



HIGHER SCHOOL CERTIFICATE EXAMINATION

1996

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.
- Mark your answers in pencil 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.

All questions are worth 1 mark each.

Select the alternative A, B, C, or D that best answers the question.

Mark your answers in pencil on the Answer Sheet provided.

1. Which of the following would be used in a food production line to ensure product purity?
 - (A) Conveyor belt
 - (B) Retort
 - (C) Metal detector
 - (D) Monopump

2. The recommended temperature range for a refrigerated cabinet storing fresh meat is
 - (A) 0°C to 4°C.
 - (B) -10°C to 0°C.
 - (C) 5°C to 8°C.
 - (D) -18°C to -12°C.

3. UHT milk does not require refrigeration prior to opening because the
 - (A) packaging protects the product from light.
 - (B) processing destroys all microorganisms.
 - (C) processing ensures chemical stability of the milk.
 - (D) packaging prevents fat separation during storage.

4. Under the NSW Food Act 1989 (amended 1992) which of the following groups of packaged foods would be exempt from date marking?
 - (A) Canned soup, flour, dehydrated potato.
 - (B) Lemonade, sliced ham, bread.
 - (C) Pickled herrings, rice, dried apples.
 - (D) Pre-packed oranges, dried parsley, salt.

5. Computerised food-processing techniques differ from automated techniques because they
- (A) ensure standardisation of production.
 - (B) are only found in large scale production plants.
 - (C) allow processing to be organised into a production line.
 - (D) can control each stage of food production.
6. Frozen food products displayed in retail chest freezers should be kept below the load line in order to
- (A) prevent product tampering.
 - (B) reduce desiccation of the food product.
 - (C) minimise product quality loss.
 - (D) avoid damage to the package.
7. Food companies develop nutrition and quality policies to
- (A) maintain or increase the market share for their products.
 - (B) develop and improve standards of production.
 - (C) raise the standard of nutritional quality.
 - (D) comply with government legislation.
8. Separation of a salad dressing during production could result from
- (A) poor quality antioxidants.
 - (B) excessive quantities of humectants.
 - (C) insufficient quantities of emulsifiers.
 - (D) food acids added at the wrong time in production.
9. Which of the following groups of foods are examples of high value-added food products?
- (A) Frozen beef, chilled oysters, sugar, flour.
 - (B) Specialty cheese, wine, ice cream, smoked salmon.
 - (C) Pasta, white rice, paté, biscuits.
 - (D) Confectionery, lobster tails, frozen vegetables, macadamia nuts.
10. Salt acts as a food preservative by
- (A) decreasing the water activity (a_w) of the food.
 - (B) decreasing the pH of the food.
 - (C) increasing the pH of the food.

11. Which of the following is a characteristic of the Australian food industry?
- (A) Small size, compared to other Australian manufacturing industries.
 - (B) Dependence on imported raw materials.
 - (C) Restricted research and development, due to government policy.
 - (D) Small expenditure on research and development by international standards.
12. One reason many large food-production companies seek to achieve fully-automated processes is that
- (A) more employment opportunities will occur on the production line.
 - (B) efficiency and product consistency will be improved.
 - (C) there will be less damage and wastage of delicate food products.
 - (D) initial set-up costs are low.

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STUDENT NUMBER

CENTRE NUMBER

SECTION II

(48 Marks)

Attempt **THREE** questions.

