
2024 HSC Food Technology Marking Guidelines

Section I

Multiple-choice Answer Key

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

Section II

Question 21 (a)

Criteria	Marks
• Identifies TWO career opportunities	2
• Identifies ONE career opportunity	1

Sample answer:

Name of organisation: A supermarket

Career opportunities include:

- sales assistant
- baker.

Question 21 (b)

Criteria	Marks
• Thoroughly describes the level of operation and mechanisation of the organisation and provides a relevant example	4
• Describes the level of operation and mechanisation of the organisation	3
• Outlines the level of operation and/or mechanisation of the organisation	2
• Provides some relevant information	1

Sample answer:

A supermarket is a large company that operates within the food retail sector of the Australian food industry. The level of mechanisation in supermarkets involves a large amount of automation with computerised systems decreasing the need for a lot of manual labour. For example, forklifts are used to transport goods within warehouses and stores.

Question 21 (c)

Criteria	Marks
• Thoroughly explains the impact the organisation has made on the economy	5
• Explains the impact the organisation has made on the economy	4
• Describes characteristics of the organisation and/or economy	3
• Outlines features of the organisation and/or the economy	2
• Provides some relevant information	1

Sample answer:

This supermarket has over 800 stores Australia wide making them one of the biggest employers of skilled and non-skilled workers. This provides both an increase in local employment rates as well as a steady income for those individuals. Local employment has a significant impact on the local economy as individuals receive an income that can be re-circulated into the local area, building up the economy.

Question 22 (a)

Criteria	Marks
• Describes the risks and benefits of an emerging technology in the food service and catering sector	4
• Describes risks and/or benefits of an emerging technology in the food service and catering sector OR • Describes a risk and a benefit of an emerging technology in the food service and catering sector	3
• Outlines a risk and/or a benefit of an emerging technology	2
• Provides some relevant information	1

Sample answer:

Home delivery apps are an emerging technology within the food service and catering sector. The benefit of home delivery apps is that they provide convenience for consumers, enabling them to order meals directly to their doorstep. This not only saves time in the kitchen, allowing families to spend more time together, but also caters to modern, busy lifestyles. On the other hand, the risk of home delivery could include the possibility of food arriving damaged, not to the desired temperature or an incorrect order. These issues can affect the overall customer experience.

Question 22 (b)

Criteria	Marks
• Explains how organic farming addresses the environmental concerns associated with food production	4
• Describes some aspects of how organic farming addresses environmental concerns associated with food production	3
• Outlines environmental concerns and/or organic farming in food production	2
• Provides some relevant information	1

Sample answer:

Organic farming reduces the harmful effects on the environment as organic food must be grown without the use of harmful pesticides, herbicides and chemicals. Traditional farming methods can damage waterways, soil and air quality with the overuse of chemicals. Organic farming can achieve similar yields using methods such as crop rotation and organic fertilisers, therefore reducing the concerns associated with the environment.

Question 23 (a)

Criteria	Marks
• Provides a reason why food colouring is used as a food additive	2
• Provides some relevant information	1

Sample answer:

Food colouring is used to enhance the overall colours and appearance of lollies.

Question 23 (b)

Criteria	Marks
• Identifies TWO characteristics of the equipment required	2
• Identifies a characteristic of equipment	1

Sample answer:

The characteristics of the equipment required are that it must be durable and reliable enough to be able to handle large batches in production.

Question 23 (c)

Criteria	Marks
<ul style="list-style-type: none"> Thoroughly describes how food is preserved using the fermentation process and provides a relevant example 	4
<ul style="list-style-type: none"> Describes how food is preserved using the fermentation process and provides a relevant example 	3
<ul style="list-style-type: none"> Outlines the fermentation process 	2
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

Fermentation is a preservation process where carbohydrates are converted into alcohol or acids through microorganisms, which extends the shelf-life of the product. A commonly known use of fermentation is the production of yoghurt. Yoghurt is created through fermentation by turning the lactose sugars in the milk into lactic acid and this extends its shelf life.

