

2022 HSC Food Technology Marking Guidelines

Section I

Multiple-choice Answer Key

Question	Answer
1	B
2	A
3	B
4	A
5	D
6	C
7	C
8	B
9	C
10	A
11	C
12	B
13	B
14	C
15	D
16	D
17	D
18	B
19	C
20	A

Section II

Question 21 (a)

Criteria	Marks
<ul style="list-style-type: none"> Identifies ONE function of packaging 	1

Sample answer:

- Protection.

Answers could include:

- Preservation
- Promotion
- Containment
- Convenience.

Question 21 (b)

Criteria	Marks
<ul style="list-style-type: none"> Recommends a packaging material suitable for the refrigerated cookie dough 	3
<ul style="list-style-type: none"> Recommends packaging for the refrigerated cookie dough 	2
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

A resealable plastic tub would be suitable for cookie dough as it provides durability for storage.

Answers could include:

- Plastic film to provide protection
- Resealable plastic bag to be stored in the refrigerator.

Question 22 (a)

Criteria	Marks
• Outlines the benefits this technology has for the environment	3
• Provides general information on a benefit of this technology for the environment	2
• Provides some relevant information	1

Sample answer:

Using an online platform eliminates the need for produce to be distributed to a physical marketplace. This reduces carbon emissions from transportation and excess packaging which may be needed to contain and protect the produce.

Question 22 (b)

Criteria	Marks
• Demonstrates a clear understanding of one piece of legislation and its impact on the operation	3
• Demonstrates an understanding of one piece of legislation and its impact on the operation	2
• Provides some relevant information	1

Sample answer:

This organisation must comply with a large range of legislation in order to be safe for consumers. An example of a piece of legislation is the *Food Act 2003* (NSW). This piece of legislation ensures that any food produced is fit for human consumption and meets all standards set out in the Food Standards code. Thus the impact on this organisation is that if this legislation is abided by the food will be safe for consumers.

Question 22 (c)

Criteria	Marks
<ul style="list-style-type: none"> Provides a detailed explanation of the storage and distribution requirements for the rescued surplus food Provides appropriate examples 	6
<ul style="list-style-type: none"> Provides an explanation of the storage and/or distribution considerations for the rescued surplus food Provides an example(s) 	4–5
<ul style="list-style-type: none"> Describes the storage and/or distribution requirements for the rescued surplus food 	2–3
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

The organisation will need to consider the storage requirements for the rescued surplus food and ensure the food remains safe for consumption throughout storage and distribution. For example, if a perishable food item such as meat is approaching its shelf life, it may need to be frozen to ensure it is safe for consumption by the time it is ready to be used by a purchaser such as a restaurant. Secondary and tertiary packaging are required in order to protect products such as eggs and must be purchased prior to commencing distribution. To prevent contamination and loss of quality, distribution channels must be suitably refrigerated, and a suitable distribution channel selected. For example, direct to consumer would be ideal for this organisation.

Question 23

Criteria	Marks
<ul style="list-style-type: none"> Clearly justifies the role of TWO dietary supplements in contributing to a balanced diet for pregnant and lactating women 	6
<ul style="list-style-type: none"> Provides some justification about the role of TWO dietary supplements in contributing to a balanced diet for pregnant and lactating women 	4–5
<ul style="list-style-type: none"> Provides information about the role of a dietary supplement/s in contributing to a balanced diet for pregnant and lactating women 	2–3
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

Pregnant women should take a folic acid supplement before becoming pregnant and throughout pregnancy. This supplement is proven to prevent neural tube defects and spina bifida in babies during pregnancy.

Lactating women could consider a vitamin D supplement. This supplement would ensure adequate supply for the lactating woman, and ensure her breast milk is nutritionally sound for her baby.

Question 24 (a)

Criteria	Marks
<ul style="list-style-type: none"> • Demonstrates a clear understanding of the reason(s) for food product development 	3
<ul style="list-style-type: none"> • Demonstrates some understanding of the reason(s) for food product development 	2
<ul style="list-style-type: none"> • Provides some relevant information 	1

Sample answer:

The organisation could have developed these food products in response to consumer concerns about the environment. By repurposing unsold wilted herbs into new products such as a pesto, the organisation is avoiding contributing these to landfill. This would appeal to consumers who are concerned about excess landfill and the methane food products produce during decomposition.

Answers could include:

- Company profitability
- Consumer demands for convenience.

