

**Victorian Certificate of Education
2015**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER Letter

FOOD AND TECHNOLOGY

Written examination

Friday 13 November 2015

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 21 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

One of the main causes of food poisoning is the consumption of food containing

- A. yeasts and moulds.
- B. pathogenic bacteria.
- C. food spoilage bacteria.
- D. enzymes and microorganisms.

Question 2

What is the role of the national authorities in a food recall?

- A. to develop food recall protocols
- B. to issue and follow-up on closure orders
- C. to develop criteria for the approval of food safety auditors
- D. to issue a certificate of re-registration for the food business responsible for manufacturing the recalled product

Question 3

It is important to monitor the critical limits in a HACCP system to check that

- A. any corrective actions that are put in place will resolve the problem.
- B. the company is able to go beyond the critical limits.
- C. the results of the system can be verified.
- D. the critical limits are not exceeded.

Question 4

Fish differs from red meat as

- A. it has only small amounts of connective tissue.
- B. it contains significant amounts of iron and omega-3 fats.
- C. iron is dispersed throughout the flesh, giving oily fish its dark colour.
- D. it cooks quickly and its flesh becomes opaque because of its high carbohydrate content.

Question 5

How are criteria for evaluation derived?

- A. from the likes and dislikes of the person preparing and cooking the food product
- B. from the constraints and considerations found in the design brief
- C. from the specifications and product ideas in the design brief
- D. from options developed during production work

Question 6

Which one of the following is an example of food product development using genetic modification?

- A. using membrane technology to produce whey protein powder from milk
- B. using high-pressure processing to kill unwanted genes in orange juice
- C. changing the DNA in tomatoes so that they ripen more slowly
- D. adding omega-3 fats to bread by microencapsulation

Question 7

What is denaturation?

- A. a permanent structural change to the protein in a food
- B. a form of gelatinisation that results in a permanent change in protein
- C. a change in protein molecules that causes the molecules to coil tightly
- D. an irreversible change to protein in food that occurs only through the application of heat

Question 8

Cross-contamination of food involves

- A. eating foods that contain natural substances that are poisonous to humans.
- B. eating foods that contain a source of physical contamination, such as a fingernail.
- C. the transfer of beneficial bacteria from food to the gut to enhance nutrient absorption.
- D. the transfer of harmful bacteria from raw food to food that has already been cooked or prepared.

Question 9

The tenderness of a cut of meat depends on

- A. cooking the meat at a very high temperature.
- B. the part of the animal the cut comes from.
- C. serving the meat with a sauce.
- D. the price of the cut of meat.

Question 10

How are convection currents created?

- A. by heat rays falling onto food during grilling
- B. by the conduction of heat through the use of electromagnetic waves
- C. by the molecules in a liquid or gas moving from a warmer area to a cooler area
- D. by heating air, causing the molecules to swirl around and collide with one another, creating heat

Question 11

Soil erosion is an example of land degradation.

It can have a significant impact on food production by

- A. creating large gullies that allow the subsoil to be washed downstream.
- B. removing the top soil and depleting the nutrients available for crops.
- C. causing the soil to be too alkaline for crops to grow.
- D. causing the soil to be too acidic for crops to grow.

Question 12

What is the colour of fruit caused by?

- A. the presence of enzymes in the skin of the fruit
- B. the amount of fibre in the skin of the fruit
- C. the presence of pigments in the fruit
- D. the pectin the fruit contains

Question 13

Modified atmosphere packaging (MAP) involves modifying the package to

- A. replace nitrogen with oxygen to prevent meat from discolouring.
- B. include reactive sachets to prevent food from crushing during transportation.
- C. replace carbon dioxide with oxygen to prevent tacos and burritos from becoming stale.
- D. include scavengers to remove ethylene and moisture produced by fruit and vegetables.

Question 14

Adding vinegar when poaching an egg is an example of using an

- A. alkali to denature the protein.
- B. enzyme to slow the setting of the egg white.
- C. acid to speed up the coagulation of the protein.
- D. enzyme to speed up the coagulation of the protein in the egg white.

Question 15

Why is an overall timeline an essential component of a design plan?

- A. to ensure that all the tools and equipment necessary for production are available when needed
- B. to ensure that a detailed weekly plan is completed before production commences
- C. to ensure that all of the required ingredients will be available when needed
- D. to ensure that the product can be made in the time available

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SECTION B**Instructions for Section B**

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

Question 1 (15 marks)

Consumers are able to buy a variety of soups in aseptic packaging. These soups are made from local and imported ingredients.

- a.** Describe the process of aseptic packaging that would be used to package the soup. 2 marks

- b.** Outline **two** advantages of aseptic packaging for consumers. 2 marks

- c.** The manufacturer is required to list on its packaging all ingredients, including any imported ingredients, used to make the soup.

Name the national authority that monitors the importation of food into Australia.

1 mark

- d. Technological developments and social pressures are two of the driving forces that have led to the development of soup in aseptic packaging.

Outline how each of these driving forces has led to the development of soup in aseptic packaging.

4 marks

Technological developments _____

Social pressures _____

- e. Product, place, price and promotion are all important factors that the manufacturer would consider when marketing the soup in aseptic packaging.

Outline how each of these factors could be used to market the soup in aseptic packaging.