Questions 13 and 14 are **COMPULSORY**

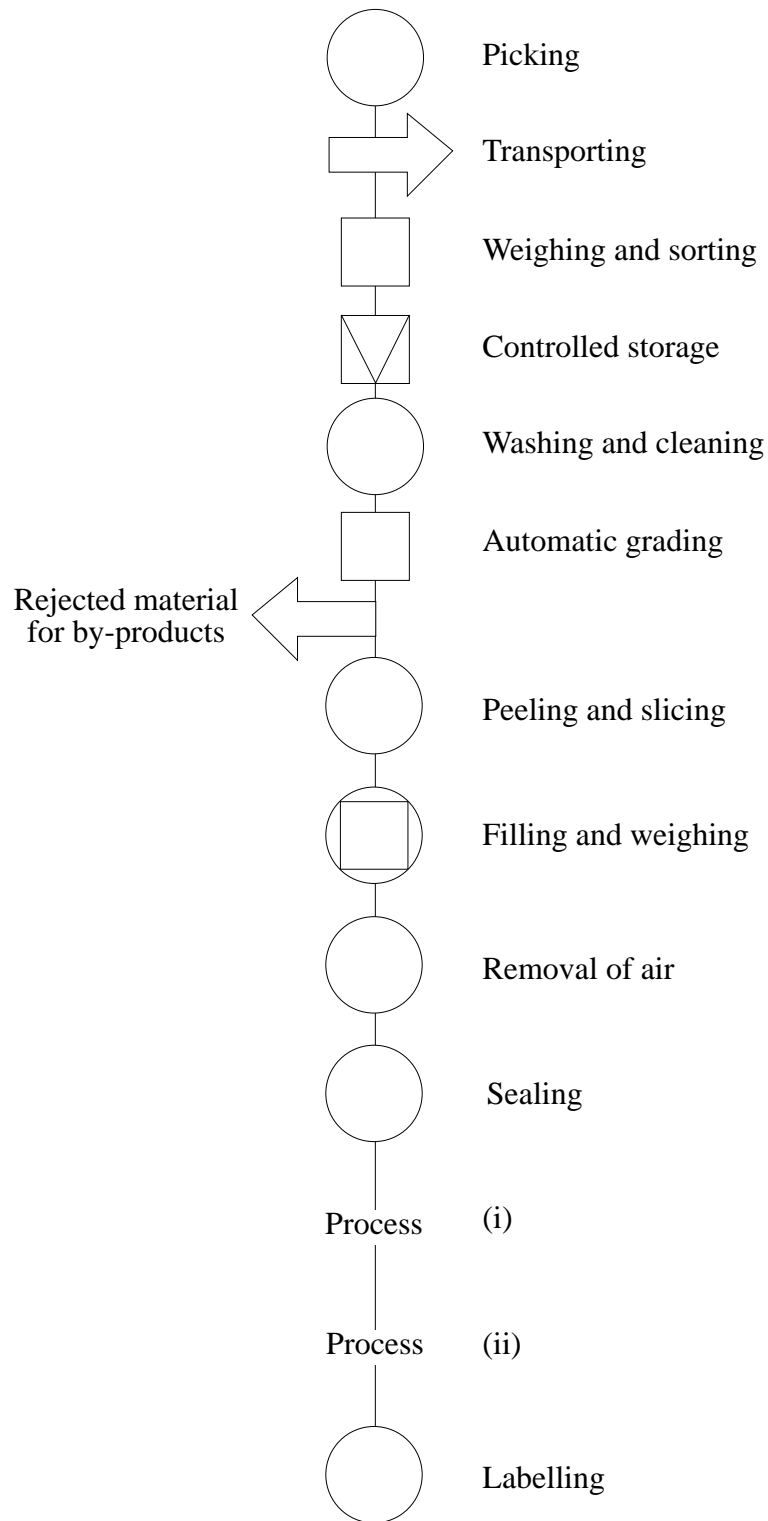
Attempt *EITHER* Question 15 *OR* Question 16.

Answer the questions in the spaces provided.

Please turn over

QUESTION 13. Food Manufacture (16 marks)

Refer to the information provided in the following flow process chart to answer the questions on pages 7 and 8.



QUESTION 13. (Continued)

(a) Name the TWO missing processes labelled (i) and (ii) on the flow process chart.

(i)

(ii)

(b) Name and describe the functions of THREE pieces of equipment that could be used at any stage shown in the flow process chart.

(i)

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(ii)

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(iii)

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(c) Identify THREE quality control points in the flow process chart. Explain the purpose of each of these points.

(i)

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(ii)

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(iii)

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QUESTION 13. (Continued)

- (d) Describe how this product would be stored and distributed after production, so that its quality is maintained.