Question 24 (b)

Criteria	Marks
<ul style="list-style-type: none"> • Provides thorough analysis of the impact of the micro-environment on the development of a successful food product • Provides a relevant example 	5
<ul style="list-style-type: none"> • Provides an analysis of the impact of the micro-environment on the development of a successful food product • Provides an example 	4
<ul style="list-style-type: none"> • Provides some information of the impact of the micro-environment on the development of a food product • Provides an example 	3
<ul style="list-style-type: none"> • Provides information about the impact of the micro-environment or the development of food products 	2
<ul style="list-style-type: none"> • Provides some relevant information 	1

Sample answer:

The micro-environment impacts food product development in a range of ways. Micro factors include – company image, production facilities, financial position and personnel expertise.

For example, some companies have recently installed specialised dust extractors in their facilities to provide their workers with better air quality, thus complying with WHS requirements for air filtering. The success of the food products produced will improve their company image, leading to an improved financial position.

Question 25 (a)

Criteria	Marks
<ul style="list-style-type: none"> • Outlines ONE dietary related disorder that may develop if this diet continues 	2
<ul style="list-style-type: none"> • Provides some relevant information 	1

Sample answer:

Type 2 diabetes is dietary related disorder that may develop due to a continued diet consisting of sugar and food with sugar. There is a direct correlation between obesity and the development of this dietary disorder.

Question 25 (b)

Criteria	Marks
<ul style="list-style-type: none"> • Identifies and proposes the lifestyle practices that may improve an individual's nutritional status for ONE dietary disorder 	4
<ul style="list-style-type: none"> • Identifies a dietary disorder and proposes a lifestyle practice for this disorder 	3
<ul style="list-style-type: none"> • Provides some information about lifestyle practice(s) that may improve an individual's nutritional status 	2
<ul style="list-style-type: none"> • Provides some relevant information 	1

Sample answer:

An individual with type 2 diabetes could benefit from changes to lifestyle practices to improve their nutritional status.

Exercise can improve blood sugar and may address type 2 diabetes. It can also boost HDL cholesterol, therefore assisting in the management of health.

Social practices including BBQs, dining in cafes and attending parties often involve food and beverages that may have a negative impact on health for an individual with type 2 diabetes.

Choosing a low glycaemic diet when in these settings would be recommended.

Question 25 (c)

Criteria	Marks
<ul style="list-style-type: none"> Clearly explains how a food company can practice the responsible advertising of health foods 	6
<ul style="list-style-type: none"> Provides some explanation about how a food company can practice the responsible advertising of health foods 	4–5
<ul style="list-style-type: none"> Provides an outline about responsible advertising of health foods 	2–3
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

Food companies must ensure they practice in a responsible manner when advertising food products. This is particularly important when advertising health foods.

Claims made on advertising material for the product must be accurate. Although companies may choose to focus on the beneficial properties of the product and avoid making claims or mentioning the more undesirable properties, they ultimately have a responsibility to act in an ethical way to inform consumers.

The use of words such as ‘natural’, ‘healthy’ and ‘lite’ are a way for food companies to get around the legal requirements of nutritional claims. In this instance, it is important for individuals to be informed and able to interpret information for their own benefit.

Question 26 (a)

Criteria	Marks
<ul style="list-style-type: none"> Provides a detailed explanation of how a principle of preservation ensures food safety in dairy products Provides appropriate examples 	4
<ul style="list-style-type: none"> Provides an explanation of how a principle of preservation ensures food safety in dairy products Provides appropriate example(s) 	3
<ul style="list-style-type: none"> Outlines a principle of preservation suitable for dairy product/s 	2
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

When preserving dairy products, it is important to ensure the underlying principle of preservation is correctly used to result in a food product that is safe for consumption. By controlling the temperature of food, you are able to destroy microorganisms or hinder their growth. For example, when perishable food items such as milk are chilled or frozen, the water content becomes unavailable for microorganisms to grow and multiply. This ensures the food does not deteriorate and is kept safe until it is ready for consumption which in turn prevents foodborne illness.

Answers could include:

- Restricting moisture such as in powdered milk
- Exclusion of air such as in UHT products
- Control of pH levels such as in yoghurt.

