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FOOD AND NUTRITION

FDN315118

Section **A**

Pages: 8

Questions: 7

Preparation time for this exam: 15 minutes

Suggested working time: 45 minutes

Instructions:

- There are **two (2)** parts to this section:
 - **Part 1** – answer **all** questions and **all** items within each question
 - **Part 2** – answer **one (1)** question.
- Write your answers in the spaces provided in this exam paper.
- The exam is **three (3) hours** in length. The suggested working time is provided in the instructions for each part.
- All answers must be written in **English**.
- You **must** make sure your answers address the listed criterion.

Marker use	
C4	/ 45

Guide to Exam Structure

		Parts	Questions available	Questions to answer	Suggested working time	Marks available
Section A	Part 1		6	6	25 minutes	25 marks
	Part 2		1	1	20 minutes	20 marks
Section B	Part 1		1	1	30 minutes	30 marks
	Part 2		1	1	15 minutes	15 marks
Section C			2	1	45 minutes	Extended ratings of A+ to z
Section D	Part 1		3	3	15 minutes	15 marks
	Part 2		1	1	30 minutes	30 marks and A+ to z
Totals			15	14	180 minutes (3 hours)	135 marks and A+ to z rating

Criterion

You **must** make sure your answers address:

- Criterion 4 describe the relationship between nutrition, food and health.

Part 1

- Answer **all** questions in this part.
- This part is worth 25 marks. The suggested working time for this part is **approximately 25 minutes**.
- This part assesses **Criterion 4**.

Question 1

a) Name the **three (3)** macronutrients and the recommended proportions from each one as a % of total energy.

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b) State the energy value of 1g of each of the nutrients named above.

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/1.5

Question 2

Explain energy intake and energy expenditure and how they are used to calculate energy balance.

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Question 3

Marker use

a) Describe **two (2)** functions of carbohydrates in the body, other than the supply of energy.

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b) Explain the difference between soluble and insoluble fibre and give a food example containing each type of fibre.

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c) How does insufficient carbohydrate intake lead to constipation?

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Question 4

a) What is the difference between a nutrient and a non-nutrient?

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b) Describe **two (2)** possible health benefits of consuming probiotics.

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c) What are **two (2)** sources rich in probiotics?

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Question 5

Marker use

a) Why are 'essential amino acids' essential?

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b) Provide **two (2)** reasons why protein is needed in the diet.

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c) Suggest **two (2)** examples of how **two (2)** foods containing incomplete proteins can be combined to complement each other to address an individual's protein requirements.

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Question 6

a) Give the recommendations for water intake for moderately active adults and explain **two (2)** possible consequences of a lack of regular water intake.

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b) How does the quantity of water consumed affect the retention of water-soluble vitamins?

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c) Explain why there is a difference between the amount of vitamin A lost and the amount of vitamin C lost from broccoli during boiling.

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**Total
P1**

/25

- Answer **the** question in this part.
- This part is worth 20 marks. The suggested working time for this part is **approximately 20 minutes**.
- This part assesses **Criterion 4**.

One in 6 people in Australia self-report as living with cardiovascular disease (CVD). That equates to 4.5 million people, or 18% of the population. Whilst this number is decreasing, CVD is still one of the most prevalent health conditions in Australia and is a major cause of death – about 1 person every 12 minutes.

(Source: <https://www.heartfoundation.org.au/your-heart/evidence-and-statistics/key-stats-cardiovascular-disease>)

Question 7

a) Identify **two (2)** groups in the population who are particularly at risk of developing CVD.

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b) Discuss the relationship between diet, atherosclerosis, and CVD.

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c) Explain the connection between excess sodium in the diet and CVD.

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Question 7 continues

Question 7 continued

Marker use

d) Explain the difference between HDL and LDL cholesterol and discuss their relationship to CVD.

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e) Using specific food examples, explain how saturated/trans fat consumption may contribute to developing CVD.

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f) Describe **one (1)** individual prevention strategy and **one (1)** community prevention strategy that can to help reduce the risk of developing CVD.

