

Victorian Certificate of Education  
2014

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER           Letter

## FOOD AND TECHNOLOGY

### Written examination

Friday 14 November 2014

Reading time: 9.00 am to 9.15 am (15 minutes)

Writing time: 9.15 am to 10.45 am (1 hour 30 minutes)

### QUESTION AND ANSWER BOOK

#### Structure of book

Section	Number of questions	Number of questions to be answered	Number of marks
A	15	15	15
B	6	6	85
			Total 100

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners and rulers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

#### Materials supplied

- Question and answer book of 20 pages.
- Answer sheet for multiple-choice questions.

#### Instructions

- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

#### At the end of the examination

- Place the answer sheet for multiple-choice questions inside the front cover of this question and answer book.

**Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.**

**SECTION A – Multiple-choice questions****Instructions for Section A**

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.

Choose the response that is **correct** or that **best answers** the question.

A correct answer scores 1, an incorrect answer scores 0.

Marks will **not** be deducted for incorrect answers.

No marks will be given if more than one answer is completed for any question.

**Question 1**

What is a design brief?

- A. a statement that defines the criteria for evaluation
- B. a series of steps a company will take to develop a new product
- C. a statement that identifies the processes to be used when developing a new product
- D. a statement that defines the aims and intentions of a new product and its specifications

**Question 2**

What is one advantage of the aseptic packaging system?

- A. A package can be sealed to make it liquid-tight.
- B. It allows the food product to be sterilised inside the package.
- C. It provides a barrier to heat and light, and allows food to keep indefinitely.
- D. It enables preservatives to be added to food products without affecting the flavour or colour of the food.

**Question 3**

Blanching food involves

- A. surrounding the food with steam.
- B. submerging the food in boiling water until it is tender.
- C. plunging the food briefly into boiling water until it is partially cooked.
- D. partially covering the food with a liquid that is just below simmering point.

**Question 4**

What are the naturally occurring chemical substances found in food that act as catalysts to speed up chemical reactions?

- A. yeasts
- B. moulds
- C. enzymes
- D. bacteria

**Question 5**

Green potatoes contain solanine, a naturally occurring substance that is poisonous when consumed.

This type of food poisoning is caused by

- A. cross contamination.
- B. bacterial contamination.
- C. physical contamination.
- D. biological contamination.

**Question 6**

Gelatinisation is the process in which

- A. starch granules absorb liquid in the presence of heat and thicken the liquid.
- B. starch granules change in colour to golden brown when exposed to dry heat.
- C. a permanent change to protein molecules is caused through the application of heat.
- D. starch or sugar and a protein present in the same mixture result in a golden-brown colour when exposed to dry heat.

**Question 7**

A general-level health claim describes

- A. a relationship between the nutrient content and energy expenditure.
- B. a relationship between the consumption of food and serious disease.
- C. the amount of nutrients or biologically active substances present in the food.
- D. a relationship between the consumption of a food, or a component in a food, and a health benefit it can provide.

**Question 8**

One action carried out by state authorities in relation to an unsafe food premise is to

- A. issue closure orders.
- B. follow up on closure orders.
- C. develop food safety standards.
- D. inspect the premise and ensure the requirements of the food safety program are being met.

**Question 9**

Which one of the following is an example of convection currents being used to cook food?

- A. pan-frying bacon
- B. cooking bread in a toaster
- C. deep-frying won tons in oil
- D. grilling meat on a barbecue

**Question 10**

Why is encouraging children to use 'pester power' or to constantly nag their parents often considered to be an unethical marketing tool?

- A. Advertisements for foods that contain high amounts of carbohydrate and protein are frequently repeated during times when children watch television.
- B. Pester power is a more powerful marketing tool than using cartoon characters or sporting heroes to advertise food products.
- C. Foods that are marketed through pester power are often high in protein and can lead to childhood obesity.
- D. Foods that are marketed through pester power are often high in energy and poor in nutrients.

**Question 11**

A key goal of Food Standards Australia New Zealand (FSANZ) is to

- A. maintain a safe food supply in Australia and New Zealand.
- B. develop food safety programs based on the HACCP system.
- C. provide quarantine inspection for all plant and animal goods arriving in Australia.
- D. inform returning residents and visitors to Australia of the 'declare or beware' program.

**Question 12**

Information on a food label that complies with the Food Standards Code includes

- A. cooking instructions, a barcode, mandatory warnings and date marking.
- B. storage instructions, weight, mandatory warnings and competition details.
- C. an ingredients list, lot identification, serving suggestions and date marking.
- D. the prescribed name of the food, lot identification, mandatory warnings and date marking.

