

B O A R D O F S T U D I E S
NEW SOUTH WALES

2009

**HIGHER SCHOOL CERTIFICATE
EXAMINATION**

Food Technology

General Instructions

- Reading time – 5 minutes
- Working time – 3 hours
- Write using black or blue pen
- Write your Centre Number and Student Number at the top of pages 5, 9, 11 and 13 or 15

Total marks – 100

Section I Pages 2–4

10 marks

- Attempt Questions 1–10
- Allow about 15 minutes for this section

Section II Pages 5–16

55 marks

This section has two parts, Part A and Part B

- Allow about 1 hour and 35 minutes for this section

Part A – 45 marks

- Attempt Questions 11–13

Part B – 10 marks

- Attempt either Question 14 or Question 15

Section III Page 17

20 marks

- Attempt either Question 16 or Question 17
- Allow about 40 minutes for this section

Section IV Page 18

15 marks

- Attempt ONE question from Questions 18–21
- Allow about 30 minutes for this section

Section I

10 marks

Attempt Questions 1–10

Allow about 15 minutes for this section

Use the multiple-choice answer sheet for Questions 1–10.

- 1 Why are quality assurance systems used in food production?
- (A) To promote a product
 - (B) To increase production
 - (C) To increase market share
 - (D) To achieve consistency of products
- 2 Which symbol is used to represent a heating process in a food processing flowchart?
- (A) 
 - (B) 
 - (C) 
 - (D) 
- 3 Which sector of the Australian food industry is responsible for the production of low-fat milk?
- (A) Food retail
 - (B) Agriculture and fisheries
 - (C) Food service and catering
 - (D) Food processing/manufacturing
- 4 Why is shift work common in the Australian food industry?
- (A) The rates of pay are higher.
 - (B) Workers prefer part-time work.
 - (C) Organisations may operate 24 hours a day.
 - (D) Some factories decrease production during winter.

- 5** For a food company, which of the following is most likely to occur during an economic recession?
- (A) An increase in personnel numbers
 - (B) A decrease in quality assurance procedures
 - (C) A decline in new food products being released
 - (D) An expansion in the range of products available
- 6** Which of the following best determines the suggested selling price of a product?
- (A) The break-even point
 - (B) Cost and availability of raw materials
 - (C) Predicted price consumers are prepared to pay
 - (D) Recovery of production costs with no profit margin
- 7** Which of the following results from the public perception of a food manufacturing organisation?
- (A) Brand name
 - (B) Company image
 - (C) Market availability
 - (D) Target market
- 8** Which of the following packaging materials is the least likely to decompose?
- (A) Steel
 - (B) Glass
 - (C) Aluminium
 - (D) Waxed cardboard

- 9** Which of the following is most affected by high levels of ethylene?
- (A) Ripening of fruit
 - (B) Rancidity of cheese
 - (C) Colour change of meat
 - (D) Microbial spoilage of bread
- 10** Which additive is essential for the manufacture of whole-egg mayonnaise?
- (A) Emulsifier
 - (B) Humectant
 - (C) Antioxidant
 - (D) Bleaching agent

Food Technology

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Centre Number

Section II

55 marks

Allow about 1 hour and 35 minutes for this section

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Student Number

Part A – 45 marks

Attempt Questions 11–13

Answer the questions in the spaces provided.

Question 11 — The Australian Food Industry (15 marks)

Please turn over

Question 11 — The Australian Food Industry (15 marks)

Use the scenario below to answer parts (a)–(d)

Pat's Pies is a manufacturer of meat pies that are sold at a factory outlet and also distributed throughout Australia. To suit the production and service of pies, the meat and sauce are prepared and stored in plastic tubs during the afternoon and filled into pie cases the next day. The pies sold at the factory outlet are not packaged or labelled.

Due to staff shortages, manual cleaning such as sweeping the floors and cleaning chopping boards and knives is often overlooked. Little training is provided to new staff on using the meat grinder and limited personal protective equipment is provided. It is suspected that a current outbreak of *Salmonella* food poisoning is linked to *Pat's Pies*.

