UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
International General Certificate of Secondary Education

ENVIRONMENTAL MANAGEMENT

Paper 2

0680/02

October/November 2005

1 hour 45 minutes

Candidates answer on the Question Paper.
Additional Materials: Rule (cm/mm)

Candidate Name	

Centre Number					

Candidate Number				

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen in the spaces provided on the Question Paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **both** questions.
The number of marks is given in brackets [ ] at the end of each question or part question.

DO NOT WRITE IN THE BARCODE.

DO NOT WRITE IN THE GREY AREAS BETWEEN THE PAGES.

If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

FOR EXAMINER'S USE	
1	
2	
TOTAL	

This document consists of **16** printed pages.

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[Turn over

1 **Composition of the lower atmosphere**

1	Nitrogen	78.0%
2	Oxygen	20.9%
3	Argon (an inert gas)	0.9%
4	Small and variable amounts of water vapour and carbon dioxide	
5	Solid particles – dust, smoke and salt crystals	0.2%

(a) (i) Complete the divided bar graph and key to show the composition of the lower atmosphere.

Key:
☐ Nitrogen
☐ Oxygen
☐ Others

0   10   20   30   40   50   60   70   80   90   100
Atmosphere (%)
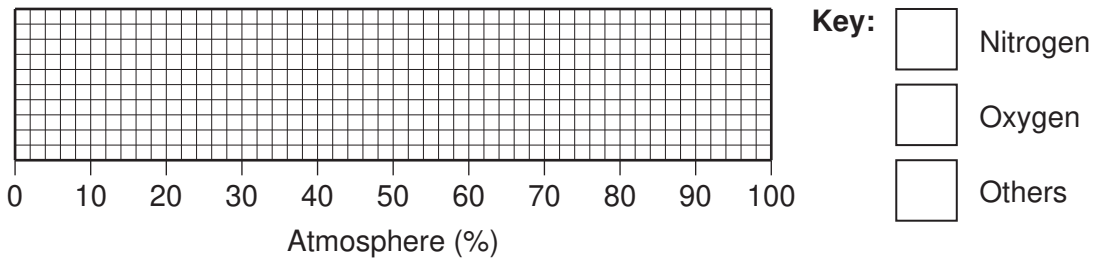
[3]

(ii) Which gas is present in the atmosphere as a result of evaporation?

....[1]

(iii) Choose **one** of the solid particles in the atmosphere.
Name a source for this type of particle. State where its concentration in the atmosphere is likely to be greater than average.

Source ....

Greater concentration..

....[2]

(iv) Amounts of carbon dioxide and water vapour in the atmosphere are small, but they are very important. Explain why.

Carbon dioxide

....

....

....

....

Water vapour

....

....

....

....[4]

