

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS
General Certificate of Education Ordinary Level

GEOGRAPHY

2217/02

Paper 2

May/June 2005

2 hours 15 minutes

Additional Materials: Answer Booklet/Paper;
Ruler;
Calculator;
1:25 000 Survey Map Extract is enclosed
with this question paper.

READ THESE INSTRUCTIONS FIRST

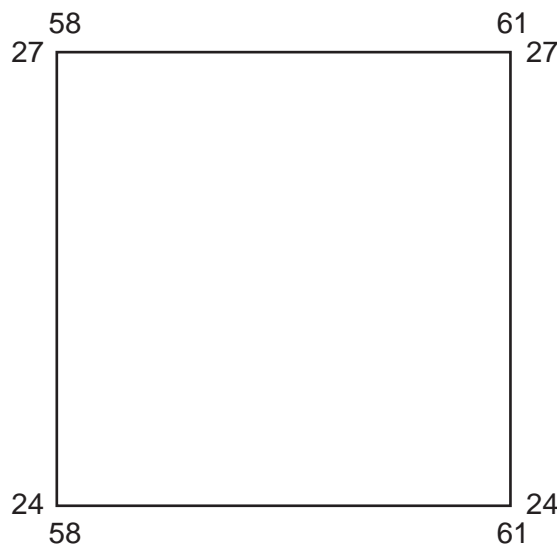
If you have been given an Answer Booklet, follow the instructions on the front cover of the Booklet.
Write your Centre number, candidate number and name on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **all** questions in Section A and **one** question in Section B.
At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [] at the end of each question or part question.
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.
The insert contains Figures for Questions 8 and 9.

Section A

Answer **all** questions in this section.

- 1 Study the map of part of the island of Dominica on a scale of 1:25 000 and answer the following questions.
- (a) (i) Give the grid reference of the police station at Portsmouth (Grande Anse). [1]
 (ii) What is located at grid reference 629256? [1]
 (iii) In which compass direction is this location from the police station at Portsmouth? [1]
- (b) Measure the total length of the Taffia River, which crosses grid square 5827, from its source to its mouth. Give your answer in metres. [1]
- (c) Describe the overall drainage pattern in the area shown below. [1]



- (d) (i) What is the main difference between the physical features of the north coast and those of the west coast? [2]
 (ii) Suggest why these coastlines have different physical features. [2]
- (e) (i) What is the main pattern of settlements in the eastern part of the map? [1]
 (ii) What factors appear to have influenced this pattern? [1]
 (iii) Give both positive and negative reasons why most of the settlement over the whole map area is close to the coast. [2]
- (f) Using map evidence of land use and buildings, describe the agricultural activities in the area around Portsmouth (Grande Anse) and Glanvillia. [4]
- (g) Briefly describe the general route, in relation to the physical features, of the parish boundary from north to south across the map. [3]

- 2 Study Table 1 which show the changes in the number of undernourished people in some regions of the world.

