



# **2010 Health & Food Technology**

## **Higher**

### **Finalised Marking Instructions**

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**2010 Home Economics  
Health & Food Technology**

**Section A – Short Response Questions**

| Question |  | Response  | Marking Guidelines                     |
|----------|--|---|--|
| 1        | Name <b>one</b> source of total complex carbohydrate.                            | 1. Bread<br>2. Flour<br>3. Potatoes<br>4. Root vegetables<br>5. Breakfast Cereals<br>6. Muesli<br>7. Pulses<br>8. Pasta<br>9. Rice<br>10. Maize<br>11. Oats<br>12. Barley<br>13. Beans<br>14. Cereals<br><br>Accept any other source of total complex carbohydrate.   | <b>1 mark</b> for correct source       |
| 2        | Identify the term used to describe the swelling and bursting of starch granules. | Gelatinisation  | <b>1 mark</b> for correct term         |
| 3        | Name <b>one</b> function of vitamin E.   | 1. An antioxidant vitamin<br>2. Destroys free radicals<br>3. Helps to prevent cancer.<br>4. Helps to prevent heart disease.<br>5. Maintenance of cell membranes.<br>6. Functioning of sex organs/reproduction.  | <b>1 mark</b> for correct function     |
| 4        | State <b>one</b> factor which hinders the absorption of calcium.                 | 1. Lack of vitamin D<br>2. Phytic acid<br>3. NSP<br>4. Fats<br>5. Oxalic acid<br>6. Lack of lactose<br>7. Lack of protein   | <b>1 mark</b> for correct factor       |
| 5        | Give <b>one</b> food source of listeria.   | 1. Soft ripened cheeses/brie/camembert<br>2. Pate/salami/continental sausages<br>3. Cook-chill meals<br>4. Raw and cooked meats<br>5. Raw/ready to eat chicken<br>6. Fish/seafood<br>7. Coleslaw/pre packed salads<br>8. Unpasteurised milk/cheese<br>9. Raw eggs<br>10. Ice-cream<br>11. Blue veined cheeses | <b>1 mark</b> for correct source       |
| 6        | What does the abbreviation <b>EU</b> stand for?                                  | 1. European Union   | <b>1 mark</b> for correct abbreviation |

| Question |  | Response   | Marking Guidelines                           |
|----------|--|--|--|
| 7        | State <b>one</b> rule to ensure effective sensory testing.               | <ol style="list-style-type: none"> <li>1. Always check that everyone is able to taste the product.</li> <li>2. Always practise good hygiene when tasting.</li> <li>3. Everyone uses clean spoons/separate dishes.</li> <li>4. Do not allow people who are unwell (colds/upset stomachs) to taste.</li> <li>5. Serve all food samples in the same way/same size portions/similar plates/same temperature.</li> <li>6. Label the foods with random letters/numbers.</li> <li>7. Only allow tasters to test up to six samples at a time.</li> <li>8. Have water/dry biscuit available to sip/eat between tastings.</li> <li>9. Complete the tasting charts after each person tastes the food.</li> <li>10. Use controlled conditions/separate booths for each taster.</li> </ol>  | <b>1 mark</b> for correct reason             |
| 8        | Give <b>one</b> benefit of irradiated foods.                             | <ol style="list-style-type: none"> <li>1. Reduces food spoilage/slows down decay in food products.</li> <li>2. Extends shelf/storage life of foods.</li> <li>3. Extends refrigerated storage time.</li> <li>4. Can prevent food poisoning/food borne diseases.</li> <li>5. Makes food safer to eat.</li> <li>6. Makes food safe for space travel.</li> <li>7. Makes food safe/sterile for hospital patients (who need protection from infection).</li> <li>8. Slows down sprouting of vegetables (potatoes/onions).</li> <li>9. Delays the ripening of fruit/vegetables.</li> <li>10. Reduces the need for chemical preservatives.</li> <li>11. Can help prevent accidental contamination in chilled meals.</li> <li>12. Can be used to destroy infestation of micro-organisms in foods/kills bacteria.</li> </ol>   | <b>1 mark</b> for correct use                |
| 9        | Identify <b>two</b> reasons for the use of additives in food production. | <ol style="list-style-type: none"> <li>1. Improves shelf life/preserves food.</li> <li>2. Can replace flavour/colour/nutrients that may have been lost during processing.</li> <li>3. Additives/preservatives can make food safer to eat.</li> <li>4. Additives/preservatives can help reduce waste.</li> <li>5. Increased range of products available to the consumer.</li> <li>6. Foods are more consistent with the use of additives.</li> <li>7. Products can be fortified by the addition of nutrients.</li> <li>8. Allows for the introduction of low fat products.</li> <li>9. Allows for introduction of reduced sugar/reduced calorie products.</li> <li>10. Aesthetic appeal of food improved.</li> <li>11. Sweetens foods.</li> <li>12. Adds/enhances flavour of food.</li> <li>13. Emulsifiers allow ingredients to mix that would not necessarily mix.</li> <li>14. Prevents ingredients separating.</li> <li>15. Prevents fats/fatty foods becoming rancid.</li> </ol> | <b>2 marks</b><br>2 x 1 mark for each reason |

| Question |  | Response  | Marking Guidelines  |
|----------|--|---|---|
| 10       | State <b>two</b> reasons why manufacturers use market research.  | <ol style="list-style-type: none"> <li>1. Allows the manufacturer to evaluate new/existing products.</li> <li>2. Identifies market trends/existing products</li> <li>3. Identifies gaps in the market</li> <li>4. Identifies a target group to the manufacturer</li> <li>5. Establishes if there is a need for a new product/gain consumers opinion of a new product for the manufacturer.</li> <li>6. Establishes the needs of the target market/what would influence consumers to buy a new product.</li> <li>7. Allows the manufacturer to investigate consumer trends/habits/popularity</li> <li>8. Allows the manufacturer to assess the potential market/to find out what is on the market/assess competition from other manufactures.</li> <li>9. Market research identifies competitors to ensure their product will be successful.</li> <li>10. Gain information on how successful a new product is going to be.</li> <li>11. Market research identifies the likes/dislikes of prototypes during the product development/to look for ways to improve the product.</li> <li>12. Market research identifies how much people are willing to pay for products/can set price from findings/to see if it will make a profit/decide on pricing policy.</li> <li>13. Establish new ideas for products/ways to improve a potential product.</li> <li>14. Helps to decide the best way to promote/advertise a product.</li> <li>15. Find out why a product is not selling/the cause of a drop in sales.</li> </ol> | <p><b>2 marks</b><br/>2 x 1 mark for <b>each</b> reason</p> |
| 11       | State <b>two</b> areas of responsibility for the Department for Environment, Food and Rural Affairs (DEFRA). | <ol style="list-style-type: none"> <li>1. Protecting/improving the environment (preserving air quality/healthy marine environment/water quality).</li> <li>2. Development of the economy in rural areas (reducing rural poverty).</li> <li>3. Promotion of the food supply chain.</li> <li>4. Promoting modern farming techniques at home / throughout the EU.</li> <li>5. Encouraging household waste recycling/composting (better management and use of natural resources).</li> <li>6. Protecting public health from animal disease which can be transmitted to humans.</li> <li>7. Improving health/welfare of animals (ensure that farm animals/fish are protected from unnecessary pain/distress).</li> </ol>   | <p><b>2 marks</b><br/>2 x 1 mark for <b>each</b> area</p>   |