(b) More information about the Earth's atmosphere is given below.
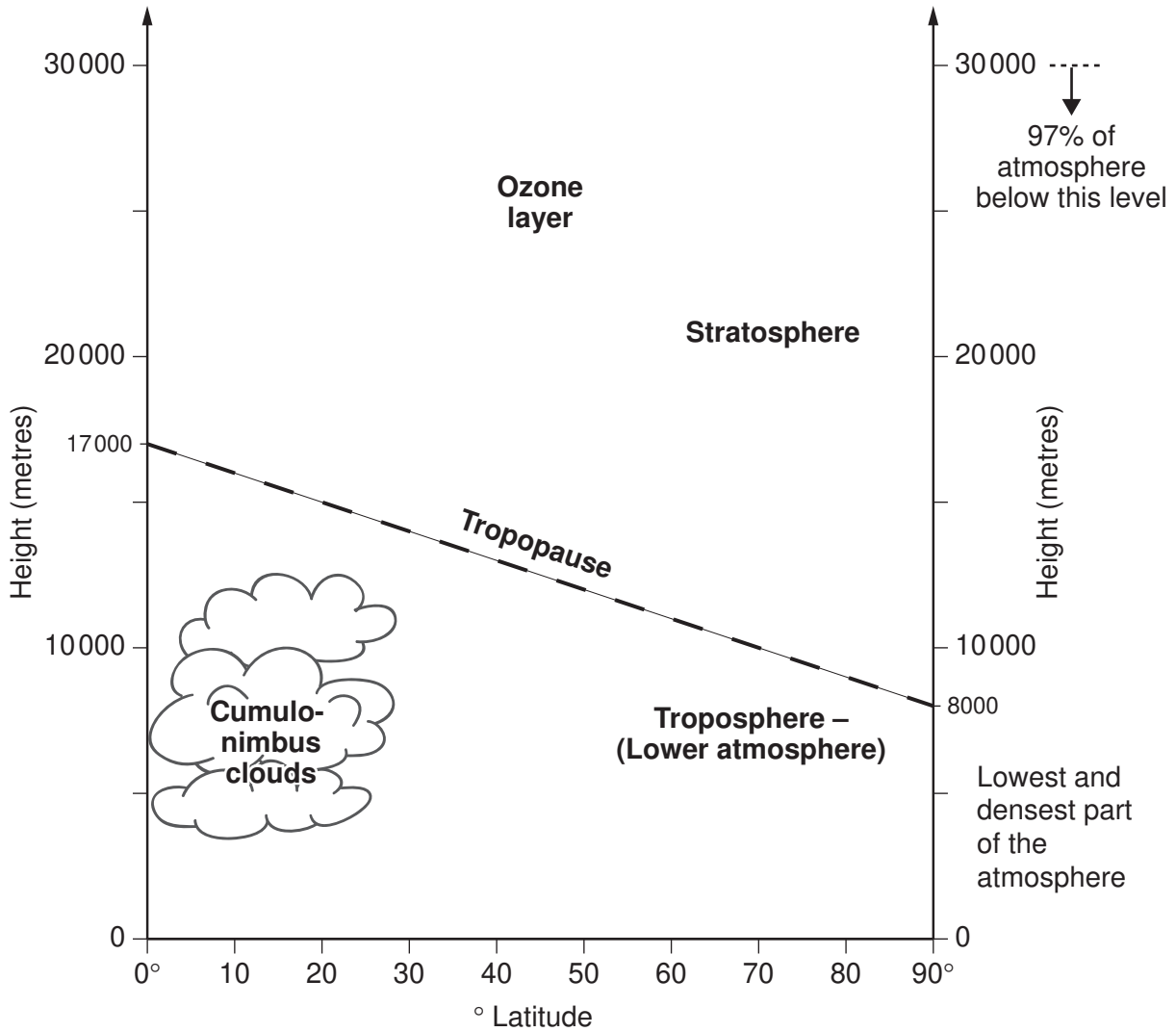
(i) How much thicker is the lower atmosphere at the Equator than at the Poles?

....[1]

(ii) Where is the ozone layer found?

....

....[1]
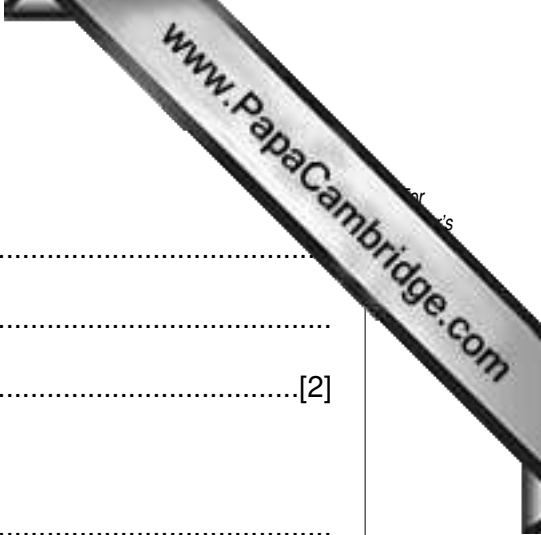
   (iii) Explain why the ozone layer is important to life on Earth.

   ....

   ....

   ....[2]

(c) **(i)** What is meant by the 'ozone hole'?

   ....

   ....

   (ii) Why are international strategies needed to reduce the pollution that has caused the hole in the ozone layer?

   ....

   ....

   ....

   ....

   ....

   ....[4]

(d) Motor vehicles are a major cause of atmospheric pollution, especially in big cities.