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End of Section A

Total
P2
/20



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External Assessment 2024

FOOD AND NUTRITION

FDN315118

Section **B**

Pages: 16

Questions: 2

Suggested working time: 45 minutes

Instructions:

- There are **two (2)** parts to this section:
 - **Part 1** – answer **one (1)** question
 - **Part 2** – answer **one (1)** question.
- Write your answers in the spaces provided in this exam paper.
- The exam is **three (3) hours** in length. The suggested working time is provided in the instructions for each part.
- All answers must be written in **English**.
- You **must** make sure your answers address the listed criterion.

Marker use	
C5	/ 45

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Guide to Exam Structure

	Parts	Questions available	Questions to answer	Suggested working time	Marks available
Section A	Part 1	6	6	25 minutes	25 marks
	Part 2	1	1	20 minutes	20 marks
Section B	Part 1	1	1	30 minutes	30 marks
	Part 2	1	1	15 minutes	15 marks
Section C		2	1	45 minutes	Extended ratings of A+ to z
Section D	Part 1	3	3	15 minutes	15 marks
	Part 2	1	1	30 minutes	30 marks and A+ to z
Totals		15	14	180 minutes (3 hours)	135 marks and A+ to z rating

Criterion

You **must** make sure your answers address:

- Criterion 5 analyse diets using Nutrient Reference Values and recognised food selection tools.

Part 1

- Answer **the** question in this part.
 - Refer to the data provided below in your answers for this part.
 - This part is worth 30 marks. The suggested working time for this part is **approximately 30 minutes**.
 - This part assesses **Criterion 5**.
-

Section B Data

Breakfast	Coffee mocha, caffeinated, regular, full cream milk	375 mL
	Crumpet, regular, toasted	2 round crumpets
	Peanut butter, crunchy, regular	2 tbs
Morning snack	Coffee, cappuccino, caffeinated, regular, full cream milk	250 mL
	Raisin toast	2 thick slices
	Butter, plain, salted	2 tbs
Lunch	McDonald's Crispy Caesar Wrap	1 wrap (227g)
	Doughnut, custard & cream filled	1 rectangle doughnut
	Coca-Cola regular coke	600 mL
Afternoon Snack	Mars bar	1 king size bar 85g
	Gatorade Blue Bolt	355 mL
Dinner	Lamb shoulder butterfly souvlaki	3 regular skewers
	Speciality foods yiros/souvlaki pita bread	3 regular round pita bread
	Tzatziki yiros garlic sauce	9 tbs
Supper	Nestle Milo, full cream milk	250 mL
	Nuts, almonds, chocolate coated	12 pieces

Table 1

Section B Data continued

Profile

Name	Age	Sex	BMI
Alex	24 yrs	Male	32.4
Weight	Height	Activity Level	PAL
135.00 kg	204.0 cm	Light-moderate	1.7

Figure 1: Health profile for a person named Alex used to determine their energy requirements.

Estimated Energy Requirement – 19 382kJ
Desirable (Recommended) Estimated Energy Requirement – 16 895kJ

Figure 2: Alex’s energy requirements.