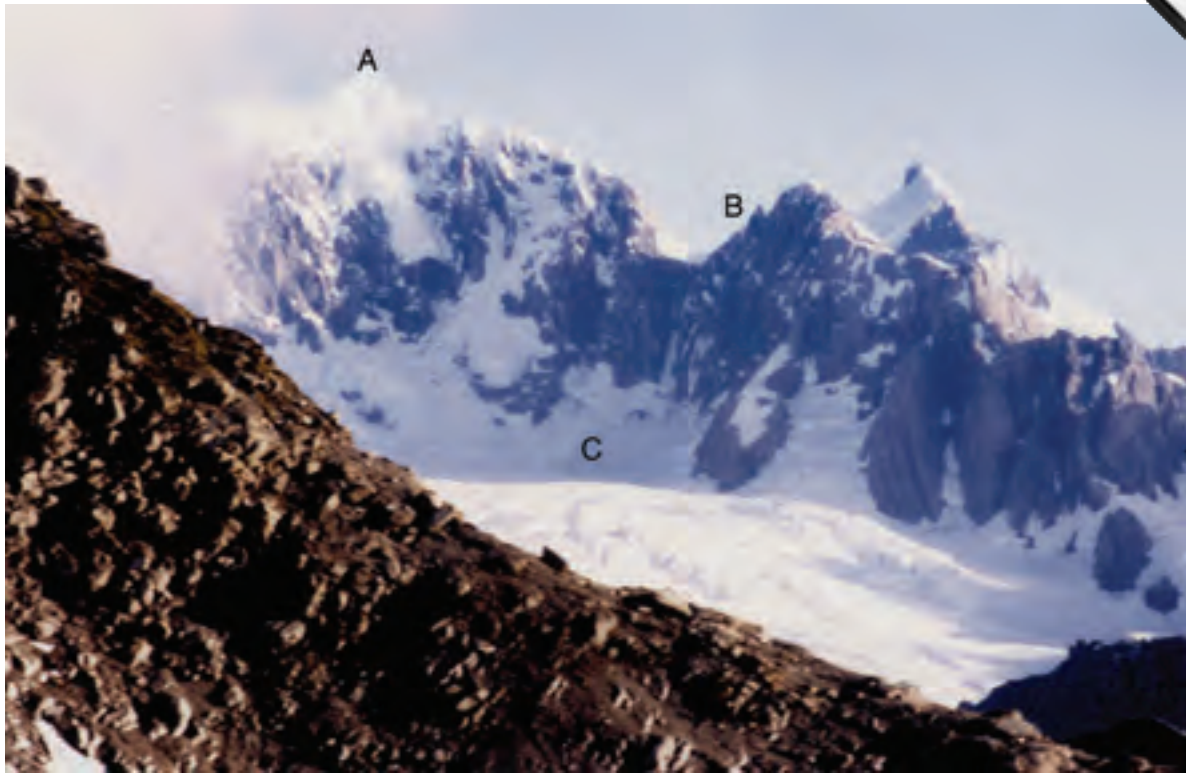
Table 1

Number of undernourished people (1969–1997)

	Undernourished people (millions)			
	1969–71	1979–81	1990–92	1995–97
Sub-Saharan Africa	89	126	164	180
Near East & North Africa	45	22	26	33
East & South-East Asia	504	406	283	241
South Asia	267	338	299	284
Latin America & the Caribbean	54	46	59	53

- (a) Draw a sketch graph to show the changes in the data over the period shown for Sub-Saharan Africa. [3]
- (b) Which region in Table 1 has the largest number of undernourished people in 1995–97? [1]
- (c) Which region was most successful in reducing the numbers of undernourished people over the period shown (1969–1997)? [1]
- (d) Suggest one factor, **not** connected with agriculture, which could have affected the numbers of undernourished people shown in Table 1. [1]

- 3 Study Photograph A which shows a mountainous region in northern Europe.



- (a) Write down A, B, C and, opposite each, name the landform identified on Photograph A by these letters. [3]
- (b) (i) Name the main weathering process at work on the areas of bare rock. [1]
- (ii) Explain how this process weathers these areas of bare rock. [3]

- 4 Study Fig. 1 which shows a population pyramid.

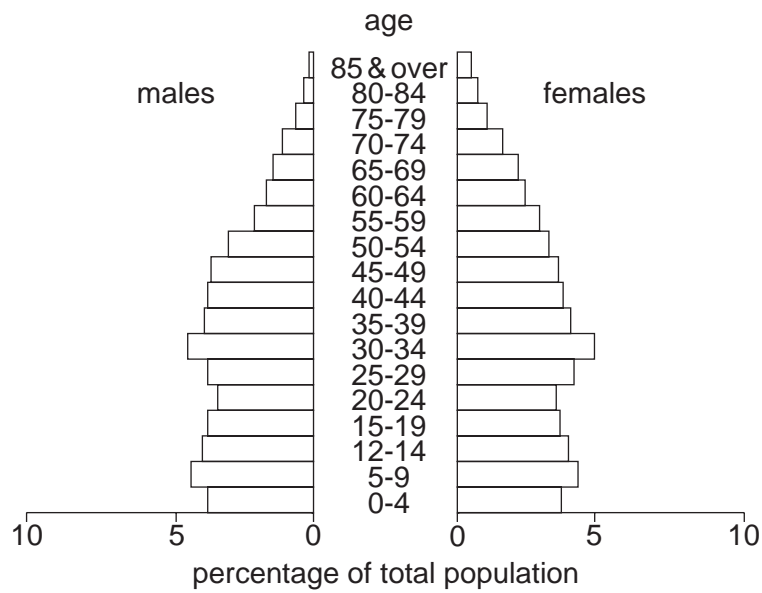


Fig. 1

- (a) Which is the largest age group? [1]
- (b) What percentage of the population is made up of children below the age of five? [1]
- (c) (i) How would you describe the life expectancy of men and of women as suggested in Fig. 1? [2]
- (ii) Choose **one** of the following which you would expect the government to increase over the next ten years:
- employment opportunities,
 - health care for the elderly,
 - old people's care homes,
 - schools,
 - university places.
- Give a reason for your answer. [2]

