

Print exam correction: Section B, Q3b.,
'assess validity' changed to 'assess
the validity', and 'assess the context of
changed to 'assess the validity of'

STUDENT NUMBER Letter

FOOD STUDIES

Written examination

Monday 13 November 2023

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	20	20	20
B	6	6	70
			Total 90

- 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 20 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

A study published in *Child Development* showed that preschool children model their eating behaviours on the behaviours of their peers. When a preschooler with a dislike for a vegetable was seated with peers who had a preference for the same vegetable, the preschooler was likely to alter their food preferences over time and eventually select the disliked vegetable.

Source: B Trieu and T Hill, 'How Peer and Parental Influences Affect Meal Choices', <healthy-food-choices-in-schools.extension.org>

What role does food play in this context?

- A. social and emotional
- B. emotional and celebratory
- C. social and health
- D. psychological and health

Question 2

Which of the following statements best describes **one** key behavioural principle for establishing healthy diets within the home?

- A. Opportunities for family connection are created during the evening meal.
- B. Children should be exposed to a wide variety of foods on their dinner plates and in their lunch boxes.
- C. Healthy eating during childhood reduces the chances of developing health problems as people get older.
- D. Foods high in sugar, saturated fat and salt are not necessary for a healthy diet and should be limited.

Question 3

What is the primary site for the absorption of nutrients in the gastrointestinal tract?

- A. stomach
- B. oesophagus
- C. small intestines
- D. large intestines

Question 4

The liver, gall bladder and pancreas contribute to which of the following?

- A. the digestion of fat into fatty acids and triglycerides
- B. the absorption of carbohydrates in the form of glucose
- C. making and storing enzymes to break down macronutrients
- D. the digestion of protein into amino acids

Question 5

CluckAr was an app created by the consumer group Choice to put pressure on the government to mandate accurate labelling of free-range egg cartons. This pressure came about as a form of consumer activism for transparency on ethical egg production. The app helped consumers make informed decisions about eggs they were purchasing.

This is a form of

- A. consumer awareness of health and ethical farming practices.
- B. economic influence due to the higher cost of free-range eggs.
- C. political influence on food choices.
- D. cultural norms of farming practices.

Question 6

The table below shows conditions that must be met when making claims about fats on food labels.

Claim	Conditions that must be met if using the claim
% Free	The food meets the conditions for a nutrition content claim about low fat.
Low	The food contains no more fat than: (a) 1.5 g/100 mL for liquid food; or (b) 3 g/100 g for solid food.
Reduced or Light/Lite	The food contains at least 25% less fat than in the same amount of reference food.

Source: <foodstandards.gov.au>

Based on the information in the table above, a 200-gram muesli bar labelled with a low-fat nutrition content claim must contain

- A. no saturated fat.
- B. no more than 6 grams of fat per bar.
- C. no more than 25% of fat per 100 grams.
- D. no more than 30% of fat per 100 grams.

Use the following information to answer Questions 7 and 8.

A ‘meat-free’ day is becoming more prevalent among Australian households. According to Toluna, a consumer intelligence platform, around 80% of Australians are opting for a meat-free day.

Question 7

Which of the following statements explains this trend in consumption behaviours?

- A. a decrease in health awareness
- B. lower availability of fresh meat
- C. concerns about too much protein intake
- D. increased access to, and intake of food from, home delivery services

Question 8

Which of the following statements shows **one** positive change that a meat-free day may have on a household?

- A. consumption of less highly processed food
- B. consumption of a wider variety of foods
- C. a decrease in the amount of food wastage
- D. the choice of high-quality cuts of meat

Use the following information to answer Questions 9 and 10.

The National Health and Medical Research Council requested systematic literature reviews to assess all the studies used in the development of the *Australian Dietary Guidelines* and the ‘Australian Guide to Healthy Eating’ (both part of the ‘Eat for Health’ program). A systematic literature review is a rigorous and structured process that critically evaluates and analyses all available information on a particular area of study, based on previous studies.

Question 9

Which would be the most appropriate group to develop the *Australian Dietary Guidelines* and the ‘Australian Guide to Healthy Eating’, based on a systematic literature review?