**Question 13**

Why are legumes an important key food?

- A. They are a major source of protein and fibre.
- B. They require little cooking and are therefore quick to prepare.
- C. They have a high fat content and therefore have a high satiety value.
- D. They contain incomplete protein and can therefore be used as a substitute for meat.

**Question 14**

According to the Food Standards Code, an example of a food that is exempt from labelling is

- A. a food that is made and packaged on the day before it is to be sold.
- B. a food that is purchased from a delicatessen, such as fresh cheese and olives.
- C. single-serve packages, such as a single-serve container of microwavable soup.
- D. some fresh vegetables, including packaged sprouting seeds such as bean sprouts.

**Question 15**

A useful strategy implemented by farmers to minimise the impact of soil erosion is

- A. adding lime to the soil to make it more stable.
- B. planting windbreaks to prevent the loss of topsoil.
- C. removing any stubble that is left behind after the harvest.
- D. developing organic farming systems that minimise the use of chemical fertilisers and herbicides.

**SECTION B****Instructions for Section B**

Answer **all** questions in the spaces provided.

**Question 1** (17 marks)

Takehome Tucker is a food manufacturing company that has begun producing a range of single-serve food products specifically for children. These products will be available in the chilled section of the supermarket.

- a.** One of the key stages in the process of product development for the company is to develop evaluation criteria.

Explain the importance to the company of developing evaluation criteria.

2 marks

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- b.** Takehome Tucker has found that a competitor is having great success with a single-serve macaroni and cheese for children. Takehome Tucker has decided to include a similar product called Mac 'n Cheese in its range.

- i.** Name the type of product development being used by Takehome Tucker.

1 mark

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- ii.** Outline **three** advantages to Takehome Tucker of using this type of product development. 3 marks

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- c. Outline **three** personal hygiene practices that the staff in the food production factory must follow when preparing the Mac 'n Cheese. 3 marks

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- d. When labelling the new Mac 'n Cheese, Takehome Tucker is required to include nutrition information.  
State **two** nutrition labelling requirements that manufacturers must include on a food label. 2 marks

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- e. Takehome Tucker's Mac 'n Cheese will be marketed to a niche market.  
Explain the term 'niche market'. 2 marks

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- f. Once Takehome Tucker’s Mac ‘n Cheese is launched onto the market, the company will undertake an evaluation of the process of product development.

Describe **two** aspects of the process of product development that the company will evaluate once the new Mac ‘n Cheese has been launched and is available for sale.

4 marks

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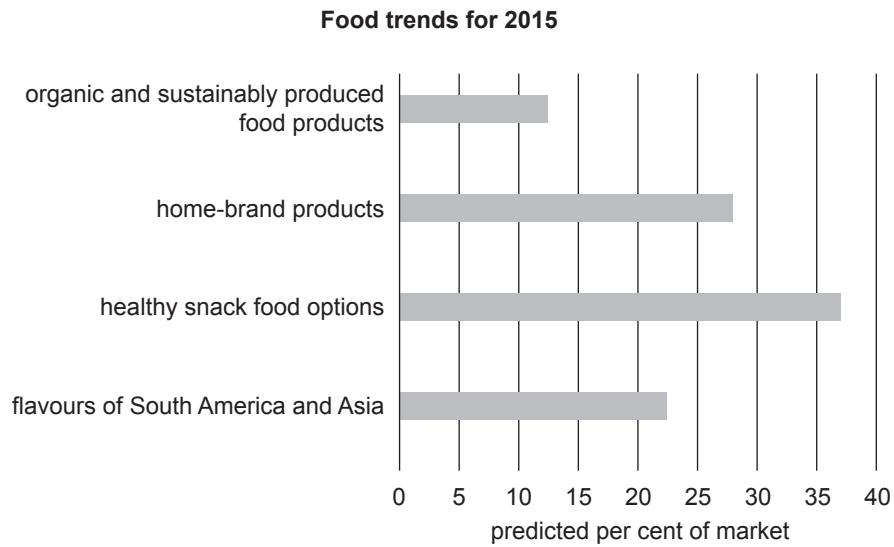
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**Question 2** (16 marks)

- a. A recent survey by an Australian research company predicted the following food trends for 2015.



Select two of the food trends predicted in the graph above and explain why each has become a driving force for food product development.

4 marks

Food trend 1 \_\_\_\_\_

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Food trend 2 \_\_\_\_\_

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**b.** In response to consumer demand, a new range of pre-prepared, heat-and-serve dishes, such as Greek meatballs, will soon be available in the chilled section of major supermarkets. The meatballs are made from minced beef.