5 Study Fig. 2 which shows climatic data and a location map for selected places in West Africa.

Station	Total Rainfall (mm)	Rainy Season †	Mean Max. Temperature °C *	Mean Min. Temperature °C *
Agades	172	May-Sept	34 May	19 Jan
Nguru	525	May-Sept	32 June	21 Jan
Bida	1212	Apr-Oct	31 Apr	26 Aug
Akassa	3600	All year	27 Feb-May	25 Jul-Sep

† months refer to length of rainy season

* months refer to month of mean max. or min. temperature

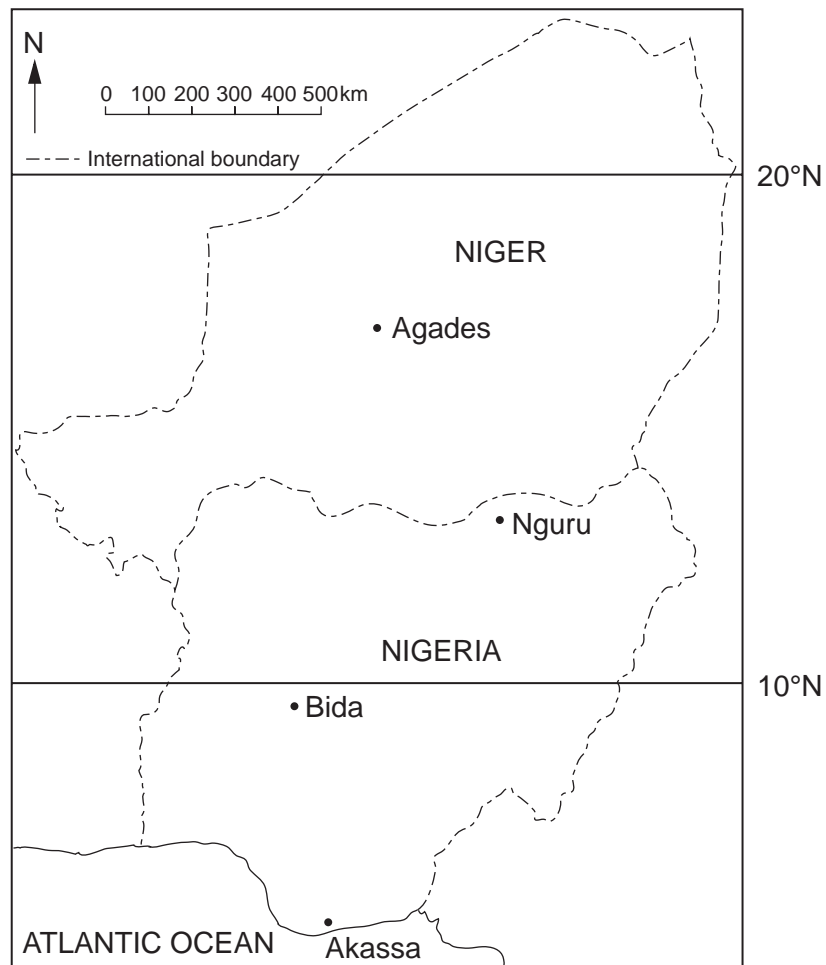


Fig. 2

- (a) (i) Which location has the heaviest rainfall? [1]
- (ii) When does the rain occur at Nguru? [1]
- (iii) Describe the trends in total rainfall across the region. [2]
- (iv) How does the rainy season change across the region? [1]

- (b) (i) Which location has the highest temperature range?
 (ii) Suggest **one** reason why this is so.

