

TECHNOLOGY AND LIVING (FOOD SCIENCE & TECHNOLOGY)

PAPER 2

(Sample Paper)

Time allowed: 2 hours

This paper must be answered in English

1. This paper consists of THREE sections, A, B and C. Each section carries 40 marks.
2. Attempt TWO sections only. Write your answers in the answer book provided.
3. Answers should be presented in an orderly way.
4. Tables and diagrams should be included wherever appropriate.
5. Graph paper and supplementary answer sheets will be supplied on request. Write your candidate number on each sheet, and fasten them with a string inside the answer book.

SECTION A FOOD CULTURE

Answer **ALL** questions in this section.

Short Questions:

1. (a) Give **TWO** reasons why food is used in celebrating or remembering an occasion. (2 marks)
- (b) Give **TWO** examples of food and describe how they are related to particular celebrations. (2 marks)
- (c) People of certain regions do not eat certain food on specific days. Give **TWO** examples. (2 marks)

Total: 6 marks

2. Describe **TWO** customs associated with eating, that may be seen as strange or offensive to others from different cultures. Indicate the cultures involved. (4 marks)

Total: 4 marks

Data analysis questions:

3. (a) Australia has no distinct cuisine. Explain why you think this may be the case. (2 marks)
- (b) Modern Australian cuisine is known as “fusion”. Explain why this term is used. (1 mark)

Total: 3 marks

4. With reference to the differences of the dietary patterns of Asian and Western cultures, explain why cardiovascular diseases is more common for people adopting dietary pattern of Western cultures. (4 marks)

Total: 4 marks

5. (a) Customs have an impact on the food we eat or the way we eat. Other than types of food, list **TWO** other religious customs that are associated with food. (2 marks)
- (b) Use the information in the Religion and Food Table (below), to make recommendations regarding a choice of each course for a Jew & a Hindu. (6 marks)

Type of Food	Jewish	Hindu
Vegetables, fruits & nuts	Yes	Yes
Alcohol	Yes	No
Lamb	Kosher	Some
Beef	Kosher	No
Pork	No	Some
Animal fats	No	Some
Fish	With scales, fins & backbone	With fins & scales
Shellfish	No	Some
Chicken	Kosher	Some
Eggs	Yes	Some
Milk Products	No rennet (used for curdling milk for cheese) No milk products with meat	No rennet (used for curdling milk for cheese)

<p><u>Western Banquet Menu</u></p> <p><i>Choice of Appetizers:</i> Shrimp Cocktail Smoked Salmon Napoleon Lobster Bisque New England Clam Chowder Mixed Greens with House Vinaigrette Caesar Salads</p> <p><i>Choice of Entrées:</i> Filet Mignon with Mushrooms & Onions Linguini with Red or White Clam Sauce Grilled Marinated Chicken Breast Stuffed Shrimp with Crabmeat</p> <p><i>Choice of Dessert:</i> Tiramisu Cheesecake</p>
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Total: 8 marks

Essay Question:

6. Compare Szechuan and Cantonese cuisines. Discuss how and why each cuisine had developed differently. (15 marks)

Total: 15 marks

SECTION B FOOD SCIENCE AND TECHNOLOGY EXTENDED STUDY

Answer **ALL** questions in this section.

Short questions:

1. Wheat flour is the major ingredient used in the production of bakery product.
- (a) Describe the chemical reactions occurred for the development of crust color. (1 mark)
- (b) Describe the biological reactions that take place during bread baking. (4 marks)

Total: 5 marks

2. A stable food system is a dispersion containing two phases of a continuous phase and a dispersed phase.
- (a) What are the colloidal dispersions? (2 marks)
- (b) Describe the aggregation of food colloids. (3 marks)

Total: 5 marks

Data analysis questions:

3. Nutrient composition of various types of food items as listed in the following table:

Food items (100g)	Protein (g)	Carbohydrate (g)	Fat (g)	Cholesterol (mg)	Energy (kcal)
Fresh tuna fish	30	0	1.18	33	131
Hard boiled egg (~50g/each)	12	< 2	10	426	148
Cottage Cheese (Low fat)	13.8	3.5	1.8	8.3	90

- (a) Which one of the food items is more perishable than the others? Give **TWO** reasons to support your answer. (3 marks)
- (b) It is not recommended for adult to take more than one egg per day. Why? (2 marks)
- (c) What is the name of dairy carbohydrate in cottage cheese? (1 marks)

Total: 6 marks

4. The ingredients and processing steps for manufacture of frozen spaghetti are given as follows:

Ingredients used: 30 kg Spaghetti
 3 kg water
 90g salt
 6 kg frozen beef
 6 kg tomato sauce

Processing steps:

- in-process steps for food preparation
- heat processing for minced beef and spaghetti
- packaged in a aluminum foil container as finished product
- receiving of raw materials and ingredients
- storage the product in freezer
- distribution to sales outlets

- (a) Explain how the 'Hurdle technology' is used in the food product. (3 marks)
- (b) Develop a flow diagram in order for manufacture of frozen cooked spaghetti. (3 marks)
- (c) Identify the critical control points (CCPs) for the whole process. (3 marks)

Total: 9 marks

Essay Question:

5. Properties of lipids do not only contribute to its uses in food product but also create problem in storage and transport. Discuss. (15 marks)

Total: 15 marks

SECTION C FOOD PRODUCTION DEVELOPMENT

Answer ALL questions in this section.

Short questions:

1. Product analysis is an important part of food product development.
 - (a) Why is product analysis useful and important in development new food products? (2 marks)
 - (b) List **THREE** of the criteria that may be used when assessing a food product. (3 marks)

Total: 5 marks

2. Modern technology has affected many aspects of food technology, including packaging.
 - (a) What does modified atmosphere packaging (MAP) stand for? How does it help to extend the shelf life of food? (3 marks)
 - (a) Give **TWO** examples of food products where MAP is used. (2 marks)

Total: 5 marks

Data analysis question:

3. The ingredients listed below have been developed for a lasagna produced as a home meal replacement.

Ingredients:	
● Minced beef	● Plain flour
● Onion	● Butter
● Green pepper	● Full fat milk
● Mushroom	● Cheddar cheese
● Beef stock	● Lasagna sheets
● Herbs	● Tomatoes

- (a) Suggest **TWO** sensory descriptors for each of the following areas that could be used on a star diagram for rating this product when it is finished. (8 marks)

Appearance	Taste	Texture	Smell

- (b) Some of these lasagna ingredients are unsuitable for someone on a low fat diet. Using the table below, name **TWO** unsuitable ingredients and give an alternative in each case. (4 marks)

Unsuitable ingredients	Alternative

- (c) Why might Coeliacs find this product unsuitable? What kind of diet do Coeliacs need to follow? (3 marks)

Total: 15 marks

Essay Question:

4. Discuss the advantages and disadvantages of genetically modified (GM) ingredients / food on the environment and consumers. (15 marks)

Total: 15 marks

END OF PAPER