

Food and Nutrition

Course Code: FDN315113

PART 1

General Comments

A few questions indicated some gaps in understanding such as fibre, the difference between types of fats and functions of calcium and iodine.

Answers

Question 1

- (a) (i) Name three nutrients which provide the body with energy. (1 mark)

Carbohydrate, Protein, Fat

- (ii) State the energy value of 1g of each of the nutrients named in (i). (1 mark)

Carbohydrate- 16kJ Protein – 17kJ, Fats – 37kJ

- (b) (i) What does the term NRV stand for? Briefly explain the term. (1 mark)

Nutrient Reference Value

A set of recommendations for nutrient intake based on currently available scientific knowledge. They include EAR, AI, UL, RDI

- (ii) EAR and EER are NRVs. What do EAR and EER stand for? (1 mark)

Estimated Average Requirement – A daily nutrient level estimated to meet the requirements of half of the healthy individuals in a particular life stage or gender group.

Estimated Energy Requirement – The average dietary energy intake that is estimated to maintain energy balance in a healthy adult of defined age, gender, weight, height and level of physical activity, consistent with good health.

- (c) (i) Proteins are made from amino acids. All amino acids contain the elements carbon and hydrogen. Give two other elements found in amino acids. (1 mark)

Nitrogen

Oxygen

- (ii) Name one animal food high in protein and one non-animal food high in protein. (1 mark)

Animal- meat, fish, eggs, chicken etc

Plant - soy, soy products, quinoa, beans, rice, chickpeas, almonds, lentils, seeds.

- (iii) List two functions of protein

1. Energy – 17kJ

2. Proteins are the main components of many structures in the body eg outer membrane of cells.

3. Enzymes

4. Hormones are made of protein
5. Proteins form antibodies
6. Regulate cell division

(iv) State one way in which the body deals with an excess of protein. (1 mark)

Converts to fat and stores

(d) (i) List three functions of fat in the body (1 mark)

1. Concentrated source of energy
2. Transport fat soluble nutrients
3. Protection of organs, insulator, energy store

(e) Explain the difference between a saturated fat and an unsaturated fat. (1 mark)

Saturated fats have no double bonds between molecules. They are saturated with hydrogen molecules. They are usually solid at room temperature.

Unsaturated are typically liquid at room temperature and their chemical structure contains one or more double bonds.

(ii) Briefly explain if an individual's diet should contain more fats with LDLs or with HDLs. (1 mark)

A diet should contain more HDLs as they reduce the risk of atherosclerosis. HDLs are referred to as good cholesterol. LDL can raise blood cholesterol and increase the risk of CVD.

(f) Dietary fibre and water work together.

(i) What is dietary fibre? How much dietary fibre is needed per day for an adult male and an adult female? (1 mark)

Is a type of carbohydrate which is not digested by enzymes in the body.

Adult Male – 30g

(ii) Explain the difference between soluble and insoluble fibre. Give a food example that provides each type of fibre. (1 mark)

All fibre is from plants. Insoluble fibre adds bulk to the diet and aids to remove waste and keep bowel regular. It is the hard outer surface of roots, grains and seeds. Eg Lignin and cellulose. Food examples – seeds, wheat bran, outer skins and cell wall of fruit and veg. eg celery.

Insoluble fibre softens in water to form a gel. It slows digestion. It can help to stabilise blood glucose levels in people with diabetes and may help lower LDLs. It also gives the feeling of fullness. Examples – oats, psyllium, lentils, fruits and vegetables.

(iii) Name the condition which results from a deficiency of water. What are two symptoms of this condition? (1 mark)

Dehydration – Thirst, tiredness, elevated blood pressure, constipation.

(iv) List two functions of water in the human body. (1 mark)

Transport nutrients, component of all cells, regulate temperature, excrete waste, lubricant, component of blood.

Section B

General Comments

The spelling of types of carbohydrates meant that many students did not achieve full marks. Spelling included fuctose, fructose, ditose, maltose etc.

