

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

2012

**HIGHER SCHOOL CERTIFICATE
EXAMINATION**

Food Technology

General Instructions

- Reading time – 5 minutes
- Working time – 3 hours
- Write using black or blue pen
Black pen is preferred
- Write your Centre Number and
Student Number at the top of
pages 9, 11, 13, 15, 17 and 19

Total marks – 100

Section I Pages 2–6

20 marks

- Attempt Questions 1–20
- Allow about 35 minutes for this section

Section II Pages 9–20

50 marks

- Attempt Questions 21–26
- Allow about 1 hour and 25 minutes for this section

Section III Page 21

15 marks

- Attempt Question 27
- Allow about 30 minutes for this section

Section IV Page 22

15 marks

- Attempt Question 28
- Allow about 30 minutes for this section

Section I

20 marks

Attempt Questions 1–20

Allow about 35 minutes for this section

Use the multiple-choice answer sheet for Questions 1–20.

- 1 A diet high in cholesterol is most likely to lead to disease in which organ of the body?
 - (A) Heart
 - (B) Kidney
 - (C) Liver
 - (D) Pancreas

- 2 Which acid is primarily responsible for the preservative effect in yoghurt?
 - (A) Acetic
 - (B) Butyric
 - (C) Citric
 - (D) Lactic

- 3 What is the main consumer perception which has led to a lack of acceptance of genetically modified foods?
 - (A) Increased price
 - (B) Decreased shelf life
 - (C) Increased risk to safety
 - (D) Decreased sensory quality

- 4 What has driven the development of simmer sauces?
 - (A) Busier lifestyles
 - (B) An ageing population
 - (C) Decreasing family size
 - (D) Concern for the environment

- 5 Which mineral requires supplementation in the diet due to its naturally low levels in the soil?
- (A) Calcium
 - (B) Iodine
 - (C) Iron
 - (D) Sodium
- 6 Which piece of food processing equipment typically uses a rotating bowl to separate particles of different density?
- (A) Centrifuge
 - (B) Filter
 - (C) Grinder
 - (D) Sieve
- 7 At what level of operation in the food industry would multi-skilling be essential?
- (A) Franchise
 - (B) Household
 - (C) Large company
 - (D) Multinational
- 8 Which nutrient is most likely to be low in a vegan diet?
- (A) Carbohydrate
 - (B) Folate
 - (C) Iron
 - (D) Vitamin C
- 9 Diverticular disease is caused by increased pressure inside the colon, often as a result of constipation.
- Which of the following is most likely to be a dietary cause of this condition?
- (A) Low iron intake
 - (B) Low fibre intake
 - (C) High levels of fat consumption
 - (D) High levels of protein consumption

- 10** Of the Australian Food Industry sectors, why is Agriculture and Fisheries the least likely to attract female employees?
- (A) The shift work involved
 - (B) The physical strength required
 - (C) The seasonal nature of the work
 - (D) The exposure to adverse weather conditions
- 11** Why do frozen vegetables, processed according to strict quality guidelines, have more nutrients than some fresh vegetables?
- (A) Packaging techniques are superior
 - (B) Vitamins are added during processing
 - (C) Low temperatures are used in processing
 - (D) Vegetables are picked and processed at their peak
- 12** According to Australian legislation, which of the following foods must adhere to labelling requirements?
- (A) A home-delivered pizza
 - (B) Salami sliced at a delicatessen
 - (C) A package containing ten individual serves of potato crisps
 - (D) A lettuce sold in the supermarket, packaged in a plastic bag
- 13** Product specifications are completed after
- (A) market research.
 - (B) a feasibility study.
 - (C) prototype development.
 - (D) production process development.
- 14** Of 20 people who ate ham and salad rolls from a bakery, 5 experienced diarrhoea within 24 to 36 hours.
- Which microorganism is the most likely cause of the illness?
- (A) *Bacillus*
 - (B) *Clostridium*
 - (C) *Salmonella*
 - (D) *Staphylococcus*

- 15** To what does *product life cycle* refer?
- (A) The shelf-life of a food product
 - (B) The sales history of a food product
 - (C) The biodegradability of a food product
 - (D) The steps in the development of a food product
- 16** Which of the following foods has the lowest Glycemic Index (GI)?
- (A) Potato
 - (B) Popcorn
 - (C) Rolled oats
 - (D) White bread
- 17** A shopping complex has two greengrocers who charge similar prices for their fruit and vegetables.
- What is this pricing tactic called?
- (A) Price fixing
 - (B) Price skimming
 - (C) Penetration pricing
 - (D) Competitive pricing
- 18** A supermarket sells biscuits labelled as gluten-free, despite knowing that the biscuits contain wheat flour.
- Which piece of legislation has been breached?
- (A) *Food Act 2003* (NSW)
 - (B) *Trade Measurement Act 1989* (NSW)
 - (C) *Work Health and Safety Act 2011* (NSW)
 - (D) *Food Standards Australia New Zealand Act 1991* (Commonwealth)

- 19** Why is Vitamin A added to margarine?
- (A) To stabilise the fat-water emulsion
 - (B) To provide the margarine with a yellow colour
 - (C) To serve as an antioxidant, minimising rancidity
 - (D) To provide nutritional quality equivalent to butter
- 20** Which organisation would advise Australian oyster producers when oyster production is severely affected by a parasite?
- (A) AQIS
 - (B) CSIRO
 - (C) FSANZ
 - (D) WHO

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Centre Number

Section II

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Student Number

50 marks

Attempt Questions 21–26

Allow about 1 hour and 25 minutes for this section

Answer the questions in the spaces provided. These spaces provide guidance for the expected length of response.

