

STUDENT NUMBER Letter

FOOD STUDIES

Written examination

Thursday 11 November 2021

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

<i>Section</i>	<i>Number of questions</i>	<i>Number of questions to be answered</i>	<i>Number of marks</i>
A	15	15	15
B	11	11	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 28 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.

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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

An individual could address a food allergy by

- A. making food swaps.
- B. regularly eating restaurant food.
- C. not reading food labels.
- D. always using organic ingredients when cooking.

Question 2

Appetite is

- A. the absence of hunger.
- B. a reduced desire to eat.
- C. a biological response to mouthfeel.
- D. the body's natural desire to eat food.

Question 3

'Taking pleasure in food is not just about cooking – it's about thinking, "I've got myself something delicious".'

Source: Nigella Lawson in Hadley Freeman, 'Nigella Lawson: "I didn't think I'd be a mended person, but I am"', *The Guardian*, 10 October 2020, <www.theguardian.com>

This quote refers to

- A. an ethical role of food.
- B. an emotional role of food.
- C. an environmental role of food.
- D. a physiological role of food.

Question 4

The range of foods available in supermarkets has increased over the last 20 years in Australia.

This could be due to

- A. changing cultural norms in Australia.
- B. an increase in physical activity.
- C. an increase in online grocery shopping.
- D. an increase in the number of farmers' markets each week.

Question 5

Which principle of heat transfer does microwave cooking use?

- A. conduction
- B. convection
- C. mechanical action
- D. electromagnetic radiation

Question 6

Dried corn kernels can be placed in a paper bag and cooked in a microwave oven to turn them into popcorn. Popcorn cooked this way is less likely to burn than popcorn cooked on the stovetop.

This is because

- A. food never burns in a microwave oven.
- B. there is no moisture used in this method of cooking popcorn and therefore the popcorn does not burn.
- C. only the water portion of the corn kernel is heated, so the corn kernel pops without burning.
- D. the turntable is constantly rotating while cooking, inhibiting any burning of the corn kernels.

Question 7

Caramelisation does not occur in microwave cooking.

Caramelisation occurs when

- A. enzymes in plant foods come into contact with oxygen and turn a brown colour.
- B. starch is exposed to dry heat and broken down into dextrins, which results in the food turning a golden-brown colour.
- C. sugar or foods containing sugar have heat applied to them, resulting in the sugar turning a brown colour and developing characteristic flavours.
- D. protein and sugar are present and dry heat is applied, resulting in the food turning a golden-brown colour.

Question 8

‘We have a track record in Victoria in identifying and managing biosecurity risks, but we are always facing new threats ...’

Source: then Minister for Agriculture Jaclyn Symes in ‘Improving livestock biosecurity in Victoria’, media release, The Hon. Jaclyn Symes MLC, 4 December 2020

A biosecurity threat could include

- A. native pests and diseases.
- B. exotic pests and diseases.
- C. extinct pests and diseases.
- D. natural pests and diseases.

Question 9

Planning meals to eat within the home will most likely promote

- A. physical activity.
- B. nutritious meal patterns within the home.
- C. claims made by nutrient supplement companies.
- D. increased consumption of food outside the home.

Question 10

Factors that need to be considered when looking at biological reasons for differences in dietary requirements include

- A. diet, allergies and gender.
- B. exposure, age and behaviour.
- C. age, sex, pregnancy and lactation.
- D. physical activity, occupation and location.

Question 11

'Country of origin' is a compulsory component of food labelling.

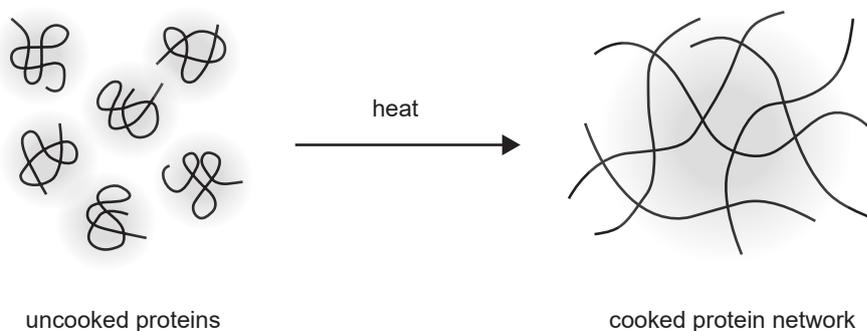
The purpose of this component is to

- A. indicate if the food is genetically modified.
- B. inform people with dietary requirements about food content.
- C. provide consumers with information about foods being exported from Australia.
- D. guide consumers to make informed decisions about the foods they purchase.