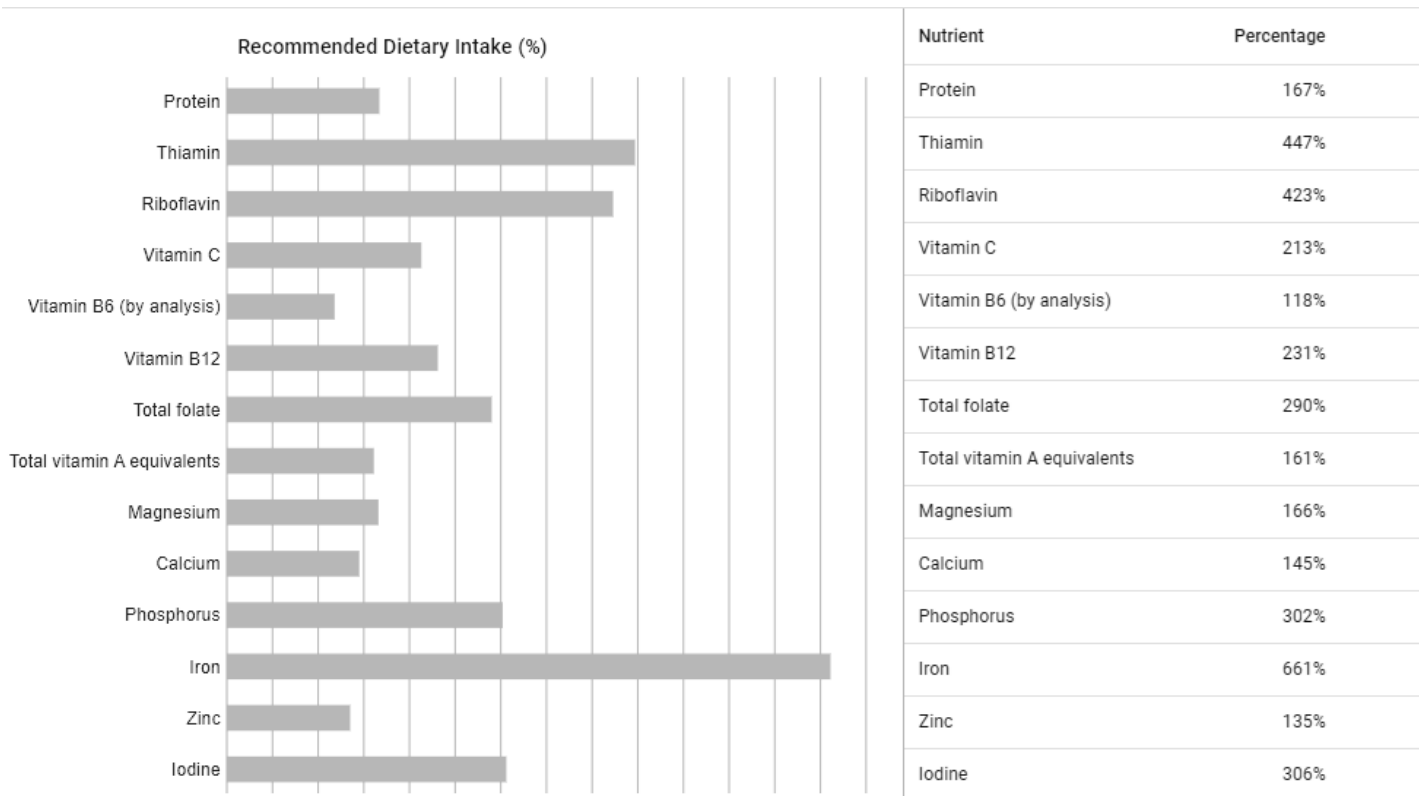


Figure 3: Bar graph of recommended dietary intakes (RDI) of various nutrients.