Question 21 (10 marks)

Name a food organisation you have studied.

Organisation

- (a) Assume that this organisation is expanding its operations.

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Identify a career opportunity linked to this expansion. Give a reason for your answer.

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Question 21 continues on page 10

Question 21 (continued)

- (b) How could consumer demands influence this organisation's development of value-added foods? **4**

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- (c) Explain the economic impacts on this organisation of the development of value-added foods. **4**

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End of Question 21

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Centre Number

Section II (continued)

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Student Number

Question 22 (6 marks)

(a) Define *quality control*.

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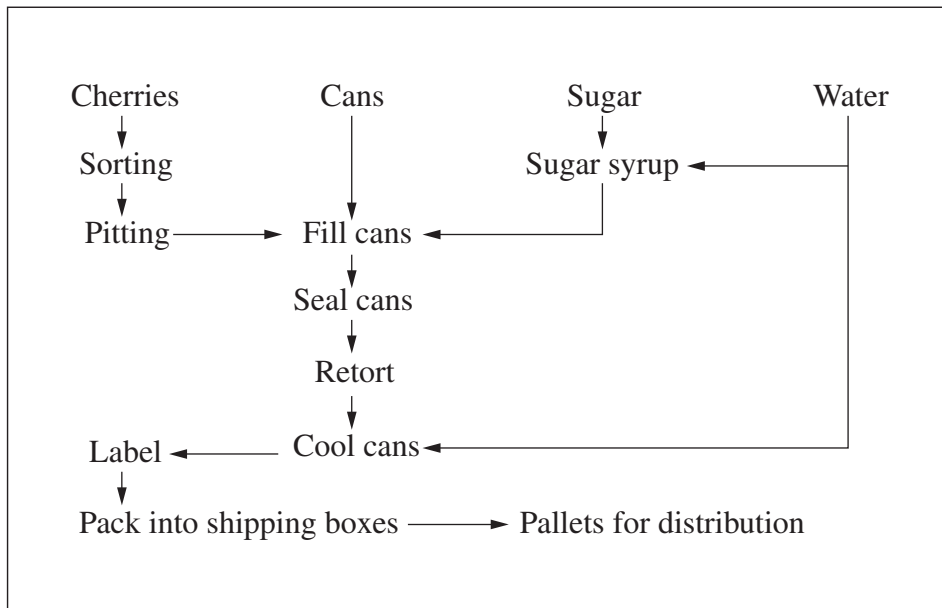
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Question 22 continues on page 12

Question 22 (continued)

(b) The flow chart below illustrates the manufacturing process for the production of canned pitted cherries.

5



Explain the quality control procedures that are needed to ensure a safe, high-quality product.

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End of Question 22



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Centre Number

Section II (continued)

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Student Number

Question 23 (9 marks)

- (a) Give a reason for preserving foods. **1**

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- (b) Describe TWO methods by which water can be removed to produce dried foods. **4**
In your answer, include examples of foods produced by each method.

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Question 23 continues on page 14

Question 23 (continued)

- (c) Explain a fermentation process used in the manufacture of a specific food product. **4**

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End of Question 23

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Centre Number

Section II (continued)

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Question 25 (6 marks)

Chomp-em Chippies makes a range of potato crisps. The company has just developed a new flavour in this range called Roast Lamb and Rosemary with Gravy.

- (a) Explain what type of food product development this represents. 2

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- (b) Explain ways in which this product could be *nutritionally modified* to gain health benefits. 4

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Centre Number

Section II (continued)

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Student Number

Question 26 (12 marks)

- (a) (i) Define the term *overweight*. 1

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- (ii) Define the term *obesity*. 1

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- (b) Explain the economic costs associated with obesity. 4

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Question 26 continues on page 20

Food Technology

Section III

15 marks

Attempt Question 27

Allow about 30 minutes for this section

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

Question 27 (15 marks)

- (a) Name a food product you have developed and outline how the product meets a consumer need. **2**
- (b) Recommend a packaging design and materials that could be used to ensure optimum quality of this food product. **5**
- (c) Develop a promotional program to advertise this food product, justifying your use of ethically suitable strategies. **8**

Please turn over

Section IV

15 marks

Attempt Question 28

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:

- demonstrate knowledge and understanding relevant to the question
 - apply course concepts to food technology issues
 - communicate ideas and information using appropriate terminology and relevant examples
 - present a logical and cohesive response
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Question 28 (15 marks)

Explain how Australian food producers and manufacturers attempt to minimise their impact on the environment.

End of paper