Question 2 (5 marks)

- (a) Explain two main functions of carbohydrate in the diet.

Energy
Aids Digestion

- (b) Carbohydrates can be classified as monosaccharides, disaccharides or polysaccharides. Complete the table, identifying types and food sources.

	Monosaccharides	Disaccharides	Polysaccharides
Types	<p>1. <i>Fructose</i></p> <p>2. <i>Glucose</i></p> <p>3. <i>Galactose</i></p>	<p>1. <i>Sucrose</i></p> <p>2. <i>Maltose</i></p> <p>3. <i>Lactose</i></p>	<p>1. <i>Starch</i></p> <p>2. <i>Fibre</i></p>
Food Sources	<p>1. <i>Fruit</i></p> <p>2. <i>Jelly Beans</i> <i>Milk</i></p>	<p>1. <i>Milk</i></p> <p>2. <i>Sugar cakes, biscuits, milo</i></p>	<p>1. <i>Bread Rice</i></p> <p>2. <i>Vegetables, nuts, seeds</i></p>

Question 3 (5 marks)

- (a) Minerals are essential micronutrients. Two of these are calcium and iodine.

Calcium

Function: Building strong bones and teeth, Clotting blood, sending and receiving nerve signals. Muscle contraction, releasing hormones. Regulating heartbeat.

Good food source: Dairy eg cheese, milk, leafy green eg broccoli, salmon, almonds

Iodine

Function: necessary for thyroid functioning and production of growth hormone. Assists with metabolism, nerve and muscle functioning, regulation of temperature and blood cell production.

Good food source: iodised salt, eggs, seafood, bread

- (b) Iron is another essential micronutrient. Name the condition caused by a lack of iron in the diet. Give two symptoms of this condition.

Anaemia- tiredness, rapid heartbeat, pale skin, dizziness

- (c) Name the vitamin required for the absorption of iron.

Vitamin C

Question 4 (5 marks)

- (a) Describe two different ways in which the body uses energy.

1. Activity 2. BMR, Digestion

- (b) Define the term energy balance. How does Body Mass Index (BMI) indicate if an individual is maintaining an energy balance?

Energy balance is when the kilojoules consumed through eating and drinking is equal to kilojoules burned through physical activity and metabolic processes. Kilojoules consumed is ENERGY IN. Kilojoules used is ENERGY OUT. If the energy in is greater than energy out an individual may gain weight whereas if the energy out is greater than energy in they will lose weight. If an individual BMI is within the healthy weight range (18.5 – 24.99) they most likely have an energy balance. If below 18.5 they may have a negative balance and 25 or over a positive energy balance

- (c) List **two** reasons individuals have different energy requirements.

Age, activity, gender, illness, body size, pregnancy

Question 5 (5 marks)

- (a) Explain how sodium and potassium work together in the body.

Sodium and potassium, work together as the sodium-potassium pump, which is the mechanism of active transport by which sodium and potassium ions are moved across the cell membrane, into and out of the cell. Sodium is the chief ion outside the cell, potassium inside. They regulate fluid balance and play a key role in blood pressure.

- (b) If an individual has a diet high in sodium, how does this affect the process explained in (a)?

Sodium is an electrolyte and it helps control muscle contractions and fluid balance within your body. Too much sodium in the diet can lead to elevated blood pressure as it draws fluid out of the cells.

- (c) Give two food sources of sodium and two food sources of potassium.

Sodium – processed foods, eg sausages, sauces

Potassium – bananas, avocado

- (d) A diet high in sodium can lead to which condition?

Hypertension, CVD

Question 6 (5 marks)

- (a) It is suggested that phytoestrogens are useful in the body. Explain why.

When eaten, phytoestrogens bind to oestrogen receptors (ERs) and can promote some of the same effects as human oestrogen.

- (b) State two rich food sources of phytoestrogens.

