VICTORIAN CURRICULUM AND ASSESSMENT AUTHORITY

Victorian Certificate of Education 2022

SUPERVISOR TO ATTACH PROCESSING LABEL HERE

STUDENT NUMBER | | | | | | | | | Letter |

FOOD STUDIES

Written examination

Thursday 10 November 2022

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

Section	*Number of questions*	*Number of questions to be answered*	*Number of marks*
A	15	15	15
B	12	12	85
			Total 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 correction fluid/tape.
- No calculator is allowed in this examination.

Materials supplied
- Question and answer book of 22 pages
- Answer sheet for multiple-choice questions

Instructions
- Write your **student number** in the space provided above on this page.
- Check that your **name** and **student number** as printed on your answer sheet for multiple-choice questions are correct, **and** sign your name in the space provided to verify this.
- All written responses must be in English.

At the end of the examination
- Place the answer sheet for multiple-choice questions inside the front cover of this book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.

SECTION A – Multiple-choice questions

Instructions for Section A

Answer **all** questions in pencil on the answer sheet provided for multiple-choice questions.
Choose the response that is **correct** or that **best answers** the question.
A correct answer scores 1; an incorrect answer scores 0.
Marks will **not** be deducted for incorrect answers.
No marks will be given if more than one answer is completed for any question.

Question 1

Manufacturers must label the packaging of food products with accurate weight information.
The purpose of this on packaging is to

A. enable the consumer to check the ingredient list against the nutrition information panel.
B. inform the consumer of the quantity of each ingredient used in the product.
C. inform the consumer about health and safety.
D. inform the consumer of the total amount of product.

Question 2

Which one of the following is the most effective way to use a nutrition information panel to compare two similar food products?

A. Compare the 'average quantity per 100 g' information.
B. Compare the 'average quantity per serving' information.
C. Compare the ingredient list found on the food packaging.
D. Compare the 'average quantity of energy in kilojoules' information.

Question 3

Which one of the following is an example of a high-level health claim that can be made on a food label?

A. 'Milk is a good source of calcium'
B. 'Supports immune and digestive health'
C. 'Phytosterols may reduce blood cholesterol'
D. 'Contains calcium for healthy bones and teeth'

Question 4

What is the difference between a food allergy and a food intolerance?

A. A food allergy is caused by only one food; a food intolerance is caused by a range of foods.
B. A food allergy is an immune response; a food intolerance is a chemical reaction.
C. A food allergy produces several symptoms; a food intolerance produces no symptoms.
D. A food allergy is not life threatening; a food intolerance is life threatening.