Question 26 (b)

Criteria	Marks
<ul style="list-style-type: none"> Provides a detailed discussion of the suitability of ONE preservation process that extends the shelf life of a meat product Provides accurate and relevant examples 	4
<ul style="list-style-type: none"> Discusses the suitability of ONE preservation process that extends the shelf life of a meat product Provides relevant examples 	3
<ul style="list-style-type: none"> Provides some information about a preservation process used to extend the shelf life of a meat product 	2
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

A preservation process that extends the shelf life of meat is drying. Drying is a suitable preservation process because it may extend the shelf life of chilled fresh meat from 2–3 days to 12 months in products such as beef jerky. Furthermore, drying is suitable because of its effectiveness in removing moisture from within the meat product, inhibiting the growth of bacteria. Another reason why drying is a suitable preservation process is because it makes the meat product more shelf stable and it does not require refrigeration.

Section III

Question 27 (a)

Criteria	Marks
<ul style="list-style-type: none"> Identifies TWO suitable career opportunities that exist in the concept store 	2
<ul style="list-style-type: none"> Identifies ONE career opportunity in the food retail sector 	1

Sample answer:

Two suitable career opportunities that exist in the concept store are kitchen hand and sales assistant.

Answers could include:

- Product demonstrator
- Food handling staff
- Chef.

Question 27 (b)

Criteria	Marks
<ul style="list-style-type: none"> Provides a detailed explanation of the quality management considerations and the safety of the self-serve food options 	5
<ul style="list-style-type: none"> Provides an explanation of the quality management considerations for the self-serve food options 	4
<ul style="list-style-type: none"> Provides information about the quality management considerations for the self-serve food options 	2–3
<ul style="list-style-type: none"> Provides relevant information 	1

Sample answer:

A quality management system would ensure a safe product for the self-serve food options. A food safety program in the form of a HACCP plan would allow for clear procedures to identify potential food hazards and prevent them from occurring. Food sampling, testing and monitoring from trained staff would be required to maintain the safety of the product.

Answers could include:

- Good Manufacturing Practice (GMP)
- Use of PPE
- Temperature monitoring
- Use of tools for serving eg tongs and spoons.

Question 27 (c)

Criteria	Marks
<ul style="list-style-type: none"> Provides a thorough evaluation of promotional strategies for the food product Uses explicit technical language in a concise and focused format Includes relevant examples 	8
<ul style="list-style-type: none"> Provides an evaluation of promotional strategies for the food product Mostly uses explicit technical language Includes relevant examples 	6–7
<ul style="list-style-type: none"> Attempts to evaluate the use of promotional strategies/strategy for the food product Provides a relevant example 	4–5
<ul style="list-style-type: none"> Provides some information about the use of promotional strategies/strategy for the food product 	2–3
<ul style="list-style-type: none"> Provides some relevant information 	1

Answers could include:

Food promotion aims to create attention, boost sales and increase brand loyalty. Food promotion includes a range of examples such as marketing communication that raises customer awareness of a food retailer, product or brand.

There are many valuable food product promotional strategies that can combine advertising, personal selling, sales promotion, public relations and direct marketing. Examples can include: free samples, showcasing product through online social media, cooking demonstrations, contests, discount coupons or loyalty cards/programs.

The food retailer could employ public relations as a promotional strategy. For example, a local social media influence could promote the food retailer to their audience. This strategy would be highly suitable as it targets consumers in the local area, therefore achieving the purpose of a promotional strategy.

Personal selling is another strategy that could be used to sell locally sourced products. Cooking demonstrations and handing out product samples are valuable ways to provide consumers with a taste of the product before they buy, which in turn may generate sales.

Section IV

Question 28

Criteria	Marks
<ul style="list-style-type: none"> Provides a thorough assessment of the roles of government organisations, food manufacturers and community groups in improving the diet and health of Australians Provides a logical and cohesive response Integrates relevant examples and uses correct terminology 	13–15
<ul style="list-style-type: none"> Provides an assessment of the roles of government organisations, food manufacturers and community groups in improving the diet and health of Australians Provides a logical and cohesive response, examples and mostly correct terminology 	10–12
<ul style="list-style-type: none"> Attempts some assessment of the roles of government organisations and/or food manufacturers and/or community groups 	7–9
<ul style="list-style-type: none"> Outlines some information about government organisations and/or food manufacturers and/or community groups 	4–6
<ul style="list-style-type: none"> Provides some relevant information 	1–3

Answers could include:

Government organisations, food manufacturers and community groups have not achieved substantial success in ensuring that Australians have good diets and health. Currently 67% of Australians (2018) are overweight or obese. The incidence of type 2 diabetes over the past decade has risen dramatically as has the number of individuals suffering from cardiovascular diseases. All of these statistics are preventable with correct, informed and managed assistance from government organisations, food manufacturers and community groups.

