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# 2023 HSC Food Technology Marking Guidelines

## Section I

### Multiple-choice Answer Key

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

## Section II

### Question 21 (a)

Criteria	Marks
• Identifies TWO foods that contain probiotics	2
• Identifies ONE food that contains probiotics	1

**Sample answer:**

Foods that contain probiotics include yoghurt and kimchi.

**Answers could include:**

- Sauerkraut
- Kombucha
- Kefir
- Pickles
- Tempeh
- Miso.

### Question 21 (b)

Criteria	Marks
• Provides a description of the role that probiotics play in the diet	2
• Provides some relevant information	1

**Sample answer:**

Probiotics contribute to a well-rounded dietary regimen by enhancing gut health. These beneficial microorganisms aid in digestion, nutrient absorption, and the maintenance of a healthy gut microbiome. Incorporating probiotic-rich foods like yoghurt and fermented vegetables can support overall well-being.

### Question 22 (a)

Criteria	Marks
• Provides an outline of ONE food safety hazard associated with selling uncovered raw meat in an open display cabinet	2
• Provides some relevant information	1

**Sample answer:**

Selling raw meat in a chilled open display cabinet poses a safety hazard because of inconsistent temperature control. The open cabinet environment will be exposed to the room temperature where microorganisms can thrive and adversely affect the uncovered meat.

### Question 22 (b)

Criteria	Marks
• Provides a thorough description of the process for maintaining the quality of seafood products	4
• Provides a sound description of the process for maintaining the quality of seafood products	3
• Provides some description of the process for maintaining the quality of seafood	2
• Provides some relevant information	1

**Sample answer:**

Chilling is a preservation process which involves storing products in a temperature-controlled environment such as a fridge at 1–4 degrees Celsius. This would be suitable for seafood products as they are highly perishable and therefore putting them in a fridge or freezer (at –18 degrees Celsius) would assist in maintaining their quality.

**Answers can include:**

- Freezing
- Dehydrating
- Canning
- Vacuum packaging
- Temperature controlled transportation.

### Question 23 (a)

Criteria	Marks
• Provides a thorough explanation of why a SWOT analysis may be used when developing a new food product	4
• Provides a sound explanation why a SWOT analysis may be used when developing a new food product	3
• Provides some information on SWOT analysis	2
• Provides some relevant information	1

**Sample answer:**

A food manufacturer may use a SWOT analysis during the creation of a new food product to comprehensively assess its potential in the market. By identifying the product's strengths, weaknesses, opportunities, and threats, the manufacturer can make informed decisions about its formulation, production processes, and marketing strategies. The strategic tool aids in optimising product quality, addressing potential challenges, capitalising on emerging trends, and ultimately ensuring the product's success in a competitive food industry landscape.

### Question 23 (b)

Criteria	Marks
• Provides a thorough description of a suitable way to package chocolate-coated biscuits	4
• Provides a sound description of a suitable way to package chocolate-coated biscuits	3
• Demonstrates some understanding about how to package chocolate biscuits	2
• Provides some relevant information	1

**Sample answer:**

Packaging the biscuits in a primary packaging, preformed plastic tray to keep the biscuits separated. The biscuits will also need to then have a flexible plastic secondary packaging. This will protect the biscuits from humidity as this can be heat sealed and is impervious to air.

### Question 24 (a)

Criteria	Marks
• Provides a detailed description of TWO gender issues within ONE sector of the Australian food industry	5
• Provides a description of TWO gender issues within ONE sector the Australian food industry	4
• Demonstrates some understanding of gender issue(s) within the Australian food industry	2–3
• Provides some relevant information	1

**Sample answer:**

In the Food Service and Catering sector, gender inequality is a notable concern. Firstly, women are underrepresented in leadership roles, including head chefs and restaurant owners. This lack of representation perpetuates stereotypes and hinders career advancement for women in culinary professions. Secondly, there's a significant gender wage gap, with male chefs earning higher salaries than their female counterparts for similar roles and experience, which further exacerbates gender disparities within the sector.