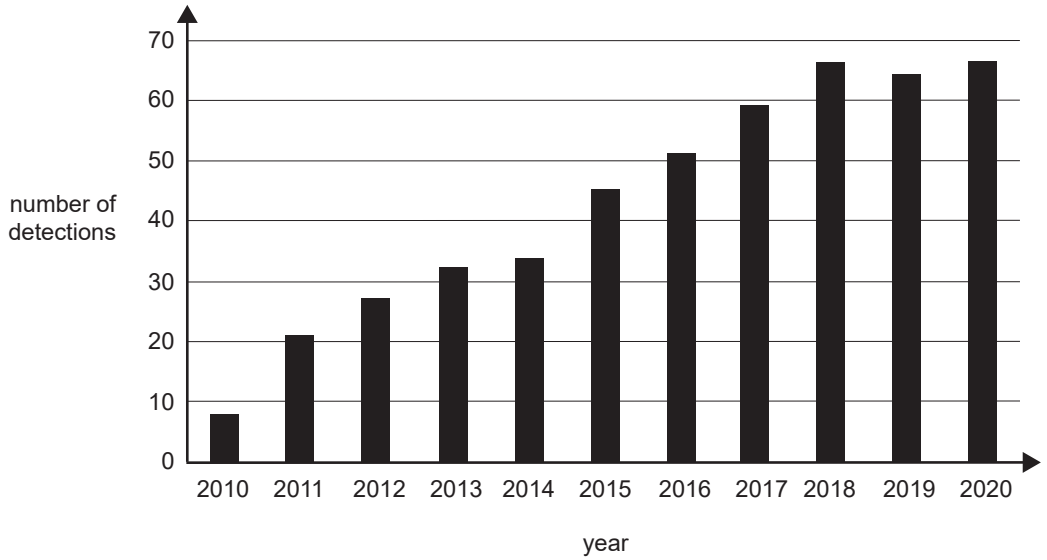
Question 5

Which one of the following is the best strategy to adequately feed a rising world population?

A. Use intensive farming methods only.
B. Ban the import and export of food.
C. Only purchase foods grown in your own country.
D. Use innovative and improved technologies in farming.

Question 6

Detection of biosecurity materials (plant, animal and environment), 2010–2020



Source: adapted from 'Australia's Biosecurity Future: Unlocking the next decade of resilience', Commonwealth Scientific and Industrial Research Organisation (CSIRO), 2022, <www.csiro.au>

According to the data in the graph above, from 2010 to 2020 the detection of biosecurity materials at Australian borders

A. increased.

B. decreased.

C. fluctuated.

D. remained level.

Question 7

Which one of the following statements accurately reflects the risks associated with biosecurity for Australia?

A. Biosecurity risks can significantly impact primary food production.

B. Biosecurity risks are managed by Food Standards Australia and New Zealand.

C. Biosecurity refers to the measures taken to increase the risks of infectious diseases and pests.

D. Biosecurity reduces risks for the Australian food export market, ensuring our food is safe for other countries.

Question 8

Which one of the following is an example of a practical way to apply evidence-based recommendations relating to food and health?

A. Advise the amount and kinds of foods that need to be eaten for good health.

B. Eat a wide variety of foods of different biological origins.

C. Follow a nutrition expert on social media.

D. Achieve and maintain a healthy weight.

Question 9

The increase in the use of Australian native ingredients in domestic kitchens may be due to

A. low prices.

B. an increase in cooking at home.

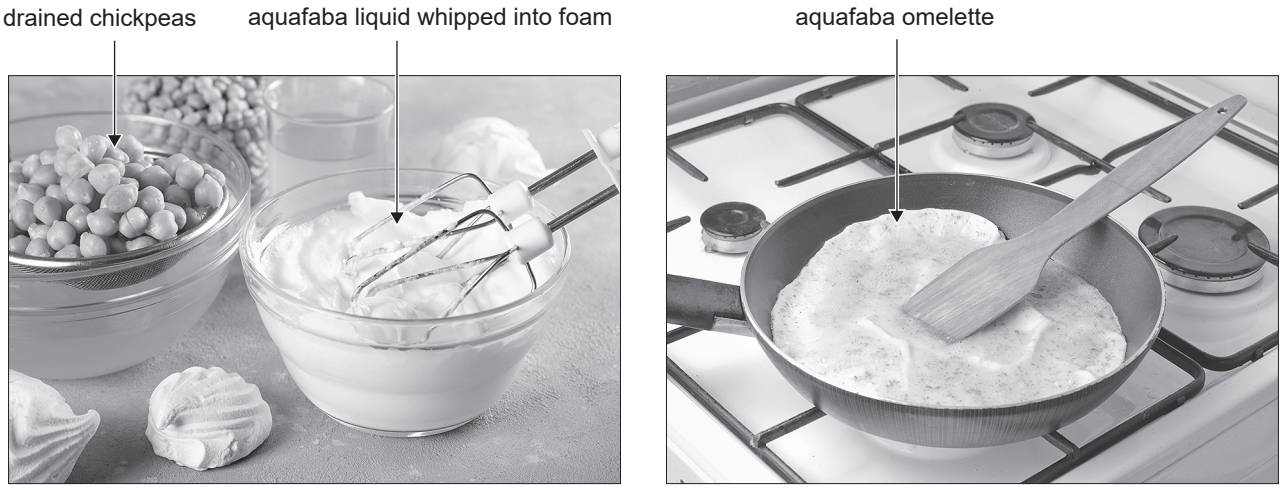
C. opportunities to purchase imported products.