<ul style="list-style-type: none"> • Whole soybean soy milk • soy sauce • soy beans • tempeh • tofu • soy drinks 	<ul style="list-style-type: none"> • oats • rice • barley • quinoa • rice bran • wheat germ 	<ul style="list-style-type: none"> • flaxseed • sesame seeds • pistachios • almonds 	<ul style="list-style-type: none"> • chickpeas • lentils • red kidney beans • alfalfa • mung beans • lima beans
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(c) Name two illnesses/conditions that a diet containing phytoestrogen rich foods may assist to prevent.

1. Some studies have shown potential benefits of phytoestrogens in regard to cardiovascular risk
2. bone density and menopausal symptoms

(d) Using examples, explain the difference between a nutrient and a non-nutrient.

Nutrients include protein, fats, carbohydrates, protein, vitamins and minerals. They are essential for health and for the body to perform its basic functions. Non nutrients include antioxidants, probiotics and phytoestrogens they are not essential for life but can enhance health.

Section C

Question 7

Processed foods containing large amounts of added sugar are contributing to a number of health conditions in Australia.

(a) (i) What is sugar? Why is it used in the food industry? (1 mark)

Sugar is a simple carbohydrate. It is used by the food industry as a sweetener. It is also used as a preservative.

(ii) Why is sugar a problem in our modern diet? Give two reasons. (2 marks)

It is a problem as it is consumed in excess by many people and may therefore may contribute to obesity. It may also displace other nutrients such as fibre as it is often in processed food.

(iii) List four specific ways in which individuals can reduce their sugar intake. (4 marks)

Choose whole foods rather than processed foods
 Drink water rather than soft drinks
 Snack on fruit and nuts rather than confectionary.
 Read food labels to choose low sugar foods

(iv) Discuss **three** strategies in relation to food that the community has put in place to help reduce the burden of overweight and obesity associated with high sugar intake. (3 marks)

NB many students did not discuss strategies that relate to food. They only discussed exercise programs.

Introduce free chilled water stations in schools and parks.

Supermarkets providing free fruit for children and lolly free checkouts

Schools having healthy canteens and removing vending machines

Farmers markets to promote fresh food

- (b) Healthy food choices contribute to overall wellbeing. A balanced diet and sufficient physical activity can reduce the risk of Type 2 Diabetes.

What is Type 2 diabetes?

Discuss Type 2 diabetes with reference to:

- Current Australian statistics
- Risk factors
- Links to other lifestyle diseases
- Preventative strategies for individuals and communities (20 marks)

A strong answer in this section required students to respond to all dot points to gain a minimum of valid points. Many students did not complete the strategies for individuals and communities section and therefore did not received high scores.

Definition: Type 2 diabetes is a condition in which the body becomes resistant to the normal effects of insulin and/or gradually loses the capacity to produce enough insulin in the pancreas

Type 2 diabetes is a combination of ineffective insulin and not enough insulin. Type 2 diabetes is a progressive condition and the progression is with the ongoing destruction of the cells in the pancreas that produce insulin.

- Current Australian statistics

280 Australians develop diabetes every day. That's one person every five minutes

Around 1.7 million Australians have diabetes. This includes all types of diagnosed diabetes (1.2 million known and registered) as well as silent, undiagnosed type 2 diabetes (up to 500,000 estimated)

More than 100,000 Australians have developed diabetes in the past year

For every person diagnosed with diabetes there is usually a family member or carer who also 'lives with diabetes' every day in a support role. This means that an estimated 2.4 million Australians are affected by diabetes every day

- Risk factors

Although there is a strong genetic predisposition, the risk is greatly increased when associated with lifestyle factors such as high blood pressure, overweight or obesity, insufficient physical activity, poor diet and the classic 'apple shape' body where extra weight is carried around the waist.

- Links to other lifestyle diseases

High blood pressure, overweight or obesity, increase the risk of diabetes II. Diabetes increase the risk of CVD and stroke along with kidney disease, eye problems, infections and circulatory conditions.