Section B Data continued

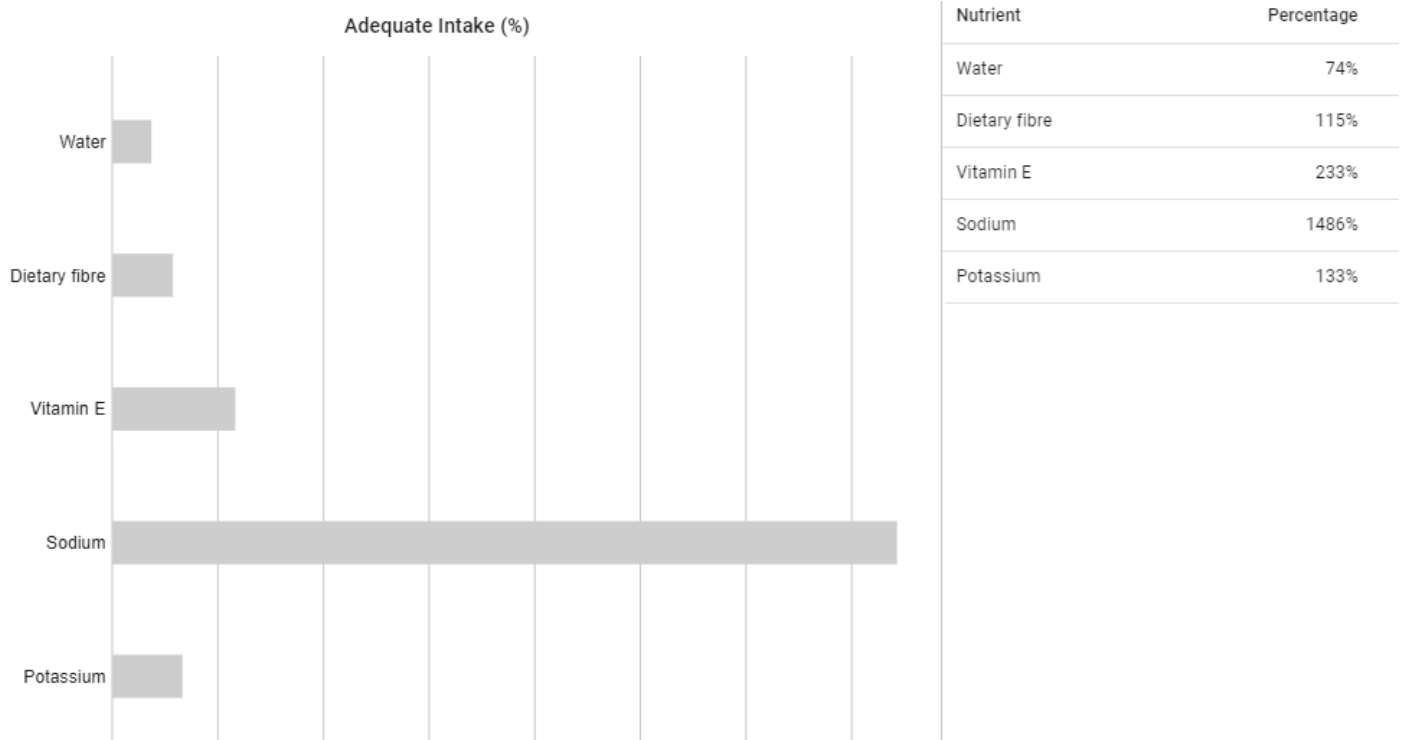


Figure 4: Bar graph of the adequate dietary intakes (AI) of various nutrients.