D. changes and trends in food purchasing and consumption behaviours.

Use the following information to answer Questions 10–12.

Aquafaba is the liquid that comes in cans of chickpeas, sometimes known as 'bean water'.

Aquafaba is an excellent substitute for egg white. When whipped for long enough, it emulsifies and turns into a foam. People can replace eggs with whipped aquafaba when making an omelette.



Sources (from left): Ahanov Michael/Shutterstock.com; Vladimir Sukhachev/Shutterstock.com

Question 10

The foaming property of the aquafaba is the result of

A. enzymes.

B. gelatinisation.

C. changes to pH.

D. mechanical action.

Question 11

Which macronutrient is responsible for the creation of the foam when aquafaba is whipped?

A. fat

B. water

C. protein

D. carbohydrate

Question 12

Which one of the following describes the physical change of aquafaba foam during the cooking of an omelette?

A. soft to firm texture

B. thick and viscous liquid

C. light and fluffy appearance

D. dextrinisation to coagulation

Use the following information to answer Questions 13–15.

Milk is used to make a variety of products, such as yoghurt, cheese and cottage cheese.

- Yoghurt is made by adding specific types of bacteria to heated milk. The milk is kept at a specific temperature for a period of time. The bacteria convert the lactose (milk sugar) to lactic acid.
- Cheese is made when an enzyme called rennet is added to milk. Rennet causes a reaction in which the curds (milk solids) separate themselves from the whey (liquid portion).
- Cottage cheese is made by adding an enzyme to milk, causing it to curdle. Unlike in hard cheeses, the curds remain loose and are mixed with the whey to create cottage cheese.

Question 13

What is the chemical change that occurs during the production of yoghurt, cheese and cottage cheese?

A. aeration
B. coagulation
C. emulsification
D. gelatinisation

Question 14

The chemical reaction that changes milk into cheese and cottage cheese is due to the effect of

A. acid.
B. heat.
C. enzymes.
D. mechanical action.

Question 15

The chemical reaction that changes milk into yoghurt is due to the effect of

A. acid.
B. heat.
C. enzymes.
D. mechanical action.

END OF SECTION A
TURN OVER

SECTION B

Instructions for Section B

Answer **all** questions in the spaces provided.

Question 1 (3 marks)

Campylobacter is the most commonly identified bacteria that causes food poisoning in Australia.

Foods that are eaten raw are common sources of food poisoning caused by *Campylobacter* because these foods do not go through a cooking process. Heat from cooking usually kills pathogens on food before the food reaches our plate.

Using the information above, suggest why it is not advisable to include raw foods such as eggs in smoothies.

Question 2 (10 marks)

a. Outline **two** benefits of low-impact farming. 2 marks

b. Outline **two** benefits of genetically modified (GM) food production. 2 marks

c. Analyse the diverse points of view related to low-impact farming and GM food production methods as possible pathways to achieving food security in Australia. 6 marks

Question 3 (6 marks)

Complete the table below by explaining the role of each of the listed key behavioural principles in increasing the healthy consumption of the vegetables and legumes/beans food group by children.

Key behavioural principle	**Role in increasing healthy consumption of the vegetables and legumes/beans food group by children**
exposure	
repetition	
modelling	

Question 4 (7 marks)

Almond trees produce almond fruit, each of which contains a nut. Once the fruit ripens, the nut can be removed and consumed as a source of food.

Bees are needed to pollinate the flowers of almond trees so that almond fruit will form.

