

BOARD OF STUDIES  
NEW SOUTH WALES

HIGHER SCHOOL CERTIFICATE EXAMINATION

1999

# FOOD TECHNOLOGY

2/3 UNIT (COMMON)

*Time allowed—Three hours  
(Plus 5 minutes reading time)*

## DIRECTIONS TO CANDIDATES

### Section I (12 marks)

- Attempt ALL questions.
- Complete your answers in either blue or black pen on the Answer Sheet provided.

### Section II (48 marks)

- Attempt THREE questions.
- Questions 13 and 14 are COMPULSORY.
- Attempt EITHER Question 15 OR Question 16.
- Answer the questions in the spaces provided in this paper.
- Write your Student Number and Centre Number in the spaces provided on the first page of each question.

### Section III (40 marks)

- Attempt TWO questions, ONE from each Part.
- Answer each question in a SEPARATE Writing Booklet.
- You may ask for extra Writing Booklets if you need them.

**SECTION I**

(12 Marks)

Attempt ALL questions.

Each question is worth 1 mark.

**Instructions for answering multiple-choice questions**

- Complete your answers in either blue or black pen.
- Select the alternative A, B, C or D that best answers the question. Fill in the response oval completely.





**Sample:**  $2 + 4 =$  (A) 2 (B) 6 (C) 8 (D) 9  
A  B  C  D

If you think you have made a mistake, put a cross through the incorrect answer and fill in the new answer.

A  B  C  D

If you change your mind and have crossed out what you consider to be the correct answer, then indicate the correct answer by writing the word **correct** and drawing an arrow as follows.

A  B  C  D   
*correct* →

- 1 Which one of the following foods is sold in a freeze-dried form?
- (A) Soya beans
  - (B) Sultanas
  - (C) Milk powder
  - (D) Instant coffee
- 2 Which symbol is used to describe storage in a food processing flowchart?
- (A) 
  - (B) 
  - (C) 
  - (D) 
- 3 Genetic engineering is important to the Australian food industry because it will
- (A) improve food handling and hygiene practices.
  - (B) decrease the level of processed food imports.
  - (C) increase the range and level of food production.
  - (D) minimise overseas ownership of food companies.
- 4 Tomato sauce is stable at room temperature after opening because of the
- (A) heat processing during manufacture.
  - (B) pigments in the tomato.
  - (C) screw cap on the container.
  - (D) salt and acid content.
- 5 What is the main cause of quality loss in biscuits during storage?
- (A) Fat rancidity
  - (B) Bacterial spoilage
  - (C) Moisture uptake
  - (D) Mould growth
- 6 Which one of the following is a characteristic of perishable foods?
- (A) High water content
  - (B) Low water content
  - (C) High acid level
  - (D) Low microbial activity

- 7 Exclusive dealings between a food supplier and one customer are illegal according to the
- (A) Quarantine Act.
  - (B) Food Act.
  - (C) Trade Measurement Act.
  - (D) Trade Practices Act.
- 8 Why did attempts to grow food in the early Australian colony have limited success?
- (A) Crops not being suited to conditions
  - (B) Local pests and disease
  - (C) High tariffs and quotas
  - (D) Insufficient numbers of farm labourers
- 9 What is the benefit of high quality raw materials when processing food?
- (A) Decreased labour costs
  - (B) Safe, consistent products
  - (C) Increased profit
  - (D) Avoidance of transport costs
- 10 Food labels are NOT permitted to specify
- (A) weight loss claims.
  - (B) low kilojoule terms.
  - (C) serving suggestions.
  - (D) additive codes.
- 11 What is the purpose of a Quality Assurance system?
- (A) To detect faults in machinery during food production.
  - (B) To monitor all aspects of the production process.
  - (C) To prevent incorrect use of ingredients and labels.
  - (D) To utilise computer software to check on the process.
- 12 Why are computerised manufacturing systems used in the food industry?
- (A) To reduce the need for quality control.
  - (B) To improve efficiency and product consistency.
  - (C) To utilise the latest technology.
  - (D) To provide a larger employment base.

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**CENTRE NUMBER**

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**SECTION II**

(48 Marks)

Attempt THREE questions.

Questions 13 and 14 are COMPULSORY.

Attempt EITHER Question 15 OR Question 16.

Answer the questions in the spaces provided.

**Please turn over**

**QUESTION 13 Food Manufacture** (16 marks)

Select ONE of the following food products:

- milk
- meat
- fruit
- bread

Food product selected .....

(a) Outline the possible causes of spoilage for this food product.

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(b) Describe a suitable process of preservation that would prevent this spoilage.

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QUESTION 13 (Continued)

(c) Analyse the reasons for the success of this preservation process for your particular food.

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(d) Devise and discuss an experiment that demonstrates the effects of spoilage on this food product.