- A. journalists
- B. laboratory scientists
- C. industrial chemists working for a company
- D. dietitians working for the government

Question 10

The undertaking of systematic literature reviews might include

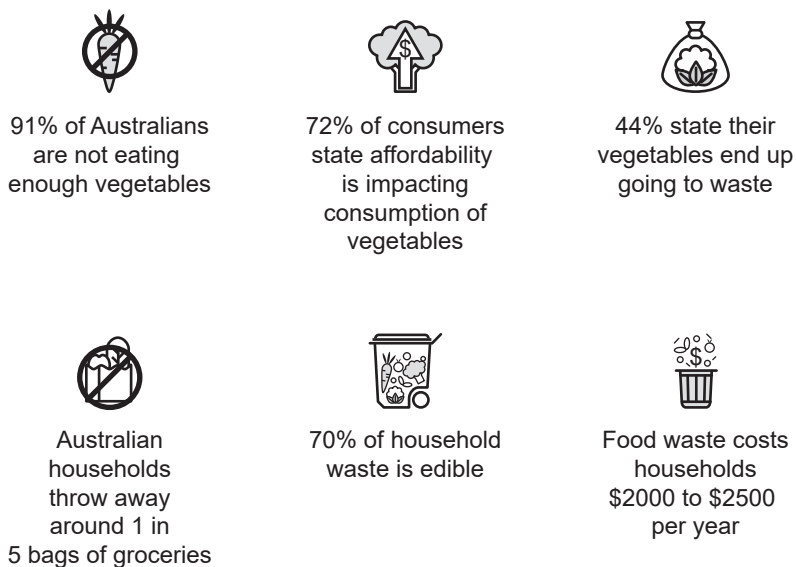
- A. checking whether findings are consistent across different studies.
- B. reviewing changes in trends in popular publications.
- C. re-analysing data used to develop the previous guidelines for accuracy.
- D. analysing public consultation reports.

Question 11

What is a major consideration when analysing the nutritional efficacy of fad diets?

- A. scientific evidence supporting the intake of macronutrients
- B. scientific evidence supporting nutritional adequacy
- C. efficacy of significant nutrients in diets
- D. research of major nutrients targeted

Use the following information to answer Questions 12 and 13.



Source: adapted from <tryfor5.org.au>

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Question 12

The infographic above shows which of the following?

- A. how to prepare and cook vegetables
- B. information about food waste
- C. how to recycle vegetable waste
- D. the role of vegetables in the provision of good nutrition

Question 13

The data in the infographic shows that

- A. 70% of food wastage cannot be eaten.
- B. 91% of Australians prefer eating meat over vegetables.
- C. 44% of consumers do not purchase vegetables because they end up going to waste.
- D. 72% of consumers limit the purchase of vegetables because of the cost.

Question 14

Which of the following is a practical option that aligns with the *Australian Dietary Guidelines* when preparing food?

- A. Do not shop when you are hungry.
- B. Grill and deep-fry foods but avoid creamy sauces.
- C. Use pastry to make vegetarian pies.
- D. Use foods that include fruit, vegetables and wholegrains when making a smoothie.

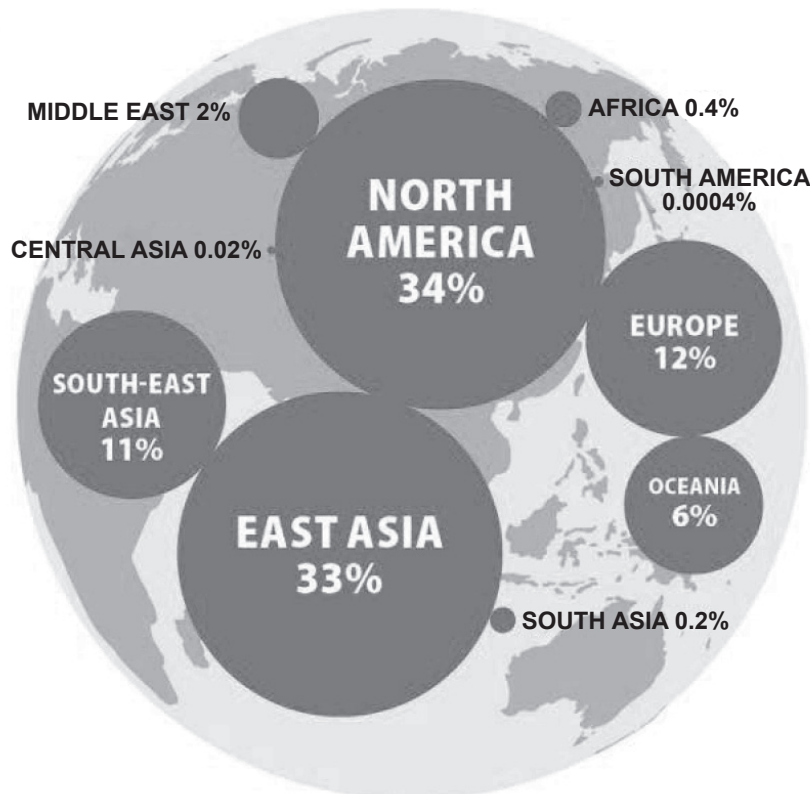
Question 15

Which of the following would most likely contribute to food security by ensuring equity of access to food?