Traffic pollution

Total emissions from traffic in one large city during one year (tonnes)

	Emission	Tonnes per year
A	Carbon dioxide	2 800 000
B	Carbon monoxide	641 000
C	Nitrogen oxides	112 000
D	Black smoke and soot particles	19 000
E	Sulphur dioxide	6000

Complete the graph below. [2]
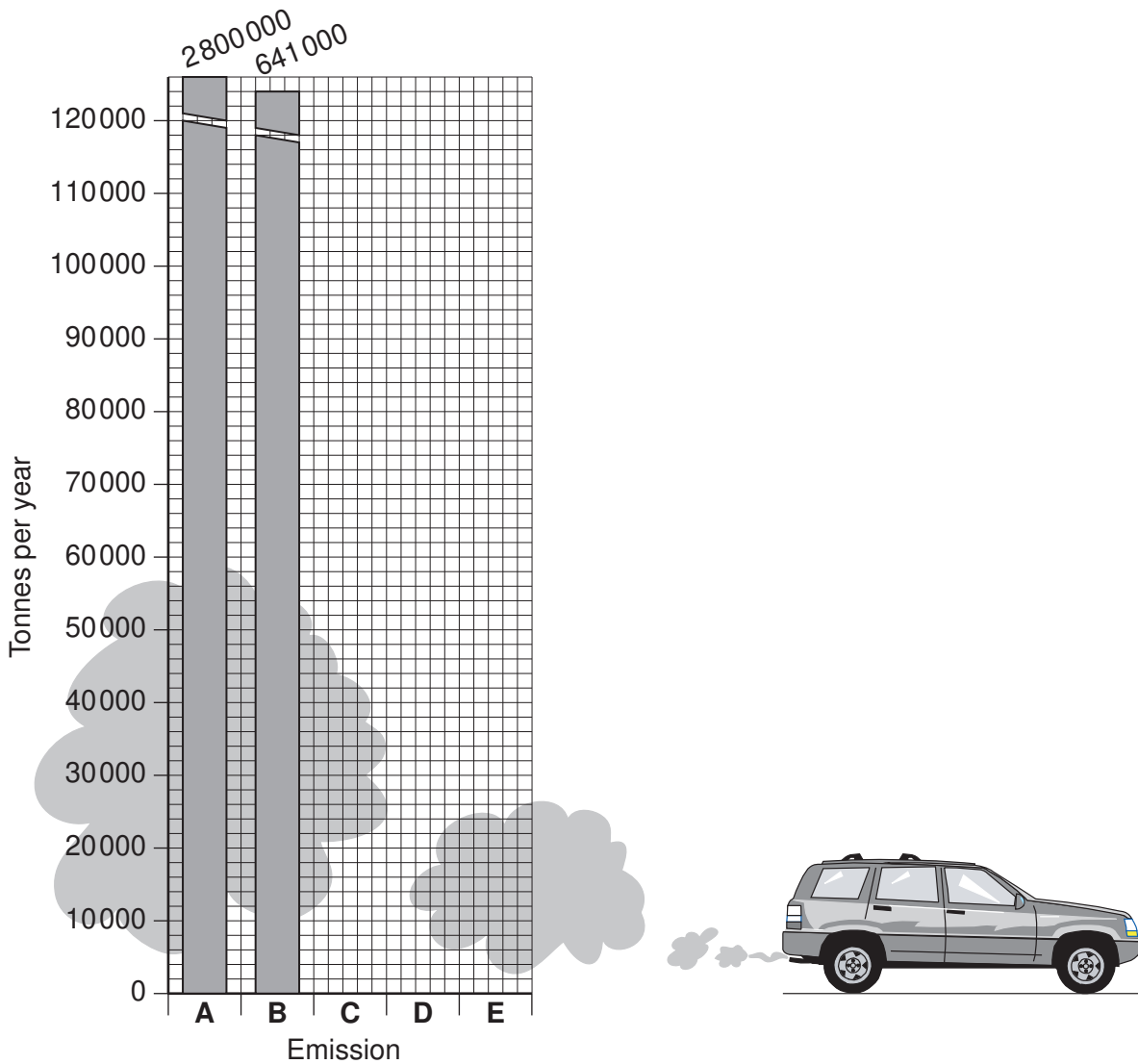
(e) The sketch below shows some of the effects of these emissions.

