your views on trains as a form of transport? ....
Q4	Do you support the construction of the new train line? Yes ☐ No ☐
Q5	What do you think should be a development priority for the city? .....
Q6	On a scale of 1–5 what impact do you think the new train line will have on the local area? 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ (Very negative) (Very positive)

Figure 6b

Interview guide

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

6 Investigating urban environments

State the title of your geographical enquiry.

You have studied urban environments as part of your own geographical enquiry.

(a) State **one** type of sampling used in your enquiry.

(1)

(b) Explain **one** way you managed a risk as part of your enquiry.

(2)

(c) (i) Describe how you used **one** piece of equipment to collect your primary data.

(2)

(ii) Explain **one** advantage and **one** disadvantage of a primary data collection method you used in your enquiry.

(4)

Advantage

Disadvantage

(d) Explain **one** way you tried to make sure your results were accurate.

(3)

(e) Study Figures 6a and 6b in the Resource Booklet. They show some of the data presentation methods used by the student.

The aim of the student's enquiry was to investigate how a new retail development has affected the city centre.

The student collected data at five sites in the city centre. The data included an environmental quality survey, a questionnaire with people in the city centre and taking photographs.

Evaluate the data presentation methods used by the student.

You **must** refer to the resources in your answer.

(8)

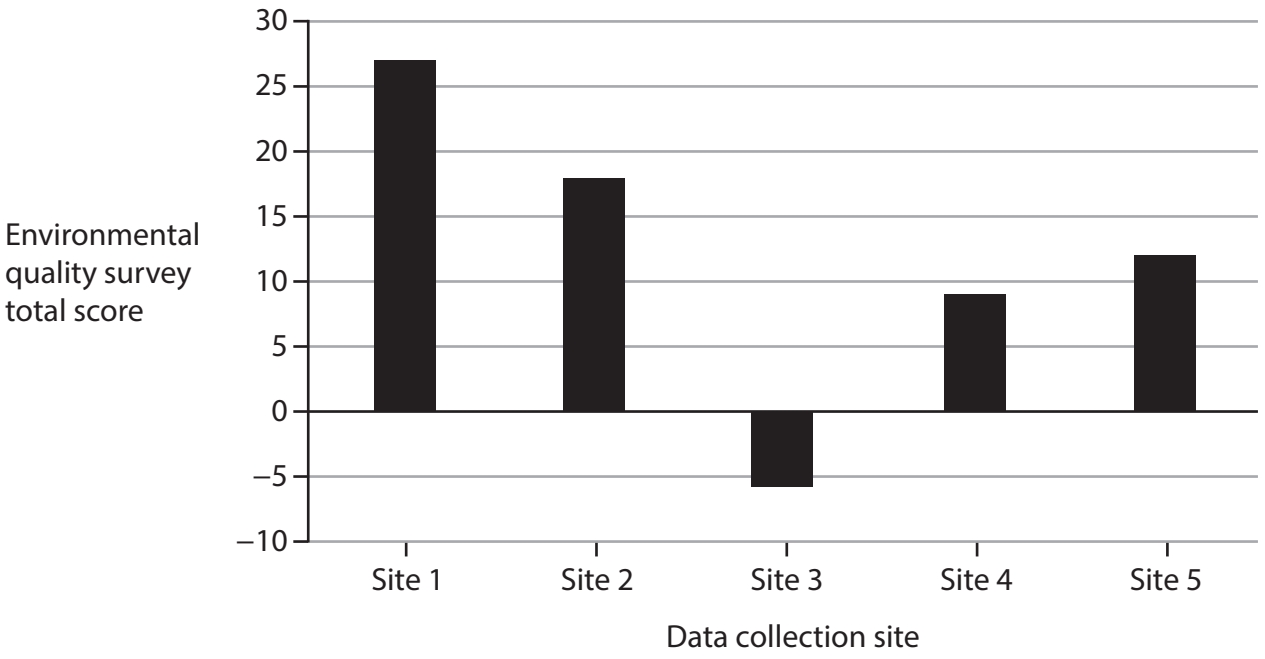


Figure 6a

Bar graph of environmental quality total scores

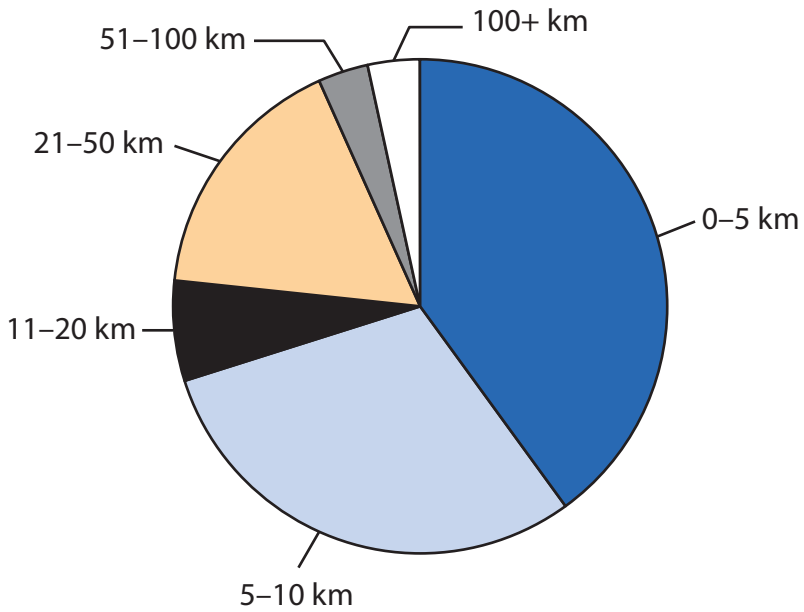


Figure 6b

Pie chart showing responses to the question, "How far have you travelled today?"

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

6 Investigating urban environments

You have studied urban environments as part of your own geographical enquiry.

State the title of your enquiry.

.....

.....

(a) (i) Name **one** type of graph you used to present your data.

(1)

.....

(ii) Explain **one** reason for your choice of graph.

(2)

.....

.....

.....

.....

(b) Explain **one** qualitative primary data collection technique you used in your enquiry.

(2)

.....

.....

.....

.....

(c) Explain **two** ways you used secondary data in your enquiry.

(4)

1 .....

.....

.....

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2 .....

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.....

(d) Suggest **one** improvement you could have made to your data analysis.

(3)

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(e) Study Figures 6a, 6b and 6c in the Resource Booklet. They show key information about the methodology, part of the data presentation and some conclusions.

> The aim of the student's enquiry was to investigate how a high street shopping area had changed.

Evaluate the student's data presentation method and conclusions.

You **must** refer to the resources in your answer.

(8)

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- Evidence recorded of new retail developments along a transect.
- Photographs.
- Questionnaire for local residents.
- Secondary data on local development plans from the local authority.

Figure 6a

Data collection methods

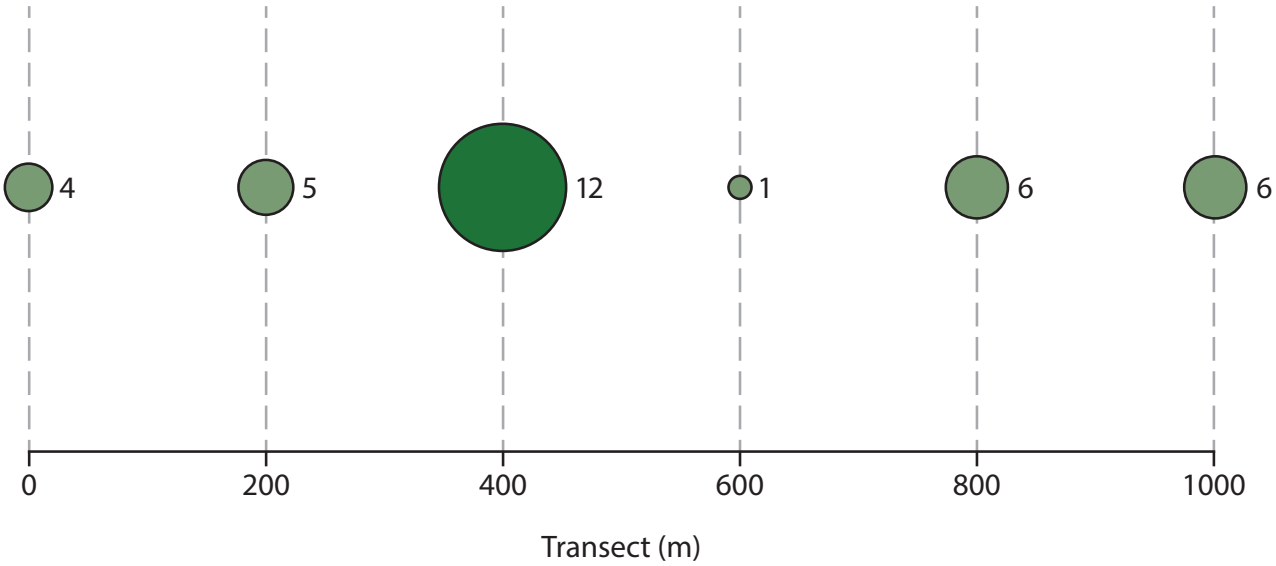


Figure 6b

Evidence of new developments along a transect

1	Development of new shops is happening across the city centre.
2	High street shops provide options for all residents in the area.
3	New shops and services have a positive impact on the lives of residents in the city.
4	There are a range of land uses present as well as the new retail developments.

Figure 6c

Conclusions

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

6 Investigating urban environments

Study Figures 6a and 6b in the Resource Booklet. They show some information about data collection methods students used and an extract from their questionnaire results.

> The aim of the students' enquiry was to investigate changes taking place to retailing in the central shopping area of Hong Kong, China.

(a) Identify **one** piece of equipment that could be used in this enquiry.

(1)

(b) Identify **one** type of secondary data used by the students.

(1)

(c) Explain why the students may have chosen random sampling for the questionnaire.

(3)

(d) (i) Plot the data for Site 1, Question 3, from Figure 6b in the Resource Booklet, to complete the bar chart in Figure 6c in the Question Paper.

(2)

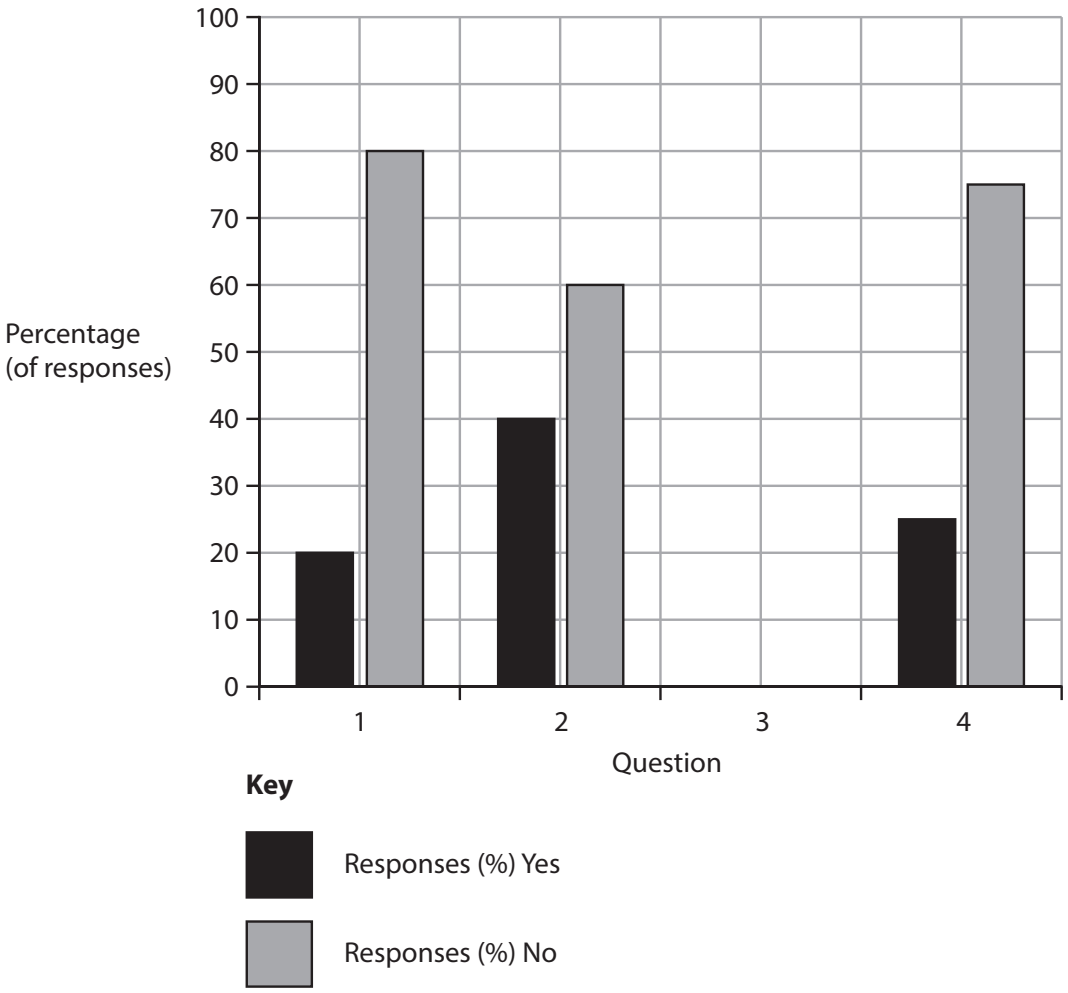


Figure 6c

(ii) State **one other** data presentation method that could have been used for the data shown in Figure 6c.

(1)

.....

(iii) Calculate the range in the number of responses for respondents that selected 'Yes' for Question 2 in Figure 6b in the Resource Booklet.

You **must** show all your workings.

(2)

.....

(e) State **one** advantage and **one** disadvantage of the data presentation method used in Figure 6c.

(2)

advantage

.....

.....

disadvantage

.....

.....

(f) You have studied urban environments as part of your own geographical enquiry.

Evaluate the importance of qualitative data in helping you reach your conclusions.

(8)

State the title of your geographical enquiry.

	Data collection methods	Details
1	• Environmental quality survey	• Conducted in three places in the central retail area.
2	• Questionnaires	• 20 people in the area selected at random.
3	• Photographs	• Taken at each site for environmental quality survey and where questionnaires collected.
4	• Information on property prices for businesses in the area.	• Websites and leaflets with details about local businesses.
5	• Data on the number of businesses that have opened and closed in the area.	• Data collected for 2014 to 2024.

Figure 6a

Data collection methods used

Question		Responses (%)					
		Site 1		Site 2		Site 3	
		Yes	No	Yes	No	Yes	No
1	Do you shop here regularly?	20	80	0	100	10	90
2	Do you know other people who shop here regularly?	40	60	20	80	50	50
3	Do you think the government should support businesses to open in the city centre?	95	5	80	20	75	25
4	Do you think the city centre is suitable for all types of shops?	25	75	50	50	40	60

Figure 6b

Extract from questionnaire results

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

6 Investigating urban environments

Study Figures 6a and 6b in the Resource Booklet. They show some information about data collection methods the students used and an extract from their questionnaire results.

> The aim of the students' enquiry was to investigate views on how people are encouraged to act more sustainably in the city centre of Porto, Portugal.

(a) State **one** health and safety risk that should have been considered for this enquiry.

(1)

(b) Identify **one** type of primary data collected by the students.

(1)

(c) Explain why the students may have chosen systematic sampling for the questionnaire.

(3)

(d) (i) Plot the data for Site 1, Question 3, from Figure 6b in the Resource Booklet, to complete the pie chart in Figure 6c in the Question Paper.

(2)

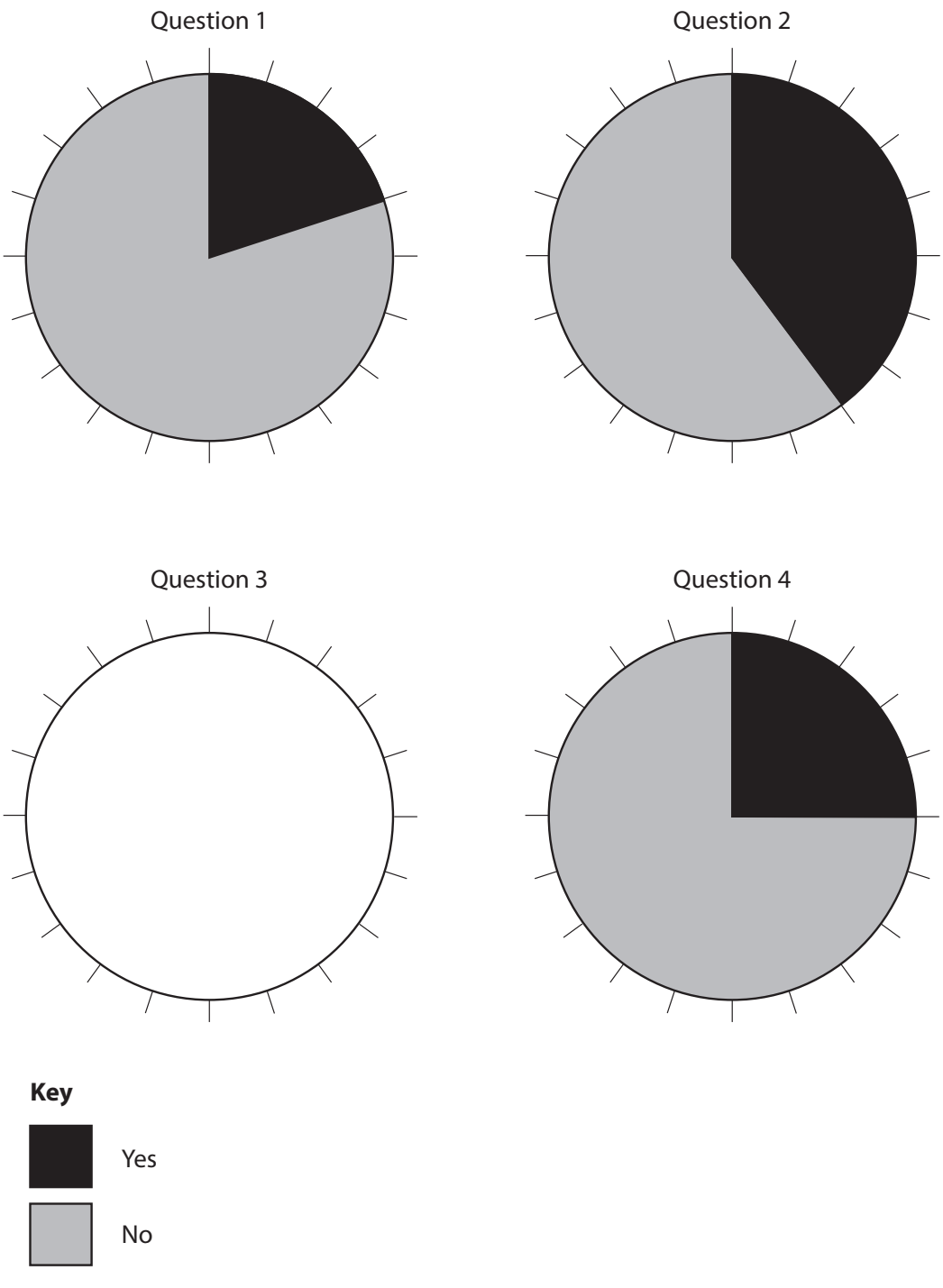


Figure 6c

Data presentation for Site 1

(ii) State **one** advantage and **one** disadvantage of the data presentation method used in Figure 6c.