6 Study Fig. 3, which is a map of an island with a mostly rocky coastline.

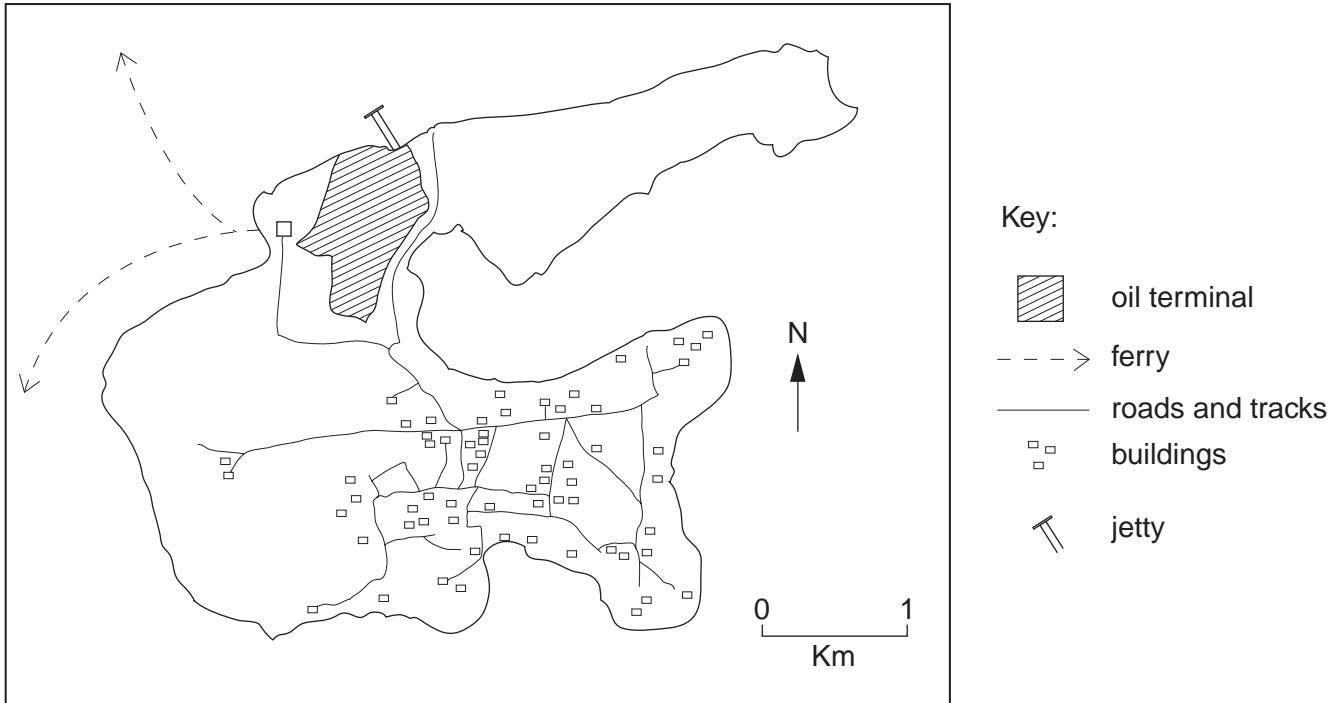


Fig. 3

- (a) Describe the nature and distribution of settlement on the island. [3]
- (b) (i) What appears to be the main centre of employment on the island? [1]
 (ii) What does the general distribution of settlement suggest is the most important occupation of the inhabitants of the island? [2]
- (c) Suggest reasons for:
- (i) the ferries, [2]
 - (ii) the location of the jetty. [1]

- 7 Study Fig. 4 which is a graph to show crop yields and potential income under different fertiliser treatments in the Ethiopian province of Tigray.