Question 23 (d)

Criteria	Marks
<ul style="list-style-type: none"> Explains why quality management is significant in ensuring the safety of frozen foods and provides a relevant example 	4
<ul style="list-style-type: none"> Describes the significance of quality management in ensuring the safety of frozen foods and provides a relevant example 	3
<ul style="list-style-type: none"> Outlines the significance of quality management in ensuring the safety of frozen foods 	2
<ul style="list-style-type: none"> Provides some relevant information 	1

Sample answer:

Quality management is vital in ensuring the safety of frozen foods. Without quality management, food safety is compromised. Systems that identify possible points of contamination in production set up preventative measures to control what transpires during these times. The best technique used to deal with hazards in food production is the HACCP system.

Question 24 (a)

Criteria	Marks
• Thoroughly compares TWO types of food product developments	4
• Compares TWO types of food product developments	3
• Describes ONE type of food product development OR • Outlines TWO types of food product development	2
• Provides some relevant information	1

Sample answer:

Line extensions involve modifications to an existing product, created for the same brand whereas a me-too product is a direct copy of another brand. Both are similar because they involve existing products and create competition for market share.

Question 24 (b)

Criteria	Marks
• Explains in detail the importance of prototyping	5
• Explains the importance of prototyping	4
• Describes aspects of prototyping	3
• Outlines aspects of prototyping	2
• Provides some relevant information	1

Sample answer:

Testing product prototypes is crucial as it enables the company to evaluate all areas of the product aligned with the desired outcomes. Technical testing, storage trials, package tests, sensory evaluation and consumer testing play vital roles in ensuring the prototype's acceptability and compliance with the Australian Standards Code. Testing prototypes ensures the food product meets consumer and market needs.

Question 25

Criteria	Marks
<ul style="list-style-type: none"> • Thoroughly discusses the role of supplements in the diet for an athlete • Provides appropriate examples 	6
<ul style="list-style-type: none"> • Discusses the role of supplements in the diet for an athlete • Provides an example(s) 	5
<ul style="list-style-type: none"> • Describes the role of supplement(s) in the diet for an athlete • Provides an example 	4
<ul style="list-style-type: none"> • Outlines the role of supplement(s) in the diet 	2–3
<ul style="list-style-type: none"> • Provides some relevant information 	1

Sample answer:

Athletes use protein supplements to build and repair muscle and make changes to their body composition. Electrolyte powders and drinks can replenish water soluble vitamins. However, supplementing is associated with an increased consumption of sugars and additives as well as being costly. There is debate as to whether supplementation is required when adequate nutrition is achieved through a balanced diet. Misuse of supplements without adequate health care advice could lead to adverse effects on the body such as toxicity.

Question 26

Criteria	Marks
<ul style="list-style-type: none"> • Thoroughly explains the health implications of the beverage on adolescents 	4
<ul style="list-style-type: none"> • Explains the health implications of the beverage on adolescents 	3
<ul style="list-style-type: none"> • Describes the health implications of the beverage 	2
<ul style="list-style-type: none"> • Provides some relevant information 	1

Sample answer:

Daily consumption of bubble tea could lead to tooth decay resulting in pain and the need for extensive dental treatments such as fillings. Overconsumption of sugar may contribute to high blood glucose levels, cause damage to eyes and kidneys and possibly lead to the development of type 2 diabetes.

Section III

Question 27 (a)

Criteria	Marks
• Identifies TWO drivers	2
• Identifies a driver	1

Sample answer:

Drivers that could prompt the development of this product can be consumer demands, health concerns such as allergies and intolerances.

Answers could include:

- Market concerns
- Technological development
- Dietary considerations.

Question 27 (b)

Criteria	Marks
• Thoroughly explains how the micro-environment could affect the company's success	5
• Explains how the micro-environment could affect the company's success	4
• Describes how the micro-environment could affect the company's success	3
• Outlines information on the micro-environment	2
• Provides some relevant information	1

Sample answer:

When a company has a strong financial position, they are able to invest money in different areas such as production facilities allowing for an advantage to create a better-quality product. On the other hand, if a company has a weak financial position this could affect the overall quality of the product due to insufficient production facilities.

Question 27 (c)

Criteria	Marks
• Provides a comprehensive explanation of the health benefits of the drink for an individual	8
• Provides an explanation of the health benefits of the drink for an individual	6–7
• Provides a description of the health benefits of the drink for an individual	4–5
• Provides an outline of the health benefit(s) of the drink for an individual	2–3
• Provides some relevant information	1

Sample answer:

Active non-nutrients are substances that are not essential for life, however, can be consumed to enhance body functioning and health. Active non-nutrients include antioxidants, phytochemicals, fibre and omega-3 fatty acids. There are a range of benefits to consuming the tropical fruit avocado drink. Individuals who suffer from lactose intolerance may benefit from the drink as they can benefit from the antioxidants present in the tropical fruit without having to consume milk. For example, vitamin E is an antioxidant found in mango which functions to control blood cholesterol levels by stopping low-density lipoproteins from breaking apart and entering the blood stream therefore reducing the build-up of plaque in the arteries.

