

**Victorian Certificate of Education  
2016**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER           Letter

# FOOD AND TECHNOLOGY

## Written examination

**Friday 11 November 2016**

**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

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
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 correction fluid/tape.
- No calculator is allowed in this examination.

#### Materials supplied

- Question and answer book of 19 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**

Which one of the following is the most suitable cooking method for tender cuts of meat?

- A. stewing
- B. boiling
- C. stir-frying
- D. casseroles

**Question 2**

When food undergoes secondary processing

- A. it is mixed with other ingredients to make it pleasant to taste.
- B. it is sorted, graded, packaged and distributed to the marketplace.
- C. its chemical and sensory properties may change but its physical structure remains the same.
- D. its physical form, flavour and texture change quite significantly from its original structure.

**Question 3**

What is a target market?

- A. people who buy the same product on a regular basis
- B. a small group of people who are in the same age and income groups
- C. a portion of the market that has a specific need that must be catered for
- D. a large group of people that a company intends to have as the focal point of its marketing campaign

**Question 4**

What is the name of the process used in the production of fat-reduced milk that allows only water and lactose molecules to pass through?

- A. ultrafiltration
- B. hyperfiltration
- C. pasteurisation
- D. homogenisation

**Question 5**

Dextrinisation is a process that occurs when

- A. starch granules absorb liquid and thicken to form a gel.
- B. sugars are heated to a high temperature and develop a golden-brown colour.
- C. starch is exposed to dry heat, resulting in a change in colour to golden brown.
- D. starch and protein are exposed to dry heat and change colour to golden brown.

**Question 6**

What is the typical order of the design process?

- A. the design brief, criteria for evaluation, production, research, prototype, marketing and product launch, evaluation
- B. constraints and considerations, criteria for evaluation, research, production, sensory evaluation
- C. the design brief, criteria for evaluation, justification, production, customer evaluation
- D. the design plan, research, justification, production, evaluation

**Question 7**

Which system is used to package ultra heat treated (UHT) milk?

- A. modified atmosphere packaging (MAP)
- B. vacuum packaging
- C. aseptic packaging
- D. active packaging

**Question 8**

The food recall process is

- A. based on guidelines called the Food Industry Recall Protocol, produced by Food Standards Australia New Zealand (FSANZ).
- B. a voluntary recall initiated by the food manufacturer if the product is past its use-by date or best-before date.
- C. coordinated by the Victorian Department of Health and Human Services.
- D. overseen by the municipal council.

**Question 9**

The functional property of gluten in a bread dough is to allow the dough to

- A. form a light, airy texture.
- B. become short and crumbly.
- C. form a dense, heavy texture.
- D. become stretchy and elastic.

**Question 10**

Two essential purposes of food packaging are to

- A. protect the product from contamination and to communicate serving ideas.
- B. provide consumers with information and to include a barcode.
- C. prevent food from being sold past its best-before date and to contain the product.
- D. protect the food from contamination and to enable easy transportation.

**Question 11**

Which one of the following foods contains the protein casein?

- A. milk
- B. meat
- C. wheat
- D. seafood

**Question 12**

What is a food intolerance?

- A. a life-threatening response to a particular food, such as peanuts
- B. a chemical reaction to a particular food, but not an immune response
- C. a reaction to particular chemicals in a food that affect the immune system
- D. a chemical reaction to a particular food, such as an abnormal immune response, coeliac disease or lactose intolerance

**Question 13**

What are two responsibilities of state authorities in the development of a food safety program?

- A. to inspect the food premises annually and register the business
- B. to employ environmental health officers to inspect the premises and audit the business every two years
- C. to develop the guidelines for the food safety program and establish the procedures to audit the program
- D. to develop the standards that all food producers must follow and ensure that each food producer has appointed a qualified food safety supervisor

**Question 14**

Gas packaging involves

- A. including gas additives and preservatives in the package.
- B. replacing the air inside the package with a mixture of specific gases before it is sealed.
- C. placing a gas sachet in the base of the package.
- D. drawing out all of the oxygen in the package and then sealing it.

**Question 15**

What is a key consideration when deep-frying potato chips?

- A. Dry the food with a paper towel before deep-frying.
- B. Ensure the oil is heated to a temperature above 260 °C.
- C. Add the food to be cooked only once the oil has reached smoking point.
- D. Add all the food to be deep-fried at the same time so that it cooks evenly.

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

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

**Question 1** (18 marks)

Nadia lives in rural Victoria and has a pear tree and an apricot tree in her garden. She preserves the pears and apricots by heat processing (bottling).