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**QUESTION 14 The Australian Food Industry (16 marks)**

APPARENT PER CAPITA CONSUMPTION OF FOODSTUFFS IN AUSTRALIA

YEAR	COMMODITY						
	<i>Beef and veal</i>	<i>Lamb</i>	<i>Poultry</i>	<i>Milk</i>	<i>Cheese</i>	<i>Butter</i>	<i>Margarine</i>
1938–1939	63.6 kg	6.8 kg	NA	106.4 L	2.0 kg	14.9 kg	2.2 kg
1948–1949	49.5 kg	11.4 kg	NA	138.7 L	2.5 kg	11.2 kg	2.8 kg
1958–1959	56.2 kg	13.3 kg	NA	128.7 L	2.6 kg	12.3 kg	NA
1968–1969	40.0 kg	20.5 kg	8.3 kg	128.2 L	3.5 kg	9.8 kg	4.9 kg
1978–1979	64.8 kg	14.4 kg	17.1 kg	100.5 L	5.3 kg	5.1 kg	8.5 kg
1988–1989	41.1 kg	14.9 kg	24.2 kg	101.0 L	9.0 kg	2.9 kg	9.0 kg
1994–1995	36.2 kg	11.5 kg	28.1 kg	103.0 L	10.3 kg	3.1 kg	7.3 kg
1995–1996	34.4 kg	11.0 kg	27.4 kg	104.3 L	10.6 kg	3.0 kg	7.2 kg

*Year Book Australia, ABS, 1998.*

NA = Figures not available.

Refer to the information in the table. Describe how FOUR of the following factors have influenced food consumption patterns in Australia.

- Historical developments
- Technology
- Multiculturalism
- Lifestyle changes
- Health and nutrition
- Marketing, including advertising strategies

**Question 14 continues on page 10**





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Attempt EITHER Question 15 OR Question 16.

**QUESTION 15 Food Marketing (16 marks)**

Market research is an important step in the food marketing process to determine consumer acceptance.

Select ONE of the following products and answer the questions below:

- high fibre, vitamin-enriched noodles
- high calcium, low-fat yoghurt
- partially prepared and packaged fresh vegetables
- marinated raw meat and vegetable stir-fry mixes.

Food product selected .....

(a) Select and define a possible target market for this product.

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**Question 15 continues on page 14**

QUESTION 15 (Continued)

(b) List and describe FOUR data collection procedures you would use to determine levels of consumer acceptance for this product.

- (i) .....  
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- (ii) .....  
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- (iii) .....  
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- (iv) .....  
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**Question 15 continues on page 15**

QUESTION 15 (Continued)

(c) Outline TWO major considerations when setting prices for this product.

(i) Major consideration .....

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(ii) Major consideration .....

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(d) How might the marketing of this product affect community health?

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Attempt EITHER Question 15 OR Question 16.

**QUESTION 16 Food Product Development (16 marks)**

The Frozen Delite Company has recently developed a new, gourmet, single-serve ice-cream product. The product is chocolate coated and contains premium vanilla ice-cream.



(a) (i) Define the following food product development terms:

1 Me too

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2 Line extension

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(ii) List FOUR possible line extensions for this product.

1 .....

2 .....

3 .....

4 .....

**Question 16 continues on page 18**

QUESTION 16 (Continued)

(b) Describe the steps involved in the development of ONE of the line extensions in part (a) (ii).

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(c) Outline the packaging requirements for your product.

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(d) Discuss the storage and distribution system that would be required for your product.

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**SECTION III**

(40 Marks)

Attempt TWO questions, ONE from each Part.

Each question is worth 20 marks.

Answer each question in a SEPARATE Writing Booklet.

**Please turn over**

**PART A—CORE STRANDS**

Attempt ONE question.

**QUESTION 17 Food Manufacture**

There are many types of additives used in processed foods.

- (a) Why are additives used in processed food?
- (b) Discuss TWO additives that are commonly used in processed foods.
- (c) Detail the food legislation that controls food additive labelling in Australia.

**QUESTION 18 Food Manufacture**

‘Paper is a better packaging material than plastic.’

Discuss this statement in relation to food products and the environment.

**QUESTION 19 The Australian Food Industry**

Australian consumers expect a food supply that is free from contamination.

Discuss how each of the following levels of government supports a safe food supply.

- (a) Federal
- (b) State
- (c) Local

**QUESTION 20 The Australian Food Industry**

Discuss current trends and possible future directions for the Australian food industry.

**PART B—OPTIONS**

Attempt ONE question.

**QUESTION 21 Food Marketing**

Generic products have become an important part of the market for many foods.

- (a) Explain the advantages and disadvantages of marketing generic brands.
- (b) Compare the marketing strategies for a brand name product with those for a similar generic product.

**QUESTION 22 Food Marketing**

‘Marketing is more than advertising.’

Discuss this statement.

**QUESTION 23 Food Product Development**

Food products are developed for specific consumer groups. List TWO product types most suitable for each of the following, and give reasons for your answer.

- (a) Single person households
- (b) Single income large families
- (c) Double income couples without children
- (d) Elderly married couples

**QUESTION 24 Food Product Development**

Discuss the development of a commercial food product that addresses an environmental issue.

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