- A. income inequality
- B. community food programs
- C. public transport infrastructure
- D. government funding for agricultural production

Question 16

Exports of Australian certified organic food 2016



Source: adapted from Australian Organic Market Report 2017, <ausveg.com.au>
© Australian Organic Ltd, reproduced with permission

Which of the following statements best describes what is shown in the figure above?

- A. Australia supplies organic food to other countries.
- B. Australia produces safe and affordable food for other countries.
- C. Australia exports organic food to all countries around the world.
- D. Australia produces organic food that is more expensive than traditionally grown foods.

Question 17

A new company has released a weight-loss supplement, claiming that consumers may safely lose several kilograms in 10 days without exercise or dieting.

Such claims should be carefully considered by consumers because the product may

- A. be very expensive.
- B. contain ingredients from overseas.
- C. be unethically marketed.
- D. not have sustainably sourced ingredients.

Question 18

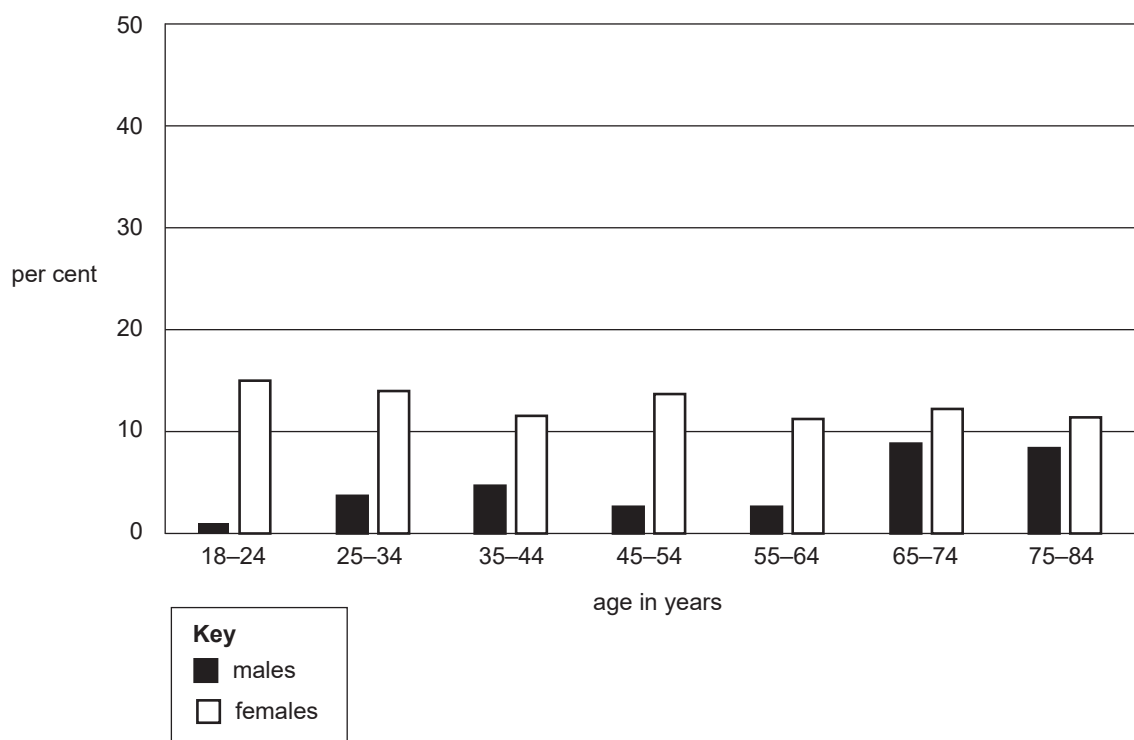
Some neighbours have collaborated to create a communal vegetable garden on the nature strip in front of their houses.

This is an example of

- A. food sustainability.
- B. food sovereignty.
- C. food citizenship.
- D. food security.

Question 19

Proportions of adults aged 18 years and over, meeting guidelines for vegetable intake, 2020–2021



Source: <nci.cancer.gov.au/prevention/diet/vegetable-consumption>

Which of the following statements best describes the data in the graph?

- A. Females aged 18 to 24 years had the highest proportion of adequate daily vegetable intake.
- B. Males aged 65 to 74 years had the highest proportion of adequate daily vegetable intake.
- C. Adequate vegetable intake in males and females increased with age.
- D. Adequate vegetable intake in males and females decreased with age.