**a.** Provide **two** reasons for preserving food.

2 marks

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**b.** Describe the process used to heat process (bottle) fruit and explain how this technique preserves the fruit.

3 marks

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**c.** Describe the impact of heat processing (bottling) on the sensory properties of fruit such as pears and apricots.

3 marks

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- d.** Nadia decides to use a bottle of her preserved apricots to make an apricot upside-down cake.

Explain how heat is transferred in an oven while the cake is baked.

2 marks

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- e.** Nadia could use a microwave oven to cook the apricot upside-down cake, instead of an oven.

- i.** Explain why the surface of the cake will not brown if the cake is cooked in a microwave oven.

2 marks

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- ii.** Outline **two** strategies for cooking safely using a microwave oven.

2 marks

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f. Commercial apple and pear orchards are located throughout rural Victoria. Apple and pear farmers use large volumes of water on their orchards.

i. Explain how the overuse of water can lead to land degradation.

2 marks

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ii. Outline **two** sustainable farming practices that apple and pear farmers could implement to manage the use of water on their orchards.

2 marks

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c. Consumers can purchase a range of fresh eggs, including eggs enriched with omega-3 fatty acids.

i. Explain why eggs enriched with omega-3 fatty acids are considered a functional food. 2 marks

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ii. Outline **two** benefits to producers or consumers of the production of eggs enriched with omega-3 fatty acids. 2 marks

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d. A consumer could purchase organic eggs to make a pavlova.

Explain why the production of organic eggs may be considered a sustainable farming practice. 2 marks

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- c. The manufacturer would have implemented a plan to market its new breakfast cereal using the four Ps of the marketing mix – product, price, promotion and place.

Select two of the four Ps and describe how each might be used to market the new breakfast cereal.

4 marks

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2. \_\_\_\_\_

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- d. Explain why the food manufacturer should take ethical considerations into account when marketing food to children.

2 marks

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**Question 4** (19 marks)

A major sushi company produces a wide range of sushi for sale in its many outlets across Australia. Sushi is made using cooked rice. The sushi company’s product range includes chicken sushi and raw salmon sushi. The sushi company was recently found guilty of a number of food hygiene offences. The company was required to close all of its premises and apply to be re-registered.

- a. Explain why cooked rice is considered a high-risk food for food poisoning. 2 marks

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- b. Describe how food products containing cooked rice should be stored to prevent food poisoning. 2 marks

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- c. The physical and sensory properties of uncooked rice change significantly when it is cooked. Name and describe the process that causes the changes to the physical and sensory properties of rice when it is cooked. 3 marks

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- d. The sushi company was charged with failing to take all practical measures to keep pests from the company's premises.

Outline **two** strategies that the company could use to ensure that its premises are free of pests. 2 marks

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- e. The sushi company is required to prepare a food safety program based on the Hazard Analysis and Critical Control Points (HACCP) system.

Explain how each of the following steps in the HACCP system will ensure that the sushi produced is safe for the consumer. 4 marks

- Establish critical limits \_\_\_\_\_

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- Establish a record-keeping system for the HACCP system \_\_\_\_\_

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f. The table below lists two steps in the production of sushi.

For each step, describe:

i. a potential hazard

2 marks

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

2 marks

<b>Step in sushi production</b>	<b>Potential hazard</b>	<b>Corrective action</b>
delivery of the uncooked rice		
preparation of the uncooked chicken and salmon		

g. Outline the role of an environmental health officer, employed by the local authority, in enabling the sushi company to reopen its business.

2 marks

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**Question 5** (15 marks)

Potatoes are one of the vegetables most frequently purchased by Australian consumers. They are an inexpensive food, and can be easily prepared and cooked in a variety of ways. Potatoes are grown throughout Australia.

- a. The Australian Government's Office of the Gene Technology Regulator has approved the use of genetic modification on potatoes.

- i. Outline **two** benefits to farmers or food producers of the use of genetic modification on vegetables, such as potatoes. 2 marks

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- ii. Explain **one** way in which the use of genetic modification on vegetables, such as potatoes, can affect the environment. 2 marks

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b. Complete the table below about the primary processing of potatoes.

i. Identify two steps in the primary processing of potatoes, other than harvesting. 2 marks

ii. Explain the purpose of each step. 2 marks

Step in primary processing of potatoes	Purpose of the step

c. Identify the natural food component that causes raw potatoes to discolour when cut and explain why this reaction occurs. 3 marks

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**d.** Potato wedges are popular with consumers, but the production of potato wedges creates a significant amount of food waste.

**i.** Explain why food waste is an environmental concern.

2 marks

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**ii.** Describe **one** strategy that food manufacturers could use to minimise the impact of food waste on the environment.

2 marks

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