Answers could include:

- Dietary fibre
- Phytochemicals
- Omega-3 fatty acids.

Section IV

Question 28

Criteria	Marks
<ul style="list-style-type: none"> • Demonstrates a comprehensive understanding of preservation processes and current developments of packaging in response to consumer demands • Provides a logical and cohesive response • Integrates relevant examples and appropriate terminology 	13–15
<ul style="list-style-type: none"> • Demonstrates a thorough understanding of preservation processes and current developments of packaging in response to consumer demand • Provides a logical response • Includes relevant examples and appropriate terminology 	10–12
<ul style="list-style-type: none"> • Demonstrates a sound understanding of preservation process(es) and current development(s) in packaging in response to consumer demand • Provides some structure • Includes some relevant examples and some appropriate terminology 	7–9
<ul style="list-style-type: none"> • Demonstrates a basic understanding of preservation process(es) and/or current development(s) of packaging • May include an example and/or terminology 	4–6
<ul style="list-style-type: none"> • Provides some relevant information 	1–3

Answers could include:

Current developments in packaging

- Edible packaging
- Sous vide
- MAP packaging
- Active packaging
- Smart packaging – QR code
- Colour changing packaging
- Vacuum packaging
- Biodegradable packaging.

Preservation processes

- Freezing
- Fermentation
- Canning
- Dehydration
- Chilling
- Pasteurisation.

Consumer demand

- Convenience
- Cost
- Health
- Dietary considerations
- Environmental considerations.

2024 HSC Food Technology Mapping Grid

Section I

Question	Marks	Content	Syllabus outcomes
1	1	AFI – Sectors of the Australian food industry	H1.2
2	1	NUT – Diet related	H2.1
3	1	FPD – Types of food product development	H1.3
4	1	FPD – Internal factors/micro-environment	H1.3
5	1	AFI – Level of operations	H3.1
6	1	AFI – Consumer demand	H1.4
7	1	FPD – Testing product prototype	H1.3
8	1	FPD – Drivers of the development of food products	H1.3
9	1	NUT – Functional foods	H2.1
10	1	FM – Food additives	H4.2
11	1	FM – Food deterioration and spoilage	H1.1
12	1	FPD – External factors/macro-environment	H1.3
13	1	AFI – Organic farming	H1.4
14	1	NUT – Ethical issues	H2.1
15	1	FM – Testing raw materials	H1.1
16	1	NUT – Supplements	H2.1
17	1	FM – Processing techniques	H1.1
18	1	NUT – Active non-nutrients	H3.2
19	1	AFI – Research and development	H3.1
20	1	FM – Preservation process	H4.2

Section II

Question	Marks	Content	Syllabus outcomes
21 (a)	2	AFI – Career opportunities	H1.2
21 (b)	4	AFI – Level of operation	H1.2, H3.1
21 (c)	5	AFI – Impacts on economy	H1.4, H3.1
22 (a)	4	AFI – Emerging technologies	H1.4
22 (b)	4	AFI – Emerging technologies	H1.4
23 (a)	2	FM – Food additives	H4.2
23 (b)	2	FM – Characteristics of equipment	H1.1
23 (c)	4	FM – Preservation processes	H4.2
23 (d)	4	FM – Quality management	H1.1
24 (a)	4	FPD – Types of food product development	H1.3
24 (b)	5	FPD – Steps in food product development	H1.3
25	6	NUT – Supplements	H2.1, H5.1
26	4	NUT – Diet related disorders	H2.1

Section III

Question	Marks	Content	Syllabus outcomes
27 (a)	2	FPD – Drivers of the development of food products	H1.3
27 (b)	5	FPD – Internal factors	H1.1
27 (c)	8	NUT – Nutritionally modified foods	H2.1, H5.1

Section IV

Question	Marks	Content	Syllabus outcomes
28	15	FM – Preservation process AFI – Consumer influences	H1.1, H1.2, H1.4