Almond trees are susceptible to fungus infections, which affect the health of the trees and the quality and amount of fruit they produce. To avoid infection, the trees need to be sprayed with a fungicide – but bees are destroyed if they are hit directly with fungicide spray.

In some almond orchards in Victoria, farmers are solving this problem by placing beehives in special areas where spraying does not happen. They are spraying at night and using unmanned, pre-programmed drone technology to carry out the spraying.

a. Explain how biodiversity is being maintained in these almond orchards. 3 marks

b. Referring to the information above, describe how farmers might be using drone technology to improve equity in food access. 4 marks

Almond fruit

Honey

Question 5 (12 marks)

According to a study published in the journal *Appetite*, young people who perceived that their social media contacts consumed a healthy diet consumed more fruit and vegetables themselves. It also found that young people indulged in more junk food if they perceived that their social media contacts did.

Reference: Lily K Hawkins, Claire Farrow and Jason M Thomas, 'Do perceived norms of social media users' eating habits and preferences predict our own food consumption and BMI?', *Appetite*, vol. 149, 1 June 2020, <https://doi.org/10.1016/j.appet.2020.104611>

a. Using the information above, discuss the role of social media in influencing the food choices of young people. 5 marks

b. Using **two** examples, describe how social media can positively shape community responses to food information. 4 marks

c. Explain why an individual might experience a positive psychological response when cooking using social media. 3 marks

Question 6 (9 marks)

> According to OzHarvest, reducing food wastage is the single most impactful action each of us can take to tackle the climate crisis.
>
> With one in every five bags of food shopping ending up in the bin – costing the average household between $2000 and $3800 dollars every year – it is time to take action.

Reference: 'Your Home', OzHarvest, <www.ozharvest.org/fight-food-waste/the-problem>

a. It has been suggested that reducing food wastage at home is the single most impactful action that individuals can take to address the risks associated with the climate crisis.

Analyse why this suggestion might be true. 5 marks

b. Explain how consumer understanding of 'use-by' and 'best before' date labelling on food packaging may assist with reducing food wastage at home. 4 marks

Question 7 (5 marks)

a. There are many reasons for the differences in dietary requirements between individuals.

Aside from different activity levels, name one biological reason for differences in dietary requirements between individuals and explain why different individuals require different amounts of protein. 3 marks

Biological reason _____

Explanation _____

_____

_____

b. Eating a diet high in protein provides satiety for the body.

Using protein as an example, explain 'satiety'. 2 marks

_____

_____

_____

Question 8 (8 marks)

Source: 'The shape of Victoria 2021: Diet and lifestyle change during the COVID-19 pandemic', LiveLighter, 16 December 2021, <https://livelighter.com.au/campaign-and-media/social-media>

a. Identify and describe two social factors that may have contributed to the increase in fruit and vegetable consumption mentioned in the image above. 6 marks

Social factor 1 _____

_____

_____

_____

_____

Social factor 2 _____

_____

_____

_____

_____

b. Explain **one** link between the consumption of fruit and vegetables and health. 2 marks

Question 9 (3 marks)

Outline the methodology used to achieve the evidence-based principles that underpin the development of the *Australian Dietary Guidelines* (part of the 'Eat for Health' program).

Question 10 (5 marks)

Our digestive system contains millions of microorganisms. In a healthy person, most microorganisms in the digestive system have a useful purpose. The mouth, stomach and upper section of the small intestine contain fewer microorganisms than the lower section of the small intestine and the large intestine, which contain trillions of microorganisms.

a. Explain **one** role that microorganisms in the small intestine play in the digestive system in facilitating the health of an individual. 3 marks

b. Describe the role of enzymatic hydrolysis in digestion. 2 marks

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Question 11 (7 marks)

Egg sales in Australia, 2020–2021 financial year, by sales volume

Australians consume about 17 million eggs every day. In the 2020–2021 financial year, egg farmers produced about 6.3 billion eggs. Of those, 52% were free-range. This compares to about 38% a decade ago.