Traffic pollution
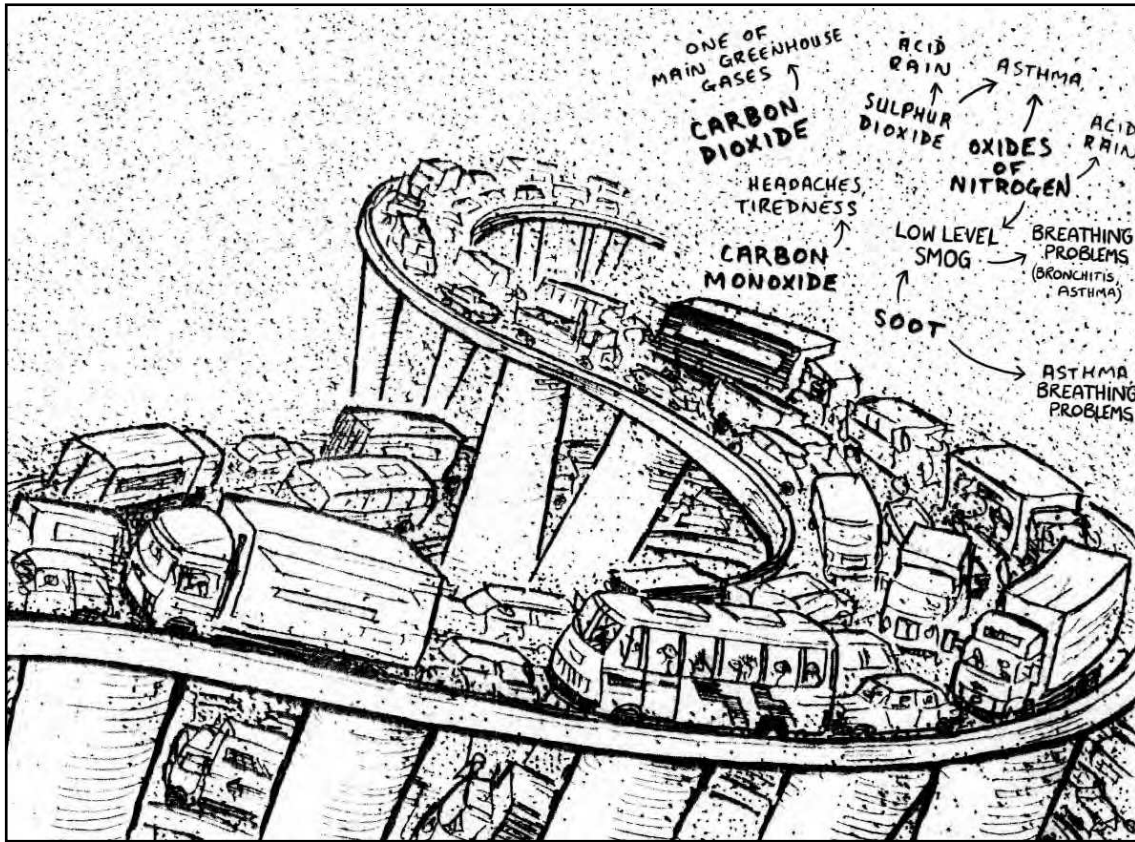
(i) Name the **two** emissions that cause acid rain.

....[1]

(ii) Describe the evidence from the sketch which shows that traffic pollution damages peoples' health.

....

....

....[2]

(iii) Which **one** of the emissions shown is **not** usually a danger to health? Explain your answer.

....

....

....[2]
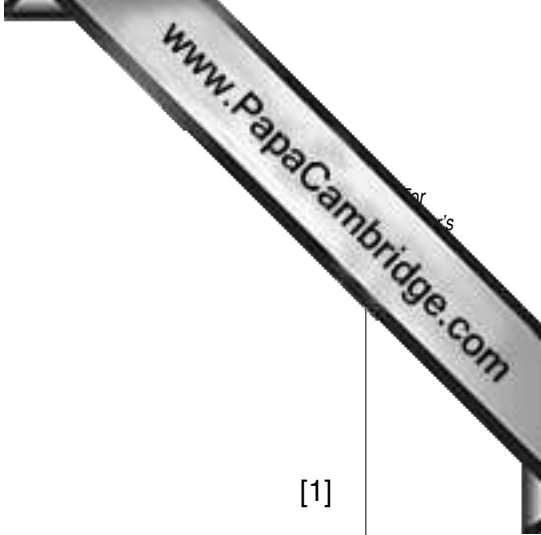
(f) Look again at the graph in part **(d)** and the sketch in part **(e)**.
In your view, which one of the five emissions is the worst for

   (i) people living in large cities

     emission ....