(2)

advantage

.....

.....

disadvantage

.....

.....

(iii) State **one other** data presentation method that could have been used for the data shown in Figure 6c.

(1)

.....

(iv) Calculate the mean response for the number of people who responded 'Yes' to Question 2.

You **must** show all your workings.

(2)

(e) You have studied urban environments as part of your own geographical enquiry.

Evaluate the importance of quantitative data in helping you reach your conclusions.

(8)

State the title of your geographical enquiry

.....

.....

.....

.....

	Data collection methods	Details
1	• Environmental quality survey	• Conducted in three locations in the city centre.
2	• Questionnaires	• 20 people in each location asking every 10th person walking past.
3	• Photographs	• Taken at each site for environmental quality survey and where questionnaires collected.
4	• Information on sustainability in the city.	• Websites and leaflets about new recycling schemes.
5	• Data on the number of electric charging points installed in the city.	• Data available for 2014 to 2024.

Figure 6a

Data collection methods used

		Responses (%)					
Question		Site 1		Site 2		Site 3	
		Yes	No	Yes	No	Yes	No
1	Do you live in the city?	20	80	0	100	10	90
2	Do you use any of the local recycling points?	40	60	20	80	50	50
3	Do you think the government should be doing more to encourage people to be more sustainable?	95	5	80	20	75	25
4	Do you think there are enough electric buses in the city?	25	75	50	50	40	60

Figure 6b

Extract from questionnaire results

MARK SCHEMES

official Pearson Edexcel mark schemes

3(a)	**AO1 (1 mark)** D population movement from urban areas to the countryside D is the correct answer as the other options do not have the correct meanings of the term.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** • Idea of different people / groups/ cultures being separated (for some reason) (1) • People forced apart (1) • People living in divided communities (1) Accept any other appropriate response. Allow ideas around exclusion.	**(1)**

Question number	Answer	Mark
3(c)	**AO1 (1 mark)** C A city with a population over 10 million people C is the correct answer as the other options do not have the correct indication of population or accurate description of the term.	**(1)**

Question number	Answer	Mark
3(d)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark (AO2) for a reason further mark (AO3) for extension through explanation, up to a maximum of 2 marks: • High density housing (1) which means that there is limited space for new developments (1). • Some housing appears unplanned / illegal as there is a lack of roads (1) which is often associated with rapid urbanisation (1). • Appears to be no evidence of traffic management, e.g. roads (1) which is an indicated of unplanned / illegal and rapid urban development (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(e)	**AO1 (1 mark)** Award 1 mark for any of the following. • (Urban) planners (1) • Local government / local authority (1) • National government / politicians (1) • NGOs / charitable foundations (1) • Developers (1) Accept any other appropriate response, e.g. named organisation, e.g. London Cycling Campaign, TfL, Bedzed, Oxfam, KENSUP, CAFOD, UN, World Bank etc	**(1)**

Question number	Answer	Mark
3(f)	**AO2 (2+2 marks)** Award 1 mark for a management approach and a further expansion mark, up to a maximum of 2 marks each. • Some places have provided grants to developers to build new housing (1) which has allowed people to more from over-crowded areas to newer and better-quality housing (1). • In some cities governments have planned and paid for better access to water and electricity supplies (1) which reduces pollution and allows people to do away with fires for cooking and lighting (1). • Transport routeways and nodes can influence urban quality of life so improving traffic speeds and flows is a solution (1) which will likely go on to improve local air quality conditions (1). • London congestion charge (1) means that people are encouraged to take public transport which reduces city pollution (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(g)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a link and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. Note any factor can be chosen, based on the information in Figure 3b. • When there is better environmental quality there may be less pollution locally (1) which means that people can work more with less day's sick (1) which means that they have more disposable income and higher overall quality of life (1). • When there is greater community diversity there is often better community cohesion (1) which means that there may be less crime in an area (1) as the local community is more vigilant and more away and looks after members of their community (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(h)	**AO2 (4 marks)** Award 1 mark for initial development idea and an additional 1 mark for development through further explanation or exemplification. **Maximum of 2 marks when no named developing country is used in context, or a developed country is used instead.** A range of countries and examples could be chosen, e.g. switching to using "greener" energy, ways of improving quality of life, "horsiculture", housing, transport etc. • In urban areas of Spain, the government have promoted the use of solar panels to generate electricity (1) this generates farm income for people in the rural-urban fringe (1). • In Spain, NGOs have worked with the government to pay for infrastructure improvements (1) which have lifted some people out of poverty as they can travel more easily from the rural area to the cities offering better employment (1). • Adding infrastructure such as public transport (1) which makes it easier for people to commute to work (1). Accept any other appropriate response.	**(4)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>3 (i)</td><td colspan="2">AO3 (4 marks)/AO4 (4 marks)
Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3
• Urbanisation is the increasing proportion of a countries population living in towns, cities and other urban areas.
• Towns and cities are growing in size in most parts of the world.
• Globally there is an uneven pattern of both urbanisation and rural living with traditionally lowest levels of urbanisation found in parts of Africa and South-East Asia.
• Nowadays some of the most rapid rates of urbanisation can be seen in parts of China as well as India.
• There are a number of drivers, but importantly high rates of urbanisation are found in developing economies because most new economic developments are found in big cities and there are push factors operating to drive people away from rural areas.
• Projections may not be reliable long-term, so caution should be heeded, especially with regard to the overall population increase.

AO4
• On Figure 3c, it can be seen that there is an overall (linear) increase in total population from 2.5 billion to projected 8+ billion in 2030.
• The worlds rural population peaks around 2005 and then there is a small relative decreased projected up to 2030.
• The worlds urban population shows a gradual and even rise from 1950 to a predicted rise of up to 5billion in 2030.
• Between 2005 and 2010 urban populations overtake rural populations, as a proportion, for the first time.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3).
• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4).</td></tr>
</table>

Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a)	**AO1 (1 mark)** A increasing proportion of people living in urban areas A is the correct answer as the other options do not describe urbanisation.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** • A city with a population of over 10 million people (1). Accept a population of 10 million.	**(1)**

Question number	Answer	Mark
3(c)	**AO1 (1 mark)** C a location that has illegally built housing C is the correct answer as the other options do not describe characteristics of informal housing / squatter settlements.	**(1)**

Question number	Answer	Mark
3(d)	**AO3 (1 mark) / AO1 (1 mark)** Award 1 mark (AO3) for evidence from the image and a further mark (AO2) for extension through explanation, up to a maximum of 2 marks: • Heavily congested roads are slow (1) which means that people will likely take a long time to travel any distance / its hard to travel around (1) • The rickshaws are packed together (1) which is dangerous / there are likely a lot of traffic injury's and even deaths (1) • Appears to be no evidence of traffic management, e.g. lines on the road (1) so this can lead to more accidents and congestion (1). • The photograph shows lots of traffic congestion (1) as there are many cars / taxis tightly packed together / not really moving (1). Accept any other appropriate response, e.g. pollution and emissions, dangerous etc inferred from resource	**(2)**

Question number	Answer	Mark
3(e)	**AO1 (1 mark)** Award 1 mark for any of the following. • Air pollution (1) • Waste management / disposal (1) • Clean water (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(f)	**AO2 (2+2 marks)** Award 1 mark for a reason and a further expansion mark, up to a maximum of 2 marks each. • Prices of land typically increase towards the city centre (1) therefore only certain land-uses and activities can afford the rents / spaces (1). • Historic reasons such as growth of urbans areas next to a river (1) can means that the core CBD is in a particular / unusual location (1). • Transport routeways and nodes can influence land-use patterns (1) as these offer points of access which means that housing or industry can develop next to points of accessibility (1). Accept any other appropriate response, e.g. other linked factors such as density, pollution, desirability, planning etc.	**(4)**

Question number	Answer	Mark
3(g)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark (AO3) for an idea from the resource and a further 2 marks (AO2) for extension through explanation, up to a maximum of 3 marks. • Englewood has much lower household income compared to Clearing (1) which means that people have lower levels of disposable income (1) which means that they can spend less on entertainment for instance so a lower overall quality of life (1). • Englewood has a much higher poverty rate compared to Clearing (1) which means that people cannot afford many luxuries (1) and therefore are experiencing a lower quality of life in Englewood compared to Clearing (1). Accept any other appropriate response, e.g. ideas related to population and jobs being hard to find etc.	**(3)**

Question number	Answer	Mark
3(h)	**AO2 (4 marks)** Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. **Maximum of 2 marks (1 per way) when no named developing / emerging country is used in context, or a developed country is used instead.** A range of countries and examples could be chosen, based on either waste management, water supply, transport etc, e.g. with policies and incentives. • In urban Brazil, the government have promoted the use of solar panels to generate electricity (1) this is because they are environmentally low carbon and cheaper than non-renewable energy (1). • In the Sao Paulo an NGO has provided credit to people in squatter settlements (1) and this is linked to local investment in infrastructure to help reduce pollution from car transport (1). • In Curitiba (Brazil), a group of companies have also paid for better urban health and education services (1) which have been aided by NGOs and have lifted some people out of poverty so they can afford better urban housing (1).	**(4)**

	Accept any other appropriate response, but must be urban in context. Can be generic. **Note group can be implicit (i.e. through the answer) or explicit for credit.** **Country must be developing or emerging for credit.**	

Question number	Indicative content	
3 (i)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Historically cities such as New York, Paris and London have developed because of trade links (especially the Colonialism influence) – the "Old World". • The complex pattern may be controlled by migration, both with countries (especially SE Asia and rural urban migration) or between countries – as set of push and pull factors operating. • Physical geography and access to trade and markets would have controlled population growth and expansion especially in the last 200 years. • Political governance influences patterns of trade and growth and has influence the pattern and distribution shown, e.g. growth of Chinese megacities and the country has developed and opened its borders to more trade. • The megacities of the wealthier countries in have much lower growth rates or even declining populations in future, so this is a factor of more recent urbanisation. **AO4** • Figure 3c shows the megacities are distributed across the surface of the earth. • On Figure 3c, it can be seen that there is a concentration of megacities around India and China especially. • Figure 3c shows that Africa has a few megacities based on its land area. • Australia is notable without any megacities and much of Europe does not have any.	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are

		flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a)	**AO1 (1 mark)** D increasing proportion of people living in urban areas D is the correct answer as the other options are incorrect definitions	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** Award 1 mark for an appropriate definition. • An area on the outskirts / outside / periphery of the main urban area (1). • Landscape interface between town and country (1). • Where the town / city and the rural area / countryside mix (1). Accept the population shift from rural to urban residency / living / dwelling	**(1)**

Question number	Answer	Mark
3(c)	**AO1 (1 mark)** A a location that has been previously built-on A is the correct answer as the other options are incorrect definitions	**(1)**

Question number	Answer	Mark
3(d)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for a basic evidence from the from the photograph (AO3) and a further 1mark for extension through explanation (AO2), up to a maximum of 2 marks. • Very high density high rise housing (1) which means that there is a shortage of land to build on as land values are high (1). • Few green spaces in the picture (1) meaning that there is limited public amenity spaces for exercise and recreational activity (1). • Appears to be a high density urban area with lots of housing and apartments (1) so this can lead to problems of litter and even transferable diseases (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(e)	**AO1 (1 mark)** Award one mark for suitable group. • NGOs (1) • Government (1) • Planners (1) • Charities (1) • World Bank, UNESCO / WHO, other IGOs (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(f)	**AO2 (2+2 marks)** Award 1 mark for a reason and a further expansion mark, up to a maximum of 2 marks each. • Prices of land typically increase towards the city centre (1) therefore only certain land-uses and activities can afford the rents / spaces (1). • Historic reasons such as growth of urban areas next to a river bridging point (1) can means that the core CBD is in a particular / unusual location (1). • Transport routeways and nodes can influence land-use patterns (1) as these offer points of access which means that housing or industry can develop next to points of accessibility (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(g)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of the change taking place and a further 2 marks for explanation of a reason, up to a maximum of 3 marks. • There has been an increase from 0.7m to 2.3m (1) as governments have encouraged lower emissions in cities (1) which means that cars have been taxed so people use bicycles (1). • There has been an increase from 0.7m to 2.3m (1) as people have become frustrated by congestion in cities (1) which means bikes are often the quickest way to get around (1). • There has been an increase from 0.7m to 2.3m (1). Governments incentivised through cheap hire models bicycle usage (1) which means more bikes have been installed to keep up with rising consumer demand (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(h)	**AO2 (2+2 marks)** Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. Maximum of 2 marks when no named developing or emerging country is used in context. A range of countries and examples could be chosen, based on either waste, housing, transport, education e.g. with policies and incentives, working with NGOs as well as legislation. • [Brazil]In some urban areas of Brazil, the government have promoted the use of solar panels to generate electricity (1) and this has allowed poorer people to use tablet technology in order to better their schooling and education (1). • [Afghanistan] Some NGOs have used education to train self-help groups (1) so that they can develop business skills, as well as finding out about nutrition and hygiene (1). • [Kenya] The local government and UNESCO have put money into health education in Kibera (1) in order to improve women's reproductive health so that education can in turn be improved (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
3 (i)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Patterns of urbanisation are controlled by a number of complex factors linked to development. • Urban areas have better provision of education and services which attract people from rural areas; the speed of this process may be limited by transport, housing technology etc. This would be the case in Sub-Saharan Africa. • Physical geography, resource, e.g. coal and access to trade and markets would have controlled population growth and rates of urbanisation and the number of cities over 500,000. • Political governance influences rural urban migration, e.g. growth of Chinese cities in recent years and the country has seen rapid population movement to urban areas – now 54%. • There may be push factors operating especially in Asia and Africa: conflict, natural disasters, food and famine, lack of services and healthcare etc. **AO4** • On Figure 3c, it can be seen that the three regions / countries have big differences in both number of cities and proportion of urban and rural dwellers. • Figure 3c shows the highest urban populations are in Europe at 73% and the lowest in sub-Saharan Africa at 37%. • Figure 3c shows that China has a roughly equal number of rural and urban population numbers. • Africa has the fewest number of cities over 0.5m and over at 55, whereas Europe and China are much higher.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a)	**AO1 (1 mark)** C a city with a population of more than 10 million The answer cannot be A, B or D as these are not the correct meanings for megacity.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** • The increasing proportion of a country's population living in towns and cities (1). • The process of making an area / region more urban (1). Accept the population shift from rural to urban residency / living / dwelling	**(1)**

Question number	Answer	Mark
3(c)	**AO1 (1 mark)** A a location that has never been built-on The answer cannot be B, C or D as these are not correct definitions of a greenfield site.	**(1)**

Question number	Answer	Mark
3(d)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for a basic evidence from the from the photograph (AO3) and a further 1mark for extension through explanation (AO2), up to a maximum of 2 marks. • Heavily congested roads are evident (1) which means the movement of traffic has been slowed down (1). • The roads are filled with yellow taxis (1) meaning that there appears to be congestion (1). • Appears to be a high-density urban area with lots of housing and apartments (1) so this can lead to more congestion due to the number of people travelling (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(e)	**AO1 (1 mark)** Award one mark for a suitable land use identified. • Housing (1) • Golf course (1) • Airport (1) • Equestrian (1) • Business parks (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(f)	**AO2 (2+2 marks)** Award 1 mark for a reason and a further expansion mark, up to a maximum of 2 marks each. • Prices of land typically increase towards the city centre (1) therefore only certain land-uses and activities can afford the rents / spaces (1). • Historic reasons such as growth of urban areas next to a river (1) can means that the core CBD is in a particular / unusual location (1). • Transport routeways and nodes can influence land-use patterns (1) as these offer points of access which means that housing or industry can develop next to points of accessibility (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(g)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a reason and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. • Delhi has a much higher index of pollution compared to Dubai as it is a poorer country (1) which means that the government has less money to manage waste for example (1) and therefore the place has lots of litter and is untidy (1). • Dubai has moderate air pollution compared to Delhi's very high air pollution due to the differences in the cities' populations (1) where each person / activity has a pollution "overhead" (1) which means that air pollution is worse in the most crowded places (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(h)	**AO2 (4 marks)** Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. Maximum of 2 marks when no named developing or emerging country is used in context. A range of countries and examples could be chosen, for both waste and housing, e.g. with policies and incentives, working with NGOs as well as legislation. Waste disposal: • In Delhi (India)local government has provided funding to promote e-waste recycling (1) which reduces the amount of electronics reaching landfill (1). Housing: • In Rio (Brazil), NGOs have worked with the government to develop for better quality housing in slum settlement (1) which provides families with a more stable lifestyle (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
3 (i)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Rates of urbanisation are controlled by a number of complex factors linked to development. • Urban areas have better provision of education and services which attract people from rural areas; the speed of this process may be limited by transport, housing technology etc. • Physical geography, resource, e.g. coal and access to trade and markets would have controlled population growth and rates of urbanisation especially in the last 200 years. • Political governance influences rural urban migration, e.g. growth of Chinese megacities in recent years and the country has developed and opened its borders to more trade and business. • There may be push factors operating especially in Asia and Africa: conflict, natural disasters, food and famine, lack of services and healthcare etc. • It could be argued that these projections may not be true, e.g. wealthier countries have much lower growth rates or even declining populations in future, so this is a factor of more recent urbanisation. **AO4** • On Figure 3c, it can be seen that all regions have seen an increase in their urban populations 1950-2020. • Figure 3c shows urban populations (compared to rural) are projected to continue to rise. • Figure 3c shows the greatest change in the percentage of urban population has been in Asia compared to Europe and Oceania between 1950-2020.