Question 12

Which one of the following is an advantage of genetically modifying foods?

- A. the ability to increase nutritional value
- B. the ability to guarantee increased crop yield
- C. ensuring that consumer demand for organic products can be met
- D. the cost of seeds is greater than the cost of non-genetically modified crops for farmers

Question 13

Source: adapted from Liz Roth-Johnson, 'Ceviche', Science and Food, 26 March 2013, <<https://scienceandfooducla.wordpress.com>>

The diagram above illustrates the change to protein when heat is applied.

This change is called

- A. denaturation.
- B. dextrinisation.
- C. emulsification.
- D. destabilisation.

Question 14

When protein-based food is cooked, it undergoes physical changes.

One change that can be observed is

- A. increased elasticity of protein strands.
- B. increased absorbency of protein strands.
- C. increased viscosity of protein strands.
- D. a firmer texture.

Question 15

Which one of the following statements best reflects the nutritional rationale underpinning the *Australian Dietary Guidelines* (part of the 'Eat for Health' program)?

- A. The work related to the 'Australian Guide to Healthy Eating' focused on factors influencing dietary choice.
- B. The 'Australian Guide to Healthy Eating' is designed for healthy Australians, including those with common health risks such as being overweight.
- C. The model on which the five food groups are based considers that foods within each grouping are eaten in amounts similar to the average intakes in Australia.
- D. It provides an individual approach to food guidance that is used by policymakers, food manufacturers and health professionals to support Australians to eat healthy diets.

SECTION B**Instructions for Section B**

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

Question 1 (4 marks)

‘Cook-along’ sessions are live online cooking presentations that allow individuals and family groups to follow along and cook together in real time. In some sessions, participants are able to interact with the presenter and other participants online.



Source: beeboys/Shutterstock.com

- a. Referring to the image and information above, describe how a live cook-along session might shape the food information received by a family. 2 marks

- b. Outline how cooking and eating together may promote connectedness within families. 2 marks

Question 2 (8 marks)

A program in regional Victoria works with asylum seekers to promote food security and provide access to local produce. The asylum seekers are women from different ethnic and cultural backgrounds. Several times per week, the women spend half their day working on the farm and the rest of their day in the kitchen. Participants prepare healthy and culturally appropriate meals, using produce that they have farmed or sourced locally. They share their personal stories and build friendships while participating in the program. Meals are shared with the participants' families and other families experiencing food insecurity. Meals are also sold to the public to raise funds for the program.

References: Daniel Short, 'Food security program receives funding boost', 17 December 2020, <<https://timesnewsgroup.com.au/geelongtimes/news/food-security-program-receives-funding-boost/>> and Common Ground Project, <www.commongroundproject.com.au/community-programs/staying-grounded>

- a. State a food-related challenge faced by asylum seekers that this local program addresses. 2 marks

- b. Explain how this local program improves equity in food access and distribution in Victoria. 4 marks