| Question |   | Response   | Marking Guidelines                                       |
|----------|---|--|--|
|          |   | 8. Gives guidance on a range of foods to the food industry (information for egg and poultry producers/EU beef labelling system/EU regulations for the protection of food names on a geographical or traditional basis – Scottish shortbread).<br>9. Provide information on the speciality food/drink sector (eg hand-made chocolates).<br>10. Promoting enjoyment of the countryside (rural access).<br>11. Provides advice/support for farmers on running the farm.   |  |
| 12       | Explain what happens to bacteria at (i) -18°C; (ii) 75°C. | (i) -18°C<br>1. Bacteria will become dormant/inactive therefore growth/multiplication will stop.<br>2. Food is frozen at -18°C and bacteria will not multiply in frozen food (many will survive and reproduce on thawing).<br>(ii) 75°C<br>1. Most harmful/pathogenic bacteria are killed/destroyed at this temperature.<br>2. Many bacteria can produce spores which will survive high temperatures.  | <b>2 marks</b><br>2 x 1 mark for <b>each</b> explanation |
| 13       | State <b>two</b> advantages of functional foods.          | 1. Functional foods have the potential to improve health/reduce the risk of certain diseases (when taken as part of a balanced diet/healthy lifestyle).<br>2. Functional foods allow consumers to take greater control of their health through food choices/know that some foods will provide specific health benefits.<br>3. Some functional foods will provide reasonable inexpensive source minerals/vitamins/nutrients in the diet (eg breakfast cereals).<br>4. Functional foods may bring about health benefits quicker than eating conventional healthy foods alone<br>5. Some functional foods can help lower cholesterol.<br>6. Some functional foods can help aid digestion.<br>7. Some functional foods provide a source of omega 3 for vegetarians/people who do not eat fish. | <b>2 marks</b><br>2 x 1 mark for <b>each</b> advantage   |

| <b>Question</b> |   | <b>Response</b>   | <b>Marking Guidelines</b>                      |
|-----------------|---|---|--|
| 14              | Give <b>one</b> advantage and <b>one</b> disadvantage of hydroponics. | <p><b>Advantages</b></p> <ol style="list-style-type: none"> <li>1. Allows foods to be grown in areas where soil conditions are poor.</li> <li>2. Allows consumers access to foods that might not otherwise be available due to poor soil conditions.</li> <li>3. Plants grown hydroponically avoid soil borne pests.</li> <li>4. The nutrient solution can provide the plant with the correct balance of nutrients.</li> <li>5. Hydroponic foods may be disease resistant which helps to produce a high quality product.</li> <li>6. Could improve food shortages in the developing world where soil and water conditions are poor.</li> <li>7. Growers can expect much higher yields/crops grown more quickly.</li> <li>8. Large scale production could help reduce costs to consumers.</li> <li>9. Extended growing season could give greater choice.</li> <li>10. Weed problems can be controlled.</li> <li>11. Disease problems can be controlled.</li> <li>12. Pest problems can be controlled.</li> </ol> | <p><b>2 marks</b><br/>1 mark for advantage</p> |
|                 |   | <p><b>Disadvantages</b></p> <ol style="list-style-type: none"> <li>1. Consumers have very limited choice of foods grown hydroponically.</li> <li>2. Initial cost for commercial hydroponics is very expensive.</li> <li>3. Production costs mean higher cost for consumers.</li> <li>4. Costs involved in maintenance are high (resulting in higher costs to the consumer).</li> </ol>  | <p>1 mark for disadvantage</p>                 |

## Section B

- 1 a) The table shows a day's nutrient content of meals eaten by an overweight female teenager. Using your knowledge of nutrition, and the information provided, evaluate the suitability of this day's nutritional intake.

### Marking Instructions:

6 x 1 mark for each point of evaluation linked to the intake of an overweight female teenager.

**Total – 6 marks (EV)**

**(Headings have been provided to assist marking but are not required to be provided by the candidate.)**

#### 1. **Energy intake (Higher)**

1. Energy intake is well above the E.A.R which is bad **as** the excess energy/calories could result in the **overweight female teenager** becoming increasing weight/becoming obese.
2. The excess weight gain resulting from this high energy intake (above the E.A.R) is not good for the **overweight female teenager as** the excess energy/calories could lead to additional weight gain which could lead to further complications such as hypertension/heart disease in later life/obesity.
3. Energy intake is well above the recommended E.A.R which may not be a problem if the **overweight female teenager** is taking part in exercise **therefore** helping to burn off the extra calories and so helping to reduce weight.

#### 2. **Protein intake (Higher)**

1. Protein intake is high and as excess protein may be used as a secondary source of energy; this is not good for the **overweight female teenager** as this may lead to obesity.
2. Protein intake is high, however, this could be beneficial for the **overweight female teenager as** she will still be growing and so it would help with growth if she is going through a period of rapid growth).
3. Protein intake is high, however, this could be beneficial for the **overweight female teenager as** if she is physically active and injures herself this will help to repair any damage tissue.
4. Protein intake is high and this could be beneficial for the **overweight female teenager** as it could aid the absorption of calcium **which** is necessary to aid the development of strong teeth/bones/help prevent her suffering from osteoporosis/osteomalacia in later life.

#### 3. **Iron intake (Lower)**

1. Iron intake is low which is not good for the **overweight female teenager** as iron is required for the formation/production of red blood cells **which** may lead to her suffering from anaemia/tiredness/exhaustion.
2. Iron intake is low which is not good for the **overweight female teenager** as iron is required for the formation/production of red blood cells and if she loses too many red blood cells during menstruation **which** may lead to her suffering from anaemia/tiredness/exhaustion.
3. Iron intake is low which is not good for the **overweight female teenager's** body as iron is required for the formation/production of red blood cells and **as** the teenager may be going through a rapid growth spurts to could lead to anaemia/tiredness/exhaustion.
4. Although iron intake is low for the **overweight female teenager** if this was in the form of heme iron it would be more easily absorbed so **therefore** help to prevent anaemia.