### Question 24 (b)

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a detailed explanation of how waste is managed in the food processing and manufacturing sector</li> <li>Provides TWO relevant examples</li> </ul>	6
<ul style="list-style-type: none"> <li>Provides a sound explanation of how waste is managed in the food processing and manufacturing sector</li> <li>Provides TWO relevant examples</li> </ul>	5
<ul style="list-style-type: none"> <li>Provides some explanation of how waste is managed in the food processing and manufacturing sector</li> <li>Provides an example(s)</li> </ul>	4
<ul style="list-style-type: none"> <li>Demonstrates some understanding of a waste management strategy(ies)</li> </ul>	2–3
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

Waste management plays a crucial role in minimising environmental impact and efficiently utilising resources. One method employed is using leftover raw materials to be repurposed to create new food products. For instance, in the dairy industry, whey, a by-product of cheese production, is processed into valuable products like protein powder or ricotta cheese, reducing waste and maximising resource utilisation.

Another example of waste management is seen in the transformation of bananas, typically discarded and destined for landfills, into banana bread. This practice not only reduces the volume of waste but also adds value to what would otherwise be considered waste material.

**Answers could include:**

- Animal feed
- Line extensions
- Recycling water and materials.

### Question 25 (a)

Criteria	Marks
<ul style="list-style-type: none"> <li>Outlines the characteristics of ONE group at risk of malnutrition</li> </ul>	3
<ul style="list-style-type: none"> <li>Demonstrates an understanding of ONE group and/or characteristics of malnutrition</li> </ul>	2
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

Teenage girls are at risk of malnutrition as they are going through a period of rapid growth and development. They are growing in height, increasing muscle mass and blood volume and they are experiencing sexual maturation and starting to menstruate.

**Question 25 (b)**

Criteria	Marks
• Provides a sound description of a diet-related condition experienced by a specific group	3
• Provides some description of a diet-related condition experienced by a specific group	2
• Provides some relevant information	1

**Sample answer:**

Elderly women are more likely to develop osteoporosis in particular if they have had multiple pregnancies and have not had adequate dietary calcium at this time. This is characterised by increased chance of bone breakage and stress fractures, which are difficult to heal, and can lead to a stooped posture.

**Question 25 (c)**

Criteria	Marks
• Provides a thorough explanation of a strategy that promotes optimum health for nutritionally vulnerable individuals	4
• Provides a sound explanation of a strategy that promotes optimum health for nutritionally vulnerable individuals	3
• Demonstrates some understanding of a strategy that promotes health	2
• Provides some relevant information	1

**Sample answer:**

One effective strategy involves implementing educational programs within schools. These programs should emphasise the promotion of nutritious food choices, including fruits, vegetables, wholegrain cereals, lean meats, and low-fat, low-sugar, and low-salt options. Utilising a combination of print and digital materials in schools can effectively raise awareness about healthy eating habits and encourage proactive measures to combat conditions like Type 2 Diabetes.

**Question 26 (a)**

Criteria	Marks
<ul style="list-style-type: none"><li>Provides a detailed comparison of TWO price structures</li><li>Applies relevant examples</li></ul>	5
<ul style="list-style-type: none"><li>Provides a comparison of TWO price structures</li><li>Includes relevant example(s)</li></ul>	4
<ul style="list-style-type: none"><li>Provides a sound understanding of TWO price structures</li><li>May refer to an example</li></ul>	3
<ul style="list-style-type: none"><li>Demonstrates some understanding of price structure(s)</li></ul>	2
<ul style="list-style-type: none"><li>Provides some relevant information</li></ul>	1

**Sample answer:**

Penetration pricing involves setting the price of a product low when it first enters the market. Once it has a position in the market the price can be increased over time. Competitive pricing would, over time, match existing competitors. For example, an ice-cream company releases a new product at a lower price but eventually it will be similar to that of their competitors.

**Answers could include:**

- Bundle pricing
- Premium pricing
- Value pricing
- Price skimming.