**i.** Identify the **two** main natural food components present in meat.

2 marks

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**ii.** Explain the impact of cooking on each of the natural food components identified in **part b.i.**

3 marks

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**c.** The new range of meatballs must comply with Food Standards Australia New Zealand's (FSANZ) Food Standards Code.

Outline **two** food standards, other than food labelling, that would apply to the production of the meatballs.

2 marks

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- d.** The meatballs will be made by a large food manufacturing company. The use of energy in the company’s factory is a major environmental issue.

Explain why the use of energy in the production process is an important environmental issue to be addressed by food manufacturers.

3 marks

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- e.** Outline **two** strategies that the manufacturer of the meatballs could implement to minimise the use of energy in its factory.

2 marks

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**SECTION B – continued  
TURN OVER**

**Question 3** (14 marks)

Victoria grows a wide variety of high-quality fruit, including apples and pears.

- a. Explain why the primary processing of fruit is important to producers. 3 marks

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- b. Fruit producers in north-central Victoria are concerned about increasing levels of salinity in their area.

Explain **one** way in which salinity can occur. 3 marks

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- c. Outline **two** sustainable farming practices that could be implemented to manage the use of water on farms in Victoria. 2 marks

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- d. Local fruit juice manufacturers have developed an apple juice that contains microencapsulated iron.  
Describe the process used to microencapsulate the iron to be included in the apple juice. 2 marks

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- e. Describe **two** advantages to food manufacturers of using microencapsulation technology.  
Support your answer with examples other than apple juice containing microencapsulated iron. 4 marks

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**Question 4** (15 marks)

A number of young people recently suffered from food poisoning after eating salad wraps purchased from a mobile food vendor at a local music festival. The wraps were made using salad ingredients and mayonnaise. The source of the food contamination was believed to be eggs used in the production of the mayonnaise.

- a. Describe **three** physical properties of a fresh raw egg. 3 marks

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- b. Explain why eggs are considered a high-risk food for food poisoning. 2 marks

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- c. Mayonnaise is prepared using egg yolks, vinegar, oil, salt and pepper.  
Identify and describe the functional property of eggs when making mayonnaise. 3 marks

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- d. The mobile food vendor purchased the mayonnaise for the salad wraps from a large commercial food manufacturer. The manufacturer of the mayonnaise would have been required to establish a food safety program before it could be registered for business.

Name the level of government responsible for approving the food safety program.

1 mark

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- e. As part of its food safety program, the manufacturer of the mayonnaise would have been required to develop a HACCP system.

Explain the importance of developing a HACCP system when producing the mayonnaise.

2 marks

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- f. Below are two steps in the production of the mayonnaise. For each step, identify:

i. a potential hazard

2 marks

ii. a corrective action to be taken to address the hazard.

2 marks

Step in production	Potential hazard	Corrective action
delivery of the eggs		
storage of the prepared mayonnaise		

**Question 5** (15 marks)

Breadmaking is a complex process.

- a.** Explain what is meant by the term ‘complex process’. 2 marks

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- b.** The following is a recipe for making a quick bread.

3 cups plain flour 2 teaspoons dried yeast 1 teaspoon caster sugar 1 teaspoon salt 3 tablespoons olive oil 350 mL warm water egg and milk glaze	1. Sift the flour, yeast, sugar and salt into a bowl, and add the oil and sufficient warm water to form a dough. 2. Turn the dough onto a lightly floured surface and knead for approximately 8 minutes. 3. Form into a loaf shape, cover with plastic wrap and set aside in a warm place to prove. 4. Glaze the proven loaf. Bake at 210 °C for 35–40 minutes until the loaf is cooked through.
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Select two steps in the recipe above for a quick bread. For each step:

- i.** explain how you can judge when the step has been successfully completed 2 marks  
**ii.** describe the impact of this step on the sensory properties of the finished loaf of bread. 2 marks

Step \_\_\_\_\_

Explanation \_\_\_\_\_

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Description \_\_\_\_\_

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Step \_\_\_\_\_

Explanation \_\_\_\_\_

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Description \_\_\_\_\_

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c. Yeast is a key ingredient in breadmaking.

List **three** conditions required for yeast to reproduce.

3 marks

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d. The final stage of making the bread is baking the loaf in the oven.

Describe how convection currents transfer heat during baking.

2 marks

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- e. A bakery uses quantitative analysis to test its specialty loaves.

Describe the type of information the bakery would collect by completing a quantitative analysis of its specialty loaves.

2 marks

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- f. Consumers who purchase a loaf of bread from a bakery could freeze the bread for future use.

Describe how the process of freezing would enable the bread to be preserved for future use.

2 marks

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