|    |   |
|----|---|
| 4. | <b>Vitamin C (Lower)</b>  |
| 1. | Vitamin C intake is low which is not good for the <b>overweight female teenager</b> as vitamin C must be present to help the absorption of iron <b>therefore</b> she may be at an increased risk of anaemia/tiredness/exhaustion.                                     |
| 2. | Vitamin C intake is low which is not good for the <b>overweight female teenager</b> as vitamin C helps cuts/wounds to heal quicker <b>therefore</b> if she has an accident the cut/wound may not heal quickly/may cause an infection.                                 |
| 3. | Vitamin C intake is low which is not good for the <b>overweight female teenager</b> as vitamin C is one of the antioxidant vitamins <b>therefore</b> the may be at increased risk in later life of cancer/heart disease in later life.                                |
| 4. | Vitamin C intake is low which is not good for the <b>overweight female teenager</b> as vitamin C is essential in prevention of infections <b>therefore</b> may she be at increased risk of catching a potential illness/infections.                                   |
| 5. | <b>Calcium intake (Higher)</b>  |
| 1. | Calcium intake is high which is good for the <b>overweight female teenager</b> as calcium combines with phosphorous to give hardness/strength to bones/teeth so <b>therefore</b> will she will be less likely to suffer from osteomalacia/osteoporosis in later life. |
| 2. | Calcium intake is high which is good the <b>overweight female teenager</b> as calcium is required for maintenance of bones/teeth <b>therefore</b> will be less likely to suffer from osteomalacia/ osteoporosis in later life.  |
| 3. | Calcium intake is high which is good the <b>overweight female teenager</b> as calcium is required to achieve peak bone mass/fill the bone bank and <b>so</b> prevent osteoporosis in later life.  |
| 4. | Calcium intake is high which is good <b>as</b> the <b>overweight female teenager</b> is she is still growing <b>therefore</b> the calcium intake will promoting good bone formation/strong teeth.   |
| 5. | Calcium intake is high which is good as it helps blood to clot after an injury <b>therefore</b> if the <b>overweight female teenager</b> has an accident she is less likely to lose as much blood.  |
| 6. | <b>Folic acid (Folate) (Lower)</b>  |
| 1. | Folate intake is low and this could be a problem for the <b>overweight female teenager</b> as it is water soluble/not stored in the body and <b>so</b> a constant supply is needed to prevent (megaloblastic) anaemia.  |
| 2. | Low intake of folate will result in a reduction of red blood cells which could be even worse for the <b>overweight female teenager</b> because her iron levels are also low and <b>so</b> this could contribute to a greater risk of becoming anaemic.                |
| 3. | Folate intake is low and this could be a problem for the <b>overweight female teenager</b> as it is required for normal growth and as she is going through a period of rapid growth this could cause growth problems.   |
| 4. | Folate intake is low which may be bad if the <b>overweight female teenager</b> was pregnant/to become pregnant <b>as</b> folate helps to prevent neural tube defects in unborn babies/spina bifida.   |
| 7. | <b>Vitamin A intake (Higher)</b>  |
| 1. | The diet is high in vitamin A which is good as Vitamin A is required for development of the eyes/healthy vision of <b>overweight female teenager</b> in dim light will not be impaired.   |
| 2. | Vitamin A intake is high which is good for the <b>overweight female teenager</b> as vitamin A is one of the antioxidant vitamins <b>therefore</b> will be at reduced risk of cancer/ heart disease in later life  |
| 3. | The diet is high in vitamin A which is good as vitamin A is required to keep the mucous membranes in the eyes/lungs/throat/digestive tract moist and free from infection <b>therefore</b> the <b>overweight female teenager</b> will have a resistance to infection.  |
| 4. | The diet is high in vitamin A which is good as vitamin A is required for the maintenance/ health of skin <b>therefore</b> the <b>overweight female teenager</b> will be less likely to suffer from spots/acne.  |
| 5. | The diet is high in vitamin A which is good as vitamin A is required for the normal growth in children <b>therefore</b> this will ensure the <b>overweight female teenager</b> , who is still growing, will develop correctly.  |
| 6. | The diet is high in vitamin A which may be bad if the <b>overweight female teenager</b> was pregnant <b>as</b> large amounts of vitamin A can be harmful to the developing baby.  |

- 1 b) Explain **four** changes that have been made in schools as a result of the Hungry for Success initiative.

**Marking Instructions:**

4 x 1 mark for each change linked to meeting Hungry for Success.

**Total – 4 marks (KU)**

**(Answers can be linked to the pupil experience or provision of food or the environment)  
(Headings have been provided to assist the marker but are not required in the answer.)**

**1. Changes linked to the food**

1. The **school** will have implemented a nutrient-based national standard for meals ensuring pupils over the course of a week consume the correct nutrients for their age group.
2. Improved food labelling/packaging/menus for pupils and parents allows **pupils** to make informed choices to ensure they are following the dietary targets.

**2. School (Health Promotion & Nutrition) (Scotland) Act 2007**

1. A choice of at least two types of vegetables/two types of fruit must be provided every day as part of the school lunch ensuring that **pupils/staff** are meeting the dietary target to increase consumption of fruit and vegetables/double intake to 400g per day.
2. Oily fish must be provided at least once every three weeks ensuring that **pupils/staff** are meeting the dietary target to increase consumption of oily fish/oil-rich fish to be doubled/consuming essential fatty acids (omega 3/6) which will help prevent heart disease in later life/improve brain functioning.
3. Additional bread must be provided every day ensuring that **pupils/staff** are meeting the dietary target to increase consumption of bread/intake to increase by 45%.
4. Only oils and spreads high in polyunsaturated/monounsaturated fats can be used when preparing the food for sale in schools ensuring that **pupils/staff** are meeting the dietary target to reduce consumption of fat/average intake of total fat to reduce.
5. No more than three deep fried items can be sold in a week ensuring that **pupils/staff** are meeting the dietary target to reduce consumption of fat/average intake of total fat to reduce.
6. Additional salt cannot be provided ensuring that **pupils/staff** are meeting the dietary target to reduce consumption of salt/average sodium intake to reduce.
7. Condiments must be dispensed in no more than 10ml portions as part of the lunch menu ensuring that **pupils/staff** are meeting the dietary target to reduce consumption of salt/sugar.
8. No confectionary can be provided as part of the lunch menu in school ensuring that **pupils/staff** are meeting the dietary target to reduce consumption of sugar/fat.
9. No savoury snacks can be provided as part of the lunch menu ensuring that **pupils/staff** are meeting the dietary target to reduce consumption of salt.
10. Only the following drinks are permitted in schools: water (still or carbonated)/skimmed, semi-skimmed milk/drinking yogurts/drinks from soya/rice/oat/tea/coffee/fruit/vegetable juices ensuring that **pupils/staff** are meeting the dietary target to reduce consumption of sugar/increase consumption of fruit and vegetables.

**3. Changes linked to the school canteen**

1. Promotion of healthier options are visible/accessible as **pupils** may want to purchase them and increase **school** meal uptake/avoid less healthy options/prevent diet related diseases.
2. More till points available/pre ordering cold lunches/increasing counter to reduce queues, making **pupils** more likely to use the facilities/increase uptake of school meals.
3. Elimination of the stigma of free-meal **pupils** by introducing cashless methods of paying for **school** meals will increase the number of students eating within **school**.
4. Improvements within **schools** to the dining room to enhance atmosphere/ambience/environment making the experience an enjoyable one/increasing uptake of school meals.

