



**Victorian Certificate of Education
2006**

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER

Letter

Figures										
Words										

FOOD AND TECHNOLOGY
Written examination

Tuesday 14 November 2006

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>
7	7	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 15 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

Due to copyright restriction,
this material is not supplied.

Big MTM produces a large number of flavoured milks. They have recently added the 99% fat free milk (product C) to their product range. In the process of developing the fat free flavoured milk, the company completes a number of stages of product development.

- a. Explain what is involved during each of the following stages in the development of the new 99% fat free flavoured milk (product C) and outline the purpose of each stage.

Stage of product development	Explanation of stage (What is it? How is it done?)	Purpose of stage (Why is it done?)
Research		
Prototype		
Product analysis		

6 marks

- b. i. Identify the type of product development used by Big M™ when the new 99% fat free flavoured milk (product C) was added to their range.

- ii. Outline one advantage of this type of product development to the manufacturer.

1 + 1 = 2 marks

- c. Describe how consumer demand and industry economics have influenced the development of the 99% fat free flavoured milk in a screw cap plastic bottle (product C).

Consumer demand

Industry economics

2 marks

- d. i. Identify the food manufacturing system used for the production of Big M™ 99% fat free flavoured milk (product C).

- ii. Briefly outline **two** features of this manufacturing system that make it suitable for the making of Big M™ 99% fat free flavoured milk.

Feature 1

Feature 2

1 + 2 = 3 marks

- e. Identify and describe **two** functions of milk packaging.

Function 1

Function 2

4 marks

Product B, UHT flavoured milk, has an extended shelf life.

- f. Describe the processes used in the UHT system that extends the shelf life of the milk before opening.

3 marks

- g. i.** Identify one target market for the 99% fat free flavoured milk in a screw cap plastic bottle (product C).

- ii.** Briefly outline **two** suitable marketing strategies that could be used to promote the 99% fat free milk (product C) to this target market.

Strategy 1

Strategy 2

- iii.** Select the **most suitable** marketing strategy (outlined in **part ii.**) for the target market and justify your choice.

Strategy selected

Justification

1 + 2 + 2 = 5 marks

Total 25 marks

TURN OVER

Question 2

- a. Explain the difference between primary and secondary processing of a key food such as fruit.

2 marks

Apricots are an example of the key food, fruit.

- b. Identify **two** examples of primary processing and two examples of secondary processing for apricots.

	Primary processing	Secondary processing
Example 1		
Example 2		

4 marks

There are several preservation techniques that are used to prevent the spoilage of food such as freezing, dehydration, use of sugars, use of acids, heat processing and canning.

- c. Select a preservation technique that is used to preserve apricots.

Preservation technique selected _____

- i. Explain how this preservation technique prevents the spoilage of apricots.

- ii. Outline **two** impacts this preservation technique has on the properties (physical, sensory and/or chemical) of apricots.

Impact 1

Impact 2

2 + 2 = 4 marks

Potatoes are an example of the key food, vegetables.

d. Complete the following table of techniques that can be used for cooking potatoes.

Method of cooking potatoes	Example of technique	The suitability of this technique for cooking potatoes (Why is this technique used?)
Wet method		
Dry method		

4 marks

Total 14 marks

TURN OVER

Question 3

‘Everything in life has its benefits – and risks. Gene technology is no exception.’

- a. Briefly outline how plants can be genetically modified. Use an example to support your answer.

2 marks

- b. Outline **two** possible benefits and **two** possible risks of the production of genetically modified food for **either** consumers **or** producers.

Benefits	Risks
i.	i.
ii.	ii.

2 + 2 = 4 marks

Like genetic modification, plant breeding is also an innovation in food product development.

c. Explain how plant breeding is used to develop new food products.

2 marks

d. i. Identify one food product that has been developed as a result of plant breeding.

ii. Explain how plant breeding has affected the physical, chemical or sensory properties of this food product.

1 + 2 = 3 marks

Farmers implement a range of practices to increase production. Some of these practices have a negative impact on the environment.

e. Identify one farming practice and describe the negative impact it can have on the environment.

Farming practice

Impact on environment

3 marks

Total 14 marks

Question 4

Harvest Fine Foods has just released a new range of dips onto the market.

National, state and local governments and authorities all have a role in ensuring that food manufactured and sold in Australia is safe for consumers to eat.

- a. Identify one role of each level of government and authority in ensuring that Harvest Fine Foods dips are produced safely. Explain how the role identified will be important in ensuring the safe production of the dips.

Level of government and authority	Role of government and authority	Explanation
National		
State		
Local		

6 marks

In manufacturing their dips, Harvest Fine Foods is required to establish a Hazard Analysis Critical Control Points (HACCP) plan.

- b. Outline **two** reasons for the establishment of a HACCP plan.