Education is key to improving Australia’s health. There has been progress as highlighted by the consolidated and comprehensive effort from Australian departments of education at federal and state levels in maintaining the mandatory curriculum in food knowledge and understanding, portioning, preparation methods and the link between diet and health for students in Years 7 to 10. However, this is not currently the status in NSW secondary schools.

Federal government incentive schemes like the Active Kids program have been developed where parents are provided with a financial incentive to see a community nutritionist/dietitian, attend nutrition cooking classes, or be provided with accredited online help to ensure that they are being provided with educated advice on how to provide a healthy diet for their children. This would promote health, minimise health risks and help prevent diet-related disease from occurring in their children’s lives. Prevention is better than cure and less expensive to the health care system. The economic burden of caring for Australians who develop diet-related diseases is currently over 70 billion dollars annually.

Food manufacturing has a reputation for providing food that is convenient, laden with fat(s), salt and sugar that all contribute to the increase in the economic cost to repair the damage done to individuals who through lack of education, lack of time and skills and lack of financial means rely on food that has been produced to have an appealing taste but lacks nutritional density. The food industry at all levels from food manufacturing to food retail, service and catering need to focus more on promoting health rather than profits. There has been a push

for more food and health experts being made available to all food manufacturers and meal providers. They encourage an approach that focuses on fresh and minimal cooking, reinvigorating people's taste buds to be more capable of eating and enjoying food that is less enhanced with fat(s), salt and sugar, thus contributing to the improved diet and health of Australians.

Community groups that support Australian's health are often led by trends that are unsustainable and geared for profit. Community groups need to have a 'watch dog' imposed so that their practices meet minimum health standards and are sustainable for people's longevity. Trends such as extreme kilojoule reduction diets or diets that cut out whole food groups would be discouraged as they can often have a negative cycle of weight loss followed by weight gain of more than the individual was trying to achieve in the first place. Hence if people are not tempted to drastically change their diets by following trends they can have better long-term health outcomes.

2022 HSC Food Technology Mapping Grid

Section I

Question	Marks	Content	Syllabus outcomes
1	1	NUT – Diet and health in Australia – the role of supplements in the diet	H2.1
2	1	FM – Preservation processes	H4.2
3	1	FPD – Steps in food product development	H1.3
4	1	AFI – Career opportunities	H1.2
5	1	CNI – Dietary disorders	H3.2
6	1	FM – Food additives	H1.1
7	1	FPD – Drivers of food product development	H1.3
8	1	AFI – Consumer influences	H1.4
9	1	CNI – Nutritionally modified foods	H5.1
10	1	FM – Current developments in packaging	H1.1
11	1	FPD – Reasons for and types of food product development	H1.3
12	1	AFI – Sectors of the Australian food industry	H1.2
13	1	CNI – Health and the role of diet in the development of conditions	H3.2
14	1	FM – Preservation processes	H4.2
15	1	FPD – SWOT analysis	H1.3
16	1	AFI – Levels of operation	H1.2
17	1	CNI – Nutritional considerations for specific groups	H5.1
18	1	FM – Causes of food spoilage	H4.2
19	1	FPD – Macro-environment impacting food product development	H1.3
20	1	AFI – Research and development	H1.4

Section II

Question	Marks	Content	Syllabus outcomes
21 (a)	1	FM – Functions of packaging	H1.1
21 (b)	3	FM – Packaging materials	H1.1
22 (a)	3	AFI – Emerging technologies	H1.4
22 (b)	3	AFI – Emerging technologies	H1.4
22 (c)	6	FM – Storage and distribution	H1.1
23	6	CNI – Role of supplements	H1.3
24 (a)	3	FPD – Drivers of food product development	H1.3
24 (b)	5	FPD – Internal factors/micro-environment	H1.3
25 (a)	2	NUT – Health and the role of diet	H2.1
25 (b)	4	NUT – Lifestyle and the effect of cultural and social practices	H2.1
25 (c)	6	NUT – Media and ethical issues	H2.1
26 (a)	4	FM – Principles of food preservation	H4.2
26 (b)	4	FM – Preservation processes	H4.2

Section III

Question	Marks	Content	Syllabus outcomes
27 (a)	2	AFI – Career opportunities	H1.4
27 (b)	5	FM – Quality management considerations	H1.1
27 (c)	8	FPD – Marketing	H1.3

Section IV

Question	Marks	Content	Syllabus outcomes
28	15	AFI/FM/NUT	H1.2, H2.1, H5.1