4. **Changes linked to the school**

1. Provision of free drinking water within the **school** will enable adequate amounts of fluid to be consumed by **pupils**, keeping the brain hydrated/improving concentration.
2. Introduction of breakfast clubs will enable **pupils** to start each day with a healthier breakfast which may help reduce incidence of diet related diseases in childhood/later in adult life/aid concentration in school/provide a safe environment/increase consumption of breakfast cereals.
3. Supportive supervision during lunchtime will enable **pupils** to be encouraged to consume healthier choices and increase uptake of a healthier provision for all/reducing obesity.
4. **Pupils** becoming involved through pupil councils/SNAG with positive suggestions regarding the whole dining experience which can be made to suit their needs making the experience an enjoyable one/increasing uptake of school meals.
5. Increased incentives for making healthy choices within the **school** will help pupils make better choices and aid concentration/prevent childhood obesity.
6. Increased promotion within the **school** of appropriate food choices, increasing pupil/parents/staffs knowledge of “healthy eating” which may help reduce incidence of diet related diseases in childhood/later in adult life.
7. Consistent “Healthy Eating” messages throughout **school** via teaching in Home Economics/canteen provision/health professionals/whole school approach will help provide healthier choices.
8. Creating a positive **school**/whole child ethos will enable schools to form links between learning and teaching & healthy eating (and food provision) which enables **pupils** to develop knowledge and understanding of healthy eating and hopefully make healthier choices.

1 c) Evaluate the contribution of fat as a nutrient in the diet.

**Marking Instructions:**

4 x 1 mark for each evaluated point on fat in the diet.

**Total – 4 marks (EV)**

**(Headings have been provided to assist marking but are not required to be provided by the candidate.)**

**Positive**

- P 1. **Fat** provides a concentrated source of energy which is good **as** it will give the body energy to function correctly.
- P 2. **Fat** provides a source of essential fatty acids/omega 3 which is good **as** it helps to reduce the risk of blood clots forming/reduces inflammatory diseases/rheumatoid arthritis/needed for brain development in babies.
- P 3. **Fat** provides a source of essential fatty acids/omega 6 which is good **as** it helps to reduce the bad cholesterol/needed for brain development in babies.
- P 4. **Fat** provides an insulating layer underneath the skin which is good **as** it helps to maintain body temperature.
- P 5. Some of the body's vital organs (eg kidneys) are surrounded by a layer of **fat** which is good **as** it ensures they are protected in the body/can carry out their function correctly.
- P 6. **Fat** provides a source of fat soluble antioxidant vitamins A/E which is good **as** it may help prevent the development of cancer/heart disease.
- P 7. **Fat** provides a source of fat soluble vitamin A which is good **as** it may help aid vision in dim light/keep the mucous membranes in the eyes/lungs/throat/digestive tract moist and free from infection/normal growth of children/maintain healthy skin.
- P 8. **Fat** provides a source of fat soluble vitamin D which is good **as** it may aid calcium absorption/work with calcium & phosphorous to form strong teeth and bones/promote quicker healing of bone fractures.
- P 9. **Fat** provides a source of fat soluble vitamin K which is good **as** it will ensure blood clots correctly in the body.
- P 10. A diet containing monounsaturated **fat** may reduce the LDL cholesterol in the body which is good **as** it can help prevent heart disease.
- P 11. A diet containing polyunsaturated **fat** may help to reduce blood cholesterol in the body which is good **as** it can help prevent heart disease.
- P 12. When **fat** is consumed as part of a diet it provides a feeling of fullness which is good **as** it may prevent overeating/help weight control.

**Negative**

- N 1. **Fat** provides a concentrated source of energy which is bad **as** any extra calories not used by the body will be stored as fat and may contribute to obesity/heart disease.
- N 2. **Fat** can often be hidden with foods eg pastry/cakes which is bad **as** you may not be aware how much fat is consumed in the diet and could lead to obesity/heart disease.
- N 3. A diet high in saturated **fat** tends to raise blood cholesterol levels which is bad **as** this increases the risk of heart disease/hypertension.
- N 4. **Fat** adds flavour to food which is bad **as** it may make someone consume too much fat and contribute to obesity/heart disease.
- N 5. A diet high in saturated **fat** tends to raise blood cholesterol levels which can narrow arteries restricting blood flow which is bad **as** it may cause blood pressure to increase/hypertension.
- N 6. A diet containing trans fatty acids/hydrogenated **fats** increase levels of blood cholesterol which is bad **as** it could cause heart disease/cancers/rheumatoid arthritis.
- N 7. Diet high in **fat** is bad **as** saturated fatty acids form insoluble soaps with calcium **which** hinders absorption of calcium by the body increasing the risk of osteoporosis.

1 d) Identify and explain **three** dietary factors which may contribute to hypertension.

**Marking Instructions:**

3 x 1 mark for identification of factor.

3 x 1 mark for each explanation linked to hypertension.

Factor must be identified before mark can be awarded for explanation. Where the factor is incorporated in the explanation, this can be credited.

**Total – 6 marks (KU)**

| Factor   | Explanation  |
|--|--|
| 1. <b>High salt/sodium intake</b>                                | 1. A high intake of salt/sodium in the body can lead to a rise in the blood pressure (passing through narrower arteries), which could result in <b>hypertension</b> .<br>2. A high intake of salt/sodium in the body causes the body to retain water, this extra water stored can raise blood pressure, which could result in <b>hypertension</b> .<br>3. Convenience foods tend to be high in salt/sodium therefore as consumers are eating more of these products this can lead to a rise in the blood pressure, which could result in <b>hypertension</b> . |
| 2. <b>High saturated fat intake/high cholesterol intake</b>      | 1. A high saturated fat intake in the diet may contribute to <b>hypertension</b> as cholesterol found in saturated fats can narrow arteries and so restrict blood flow causing blood pressure to increase.   |
| 3. <b>High total fat intake</b>                                  | 1. Fat provides a concentrated source of energy providing more kilojoules/kilocalories than any other nutrient, if a high fat diet is consumed it may mean that a person will be overweight can cause a rise in blood pressure resulting in <b>hypertension</b> .  |
| 5. <b>High intake kilojoules/kilocalories/energy foods/sugar</b> | 1. A high intake of kilojoules/kilocalories may mean that a person will be overweight and being overweight can cause a rise in blood pressure which could result in <b>hypertension</b> .  |
| 6. <b>Lack of potassium</b>                                      | 1. Potassium in the diet tends to reduce blood pressure therefore a lack of potassium in the diet may contribute to <b>hypertension</b> .  |
| 7. <b>Excessive alcohol</b>                                      | 1. If too much alcohol is consumed over time, this can lead to a rise in blood pressure which could result in <b>hypertension</b> .<br>2. Alcohol is high in kilojoules/kilocalories and if consumed in excess may mean that a person will be overweight which may cause a rise in blood pressure resulting in <b>hypertension</b> .   |

- 2 a) Explain **each** of the following stages in the development of a new Chinese dish.
- (i) Concept generation
  - (ii) Product testing
  - (iii) Marketing plan
  - (iv) Launch

**Marking Instructions:**

4 x 1 mark for **each** explanation linked to each stage of development and the Chinese dish.