Reason 1

Reason 2

2 marks

- c. Identify and explain the importance of **two** health, safety or hygiene practices the employees of Harvest Fine Foods need to implement in their preparation of the dips.

Practice 1

Practice 2

4 marks

A major concern for Harvest Fine Foods is possible food spoilage or food poisoning.

- d. i. Explain the difference between food spoilage and food poisoning.

- ii. Identify one of the main causes of food spoilage and explain how it can cause food to spoil.

Main cause of food spoilage

Explanation

Bacterial contamination is the most likely cause of food poisoning.

- iii. Identify and explain **two** conditions required for the growth of bacteria that could lead to contamination of the dips.

Condition 1

Condition 2

2 + 2 + 4 = 8 marks

Total 20 marks

TURN OVER

Question 5

- a. Identify and describe a technological development that has led to the production of a new and emerging food.

Technological development

Description

3 marks

Functional foods are an example of new and emerging foods.

- b. Describe what is meant by the term ‘functional foods’.

1 mark

- c. Identify one functional food and outline an advantage of this food to the consumer.

Functional food

Advantage to the consumer

2 marks

Due to an increase in the range of functional foods available, it is important that when these foods are marketed, consumers receive accurate information about health claims.

- d. Describe what is meant by a ‘health claim’.

1 mark

Many foods have been developed for people with specific food sensitivities.

- e. i. Explain what is meant by 'food sensitivity'.

- ii. Identify a food that has been developed to address a food sensitivity.

- iii. Identify a niche market for the product identified above.

1 + 1 + 1 = 3 marks

Total 10 marks

Question 6

The owners of a café in regional Victoria wish to extend their business to appeal to a new target market. They have decided to sell a range of picnic packages suitable for local, interstate and international visitors to the region. Customers will be able to order their package online or via telephone and will have a range of sweet and savoury items to choose from. The picnic packages are designed to give a convenient meal or snack option for those visiting wineries or other tourist locations.

You have been asked to develop 4–6 products for the trial range of picnic packages. All products must be of a high quality, require little or no preparation, be suitable for a variety of meals throughout the day, include a variety of ingredients and be able to be stored for a short period of time without refrigeration.

- a. Use the specifications (considerations and constraints) outlined in the design brief above to develop **three** criteria for evaluation.

Criterion 1

Criterion 2

Criterion 3

3 marks

The following categories of food have been identified as suitable for the picnic packages.

- yeast items
- cakes, biscuits or desserts
- pastry items
- sweet and savoury preserves
- confectionery items

b. i. Using the categories identified above, suggest one example of a food item that would be suitable for the picnic packages.

ii. Identify a complex process and explain a key step in this process that is important for the high quality production of this food item.

Complex process _____

Explanation of key step in the complex process

1 + 3 = 4 marks

To be successful, the food items in the picnic packages must compare favourably with similar commercial items.

Identify a food item suitable for the picnic packages that could be compared with a commercial food item.

c. Name and describe a test that could be used to compare a property (physical, chemical or sensory) of the food item identified above with a commercial food item.

3 marks

Total 10 marks

Question 7

Lemon Meringue Pie is a sweet dish. It has three layers; a pastry case, a gelatinous lemon filling and a meringue top. Below is a recipe for Lemon Meringue Pie.

<p>LEMON MERINGUE PIE RECIPE</p> <p>1 precooked pastry case</p> <p>Lemon filling</p> <p>Ingredients</p> <p>2 tb cornflour</p> <p>½ cup water</p> <p>¼ cup butter</p> <p>½ cup sugar</p> <p>2 egg yolks</p> <p>juice and rind of 2 lemons</p> <p>Method</p> <ol style="list-style-type: none"> 1. Blend cornflour with water and place in saucepan with butter, sugar, yolks, rind and juice of lemons. 2. Stir until boiling, cook 1 minute. 3. Cool slightly. 4. Pour filling into a precooked pastry case and top with meringue. 5. Bake at 180°C for 5 minutes until it begins to brown. 	<p>Meringue</p> <p>Ingredients</p> <p>2 egg whites</p> <p>½ cup sugar</p> <p>pinch of salt</p> <p>Method</p> <ol style="list-style-type: none"> 1. Beat egg white and salt until stiff. 2. Add sugar gradually and continue to beat until very thick. 3. Spoon on top of lemon filling.
--	---

Egg white is an ingredient in the meringue recipe above.

- a. i. Identify the natural food component in egg white that is important in the preparation of the meringue.

- ii. Name and describe the function of this natural food component in the production of the meringue.

1 + 2 = 3 marks

- b. i. Identify the ingredient **and** the natural food component that is responsible for the gelatinisation of the lemon filling.

Ingredient

Natural food component

- ii. Describe the process of gelatinisation involved in the production of the filling in this recipe.

2 + 2 = 4 marks

Total 7 marks