  (ii) people living elsewhere in the world?

     emission ....   [1]

 (iii) Explain your choices.

     ....

     ....

     ....

     ....

     ....

     ....[3]

(g) Some of the world's big cities are known for high levels of air pollution. Ma~~~ locations and weather conditions similar to those shown on the diagram below.

Location and weather conditions that favour air pollution
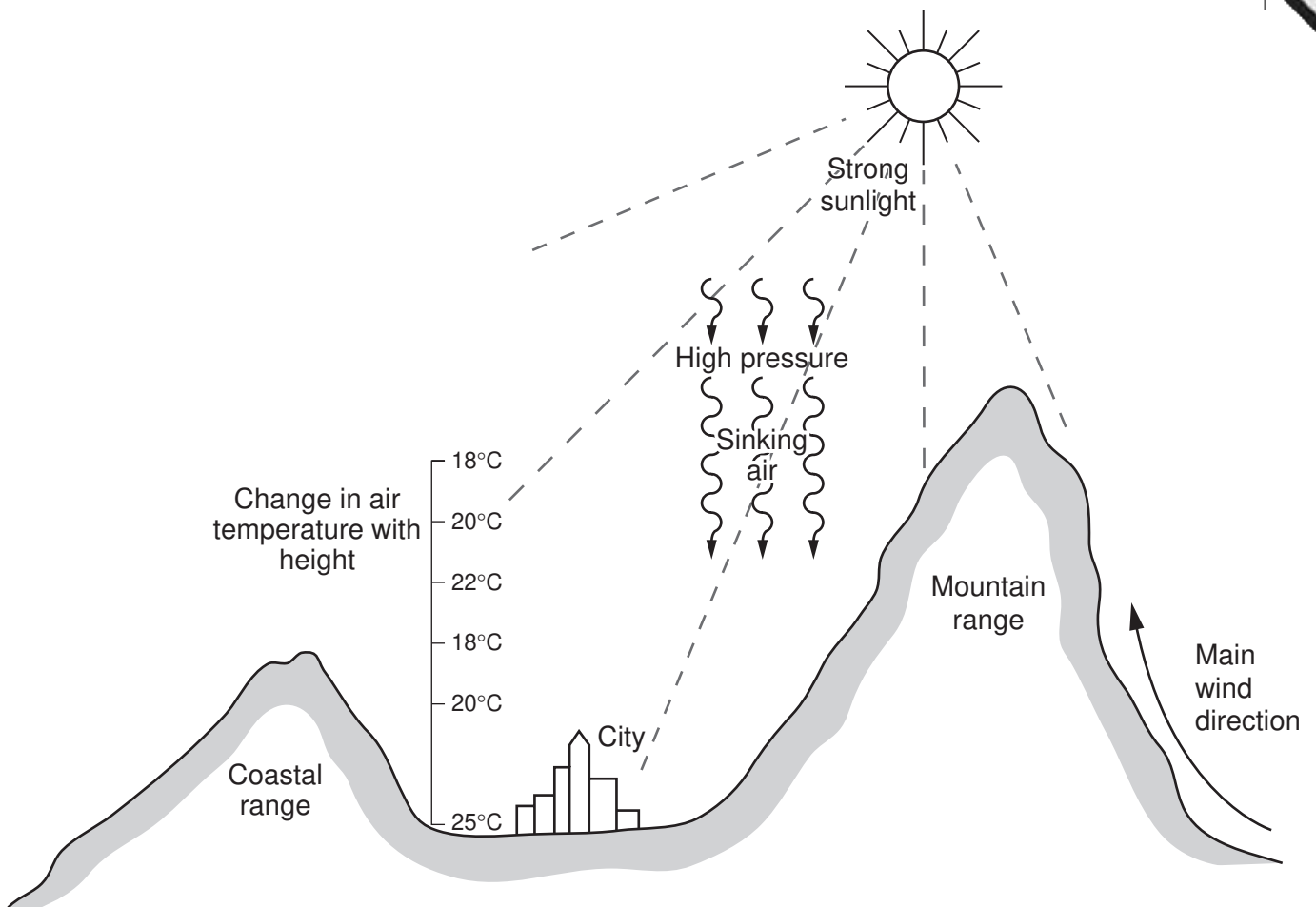
(i) Choose **three** features shown on the diagram. Explain how each increases the chances of high levels of air pollution in big cities.