	• Figures 3c shows how there has been very little change in the percentage of urban population in Oceania between 1980 and the present day.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

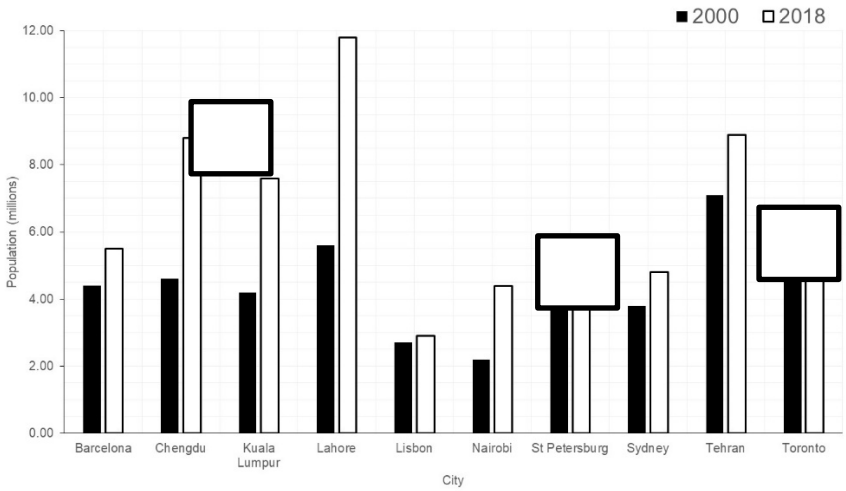
3(a)(i)	**AO1 (1 mark)** Award 1 mark for a suitable defintion. • The movement of people and employment from cities to rural areas. (1) • The movement of people and employment from major cities to small cities and towns. (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (2 marks)** A - Air pollution (1) F - Water contamination (1) B, C, D, and E are all incorrect as they are other types of problems associated with rapid urban growth.	**(2)**

Question number	Answer	Mark
3(b)(i)	**AO2 (1 mark) /AO3 (1 mark)** Award 1 mark for suitable reason based on evidence from the photograph (AO3), and a further 1 mark for extension through explanation (AO2), up to a maximum of 2 marks. • High building density (1) due to high population density. (1) • Dense transport network/transport hub (1) as people need to travel to the area for work. (1) • Multi-storey buildings (1) due to shortage of space. (1) • Lack of green space (1) due to high price of land. (1)	

	Accept any other appropriate response. Evidence must be plausibly inferred from the photograph.	**(2)**

Question number	Answer	Mark
3(b)(ii)	**AO1 (1 mark)** D - The land at the edge of an urban area where the rural area begins. (1) A, B and C are incorrect as they are not definitons of a rural-urban fringe.	**(1)**
Question number	**Answer**	**Mark**
3(c)	**AO2 (2 +2 marks)** Award 1 mark for identification of a suitable strategy for improving quality of life related to transport and housing, and an additional 1 mark for development through further explanation or exemplification. Maximum of 2 marks for transport and housing each. Transport • Introduce congestion zone charges to reduce traffic (1) to try and reduce air pollution (1). • Increase electric car charging points (1) to reduce carbon emissions from burning petrol (1). Housing • Develop brownfield sites into affordable housing (1) to reduce pressure on existing housing (1). • Creating quotas for affordable houses (1) in any large new developments that would have otherwise been targeted to high income populations (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(d)(i)	**AO3 (1 mark)** Award 1 mark for an X in the box above the column for Lahore.  **Figure 3b**	**(1)**

Question number	Answer	Mark
3(d)(ii)	**AO3 (1 mark)** A - Chengdu (1) B, C and D are incorrect as they have less than +4.2 increase experienced in Chengdu: Lisbon = +0.2; St Petersburg = +0.7; Toronto = +1.5	**(1)**

Question number	Answer	Mark
3(d)(iii)	**AO2 (1 mark)** Award 1 mark for a suitable factor. • Economies of scale. (1) • Multiplier effect. (1) • Rural-urban migration. (1)	

	• Concentration of employment possibilities. (1) • High birth rates (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (4 marks)** Award 1 mark for initial idea of how a group manages a challenge, and an additional 1 mark for development through further explanation or exemplification of how they manage the social challenge. Maximum of 2 marks for each group. Maximum of 2 marks when no named developing or emerging country, or a developed country is used instead. A range of country examples and various groups could include: • [Tanzania]: ○ Local government/ politicians can increase provision of social services (1) to improve health of the population (1). ○ NGO such as WaterAid can provide equipment to increase clean water supply to people living in informal settlements (1) reducing risk of poor water quality consumption (1). Accept any other appropriate response. Note: group or organisations can be implicit or explicit.	**(4)**

Question number	Indicative content
3(f)	**AO3 (4 marks)/AO4 (4 marks)** . **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance**

	The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include the following. **AO3** • Populations in towns and cities across the globe have been growing at different rates for decades. The country's stage in development greatly affects this process. • As a country begins to develop and industrialisation takes place, many towns and cities begin to grow and have an increased demand for workers. This causes a lot of rural-urban migration which leads to increased urban populations. • Demographic trends also mean that some countries in earlier stages of development still tend to have quite high birth rates which leads to high rates of population growth in urban areas. • Some economies do not develop at the same pace, and so patterns of urban growth are not as fast as others. • In more developed countries, the proportion of the population living in urban areas has slowed down as counter-urbanisation is often taking place with many people preferring to live in the rural-urban fringe, or more rural areas. **AO4** • Figure 3c shows varied patterns of growth for the proportion of populations living in urban areas in different countries. • Figure 3c shows how during this time span (1960-2015) there have been different paces of growth across different countries from different starting points. • Examples could include: Kenya has risen from 8 to around 25% while Brazil started at 46% and has grown to around 83%. • Figure 3c shows that in recent years growth of urban populations has begun to plateau for some countries such as France. • Figure 3c shows that in recent years urban growth has continued at pace, for example China.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)

		• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

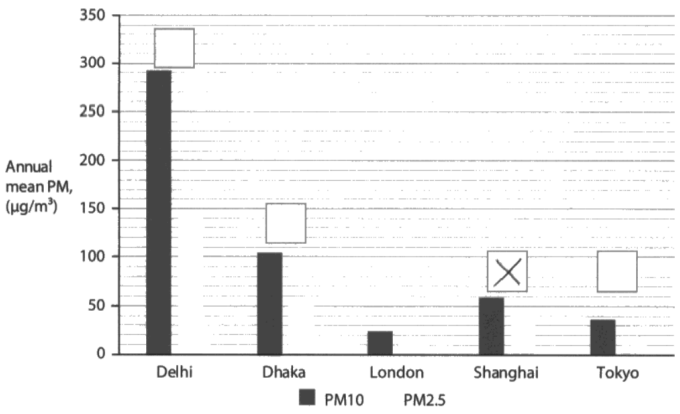
3(a)(i)	**AO1 (1 mark)** • The outward spread of an urban area, with greater proportion of people moving to the suburbs. (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (2 marks)** A Increased traffic congestion and D reduced access to health services. B, C, E and F as they are not problems associated with urban growth.	**(2)**

Question number	Answer	Mark
3(b)(i)	**AO2 (1 mark) /AO3 (1 mark)** Award 1 mark for suitable reason based on evidence from the photograph (AO3), and a further 1 mark for extension through explanation (AO2), up to a maximum of 2 marks. • Large amounts of green space (1) which suggests lots of farmland available (1). • Dense urban area in the distance (1) which suggests this is far from the city centre (1). • Large industrial development visible (1) which typical of an out of town development (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(b)(ii)	**AO1 (1 mark)** B Land that has been previously used, abandoned and now waits new use for industrial or commercial purposes. A, C, and D are incorrect as they do not refer to brownfield sites.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (2 +2 marks)** Award 1 mark for identification of a factor that can affect land use patterns and an additional 1 mark for development through further explanation or exemplification. • Land value (1) high value land in the CBD for example tends to be used by businesses who can afford the higher rates. • Access to transport routes (1) as many people try to locate either their business or residential areas near efficient transport networks (1). • The amount of space required for an activity (1) business parks tend to be located in a large open area to accomodate all their facilities (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(d)(i)	**AO3 (1 mark)** Award 1 mark for an X in the box above the columns for Shanghai (1).  	**(1)**

Question number	Answer	Mark
3(d)(ii)	**AO2 (1 mark)** A Delhi (149) B (Dhaka = 47), C (London = 11) and D (Shanghai = 14) are incorrect as they have a smaller difference.	**(1)**

Question number	Answer	Mark
3(d)(iii)	**AO2 (1 mark)** • Traffic/vehicles/cars (1) • Industry/factories (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (4 marks)** Award 1 mark for suitable identification of a strategy with a further mark for development or exemplification. Maximum of 2 marks for each strategy. A range of examples could be used, and responses could refer to strategies which target a range of issues (waste disposal, transport, education, health, employment and housing) Examples could include: • Self-help schemes in favelas (1) to try and give people the opportunity to buy or rent land connected to city services to provide higher standard of housing (1). • NGOs working to improve water access to houses in informal settlements (1) which reduces the chance of spreading waterborne diseases (1). • Improve sustainable transport network (1) through the Curitiba Master plan which addressed transport network issues across the city and involves prioritizing public transport networks (1). • Increasing investment into the urban rail systems (1) to replace old colonial railways to improve reliability (1). Accept any other appropriate response.	**(4)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>3(f)</td><td colspan="2">AO3 (4 marks)/AO4 (4 marks)

Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include the following.

AO3
• Megacities are cities with populations of over 10 million people.
• The factors that affect their growth are those that affect urban areas more generally.
• Population growth: The growth of megacities are fuelled by rural-urban migration, international migration and by demographic characteristics of their populations. Often cities are dominated by younger populations who are also the demographic age groups who tend to have children. In developing/emerging countries where birth rates are still high this can lead to rapid growth of populations.
• Economic Development which is often concentrated in these cities and leads to the multiplier effect attracting more people and businesses to the city, in turn creating further growth.
• Some of these cities appear to be close to coast because they have an advantage for import and export and associated trade.

AO4
• Figure 1c shows predicted population growth for several megacities across the globe by 2025.
• Figure 1c shows how the global spread of the world’s megacities, with a concentration in Asia.
• Figure 1c shows how some of the megacities with the predicted highest growth will be in Asia.
• Figure 1c indicates there are a lack of megacities in Africa.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of</td></tr>
</table>

		understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

Question Number	Answer	Mark
3(a)(i)	**AO1 (1 mark)** B Reduces loss of countryside (1). The answer cannot be A (a disadvantage), C (a disadvantage), D (refers to greenfield sites).	**(1)**

Question Number	Answer	Mark
3(a)(ii)	**AO1 (1 mark)** • Overpopulation (1) • Shortage of housing (1) • High demand for services (1) • Development of squatter settlements (1) • Increased air pollution • Traffic congestion (1) • Urban sprawl/loss of greenfield sites (1) • High competition for jobs/growth of informal economy (1). Accept any appropriate response. If answer includes pollution, must include which type to obtain the mark.	**(1)**

Question Number	Answer	Mark
3(b)	**AO1 (1 mark)** A Business park (1). The answer cannot be B, C or D as these are usually found in the centre of the city.	**(1)**

Question Number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for basic evidence from the from the photograph (AO3) and a further 1 mark for extension through explanation (AO2), up to a maximum of 2 marks. • Lots of green space around the factory (1) which means there is space to expand if the business grows (1). • Flat land (1) suitable for building large factories (1). • Road connections visible (1) which are important for attracting a workforce and for transporting goods produced (1). • Scenic environment for surroundings (1) can be an attractive prospect for workers (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable definition. • A city with a population of 10 million people or more (1). Accept variations of the above definition mentioning a population of 10 million.	**(1)**

Question Number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for a factor and a further expansion mark, up to a maximum of 2 marks each. • Prices of land and property in the city centre have become too high (1) therefore people seek alternatives where the cost is lower (1). • High population densities in the city centre mean high demand for housing and increased cost (1) leading to some people moving to an area with more room for larger houses (1). • Concerns over air pollution or crime in city centres (1) means people are turning to other areas to live, moving further away from the city centre (1). • Increasing wealth of people working in tertiary jobs (1) who want to live in an area with better quality of life e.g. have a garden (1). • Improvements in communication (1) as people no longer have to travel to the office every day to do their job (1). Accept any other appropriate response.	**(4)**

Question Number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a reason and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. • There are predictions for population of megacities such as Dhaka to reach over 40 million by (2035) (1) this is likely to be due to high birth rates (1) which leads to faster rates of growth (1). • The population of Manila is predicted to grow by around 12 million people from 2000-2035 (1) due to continued rapid urbanisation associated with rural-urban migration (1). • All three megacities shown display a significant increase in their population during this time scale and are predicted to keep increasing in the future (1), likely to be due to high rates of natural increase (1). Accept any other appropriate response.	**(3)**

Question Number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for identification of each suitable strategy and an additional 1 mark for development through further explanation or exemplification. Maximum 2 marks for each strategy. • Self-help scheme (1) where the local authority provides cheap building materials or loans to make home improvements (1). • Site and service schemes (1) where local people are able to buy a piece of land cheaply to build their own home (1). • Urban planning (1) where the government replaces squatter settlement housing with high-quality high-rise flats (1). • Local governments trying to destroy parts of squatter settlements (1) leaving many people homeless (1). • NGOs provide aid to reduce poverty (1) through education or provision of training (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
3 (h)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • There are a range of environmental challenges facing urban environments in developed countries including: air pollution, waste disposal, energy use, lack of green space. • High levels of traffic and congestion in city centres leads to increased air pollution. London regularly exceeds the international safety limits for air quality. Air pollution is thought to contribute to respiratory problems. In London it is estimated that 9,000 people die a year due to air pollution. • Waste is a major issue for urban areas: New York produces around 12,000 tonnes of household waste everyday, as well as 13,000 tonnes with much of this ending up in landfill. • In addition to the environmental challenges, urban areas also face a range of social and economic challenges which can exacerbate the environmental ones (e.g. demand for health and education services diverting funding that could be used to combat air pollution or waste). **AO4** • Figure 3c indicates there are a range of environmental challenges facing urban areas. • Figure 3c suggests that the number of vehicles visiting urban centres is a challenge and that to address this there has been a move to limit them. • Figure 3c suggests that the amount of waste produced in urban area is a challenge and therefore there is a need for increased recycling facilities to be more sustainable. • Figure 3 suggests air pollution may be leading to increased respiratory problems for urban populations.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

3(a) (i)	**AO1 (1 mark)** B Cheaper to build on (1) The answer cannot be A (incorrect), C, (disadvantage), or D (disadvantage).	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (1 mark)** Award 1 mark for a suitable factor identified. • Population growth/natural increase (1) • Rural to urban migration (1) • Industrialisation/economic development (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** C 10 million people (1) The answer cannot be A or B (too few), or D (too many).	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for basic evidence from the from the photograph (AO3) and a further 1mark for extension through explanation (AO2), up to a maximum of 2 marks. • Very high density high-rise housing (1) associated with rapid urbanisation in order to try and cope with increased number of residents (1). • Lower quality housing in the foreground (1) which suggests housing supply has not been able to keep up with demand (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable definition. • Work not officially recognised (1). • Work done by people who work for themselves on the streets of the city (1). • Work that doesn't have set wages or involve paying any taxes (1). Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for a suitable factor and a further mark for expansion. Maximum 2 marks for each factor. • Increased levels of air pollution in city centres (1) leads people to want to move to the countryside for a cleaner environment (1). • Increased levels of crime in city centres (1) which leads people to seek safer areas outside of the city (1). • High land prices and housing costs in cities (1) is leading people to look to more rural areas where prices may be lower (1). • Rising wealth of population as people want a better quality of life (1) by living in quieter and greener locations away from the city (1). • Improvements in communication networks (1) which mean people can work from home rather than travel to a central office (1). • Elderly people retiring (1) wanting a more peaceful environment (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a trend and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. • There has been an increase in the percentage of population living in urban areas in all three regions (1) due to rapid urbanisation (1) as urban areas have continued to grow due to rural-urban migration (1). • The region with the highest percentage of population living in rural areas to date has been Europe (1) as this region experienced urbanisation earlier than Africa and Asia (1), and this is predicted to continue into the future (1). • The increase in the percentage of the population living in urban areas is more rapid in Africa and Asia compared to Europe (1) because many countries in these regions are undergoing rapid urbanisation (1) due to rural-urban migration (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for initial explanation and an additional mark for development through further explanation or exemplification. Maximum 2 marks for each strategy. A range of countries and examples could be chosen, based on either waste, housing, transport, education e.g. with policies and incentives, as well as legislation. • A congestion charge has been introduced in some cities (London, Durham) (1) to try and reduce congestion and air pollution (1). • Residents are establishing community gardens in many cities (1) in order to build community cohesion, but also ensure access to fresh food (1). • Building cycle lanes (1) to provide transport routes which could reduce the use of cars (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
3 (h)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • There are a range of social challenges facing urban areas in developing/emerging countries. • Rapid urbanisation facing many cities in developing countries, such as Dhaka has led to increase pressure on many services such as education and healthcare, and not all people can access them.