- Preventative strategies for individuals and communities ideas include:

Individual – maintain healthy weight by eating healthy diet. Consuming recommended amounts of fruit and vegetables. Consuming a diet that includes low GI foods to help regulate blood sugar level and increase satiety. Consume recommended energy intake to reduce risk of obesity. Eat recommended fat ratio to reduce energy dense foods and help maintain weight and reduce risk of CVD. Consume low sodium to reduce risk of high blood pressure. Consume foods rich in fibre to reduce risk of overeating. Exercise regularly.

Community – Schools educate students about healthy eating and importance of exercise. Have health canteens and nutrition policy. Teach students to cook health foods and meals.

Promote health in shopping malls and centres eg Diabetes awareness. Provide free health checks. Have drinking fountains in parks. Have health food fiestas and community events. Have billboards and promotions for healthy eating.

Councils could distribute measure up tapes to promote awareness of healthy weight.

PART 2

Section A

Question 8

- (i) Students should recognise Michael's energy intake is excessive and provide the data for this. Better answers comment that this affects the energy ratios from protein, fat and carbohydrate. Students should compare AMDR figures with Michael's intake.
- (ii) Michael is eating all macronutrients in excess (protein, fat and carbohydrate).
- (iii) This question was not answered as well as expected. Students needed to identify a range of short term and long term consequences of excess intake of fat, protein and carbohydrates. Better answers demonstrated clear understanding of the links between excess intake of the macronutrients and consequences. Michael is already obese.

Sample answer:

In the short term Michael will gain weight; he is already obese. The excess body weight will have adverse health effects such as tiredness, stress on joints, sleep apnoea and depression. In the long term, Michael may experience hypertension and elevated LDL cholesterol levels leading to atherosclerosis and CVD. He is also at higher risk of Type 2 Diabetes.

For one mark, students needed to recognise Michael's intake of both sodium and calcium is excessive, providing some data. For the second mark, students needed to either provide reference to numbers of an upper limit (within range), or state what an upper limit means.

Students need to explain that the recommended intake is a third of each type of fat (monounsaturated, polyunsaturated and saturated), supplying data as evidence. They needed to comment that saturated fat intake is too high. The other fats do not need to be increased.

Question 9

- (i) Most students showed good analytical skills in comparing the biscuits. Students needed to compare the key nutrients, not just relist the figures.
- (ii) The oatmeal biscuit is best because it has no sodium, most fibre and lowest energy. Many students chose the cheese biscuit, and were awarded half marks for justifying their choice.
- (iii) The three suggested foods needed to be supported with nutritional reasons.

Sample answer:

Replace the chocolate biscuits which are high in sugar and energy with fresh vegetables eg. Carrot sticks and hummus. This contains no sugar and is nutrient dense.

Replace the cheese biscuits which are high in sodium and refined carbohydrate with wholegrain bread which is high in fibre and micronutrients.

Replace the evening snack biscuits with unsalted nuts or fresh fruit. These foods are high in micronutrients and non nutrients and low in saturated fat.

(i) 1 mark was awarded for a good definition (not just repeating the quote above).

½ mark for a food example

½ mark for 500-600 kJ per serve

½ mark was awarded for 0-3 serves. 1 mark for recognising Michael is obese and therefore is recommended to have no discretionary serves.

½ mark was awarded for each discretionary food, ½ mark for each explanation.

2 serves of fruit and 5 ½ - 6 serves of vegetables. (1/2 mark for 5 vegetables).

Many students misinterpreted this question or did not know how much is in a serve. An accurate example of a serve of each was required. Eg one cup of leafy green veg; one medium apple; ½ potato.

PART 3

Section A

Question 10

(a) (i) Generally well answered. The following guide includes factors accepted in each category.

Social	Physiological	Economic	Psychological
Lifestyle	Hunger	Occupation	Beliefs
Tradition	Appetite	Marketplace	Expenses
Technology	Satiety	Technology	Emotions
Occupation	Allergies		
	Turgor		
	Levels of Physical		
	Activity		

Marking scale was:

3 = All correct, 2 = 10-13, 1 = 5-9, 0 = less than 4 correct

Most students tackled this quite well. A few were confused between Physiological and Psychological.

