



OFFICE OF TASMANIAN  
ASSESSMENT, STANDARDS  
& CERTIFICATION

Tasmanian Certificate of Education  
External Assessment 2018

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# FOOD and NUTRITION

## (FDN315118)

Pages:	12
Questions:	7

## SECTION A

Time: 45 minutes

### Candidate Instructions

1. You **MUST** make sure that your responses to the questions in this examination paper will show your achievement in the criterion being assessed.
2. This paper is divided into **TWO** parts.
3. Answer **ALL** questions in both parts.
4. This examination is 3 hours in length. It is recommended that you spend approximately 45 minutes in total answering the questions in this booklet.
5. Answers must be written in the spaces provided on the examination paper.
6. You should make sure you answer all parts within each question so that the criterion can be assessed.
7. All written responses must be in English.

On the basis of your performance in this examination, the examiners will provide results on the following criterion taken from the course statement:

**Criterion 4** Describe the relationship between nutrition, food and health.

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**PART 1**

Answer **ALL** questions in this part.

This part is worth **20 marks**.

It is recommended you spend approximately **20 minutes** on this part.

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**Question 1**

(5 marks)

(i) Explain **TWO** functions of fibre and identify **TWO** foods high in fibre.

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(ii) Explain why it is important to increase water intake if increasing fibre consumption in your diet.

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(iii) Name **TWO** conditions that adequate fibre intake aims to reduce the risk of.

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(iv) What is the adequate intake (AI) of fibre per day for an adult male and adult female?

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**Question 2**

(5 marks)

(i) State **TWO** functions of fats.

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(ii) Explain the role of cholesterol, including HDL and LDL cholesterol.

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(iii) What are the **TWO** categories of polyunsaturated fatty acids? Give **ONE** good food source of each.

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**Question 3**

(5 marks)

(i) State **TWO** functions of folate.

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(ii) Identify **THREE** good food sources of folate.

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**Question 3 continues.**

**Question 3 continued.**

- (iii) What is the difference between a fat soluble and water soluble vitamin? In your answer, make reference to which group folate belongs to.

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**Question 4**

(5 marks)

- (i) Identify **TWO** good food sources of potassium and **TWO** good food sources of sodium.

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- (ii) Explain the inter-relationship of potassium and sodium in maintaining fluid balance.

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- (iii) Explain why a deficiency in either or both of the minerals, sodium and potassium, may affect health.

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**PART 2**

Answer **ALL** questions in this part.

This part is worth **25 marks**.

It is recommended you spend approximately **25 minutes** on this part.

**Question 5**

(10 marks)

Under-consumption and over-consumption of macronutrients and micronutrients in the body contribute to the overall burden of disease. Improving the nutritional status of Australians can play an important role in addressing many diet-related health conditions.

Choose **ONE** diet-related health condition **from the following** and provide the requested information.

- Heart Disease
- Type 2 Diabetes
- Overweight/Obesity

Diet-related condition 1:.....

(i) Definition of the condition.

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(ii) Recent Australian statistics to highlight its prevalence.

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**Question 5 continues.**

**Question 5 continued.**

(iii) Dietary factors that increase the risk of the condition.

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(iv) Discuss **ONE** prevention strategy.

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**Question 6**

(10 marks)

From the diet-related health conditions provided in Question 5, select another condition, and provide the requested information as follows. **Note: You cannot use the same condition as in Question 5.**

Diet-related condition 2:.....

(i) Definition of the condition.

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(ii) Recent Australian statistics to highlight its prevalence.

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(iii) Dietary factors that increase the risk of the condition.

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(iv) Discuss **ONE** prevention strategy.

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**Question 7**

(5 marks)

Using the diet-related conditions discussed in **Question 5 and 6**, explain any links between the conditions and some similarities in food intake that may lead to the conditions.

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# FOOD and NUTRITION

## (FDN315118)

Pages:	12
Questions:	2

## SECTION B

Time: 45 minutes

### Candidate Instructions

1. You **MUST** make sure that your responses to the questions in this examination paper will show your achievement in the criterion being assessed.
2. This paper is divided into **TWO** parts.
3. Answer **ALL** questions in both parts.
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6. You should make sure you answer all parts within each question so that the criterion can be assessed.
7. All written responses must be in English.