<table>
<tr><td></td><td colspan="2">

- Rapid rural-urban migration means there is often not enough housing available, and can lead to the development of squatter settlements where there are poor quality facilities, and overall a lower quality of life, creating many social challenges (from poverty, inequality, increased risk of disease and low literacy levels for example). In Dhaka for example there are around 4 million residents living in over 4,500 squatter settlements across the city.
- Many of these social challenges are interlinked, if people can access skilled jobs, they can increase their income which can lead to a higher quality of life.
- In addition to these social challenges, urban areas face multiple environmental and economic challenges from ensuring reliable electricity supply through to air pollution and congestion. For some groups of people these may rank higher on the priority list than some of the social challenges.

AO4

- Figure 3c indicates some of the social challenges facing urban areas in Bangladesh, according to a city developer.
- Figure 3 indicates there is a high demand for housing which may mean there is not enough for all residents.
- Figure 3c suggests that there may be challenges about ensuring all children access education.
- Figure 3c suggests that population change is creating pressure on local services, such as healthcare.

</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>

- Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)
- Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)

</td></tr>
<tr><td>Level 2</td><td>4–6</td><td>

- Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently,

</td></tr>
</table>

		leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a) (i)	**AO1 (1 mark)** D – rural-urban fringe (1) The answer cannot be A, B, or C as these are not typically the locations associated with science parks.	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (1 mark)** Award 1 mark for any suitable reason. • Desire for a larger house (1) • Need to expand a business (1) • Air pollution in cities (1) • Lower housing costs (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** D transport connections (1) The answer cannot be A, B or C as these are incorrect.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for a basic evidence from the from the photograph (AO3) and a further 1 mark for extension through explanation (AO2), up to a maximum of 2 marks. • Reduces any need to destroy more green space (1) as land has already been cleared (1). • Located next to other businesses and services (1) which might be important for the new business (1). • Infrastructure is already in place (1) to there are good transport connections for workforce to access the site (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable definition. • Separation of social classes within cities (1). • Separation of groups based on race/ethnicity/gender (1). Accept any other appropriate response, including the idea of ethnic enclaves as illustration of segregation.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for a factors and a further expansion mark, up to a maximum of 2 marks each. • Economic development in the city (1) which attracted more people to move there leading to more rural-urban migration (1). • Population growth (1) fuelled by rural-urban migration but also natural increase of the urban population as it grows (1). • Multiplier effect (1) as more people have moved there, more people need more services, which fuels more economic growth (1). • Location on a coastline (1) leading to creation of ports to facilitate international trade (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a trend and a further 2 marks for extension through explanation or description or use of figures from the resource, up to a maximum of 3 marks. • The percentage of urban population in the UK has been relatively stable since 1960 with only a slight increase (1) because the UK has already undergone urbanisation much earlier (1) as part of the industrial revolution (1). • Oman has experienced a rapid increase in urban population from 1960-1990 (1) as it experienced rapid urbanisation (1) as part of its economic development process (1). • Kenya has experienced more or less consistent rate of growth since 1960 (1) from around 9% to 29% by 2019 (1) as the country is still developing rural-urban migration continues to take place (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification for each group. Award up to two marks each group up to a maximum of 4 marks for the question. Maximum 2 marks if developing/emerging country provided. If no country provided but relevant content for a developed country then award up to max marks. Accept local /regional/national government as different groups. A range of countries and examples could be chosen, relating to environmental challenges which could include air pollution, waste, water pollution, noise pollution for example. • [UK] A congestion charge has been introduced by local government in some cities (London, Durham) (1) to try and reduce congestion and air pollution (1). • [UK] Residents are establishing community gardens in many cities (1) in order to build community cohesion, but also ensure access to fresh food (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content		
3 (h)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • There are a range of economic, social and environment problem that are associated with rapid urbanisation. • High traffic density is often associated with rapid urbanisation which can lead to congestion, but also increased air pollution. • The World Health Organisation air quality guidelines recommends that cities with a PM2.5 concentration should not exceed 10 μg/m^3. Despite this many cities (in both developing and developed countries) exceed this level. • High levels of air pollution can lead to more respiratory health issues in residents. • Rapid urbanisation facing many cities in developing countries, such as Dhaka, has led to increase pressure on many services such as education and healthcare, and not all people can access them. • Rapid rural-urban migration means there is often not enough housing available and can lead to the development of squatter settlements where there are poor quality facilities, and overall a lower quality of life, creating many social challenges (from poverty, inequality, increased risk of disease and low literacy levels for example). In Dhaka for example there are around 4 million residents living in over 4,500 squatter settlements across the city. • Many of these problems are interlinked, urban areas face multiple environmental and economic challenges from ensuring reliable electricity supply through to air pollution and congestion. **AO4** • Figure 3c shows how air pollution affects cities across the globe. • Figure 3 shows how air pollution can vary within and between regions from as high as 122 micrograms of PM2.5 in Delhi to 20 in Mexico City. • Figure 3c suggests that urban air pollution is a global problem due to high levels across several continents (above 55.5 PM2.5 which is identified by WHO to be unhealthy). • Figure 3c indicates that a number of cities in South East Asia have high levels of air pollution.		
Level	**Mark**	**Descriptor**	
	0	No rewardable material.	

Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a) (i)	**AO1 (1 mark)** D – financial district (1) The answer cannot be A, B or C as these features usually associated with areas outside the city centre.	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (1 mark)** Award 1 mark for any suitable reason. • Accessibility/transport links (1) • Proximity to city centre (1) • Building quality (1) • Land use (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** A infrastructure (1) The answer cannot be B, C or D as these do not affect land use patterns.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for a basic evidence from the from the photograph (AO3) and a further 1 mark for extension through explanation (AO2), up to a maximum of 2 marks. • Potential for room to expand at a later date (1) as the land is usually on the edge of a settlement (1). • Nicer environment for a business (1) which can provide greater job satisfaction for workers (1). • No need to pay for land to be cleared before building (1) so may be cheaper than building on some brownfield sites (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable definition. • Movement of people away from cities to more rural areas or smaller towns and cities (1). Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for a suitable and a further development or exemplification, up to a maximum of 2 marks each. • Population growth / natural increase (1) fuelled by rural-urban migration but also natural increase of the urban population as it grows (1). • Multiplier effect (1) as more people have moved there, more people need more services, which fuels more economic growth (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for a trend and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. • Asia has developed a larger proportion of urban dwellers over recent decades (1). This is due to the growth of secondary sectors and industrialisation (1) which had lead to growth of employment in urban areas (1). • Europe has a developed lower proportion of global urban population over time (1) as it went through processes or urbanisation earlier (1) and actually experienced process of counter-urbanisation as people seek places with a better quality of life (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. A range of countries and stakeholders examples could be chosen, relating to different environmental challenges (these could include air pollution, waste, water pollution, noise pollution). Maximum 2 marks where a developed country or no country provided. • [Brazil] In Curitiba, local government supporting sustainable transport (1) to try and reduce congestion and air pollution (1). • [Brazil] In Curitiba, planners have helped to create public transport systems that are effective (1) to reduce the number of vehicles on the road (1). • [India] In Delhi, government have been investing in waste management programmes to increase points for recycling. • [India] In India, a central pollution board was established (1) to develop programmes to reduce air pollution across different cities by finding new technologies (1). Accept any other appropriate response.	**(4)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>3 (h)</td><td colspan="2">AO3 (4 marks)/AO4 (4 marks)
Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3
• There are a range of economic, social and environment problem that are associated with rapid urbanisation.
• High traffic density is often associated with rapid urbanisation which can lead to congestion, but also increased air pollution.
• Congestion can lead to reduced economic productivity as people cannot move effectively around urban areas.
• The World Health Organisation air quality guidelines recommends that cities with a PM2.5 concentration should not exceed 10 μg/m^3. Despite this many cities (in both developing and developed countries) exceed this level, and congestion exacerbates this issue.
• High levels of air pollution can lead to more respiratory health issues in residents.
• Rapid urbanisation facing many cities in developing countries, such as Dhaka has led to increase pressure on many services such as education and healthcare, and not all people can access them.

AO4
• Figure 3c shows how many cities which have experience rapid urbanisation face high level of congestion – with journey times over 43% above uncongested free flow of traffic.
• Figure 3c shows how this issue affects urban areas from across different continents suggesting it is a global problem.
• Figure 3c indicates that Moscow, Mumbai, Bogota and Manila have the highest average congestion levels, these are all based in developing/emerging economies.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)
• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)</td></tr>
</table>

Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a) (i)	**AO1 (1 mark)** B - Increased network of cycle lanes (1) The answer cannot be A, C or D as these are not strategies which would make cities more sustainable. A would increase traffic and C and D relate to wider quality of life but not sustainability.	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (1 mark)** Award 1 mark for any suitable reason. • They can include green spaces in their city plans(1) • They can create plans for affordable housing schemes(1). • They can support regeneration of areas (1). • Communication with law enforcement (1).	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** D employment (1) The answer cannot be A or C as these are impacts of urbanisation, or B which is not a factor that can lead to urbanisation.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for basic evidence from the from the resource (AO3) and a further 1mark for extension through explanation (AO2), up to a maximum of 2 marks. • There is a lot of commercial space (1) which may be due to the land values (1). • There are some residential aeras (1) as there are good transport connections via road/rail (1). • High land values (1) means only retail and offices are generally only located in the centre (1). Accept any other appropriate response	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable area identified. • Rural-urban fringe (1) • Urban fringe (1) • Suburban fringe (1) • Edge of the city (1)	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for an advantage and a disadvantage, with a further mark for expansion mark, up to a maximum of 2 marks each. Advantage • There is often more land available (1) which would allow for a better-quality house to be built (1). • There may be better access to major roads for residents (1) which may support their ability to travel to other areas (1). • Improved quality of life for residents (1) due to lower levels of air pollution (1). • Reduces housing pressure on the city centre (1) supporting growth of the population for local jobs (1). Disadvantage • This can lead to building on greenfield sites (1) which can damage local biodiversity (1). • There may be resistance from local residents (1) which may lead to conflicts (1). • May lead to urban sprawl (1) as housing estates expand the amount of land used for residential purposes (1). • Loss of agricultural land (1) which can lead to loss of jobs (1). • Long way from CBD where many people work (1) inconvenient to commute therefore/doesn't match sustainability principles of new builds (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a trend and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. • There has been a significant increase in the percentage of urban populations (1) this could have been driven by availability of jobs in the cities (1) which caused rural-urban migration (1). • There has been a rapid increase in urban populations since 1900 (1) caused by rural-urban migration (1) which has been driven by industrialisation in many countries during this time period (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. Maximum of 2 marks when no named developed. A range of countries and examples could be chosen, relating to a range of challenges which could include: congestion, transport, employment, or environmental issues. • Nigeria: ○ Lagos experiences high level of congestion (1) due to a rapid increase in the number of personal vehicles (1). ○ In Lagos there have been shortages in drinking water (1) due to rapid increase in demand which the existing infrastructure cannot manage (1). • Bangladesh: ○ Lack of waste management supplies in Dhaka (1) have led to disposal of waste into local water bodies which can led to contamination (1). ○ Shortage of housing in cities like Dhaka (1) can lead to the growth of informal settlements (1). Accept any other appropriate response.	**(4)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>3 (h)</td><td colspan="2">AO3 (4 marks)/AO4 (4 marks)
Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3
• Development of brownfield sites is common in many cities due to shortages of space, and the need to redevelop areas for different purposes. E.g. decline of motor industry in the US has led to many cities needing to regenerate areas which have experienced decline.
• Brownfield sites are typically associated with reduced loss of the countryside, and land use that would be used for other purposes such as agriculture.
• Benefits of building on brownfield sites include that it can lead to regeneration and revival of urban areas (as seen in the London Docklands). This also reduced the need to build on greenfield sites, which can reduce urban sprawl.
• There are however drawbacks of building on brownfield sites. If the site is contaminated for example, then it can be expensive to treat the land to make it suitable for construction for new purposes.

AO4
• Figure 3c shows how different brownfield sites have been developed into new sites in the United States.
• Figure 3 shows how there is potential for transformation for sites such as old houses, abandoned factories and polluted sites into new buildings, gardens or leisure areas.
• Figure 3c shows how brownfield sites can be repurposed for various commercial and leisure purposes.
• Figure 3c shows how the use of brownfield sites has the potential to have economic, social and environmental impacts.</td></tr>
<tr><td>Level</td><td>Mark</td><td>Descriptor</td></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)
• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)</td></tr>
</table>

Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a) (i)	**AO1 (1 mark)** A - Chennai, India (1) The answer cannot be B, C or D as these cities have populations with less than 10 million which is the minimum for a megacity.	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (1 mark)** Award 1 mark for any suitable definition: • Growth of urban areas at the edges/suburbs (1) • Shift from central urban areas to the suburbs/movement of people to the suburbs (1) • Movement of people from central urban areas to the suburbs/rural-urban fringe (1) • Outwards movement of an urban area (1) Accept any other reasonable response.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** C population growth (1) The answer cannot be A, B or D as these are not reasons for building on rural-urban fringe. A would be city centre, B, would require less building and D relates to farming practices.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for suitable type of land use (AO2) and a further 1 mark for extension using evidence from the resource (AO3), up to a maximum of 2 marks. • Retail (1) which is usually found in the city centre (1). • Offices/commercial buildings (1) as there are skyscrapers typically used for this purpose. (1). • Transport (1) as there is large train station present (1). • Residential (1) as there are many buildings which could be used as homes (1). • Industry (1) as good transport connections (1). • Recreation/tourism (1) use of green spaces for leisure time (1). Accept any other appropriate response	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable stakeholder: • Planners (1) • Government/politicians (1) • Investors/business people (1) • Local councillors (1) • Residents/community groups (1) Accept any other appropriate response.	(1)

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for each initial challenge, with a further mark for expansion, up to a maximum of 2 marks each. • Income not taxed (1) so governments cannot use money raised to invest in the local area (1) • People do not have a reliable income (1) therefore they may struggle to pay for bills/food which may lead to experiences of poverty (1) • Informal jobs often don't have much health and safety protection (1) so workers do not have safe working conditions/may be injured (1). • Not regulated/no contract/lack of legislation (1) so unlikely to get holiday pay/medical benefits/protective equipment (1). Accept any other appropriate response.	(4)

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a trend and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. • Many cities have had consistently high levels of air pollution PM2.5 (1) as rapid urbanisation tends to increase the number of cars in the area (1) which can lead to increased particulate matter (1). • Urbanisation can lead to increased air pollution/PM2.5 (1) as there can be a lot of traffic congestion (1) which leads to increased emissions (1). • Levels of air pollution have declined in Bengaluru from 2016-2019 (1) from around 52 to 33 PM2.5 (1) as rapid urbanisation led to air pollution which prompted governments to put in place measure to reduce pollution (1). Accept any other appropriate response.	(3)

Question number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. A range of countries and examples could be chosen, relating to a range of improvements made to transport options. • Bangladesh: ○ Dhaka has a new metro system (1) which can carry large number of passengers which could reduce congestion (1). ○ New highways built (1) designed to connect major urban areas (1). • Brazil: ○ Curitiba has a Mass Rapid Transit System (1) which connects residential areas to the commercial areas (1). ○ Cycle lanes have been built (1) to allow more travel by bike and reduce carbon emissions (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
3(h)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Cities around the world have been undergoing continued and often rapid urbanisation for many years. In 2007 the UN estimated that there were more people in urban areas than rural. • Rapid urbanisation is typically associated with countries that have gone through sector shifts through industrialisation and on to service sector industries. • Such shifts are associated with rural-urban migration as people seek more employment opportunities and the potential for a different quality of life. • By 2030 it is estimated that there will be over 40 megacities around the world. • Natural increase in some countries with relatively high birth rates contribute to growing populations in urban areas.