Australia experienced a national egg shortage this winter. Hens kept in cages or barns are more regular producers because conditions are optimised to stimulate laying. Temperatures are constant and hens are exposed to 16 hours of light every day. Free-range hens are affected by hot or cold temperatures, wind and rain, and length of daylight. In winter months they have less energy and produce (on average) 20% fewer eggs than a hen confined indoors in controlled conditions.

Sources: data for graph from Australian Eggs, <www.australianeggs.org.au/egg-industry>;
text adapted from Flavio Macau, 'What's causing Australia's egg shortage?
A shift to free-range and short winter days', The Conversation, 10 August 2022,
<https://theconversation.com/whats-causing-australias-egg-shortage-a-shift-to-free-range-and-short-winter-days-188433>

a. Explain why Australians consume about 17 million eggs every day. 2 marks

b. Explain why more free-range eggs were sold in 2020–2021 than eggs laid by caged hens. 2 marks

c. Suggest **three** reasons why egg farming practices may have contributed to a national egg shortage in winter 2022. 3 marks

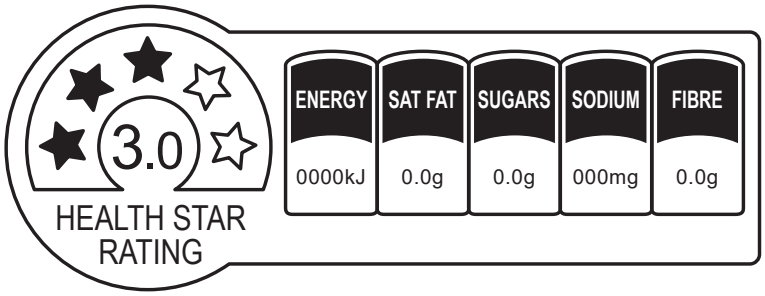
Question 12 (10 marks)

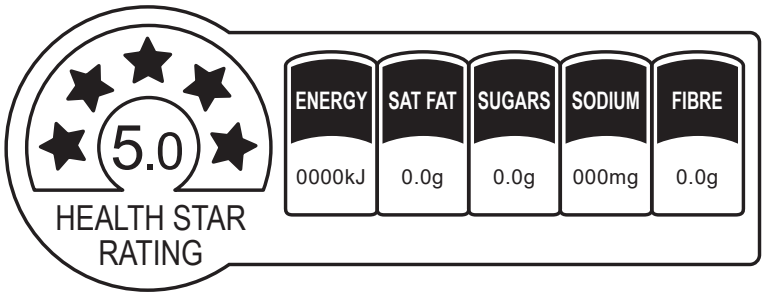
The Health Star Rating system is a voluntary front-of-pack labelling system that rates similar packaged food products from 0.5 to five stars. It allows consumers to compare products, for example, comparing breakfast cereals with breakfast cereals, and cheeses with cheeses. A packaged food with five stars is considered a healthier choice than one with 0.5 stars.

The Health Star Rating system was developed by Australian federal, state and territory governments, in association with industry, public health and consumer groups.

The Health Star Ratings are designed so that a consumer can make a comparison between two similar food products simply and quickly.

Manufacturers can alter ingredients in their product – for example, increasing fibre, or decreasing salt or added sugar – to improve the number of stars their product is awarded.





'I always eat that brand of cereal; Mum says it is good for me because it has the best Health Star Rating of all breakfast cereals.'

Using the information provided about the Health Star Rating system, evaluate the statement above. In your response, consider:

- optional information contained on food labels, the purpose behind the optional information and the advantages of accurate food labelling for consumers
- the source and purpose, as criteria to assess the validity of the Health Star Rating system
- the ways in which food selection can assist in the prevention of obesity and related lifestyle diseases.

DO NOT WRITE IN THIS AREA

END OF QUESTION AND ANSWER BOOK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