1 ....

....

....

2 ....

....

....

3 ....

....

....[4]

(ii) Name **two** strategies for reducing air pollution in large cities.

1 ....

2 ....[2]

(iii) Why is it difficult to reduce levels of air pollution in large cities? Explain as fully as you can.

....

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....

....[5]

[Total: 40]

2 (a) Look at the world map showing total fertility rates.
Total fertility rate is the number of children for each woman.

World total fertility rates
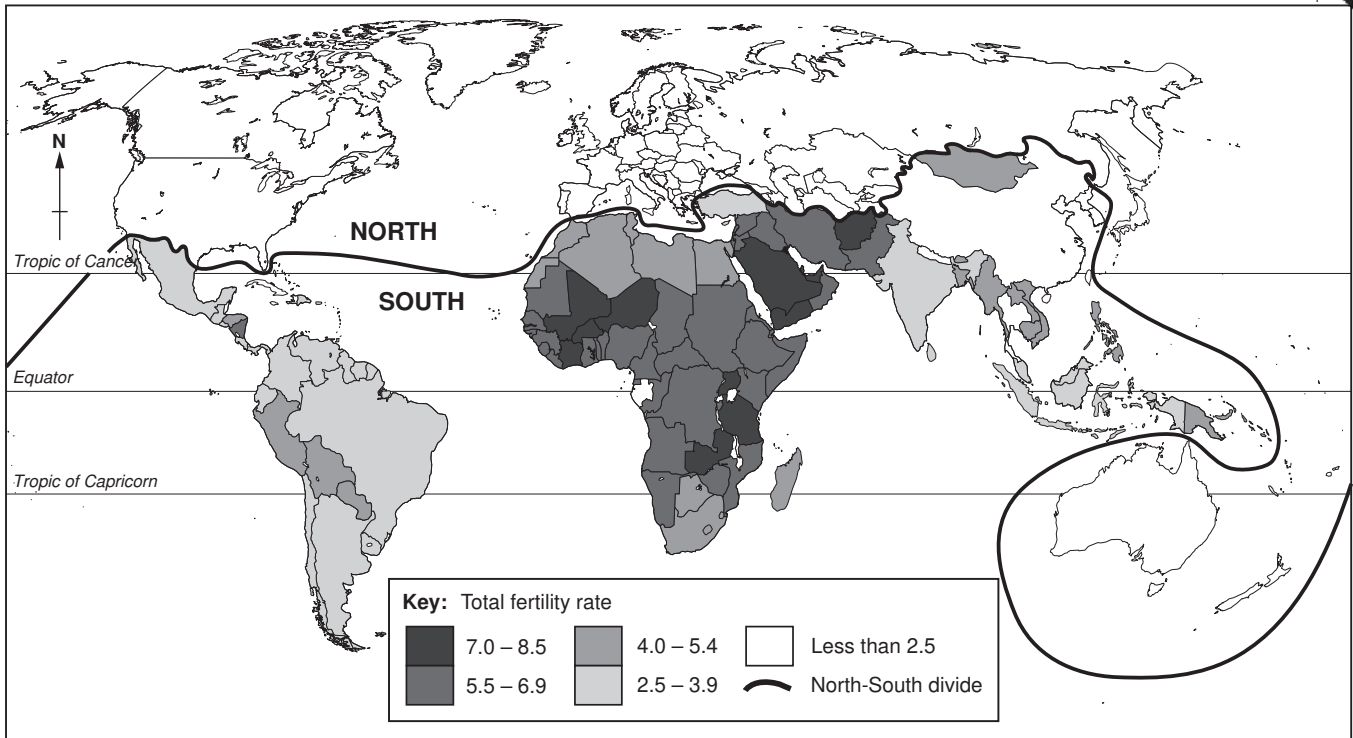
(i) Where are most of the countries with high fertility rates (5.5 and above) located?

....

....

....[2]

(ii) The North-South divide, which is the line that separates developed and developing countries, is marked on the map.
State the main difference in fertility rates shown between the developed North and developing South.

....

....