	• Growth of smaller cities due to counter-urbanisation. **AO4** • Figure 3c shows how the global urban population is expected to grow to 5 billion people by 2030. • Figure 3c shows how there will be significant growth in the number of cities in all categories, but particularly mid-sized cities by 2030. • Figure 3 shows how the number of megacities grew from 10 in 1990 to 33 in 2018 and projected to 43 by 2030. • Figure 3 shows how there are different levels of predicted growth for the future, with a significant growth in mid-sized cities and megacities.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a)(i)	**AO1 (1 mark)** **C** - Lahore, Pakistan 11.1 million people (1) The answer cannot be A, B or D as the populations are below 10 million which is the minimum for a megacity.	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (1 mark)** Award 1 mark for any suitable definition. • The movement of people / employment from major cities to smaller cities and towns/ to rural areas. (1) • Movement away from urban areas (1). Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** C – existing roads and electricity present (1) The answer cannot be A, B or D as these are not reasons for building on a brownfield site.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for basic evidence from the from the resource (AO3) and a further 1 mark for extension through explanation (AO2), up to a maximum of 2 marks. • Accessibility (1) as there are clear access by road (or by river) (1). • High density buildings (1) suitable for commercial office blocks (1). • Land value (1) which favours commercial / business land uses (1). • Evidence of piers/waterside/port (1) which allows access by boat/transporting goods by boat (1). • Limited space (1) which has driven the need for high-rise housing (1). • Limited green space (1) due to rapid urbanisation (1). • Green spaces (1) used for leisure (1). Accept any other appropriate response	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable source of air pollution. • Cars / vehicles/ lorries/ traffic /trains (1) • Factories (1) • Construction (1) • Wood burners (1) • Burning fossil fuels/power plants (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for an initial idea of how urbanisation can lead to housing challenges, with a further mark for expansion mark, up to a maximum of 2 marks each. • High levels of rural to urban migration can lead to rapidly growing populations (1) which can outstrip supply leading to the growth of informal settlements (1). • Urbanisation can lead to increase in the value of land/housing (1) which can mean some people can no longer afford to live in the urban area (1). • High demand for housing (1) can lead to very cramped living conditions/creates high density housing (1). • Increased number of people when services (e.g. waste disposal) are inadequate (1) can lead to unsanitary conditions/disease/shortage of available clean water (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of the pattern shown and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. • There are high levels of informal employment in the African countries shown (1) which may have been caused by rapid rural-urban migration (1) which may have been faster than the growth in jobs (1). • Between 63-86% of employment in the African cities shown was informal (1) this may be due to lack of education of some of the people who moved to the city (1) which meant they could not access formal employment (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for initial idea and an additional 1 mark for development through further explanation or exemplification. A range of countries and examples could be chosen. ○ Improve public transport (1) to reduce congestion and improve accessibility (1). ○ Congestion charges (in cities like London) (1) to improve air quality/plants remove more CO2 (1). ○ Increasing green spaces/recreational areas (such as the High line in New York) (1) to improve mental wellbeing (1). ○ Introducing affordable home schemes (1) so people can afford to live in cities and not commute such long distances (1). ○ Increase taxes (1) to pay for healthcare/waste collection (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
3(h)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive, and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • More than half the world's population lives in urban areas. By 2050 it is predicted that more than two thirds of the world's population will live in urban areas. • For some areas of the world that have already gone through industrialisation and shifts to tertiary and quaternary sectors, rapid urbanisation took place decades ago. Many European countries have seen the rate of urbanisation slow down, and experience counter-urbanisation. • Many developing or emerging economies that are undergoing industrialisation are experiencing more rapid urbanisation, in part due to the development of their economy and the associated rural-urban migration. • Rapid urbanisation driven by rural-urban migration as people move in search of jobs, the possibility of higher incomes, and greater access to services.

	• Investment often concentrates in urban areas leading to greater development of industries and business which further fuels rural-urban migration as well as urban sprawl. **AO4** • Figure 3c shows how urban growth rates have differed between Africa and Europe. • Figure 3c shows how Europe has had higher proportions of urban populations since 1950, with predictions this will continue until 2050. • Figure 3c shows how Europe rises from around 50% urban in 1950 to around 80% by 2050, whereas it is about 13% to 55% for Africa in this time period. • Figure 3 shows how Africa passes 50% of population being urban in around 2035, whereas this was already at 50% for Europe before 1950. • Figure 3c shows that by 2050 it is expected that both regions will have over 50% of populations living in urban areas.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a) (i)	**AO1 (1 mark)** A - counter-urbanisation (1) The answer cannot be B, C or D as these do not slow down the rate of counter-urbanisation.	**(1)**

Question number	Answer	Mark
3(a)(ii)	**AO1 (1 mark)** Award 1 mark for a suitable cause: • Rural-urban migration (1) • Job opportunities (1) • Natural increase (1) • Perceived improved quality of life (1) • Potential for better access to health/education services (1) • Better access to clean water/sanitation/electricity supplies (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** C Southeast Asia (1) The answer cannot be A, B or D as these regions of the world did not have the highest rate of urbanisation during the 2020s.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for suitable reason (AO2) and a further 1 mark for extension using evidence from the resource (AO3), up to a maximum of 2 marks. • Congestion (1) as high usage levels of private transports can cause delays in moving around the city (1). • High volumes of traffic (1) can contribute to air pollution/decreased air quality (1). • Creates air pollution (1) due to high volumes of traffic (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable food related challenge: • Food deserts (1) • Poor access to nutritious food (1) • High cost of food (1) • Excess of fast-food restaurants (1) • Cost of living crisis (1) • Malnutrition (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for each advantage, with a further mark for expansion mark, up to a maximum of 2 marks each. • Usually on the edge of cities with large amounts of land available (1) so there is the potential to expand in the future (1). • Sites can usually be more attractive/be surrounded by scenic beauty (1) which may help attract/retain skilled workers (1). • Potentially lower land values/cheaper in than in the city centre (1) because there is no need to clear away old buildings/infrastructure (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a change shown and a further 2 marks for extension through explanation or description, up to a maximum of 3 marks. • There will be a significant increase in the recycling of waste (1) which means that less needs to go to landfill (1) which means reduced environmental impact (1). • Increase in recycling (1) from about 24% to 55% (1) which can lead to less litter around the city (1). • There will be a greater focus on prevention of waste (1) which will mean greater efforts to reduce/reuse/recycle (1) which can reduce individual carbon footprints (1). • A significant reduction in the amount of waste going to landfill (1) which lead to less greenhouse gas emissions (1) or risk of land contamination (1). • Increase in recycling (1) leads to less air pollution (1) as less waste reaches landfill/is burnt (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for initial explanation and an additional 1 mark for development through further explanation or exemplification. Maximum of 2 marks when no named developed. • Planners: ○ Can ensure new developments have sufficient green spaces (1) to ensure those in high rise housing have access to green spaces for leisure/wellbeing (1). ○ Can include plans for sufficient services such as health and education (1) so residents do not have to travel long distances and incur high costs for doing so (1). ○ Can identify community issues (1) to target projects such as increased affordable housing (1). • Property developers: ○ Can include options for affordable housing (1) to ensure that people are not excluded from areas (1). ○ Can include renewable energy options in properties (1) to reduce household energy costs (1). Accept any other appropriate response.	**(4)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>3 (h)</td><td colspan="2">AO3 (4 marks)/AO4 (4 marks)

Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3
• Land use changes across a city in part due to land values and therefore who can access the land as well as the purpose of the area of the city.
• Typically land values are very high in the CBD and in areas where there is a need for commercial organisations. Such high land values tend to mean there are fewer residential properties.
• Typically closer to the city centre will be a greater proportion of flats to accommodate higher volumes of people, and also because property prices are higher they tend to be smaller.
• Proximity to the CBD is often a key factor in determining land use. Often the areas furthest from the CBD have a greater proportion of residential land use.

AO4
• Figure 3c shows land use changes significantly as you move away from the central business district.
• Figure 3c shows how the commercial land value is high in the centre of the city but also in some high points in residential areas, but generally declines in value as you move away from the CBD.
• Figure 3c shows multifamily residential properties have high land use values closer to the CBD and lower away from the CBD.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)
• Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)</td></tr>
</table>

Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a) (i)	**AO1 (1 mark)** D – a city with a population of 10 million (1) The answer cannot be A, B or C as these all have populations which are too small to be considered megacities.	**(1)**

Question number	Answer	Mark
3(a) (ii)	**AO1 (1 mark)** Award 1 mark for a suitable factor. • Rural-urban migration (1) • Improved transport (1) • Job opportunities (1) • Natural increase/high birth rate/ BR > DR (1) • Perceptions of a better quality of life in cities (1) • Government policy (1) • Urbanisation (1) • Multiplier effect (1) • Economic development (1) • Population growth (1) • Economies of scale (1) • Good transportation (1) • Increase in technology (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(b)	**AO1 (1 mark)** A coal fired power stations (1) The answer cannot be B, C or D as these would not cause air pollution in cities.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for suitable environmental challenge that would be created by what is shown in the resource (AO3) and a further 1 mark for the way politicians could manage it (AO2), up to a maximum of 2 marks. • Waste disposal (1) could increase funding for waste collection/recycling schemes (1) • Water pollution (1) could campaign/raise awareness to stop people adding litter to the water (1) • Dumping of plastics (1) create regulations/security cameras/fines for offenders (1) • Littering (1) community clean ups could be brought in (1). Accept any other appropriate response	**(2)**

Question number	Answer	Mark
3(d)	**AO1 (1 mark)** Award 1 mark for a suitable reason: • It can lead to inequality (1) • Differences in quality of life (1) • Pressure on public services in some areas (1) • Unequal access to services (1) • Poverty (1) • Language barriers (1) • Urban decline (1) • Discrimination (1). Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for each initial reason, with a further mark for expansion mark, up to a maximum of 2 marks each. • High property prices in city centres (1) mean people move to smaller towns or rural areas (1). • Desire for more access to green spaces (1) which are not usually as accessible within cities (1). • Desire for larger houses to raise a family (1) and cities typically have smaller/more expensive properties (1). • Get away from air pollution (1) to a rural area where the air is cleaner/less harmful to health (1)	**(4)**

	• Retired/work from home (1) so no need to live near the city centre for jobs/prefer a calmer/quieter place to live (1) Accept any other appropriate response.	

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of a feature shown in the resource and a further 2 marks for extension through explanation or description of the way this will create a challenge, up to a maximum of 3 marks. • Many cities indicate growth in the size of informal settlements (1) which means many people may be living in insecure conditions (1) which may increase the risk of poverty (1). • There are at least 2 cities with at least 120-200% growth in the size of informal settlements (1) which may create challenges for provision of education and healthcare (1) due to rapid population growth (1). • Argentina has 200.1-600%/higher growth in urban areas (1) big informal economy which is unregulated (1) increasing the crime rate (1) Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(g)	**AO2 (4 marks)** Award 1 mark for initial reason and an additional 1 mark for development through further explanation or exemplification. ○ Lack of other available land in cities (1) combined with a high demand for housing (1). ○ Industrial/business parks (need lots of open space for large complexes) (1) and room to expand in the future (1). ○ Potentially cheaper to build on than brownfield sites (1) as it does not need to be cleared/treated first (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
3 (h)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

	AO3 • There are a range of possible strategies aimed at improving the quality of life and its different components. This can include addressing waste disposal, transport, education, health, employment and housing. • Many strategies such as introducing new transport systems (such as new metro systems, new electric bus networks etc) can improve aspects of quality of life, such as reducing travel times. But few strategies tend to address overall quality of life. • These strategies can be implemented by a range of stakeholders at different scales, from the individual through to the global. The effectiveness of these strategies depends on their objectives, funding, sustainability and feasibility for implementation. **AO4** • Figure 3c shows strategies used to improve transport and electricity supply in the context of developing/emerging countries. • Figure 3c shows how a new mass rapid transit project in Dhaka, Bangladesh has the potential to help people reach different areas of the city more quickly. • Figure 3c shows how large-scale investment from organisations like the World Bank (in combination with other investors) can lead to improvements in electricity access. • Figure 3c shows has schemes to improve different aspects of living in cities can take place at different scales (from the city to a continent).

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

3(a)	**AO1 (1 mark)**	

	C increase in the proportion of people living in towns and cities (1) The answer cannot be A, B or D as these are not definitions of urbanisation.	**(1)**

Question number	Answer	Mark
3(b) (i)	**AO1 (1 mark)** Award 1 mark for a suitable factor. • Rural-urban migration (1) • Improved transport (1) • Job opportunities (1) • Natural increase/high birth rate/ increase in population (1) • Perceptions of a better quality of life in cities (1) • Government investment (1) • Rapid Economic Development (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(b)(ii)	**AO1 (1 mark)** A competition for jobs (1) The answer cannot be B, C or D as these are not problems caused by rapid urbanisation.	**(1)**

Question number	Answer	Mark
3(c)	**AO2 (1 mark) / AO3 (1 mark)** Award 1 mark for suitable evidence (AO2) and a further 1 mark for extension using evidence from the resource (AO3), up to a maximum of 2 marks. • High rise buildings (1) as these are often found in city centres due to shortage of land (1) • High building density (1) due to city centre location (1). Accept any other appropriate response	**(2)**

Question number	Answer	Mark

3(d)	**AO1 (1 mark)** Award 1 mark for a suitable reason: • Lack of income/poverty (1) • Inequality (1) • Food deserts (1) • Unemployment (1) • No/little land to grow food on (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
3(e)	**AO2 (2+2 marks)** Award 1 mark for each initial reason, with a further mark for expansion mark, up to a maximum of 2 marks each. • High property prices in city centres (1) mean people move to smaller towns or rural areas (1). • Desire for more access to green spaces (1) which are not usually as accessible within cities (1). • Desire for larger houses to raise a family (1) and cities typically have smaller/more expensive properties (1). • Transport links (1) making travelling longer distances quicker (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
3(f)	**AO1 (1 mark) / (AO3) 2 marks** Award 1 mark for an identification of reason and a further 2 marks for extension through explanation or description with references to the resource, up to a maximum of 3 marks. • Air pollution caused by congestion (1) can lead to respiratory health issues (1) which can increase pressure on health services (1). • There is a high economic impact of congestion (1) as people are delayed from getting to work (1) which leads to a reduction in sales (1). • New York has the highest economic losses (1) this can lead to workers sitting in traffic (1) causing a loss of productivity. (1) Accept any other appropriate response.	**(3)**

Question number	Answer	Mark

3(g)	**AO2 (4 marks)** Award 1 mark for basic advantages and disadvantages and an additional 1 mark for development through further explanation or exemplification. Maximum 2 marks for advantage and disadvantage. Advantage: • Potentially cheaper to build on than some other sites (1) as existing infrastructure/utilities is already in place (1). • Proximity to other existing businesses/labour (1) as they are usually located in urban areas (1). Disadvantage: • May be more expensive if land is contaminated (1) which means work will be needed to clean the land first (1). • Often little room for expansion (1) as built confines of existing urban infrastructure (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
3 (h)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • There are a range of possible strategies aimed at improving the quality of life and its different components. This can include addressing waste disposal, transport, education, health, employment and housing. • Many strategies aimed at improving waste disposal in cities (such as city wide recycling and reuse schemes or national recycling incentives) can improve aspects of quality of life, such as reducing the amount of litter on the streets, and the amount of wate reaching landfill. But few strategies tend to address overall quality of life. • These strategies can be implemented by a range of stakeholders at different scales, from the individual through to the national. The effectiveness of these strategies depends on their objectives, funding, sustainability and feasibility for implementation. • Without effective waste disposal facilities and programmes cities face a range of challenges including visual pollution, water pollution and the potential for greater health risks. **AO4**

	• Figure 3c shows strategies used to improve recycling and reduce disposable cups in the context of developed countries. • Figure 3c shows how a charging household in Australia may support reductions in the amount of waste. • Figure 3c shows how a coffee cup recycling scheme could reduce the 2.8 billion cups that are thrown away each year. • Figure 3c shows how schemes to improve different aspects of living in cities can take place at different scales and can be supported by individual actions.	
Level	**Mark**	**Descriptor**
	0	No rewardable material.
Level 1	**1–3**	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3) • Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	**4–6**	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	**7–8**	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3) • Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question number	Answer	Mark

6(a)(i)	**AO3 (1 mark)** Award 1 mark for any of the following. • Systematic (1) • Stratified (1) • Random (1) • Pragmatic (1) • Opportunistic (1) Accept any other appropriate response. **Note: Title not required for credit.**	**(1)**

Question number	Answer	Mark
6(a)(ii)	**AO3 (2 marks)** Award 1 mark for a reason further mark for extension through explanation, up to a maximum of 2 marks: • It allowed find out about the spatial variation in the area of study (1) so that we knew that we would get good spatial coverage to minimise bias (1). • Stratified sampling was used as we had census data about the towns population (1) so we could design a fair sampling frame for the questionnaire about urban change that we were using (1). Accept any other appropriate response, e.g. asking “different people” is allowable.	**(2)**

Question number	Answer	Mark
6(b)	**AO3 (2 marks)** Award 1 mark for identifying a risk and a further expansion mark up to a maximum of 2 marks. Nature of risk, and risk management will vary depending on the location as well as the context of the investigation. • In the urban area there was lots of traffic so risk the was being struck by a vehicle (1). This was managed by only using a designed crossing (1). • Fieldwork was carried out in winter so there was a small risk of hypothermia (1). Lots of warm clothes were used (1). • The wet pavements in the town presented a slip and trip risk. (1). Non-slip shoes were used to minimise the risk of falling over (1). • I knew that the title focus had published secondary data (1) therefore it was achievable in terms of testing against someone else's findings – reducing risk (1). Accept any other appropriate response. **Note – credit ideas related to risk of poor-quality data collection.**	**(2)**

Question number	Answer	Mark
6(c)	**AO3 (3 marks)** Award 1 mark for each of the following identifiers: • Locations that can be identified e.g. places (1) • Site numbers along a street / locations of sampling etc (1). • Justifications and reasons, developed through explanation and clear geography (2) • Scale and direction arrows, titles, key etc (award a max of 1 mark total) (1). **Note: If work does not include annotations or descriptive labels, then max 2 marks.**	**(3)**

Question number	Answer	Mark
6(d)	**AO3 (4 marks)** Award 1 mark for a method and a further expansion mark, up to a maximum of 2 marks each. Nature of qualitative techniques utilised will vary depending on the location as well as the context of the investigation. • Interview data from a number of respondents were used to find out about attitudes towards change in urban areas (1) but it was only a small sample (1) so we could not be convinced about the strength of the conclusions (1). • Digital photographs were taken of the fieldwork equipment to measure noise (1) so that this could be later used to help evaluate the methods and their reliability (1) but the photos did not include an effective scale (1). • Field notes recorded aspects of the site location and a description (1). The notes difficult to do since we did not know the history of the area (1) so I was unable to trust their validity (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
6(e)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Both Figures 6a and 6b do show some outcomes from the fieldwork surveys, therefore it is possible to make some sense of what the student found. • Figure 6a seems incomplete as the nature of the questions asked is not present on the key so it's difficult to draw conclusions.