4 marks

Product	
Place	
Price	
Promotion	

- f. The aseptic packaging of soup could have a negative impact on the environment.

Explain why this type of food packaging can be an environmental issue.

2 marks

Question 2 (14 marks)

a. A butcher specialises in organically farmed poultry products, including chicken, duck, turkey and goose.

i. What is organic farming?

2 marks

ii. Explain why an increasing number of consumers choose to purchase organic food products.

2 marks

- b.** The butcher who specialises in organic poultry products is considered to have a niche market.

Describe the difference between a target market and a niche market.

2 marks

- c.** One product manufactured by the butcher is organic chicken kebabs. When producing the organic chicken kebabs in the shop, significant amounts of water are used.

Outline **two** strategies the butcher could use to minimise the use of water in the shop.

2 marks

- d.** The butcher supplies a local restaurant with the organic chicken kebabs. A large number of people were recently hospitalised with salmonella poisoning after eating contaminated chicken kebabs from the restaurant. The restaurant was closed down after many customers reported being ill. It remained closed until investigations were completed.

- i.** Describe **two** responsibilities of state authorities in addressing this food poisoning incident.

4 marks

- ii.** Explain **one** way in which local authorities would work with state authorities to address the food poisoning incident.

2 marks

Question 3 (16 marks)

Sally has decided to enter her homemade vegetable pasties in the Royal Melbourne Show.

Below is a copy of the recipe that Sally will use to make the shortcrust pastry.

Ingredients	Method
1 cup plain flour 1 cup self-raising flour $\frac{1}{2}$ teaspoon salt 125 grams cold butter, cubed $\frac{1}{2}$ cup water $\frac{1}{2}$ teaspoon lemon juice, fresh	<ol style="list-style-type: none"> 1. Sift the flours and salt into a mixing bowl. Rub the butter into the combined flours using the fingertips. 2. Combine the water and lemon juice. Gradually add sufficient liquid to the flour and butter mixture to form a dough. 3. Lightly flour the bench, turn the dough onto the bench and knead lightly. 4. Divide the pastry into 12 equal portions and roll each portion into a round.

- a. Identify two personal hygiene practices Sally would need to follow before starting to make her vegetable pasties and outline why each practice is necessary to ensure safe food preparation. 4 marks

Personal hygiene practice 1 _____

Personal hygiene practice 2 _____

- b. Explain why the preparation of shortcrust pastry is a complex process. 3 marks

c. Step 3 in the recipe for making the shortcrust pastry states that the dough should be kneaded lightly.

i. Outline **two** ways to judge when the dough has been kneaded sufficiently.

2 marks

ii. Explain the impact of kneading lightly on the sensory properties of the cooked pastry.

2 marks

d. Explain why vegetable pasties should be initially cooked at 220 °C and then the temperature is lowered to 190 °C as they continue to cook.

2 marks

- e. A number of vegetable pasties will be entered in the Royal Melbourne Show. The judges will use a profiling test to determine the winning entry.

i. Explain why a profiling test would be suitable for judging vegetable pasties.

2 marks

- ii. The judges will also measure each of the vegetable pasties entered in the show for weight, height and colour.

Identify the type of food product analysis that measures these properties.

1 mark

Question 4 (18 marks)

- a.** Avocados undergo primary processing before being sent to market.

Define the term 'primary processing'.

2 marks

- b.** Identify and describe two steps in the primary processing of avocados.

4 marks

Step 1 _____

Step 2 _____

- c. Artificial chemicals, including fertilisers and pesticides, may be used on avocado orchards.

Explain why the use of such chemicals on avocado orchards could be an environmental concern.

2 marks

- d. Explain how foods such as avocado pulp can be processed using high-pressure processing technology.

3 marks

- e. Outline **two** reasons why high-pressure processing may be used on avocado products. 2 marks

- f. Identify and describe the process that causes avocados to brown when they are cut. 2 marks

- g. A food manufacturer produces a range of avocado dips, including a spicy avocado dip, a lite avocado dip and an avocado dip with cashews.

- i. Identify this type of product development. 1 mark

- ii. Outline **two** reasons why this type of product development is used. 2 marks

Question 5 (13 marks)

A national market research organisation has discovered that older consumers are looking for dairy products with nutritional benefits that may help to reduce the risk of developing conditions such as osteoporosis, dementia and heart disease.

Milk ‘n’ More Dairy produces a range of specialty milks, including milk enriched with omega-3 fats.

- a. The milk enriched with omega-3 fats is a functional food.

Define the term ‘functional food’.

2 marks

- b. Food labels provide useful information about the product. The Food Standards Code provides labelling regulations that apply to all food for sale in Australia, including milk.

- i. Write the full name of the agency responsible for developing the Food Standards Code.

1 mark

- ii. Identify two pieces of information that must be included on Milk ‘n’ More Dairy’s food label and state the benefit of providing this information to the consumer.

4 marks

Labelling information	Benefit to consumers

- c. The labelling on the packaging for milk states that the milk is a good source of omega-3 fats. This is an example of a nutrition content claim.

Outline the difference between a 'nutrition content claim' and a 'health claim'.

3 marks

- d. Market research results showed that the number of people suffering from a food intolerance is increasing.

i. Explain the term 'food intolerance'.

2 marks

ii. Identify the food intolerance that affects some people when they consume milk and other dairy products.

1 mark