**Total – 4 marks (KU)**

(i) **Concept generation**

1. This stage is important as it involves developing ideas for the new **Chinese dish**.
2. This is the thinking stage/thinking up new ideas for the **Chinese dish**, looking for a gap in the market within the **Chinese dish** range.
3. This stage allows ideas for the **Chinese dish** to be developed from market analysis/trialling existing Chinese dishes to establish why they are popular/looking for something similar yet new and different.
4. Disassembly of a popular existing **Chinese dish** establishes why certain characteristics are popular (helps manufacturers to create a **Chinese dish**).
5. The **Chinese dish** has to be new so this stage makes sure the manufacturers do not replicate any existing Chinese dishes on the market.
6. During this stage the developers will consider the importance of cost/portion size/methods of reheating and cooking/flavour/texture/appearance to the **Chinese dish**.
7. Without this stage the development process of the **Chinese dish** cannot take place.

(ii) **Product testing**

1. Allows for the **Chinese dish** to be (sensory) tested on consumers so that opinion can be obtained (trial by workforces/social groups/various ages/tasting panels).
2. Various groups will be used to gain market opinion of the **Chinese dish**.
3. Allows the **Chinese dish** to be further refined/eliminated as a result of consumer's opinion.
4. Allows the range of possible Chinese dishes to be further refined – the most suitable and popular **Chinese dish** will be kept.
5. Certain **Chinese dishes** will be eliminated due to their unfavourable tests.

(iii) **Marketing plan**

1. Allows for the development of a range of activities/advertising campaign to promote the **Chinese dish** (eg special offers).
2. The position in which the **Chinese dish** will be sold/displayed will be considered to attract new/potential customers.
3. The initial price of the **Chinese dish** will be considered, eg low cost to attract new interest/ high cost to denote quality/luxury.
4. Packaging can be finalised for the **Chinese dish** taking into account marketing plans/ product price.

(iv) **Launch**

1. An important stage of the plan as the **Chinese dish** is now on sale.
2. Piloting of the **Chinese dish** may be carried out to gauge the success of the product/to monitor the sales in a small area initially (from experience gained here the manufacturer can adjust the marketing approach before using it more widely).
3. Market monitoring – finally the **Chinese dish** is launched into the national market place, promoting awareness to potential customers.
4. Sales figures may be checked very carefully initially to measure success of **Chinese dish**.
5. Market research may provide regular feedback on the **Chinese dish** which allows the product to be refined and improved.
6. Test marketing carried out to monitor initial sales of the **Chinese dish** – manufacturers would adjust marketing if necessary.
7. Market monitoring – final launch of **Chinese dish**, analysis of sales to establish its position against other/rival top selling Chinese dishes.
8. Market research to provide regular feedback so that manufacturers can re-think/re-adapt the marketing approach for the **Chinese dish** as quickly/economically/effectively as possible.
9. **Chinese dish** may be sold in particular branches of a supermarket to see how well it sells and who it appeals to, before launching it throughout stores nationwide.
10. Shops may decide where the **Chinese dish** will be situated (which aisle/shelf/point of sale) to attract most attention/customers.
11. Type of shop suitable for launching the **Chinese dish** may have to be carefully considered to ensure high profile during launch and correct target group attracted.
12. A range of promotional techniques need to be used to help promote the sales of the **Chinese dish** eg in-store tasting sessions/special offers/money off coupons/television advertisements.

- 2 b) The star profile below shows the results of testing the Chinese dish.  
Evaluate the suitability of this Chinese dish for the elderly.

**Marking Instructions:**

5 x 1 mark for **each** valid evaluation point linked to the suitability of the **Chinese dish** for the **elderly**.

**Total – 5 marks (EV)**

1. **Saltiness (5)**

**Positive**

- P 1. The **Chinese dish** has a very high score for saltiness which may be suitable for the **elderly** as they may find their ability to taste flavour has decreased **therefore** they will like the salty flavour.

**Negative**

- N 1. The **Chinese dish** has a very high score of saltiness which makes it unsuitable for the **elderly as** it could lead to hypertension/CHD.  
N 2. The **Chinese dish** has a very high score of saltiness which makes it unsuitable for the **elderly as** this may lead to dehydration which may cause the elderly person to become confused.

2. **Colour (4)**

**Positive**

- P 1. This **Chinese dish** must be quite colourful as it has a high rating **therefore** making the Chinese dish more appealing to the **elderly** who often lack interest in food.  
P 2. This **Chinese dish** must be quite colourful as it has high rating so the **elderly** may be attracted to the bright colours within the dish and **therefore** enjoy the bright appearance of the **Chinese dish**.  
P 3. The high colour rating for the **Chinese dish** is an advantage as it may indicate there are lots of colourful vegetables in the dish **therefore** increasing **elderly** intake of NSP/dietary fibre/contributes to Scottish dietary target to increase consumption of fruit and vegetables.

**Negative**

- N 1. The high colour rating for the **Chinese dish** is a disadvantage as it may indicate there are lots of colourful vegetables in the dish **therefore** making it difficult for the **elderly** to chew/swallow.  
N 2. The high colour rating for the **Chinese dish** may be bad as it could imply that there may be a large number of additives/colourings **which** could cause allergic reactions in some **elderly** people.

3. **Sweetness (4)**

**Positive**

- P 1. The **Chinese dish** has a high score for sweetness which may be suitable for the **elderly as** they may find their ability to taste flavour has decreased **therefore** they will like the sweet flavour.

**Negative**

- N 1. A high score for sweetness makes this **Chinese dish** unsuitable for the elderly; this may indicate a high sugar level **therefore** leading to obesity/CHD/dental caries/ (type 2) diabetes in the **elderly**.  
N 2. A high score for sweetness for the **Chinese dish** may be unsuitable for the **elderly as** it may be high in sugar and elderly people need less energy **therefore** this could lead to weight gain/obesity.

4. **Sourness (3)**

**Positive**

- P 1. The medium sourness rating for the **Chinese dish** is an advantage **as** many **elderly** like strong/sharp flavours.
- P 2. The **Chinese dish** has a medium score for sourness which may be suitable for the **elderly as** they may find their ability to taste flavour has decreased **therefore** they will enjoy the dish.
- P 3. The **Chinese dish** has a medium score for sourness which may be suitable for the **elderly as** they will enjoy the strong tastes and **therefore** continual purchase will help to maintain their nutritional intake.

**Negative**

- N 1. A middle score means the **Chinese dish** has a medium score for sourness which may be unsuitable for the **elderly as** it could cause stomach upset/indigestion.

5. **Moistness (2)**

**Positive**

- P 1. The low score for moistness for this **Chinese dish** may be good as it may indicate there is little/no sauce which is high in fat/sugar which may contribute to obesity/CHD.