(ii) (says i again in exam)

Not as well answered as part (i). For 2 full marks students needed to give a specific, sensible example that related to food choices. Quite a few students were confused by the term 'inter-related' and simply mentioned factors that were similar to each other. E.g. Emotions and beliefs can be inter-related as they both refer to how you feel and the way you interpret particular situations'.

The best answers gave specific examples and mentioned the food involved:

Economic –occupation (builder) might influence Physiological – nutritional requirements or hunger because they are more physical active.

Tradition (Social) and Occupation (Economic) can be inter-related. A family may have a tradition of eating a roast dinner at Christmas time, but due to having a job that doesn't pay much they can't afford to buy all the trimmings that they would like to eat at that time.

Average mark for question 10 (for Sue) was 3.3/5 with only one person getting a zero score (no attempt made).

Question 11

(a) Most students chose one food item to refer to (as the box indicated that they should) but a few specified different foods for each factor. These were considered and marked equally. Given the question was worth 4 marks (4 marks, 4 minutes), students had to explain the example in the space provided rather than merely write one or two words for full marks. If they simply listed a correct reason with no explanation they were given ½ a mark for each reason.

Better answers included explanations for each factor: e.g.

Food Selected: Soy Milk	
<p>Physiological Factors: Allergies – lactose intolerance would mean that the person needs to drink Soy milk instead of cow's milk OR Physiological – Appetite – the sight of the cake makes me want to have a piece even though I am not hungry.</p>	<p>Psychological factors: Belief: An individual may believe that it is wrong to consume animal products (vegetarian/ vegan) and therefore drink soy milk as it lacks any animal products</p>
<p>Social Factors: Media: Advertisements through the media may influence an individual into believing that soy milk is nutritionally superior so they choose to purchase and consume it Chocolate cake: SOCIAL – tradition/birthday – cake is served to celebrate the birthday.</p>	<p>Economic Factors: Cost: Soy milk may be cheaper than regular milk at the place where an individual does their shopping so they save money by buying soy milk.</p>

- (b) Most students could write an example for each of the 6 factors although some of what the students wrote was vague and lacking in detail i.e. 'A habit is a habit of doing something each day'. The most likely factors to be left blank were Attitude and Self Concept.

Some students continued to discuss the food that they selected for 11 (a) above. These answers were considered and marked equally. As the question was worth 6 marks (6 marks 6 minutes) it was expected that some detail was included in the answers. Some lost marks as they failed to explain and provide a concrete example- good responses:

Better answers included reference to a specific food or instance:

Attitude: Some people have a value of supporting Australian farmers resulting in an attitude to only buy Australian tinned tomatoes OR The way someone views something after evaluating its merit. An individual may think that organic food is better for you so will buy organically farmed broccoli.

Media: An advertisement on television that features a well-known celebrity promoting weight loss shakes may persuade an individual to purchase that item.

Food Cost: If cost of food is not an issue for an individual they may select an expensive food item like caviar. On the other hand if income is low someone might select a generic brand food eg baked beans. OR Some consumers only buy fruit (eg grapes) when in season and they are at a low price.

Habit: A habit is an action repeated on a regular basis without thought. An individual may have a sandwich when they get home from work every day and this habit may be hard to break.

Self-Concept: This is how we see ourselves. An individual who sees themselves as overweight may choose to eat vegetables like carrots, pumpkin and peas more often.

Colour of food: The colour of food can indicate ripeness or nutritional value. Someone may choose not to eat a banana if it has turned brown.

Average mark for question 11 (for Sue) was 6.0/10 with only two people getting a zero score (no attempt made).

Section B

Question 12

Answers to this question generally took one of three forms. They either:

- re-wrote the story with some very general suggestions as to what might influence the students food choices (didn't score well)
- gave a very descriptive nutritional evaluation of the students diets including disease implications (not required, didn't score marks)
- Very clearly presented an organised list of categorised suggestions as to factors that influenced food choices of the students (Best answers were of this type).