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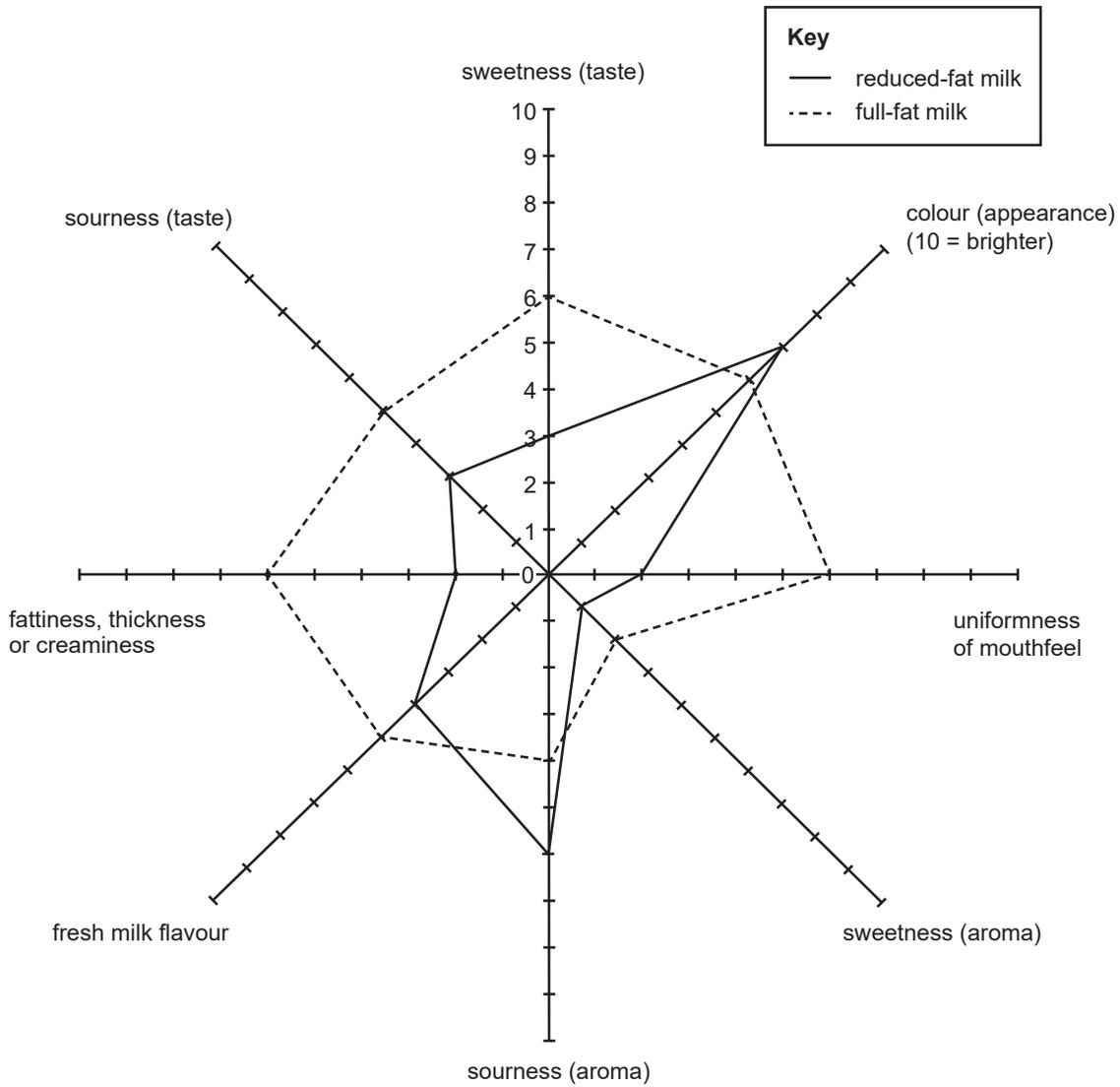
- c. Outline the social role of this local food program in expressing individual identity. 2 marks

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Question 3 (10 marks)

One way to complete a sensory analysis is to make a comparison of two food products using a star chart to record the sensory properties of each product.

An adolescent sampled a reduced-fat milk product and a full-fat milk product, and then compared the sensory properties of the two products on the star chart below. The star chart enables a comparison of the differences in these two food products.



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- a. Using the data in the star chart on page 10, describe **four** differences in the sensory properties of the reduced-fat milk product and the full-fat milk product. 4 marks

- b. A key nutrient of milk is protein.
Describe the chemical digestion and absorption of protein that occurs in the small intestine. 4 marks

- c. Lactose intolerance is the inability to break down a type of natural sugar called lactose. Lactose is commonly found in dairy products, such as milk and yoghurt.
Other than lactose-free dairy products, identify an alternative milk or yoghurt that is suitable for someone with lactose intolerance. Justify your answer. 2 marks

Question 4 (6 marks)

The Planetary Health Diet

The Planetary Health Diet is the optimal diet for people and planet.