**Negative**

- N 1. The **Chinese dish** has a low score for moistness which could be a disadvantage as the dish will be drier in texture/may have very little sauce and some elderly may suffer from a dry mouth (reduced saliva production) **therefore** making it more difficult for the **elderly** to chew/swallow this dish.

6. **Crispness (5)**

**Positive**

- P 1. The **Chinese dish** has a very high score for crispness which may be good for the **elderly as** they may enjoy the contrast in texture from the sauce/rice etc which makes the dish pleasant to eat.

**Negative**

- N 1. The **Chinese dish** has a very high score for crispness which may be bad for the **elderly** as it may be too crisp for them and **therefore** they may not like the texture/irritate the gums.
- N 2. The **Chinese dish** has a very high score for crispness which may indicate the food has been deep fried and this may be bad for the **elderly as** it could contribute to heart disease/obesity/hypertension.

2 c) Evaluate the use, to the consumer, of nutritional information on food products.

**Marking Instructions:**

4 x 1 mark for **each** point which evaluates the use of **nutritional information** on food products to the **consumer**.

**Total – 4 marks (EV)**

**Positive**

- P 1. Many food labels show **nutritional information** which can be helpful to the **consumer** as it enables them to make healthier choices when buying food products.
- P 2. Food products that display **nutritional information** can be an advantage **as** the **consumer** is able to compare nutritional information between like products and **therefore** make an informed choice.
- P 3. **Consumers** tend to be interested in specific nutrients therefore if **nutritional information** on a food product makes a claim (low in fat) the manufacturer has to clearly support this which is good **as** the consumer is protected from false claims.
- P 4. **Nutritional information** on labels may state the percentage of sugar/starch which would be useful to the **consumer** who wants to reduce sugar **therefore** helping diabetics/consumers wishing to avoid tooth decay/weight gain.
- P 5. **Nutritional information** on labels which give percentages of salt/sodium is useful to the **consumer** who may be on a low salt diet **because** it allows comparisons between products **so** helping to reduce the risk of high blood pressure/kidney disease.
- P 6. **Nutritional information** for dietary fibre/NSP is given as a percentage/weight which is useful to a **consumer** who wishes to follow current dietary advice **so** helping reduce the risk of bowel disorders/heart disease (reducing blood cholesterol).
- P 7. Some **consumers** may have special dietary requirements, **nutritional information** found on food product can be very useful **as** it will help them to choose a product to suit their dietary needs.
- P 8. **Nutritional information** for fats is often stated on food products as a percentage of saturates/unsaturates/polyunsaturates which could be very useful to a **consumer** who wants to reduce his/her intake of saturated fats **therefore** reducing his/her risk of coronary heart disease.
- P 9. **Nutritional information** which gives energy values would be useful to the **consumer** who wants to make comparisons between similar products **therefore** allowing consumer to make an informed choice/reduce risk of weight gain/obesity.
- P 10. **Nutritional information** on food products can be displayed as high/medium/low which is good as it is easier to understand and **therefore** easier for the **consumer** to make a comparison and choose the best product for their need.
- P 11. **Nutritional information** is often shown per serving on food products which is good **as** it is easier for the **consumer** to understand/compare **therefore** helping them to make a healthy food choice.
- P 12. **Nutritional information** may include a full list of vitamins/minerals which is good as it will allow **consumers** to make informed choices.

**Negative**

- N 1. **Nutritional information** on food products may not be easily understood by some **consumers** which is bad **as** it will not assist them to make healthy choices.
- N 2. **Nutritional information** on some food products may be too complicated for the average **consumer** to understand which is a disadvantage **because** they may choose to ignore it.
- N 3. **Nutritional information** displayed in tables on food products may be too small and difficult to read which is bad **as** it is of little use to the **consumer** when making healthy choices.
- N 4. Food manufacturers do not have to provide **nutritional information** which is a disadvantage to the **consumer** **as** they may not be able to compare products/make healthy/informed choices.
- N 5. **Nutritional information** for sodium will be found on food products and this may be bad as **consumers** may not be aware that this is known as salt and so this may not help them control their sodium/salt intake.

2 d) Explain the effects of storage, preparation and cooking on Vitamin B1 (thiamine).

**Marking Instructions:**

3 x 1 mark for each explanation.

1 x storage, 1 x preparation, 1 x cooking.

**Total – 3 marks (KU)**

1. **Storage**

1. Loss of this vitamin will occur if food is exposed to sunlight because UV light reduces **vitamin B1/thiamine** and it deteriorates quickly.
2. Store in a cool dark place, away from light because **vitamin B1/thiamine** deteriorates quickly when exposed to sunlight/UV light.
3. Store in a cool dark place away from light / air (bottom of a fridge) to prevent oxidation / loss of **vitamin B1/thiamine**.

2. **Preparation**

1. **Vitamin B1/thiamine** is readily soluble in water therefore avoid soaking to prevent vitamin B1/thiamine being leached into water.
2. Prepare as needed just before cooking / serving which prevents oxidation of **vitamin B1/thiamine** taking place.
3. During the preparation/polishing of white rice to free it from bran, **vitamin B1/thiamine** is removed with the bran.

3. **Cooking**

1. Cooking for a long period of time above boiling point will gradually destroy **vitamin B1/thiamine** (so use quick methods of cooking).
2. Steaming/stir frying/microwaving/pressure cooking/quick methods of cooking will help to conserve/minimise loss of **vitamin B1/thiamine**.
3. Quick dry methods of cooking will minimise loss of **vitamin B1/thiamine**.
4. **Vitamin B1/thiamine** is water soluble and will be lost/leached into cooking liquid.
5. Use minimal amounts of water when cooking to avoid too much **vitamin B1/thiamine** leaching into the cooking water.
6. Alkaline cooking mediums (bicarbonate of soda/baking powder) destroy **vitamin B1/thiamine**.

- 2 e) Explain **two** ways in which **each** of the following Acts protect the consumer when purchasing food.
- (i) Trade Descriptions Act (1968)
  - (ii) The Food Hygiene (Scotland) Regulations (2005)

**Marking Instructions:**

2 x 1 mark for **each** well explained protection linked to the purchase of food under the Trade Descriptions Act (1968).

2 x 1 mark for **each** well explained protection linked to the purchase of food under The Food Hygiene (Scotland) Regulations (2005).