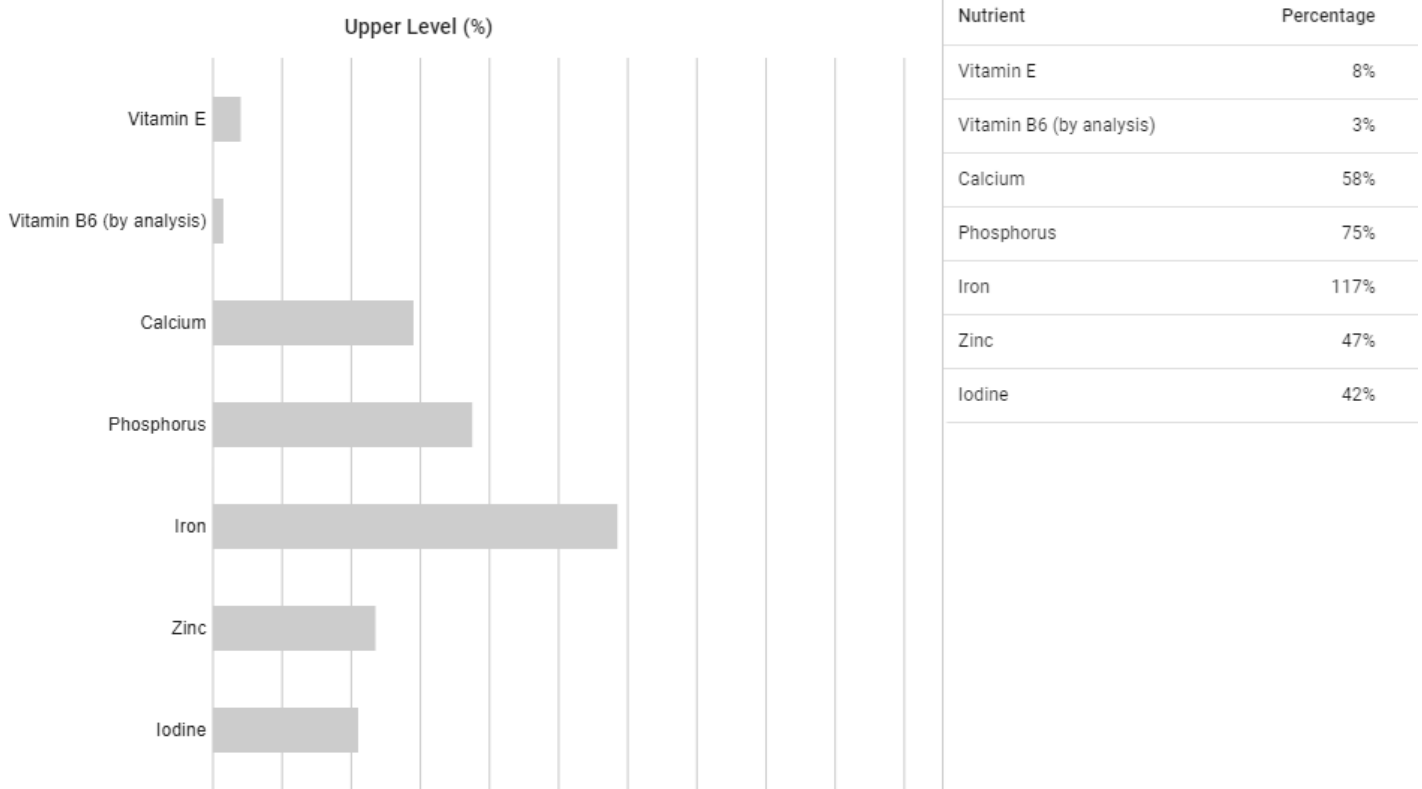


Figure 5: Bar graph of the upper level of intake (UL) of various nutrients.