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- (e) Outline THREE factors to be considered when deciding on suitable packaging materials for products of this process.

- (i)
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- (ii)
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- (iii)
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- (f) Briefly describe the impact this process would have on the environment.

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QUESTION 14. The Australian Food Industry (16 marks)

The All Australian Food Company is a large company operating in the food processing/manufacturing sector of the Australian food industry.

(a) List TWO differences between the levels of operation for this large company and those of a small family business.

(i)
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(ii)
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(b) The All Australian Food Company aims to produce a high quality product all year round. Outline current developments within the food processing/manufacturing sector that would assist the company to achieve this goal. Your discussion should focus on THREE of the following areas:

- research and development;
- resource management;
- equipment used;
- quality management.

(i) Area
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QUESTION 14. (Continued)

(ii) Area

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(iii) Area

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(c) The All Australian Food Company is considering relocating to a small country town. Describe the impact this decision would have on the local economy.

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STUDENT NUMBER

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Attempt *EITHER* Question 15 *OR* Question 16.

QUESTION 15. Food Marketing (16 marks)

Select ONE product from the list below:

- ring-pull canned spaghetti;
- pre-packaged, pre-prepared fresh vegetable salad;
- low-joule, pre-prepared frozen dinner.

Answer the following in relation to the product you have chosen.

Product chosen

(a) Identify a potential target market for this product.

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(b) Describe suitable market positioning for the product.

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QUESTION 15. (Continued)

- (c) For your chosen product, outline the distribution systems available to the manufacturer.

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- (d) 'Marketing is more than selling.'

Briefly explain the *differences* between marketing and selling. Use the food product chosen to support your explanation.

Marketing

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Selling

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QUESTION 16. (Continued)

(b) What factors would you consider when undertaking a cost feasibility study?

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(c) Describe the methods you would use to test the product prototypes in relation to:

(i) sensory evaluation;

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(ii) packaging and storage trials.

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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.

PART A—CORE STRANDS

Attempt ONE question.

QUESTION 17. Food Manufacture

- (a) Briefly describe THREE heat processes used to preserve foods.
- (b) Using examples of foods preserved by each of these methods, compare the effects of each process on:
 - (i) extension of storage life of the food;
 - (ii) nutrient content of the food;
 - (iii) sensory properties of the food.

QUESTION 18. Food Manufacture

An extract from the mission statement of a multinational food company states:

The company will take into account new international developments as they occur in the formulation and manufacture of food packaging. Our packaging will ensure the protection of the health, safety, and well-being of consumers, and maintain the highest quality product at the most competitive price.

Outline the reasons why manufacturers develop packaging to protect processed foods against physical damage.

Discuss the specific packaging methods and materials used by food manufacturers to protect their foods from physical damage.

QUESTION 19. The Australian Food Industry

Discuss the impact of THREE of the following current trends on the Australian food industry.

- (a) Changes to economic climate.
- (b) International ownership.
- (c) Changes in import/export policy.
- (d) Ecological sustainability.
- (e) Changes in consumer lifestyle.

QUESTION 20. The Australian Food Industry

Australia has an excellent reputation in providing a safe food supply.

Discuss the roles of both the Australian food industry and government in establishing and maintaining this situation.

PART B—OPTION STRANDS

Attempt ONE question.

QUESTION 21. Food Marketing

- (a) Outline the elements of the marketing mix.
- (b) Apply the marketing mix to the development of the marketing strategy for a food product with which you are familiar.

QUESTION 22. Food Marketing

Snack foods vary widely in their nutritional value.

Describe marketing strategies used to promote a variety of snack foods.

QUESTION 23. Food Product Development

New food product development occurs in a number of stages. For development to continue, a number of significant factors must be taken into account.

Explain the influence of the following factors on food product development.

- (a) Availability and functional properties of the ingredients.
- (b) Techniques and equipment utilisation.
- (c) Impact of government legislation.
- (d) Prototype development.

QUESTION 24. Food Product Development

Specific consumer demands relating to issues of health and nutrition have impacted on the development of new food products.

Discuss this statement with reference to food products developed in the 1990s.

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