**Total – 4 marks (KU)**

(i) **The Trade Descriptions Act (1968)**

1. This Act protects the **consumer** by making it a criminal offence to falsely describe (orally/written/ visual) food a trader is selling.
2. The Act protects the consumer as food pictured on the product packaging must not mislead the **consumer** (eg a cross section of a fruit pie overflowing with whole pieces of juicy fruit must not be filled with fruit-flavoured puree).
3. The Act protects the consumer as food with a written description on the product packaging must reflect that description and not mislead the **consumer**.
4. The **consumer** is protected from misleading/false description of foods in written advertisements/radio advertisements/television advertisements.
5. This Act protects the **consumer** by making it a criminal offence if an employee eg a sales assistant/trader/employer gives a false verbal description of a food.
6. The Act makes it illegal for a trader to mislead the **consumer** about the service they are providing such as if a food delivery service is claiming to deliver free, then the consumer should not have to pay any extra charge for delivery.
7. The Act protects the **consumer** as if foods are presented in such a way as to give a misleading impression about where they were manufactured/produced they must be clearly labelled to show their country of origin/production.
8. A **consumer** who believes that a trader has given a false/misleading description of food should contact the Trading Standards Department as The Trade Description Act allows them to be prosecuted under criminal law.

(ii) **Food Hygiene (Scotland) Regulations (2005)**

1. These Regulations protect the **consumer** by ensuring all premises/village halls/restaurants/supermarkets/vans/vending machines follow food hygiene rules to make sure food is safe for **consumers** to eat.
2. These Regulations protect the **consumer** by ensuring that all food sold publicly or privately/for profit or fundraising follows food hygiene rules making food safe for **consumers** to eat.
3. The Regulations protect the **consumer** by making sure that most food businesses register with their local authority so that guidance can be given on food law/inspections can be carried out.
4. The **consumer** is protected by these Regulations as it ensures that staff must be appropriately supervised and trained in food hygiene so they can carry out their work hygienically making sure food is safe to eat.
5. Food businesses must implement the Regulations to ensure **consumer** safety by having a suitable system in place to analyse potential hazards (eg food contamination) and how they can be controlled and monitored in the production of food products.
6. These Regulations protect the health of the **consumer** by ensuring that food businesses implement a Hazard Analysis Critical Control Point (HACCP) system/risk assessment.
7. The Regulations require that food businesses must carry out a risk assessment to identify hazards to food safety (eg inadequate cooking) which may be present within the business and ensure adequate safety controls in place are maintained/reviewed to protect the **consumer**.

8. The Regulations protect the **consumer** ensuring that food premises are clean/in good repair/well designed to carry out hygiene procedures (eg adequate wash basins and flush toilets/facilities for cleaning and disinfecting/satisfactory standards of lighting and ventilation/surfaces easily cleaned and disinfected).
9. The Regulations protect the **consumer** by ensuring that no food must be kept at a temperature which would result in a risk to consumer health.
10. The Regulations protect the **consumer** by ensuring that all foods stored in a refrigerator must be stored at a temperature of 1-4°C so bacterial growth is slowed.
11. The Regulations protect the **consumer** by ensuring that all foods stored in dry stores are in a cool ventilated place.
12. The Regulations protect the **consumer** by ensuring that all food that is to be reheated must reach a core temperature of 82°C to make sure most pathogenic bacteria are destroyed.
13. The Regulations protect the **consumer** by ensuring that all cooked foods to be sold as hot are held at a temperature of 63°C as below this would encourage bacterial growth.
14. The Regulations protect the **consumer** by ensuring that all food that is to be cooked must reach a core temperature of 75°C to make sure most pathogenic bacteria are destroyed.
15. The Regulations should protect the health of **consumers** throughout the European Community by ensuring food hygiene rules are followed in each country.
16. The Regulations should protect the health of **consumers** throughout the European Community as it applies to food businesses throughout the supply chain including farmers and growers.
17. Environmental health officers enforce the regulations ensuring **consumer** safety when purchasing food.

3 a) Explain **four** reasons for the **increase** in food poisoning.

**Marking Instructions:**

4 x 1 mark for each reason which must demonstrate an understanding of reasons for **increase** in food poisoning (not reasons why food poisoning should occur).

**Total – 4 marks (KU)**

**(Headings have been provided to assist marking but are not required to be provided by the candidate.)**

**1. Farming/food production**

1. More intensive methods of food production/large numbers of animals farmed in a small space increase the risk of contamination and these animals may have large numbers of bacteria which may lead to **food poisoning**.
2. Increased length of the food production chain/importing food from abroad may allow bacteria to form/contaminate food as more people/processes are involved in treating/transporting/storing food which increases the risk of **food poisoning**.

**2. Eating outside the home**

1. As more food is consumed outside the home/in restaurants/cafes/supermarkets there is an increased risk of infected food handlers/food handlers with poor hygiene habits preparing food which may contaminate food (with bacteria) and so increasing the risk of **food poisoning**.
2. More people are eating out/there are more people handling the food which increases the opportunity for contamination with bacteria increasing the incidence of **food poisoning**.
3. Less food is prepared/cooked in the home which means more people are handling the food which is being eaten so increasing the risk of **food poisoning**.
4. Pupils taking packed food lunches to school with inadequate facilities to keep the food cool/cool box may give bacteria time to multiply and so increase the risk of **food poisoning**.
5. Inadequate hand washing prior to consuming food at school/place of work can allow food to be contaminated and so increase the risk of **food poisoning**.
6. As more foods are consumed outside the home there is an increased risk that food may not be cooked adequately which could increase the risk of **food poisoning**.

**3. Shopping for food**

1. When shopping for food if chilled/frozen food is not stored/transported home in a cool box/chilled conditions bacteria may multiply and so increase the risk of **food poisoning**.
2. When purchasing food at outdoor markets, food which is not covered could become contaminated with bacteria which may increase the risk of **food poisoning**.
3. If the use by date is short when purchasing perishable foods and this is not picked up by the consumer, a high number of bacteria may be allowed to develop which may increase the risk of **food poisoning**.

**4. Food preparation within the home**

1. Inadequate cooking/microwaving/reheating of food in the home meaning that the bacteria are not killed increases the incidence of **food poisoning**.
2. If there is inadequate cooling of food in warm kitchen bacteria have more time to multiply which may increase the risk of **food poisoning**.
3. Poor literacy/numeracy skills may mean that the person preparing the food cannot follow the cooking instructions given on packets/in recipe books and so under cook the food which may increase the risk of **food poisoning**.
4. If there is inadequate thawing of poultry the centre of the food may not be thoroughly cooked so bacteria are not killed and so increase the risk of **food poisoning**.
5. Lack of knowledge of appropriate reheating temperatures to ensure that all bacteria are destroyed may mean that this increase the number of cases of **food poisoning**.
6. Infected food handlers/those with poor hygiene habits increase the incidence of **food poisoning** by transferring bacteria to food.
7. Uncovered food could be contaminated by animals/fly and if this is then consumed it may lead to **food poisoning**.