Section B Data continued

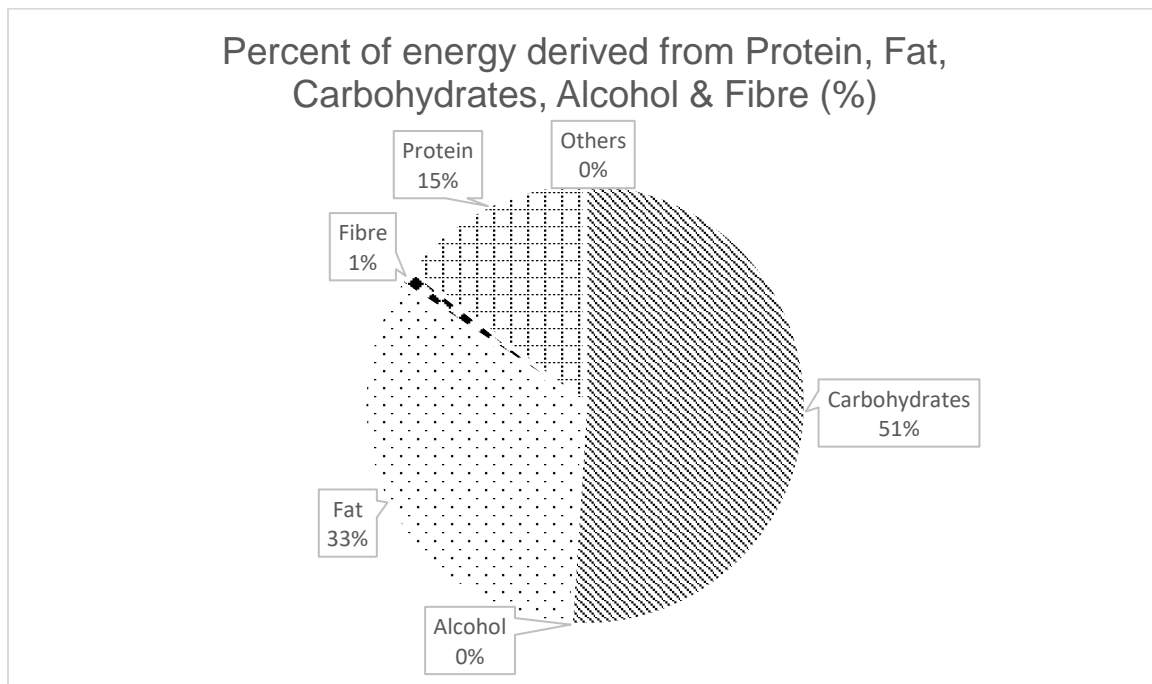


Figure 6: Pie graph of the percentage ratio of protein, carbs, fats, alcohol, fibre and KJ from others.

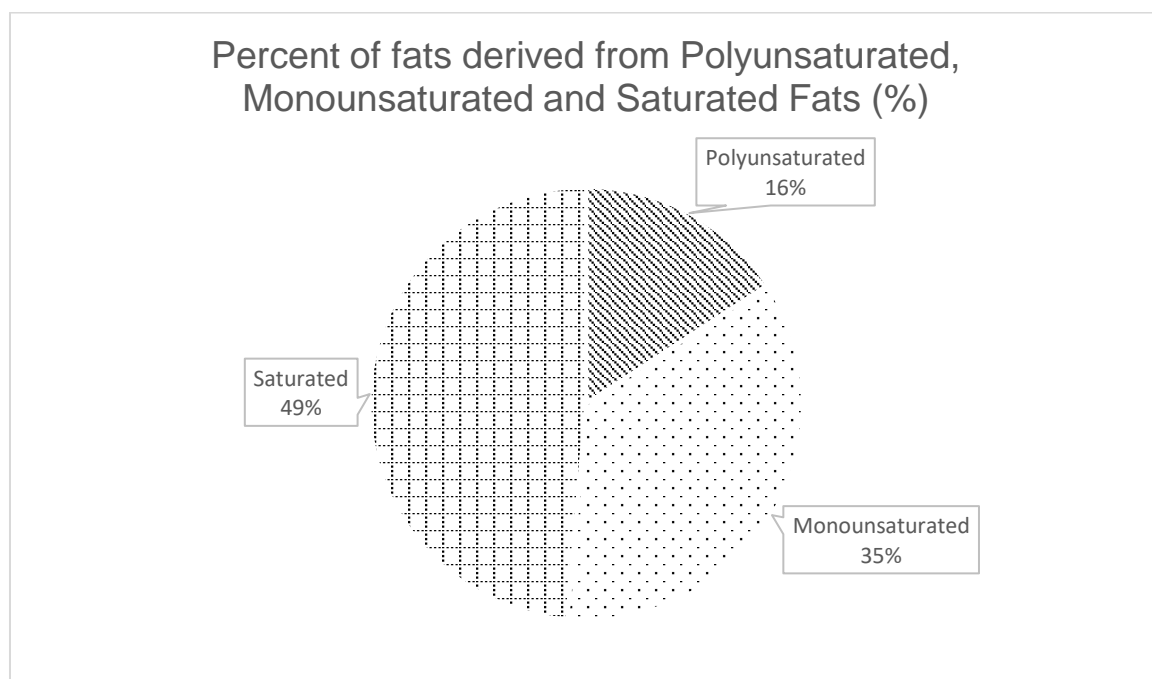


Figure 7: Pie graph of the percentage ratio of polyunsaturated, saturated, monounsaturated fats.

Question 8

Marker use

a) Alex's BMI falls within what range?

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b) Compare Alex's energy intake with the recommended intake and determine **two (2)** long-term health consequences if this eating pattern continues.

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c) Identify the macronutrient that Alex is consuming in excess and explain **two (2)** long-term health consequences of this.