The Planetary Health Diet (PHD) is a global reference diet for adults that is symbolically represented by half a plate of fruits and vegetables. The other half consists of primarily whole grains, plant proteins (beans, lentils, pulses, nuts), unsaturated plant oils, modest amounts of meat and dairy, and some added sugars and starchy vegetables.

The Australian Guide to Healthy Eating

Australian Guide to Healthy Eating

Enjoy a wide variety of nutritious foods from these five food groups every day.
Drink plenty of water.

The ‘Australian Guide to Healthy Eating’ (AGTHE; part of the ‘Eat for Health’ program) is a food selection guide that visually represents the proportion of the five food groups recommended for consumption each day.

Sources: top image and adapted text from ‘The Planetary Health Diet’, Eat Forum, <<https://eatforum.org/learn-and-discover/the-planetary-health-diet/>>; bottom image and adapted text from ‘Australian Guide to Healthy Eating’, *Australian Dietary Guidelines*, Eat For Health, Australian Government National Health and Medical Research Council, <www.eatforhealth.gov.au>

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Question 5 (6 marks)

According to VicHealth, Australians are consuming a considerably higher level of added sugar each day than is recommended.

Identify and describe two social factors, apart from cultural norms, that could contribute to high added sugar intake by consumers.

Social factor 1 _____

Social factor 2 _____

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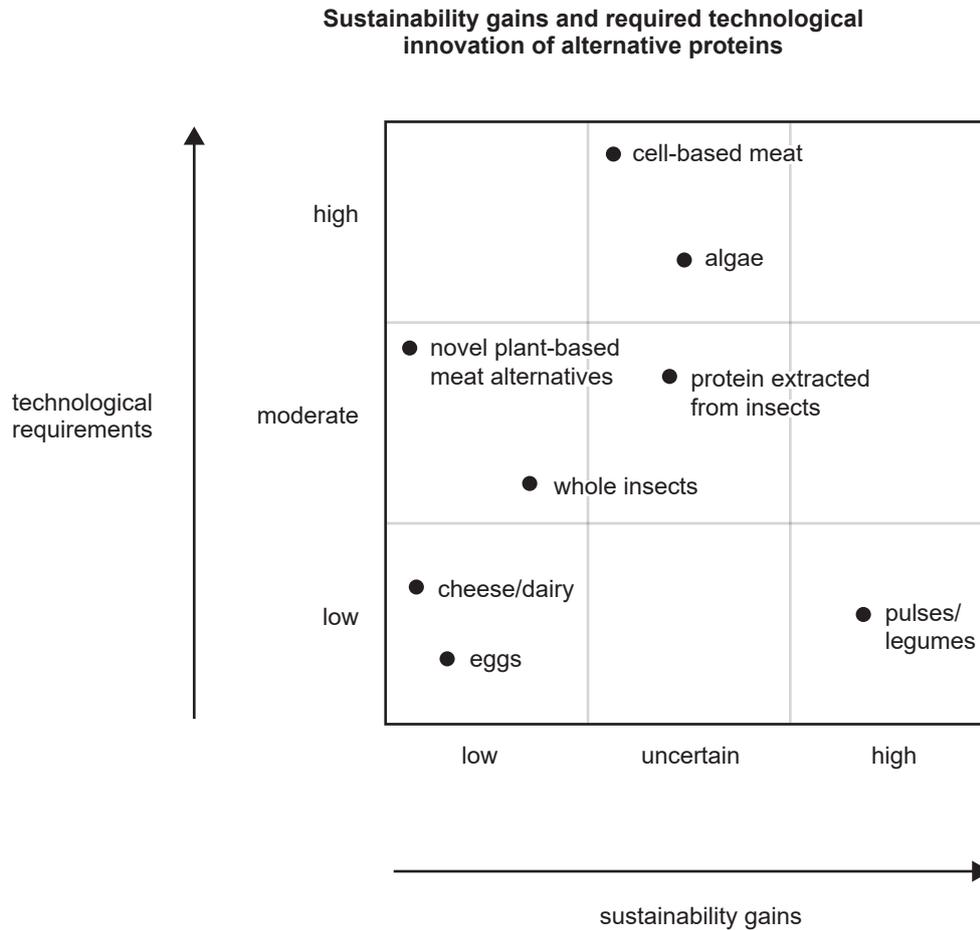
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**SECTION B – continued
TURN OVER**

Question 6 (6 marks)

Non-traditional protein sources include cell-based meat, insects and algae. In Western cultures, such as Australian culture, insects and algae have low levels of uptake as food products consumed by humans and currently have a very small market share. However, these protein sources have potential as feed for livestock.