Question 20

Which of the following factors are most closely linked to sedentary behaviour?

- A. marketing of food and portion sizes
- B. social norms and peer influence
- C. age and sex
- D. use of technology and screen time

SECTION B

Instructions for Section B
Answer **all** questions in the spaces provided.

Question 1 (7 marks)

A person with a lactose intolerance is comparing milk types with similar nutrient contents and wants to find the best substitute for cow’s milk. They are studying the nutrition information panels of a variety of animal-based and plant-based milks.

- a. Explain the physiology of an intolerance to lactose and provide **one** reason why an individual with an intolerance to lactose can consume small amounts of cow’s milk. 3 marks

DO NOT WRITE IN THIS AREA

- b. Using the data in the table, recommend a substitute milk with a similar nutritional profile to full-cream cow's milk and justify why this milk is suitable for an individual with a lactose intolerance.

4 marks

	Quantities per 100 mL						
	kJ	Carbohydrates (g)	Sugars (g)	Protein (g)	Fat (g)	Saturated fat (g)	Calcium (mg)
full-cream cow's milk	259	4.4	4.4	3.4	3.4	2.3	118
light cow's milk	190	4.6	4.6	3.5	1.3	0.9	118
almond milk	55	0.3	0.3	0.5	1.2	0.1	100
coconut milk	74	0.2	0.1	0.3	5	4.8	0
soy milk	250	5	1.7	3.4	2.9	0.2	110
rice milk	230	10.3	3.6	0.6	1.2	0.1	80

Milk type _____

Justification _____

Question 2 (21 marks)

In recent times an increasing number of companies have collaborated with farmers to address the issue of food waste. A solution has been found where the irregular or damaged vegetable produce is repurposed into edible plant powders. These powders are used as ingredients in the production of various snack products. To enhance efficiency, some farms are installing machinery on-site to convert irregular or damaged produce into powder. It is worth noting that workers who harvest these vegetables often work across multiple farms.

- a. Explain two positive environmental effects of removing the need to transport vegetables to a factory for processing. 4 marks

Environmental effect 1 _____

Environmental effect 2 _____

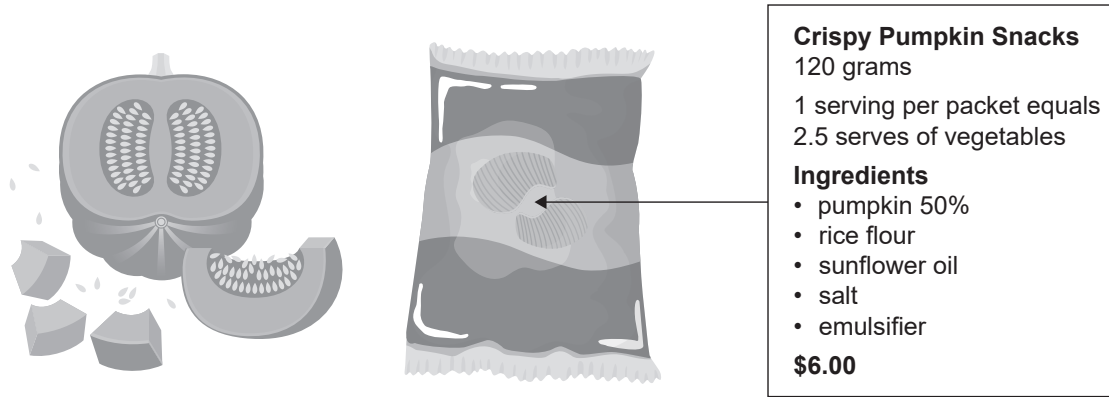
- b. Turning damaged and irregular vegetables into powders is an example of the repurposing of food. 4 marks

Discuss two environmental benefits of repurposing food. 4 marks

Environmental benefit 1 _____

Environmental benefit 2 _____

- c. Using the information at the beginning of Question 2, discuss **one** way in which environmental sustainability of primary food production can be improved through managing the risks associated with biosecurity. 4 marks



Sources (from left): indra-east/Shutterstock.com; IMissisHope/Shutterstock.com

Crispy Pumpkin Snacks, pictured above, are manufactured from the powder of repurposed pumpkins.

Products such as these are often marketed as a way of increasing an individual's vegetable intake. Currently, fewer than 10% of Australians are meeting the daily recommended five serves of vegetables per day.

- d. Explain how the conditioning of appetite might contribute to a child finding a packet of Crispy Pumpkin Snacks more appealing than a serve of steamed pumpkin.