**Question 26 (b)**

Criteria	Marks
• Provides a comprehensive explanation of THREE factors when determining a price for their product	6
• Provides a sound explanation of THREE factors when determining a price for their product	5
• Provides some explanation of at least TWO factors when determining a price for their product	3–4
• Demonstrates some understanding of factor(s) determining a price for their product	2
• Provides some relevant information	1

**Sample answer:**

The production costs and profitability is essential for companies to consider when setting a price for their product. The costs involved include raw materials, production and packaging and can affect the price. Companies establish a breakeven point to determine how many products need to be sold to cover costs and make a profit.

Pricing competitively in order to attract the right consumers and amount of sales is also important. For example, soft drink companies who price their drinks at the same price, are creating competition and targeting the same consumers.

Flexibility is also considered as products may need to be placed on sale or bundle packaged in order to drive up sales when the lifespan of the product is nearing the end.

**Answers could include:**

- Promotional activities
- Consumer demand
- Financial feasibility.

## Section III

### Question 27 (a)

Criteria	Marks
• Provides an outline of factors that influence the availability of fresh produce in food retail	3
• Demonstrates some understanding of the factor(s) that influence the availability of fresh produce in food retail	2
• Provides some relevant information	1

**Sample answer:**

Factors influencing fresh produce availability in food retail include seasonal fluctuations in crop production, supply chain logistics affecting transportation and storage, consumer demand for specific items, and the impact of climate change conditions on farming practices.

**Answers could include:**

- Inflation rates
- Global pandemic
- Wars
- Trade relations.

## Question 27 (b)

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a sound description of commercial practices that could be implemented by food companies in response to consumer demands</li> </ul>	4
<ul style="list-style-type: none"> <li>Provides a description of commercial practice(s) that could be implemented by food companies</li> </ul>	3
<ul style="list-style-type: none"> <li>Demonstrates some understanding of commercial practice(s) that could be used by food companies</li> </ul>	2
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

### **Sample answer:**

Food companies can respond to consumer demands by implementing various commercial practices. They can conduct market research to understand consumer preferences, leading to the development of new products or reformulating existing ones to meet health and dietary trends. Companies can also invest in sustainable sourcing and production methods to align with consumers' growing environmental concerns.

### **Answers could include:**

- Effective labelling and transparent communication can build trust and satisfy demand for product information
- Embracing e-commerce and direct-to-consumer channels can provide convenience and accessibility, meeting the evolving demands of tech-savvy consumers.

**Question 27 (c)**

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides a comprehensive explanation of preservation processes for extending the shelf life of one perishable food</li> <li>Uses explicit technical language in a concise and focused format</li> <li>Provides appropriate examples</li> </ul>	8
<ul style="list-style-type: none"> <li>Provides a sound explanation of preservation processes for extending the shelf life of one perishable food</li> <li>Mostly uses explicit technical language</li> <li>Provides appropriate examples</li> </ul>	6–7
<ul style="list-style-type: none"> <li>Provides some explanation of preservation process(es) of the shelf life of a perishable food</li> <li>Provides some examples</li> </ul>	4–5
<ul style="list-style-type: none"> <li>Demonstrates some understanding of how the shelf life of perishable foods can be extended</li> </ul>	2–3
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1

**Sample answer:**

Milk is a highly perishable food product due to the action of the enzymes and microorganisms. Milk can be preserved through UHT and dehydration. UHT milk is heated to 140 degrees for about two seconds and is then packaged in sterile packaging. This process uses temperature to kill all bacteria and to deactivate the enzymes.

Milk powder is made by removing the moisture from the fresh milk by putting it through a spray dryer/atomiser to evaporate the water content down to about 3%. This extends the shelf life of milk as the moisture in fresh milk contributes to the ideal environment required for microbial growth.

