



# Victorian Certificate of Education 2011

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

## STUDENT NUMBER

Figures

Words


Letter

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# FOOD AND TECHNOLOGY

## Written examination

Thursday 17 November 2011

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 white out liquid/tape.
- No calculator is allowed in this examination.

### Materials supplied

- Question and answer book of 18 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**

Dehydration is a method of preserving food by

- A. adding strong concentrations of sugar.
- B. increasing the salinity level of the food.
- C. removing moisture by warm air or sunlight.
- D. heating food in a glass bottle or jar to high temperatures.

**Question 2**

During food preparation and processing, the application of dry heat can cause a change in the physical properties of starch.

This is called

- A. coagulation.
- B. dextrinisation.
- C. emulsification.
- D. caramelisation.

**Question 3**

Beating the egg whites is an important stage in making meringues and macaroons.

This process is an example of

- A. mixing.
- B. aeration.
- C. creaming.
- D. folding in.

**Question 4**

Primary processing of apples includes

- A. picking, washing, grading for size.
- B. harvesting, washing, grading for colour and size, canning.
- C. washing, grading and sorting for size and shape, blast freezing.
- D. picking, sorting according to size, blanching and packaging in aseptic packaging.

**Question 5**

The quantitative analysis of a food measures its

- A. size, shape, flavour, texture and viscosity.
- B. viscosity, shelf life, nutrient content, weight and volume.
- C. colour, aroma, mouth-feel, appearance, weight and nutrient content.
- D. viscosity, flavour, texture, appearance, weight, nutrient content and shelf life.

**Question 6**

Overuse of pesticides and over spraying of chemicals in primary food production can result in

- A. erosion of land used for farming.
- B. harmful runoff into rivers and creeks.
- C. the loss of essential nutrients from the soil.
- D. development of salinity of land used for farming.

**Question 7**

Modified Atmosphere Packaging (MAP) is a suitable system for packaging

- A. ice cream.
- B. sliced bread.
- C. diced tomato.
- D. fresh fettucini.

**Question 8**

Organic food production involves

- A. buying food produced locally.
- B. purchasing food from a farmers market.
- C. growing food using an irrigation system.
- D. growing food without the use of chemical fertilisers and pesticides.

**Question 9**

A food label must contain

- A. a bar code.
- B. serving suggestions.
- C. any mandatory warnings.
- D. the amount of carbon emissions produced during manufacture.

**Question 10**

Microencapsulation is an example of new technology used in food production.

Microencapsulation consists of

- A. packaging food items in individual portions.
- B. adding a functional ingredient to a food product.
- C. packaging liquid food products in a sterile container.
- D. packaging small particles of an active or functional ingredient in a minute capsule.

**Question 11**

Acids are important ingredients in marinades used in meat recipes.

They assist by

- A. softening the connective tissue.
- B. toughening the connective tissue.
- C. preventing the meat from browning.
- D. preserving the nutrient content of the meat.

**Question 12**

Maillard reaction during food preparation involves

- A. acid and protein and dry heat.
- B. acid and protein and moist heat.
- C. sugar or starch and protein and dry heat.
- D. sugar or starch and protein and moist heat.

**Question 13**

One type of food product development is an increase in variety by adding flavours or changing the packaging size.

This is an example of

- A. me-too.
- B. innovation.
- C. line variation.
- D. line extension.

**Question 14**

In the marketing of food, 'ethical considerations' means taking into account

- A. what is seen to be morally right.
- B. the cost of the product to consumers.
- C. the cost of the advertising campaign.
- D. factors that reduce the impact of the product on the environment.

**Question 15**

The authority responsible for overseeing food safety in Australia is

- A. the Food Standards Code.
- B. Food Safety Australia New Zealand.
- C. Food Standards Australia New Zealand.
- D. Australia New Zealand Food Authority.

**SECTION B****Question 1**

A new café is about to open for business. In order to prepare food that is safe to consume, all staff will need to follow strict personal hygiene practices.