- (a) Identify ONE piece of legislation at both the federal and the state level that has been breached in this scenario. **2**

Federal:

State:

- (b) Describe the breaches associated with both pieces of legislation identified in part (a). **4**

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Question 11 continues on page 7

Question 11 (continued)

- (c) Describe the processes that would be used to deal with the food poisoning outbreak in this scenario. **4**

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- (d) Propose and justify a staff training program that *Pat's Pies* could implement to improve food safety and hygiene practices. **5**

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End of Question 11

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Section II – Part A (continued)

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Question 12 — Food Manufacture (15 marks)

(a) Outline the functions of packaging materials. **3**

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(b) Select ONE of the following foods or a product made from it:

- Milk
- Fish
- Apples

Food/product selected:

For the food/product selected:

(i) Identify ONE type of appropriate packaging material. **1**

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Question 12 continues on page 10

Question 12 (continued)

- (ii) Explain the suitability of this type of packaging material for the storage and distribution of the selected food/product.

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- (iii) Evaluate the environmental impact of the packaging material identified in part (b) (i).

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End of Question 12

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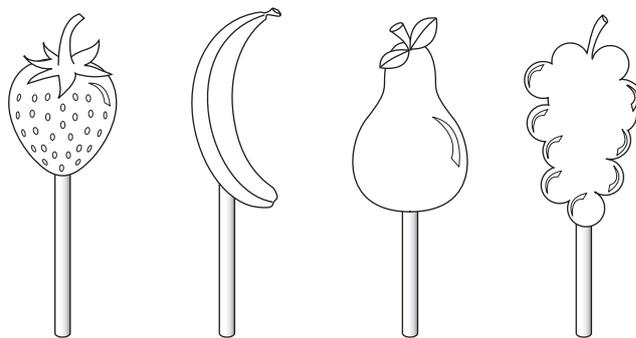
Section II – Part A (continued)

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Question 13 — Food Product Development (15 marks)

Fastfruit is a multinational company with a large share of the fruit juice market. It wants to expand its product range by developing frozen, fruit-shaped confections.



- (a) Describe the market research that would need to be conducted before specifications are developed for this product. 4

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Question 13 continues on page 12

Question 13 (continued)

- (b) Describe a feasibility study that could be conducted during the development of this product. **5**

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- (c) Explain the tests that would need to be conducted during prototype development of this product. **6**

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End of Question 13

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Section II (continued)

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Part B – 10 marks

Attempt either Question 14 or Question 15

Answer the question in the spaces provided.

Question 14 — Contemporary Food Issues – Nutrition (10 marks)

- (a) Describe advertising practices that are used by fast-food outlets to sell their products. Use examples in your answer. **4**

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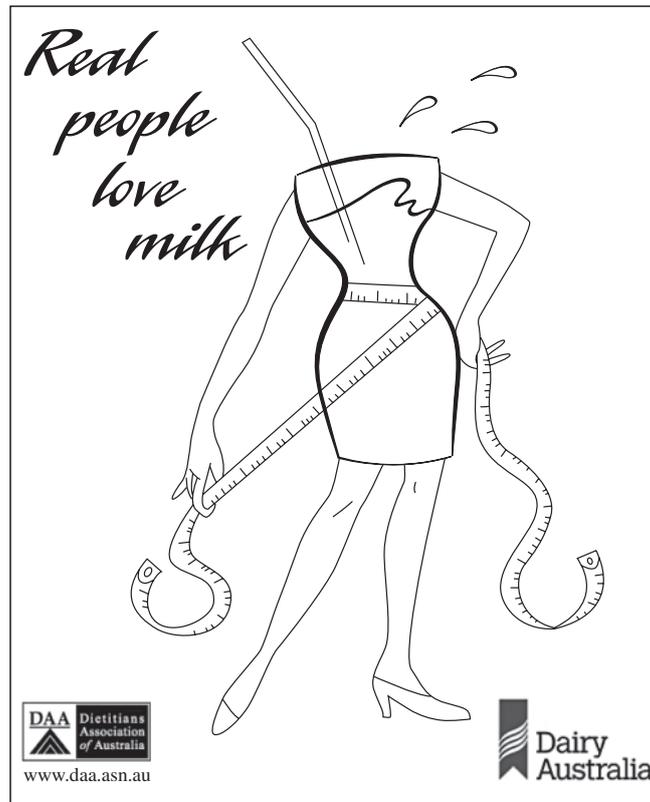
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Question 14 continues on page 14

Question 14 (continued)

An advertisement for milk is shown.