On the basis of your performance in this examination, the examiners will provide results on the following criterion taken from the course statement:

**Criterion 5** Analyse diets using Nutrient Reference Values and recognised food selection tools.

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# PART 1

Answer **ALL** parts of this question.

This question is worth **17 marks**.

It is recommended you spend approximately **17 minutes**.

Use your knowledge of nutrition and the information provided in Billy's Dietary Analysis to answer **Question 8** and **Question 9**.

## Question 8

Billy's typical dietary intake over **ONE** day.

Food	Amount	Portion
<b>Breakfast</b>		
<input type="checkbox"/> Sausage, beef, fried	3	sausage, long and ▼
<input type="checkbox"/> Potato, hash brown, purchased frozen, baked or roasted, fat not further defined	4	hash brown, regul. ▼
<input type="checkbox"/> Fruit drink, apple juice, commercial	1	drink, single bever ▼
<input type="checkbox"/> Coffee, cappuccino, from ground coffee beans, with regular fat cows milk	1	travel mug, mediu ▼
		▼
<b>Lunch</b>		
<input type="checkbox"/> Bread, from white flour, for homemade sandwiches, toasted	4	slice, regular, 27g ▼
<input type="checkbox"/> HAM, SHAVED HAM	4	slice, shaved, 12g ▼
<input type="checkbox"/> Cheese, cheddar, natural, plain, regular fat	2	slice, sandwich size ▼
<input type="checkbox"/> Custard, dairy, regular fat, chocolate, commercial	200	mL ▼
<input type="checkbox"/> BISCUIT, ARNOTT'S TINY TEDDY CHOCOLATE CHIP BISCUITS	1	single serve packa, ▼
<input type="checkbox"/> Thickshake, chocolate or coffee flavour, regular fat cows milk, with ice cream	1	drink, large, 750ml ▼
<b>Dinner</b>		
<input type="checkbox"/> Bread, pizza base	300	g ▼
<input type="checkbox"/> Tomato, paste, with added salt	4	drizzle or squirt, 5l ▼
<input type="checkbox"/> Chicken, bite-size pieces, coated, fast food chain, fried, fat not further defined	10	piece, 10g ▼
<input type="checkbox"/> Salami, pepperoni	10	slice, 23g ▼
<input type="checkbox"/> Cheese, cheddar, processed, regular fat	2	sprinkle, 19.2g ▼
<input type="checkbox"/> Bacon, breakfast rasher, baked, roasted or fried, no added fat	2	rasher, 40g ▼
<input type="checkbox"/> Cheese, mozzarella, regular fat	2	sprinkle, 19.2g ▼
<input type="checkbox"/> Fruit drink, apple juice, commercial	1	drink, single bever ▼
		▼
<b>Snack</b>		
<input type="checkbox"/> Banana split, banana with added ice cream, whipped cream, topping & nuts	1	g ▼

