



**Victorian Certificate of Education
2007**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

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FOOD AND TECHNOLOGY
Written examination

Tuesday 20 November 2007

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>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
9	9	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 21 pages.
- Instructions**
- Write your **student number** in the space provided above on this page.
 - All written responses must be in English.

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

Instructions

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

Question 1



The Weet-Bix packet shown above displays the manufacturer's name.

- a. Apart from the manufacturer's name, identify **two** labelling requirements that must be shown on this packet and outline one reason for including each of these labelling requirements on the packet.

Labelling requirement 1 _____
Reason

Labelling requirement 2 _____
Reason

2 + 2 = 4 marks

- b. i. Identify **two** factors that Sanitarium needs to consider when developing the Weet-Bix packaging to reduce its impact on the environment.

Factor 1 _____

Factor 2 _____

- ii. Briefly explain how each of the factors identified will help to reduce the environmental impact of the packaging.

Explanation of Factor 1

Explanation of Factor 2

2 + 2 = 4 marks

The Weet-Bix packet states it contains folate, which is a nutrient. A diet rich in folate, before and in early pregnancy, may help to prevent birth defects like spina bifida. This message about folate is part of a national trial of health claims in both Australia and New Zealand.

- c. i. Explain the meaning of the term 'health claim'.

- ii. Outline **one** reason why health claims are monitored in Australia and New Zealand.

2 + 1 = 3 marks

Total 11 marks

TURN OVER

Question 2



The Riverside Pecans packaging clearly states that the product is ‘**not** genetically modified’.

a. Describe the process of genetic modification.

2 marks

b. Outline two reasons why the producers of Riverside Pecans would want to promote to consumers that their product is **not** genetically modified.

Reason 1

Reason 2

2 marks

Some foods such as canola and soy are being developed using genetic modification.

- c. Outline **two** benefits for **farmers** of genetic modification in the production of food.

Benefit 1

Benefit 2

2 marks

Total 6 marks

TURN OVER

Question 3

The safety of Australia’s food supply is governed by one national authority.

a. What is the name of this authority?

_____ 1 mark

b. List **two** responsibilities of this authority **and** briefly explain how consumers benefit from each of these responsibilities.

Responsibility 1 _____

Benefit to consumers _____

Responsibility 2 _____

Benefit to consumers _____

2 + 2 = 4 marks

Authorities at national, state and local levels all have a role in ensuring Australian consumers have high quality food.

c. i. Provide **one** example where different levels of authority (national, state or local) work together to ensure the high quality of Australia’s food supply.

ii. Select **two** levels of authority (national, state or local) and explain the role of each of these in the **example above**.

Level of authority 1 _____

Explanation _____

Level of authority 2 _____

Explanation _____

1 + 4 = 5 marks

Total 10 marks

Question 4

Cupcakes are small cakes which are often decorated and are a popular treat for people of all ages. Below is a photograph of decorated cupcakes and a recipe for the cakes.

**Cupcakes**

110 grams plain flour

$\frac{1}{2}$ teaspoon baking powder

65 grams butter

65 grams caster sugar

$\frac{1}{2}$ teaspoon vanilla essence

1 egg

60 ml milk

1. Preheat the oven to 200°C.
2. Place paper cases into the cupcake tin.
3. Sift the flour and baking powder.
4. Cream the butter and sugar.
5. Mix in the vanilla essence.
6. Add the egg gradually; mix well.
7. Fold in the flour and milk alternately, about $\frac{1}{3}$ at a time.
8. Spoon the mixture into the paper cases.
9. Bake in the preheated oven for 12 to 15 minutes.
10. Turn onto a wire rack to cool.

Butter, egg and plain flour are all key ingredients in the preparation of the cupcakes.

- a. Complete the following table for each of these ingredients.

Ingredient	Identify the natural food component in the ingredient.	Explain one main function of each natural food component in the preparation of the cupcakes.
Butter		
Egg		
Plain flour		

6 marks

The creaming of the butter and sugar and the baking of the cakes are two of the complex processes involved in making the cupcakes.

- b. Select one of these complex processes **or** another complex process you have used in your production work during the year to answer the following questions.

Name of the complex process _____

Outline **two** important steps in the complex process identified above which are necessary to maximise the quality of the food item.

Step 1

Step 2

2 marks

During the baking of the cupcakes, the mixture changes colour and the cakes brown.

- c. i. Name **one** process which can cause the cakes to brown.

- ii. Outline how this process browns the cakes.

1 + 1 = 2 marks

Decorated cupcakes have become a popular product sold at community and farmers' markets.

- d. i. Identify the food manufacturing system which would be used by a cake stall owner to produce the cakes for sale at a community or farmers' market.