Cell-based meat is also known as cultured or cellular meat. It refers to meat grown in a laboratory using cells from an animal, rather than raising and slaughtering animals for consumption.



Source: adapted from S Admassu, T Fox, R Heath and K McRobert (Australian Farm Institute), *The Changing Landscape of Protein Production: Opportunities and challenges for Australian agriculture*, AgriFutures Australia, 2019, pp. 16 and 25, <www.agrifutures.com.au/wp-content/uploads/2020/02/20-001.pdf>

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Using cell-based meat is one solution to the problem of protein production and supporting sustainable futures. Considerations around the issue of using cell-based meats rather than other protein sources include:

- environmental sustainability
- ethical decision making
- technological requirements.

Referring to the information on page 16, discuss an opportunity, a challenge and a proposed solution for **one** of the considerations listed above.

Consideration _____

Opportunity	
Challenge	
Proposed solution	

- b. The *Australian Dietary Guidelines* (part of the 'Eat for Health' program) state that a serve of bread is one slice (approximately 40 g).

Explain how the nutrition information panels on page 18 may encourage overconsumption of food.

3 marks

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Question 8 (15 marks)**Peas, please! Food familiarization through picture books helps parents introduce vegetables into preschoolers' diets****Abstract:**

Studies show that familiarizing children to fruit and vegetables through picture books can increase their interest in tasting targeted foods ... Parents of 127 toddlers (aged 21–24 months) identified two 'target' foods they wanted their child to eat (1 fruit, 1 vegetable) ... Parents and children in two experimental groups looked at books about either the target fruit or vegetable every day for two weeks; the control group did not receive a book. Parents in all three groups were then asked to offer their child both target foods every day during a 2-week taste-exposure phase. Parental ratings of children's liking and consumption of the foods were collected at baseline, immediately following taste-exposure (post-intervention), and 3 months later (follow-up). In all groups, liking of both foods increased following taste exposure ... In addition, compared to the control group who experienced only taste exposure, looking at vegetable books enhanced children's liking of their target vegetable post-intervention ... and increased consumption of the vegetable at follow-up ... suggesting that picture books may have positive, long-term impacts on children's attitudes towards new foods.

Source: LH Owen, OB Kennedy, C Hill and C Houston-Price, 'Peas, please! Food familiarization through picture books helps parents introduce vegetables into preschoolers' diets', *Appetite*, vol. 128, 1 September 2018, p. 32, <<https://doi.org/10.1016/j.appet.2018.05.140>>; licensed by CCC-Rightslink (USA) with permission from Elsevier

- a. Suggest how each principle of research in the table below would have been applied to the study described in the abstract above.

6 marks

Principle of research	How the principle would have been applied to the study
recognition of credible sources	
evidence-based information	
accurate analysis of data	

- b. Use the criteria in the table below to assess the validity of the information stated in the abstract on page 20.

6 marks

Criterion	Assessment of the validity of the information using this criterion
purpose	
context	
language used	

- c. Exposure is an example of a key behavioural principle that is evident in this study.

Name another key behavioural principle and explain its role in establishing children's liking of and increased intake of fruit and vegetables.

3 marks

Question 9 (4 marks)

Explain the difference between a nutrient content claim and a general-level health claim. Provide an example of both.

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SECTION B – continued
TURN OVER

Question 10 (8 marks)



Grab and Eat Later!
Our fresh selections use quality fruit and vegetables.

Taste: Savoury or sweet, our selected range will satisfy every taste

Perfect packaging: Conveniently stores in fridge until needed

Availability: All year, all seasons

Source: Svetlana Verbitckaia/Shutterstock.com (image only)

- a. The product above, called Grab and Eat Later!, has been described as a ‘fresh snack’.

Justify why this product is a practical way to apply evidenced-based recommendations relating to food and health to everyday food behaviours and habits.

2 marks

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