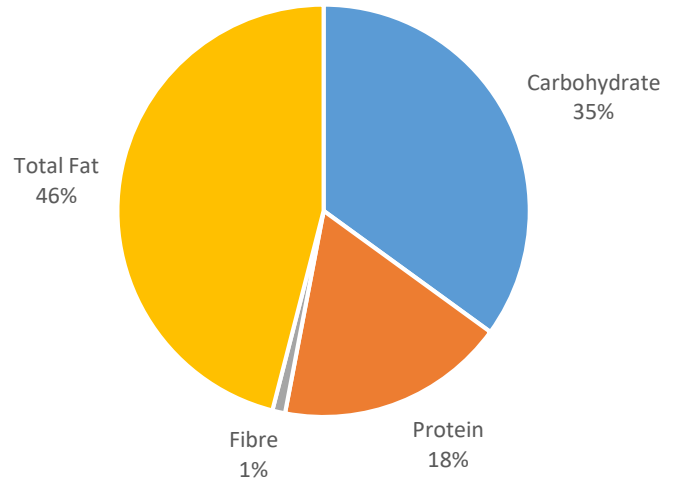
# Billy's Nutritional Profiles

## Personal details

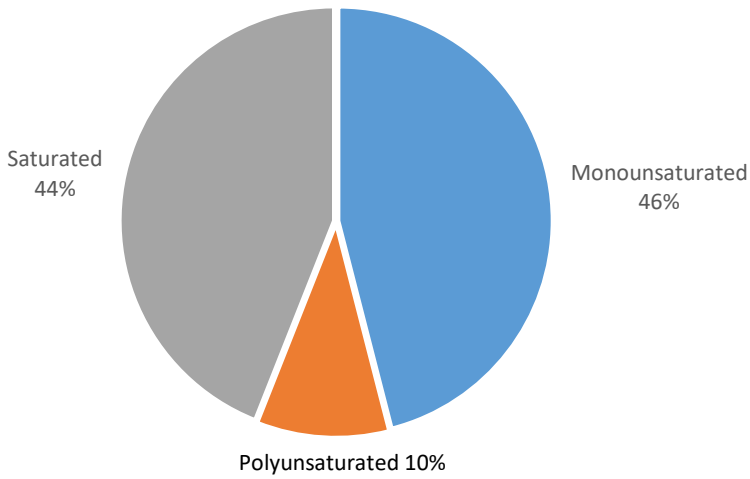
### Billy's Energy Ratios

First name: Billy	
Age (yrs):	45
Weight (kg):	107
Height (cm):	176
Sex:	Male
Physical Activity Level:	Extremely inactive
EER - Estimated Energy Requirement (kj):	<b>10547</b>

**Macronutrient Ratio (%)**



**Fat Ratio (%)**



Macronutrient	Amount	Macro %
Carbohydrate (g)	502	35
Protein (g)	252	18
Total Fat (g)	296	46
Alcohol (g)	0	0
Fibre (g)	5	1
Other	na	0

Fat	Amount	Fat %	Energy %
Monounsaturated (g)	125	46	19
Polyunsaturated (g)	29	10	4
Saturated (g)	122	44	19



## Summary of Billy's daily dietary intake

Energy (kJ)	<b>23906.2</b>	Thiamin (B1) (mg)	3.2
Protein (g)	252.3	Riboflavin (B2) (mg)	4.1
Fat (g)	295.5	Niacin (B3) (mg)	53.9
- Saturated fat (g)	121.7	Folate, total (ug)	694.3
- Monounsaturated fat (g)	125.5	Vitamin C (mg)	107.1
- Polyunsaturated fat (g)	28.5	Calcium (mg)	2143.3
Trans fat (mg)	6012.8	Iron (mg)	23.8
Cholesterol (mg)	799.7	Iodine (µg)	404.6
Carbs (g)	501.5	Magnesium (mg)	569.3
- Sugars (g)	216.3	Potassium (mg)	6658.7
- Starch (g)	285.9	Sodium (mg)	12732.1
Fibre (g)	5.0	Zinc (mg)	34.1
Alcohol (g)	0.0		

**Question 8**

(a) (i) Using the data, how many kilojoules on a typical day is Billy consuming in comparison to what his EER suggests he should have for energy balance? (1 mark)

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(ii) Discuss the concept of energy balance in relation to the data. Why is it important for Billy to work towards an energy balance? (2 marks)

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(iii) How do Billy's energy intake ratios differ from the Acceptable Macronutrient Distribution Ranges (AMDR)? (3 marks)

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(iv) Explain why the AMDR are not true reflections of Billy's dietary needs. (2 marks)

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**Question 8 continues.**

**Question 8 continued.**

- (b) Identify **TWO** macronutrients which Billy is consuming in excess. Describe **ONE** possible consequence of excessive consumption of each macronutrient. (4 marks)

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- (c) One of the micronutrients Billy is consuming in excess is sodium. Explain **ONE** short-term and **ONE** long-term consequence of a sodium intake as high as Billy's. (2 marks)

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- (d) Explain how Billy's fat intake ratios differ from the nutritional recommendations. (3 marks)

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**PART 2**

Answer **ALL** parts of this question.

This question is worth **28 marks**.

It is recommended you spend approximately **28 minutes**.

Use your knowledge of nutrition **and** the information provided in Billy's Dietary Analysis, the Australian Dietary Guidelines and the Australian Guide to Healthy Eating to answer **Question 9**.

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**Question 9**

(a) According to the Australian Dietary Guidelines, Australian adults get nearly 36% and children get nearly 41% of their daily kilojoules from discretionary food.