	• Figure 6b only shows one picture, so this might be biased as some could have been missed, therefore this technique is limited in its appropriateness. • Recognition of issue in presentation (both Figure 6a and 6b) may be flawed in terms of approach and usage. • An evaluation of how far the presentation techniques can be trusted may be provided. **AO4** • In Figure 6a there is no totals column for the Peoples Responses • In Figure 6a, some rows have incorrect addition • In Figure 6a the is no strongly agree category • In Figure 6a the colours may be the wrong choice of plot technique • In Figure 6b only 2 opinions are shown (there may have been more). • In Figure 6b the viewer doesn't know anything about the time the photo was taken, and therefore the frequency of lorry movements etc. • In Figure 6b don't anything about the area / context of where the image is taken.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)

		• All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)(i)	**AO3 (1 mark)** Award 1 mark for any of the following. • Newspapers (1) • GIS map / paper map (1) • Book / magazine (1) • Government report / policy document (1) • Blog / forum / social media (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(a)(ii)	**AO3 (2 marks)** Award 1 mark for a reason further mark for extension through explanation, up to a maximum of 2 marks: • It allowed find out about the spatial variation in the area of study (1) so that we knew that we would get good spatial coverage to minimise bias (1). • We used census data about the towns population (1) so we could design a fair sampling frame for the questionnaire about energy that we were using (1). • The urban area has lots of people / activity (1) so that makes it idea / title measurable and achievable (1) Accept any other reasonable idea. **Note: no credit for just restating the secondary data type.**	**(2)**

Question number	Answer	Mark
6(b)	**AO3 (2 marks)** Award 1 mark for identifying a reason and a further expansion mark up to a maximum of 2 marks. • It was linked to a place close to school (1). Therefore, the data we collected would help answer the initial question set (1). • The urban model allowed us to test a theory (1), so the title and focus was established to challenge the assumptions in the model (1). • The title was both manageable and achievable. (1). Meaning that out primary data could be designed to fully answer the title set (1). • The urban area has lots of people / activity (1) so that makes it idea / title measurable and achievable (1) Accept any other appropriate response, including ideas around why the location was appropriate, or manageability – "straightforward" etc. Note: no credit for just stating the title of the enquiry.	**(2)**

Question number	Answer	Mark
6(c)	**AO4 (3 marks)** Award 1 mark for a method and a further expansion mark, up to a maximum of 2 marks each. • The EQA scale (1) only goes from -5 to + 5 and it is uncalibrated (1). This means that scores recorded by different people vary (1). • A poor-quality closed questions questionnaire (1) used would have potential for errors to be introduced (1) for example by an inappropriate sequencing of questions (1). • When counting the number of vehicles (1) its possible to easily miss some cars outs (1) making the results less reliable (1). • The language barrier was the language barrier (1) which means that have to use other people for the questionnaire (1) therefore taking more time to deliver it (1) Accept any other appropriate response, including sampling as well as techniques in the context of "method".	**(3)**

	Note: interviews and photographs are qualitative, so no credit. **Accept questionnaires as quantitative.**	

Question number	Answer	Mark
6(d)	**AO3 (4 marks)** Award 1 mark for a method and a further expansion mark, up to a maximum of 2 marks each. • We used quantitative tools such as mean and median (1) so we could final measures of centrality in our data (1). • Annotated sketches based on photographs from the fieldwork were used (1) and the selected annotations were able to highlight processes operating in the area (1). • A computer spreadsheet was used to calculate the spread and range in our questionnaire data (1) so that we could compare the outcomes between the two sample sites (1). Accept any other appropriate response, linked to analysis. **Note: allow presentation in the context of analysis.**	**(4)**

Question number	Indicative content
6(e)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Both Figures 6a and 6b do show some outcomes from the fieldwork surveys, therefore it is possible to make some sense of what the student found. • Figure 6a seems incomplete as the nature of the questions asked is not present on the key so it's difficult to draw conclusions.

	• Recognition of issue in presentation (both Figure 6a and 6b) may be flawed in terms of approach and usage. • An evaluation of how far the presentation techniques can be trusted may be provided. **AO4** • In Figure 6a there is no totals column for the Peoples Responses • In Figure 6a the is no strongly agree category • In Figure 6a the colours may be the wrong choice of plot technique • In Figure 6b only 2 opinions are shown (there may have been more). They may have been edited. • In Figure 6b there is no idea as to how the responses were selected • In Figure 6b show anything about the area / context of where the interview took place and when.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6 (a) (i)	**AO3 (1 mark)** Award 1 mark for a suitable type of primary data. • Environmental quality survey (EQS, EQA) (1) • Questionnaire (1) • Interview (1) • Photographs (1) Nature of data will vary depending on the location as well as the context of the investigation. It must be relevant to a human geography focused piece of fieldwork.	**(1)**

Question number	Answer	Mark
6 (a)(ii)	**AO3 (2 marks)** Award 1 mark for identifying a way it helped, and a further mark (s) for an explanation, up to a maximum of 2 marks. The primary data will vary on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • Interviews were used to find our peoples' perceptions of the redevelopment (1) so that we knew more about the local attitudes of people who lived there in order to collect reliable survey sample (1). • Photographs were taken at the proposed new housing development to record the wildlife currently there (1) so we could understand more about how the area would change with the development (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6 (b)	**AO3 (2 marks)** Award 1 mark for identify a reason and a further mark for extension through explanation, up to a maximum of 2 marks. **NB:** the location provides a context for the investigation and the subsequent parts that follow – no credit for this. • It was safe to work in (1) and this means we could collect a sufficient range of data to be able to answer the hypothesis (1). • It was close to the local school (1) therefore we could collect primary data without having to spend a long time travelling (1) • The area provided two different communities / groups of people (1) therefore giving me a more complete picture of the contrasting attitudes towards urban development (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6 (c)	**AO3 (3 marks)** Award 1 mark for identification of the secondary data and its use, and a further mark (s) for an explanation, up to a maximum of 2 marks: The secondary data will vary on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • The local census information helped us to work out how many people lived in our sample area (1) so we were able to design a fair sample for the fieldwork (1) and that gave us stronger conclusions (1). • A local city future report from the regional government (accessed online) allowed to find out about the proposed housing plans in the area (1) and we were then able to use these when we were considering the sample design (1) which allowed a more reliable data set to be collected (1). • A specialist textbook about energy allowed us to find out about the planning requirements for a rebranding project (1) and we then used GIS to simulate the type of area that would be good to build new shopping centre (1) and from that developed a series of questionnaires (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
6 (d)	**AO3 (2+2 marks)** Award 1 mark for a method and a further expansion mark, up to a maximum of 2 marks each. • We used located pie charts on a base map (1) to show the differences in outcomes based on the questionnaire survey (1). • We used gain-loss bar charts to show EQA data (1) and this made it easy to compare the best and worst sites (1). • We used scatter graphs to compare two proposed sites (1) which allowed us to see the relationship between places as revealed by the data (1). • Annotations on fieldwork pictures allowed commentary on different sites (1) allowing me to express my perceptions of differences (1). Accept any other appropriate response.	**(4)**

Question number	Indicative content
6 (e)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Both Figures 6a and 6b do show some outcomes from the fieldwork surveys, therefore it is possible to make some sense of what the student found. • Figure 6a seems incomplete as the nature of the questions asked is not present on the key so it's difficult to link to conclusions. • Figure 6b only shows two annotations, so this might be biased as some could have been missed, therefore this technique is limited in its appropriateness and value. • Recognition of issue in analysis (both Figure 6a and 6b) may be flawed in terms of approach and usage. • An evaluation of how far the conclusions can be trusted (line 10 +11) cannot be trusted as they are vague. **AO4** • In Figure 6a there are lots of generalisations. • In Figure 6a the is no data being presented as evidence. • In Figure 6a they are mostly lists of descriptive statements. • In Figure 6b only 2 simple labels are shown, rather than annotations as indicated in the title. • In Figure 6b the label blue sky is not very useful as a conclusion. • In Figure 6b the image includes no scale or direct reference to a particular urban area. • In Figure 6b there is no title provided by the student.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)	**AO3 (2 marks)** Award 1 mark for explaining the hazard / risk and a further mark for explaining how the risk is managed, up to a maximum of 2 marks. ***NB:*** *the title provides a context for the investigation and the subsequent parts that follow – no credit for this.* • In urban areas there is a lot of traffic so high risk of being struck by a vehicle (1) which was managed by only using a designed crossing (1). • Fieldwork was carried out in winter so there was a small risk of hypothermia (1) so lots of warm clothes were used (1). • The wet rocks present a slip and trip risk (1) so walking boots were used to minimise the risk of falling over (1). • Risk of collecting bias / unreliable data leading to invalid results (1) which could be managed by careful site selection / sample size / design (1). Nature of risk, and risk management will vary depending on the location as well as the context of the investigation.	**(2)**

Question number	Answer	Mark
6(b)(i)	**AO3 (2 marks)** Award 1 mark for identification of the qualitative data and its use, and a further mark (s) for an explanation, up to a maximum of 2 marks: The qualitative data will vary on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • Interviews were unreliable since they often have bias (1) so the respondent may have a particular attitude towards the development which is not reflected in the wider population (1). • Photographs are a snapshot of what is happening at a certain time (1) so we don't know what the place / area looks like at other times, e.g. at night for example (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(b)(ii)	**AO3 (2 marks)** Award 1 mark for an improvement and a further mark for extension through explanation, up to a maximum of 2 marks: • We could have used a larger sample of people (1) and this would have made the conclusion's stronger based on more people's opinions (1). • Photographs could have been taken in different seasons (1) to see how the urban area changed over time (1). • I could have completed more field sketches from different views (1) thereby giving me a more complete picture of the landscape and its environment (1).	**(2)**

	Accept any other appropriate response.	

Question number	Answer	Mark
6(c)	**AO3 (2 marks)** Award 1 mark for identification of the secondary data and its use, and a further mark (s) for an explanation, up to a maximum of 2 marks: The secondary data will vary on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • The local census information helped us to work out how many people lived in our sample area (1) so we were able to design a fair sample for the fieldwork (1). • A report from the regional government (accessed online) allowed to find out about the proposed developments in the area (1) and we were then able to use these when we were considering the sample design. • A specialist textbook about urban environments allowed us to find out about the planning requirements for new buildings in cities (1) and we then used GIS to simulate the type of area that would be good to build new developments (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(d)	**AO3 (2+2 marks)** Award 1 mark for a method and a further expansion mark, up to a maximum of 2 marks each. • We used located pie charts on a base map (1) to show the differences in outcomes based on the questionnaire survey (1). • We used gain loss-bar charts to show EQA data (1) and this made it easy to compare the best and worst sites (1). • We used scatter graphs to compare two proposed energy sites (1) which allowed us to see the relationship between places as revealed by the data (1). • Annotations on fieldwork pictures allowed commentary on different sites (1) allowing me to express my perceptions of differences (1). Accept any other appropriate response.	**(4)**

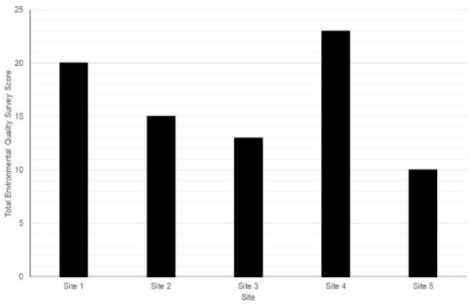
Question number	Indicative content
6(e)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Both Figures 6a and 6b do show some relevant approaches to the collection questionnaire data. • Figure 6a seems to have the questions in the wrong order. • Figure 6a – can be very difficult to judge age, therefore this technique is limited in its appropriateness. • 6b has several limitations in terms of sample size, timing / frequency and the choice / selection of people. • No justification or rationale for sample size or spacing, e.g. every 8th person – may lead to bias. **AO4** • In Figure 6a there are issues with the age categories – overlap. • In Figure 6a the questions are poorly worded. • In Figure6 there is a scale which has a mid-3 on it. • In Figure 6b there is a small sample size. • In Figure 6b their questionnaires are delivered at lunchtime.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)(i)	**AO3 (1 marks)** Award 1 mark for a suitable piece of secondary data. • Newspaper articles about the area. (1) • Local data on land values. (1) • Leaflet from interested pressure group. (1) • Land use map / town plan (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(a)(ii)	**AO3 (2 marks)** Award 1 mark for inital point and a further mark for explanation. • Can capture lots of detail (1) which means they can be examined properly after the fieldtrip has ended. (1) • Provides an accurate representation of the site (1) at that point in time (1). • Can be used to capture the state of the site at the present time (1) which can be used to compare to historical photographs. (1) • Easy to annotate to show details (1) so can help with analysis (1). • Accept any other appropriate response. Do not accept easy to take.	**(2)**

Question number	Answer	Mark
6(b)(i)	**AO3 (1 mark)** 1 mark for each correctly plotted bar. Site 1 should be 20 (1) Site 2 should be 15 (1)  	**(2)**

Question number	Answer	Mark
6(b)(ii)	**AO4 (1 mark)** A - Bar (1) All the other options are incorrect.	**(1)**

Question number	Answer	Mark
6(b)(iii)	**AO3 (1 mark)** • Site 4. (1)	**(1)**

Question number	Answer	Mark
6(b)(iv)	**AO4 (2 marks)** Award 1 mark for the calculation of the correct answer = 13 (1) Award 1 mark for correct method to calculate range = 23-10 (1) or working out with similar numbers, i.e. understands idea of difference/substraction (highest and lowest values).	**(2)**

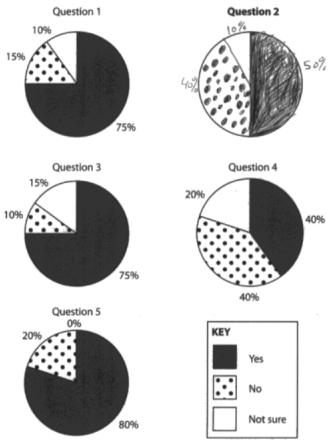
Question number	Answer	Mark
6(c)	**AO3 (3 marks)** Award 1 mark for a correct suggested way to manage a risk, with a further 2 marks for expansion. • Remain alert (1) to ensure awareness for traffic (1) to prevent accident. (1) • Wear appropriate clothing (1) to ensure remain comfortable during fieldwork (1) and reduce chance of illness. (1) • Work in groups (1) to ensure safety (1) against unexpected events. (1)	

	Accept any other appropriate response. Note: credit ideas related to risk of poor data collection.	**(3)**

Question number	Answer	Mark

6(a)(i)	**AO3 (1 marks)** • Photos and sketches (1) • Information from newpapers/websites (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(a)(ii)	**AO3 (2 marks)** • Systematic (1) collecting data in an ordered or regular way. (1) • Random/opportunistic (1) collecting evidence where possible/appropriate (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(b)(i)	**AO3 (1 mark)** 1 mark for each correctly drawing the lines and 1 mark for correctly shading or labelling the portions. Portions can be in any order. Yes: 50% No: 40% Not sure: 10% For example:  	**(2)**

Question number	Answer	Mark
6(b)(i)	**AO4 (1 mark)** C Potential to generate a mixture of qualitiative and quantiative data.	**(1)**

Question number	Answer	Mark
6(b)(iii)	**AO3 (1 mark)** B The average percentage for people who answered 'not sure' was 11.	**(1)**

Question number	Answer	Mark
6(b)(iv)	**AO4 (2 marks)** Award one mark for each suitable suggestion of how to improve data collection, up a maximum of 2 marks: • Increase the number of questionnaires completed (1) in order to get a more representative sample (1). • Increase the number of sites where data was collected (1) to get different perspectives (1). • Acquire more secondary data (1) to be able to understand more about the area before primary data collection (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(c)	**AO3 (3 marks)** Award 1 mark for identification of an advantage of secondary data, with a further 2 marks for expansion. • Secondary data can be compared to primary data (1) to check for any differences or similarities (1) and to confirm conclusions (1). • Increases sources of data (1) which can be used to form a more complete picture (1) which increases validity of the enquiry (1). • Can access different types of data that would otherwise be available (1) often with a much larger amount of data that could be collected by one student (1) expanding the types of data analysis that can be conducted (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark

Question Number	Answer	Mark
6(a)	**AO3 (1 mark)** Award 1 mark for: 3 / Why? 4 / How do you think the factory could be redeveloped to be useful to the local area? Accept either the question number on its own or it the candidate has written out the appropriate question shown above.	**(1)**

Question Number	Answer	Mark
6(b)	**AO3 (1 mark)** Award 1 mark for identifying a suitable advantage. • Easy to see proportions (1) • Easy to compare data (1) • Clear presentation of results (1). Accept any other appropriate response.	**(1)**

Question Number	Answer	Mark
6(c)	**AO3 (2 marks)** Award 1 mark for suitable sampling technique identified and further mark for explanation, up to a maximum of 2 marks. • Systematic sampling (1) collecting data in an ordered way e.g. every 5th person (1). • Stratified sampling (1) where a particular number of different categories of people are chosen to reflect the proportion of the number in the total population (1). • Random sampling (1) where there is no subjectivity over who is chosen to participate (1).	