....[2]

(iii) Explain why fertility rates are very high in some countries and low in others. Refer to named countries in your answer.

....

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....[5]

(b) Look at the graph below which shows the results of world urbanisation.

Urban population in developed and developing countries
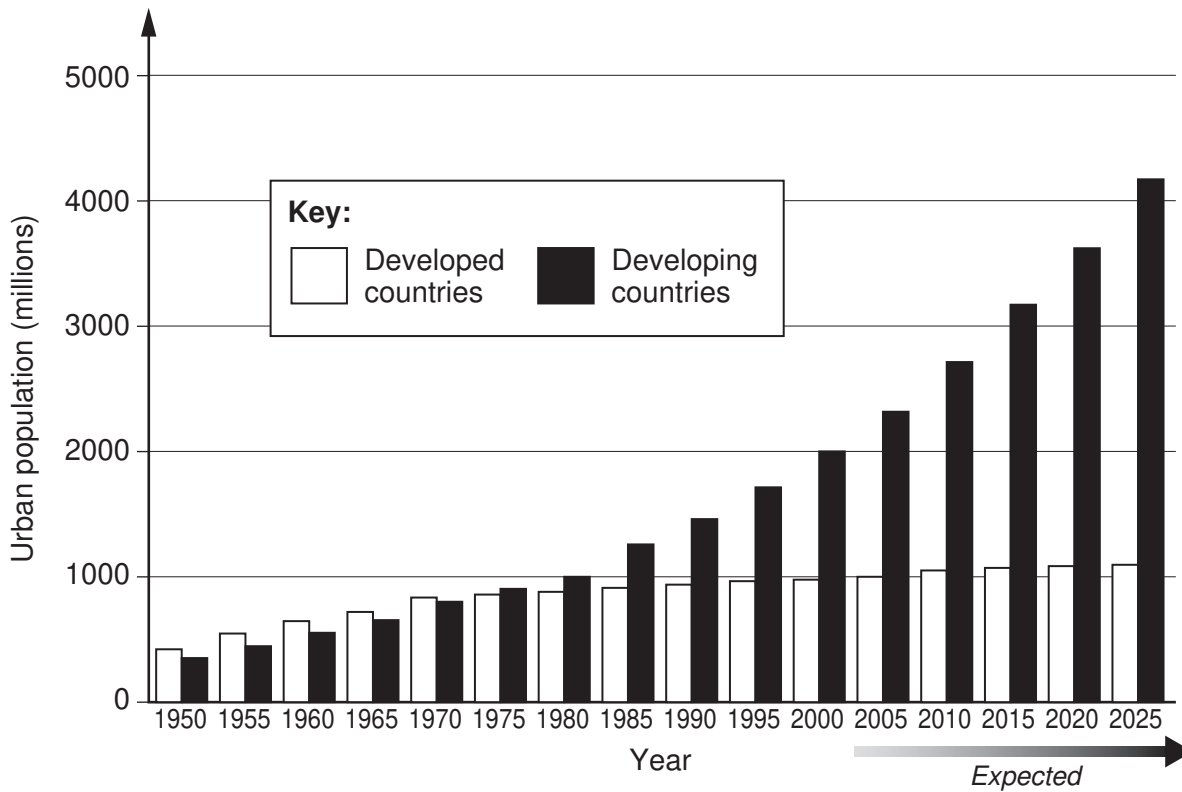
(i) Describe what the graph shows about changes in urban population in **developed** countries.

....

....

....

....[2]

(ii) The graph shows that a major change occurred in 1975. What was it?

....

....[1]

(iii) Describe what the graph shows about expected urban population in **developing** countries from 2005 onwards.

....

....

....

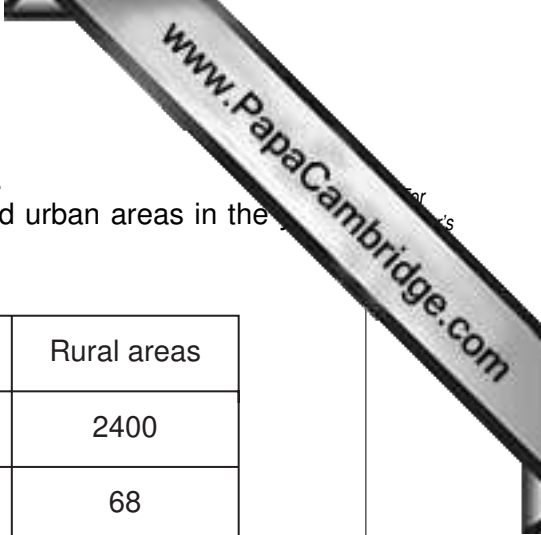..[2]

(c) One of the causes of urban growth is rural to urban migration.
Look at the examples below of differences between rural and urban areas in the ~~year~~
2000.