(i) Billy consumes too many discretionary foods. Explain why discretionary food is not an essential component of the dietary patterns recommended by the Australian Government. (3 marks)

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(ii) Choose **THREE** discretionary food items from Billy's typical dietary intake.

- Recommend an appropriate modification for **EACH** discretionary food item.
- Justify why **EACH** modification is a better choice for Billy. (6 marks)

Food item 1: .....

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Food item 2: .....

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**Question 9 continues.**

**Question 9 continued.**

Food item 3: .....

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(b) The Australian Guide to Healthy Eating (AGHE) suggests that individuals should *'Enjoy a wide variety of nutritious foods from five different groups'*.

One of the groups is 'lean meats, poultry, fish, eggs, tofu, nuts and seeds, legumes and beans'.

(i) How many serves of 'lean meats, poultry, fish, eggs, tofu, nuts and seeds, legumes and beans' should Billy be consuming daily? (1 mark)

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(ii) Discuss **THREE** ways Billy could introduce or swap healthier alternatives to improve his daily intake for this food group to comply with the number of serves recommended by the AGHE. (3 marks)

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(iii) Discuss **TWO** effects that substituting food items from this food group will have on Billy's health. (2 marks)

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(iv) If Billy was to become a vegan, list **THREE** ways he could still meet the recommended serves per day of this food group. (3 marks)

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**Question 9 continues.**

**Question 9 continued.**

(c) Billy's daily dietary intake appears high in calcium.

(i) Recommend **FOUR** good food sources of calcium that he may substitute into his eating pattern. Justify why **EACH** substitution is a better choice for Billy. (4 marks)

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(ii) Provide **TWO** reasons why it is important for Billy to meet the daily AI for calcium. (2 marks)

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(d) Billy's dietary intake appears low in fibre. Suggest **TWO** high fibre snacks that he could include. (1 mark)

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(e) Billy's regular dinner meal is pizza from his local pizza shop (see daily eating pattern). Suggest **THREE** modifications Billy could make to create a more healthy pizza at home himself, in accordance with the ADGs. (3 marks)

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# FOOD and NUTRITION

## (FDN315118)

Pages:	8
Questions:	2

## SECTION C

Time: 45 minutes

### Candidate Instructions

1. You **MUST** make sure that your responses to the questions in this examination paper will show your achievement in the criteria being assessed.
2. Answer **ONE** question from this part.
3. You **MUST**:
  - Communicate ideas and information in the form of extended written expression.
  - Identify and analyse food related issues.
  - Respond using the form of extended written expression.
  - Use structured paragraphs and sentences, which must be written in a logical, coherent manner, using specialised terminology and appropriate English grammar.
  - Candidates must provide clear and reasoned arguments supported by examples.
4. Answers must be written in the spaces provided on the examination paper.
5. This examination is 3 hours in length. It is recommended that you spend approximately 45 minutes in total answering the questions in this booklet.
6. All written responses must be in English.

On the basis of your performance in this examination, the examiners will provide results on the following criteria taken from the course statement:

**Criterion 2** Communicate ideas and information in a variety of forms\*

**Criterion 8** Identify and analyse food related issues

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**Answer: EITHER Question 10**

**OR Question 11**

This part is worth **45 marks**.

It is recommended you spend approximately **45 minutes** on this part.

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### **Question 10**

The maintenance of a sustainable food supply is an increasing global concern. More than enough food is produced to feed the world's population. Unequal food distribution, however, has led to global food waste and food insecurity with the result that many people do not get enough food to maintain good health.

Write an extended response that:

- Explains the term 'food security'.
- Discusses **ONE** barrier and/or risk factor for food security using current global and Australian statistics.
- Discusses and makes reference to at least **TWO** groups of people, most 'at risk' of food insecurity in developing countries and/ or Australia. Provide examples and data.
- Explores **TWO** possible strategies to help reduce the incidence of food insecurity in developing countries and/or Australia. Evaluate the potential advantages and disadvantages of each possible strategy.

**NOTE: Use strategies from different sectors: Technology, Education, Government policy, Aid or Sustainable food systems.**

### **Question 11**

During 2018, Coles and Woolworths supermarkets announced a number of initiatives to increase their contribution towards more ecologically sustainable practices. They are going to actively reduce waste and landfill through more recyclable packaging and find alternative uses for waste, as Australians throw out \$8 billion of edible food every year.