	Accept any other appropriate response.	**(2)**

Question Number	Indicative content
6(d)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Figure 6a shows an appropriate data collection method for exploring views about the factory redevelopment. • Figure 6b presents simple data that was produced the questionnaire data, but doesn't explore the views in detail. • Figure 6a seems to make it difficult to validate conclusions because there is no way to classify the responses in more detail. • Figure 6b only shows presentation of data from two questions and doesn't show in combination with the outcomes of the different methods of the investigation. • Figure 6b does not present any of the qualitative data that could have revealed the information to help the student reach their aim. **AO4** • In Figure 6a there are no questions to categorise responses (gender, age etc). • In Figure 6a there are a range of open and closed questions to generate qualitative and quantitative data. • In Figure 6a there is no question to check understanding of how long people have known this area of the city. • In Figure 6b there are only 2 simple pieces of data presented. • In Figure 6b there are no data labels for some of the data presented. • In Figure 6b the pie charts are presented in different sizes.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

6(a)	**AO3 (1 mark)** Award 1 mark for: • Newspaper articles or photos in newspaper articles (1)	**(1)**

Question number	Answer	Mark
6(b)	**AO3 (1 mark)** Award 1 mark for identifying a suitable advantage. • Can include qualitative and quantitative data (1) • Can allow open and closed questions (1) • Easy to gather data (1) • Can be easily analysed (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(c)	**AO3 (4 marks)** Award 1 mark for a suitable way reliability of data could have been affected and a further mark for extension through explanation, up to a maximum of 2 marks: • The student might have visited the area at a time when there were not many people around (1) so views collected would not be representative (1). • The student may have hurried the annotated diagram (1) so missed important details (1). • The environmental quality survey is subjective (1) so views may differ every time it is conducted (1). Accept any other appropriate response.	**(2)**

Question number	Indicative content
6(d)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Both Figures 6a and 6b do show some outcomes from the fieldwork surveys, therefore it is possible to make some sense of what the student found. • Figure 6a seems to make it difficult to validate conclusions as not aware of the nature of the data collected to create the word cloud. • Figure 6b shows three basic conclusions, but it is difficult to use 6a to validate the conclusions as there is not enough detail about where these views were coming from. • Figure 6b the evaluation statements are quite vague and require more detail, although 4 makes a sensible suggestion about how to improve the study, particularly given conclusion 3. **AO4** • In Figure 6a there are lots of key words shown in the word cloud. • In Figure 6a the words are shown in different sizes which may indicate frequency. • Figure 6a does not provide context of who said these words. • Figure 6a does not suggest which questions these words respond to. • In Figure 6b the conclusions are very descriptive. • In Figure 6b the evaluation statements make suggestions about how the methods could have been improved. • Figure 6b suggests there were elements of the fieldwork that were not effective.

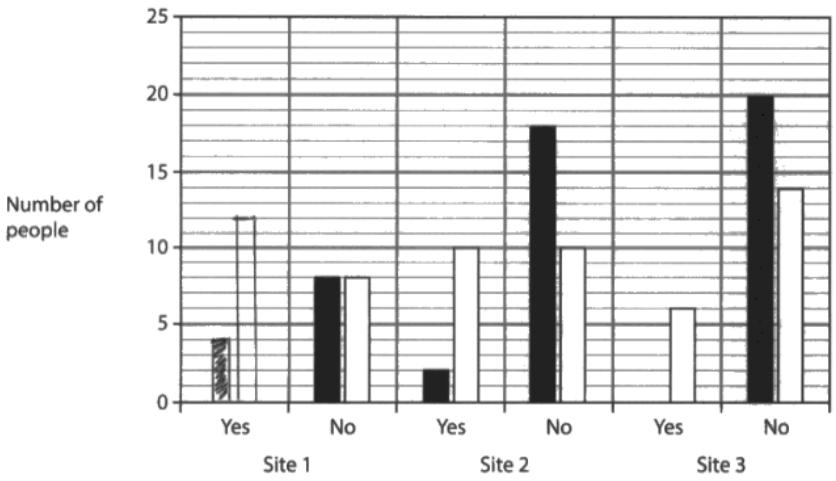
Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity, and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)(i)	**AO3 (1 mark)** Award one mark for any of the following: • Question 1 or "Do you recycle your rubbish when you are in the city?" • Question 3 or "Do you think recycling is the responsibility of the city council?" • Question 4 or "Do you own a reusable coffee cup?" • Question 5 or "Would you like to recycle more?" • Accept answers that just provide a number e.g. 1 or Q1.	**(1)**

Question number	Answer	Mark
6(a)(ii)	**AO3 (2 marks)** Award 1 mark for initial point, and a further mark for explanation, up to a maximum of 2 marks. • Open question allow opinions to be gained (1) which can be provided in more detail than closed questions (1). • Open questions allow for responses that were not expected (1) which would not be captured by closed questions (1). • Allows you gain qualitative data (1) which means you can understand people's views (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(b)(i)	**AO3 (1 marks)** Award 1 mark for: Systematic sampling (1)	**(1)**

Question number	Answer	Mark
6(b)(ii)	**AO4 (2 marks)** Award 1 mark each correctly drawn bar with correct shading. Award 2 marks for all 2 correctly drawn bars with correct shading. Some indication of shading is acceptable does not have to be completely filled in.  	**(2)**

Question number	Answer	Mark
6(b)(iii)	**AO4 (1 mark)** Award 1 mark for: Site 3 (1)	**(1)**

Question number	Answer	Mark
6(b)(iv)	**AO4 (2 marks)** Award 1 mark for working and 1 mark for correct answer. 12+ 10+ 6 = 28 / 3 (1) Allow 12+10+6/3 (1) = 9.3 (1) They do not have to write the answer on the answer line. Credit correct answers anywhere in the space provided.	**(2)**

Question number	Answer	Mark
6(c)	**AO3 (3 marks)** Award 1 mark for a suitable method, and further 2 marks for explanation. • Environmental Quality Survey (1) which could have assessed the varied quality of areas where there are recycling facilities (1) to see if there were any correlations (1). • Environmental Quality Survey (1) provides quantitative data (1) that can aid analysis/evaluation (1). • Interview a local city council representative (1) to understand what the city council was doing about sustainable behaviours (1) and if they were offering incentives to local people to use them e.g. an app (1).	**(3)**

Question number	Indicative content
6(d)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Evaluation is likely to be linked to the use of a range of data presentation methods to strengthen argument, linked to aims. • Evaluation will most likely be linked to the evaluation of the data presentation methods as well as collection methods and fieldwork design. • Recognition of the extent to which presentation methods chosen were suitable for the data types collected e.g. doesn't allow for presentation of qualitative data effectively. • A supported judgement is reached about the presentation methods, drawing on evidence such as strengths, weaknesses, alternatives and relevant examples using data. **AO4** • There is evidence of using different skills and techniques as part of primary fieldwork.

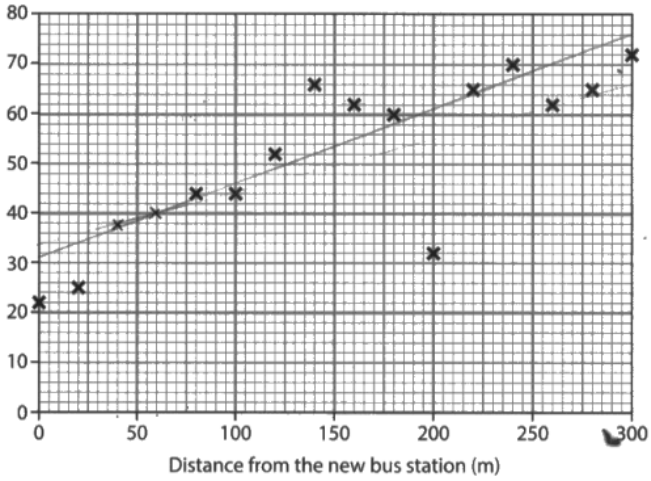
	• There is evidence of using different skills and techniques relevant to data presentation stage of the enquiry. • There is evidence of using different skills and techniques to investigate aspects of urban environments. • There is evidence of own fieldwork data (and design) i.e. reference to the field data collected by the student.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity and uses relevant geographical terminology consistently. (AO4)

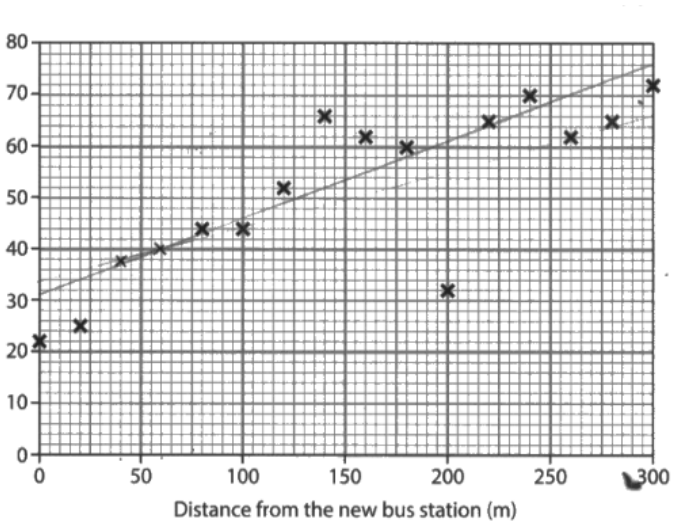
Question number	Answer	Mark

6(a)(i)	**AO3 (1 mark)** Award one mark for any of the following: • Question 2/Q2/2 or 'What benefits does it bring?' (1) • Question 6/Q6/6 or 'What impact do you think the new bus station has had on the area? (1) .	**(1)**

Question number	Answer	Mark
6(a)(ii)	**AO3 (2 marks)** Award 1 mark for initial point, and a further mark for explanation, up to a maximum of 2 marks. • Closed question allow opinions to be quantified (1) which make data analysis straightforward when creating graphs and charts (1). • Closed questions are usually quicker to respond to (1) so it might be possible to get more people to answer these (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(b)(i)	**AO4 (2 marks)** Award 1 mark for correctly plotted point at 40 and 60m. Correct diagram shown below:  	**(2)**

Question number	Answer	Mark
6(b)(ii)	**AO4 (1 marks)** Award 1 mark for: 200m (1) Accept 200.	**(2)**

Question number	Answer	Mark
6(b)(iii)	**AO4 (1 mark)** Award 1 mark for a suitable line drawn, similar to below:  Line of best fit needs to be within the first and last plots but angle and height can vary slightly from the example shown above.	**(1)**

Question number	Answer	Mark
6(b)(iv)	**AO4 (2 marks)** Award 1 mark for working and 1 mark for correct answer. • (52+60) /2 (1) • 56/56.0 (1)	**(2)**

Question number	Answer	Mark
6(c)	**AO3 (3 marks)** Award 1 mark for a suitable method, and further 2 marks for explanation. • Local newspaper articles (1) can be used to find out views of local people on the new bus station (1) and compare these to answer from a questionnaire (1). • Reports from local council on regeneration (1) to consider potential value of new bus station to local community (1). Accept any other appropriate response. Do not credit 'internet' on its own.	**(3)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>6(d)</td><td colspan="2">AO3 (4 marks)/AO4 (4 marks)
Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3
• Evaluation is likely to be linked to the use of a range of data collection methods to strengthen argument, linked to aims.
• Evaluation will most likely be linked to the evaluation of the data collection methods as well as fieldwork design and the techniques used to analyse and present data.
• Recognition of the extent to which data collection methods chosen were suitable for the data types collected e.g. doesn’t allow for presentation of qualitative data effectively.
• A supported judgement is reached about the data collection methods, drawing on evidence such as strengths, weaknesses, alternatives and relevant examples using data.

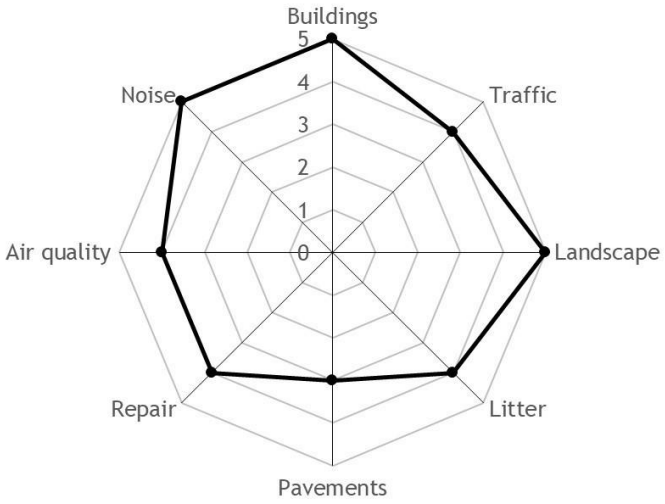
AO4
• There is evidence of using different data collection methods and thought about the design of these methods as part of primary fieldwork.
• There is evidence of using different skills and techniques relevant to design of the methodology stage of the enquiry.
• There is evidence of using different skills and techniques to investigate aspects of urban environments.
• There is evidence of own fieldwork data (and design) i.e. reference to the field data collected by the student.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No acceptable response.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)
• Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)</td></tr>
</table>

Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)(i)	**AO3 (1 mark)** Award one mark for a suitable type of secondary data. • Data on local population demographics (1). • Local planning reports (1). • Local newspaper articles on energy issues (1). • Data from social media (1) Do not allow general data sources such as 'the internet' or 'textbooks'.	**(1)**

Question number	Answer	Mark
6(a)(ii)	**AO3 (2 marks)** Award 1 mark for initial point, and a further mark for explanation, up to a maximum of 2 marks. • It can be used to find out more features of the enquiry area (1) which can provide the context for the enquiry (1). • It can be used to confirm findings from primary data (1) and support conclusions (1). • It can be used to compare to historical patterns (1) to understand where changes have taken place (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(b)(i)	**AO4 (2 marks)** Award 1 mark for: Plotting points correctly (1) Connecting lines correctly (1). This should look like the diagram below:  	**(2)**

Question number	Answer	Mark
6(b)(ii)	**AO4 (1 marks)** Award 2 marks for a suitable observation. • The site has a good/positive environmental quality. (1) • The high scores suggest a high environmental quality. (1) • The area might not be set up for pedestrians. (1) • There is a lot of traffic in the area. (1)	**(2)**

Question number	Answer	Mark
6(b)(iii)	**AO4 (1 mark)** Award 1 mark for a suitable advantage: • A lot of different features can be plotted on one graph. (1) • It is clear to see the environmental quality of the area. (1) • Easy to compare different factors (1)	**(1)**

Question number	Answer	Mark
6(b)(iv)	**AO4 (2 marks)** Award 1 mark for working and 1 mark for correct answer. 5,4,5,4,3,4,4,5 or 3,4,4,4,4,5,5,5 (1) = 4 (1)	**(2)**

Question number	Answer	Mark
6(c)	**AO3 (3 marks)** Award 1 mark for an initial point, and further 2 marks for explanation. • Photographs can be used to record features of the area (1) which can be annotated in the data presentation stage (1) and demonstrate findings such as evidence of poor pavements (1). • Photographs can be used as an alternative for field sketches (1) and can be more accurate (1) to allow the student to look back after leaving the fieldwork site (1). Photographs can be used for rephotography (1) so the current features could be compared with the past (1).	**(3)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>6(d)</td><td colspan="2">AO3 (4 marks)/AO4 (4 marks)
Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3
• Evaluation is likely to be linked to the conclusions made and how these linked to the aims for the enquiry.
• Evaluation will most likely be linked to the methods used that led to these conclusions and how the nature of fieldwork design led to the creation of the conclusions.
• Recognition of the extent to which aim was met and how the methods chosen to allow these conclusions to be reached.
• A supported judgement should be reached about how the aim was met drawing on evidence from the conclusions, such as the strength and weaknesses of the findings, using relevant examples from either the data or the conclusions that they led to.

AO4
• There is evidence of using different skills and techniques as part of primary fieldwork.
• There is evidence of using different skills and techniques relevant to conclusion stage of the enquiry.
• There is evidence of using different skills and techniques to investigate aspects of urban environments.
• There is evidence of own fieldwork data (and design) i.e. reference to the field data collected by the student.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No acceptable response.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that</td></tr>
<tr><td></td><td></td><td>provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)

• Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)</td></tr>
</table>

Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)(ii)	**AO3 (2 marks)** Award 1 mark for suitable factor, and a further mark for explanation, up to a maximum of 2 marks. • Accessibility (1) they needed to be in walking distance to ensure data could be collected (1). • To ensure range of data gathered across the village (1) to support reliable conclusions (1). • Time available (1) to ensure all sites could be feasibly visited in a day (1). • Safety (1) to not go in areas that do not have sufficient pavements (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(b)	**AO3 (2 marks)** Award 1 mark for a suitable way identified, and a further mark for development or explanation. • Local newspaper articles (1) to provide evidence to support conclusion (1). • Government reports (1) provided background data on new transport schemes (1). • Government website (1) with data on urban population characteristics (1). • Old photographs (1) to show change over time (1). • Past investigations (1) to check for annual changes (1). • Maps/online maps/land use maps (1) to be able to explore patterns (1). Accept any other appropriate response. Secondary data needs to be specific, do not accept, the internet for information. The secondary data will vary depending on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments.	**(2)**

Question number	Answer	Mark
6(c)	**AO3 (4 marks)** Award 1 mark for an advantage and 1 mark for a disadvantage with a further mark for development or explanation up to a maximum of 2 marks each. Max 2 marks for advantage or disadvantages. The data presentation techniques will vary depending on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. Advantages: • Pie chart allows view of relative proportion of people's views (1) which allows conclusions to be formed (1). • Bar graph give a clear visual picture of the data (1) which provides a summary of questionnaire data to be able to form conclusions (1). • Line graph can show trends (1) this can be used to compare between sites (1). Disadvantages: • Pie chart only showed overall proportions of people's views (1) rather than explaining what they thought. • Bar graph only shows a snapshot of information (1) rather than how the data has changed over time (1). • Line graph only shows continuous data (1) so limits the conclusions that be drawn (1). Accept any other appropriate response which might include: land use maps, word clouds, GIS maps, use of interview quotes, annotated photographs, radar graphs.	**(4)**

Question number	Answer	Mark
6(d)	**AO3 (3 marks)** Award 1 mark for an initial point, and further 2 marks for explanation. Conclusion will vary depending on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • Data was collected at several sites (1) to ensure an accurate representation of views (1) to ensure conclusions could be supported with evidence (1). • Findings from primary data collection were compared to findings from secondary data collection (1) and similar ideas were found (1) showing how the conclusions confirmed the views about the new development (1). Accept any other appropriate response.	**(3)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>6(e)</td><td colspan="2">AO3 (4 marks)/AO4 (4 marks)
Marking instructions
Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below.

Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3
• Evaluation is likely to be linked to the choice of equipment and data collection methods used and how these linked to the aims for the enquiry.
• Evaluation will most likely be linked to how suitable the equipment was for the choice of data collection methods and how this may have affected the conclusions made.
• Recognition of the extent to which aim could be met and how the equipment and data collection methods were suitable for the type of fieldwork carried out.
• A supported judgement should be reached about the choice of equipment and data collection methods, such as the strength and weaknesses, or suggestions of additional/alternative equipment or data collection methods which could have been used.

AO4
• In Figure 6a there shows there is relevant fieldwork equipment for the data collection methods identified (e.g. Interview guide for interviews).
• In Figure 6a shows the students are using both primary and secondary data.
• In Figure 6a does not specify if they are using any maps.
• In Figure 6b there are no age groups specified in the interview.
• In Figure 6b some of the questions are too general, e.g. Q3.
• In Figure 6b the student only collects quantitative data for Q6 which should have been followed with a question to understand the reasons for their respond in Q6.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No acceptable response.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)</td></tr>
</table>

		• Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)	**AO3 (1 mark)** Award one mark for a suitable type of sampling. • Random (1) • Stratified (1) • Systematic (1) • Opportunistic (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(b)	**AO4 (2 marks)** Award 1 mark for initial point, and a further mark for explanation, up to a maximum of 2 marks. The risks managed will vary depending on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • We crossed the road safely (1) to avoid getting hit by cars/bikes/buses (1). • Conducted a risk assessment before travelling to fieldwork site (1) to ensure we were aware of risks we could face (1). • Provided team members with phone numbers (1) so we could regroup if we got lost (1). • Wore suncream/lots of layers (1) to avoid sunburn/avoid hypothermia (1). • We stayed in our group/took a map/took our phone (1) to avoid getting lost (1). • Carried water supplies (1) to avoid dehydration (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(c)(i)	**AO3 (2 marks)** Award 1 mark for initial point, and a further mark for explanation, up to a maximum of 2 marks. The equipment used will vary depending on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • Mobile phone (1) to plot data on a map/take photos (1). • Questionnaire (1) to gather views from local people (1). • Sound meter (1) to explore changes in noise around the city (1). • Stopwatch (1) for timing a minute to count the cars (1). • Pencil (1) to draw annotated field sketches/diagrams (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(c)(ii)	**AO3 (4 marks)** Award 1 mark for each advantage and disadvantage, and a further mark for explanation, up to a maximum of 2 marks for each. The data collection methods used will vary depending on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. Advantages: • Survey was a quick way of collecting data (1) which meant we could collect a bigger sample (1). • Taking photographs provided an accurate visual record of the area (1) which meant I could refer back to them when doing the data analysis (1). • Environmental quality surveys create quantitative data (1) which makes easy to compare (1). Disadvantages: • People didn't want to fill in our surveys (1) which meant we had a small sample (1). • Photographs do not capture the sounds and smells of the sites (1) so cannot be used to recollect all details about the environmental quality of the area (1). • Environmental quality surveys are subjective (1) so different people may get different data about the same site (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
6(d)	**AO3 (3 marks)** Award 1 mark for an initial point, and further 2 marks for explanation. • I took photographs as well as field sketches (1) to make sure I did not miss any details (1) this meant I could refer to these images when analysing the data (1). • I chose several sites around the area (1) to make sure that I collected data from a range of people (1) to try and get a representative sample of people (1). Accept any other appropriate response.	**(3)**

Question number	Indicative content
6(e)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Evaluation is likely to be linked to the data presentation methods used and how these linked to the aims for the enquiry. • Evaluation will most likely be linked to how effective the data presentation methods are for displaying the chosen data, and the level of detail provided in these data presentation methods. • Recognition of the extent to which aim could be met with the chosen data presentation methods. • A supported judgement should be reached about the suitability and quality of the data presentation methods, such as the strength and weaknesses of these methods, using relevant examples from the figures provided. **AO4** • Figure 6a shows a bar graph of total environmental quality scores but does not show what elements were used to create this total score. • Figure 6a is accurately labelled axis and has a title.

	• Figure 6b is a pie chart where it is easy to see the proportions of how people responded. • Figure 6b does not have any percentage labels so it is difficult to know the exact percentages. • Figure 6b shows there are overlaps on the categories of distances recorded.

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)(i)	**AO3 (1 mark)** Award one mark for a suitable type of graph: This will be dependent on the type of enquiry but typically graphs could include: • Bar graph/stacked bar graph (1) • Line graph (1) • Pie chart (1) • Histogram • Scattergraph (1) • Bubble chart (1) • Box plot (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(a)(ii)	**AO3 (2 marks)** Award 1 mark for initial reason, and a further mark for explanation, up to a maximum of 2 marks. This will be dependent on the previous response but answers could include: • Easy to visualise the data (1) and make comparisons between locations/data sets (1). • Can be used to identify patterns (1) and show any significant anomalies in the data (1). • Suitable for the data being plotted (1) needed to show change over time/continuous data (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(b)	**AO3 (2 marks)** Award 1 mark for a suitable way qualitative technique, and a further mark for development or explanation. This will vary depending on enquiry question, but could include: • Photographs (1) to capture accurate visual record of the surrounding to annotate later (1). • Interviews (1) to capture views of local stakeholders (1) • Surveys/questionnaires (with open questions) (1) to understand the reasons behind participant choices (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
6(c)	**AO3 (4 marks)** Award 1 mark for each way identified with a further mark for development or explanation up to a maximum of 2 marks each. Max 2 marks for each way provided. The type of secondary data will vary on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • Used local newspaper articles (1) to research information about the history of the local area (1). • Used a government report about regeneration (1) to provide a national context for changes taking place to inform my interview questions (1). • Used data on property prices (1) to look for correlations with the data I had from the Environmental Quality Survey (1) • Map (1) to be able to examine land features (1). Accept any other appropriate response.	**(4)**

Question number	Answer	Mark
6(d)	**AO3 (3 marks)** Award 1 mark for identification of an improvement, and further 2 marks for explanation. The type of data analysis will vary on the nature and context of the fieldwork, but it must be plausibly linked to the focus: urban environments. • I could have compared the data I had from different sites (1) in order to consider broader patterns (1) to understand where significant differences were (1). • I could have created a word cloud with data from the report (1) to systematically highlight key themes from the report (1) rather than just highlight interesting sentences (1). • Use a greater variety of data presentation methods/use line graphs rather than pie chart (1) to be able to more easily identify trends (1) to be able to support conclusions (1). Accept any other appropriate response.	**(3)**

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Indicative content guidance
The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include:

AO3
• Evaluation is likely to be linked to the conclusions made and how these linked to the aims for the enquiry.
• Evaluation will most likely be linked to the methods, and limited data presentation provided that led to these conclusions and how the nature of fieldwork design led to the creation of the conclusions.
• Recognition of the extent to which aim was met and how the methods chosen to allow these conclusions to be reached.
• A supported judgement should be reached about how useful the conclusions were, using relevant examples from the resources.
AO4
• In Figure 6a there is a summary of data collection methods used (including photographs and questionnaire collected along a transect, and secondary data).
• In Figure 6a shows the students are using both primary and secondary data.
• In Figure 6b there is a bubble graph which shows evidence of new developments along the transect.
• In Figure 6c there are conclusions about new developments in the city.</td></tr>
<tr><th>Level</th><th>Mark</th><th>Descriptor</th></tr>
<tr><td></td><td>0</td><td>No acceptable response.</td></tr>
<tr><td>Level 1</td><td>1–3</td><td>• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)
• Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)</td></tr>
<tr><td>Level 2</td><td>4–6</td><td>• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant</td></tr>
</table>

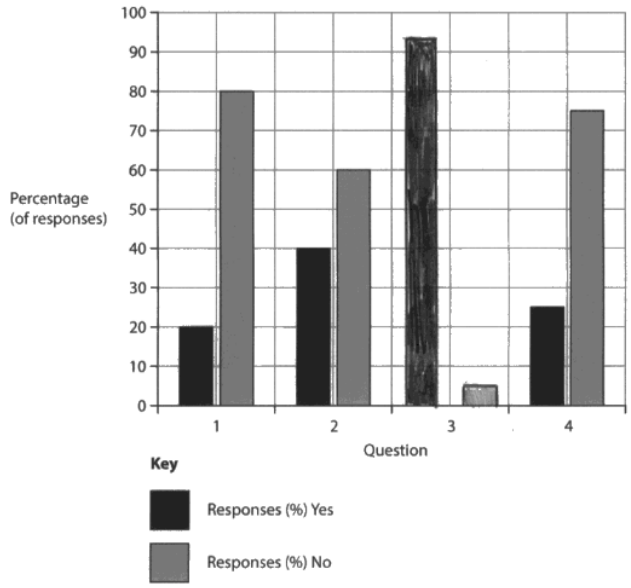
		understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

6(a)	**AO3 (1 mark)** Award one mark for a suitable piece of equipment: • Camera/Mobile phone (1) • Environmental quality survey sheet (1) • Questionnaire (1) • Map (1) • Stopwatch (1) • Notebook (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(b)	**AO3 (1 mark)** Award 1 mark for either of the following: • Websites/leaflets on local businesses (1) • Data on the number of businesses (that have opened and closed) (1)	**(1)**

Question number	Answer	Mark
6(c)	**AO3 (3 marks)** Award 1 mark for a suitable reason, and a further mark for development or explanation up to a maximum of 3 marks. • It is less biased than other options (1) as participants are chosen randomly rather than for a particular reason /equal chance of being sampled (1) which means data should be more accurate (1). • Random sampling is easy to implement (1) it does not require access to a particular group of people (1) so they can be selected as they walk by (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
6(d)(i)	**AO4 (2 marks)** Award 1 mark for accurate plotting of each bar. (Yes – 95%/No 5%)  	**(2)**

Question number	Answer	Mark
6(d)(ii)	**AO4 (1 mark)** Award 1 mark for another suitable presentation method: • Pie chart (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(d)(iii)	**AO4 (2 marks)** Award 1 mark for correct method to calculate the range. Award 2 marks for correct answer. NB Only look at working out if answer is incorrect. 50-20 (1) (method mark) 30 (2)	**(2)**

Question number	Answer	Mark
6(e)	**AO3 (2 marks)** Award 1 mark for an advantage, and 1 mark for a disadvantage.	

	• Advantage: ○ Easy to see patterns for each site (1) ○ Easy to compare sites (1) • Disadvantage: ○ Does not show any correlations between questions (1) ○ This chart shows percentages rather than real numbers of responses (1). ○ Difficult to read accurately because of the scale on the y-axis being so spaced out (1) ○ Difficult to know what question was asking from the graph (1) Accept any other appropriate response.	**(2)**

Question number	Indicative content
6(f)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Evaluation is likely to be linked to the use of a range of data collection methods to generate qualitative data. • Evaluation will most likely make links between the qualitative data used and how this strengthened the argument/conclusions. • Evaluation will most likely be linked to the evaluation of the use of quantitative data alongside qualitative data to form accurate conclusion. • Recognition of the extent to which the type of data collected can affect how data is analysed/ the aim is met/conclusions are made. • A supported judgement is reached about the use of qualitative data in their enquiry drawing on evidence such as strengths, weaknesses, alternatives and relevant examples using data. **AO4** • There is evidence of using different skills and techniques as part of primary fieldwork. • There is evidence of qualitative techniques such as interviews, open ended questions in questionnaires, photographs. • There is evidence of using different skills and techniques relevant to how data is collected or analysed as part of the enquiry.

Question number	Answer	Mark
	• There is evidence of using different skills and techniques to investigate aspects of urban environments. • There is evidence of own fieldwork data i.e. reference to the field data collected by the student.	

Level	Mark	Descriptor
	0	No acceptable response.
Level 1	1–3	• Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) • Few aspects of the enquiry process are supported by the use of geographical skills to obtain information, which has limited relevance and accuracy. Communicates generic fieldwork findings and uses limited relevant geographical terminology. (AO4)
Level 2	4–6	• Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) • Some aspects of the enquiry process are supported by the use of geographical skills. Communicates fieldwork findings with some clarity, using relevant geographical terminology occasionally. (AO4)
Level 3	7–8	• Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) • All aspects of the enquiry process are supported by the use of geographical skills. Communicates enquiry-specific fieldwork findings with clarity and uses relevant geographical terminology consistently. (AO4)

Question number	Answer	Mark

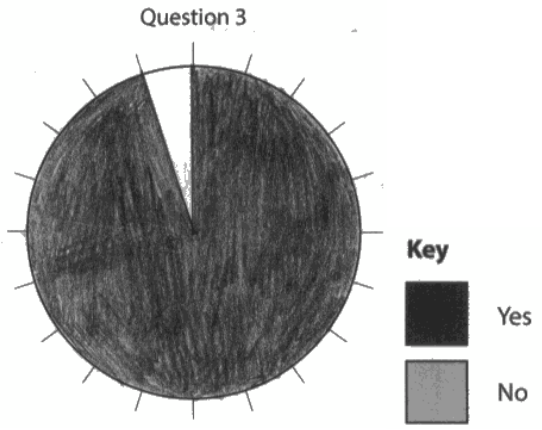
6(a)	**AO3 (1 mark)** Award one mark for a suitable risk:	

	• Road safety (1) • Weather conditions (1) • Proximity to electricity pylon (1). • Access rights (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark
6(b)	**AO3 (1 mark)** Award 1 mark for any of the following: • Environmental quality survey (1) • Questionnaires (1) • Photographs (1)	**(1)**

Question number	Answer	Mark
6(c)	**AO3 (3 marks)** Award 1 mark for a suitable reason, and a further mark for development or explanation up to a maximum of 3 marks. • Systematic sampling is easy to implement (1) it does not require access to a particular group of people (1) so they can be selected as they walk past by counting intervals (1). • It is less biased than other options (1) as participants are chosen by a system rather than for a particular reason (1) which means data should be more accurate (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark

6(d)(i)	**AO4 (2 marks)** Award 1 mark for accurate drawing of segments. Award 1 mark for accurate shading.  	**(2)**

Question number	Answer	Mark
6(d)(ii)	**AO3 (2 marks)** Award 1 mark for an advantage, and 1 mark for a disadvantage. • Advantage: ○ Easy to see patterns for each site (1) ○ Easy to compare sites (1) • Disadvantage: ○ Does not show any correlations between questions (1) ○ This chart shows percentages rather than real numbers of responses (1). Accept any other appropriate response.	**(2)**

Question Number	Answer	Mark
6(d)(iii)	**AO3 (1 mark)** Award 1 mark for another suitable presentation method: • Bar graph (1) • Histogram (1) Accept any other appropriate response.	**(1)**

Question number	Answer	Mark

6(d)(iv)	**AO4 (2 marks)** Award 2 marks for correct answer. Award 1 mark for correct method to calculate the mean if the answer is not correct. 40 + 20 + 50 / 3 (1) 36.67 (accept 36.6/36.7/37) (1)	**(2)**

Question Number	**Indicative content**	
6(e)	**AO3 (4 marks)/AO4 (4 marks)** **Marking instructions** Markers must apply the descriptors in line with the general marking guidance and the qualities outlined in the levels-based mark scheme below. **Indicative content guidance** The indicative content below is not prescriptive and candidates are not required to include all of it. Other relevant material not suggested below must also be credited. Relevant points may include: **AO3** • Evaluation is likely to be linked to the use of a range of data collection methods to generate quantitative data. • Evaluation will most likely make links between the quantitative data used and how this strengthened the argument/conclusions. • Evaluation will most likely be linked to the evaluation of the use of quantitative data alongside qualitative data to form accurate conclusions. • Recognition of the extent to which the type of data collected can affect how data is analysed/ the aim is met/conclusions are made. • A supported judgement is reached about the use of quantitative data in their enquiry drawing on evidence such as strengths, weaknesses, alternatives and relevant examples using data. **AO4** • There is evidence of using different skills and techniques as part of primary fieldwork. • There is evidence of using different skills and techniques relevant to how data is collected or analysed as part of the enquiry. • There is evidence of using different skills and techniques to investigate aspects of economic activity and energy. • There is evidence of own fieldwork data i.e. reference to the field data collected by the student.	
Level	**Mark**	**Descriptor**
	0	No acceptable response.

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Question number	Answer	Mark