## Section IV

### Question 28

Criteria	Marks
<ul style="list-style-type: none"> <li>Provides an extensive discussion of the impact of government policies and legislation on the agri-food chain</li> <li>Provides a logical and cohesive response</li> <li>Integrates relevant examples and appropriate terminology</li> </ul>	13–15
<ul style="list-style-type: none"> <li>Provides a thorough discussion of the impact of government policies and legislation on the agri-food chain</li> <li>Provides a logical response</li> <li>Includes relevant examples and appropriate terminology</li> </ul>	10–12
<ul style="list-style-type: none"> <li>Provides a sound discussion of the impact of government policies and/or legislation on the agri-food chain</li> <li>Provides some structure</li> <li>Includes some examples and some appropriate terminology</li> </ul>	7–9
<ul style="list-style-type: none"> <li>Demonstrates some understanding of the impact of government policies and/or legislation on the agri-food chain</li> <li>May include an example and/or terminology</li> </ul>	4–6
<ul style="list-style-type: none"> <li>Provides some relevant information</li> </ul>	1–3

**Answers could include:**

The agri-food chain is a complex network encompassing agriculture, processing, distribution, and consumption. It plays a pivotal role in the food industry. Government actions, through policies and legislation, have the power to shape and regulate various aspects of this chain. Governmental decisions impact the production, safety, sustainability, and accessibility of food within the agri-food chain.

With reference to the agri-food chain – agriculture and fisheries sector, food processing and manufacturing sector, food retail sector and food service and catering sector.

Examples of policy:

- Food and Nutrition Policy
- Trade Policy
- HACCP

Examples of legislation:

- Food Standards Code
- Food Act 2003 (NSW)
- Food Regulation 2015 (NSW)
- FSANZ Act 1991
- Competition and Consumer Act 2010
- Workplace Health Safety Act 2011.

# 2023 HSC Food Technology Mapping Grid

## Section I

Question	Marks	Content	Syllabus outcomes
1	1	FM – Packaging	H4.2
2	1	NUT – Physical effects of malnutrition/diet disorders	H2.1
3	1	AFI – Level of operation	H1.2
4	1	NUT – Production and manufacture of nutritionally modified foods	H1.3
5	1	FM – Production and processing of food HACCP	H1.1
6	1	NUT – Diet and health in Australia, physical effects	H2.1
7	1	FPD – Macro-environment impact on food production development	H1.3
8	1	FM – Control procedures in food production systems	H1.1
9	1	AFI – Role of advisory groups with policy and legislation	H1.2
10	1	FM – Functions of food packaging	H1.3
11	1	AFI – Government policies and legislation	H3.1
12	1	NUT – Role of active non-nutrients in the diet	H2.1
13	1	FPD – Me too products	H1.3
14	1	NUT – Role of individuals, community groups, industry, government and private agencies	H2.1
15	1	FM – Role of good additives	H1.1
16	1	FPD – Market research	H1.3
17	1	AFI – Emerging technologies	H1.2
18	1	FM – Current developments in packaging	H4.2
19	1	NUT – Media and ethical issues related to advertising practices	H2.1
20	1	AFI – Policy and legislation	H1.2

**Section II**

<b>Question</b>	<b>Marks</b>	<b>Content</b>	<b>Syllabus outcomes</b>
21 (a)	2	Identify foods that are considered probiotics	H2.1
21 (b)	2	Describe the role probiotics play in the diet	H2.1
22 (a)	2	Outline potential contamination that could occur (HACCP)	H1.1
22 (b)	4	Production and processing of food – quality and quantity	H1.1
23 (a)	4	FPD – SWOT	H1.3
23 (b)	4	FM – Functions of packaging	H1.1
24 (a)	5	AFI – Gender issues	H1.2
24 (b)	6	AFI – Food waste	H1.4
25 (a)	3	NUT – Group – name a group	H3.2
25 (b)	3	NUT – Diet related condition	H3.2
25 (c)	4	NUT – Promoting optimum health	H2.1
26 (a)	5	FPD – Marketing plans – price structure	H1.3
26 (b)	6	FPD – Price structure	H1.3

**Section III**

<b>Question</b>	<b>Marks</b>	<b>Content</b>	<b>Syllabus outcomes</b>
27 (a)	3	AFI – Factors that affect the food industry	H1.2
27 (b)	4	FPD – Factors that impact on food product development	H1.3
27 (c)	8	FM – Preservation	H1.1

**Section IV**

<b>Question</b>	<b>Marks</b>	<b>Content</b>	<b>Syllabus outcomes</b>
28	15	AFI – Sectors of the Australian food industry and policy and legislation and agri-food chain	H1.2