Write an extended response that:

- Explains the term 'ecological sustainability'.
- Discusses and explains sustainable food systems (food production, processing and consumer practices), using examples and relevant global and Australian statistics.
- Discusses **ONE** barrier to sustainable food systems.
- Explores **TWO** possible strategies that could be implemented to achieve ecological sustainability in the food system. Evaluate the potential advantages and disadvantages of each possible strategy.

**NOTE: Use strategies from different sectors: Technology, Education, Government policy or Sustainable food systems.**

**Question Number:**

*(In the box write the number of the question you are answering)*

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# FOOD and NUTRITION

(FDN315118)

## SECTION D

Pages:	8
Questions:	6

Time: 45 minutes

### Candidate Instructions

1. You **MUST** make sure that your responses to the questions in this examination paper will show your achievement in the criterion being assessed.
2. This paper is divided into **TWO** parts.
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6. This examination is 3 hours in length. It is recommended that you spend approximately 45 minutes in total answering the questions in this booklet.
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On the basis of your performance in this examination, the examiners will provide results on each of the following criterion taken from the course statement:

**Criterion 6** Analyse factors affecting food choice

**PART 1**

Answer **ALL** questions in this part.

This part is worth **15 marks**.

It is recommended you spend approximately **15 minutes** on this part.

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**Question 12**

The connection between food selection and emotion can be very strong. Provide **THREE** different examples to support this statement. (3 marks)

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**Question 13**

Explain how advertising can influence food choice, and either positively or negatively affect self-concept. Provide **ONE** example of an advertisement and how it may influence food choice and self-concept. (3 marks)

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**Question 14**

Food plays many roles in shaping and expressing both individual identity and connectedness to families, peer groups and communities. Outline **ONE** lifestyle and work pattern influence, and **ONE** cultural and traditional influence on food choice. Provide an example of each. (3 marks)

Lifestyle and work pattern influence:

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Cultural and traditional influence:

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**Question 15**

Describe **TWO** strategies in relation to food choice that fast-food outlets may use to encourage individuals or families to purchase discretionary food. (2 marks)

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**Question 16**

Define and explain the difference between hunger, appetite and satiety in relation to food choice. Provide an example of each. (4 marks)

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## PART 2

This part is worth **30 marks**.

It is recommended you spend approximately **30 minutes** on this part.

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### Question 17

**Identify the specific factors affecting the food selection choices of Anna, Chris, Steven, Michelle and Paulo.**

**Provide examples of specific food choices in your answer.**

The following family consists of: Anna (mother), Chris (father), Michelle (child), Steven (child) and Paulo (exchange student).

Anna is a 40 year old mother of 2 young children. She is an elite level athlete who trains up to 6 hours a day and as a result, is very particular with what she eats. This dietary lifestyle makes her feel good about herself and provides her with the nutrients needed to keep her performing as an athlete. Anna usually eats different meals to the rest of the family. However, when Anna doesn't perform well, she gets very emotional and at this time, she binge eats.

Chris is a 42 year old father of 2 young children who is very tall and has a large body size. He eats six meals a day due to always being hungry and never feeling full. He often purchases unhealthy takeaway food. Chris plays football for fun on the weekend and always socialises with his mates after a game, enjoying food and drink.

Steven is a 5 year-old boy and has a nut allergy. He loves to eat food while watching TV every afternoon. He requests and enjoys eating food he has seen on TV advertisements.

Michelle is 11 years old. As she has got older she has decided to not eat meat as she overheard her parents' friend telling them that they had chosen to be vegetarian. She enjoys eating fruit at recess time and especially likes the crunch associated with eating red shiny apples. However, Michelle dislikes eating kiwifruit due to the furry skin, or bananas due to their shape and smell.

Paulo is a 19 year-old student on exchange from Mexico. He loves eating Mexican cuisine as it reminds him of home and his host family often cook this for everyone. Paulo is studying at university and is very busy. He grabs convenient, cheap food each day at the café. He has little money to spend on food and very rarely goes to the supermarket with his host family due to being so busy.

(30 marks)

**Question 17 continues.**









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