

Candidate Name \_\_\_\_\_

Centre Number	Candidate Number

**International General Certificate of Secondary Education**  
**CAMBRIDGE INTERNATIONAL EXAMINATIONS**  
**FOOD SCIENCE**  
PAPER 3 Alternative to Coursework

**0635/3**

**MAY/JUNE SESSION 2002**  
2 hours

Candidates answer on the question paper.

Additional materials:

Coloured pencils	Compass
Eraser	Pencil
Ruler	

**TIME** 2 hours

**INSTRUCTIONS TO CANDIDATES**

Write your name, Centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided on the question paper.

**INFORMATION FOR CANDIDATES**

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

FOR EXAMINER'S USE	
1	
2	
3	
<b>TOTAL</b>	

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**This question paper consists of 14 printed pages and 2 blank pages.**





- 1 An investigation was carried out amongst a small group of fifteen year old students to find out the type and the amount of fluid each of them drank in one day.

The results are shown in the table below.

time of day	Student A	Student B	Student C	Student D
Breakfast	nil	glass of milk	cup of tea	can of cola
Mid-morning	can of cola	can of orange drink – carbonated	glass of milk	cup of white coffee
Mid-day	can of cola	glass of orange juice	carton of orange juice	glass of milk
Afternoon	can of orange drink – carbonated	cup of tea	nil	nil
Evening	can of cola cup of black coffee	cup of white coffee	nil	glass of milk beaker of hot chocolate

- (a) The main constituent of all of these drinks is water.

- (i) Use the following data to calculate the total fluid intake for each student.

A beaker contains	275 ml
A can of cola contains	330 ml
A can of fruit drink contains	330 ml
A carton of orange drink contains	250 ml
A cup contains	225 ml
A glass contains	275 ml

Total fluid intake for Student A .....

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Total fluid intake for Student B .....

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Total fluid intake for Student C .....

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Total fluid intake for Student D .....

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[8]

(ii) The average amount of water an individual should drink each day is 1500 ml.

(a) Prepare a bar chart to show the daily fluid intake of each student compared with the average daily requirement.

[10]

(b) Comment on **three** aspects of the quality and usefulness of your presentation.

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(iii) (a) List **five** ways in which the body uses water.

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(b) Explain why the exact daily fluid intake for each individual is different.

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(c) State the possible results of a long period of insufficient fluid intake.

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(b) Study the following information.

drink	ingredients
carton of pure orange juice	Concentrated orange juice, unsweetened. No sweeteners, artificial colours, flavours or preservatives. A 200 ml serving provides 100% of the RDA of vitamin C.
can of carbonated orange drink	Carbonated water, Sugar, Glucose Syrup, Orange fruit, Citric acid, Antioxidant (Ascorbic acid), Preservative (Sodium Benzoate), Flavourings, Artificial Sweetener (Saccharine), Colour (Beta Carotene).
can of cola	Soft drink with vegetable extracts. Carbonated water, Sugar, Colour (Caramel), Phosphoric acid, Flavourings, Caffeine.

nutrients in drinks consumed									
nutrients		orange juice 1 glass	orange drink carton	cola can	hot choc. beaker	coffee – black 1 cup	coffee – white 1 cup	tea 1 cup	milk 1 glass
Energy	kcal	110	62	147	128	–	19	4	178
	kJ	465	264	623	542	–	79	19	741
Carbohydrate of which sugar	(g)	24.2	14.4	27.8	21.1	–	0.6	0.7	12.9
		24.2	14.4	27.8	19.8	–	0.6	0.7	12.9
Protein	(g)	1.5	0.3	–	5.2	–	0.4	0.5	9
Fat of which saturates	(g)	–	tr	–	2.7	–	1.7	tr	10.45
		–	–	–	2.4	–	1.1	–	–
Sodium	(g)	–	tr	tr	0.2	–	tr	tr	1.3
Calcium	(g)	–	tr	–	251	–	tr	tr	330
Vit. A	( $\mu$ g)	130	–	–	160	–	tr	tr	137.5
Vit. B <sub>1</sub>	(mg)	0.22	–	–	0.24	–	tr	tr	0.13
Vit. B <sub>2</sub>	(mg)	–	–	–	0.32	–	tr	tr	0.55
Niacin	(mg)	0.5	–	–	3.6	–	tr	tr	0.26
Vit. C	(mg)	100	33	–	–	–	–	–	–
Vit. D	( $\mu$ g)	–	–	–	0.5	–	tr	tr	0.07
Fibre	(g)	–	–	–	1.2	–	–	–	–



2 A group of pupils was asked to produce a questionnaire on Non-Starch Polysaccharide in the diet. (NSP – dietary fibre)

(a) It is important that the target group for any investigation is selected carefully.

(i) Identify the characteristics of a target group.

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(ii) Give reasons for your choice of target group for this questionnaire.

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**PLEASE TURN OVER FOR  
REST OF QUESTION**

(b) The following examples show the approach taken by two pupils as part of their investigation.

**Example A**

What do you know about dietary fibre and its importance to the body?  
Tick the boxes beside the facts you consider to be true.

<p>Fibre is:</p> <p>an available carbohydrate <input type="checkbox"/></p> <p>an unavailable carbohydrate <input type="checkbox"/></p> <p>a protein <input type="checkbox"/></p> <p>a fat <input type="checkbox"/></p> <p>a polysaccharide <input type="checkbox"/></p> <p>mainly plant cellulose <input type="checkbox"/></p>	<p>Fibre is needed to:</p> <p>aid digestion <input type="checkbox"/></p> <p>aid peristalsis <input type="checkbox"/></p> <p>remove waste from the body <input type="checkbox"/></p> <p>provide energy <input type="checkbox"/></p> <p>prevent constipation <input type="checkbox"/></p>
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**Example B**

Please tick Yes or No.

Do you know what fibre is?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Do you know why fibre is important in the diet?	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Do you know how much fibre is needed each day?	Yes <input type="checkbox"/>	No <input type="checkbox"/>

(i) State, with reasons, why it is likely that **Example A** would produce more useful responses than **Example B**.

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(ii) Suggest ways in which **Example B** could be improved.

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(c) Design a questionnaire which could be used to test knowledge of the best sources of NSP (dietary fibre) in local foods.

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