All 4 factors together with their sub- factor needed to be explained- some just did either but not both. A lot of students didn't include possible food choices in their answers. Many students made up extra information so they could expand on the point they were trying to make. E.g. "Anna's friends are all choosing to follow the media's example too". Jack was the student most talked about. Other common problems – Healthy food is not necessarily more expensive than junk food!

Better answers were organised and listed information either by student or by factor. Food choices were clearly linked to the students behaviours with food examples included.

Physiological: sensory reaction, flavour: Jack doesn't like the taste and texture of pork, beef or poultry. This has resulted in Jack not consuming these foods at all and becoming vegetarian. He may choose to eat tofu based products or legumes instead.

Social: Lifestyle. Household structure: Robert's mum works most evenings and therefore he and Jack have to make their own meals. As a result they choose easy options such as microwavable frozen dinners and pre-packaged meals such as ready to heat lasagne.

Psychological: Self Concept: Anna is self-conscious of her changing appearance and therefore chooses to restrict her diet and consumes only a small portion of vegetables for dinner.

Economic: Resources/ Skills: Jack has to cook his own meals as his mum is at work. He may lack the necessary skills to cook a nutritious meal from scratch so chooses pre-prepared microwavable dinners.

Psychological: Culture: As Parvan is Indian his family may choose to include Indian cuisine regularly in their household. E.g. rice and curry.

Physiological: Allergies: Jack is allergic to peanuts therefore he has to choose other foods in his diet instead – he has to have jam on toast instead of his preferred peanut butter. This may also impact on the rest of his family.

OR

Robert:

Social: Lifestyle: Part of his daily life involves sitting down and gaming. Snack foods are easy to grab while he is doing this so he tends to eat a lot of discretionary foods such as chips and chocolate.

Economic: Occupation: His mum works evenings so he is left in charge of dinner. This means that instead of home cooked meals he relies on pre-prepared microwavable dinners.

Physiological: Age and gender: Being a Grade 12 male means that he is most likely still growing and his nutritional and energy requirements will be high. Frozen pre-prepared dinners that have been previously cooked by his mum can contain quite high nutritional value and will be suitable for him.

Psychological: Habit: He is in the routine of snacking while he plays online games. He would do this without thinking and it will take a concerted effort to change from eating chips and chocolate while he plays the games.

PART 4

Criterion 2 and 8

Part 4 of the exam required students to respond using extended written responses. Candidates were told they needed to use structured paragraphs and sentences, which must be written in a logical, coherent manner using specialised terminology and appropriate grammar in response to the question based on a food-focussed issue.

Question 13 – Food Security

Students needed to include the following to receive an "A" rating:

- Definition of Food Security – many students just rewrote the stimulus.
- The 5 pillars named and explain how they relate to food security.
- A paragraph to outline the main barriers and solutions to be addressed in the essay.
- Brief definition of malnutrition and obesity and how it related to food security. Most students found this difficult. They needed to talk about energy-dense food that may lack important nutrients and how this can lead to malnutrition and also obesity. Most students do not understand that it is possible to be both obese and malnourished. An example would be good here too e.g. Aboriginal and Torres Strait Islanders. Most students do not understand that in even the poorest countries of the world there are very wealthy people who are not insecure and can buy almost any food they desire. Many students said that people with more money are more likely to be obese when the reverse is actually true.

- Students needed to state the groups of people who are frequently food insecure in this country.
- Students needed to identify three (3) interrelated factors that can lead to food insecurity (barriers). Each main barrier needs to be explained in depth and then related to several other barriers e.g. main barrier could be climate change and related barriers could be droughts and flooding, flood plain erosion and loss of top soil. Interestingly, no students mentioned Syria as a country with severe food insecurity as a result of a wide range of barriers. This is staggering given the amount of recent media attention this country has received. Students must read widely about food issues. On the whole many answers were rather simplistic.
- Three (3) possible solutions to food insecurity need to be outlined. Each solution needed a definition/explanation, then students were required to evaluate the feasibility of each solution. That is, several pros and cons of the solutions outlined.
- Every essay should have a conclusion with no new information but to sum up what has been addressed in the essay.
- To get an “A”, students cannot give information that is blatantly incorrect – some very unusual statistics were given.