- ii. Outline **two** features of this food manufacturing system which makes it a suitable system to produce the cupcakes for a community or farmers' market.

Feature 1

Feature 2

1 + 2 = 3 marks

Total 13 marks

TURN OVER

Question 5

Design brief

Park View Café is a new café opening in early December. The café will focus on serving delicious lunches and dinners for casual and more traditional dining. The menu will be based on healthy dishes with an emphasis on fresh, high quality, well-presented food. Vegetarian choices will be available. The café also wants to make a feature of preserved foods so that there is variation in texture and flavours.

- a. From the design brief above, develop **four** criteria that the owners of the café could use to evaluate whether they have met the requirements of the design brief.

Criterion 1 _____

Criterion 2 _____

Criterion 3 _____

Criterion 4 _____

4 marks

There are many ways of preserving food including dehydration, use of sugar, use of acids, freezing and heat processing.

- b. Identify **two** preserved food items that can be prepared in the café using **two** of the preservation techniques listed above. Outline how each food item could be used in a meal for customers.

Preserved food items	Outline of how the food items could be used in a meal at the café
1.	
2.	

2 + 2 = 4 marks

- c. Select **one** preserved food item identified in **part b.** and explain how the preservation technique used prevents the spoilage of the food.

Preserved food item _____

Explanation

2 marks

Fruit is a key food that can be prepared by dry and wet methods of cooking.

- d. Name one fruit which could be used in the café **and** identify a dry **and** a wet method suitable for cooking this fruit. Explain the impact of each of these cooking methods on the properties of this fruit.

Fruit _____

Dry method _____

Explanation

Wet method _____

Explanation

2 + 2 = 4 marks

The café will need to develop a Hazard Analysis and Critical Control Points (HACCP) system before it opens for business.

e. i. Outline the purpose of the HACCP system.

There are seven key HACCP steps.

1. Analyse the hazards and assess risks.
2. Identify the critical control points.
3. Set the critical limits for each critical control point.
4. Monitor the critical control points.
5. Establish corrective actions.
6. Set up records.
7. Verify that the HACCP system is working correctly.

ii. Select **two** of the HACCP steps and explain why each is important for the café.

Step _____

Explanation

Step _____

Explanation

1 + 2 = 3 marks

Total 17 marks

Question 6



The development of the new Four'n Twenty Lite meat pies would have involved a number of stages including market research, the development of the design brief and criteria for evaluation, development of a prototype, production, marketing and evaluation.

- a. Select **two** of these stages and explain their importance in the development of the new Lite pies.

Stage 1 _____

Explanation _____

Stage 2 _____

Explanation _____

2 + 2 = 4 marks

Consumer demand, social issues and industry economics all have an influence on the development of new food products.

- b. Select **one** of the factors listed above and describe the way in which the factor selected would have influenced the development of the Lite pies.

Factor _____

Description _____

1 mark

During the development of the Four'n Twenty Lite meat pies, the company would have evaluated the physical, sensory and chemical properties of the product.

- c. Identify and describe one test the company may have used to evaluate the pies.

Test _____

Description _____

1 + 2 = 3 marks

Product, price, place and promotion are all important considerations in the marketing of a new food product.

- d. i. Select **two** of these marketing considerations and describe how each may be used by Four'n Twenty in marketing their new Lite pies.

Marketing consideration 1 _____

Marketing consideration 2 _____

- ii. Discuss **one** ethical consideration Four'n Twenty should take into account when planning their marketing campaign for the Lite pies.

2 + 2 = 4 marks

Total 12 marks

Question 7

A new variety of wheat known as waxy wheat is being grown in Australia and is an example of an innovation in food product development. This new waxy wheat can be used in a range of bakery products, novel foods and health foods. The waxy wheat has different starch properties from normal wheat. Products made from waxy wheat do not lose water when frozen or thawed, which lengthens their shelf life and improves mouth feel. This improved variety has been developed **without** the use of genetic modification.

- a. i. Identify and explain the **process** that would have been used to develop this new wheat variety.

- ii. Describe **two** advantages that this process could have for the farmers who grow the new waxy wheat.

Advantage 1

Advantage 2

2 + 2 = 4 marks

The waxy wheat can be used in manufacturing novel foods.

- b. Explain the meaning of the term 'novel foods'.

2 marks

The waxy wheat is an example of how technology has been used to develop a new and emerging food. Ultrafiltration and microencapsulation are two examples of technology used in the production of other new and emerging foods.

- c. Select **one** of these examples **or** another example of technology used in innovative food product development.

Name of the technology _____

- i. Describe the process used in this technology.

