

General Certificate of Education  
June 2005  
Advanced Level Examination



**DESIGN AND TECHNOLOGY: FOOD TECHNOLOGY FTY6**  
**Unit 6 Written Paper**

Tuesday 21 June 2005 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 **four** questions.
- 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.

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

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**SECTION A**

**Materials and Components**

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- 1** (a) Explain what is meant by the following terms.
- (i) Fatty acids
  - (ii) Triglycerides
  - (iii) Rancidity *(3 × 4 marks)*
- (b) Describe the process of hydrogenation in the manufacture of margarine. *(8 marks)*
- (c) Why are trans fatty acids considered to be harmful to health? *(4 marks)*
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- 2** (a) Explain why the following would be used in the manufacture of a sauce-based product that contains fish.
- (i) Preservatives
  - (ii) Modified starch
  - (iii) Antioxidants *(3 × 4 marks)*
- (b) Why do some cuts of meat require different cooking methods than others? Make reference to the structure of meat in your answer. *(8 marks)*
- (c) Explain what is meant by the Maillard reaction (non-enzymic browning). *(4 marks)*

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**SECTION B****Design and Market Influences**

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- 3 Describe how CAD and CAM are used in the design and manufacture of food products. Give examples to support your answer. *(24 marks)*

- 4 “Manufacturers are keen to respond to the increased demand from consumers for meal and snack products.”

Discuss this statement making reference to the following.

- (a) Healthy eating
- (b) Life-stage products
- (c) Ambient meals
- (d) Ethnic foods

*(24 marks)*

**TURN OVER FOR SECTION C**

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**SECTION C****Processes and Manufacture**

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**5** Manufacturers should be aware of the three types of hazard in food production.

- (a) Physical
- (b) Microbiological
- (c) Chemical

For each point above, explain the steps taken in designing and monitoring food production systems to ensure that risks are minimised. *(3 × 8 marks)*

**6** Once a food product has been designed it is the responsibility of the research and development team to prepare it for large-scale manufacture. With reference to the following manufacturing units describe this process and the factors that have to be taken into account.

- (a) Test kitchen
- (b) Pilot plant
- (c) Laboratories

*(3 × 8 marks)*

**END OF QUESTIONS**