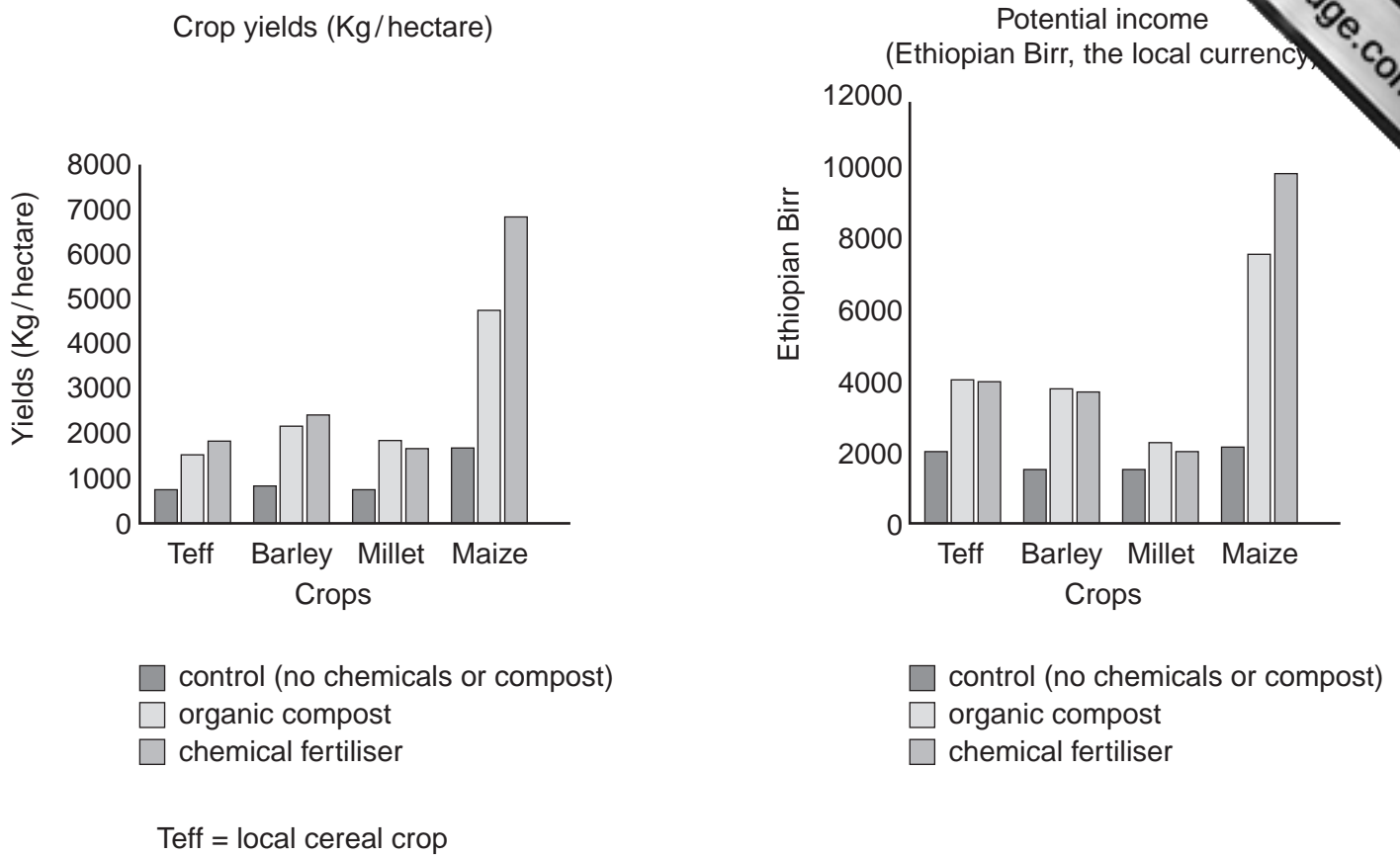


Fig. 4

- (a) (i) Which crop showed the greatest increase in yield with the application of chemical fertilisers? [1]
- (ii) Which crop yielded more highly with organic compost than with chemical fertiliser? [1]
- (b) (i) What is the expected increase in income from teff of changing from no fertiliser (control) to organic compost? [1]
- (ii) Suggest the likely advantages of using organic compost compared with chemical fertiliser. [2]

Section B

Answer **one** question from this section.

- 8 A group of students investigated downstream changes in a small river as distance from the source increased. Three sites, A, B and C, were visited, at different distances from the source of the river and at decreasing height above sea level. The results of the investigation are shown in Table 2.