- a. Other than hand washing, outline **two** personal hygiene practices that should be carried out when working with food.

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2 marks

- b. A major concern for the owners of this café is to prevent food poisoning. One of the most common causes of food poisoning is cross-contamination.

- i. Define the term 'cross-contamination'.

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- ii. Outline **two** of the main causes of cross-contamination.

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2 + 2 = 4 marks

The café is committed to providing safe food for customers. To reduce the risk of unsafe food reaching customers, the café owners will need to develop a Hazard Analysis and Critical Control Points (HACCP) system.

- c. Identify two steps in the HACCP system and explain how each step will ensure that the food produced in this café is safe for the customer.

Step \_\_\_\_\_

Explanation \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Step \_\_\_\_\_

Explanation \_\_\_\_\_

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\_\_\_\_\_

4 marks

Chicken and beef burgers are included on the café menu. The production of the burgers involves several stages, including the delivery of raw ingredients, storage of ingredients and the cooking of the chicken and beef patties.

- d. Select two of the stages listed above. For each stage, describe one hazard other than cross-contamination that could lead to food poisoning, **and** a corrective action that staff should follow in order to overcome the hazard.

Stage in production	Hazard	Corrective action
1.		
2.		

4 marks

**Question 2**

A food manufacturer has developed a new cookie for children. This cookie is enriched with vitamins A and B. The manufacturer intends to use a popular cartoon character on the label of the cookie that will appeal to primary school children.

Advertising in newspapers, magazines and on television, is a very successful marketing strategy used by food manufacturers to encourage consumers to purchase their product.

- a. Identify and describe **two other** marketing strategies that could be used by the manufacturer of the cookies to promote its new snack food.

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2 marks

Product, place, promotion and price are all important considerations when a company is developing and marketing a new product.

- b. Select **two** of these marketing considerations and outline how they may be used to market the new cookies.

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2 marks

When developing their marketing strategy, food manufacturers choose to focus their advertising on either a target market or a niche market.

- c. Explain the difference between a target market and a niche market.

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2 marks

- d. Discuss one ethical consideration that the manufacturer of the cookies should take into account when marketing its product to children.

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3 marks

Fats such as butter and margarine are used in the manufacture of the cookies.

- e. Outline two functions of fats in the preparation and processing of biscuits or cakes.

Function 1 \_\_\_\_\_

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Function 2 \_\_\_\_\_

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2 marks

Federal, state and local authorities all have a role in ensuring a safe food supply.

- f. Describe a role that **each** of these levels of authority has in the development and/or implementation of a food safety program for the cookie manufacturer.

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3 marks



- g.** The chocolate confectionery used to decorate the cookies has been imported from overseas.
- i.** Write the **full name** of the statutory body responsible for protecting Australian consumers from the importation of unsafe food from overseas.

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- ii.** Describe **two** ways this statutory body monitors the importation of food products into Australia.

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1 + 2 = 3 marks





**Question 4**

There is a wide variety of milk-based fruit smoothie drinks now available in our supermarkets. MooFru is one such drink. This convenient ready-to-drink fruit smoothie comes in a 250 ml plastic bottle with a screw-top lid. The label states the drink is 99 per cent fat free, has added fibre and calcium, is low GI and contains real fruit and fresh dairy products, with no artificial colours or flavours.

The development of the MooFru smoothie has come about as a result of a range of driving forces.

- a. Identify two of these driving forces and explain how each has influenced the development of the MooFru smoothie.

Driving force \_\_\_\_\_

Explanation \_\_\_\_\_

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Driving force \_\_\_\_\_

Explanation \_\_\_\_\_

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4 marks

There is an increase in the number of functional foods available for consumers to purchase.

- b. i. Define the term ‘functional food’.

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- ii. Explain why the MooFru smoothie is considered a functional food.

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1 + 1 = 2 marks

The MooFru smoothie is packaged using the aseptic packaging system.

- c. i. Explain the process of aseptic packaging.