- ii. Identify a food developed using this technology.

2 + 1 = 3 marks

The future of the sustainable environment depends on farming practices that have minimal impact.

- d. Describe **one** farming practice that will maintain an economic advantage for primary producers and have a minimal impact on the environment.

2 marks

After harvesting, all cereals such as wheat go through primary and secondary processing.

- e. Explain the difference between primary processing and secondary processing of cereals such as wheat. Use **one** example of **each** type of processing to support your answer.

4 marks

- f. Outline **two** reasons for secondary processing of food.

Reason 1

Reason 2

2 marks

Total 17 marks

Question 8

To celebrate his 18th birthday, Steven’s parents invited a large number of his friends and family to a party that was held at their home. Steven’s mother prepared all of the food for the party at home. The day after the party, the family was very concerned to hear that several of the guests had suffered from food poisoning.

a. Explain the meaning of the term ‘food poisoning’.

1 mark

The presence of bacteria is one of the major causes of food poisoning.

b. Identify and describe **two** conditions that are required for the growth of bacteria in food.

Condition 1 _____

Description

Condition 2 _____

Description

2 + 2 = 4 marks

c. Outline **two** safety or hygiene practices in the storage and preparation of the food for a party to prevent food poisoning.

1. _____

2. _____

2 marks

When Steven's mother was preparing the salads for the party she noticed that some of the vegetables showed signs of food spoilage. She did not use these vegetables.

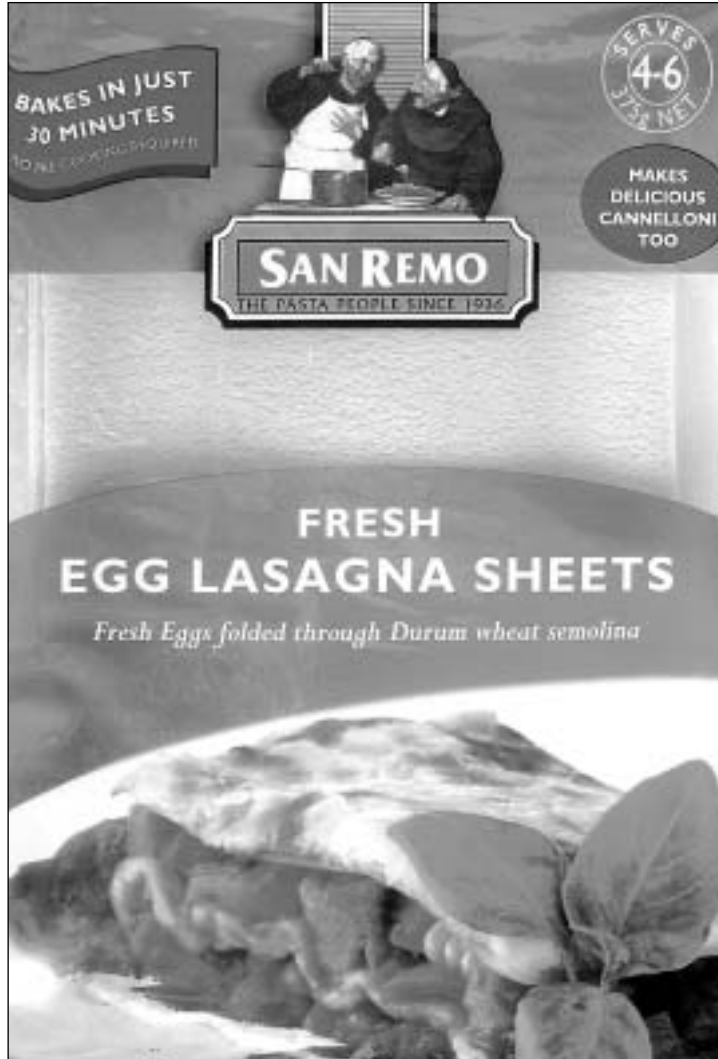
d. Explain the meaning of the term 'food spoilage'.

1 mark

Total 8 marks

TURN OVER

Question 9



Fresh egg lasagne sheets as shown above are an example of a food product that is packaged using Modified Atmosphere Packaging (MAP).

a. Outline the MAP system of packaging.

1 mark

b. Outline **two** reasons why MAP packaging can be of benefit to consumers.

Reason 1

Reason 2

2 marks

When products such as fresh egg lasagne sheets are successful in the market place, competitors quickly produce similar products.

c. i. Identify the type of product development used by the competing manufacturer.

ii. Outline **two** reasons why this type of product development is of benefit to the competing manufacturer.

Reason 1 _____

Reason 2 _____

1 + 2 = 3 marks

Total 6 marks