© Dietitians Association of Australia, reproduced by permission

- (b) Explain how this advertisement may influence attitudes towards milk and body image.

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End of Question 14

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Section II – Part B (continued)

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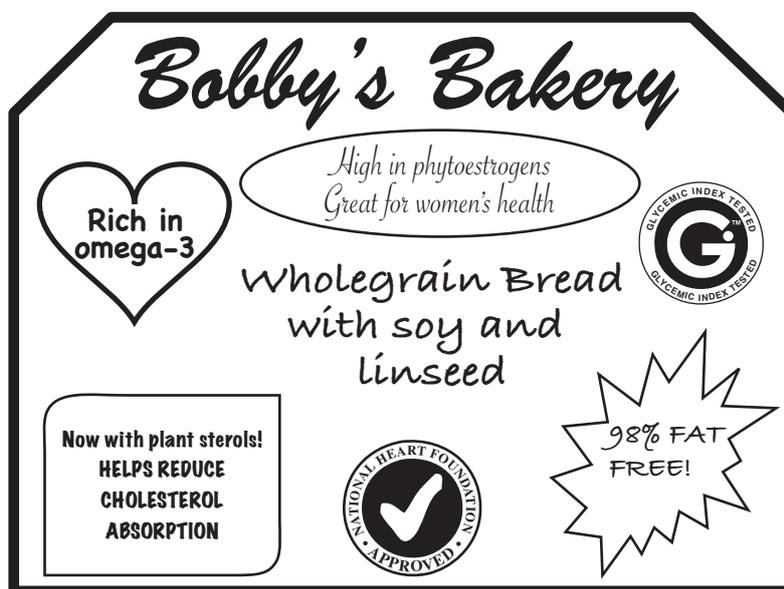
Student Number

Do NOT attempt Question 15 if you have already attempted Question 14.

Question 15 — Contemporary Food Issues – Marketplace (10 marks)

- (a) Name the agency that controls labelling requirements for foods. 1

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- (b) Describe the legal requirements for labelling to support the nutritional claims on the label shown. 4

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Question 15 continues on page 16

Food Technology

Section III

20 marks

Attempt either Question 16 or Question 17

Allow about 40 minutes for this section

Answer the question in a writing booklet. Extra writing booklets are available.

Question 16 — Food Manufacture (20 marks)

- (a) Outline reasons for preserving foods. **4**
- (b) Describe causes of food deterioration and spoilage. Use examples to support your answer. **6**
- (c) Propose preservation processes for a selected food. Clarify the principles behind each preservation process proposed. **10**

OR

Question 17 — Food Product Development (20 marks)

- (a) Outline types of food product development. Use examples to support your answer. **4**
- (b) Describe internal factors that food manufacturers need to consider when deciding which type of food product to develop. **6**
- (c) Account for the need for food manufacturers to constantly develop new food products. Use examples to support your answer. **10**

Please turn over

Section IV

15 marks

Attempt ONE question from Questions 18–21

Allow about 30 minutes for this section

Answer the question in a SEPARATE writing booklet. Extra writing booklets are available.

In your answer you will be assessed on how well you:

- present ideas clearly in a well-structured text
 - use appropriate terminology
 - support the argument with relevant examples
-

Contemporary Food Issues – Nutrition

Question 18 (15 marks)

Explain the aspects of nutrition that need to be considered for the promotion of optimum health in a specific group you have investigated.

OR

Question 19 (15 marks)

Explain the effects of heredity and diet in the development of cardiovascular disease and diabetes. In your answer, include a dietary plan to manage each of these conditions.

Contemporary Food Issues – Marketplace

Question 20 (15 marks)

Explain the environmental, economic, social and ethical implications of a marketplace trend you have investigated.

OR

Question 21 (15 marks)

Explain how the cost benefits of a food product can be determined by a cradle-to-grave analysis.

End of paper