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d) Is Alex consuming enough dietary fibre? Justify your answer and suggest **one (1)** short-term and **one (1)** long-term health consequence.

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Question 8 continues

Question 8 continued

Marker use

e) One of the micronutrients Alex is consuming in excess is sodium. Explain **one (1)** short-term and **two (2)** long-term consequences of a sodium intake as high as Alex's.

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f) Alex is consuming several other micronutrients in excessive amounts. Select **two (2)** and explain **one (1)** short-term and **one (1)** long-term health consequence of the high intake.

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g) Looking at Alex's percentage of energy derived from the macronutrients, how does this differ from recommendations? Explain **one (1)** possible health consequence of this imbalance.

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Question 8 continues

Question 8 continued

Marker use

h) Explain how Alex's fat intake ratios differ from the nutritional recommendations.

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i) Identify and explain **two (2)** possible consequences this level of fat intake might have on Alex's health.

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Total
P1
/ 30

Part 2

- Answer **the** question in this part.
 - Refer to the data provided in Part 1 in your answers to Part 2.
- This part is worth 15 marks. The suggested working time for this part is **approximately 15 minutes**.
- This part assesses **Criterion 5**.

Question 9

a) Guideline 2 of The Australian Dietary Guidelines (ADG) suggests that we should “Enjoy a wide variety of nutritious foods from the main five food groups every day such as: plenty of vegetables, including different types and colours, and legumes/beans”.

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How many serves of vegetables should Alex be consuming each day? How does this compare with the number of serves Alex is consuming each day?

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b) Suggest **four (4)** specific changes Alex could make to introduce more vegetables into his diet.

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Question 9 continues

Question 9 continued

Marker use

- c) The data identifies a deficiency of iodine in Alex’s diet. What health consequence might this deficiency lead to? Suggest **two (2)** changes to his diet that will improve his iodine levels.

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- d) Guideline 3 of the ADG recommends “limiting intake of foods containing saturated fat, added salt, added sugars and alcohol”.

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Alex’s sodium intake has been identified as excessive.

Identify **three (3)** foods in Alex’s diet that are high in sodium and suggest **three (3)** substitutions Alex could make to decrease his salt intake.

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Question 9 continues

Question 9 continued

Marker use

- e) Alex is consuming an excessive amount of saturated fat. Suggest substitutions for **three (3)** foods that would be beneficial in reducing Alex's saturated fat intake and improving the polyunsaturated and monounsaturated fat levels in his diet.

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Total
P2
/15

End of Section B
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Section **C**

Pages: 12

Questions: 2

Suggested working time: 45 minutes

Instructions:

- Answer **one (1)** question in **extended written response**.
- Write your answers in the spaces provided in this exam paper.
- The exam is **three (3) hours** in length. The suggested working time for this section is **approximately 45 minutes**.
- All answers must be written in **English**.
- You **must** make sure your answers address the listed criteria.

Marker use	
C2	/ Alpha
C8	/ Alpha

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Section C		2	1	45 minutes	Extended ratings of A+ to z
Section D	Part 1	3	3	15 minutes	15 marks
	Part 2	1	1	30 minutes	30 marks and A+ to z
Totals		15	14	180 minutes (3 hours)	135 marks and A+ to z rating

Criteria

You **must** make sure your answers address:

- Criterion 2 communicate ideas and information in a variety of forms
- Criterion 8 identify and analyse food related issues.

- Answer **one (1)** question in an **extended written response**; **either** Question 10 **or** Question 11.
 - Communicate ideas and information in the form of an extended written response.
 - Use structured paragraphs and sentences. These must be written in a logical, coherent manner, using specialised terminology and appropriate English grammar.
 - Provide clear and reasoned arguments supported by examples.
 - The suggested working time for this section is **approximately 45 minutes**.
 - This section assesses **Criteria 2 and 8**.
-

Question 10

There are three key components of food security (World Health Organization, 2011):

- **Food access:** the capacity to acquire and consume a nutritious diet, including costs, availability, storage, available time and skills, cooking facilities, and knowledge to make appropriate choices.
- **Food availability:** the supply of food within a community affecting food security of individuals, households or an entire population. This includes the location of food outlets and the variety they stock as well as price and quality.
- **Food use:** the appropriate use of food, based on knowledge of basic nutrition and care.