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- ii. Outline two benefits to the manufacturer and two **other** benefits to the consumer of using the aseptic packaging system.

Manufacturer	Consumer
1.	1.
2.	2.

2 + 4 = 6 marks

The MooFru smoothie is packaged in a plastic bottle. The disposal of such packaging has become a major environmental issue for food manufacturers.

- d. Describe **one** main concern associated with the disposal of food packaging.

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2 marks

**Question 5**

Orchard Fresh Juices produces a range of fruit juices using an emerging technology called high pressure processing.

- a. Explain how food is processed using the system of high pressure processing.

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3 marks

- b. Outline three advantages of high pressure processing to producers and/or consumers.

Advantage 1 \_\_\_\_\_

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Advantage 2 \_\_\_\_\_

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Advantage 3 \_\_\_\_\_

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3 marks

High pressure processing is used by companies around the world to produce a range of food products.

- c. List **one** food product, other than fruit juice, that is processed using high pressure processing.

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1 mark

Orchard Fresh Juices has achieved Australian Certified Organic certification for the manufacture of its high pressure processed fruit juices.

- d. Explain why farmers may choose to adopt organic farming methods to produce their food crops.

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2 marks

Energy use, water use and the production of waste are all environmental issues associated with food manufacturing, including fruit juice.

- e. Select **one** of the environmental issues listed above and discuss the way in which food manufacturing can have an impact on the environment.

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3 marks

**Question 6**

A company that produces salmon products has recently launched a pre-cooked salmon fillet. The product is cooked gently, then smoked, and can be served straight from the pack or warmed through.

All fish, including salmon, contains the natural food component, protein.

- a. Name and describe the effect of cooking on the protein in the salmon.

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3 marks

During the development of the pre-cooked salmon fillet, the manufacturer conducted a sensory analysis test. The results are recorded in the table below (5 = high score, 1 = low score).

Characteristics	Taster A	Taster B	Taster C	Taster D
Flavour	4	4	3	5
Smokiness	3	5	4	4
Firmness of cooked flesh	3	4	5	3
Evenness of flakes	4	3	5	5

- b. Name and describe one sensory analysis test that could have been used to obtain the results in the table above.

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3 marks



The pre-cooked salmon could be included in a risotto. Below is the method for making a risotto.

1. Bring the stock and water to a gentle simmer.
2. Heat the oil and sauté the onion for approximately 2 minutes.
3. Add the arborio rice and stir over the heat until the grains are well coated with oil.
4. Add half the simmering stock and stir well. Simmer gently until all the stock has been absorbed by the rice.
5. Add remaining stock and simmer gently until all the stock has been absorbed and the rice is tender (20 to 30 minutes).
6. Add the spinach leaves and simmer for 3 to 4 minutes.
7. Flake the salmon with a fork and add to the risotto. Stir through with the grated zest of a lemon or lime.
8. Stir through the parmesan cheese and lemon or lime juice and season with salt and pepper.
9. Cover the risotto and allow to stand for 5 minutes before serving.

- c. Name the process that occurs when the stock is absorbed by the rice during cooking.

1 mark

The preparation of the risotto uses both wet and dry methods of cooking.

- d. i. Identify and describe one wet method of cooking used in the preparation of the risotto.  
 ii. Identify and describe one dry method of cooking used in the preparation of the risotto.

	Identification of method	Description of method
<b>Wet method of cooking</b>		
<b>Dry method of cooking</b>		

2 + 2 = 4 marks

e. The production of the risotto involves using complex processes.

i. Explain what is meant by the term 'complex process'.

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ii. Select one of the steps in the making of the risotto that is an example of a complex process and explain the importance of this step.

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iii. Identify one piece of equipment suitable to use in completing the complex process you have selected and describe how to use this piece of equipment safely.

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2 + 2 + 2 = 6 marks

The risotto could be preserved by freezing.

f. Describe how the process of freezing can preserve the risotto for future use.

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2 marks