

General Certificate of Education
June 2004
Advanced Level Examination



DESIGN & TECHNOLOGY: FOOD TECHNOLOGY 6541
Unit 6 Written Paper (FTY6)

Tuesday 22 June 2004 1.30 pm to 4.30 pm

In addition to this paper you will require:

- a 12-page answer book (AB12) which is provided separately;
- normal writing and drawing instruments.

Time allowed: 3 hours

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 FTY6.
- **Answer one question from each of Sections A, B and C and one other question from any section.**

Information

- The maximum mark for this paper is 100.
- 24 marks are allocated to each question and 4 marks overall are allocated for quality of written communication.
- Mark allocations are shown in brackets.
- This paper carries 20 per cent of the total marks 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.

Answer one question from **each** of the three sections and **one** other question from any section.

SECTION A

Materials and Components

- 1** (a) Explain the term micro-nutrients. *(4 marks)*
- (b) Select **two** micro-nutrients and for each describe:
- (i) **two** dietary sources;
 - (ii) the dietary function;
 - (iii) the dietary deficiency. *(2 × 6 marks)*
- (c) Describe, with examples, how processing could affect the micro-nutrient content of foods. *(8 marks)*
- 2** (a) Describe, with the aid of a diagram, the structural form of **either** amylose **or** amylopectin. *(6 marks)*
- (b) Starch is always accompanied by enzymes which can readily break it down. Describe, with examples, how this can affect the sensory characteristics of food products. *(6 marks)*
- (c) In relation to starch-based sauces, describe with examples, the effect that the following may have upon the production of a gel.
- (i) Ratio of ingredients
 - (ii) Proportion of amylose in the starch
 - (iii) Lemon juice
 - (iv) Sugar *(12 marks)*

SECTION B**Design and Market Influences**

- 3 (a) Explain why product analysis is useful in developing new products. *(8 marks)*
- (b) Describe how product analysis could be carried out with reference to specific examples. *(8 marks)*
- (c) Describe the factors which could be taken into account when calculating the cost of a new product. *(8 marks)*
- 4 Describe how food manufacturers have responded to consumer needs and trends to remain competitive. Make reference to products, processes and manufacturing techniques in your answer. *(24 marks)*

TURN OVER FOR SECTION C

SECTION C
Processes and Manufacture

- 5 Outline the regulations food manufacturers must follow with reference to:
- (a) product formulation (ingredients used)
 - (b) manufacturing practices
 - (c) food packaging and labelling design
 - (d) transportation and storage of food products. (4 × 6 marks)
- 6 (a) Explain why probiotic products are increasingly popular. (8 marks)
- (b) Discuss, with reference to the data below,
- (i) examples of specific food poisoning bacteria
 - (ii) the use of high risk foods
 - (ii) social and economic trends. (16 marks)

FOOD POISONING ANNUAL CORRECTED NOTIFICATIONS

England and Wales, 1982 – 1999

	Formally Notified	Otherwise Ascertained*
1982	9,964	4,289
1983	12,273	5,462
1984	13,247	7,455
1985	13,143	6,099
1986	16,502	7,446
1987	20,363	8,968
1988	27,826	11,887
1989	38,086	14,471
1990	36,945	15,200
1991	35,291	17,252
1992	42,551	20,796
1993	44,271	24,316
1994	50,412	31,421
1995	50,761	31,280
1996	50,718	32,515
1997	54,233	39,668
1998	53,764	40,168
1999	48,454	37,862

*Includes Port Health Authorities

Source: Health Protection Agency Communicable Disease Surveillance Centre

END OF QUESTIONS