Write an extended response that:

- Explains the term 'food security' and identifies the pillars it is based on.
- Examines the three components and discusses specific details of how they affect food security.
- Identifies and discusses one barrier to each component.
- Suggests a possible strategy to overcome the barrier.

OR

Question 11

Global food systems are being challenged. The pandemic exposed their vulnerabilities and created a renewed urgency for change. We are using non-renewable, polluting resources to produce food, which is degrading land and water systems. In Australia, a concentration of power in our food supply chains is undermining sustainable food systems and the ability of food producers and consumers to turn this situation around.

Write an extended response that:

- Explains the term 'ecological sustainability'.
- Discusses and explains sustainable food systems (primary, secondary and tertiary), using examples and relevant global and Australian statistics.
- Discusses in detail **one (1)** barrier to sustainable food systems.

End of Section C
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Section **D**

Pages: 12
Questions: 4

Suggested working time: 45 minutes

Instructions:

- There are **two (2)** parts to this section:
 - **Part 1** – answer **all** questions and **all** items within each question
 - **Part 2** – answer **one (1)** question.
- Write your answers in the spaces provided in this exam paper.
- The exam is **three (3) hours** in length. The suggested working time is provided in the instructions for each part.
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Marker use	
C2	/ Alpha
C6	/ 45

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Guide to Exam Structure

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Section D	Part 1	3	3	15 minutes	15 marks
	Part 2	1	1	30 minutes	30 marks and A+ to z
Totals		15	14	180 minutes (3 hours)	135 marks and A+ to z rating

Criteria

You **must** make sure your answers address:

- Criterion 2 communicate ideas and information in a variety of forms
- Criterion 6 analyse factors affecting food choice.

Part 1

- Answer **all** questions in this part.
- This part is worth 15 marks. The suggested working time for this part is **approximately 15 minutes**.
- This part assesses **Criterion 6**.

Question 12

The connection between food and emotions can be very strong. Give **three (3)** different examples that support this statement: one for a child, one for an adult and one for an elderly person.

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Question 13

Marker use

Explain how geographical location and an individual's economic situation affect food choices. Outline how living in rural Tasmania might influence food selection and provide **one (1)** Tasmanian food example.

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Question 14

How can advertising influence food choice and be either a positive or negative influence on self-concept? Give **one (1)** example of an advertisement and how it may influence food choice and self-concept.

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Total
P1
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- Answer **the** following question in this part.
- This part is worth 30 marks. The suggested working time for this part is **approximately 30 minutes**.
- This part assesses **Criteria 2 and 6**.

Question 15

Anna is 19 years old and in her first year of a health degree at university. She had to move away from her rural Tasmanian hometown to attend university in Hobart. Her family home is two hours away from the nearest large supermarket and one hour away from a general store which sells an expensive and very limited range of foods.

During the semester, Anna shares a house within walking distance of the university campus with two other female students. Bing has come to Tasmania from Beijing to study Business and Billie, from Melbourne, is studying medicine.

Anna and Bing both play basketball so they train one evening a week and play their rostered games on a second night. Billie runs half marathons, so she runs three times a week; depending on her schedule it could be during the morning or evening. Remaining evenings are spent studying.

Anna has a weakness for fast food because she doesn't have it at home with her family. Bing is vegetarian and isn't fussed with Aussie takeaway food, preferring dishes she is more familiar with, such as noodles and fried rice. Billie loves pizza but only indulges once a month. The girls all have part time work – Anna in retail, Bing in hospitality and Billie at KFC. They return home to their parents during semester breaks.

Outline the main factors likely to influence each student's food choices when they:

- Share the house near the university they attend.
- Return to their parents' homes during the holidays.

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End of Section D
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