Question 14 – Ecological Sustainability

Students needed to include the following to receive an “A” rating:

- Provide a clear accurate definition of ecological sustainability and introduce some of the impacts to ecological sustainability, including climate change, biodiversity and the concept of ecological footprint (e.g. Australia has an average ecological footprint of 6.8 global hectares per person).
- Students needed to make a link that with world population expected to be nine billion by 2050, Australian and world agricultural industries will need to produce upwards of 70 per cent more food, using less water, less land and having a smaller ecological footprint.
- Students then needed to critically analyse three environmental impacts (barriers) to ecological sustainability in the Australian food system, covering each area of production, processing and distribution/consumer practices.
- Each of these impacts (barriers) needed to be examined in depth and there needed to be some explanation of possible ethical impacts of the barrier (e.g. when examining intensive agriculture there could be a discussion about the grain that was used to feed animals and how this grain could have been used to feed humans). Good answers gave examples in terms of current practices in Australia.
- Students needed to use data to support the analysis of each of these barriers (e.g. 23% of energy consumption has been used in the processing and packaging of food).
- Students need to explain how to create a more sustainable food system, and then use technical detail to describe three realistic strategies and solutions which could improve ecological sustainability in the food system. While the solution did not necessarily need to be a resolution that is currently being used in Australia, it did need to link to the barriers a student had identified and be suitable to implement in the Australian food system.
- Students then needed to provide clear and reasoned arguments, supported by examples and data, that evaluated the potential advantages and disadvantages of each solution within Australia. This needed to be more than a sentence tacked onto the end of the paragraph.

Overall, there was good use of environmental issues/impact e.g. over cultivation, deforestation and farming practices, but some students did not make the link to the food systems. Stronger essays spent a paragraph discussing a barrier, then discussed the solution including the pros and cons of that solution in the following paragraph. Some students gave a solution such as ‘organic farming’ or ‘genetically modified seeds’ or ‘educating farmers’ as almost a quick fix to the issues of ecological sustainability. Greater depth of understanding needed to be demonstrated including some discussion of the ethical impacts of a solution. There seemed to be an obvious divide between those students who had revised the topic and those who hadn’t.

Overall Comments and Suggestions:

It was important for candidates to respond using well-structured and logical paragraphs. Poor essay structure makes it hard for the marker to follow the flow of the response.

- Keep sentences short and use commas.
- Students need to learn to spell such key terms as security, malnourished, nutrition etc.

- Students need to paragraph more carefully. One topic or idea = 1 paragraph. There should be a number of paragraphs on each page.
- Writing needs to be legible. If a marker has difficulty reading a response, that will understandably be an issue. It is important to write in pen, not pencil.
- There is no such word as “majorly”.
- In some instances there was a lack of basic general knowledge; Africa and Asia were referred to as a country. They are continents. Students should have had a clearer understanding of basic geography if they were going to use those examples.
- In question 13 the language of the assessed criterion asks students to use the term developing and developed countries, therefore it is essential that students use these terms rather than LDC’s and MDC’s, which are no out-dated and not used.

Stronger Answers

- Included well-constructed introductions and conclusions.
- Responded using well-structured and logical paragraphs that covered each aspect of the question.
- There was a deliberate use of language to bring cohesion to the response allowing ideas to flow.
- Students made links between paragraphs.
- Used depth, candidates analysed the relative pros and cons of the solutions in food security of ecological sustainability.

Weaker Answers

- The response was very generalised and sparse in content, with no direct reference to the exam question and often failed to address all aspects of the question.
- Lack of analysis resulted when students retold information that they had learnt and only gave vague solutions.
- Failure to provide relevant, current data even though this was clearly part of criterion 8.