Egypt

	Cairo (capital city)	Rural areas
Average income per year (£ Egyptian)	3500	2400
Infant mortality rate (per 1000)	50	68

Brazil

	Urban areas	Rural areas
People with access to safe supplies of drinking water (%)	95	53
People with access to improved sanitation (%)	84	43

(i) State an **economic** reason why people migrate from rural areas to Cairo.

....

....[1]

(ii) In both countries people living in urban areas are likely to be more healthy than those living in rural areas.
Using evidence from the table above, describe and explain this.

....

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....[4]

(d) Many new migrants into cities in developing countries live in housing similar shown in sketch **A** below.

Sketch A
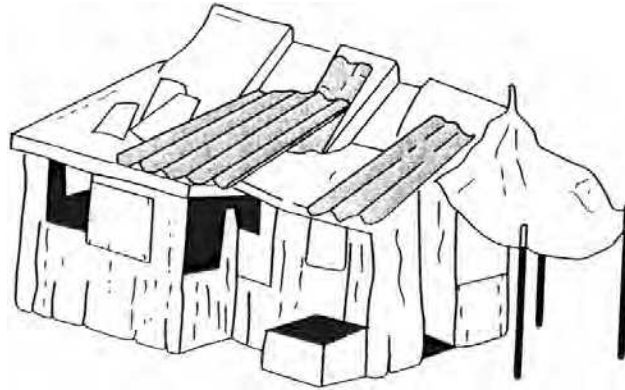
Describe how sketch A shows that people living here are

(i) newcomers to the city;

....

....

....

(ii) short of money.

....

....

....[3]

(iii) This type of housing is found most often around the edges of cities. Why?

....

....[1]

(iv) Describe **one** problem resulting from a location around the edge of a big city.

....

....

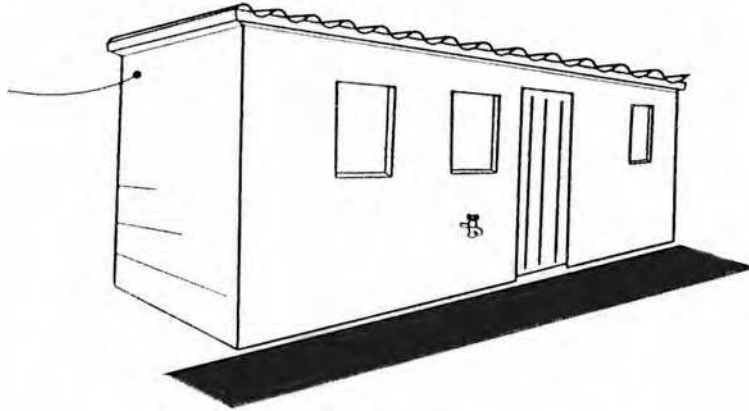...[2]

(e) Sketch **B** shows housing in an area where people have lived for more than twenty [years] since migrating from rural areas.

Sketch B

(i) What improvements can be seen compared with the housing on sketch A?

....

....

....

....[2]

(ii) State **two** reasons why improvements like these are made.

1 ....

....

....

2 ....

....

....[4]

(f) Housing is only one of the many urban problems caused by rural to urban migra...
Some people believe that it would be better to improve farming in rural areas...
reduce the numbers wanting to migrate to the cities.

New agricultural techniques to increase output

- A Irrigation
- B New seeds (e.g. the Green Revolution)

(i) Choose **one** of these new agricultural techniques and name an area where it is used by farmers.

Technique ....Area ....[1]

(ii) Explain how it has increased output in the area named.

....

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....[3]

(iii) Is it ever going to be possible to reduce the numbers of people migrating from rural to urban areas in developing countries? Explain your views about this.

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....[5]

[Total: 40]

[Total for paper: 80]