Table 2

	Site A	Site B	Site C
Distance from the source (km)	8	13	28
Height above sea-level (m)	550	350	108
Average pebble size (cm)	18	9	7.5
Velocity (m/sec)	0.37	0.59	0.42

- (a) (i) Using a map, the students found the height above sea-level at each site. Use the data from Table 2 to draw an accurate long profile line graph on Fig. 5 (Insert) to show the changing height above sea-level of the river from the source to Site C. [4]
- (ii) The students discussed long profiles and river features such as waterfalls, flood plains, rapids and ox bow lakes. List **two** river features which the students might expect to see at Site A and two features at Site C. [2]
- (b) The teacher instructed students to draw a field sketch at Site A. One completed sketch is shown in Fig. 6 (Insert).
- (i) State **two** essential pieces of information, other than the location, which should be included when completing a sketch. [2]
- (ii) Suggest **one** advantage and **one** disadvantage of using field sketches. [2]
- (c) One feature shown by the sketch (Fig. 6) is large and small rocks on the river bed. Explain how these may change the friction, speed and flow of this small river. [4]
- (d) Each student randomly selected ten pebbles at each site. The pebbles were chosen at random by a student walking around the river stepping in different directions. After each step, the pebble closest to the end of the foot was picked up and measured.
- (i) Using the results in Table 2, complete the bar graph on Fig. 5 (Insert) to show the average pebble size for Site B and Site C. The result for Site A is already plotted on Fig. 5. [2]
- (ii) The results show that pebble size becomes smaller from Site A to Site C. Suggest a reason for this. [2]
- (iii) Why might this random method of collecting pebble sizes be considered an unreliable method? [1]
- (iv) Suggest how the students may obtain a more representative sample of results if the investigation was repeated. [2]

- (e) Study Table 2 again. The velocity at each site was also recorded and the results are shown in Table 2.
- (i) Describe the changing pattern of velocity from Site A to Site C.
- (ii) Water was extracted by a bottling factory upstream from Site C. Suggest how and why this:
- changed the velocity readings,
 - increased the depositional features at Site C.
- (f) Stating data evidence from Table 2 and Fig. 5, write a conclusion to the investigation about the changes in this small river as distance from the source increased.

[3]

[5]

Total 30 marks

- 9 Students investigated traffic flow in and around the centre of a town. A simplified map of the area studied is shown on Fig. 7. The students proposed to investigate two hypotheses.

- The amount of traffic is highest in the centre of the town and decreases away from the centre.
- Traffic flow will change during the day.

Six sites (P, Q, R, S, U and V) were chosen at different distances from the town centre. These sites are shown on Fig. 7. Site P was identified as the centre of the town.

- (a) Suggest how and why the amount of traffic is often a problem in the centre of towns. [3]
- (b) The traffic was counted three times during a weekday. A student at each site counted vehicles for five minutes at 08.30, 13.00 and 16.30. The results of the traffic survey are shown in Table 3 below.
- (i) A tally system was used for recording the vehicles passing each student. Suggest two reasons why this is a suitable recording method. [2]
- (ii) Using the data from Table 3, draw proportional squares to show the total number of vehicles at Sites S and U onto Fig. 7. [4]
- (iii) Describe the changes in **total** traffic as distance from the centre of the town increases. [2]

Table 3

Site	Distance in metres from Centre (P)	08.30 Away from P	08.30 Towards P	13.00 Away from P	13.00 Towards P	16.30 Away from P	16.30 Towards P	Total
P	0	140		56		93		289
Q	200	31	81	14	16	44	14	200
R	250	7	26	2	8	11	10	64
S	420	19	46	8	14	35	22	144
U	580	9	30	6	7	19	10	81
V	470	33	60	25	29	69	40	256

- (c) (i) Study Fig. 8 showing flow diagrams for traffic flow at Sites U and V. Compare the flow during the day at Site U with that at Site V. You should state data to support your comments.
- (ii) If a similar flow diagram was drawn for Site Q for 16.30, state in mm the width of the flow diagram for both towards and away from the centre of the town. [1]
- (iii) Calculate the percentage of traffic recorded at Site R at 08.30 travelling towards the town centre as a proportion of the total passing Site R. [1]
- (d) Students decided to investigate land use to see if a link existed between land use and traffic flow.
- (i) Outline the reasons why traffic **flow** may be linked to land use in a town. [3]
- (ii) Suggest specifically and in detail what the students should do to collect data about the land use of this town. [4]
- (e) Write a conclusion to this investigation. It should include
- comments on both hypotheses 1 and 2,
 - data evidence to support your conclusions,
 - critical evaluation of the data collection methods used in the investigation. [6]

Total 30 marks

Copyright Acknowledgements:

- Question 2 Table 1; 'Sustainable Living – World Food Resources', © Food and Agriculture Organization of the United Nations.
Question 3 Photograph A; Brian Heppel © UCLES.
Question 7 Fig. 4; © Department for International Development.

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