

General Certificate of Education
June 2005
Advanced Subsidiary Examination



DESIGN AND TECHNOLOGY: FOOD TECHNOLOGY FTY1
Unit 1 Materials and Components

Friday 10 June 2005 Morning Session

In addition to this paper you will require:

- an 8-page answer book (AB08) which is provided separately;
- normal writing and drawing instruments.

Time allowed: 1 hour 30 minutes

Instructions

- Use blue or black ink or ball-point pen. Pencil and coloured pencils should only be used for drawing.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. The *Paper Reference* is FTY1.
- Answer **three** questions.
- Answer Question 1 and any **two** of Questions 2 to 4.

Information

- The maximum mark for this paper is 100.
- 40 marks are allocated to Question 1, 28 to each of Questions 2 to 4, and 4 marks overall for quality of written communication.
- Mark allocations are shown in brackets.
- This paper carries 30 per cent of the total marks for Advanced Subsidiary and 15 per cent for Advanced Level.
- You are reminded of the need for good English and clear presentation. The quality of your written communication will be assessed across all questions.

Advice

- Your answers should be illustrated with sketches and/or diagrams wherever you feel it is appropriate.

SECTION A

Answer Question 1.

- 1 (a) Explain the differences in the composition of 100 g of the food products listed in the table below. (10 marks)

	Energy	Protein	Carbo- hydrate	Fat	Fibre	Vitamin C	Calcium	Iron
White macaroni (boiled)	365 kJ	3.0 g	18.5 g	0.5 g	0.9 g	0.0 mg	6.0 mg	0.5 mg
Egg noodles (boiled)	264 kJ	2.2 g	13.0 g	0.5 g	0.6 g	0.0 mg	5.0 mg	0.3 mg
Wholemeal spaghetti (boiled)	485 kJ	4.7 g	23.2 g	0.9 g	3.5 g	0.0 mg	11.0 mg	1.4 mg

Table 1 Nutrient content of similar foods (per 100 g)

- (b) Discuss the advantages to the *food manufacturer* of the use of food additives in the production of a product range. (10 marks)
- (c) Explain how a research and development team could develop the nutritional value, flavour and texture of a product range based on cheese. (3 × 4 marks)
- (d) Explain and give an example of syneresis in food products based on eggs. (3 marks)
- (e) What are the effects of food processing on micro nutrients? (5 marks)

SECTION B

Answer any **two** questions from this section.

- 2 (a) Explain the importance of each of the following in the production of baked food products. Give practical examples for each.
- (i) Gelatinisation
 - (ii) Moisture retention
 - (iii) Caramelisation *(3 × 4 marks)*
- (b) State the types of flour used and explain their function in the following baked products.
- (i) Bread
 - (ii) Shortcrust Pastry
 - (iii) Victoria Sandwich *(3 × 4 marks)*
- (c) State **four** ingredients a food manufacturer could use to create food products rich in water soluble vitamins. *(4 marks)*
- 3 (a) (i) What is Non Starch Polysaccharide (NSP)? *(2 marks)*
- (ii) Explain the function of NSP in the diet. *(6 marks)*
- (b) Explain how a production and development team could increase the NSP content of a product range based on shortcrust pastry. Give savoury and sweet practical examples. *(12 marks)*
- (c) How would increasing the NSP content affect the sensory characteristics of the product? *(8 marks)*
- 4 (a) Explain the functions of lipids in the production of
- (i) mayonnaise
 - (ii) flaky pastry
 - (iii) shortbread biscuits. *(3 × 4 marks)*
- (b) Describe, with an example for each, what is meant by
- (i) deep fat frying
 - (ii) shallow frying
 - (iii) dry frying. *(3 × 3 marks)*
- (c) Describe the effects of different methods of frying on the nutritional value of food products. *(7 marks)*

END OF QUESTIONS

THERE ARE NO QUESTIONS PRINTED ON THIS PAGE