3 marks

- e. Considering the information above, discuss two ethical factors relating to the manufacturing and marketing of this product.

6 marks

Ethical factor 1 _____

Ethical factor 2 _____

Question 3 (8 marks)

Dr Helen Macpherson from Deakin University’s Institute for Physical Activity and Nutrition (IPAN) studied the eating habits and brain volumes of adults aged between 40 and 65 years, and found that those who ate a healthy variety of foods, including plenty of vegetables, fruit, grains and good oils, maintained ... a larger brain volume as they aged, compared to those whose diets included less of those foods.

Dr Macpherson said the findings, published in the peer-reviewed *Journal of Alzheimer’s Disease* in 2021, were significant because they suggest that lifelong healthy eating habits are needed to protect the physical health of the brain as we age.

The study looked at the diets and brains of 19 184 people aged 40 to 65 years. The study participants kept food diaries, which allowed assessment of the participants’ healthy food intake. The study also measured the size of the participants’ brains by using medical scans. The data was collected, graphed and analysed, and connections between diet quality and brain size were made.

Source: adapted from ‘Midlife diet could help you eat your way to a healthy brain’, media release, <deakin.edu.au>

- a. Explain how the findings on maintaining brain size and the eating habits of the adults in this study align with the healthy eating recommendations of the ‘Australian Guide to Healthy Eating’.

2 marks

DO NOT WRITE IN THIS AREA

- b. Context and presentation of evidence are two criteria used to assess the validity of food information.

Use these two criteria to assess the validity of the findings in relation to the importance of diet in maintaining physical health of the brain for middle-aged people.

6 marks

Context	Presentation of evidence

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Question 4 (15 marks)



Source: <facebook.com/thesustainabletable>

a. Describe what is meant by the term 'food citizen'. 2 marks

b. Explain why shopping at an accredited farmers' market could be an example of food citizenship. 2 marks

DO NOT WRITE IN THIS AREA

- c. Identify and describe **one** positive sustainability outcome that could be achieved by following the ethical shopping pyramid. 3 marks

- d. Analyse the influence of the social factors of income and accommodation on the purchase of an organic food box of fruit and vegetables. 6 marks

- e. Explain **one** possible link between purchasing a food box containing fruit and vegetables, and healthy living. 2 marks

DO NOT WRITE IN THIS AREA

Question 5 (9 marks)

These headlines appeared in various media articles.

‘Athlete attributes changes to high-protein diet’

‘Low carbohydrate diet is perfect for the athlete’

‘Muscle gain is all about dietary protein’

- a. Discuss **one** reason why the headlines above do not support the healthy eating recommendations of the *Australian Dietary Guidelines*.

3 marks

- b. Describe **one** emotional or psychological response to food that these headlines may elicit in individuals.

2 marks

- c. Analyse **one** way in which these headlines may shape food information and influence an individual’s food choices.

4 marks

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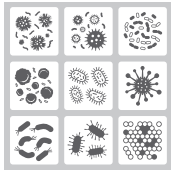
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SECTION B – continued
TURN OVER

Question 6 (10 marks)

What does a healthy gut look like?



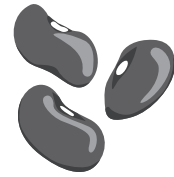
Diversity of microorganisms



Four to six serves of whole grains (e.g. wheat, rice, quinoa, barley)



Two serves of fruit (with skin on if possible)



One serve of legumes (e.g. lentils, chickpeas, beans)



Five serves of vegetables



If dairy is consumed, include some fermented types such as yoghurt



Keep active

Sources (clockwise from top left): Alexandr III/Shutterstock.com; Anny Sketches/Shutterstock.com; Juri_kam/Shutterstock.com; Sunnydream/Shutterstock.com; Mark stock/Shutterstock.com; IMissisHope/Shutterstock.com; Aliaksei Design/Shutterstock.com;

Luca has gut issues, with symptoms including bloating, increased flatulence and irregular bowel movements. His dietitian believes that Luca’s symptoms may be a result of an intolerance to fermentable oligosaccharides, disaccharides, monosaccharides and polyols (FODMAP). Luca has been advised to go on a low-FODMAP diet for four to six weeks. Over these four to six weeks, the dietitian will be gradually introducing different types of foods containing fermentable carbohydrates into Luca’s diet, to determine which foods may be contributing to the symptoms in his gut.

Using the diagram above, ‘What does a healthy gut look like?’, and the information about Luca, discuss:

- the role of high-carbohydrate foods in influencing gut microbiota
- the influence of a low-FODMAP diet on the gut microbiota
- the relationship between gut microbiota and Luca’s physical health.

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