8. Lack of knowledge leading to incorrect storage in fridge/possible cross contamination between raw and cooked food increasing risk of **food poisoning**.
9. Lack of knowledge leading to cross-contamination of raw food to cooked food may mean that bacteria are present on the cooked food which can lead to **food poisoning**.
10. Lack of knowledge that damaged utensils/cracks in crockery can harbour bacteria which when used to prepare food could lead to **food poisoning**.
11. The greater number of meals which are served for celebrations/anniversaries as preparation is sometimes carried out too far in advance/the food may be stored in the danger zone (5°C - 63°C) allowing bacteria to multiply to high levels so increase the incidence of **food poisoning**.
12. Increase in barbecuing food if it is burnt on the outside due to high temperature, but high-risk food (such as poultry/sausages) do not reach the core temperature (75°C) in the centre, bacteria are not killed which increases the incidence of **food poisoning**.
13. Students/people setting up home for the first time may have no knowledge about how to handle/  
store/prepare food and so bacteria have the opportunity to multiply increasing the risk of **food poisoning**.
14. Inadequate hand washing prior to consuming/preparing food at home can allow food to be contaminated and so increase the risk of **food poisoning**.
15. Inadequate hand washing after handling pets/playing outside and then preparing/consuming food at home can allow food to be contaminated and so increase the risk of **food poisoning**.

5. **Standard of living**

1. Rising standard of living/more money available which means the purchase of meat/dairy products increases; these foods are the main carriers of **food poisoning** bacteria.
2. Rising standard of living/more money available which means the purchase of take away meals/eat in restaurants if food safety/food hygiene guidelines are not followed which may increase the risk of **food poisoning**.
3. Less money available/increased unemployment may mean that the food is kept for longer giving an opportunity for bacteria to breed and so increase the risk of **food poisoning**.
4. When consumers travel abroad on holiday they may be exposed to poor hygienic practices which may mean they are exposed to bacteria and suffer from **food poisoning**.

6. **Increased public awareness**

1. Due to increased public awareness/people are more aware of the symptoms of food poisoning/seek medical assistance therefore more cases are reported so it appears as if the number of cases of **food poisoning** has increased.

3 b) Identify and explain **two** functional properties of eggs.

**Marking Instructions:**

2 x 1 mark for each functional property identified.

2 x 1 mark for each detailed explanation linked to eggs.

Functional property must be identified before mark can be awarded for explanation. Where the functional property is incorporated in the explanation this can be credited.

**Total – 4 marks (KU)**

| Functional property   | Explanation linked to functional properties of eggs   |
|-----------------------|---|
| 1. <b>Aeration</b>    | 1. When <b>egg</b> whites are whisked they increase in volume as the protein/albumen stretches and traps air bubbles in the foam.<br>2. When <b>egg</b> is whisked with sugar a large volume of air is trapped in a honeycomb like mesh.  |
| 2. <b>Coagulation</b> | 1. When the protein/albumen in <b>egg</b> is heated it changes from a liquid to a solid state thickening a mixture (eg flan).<br>2. By adding salt/acid or extra egg to an <b>egg</b> mixture a firmer set can be achieved when the protein is heated.<br>3. By adding sugar to an <b>egg</b> mixture a looser set can be achieved when the protein is heated.<br>4. When <b>egg</b> has been used to bind ingredients together (eg burger/biscuit) the egg coagulates on heating holding the ingredients together. |
| 3. <b>Emulsifying</b> | 1. <b>Egg</b> yolk contains a substance called lecithin which allows oil and another liquid to be mixed together without separating (eg mayonnaise).<br>2. <b>Egg</b> yolk contains a substance called lecithin which stabilises mixtures by forming an emulsion which will prevent curdling (eg cakes).  |
| 4. <b>Glazing</b>     | 1. <b>Eggs</b> can be used to glaze foods (eg pastries) which when heated/baked/cooked in the oven will produce a golden brown colour.  |
| 5. <b>Binding</b>     | 1. <b>Egg</b> can be used to bind ingredients together (eg burgers/ biscuits) which ensures they stay together when the product is being produced.  |
| 6. <b>Colour</b>      | 1. <b>Egg</b> can improve the appearance of pale foods by giving a rich colour from the egg yolk (eg white sauce).<br>2. <b>Eggs</b> can be used to glaze foods (eg pastries) which when heated/baked/cooked in the oven will produce a golden brown colour.  |
| 7. <b>Flavour</b>     | 1. <b>Egg</b> can impart a rich taste to food products improving the flavour.   |
| 8. <b>Coating</b>     | 1. Using <b>egg</b> to apply a coating on food products (eg potato croquettes) allows the coating to stick to the product which will then coagulate/prevents the food from falling apart while cooking.   |

- 3 c) Evaluate the nutritional suitability of the following meal for a vegetarian.
- Bean Burger
  - Wholemeal roll
  - Green salad
  - Lemon meringue pie and cream

**Marking Instructions:**

4 x 1 mark for each point evaluated in detail linked to the dietary needs of a vegetarian.

**Total – 4 marks (EV)**

**Bean Burger**

**Positive**

- P 1. Beans are a good source of protein which will be beneficial for a **vegetarian** as it will provide an alternative/non meat source of protein to allow for growth/repair/maintenance of body tissue.
- P 2. The insoluble NSP/dietary fibre found in beans will be beneficial to a **vegetarian** as it may help remove waste from the body so preventing constipation.
- P 3. The beans contain iron which will be beneficial to a **vegetarian** as their intake may be low as they do not eat red meat (good source of iron), so this ensures they do not suffer from anaemia.
- P 4. The beans contain calcium which will be beneficial to a **vegetarian** as their intake may be low if they are a vegan and do not consume dairy products (good sources of calcium), so this ensures they do not suffer from osteoporosis.
- P 5. Beans tend to be low in fat/saturated fat which will be beneficial to a **vegetarian** as there is no increased cholesterol/coronary heart disease/prevent narrowing of the arteries and **so** prevent obesity/coronary heart disease in the future.
- P 6. Beans are high in complex carbohydrates which help give slow release energy and will prevent the **vegetarian** feeling hungry/prevent snacking on high fat/salt/sugar products, and **so** prevent obesity.
- P 7. The 'B' vitamins found in beans will be beneficial to a **vegetarian** as it will release energy from the carbohydrate allowing them to benefit from consuming the carbohydrate **which** gives them energy.
- P 8. The beans are a good source of (low biological value) protein which is good as the **vegetarian** will have to eat a variety of low biological value foods to ensure they have all the essential amino acids and **so** allow them to grow/repair damaged tissue effectively.
- P 9. The bean burger may be made with soya beans which are a good source of high biological value protein which is good as the **vegetarian** may be lacking protein/not consuming meat products and **so** gives them all the essential amino acids to allow them to grow/repair correctly.
- P 10. The bean burger may be bound together with egg which will be beneficial to a **vegetarian** as it will provide them with a source of high biological value protein (which they may be lacking from not consuming meat products) and **so** gives them all the essential amino acids to allow them to grow/repair correctly.
- P 11. The beans contain folic acid which will be beneficial to a **vegetarian** as it is required for the formation of red blood cells, iron levels may be low so this could help prevent anaemia.
- P 12. The bean burger may be bound together with egg which will be beneficial to a **vegetarian** as it contains vitamin B12 **which** may be lacking in their diet from not eating meat **therefore** helping to prevent (certain forms of) anaemia.

**Negative**

- N 1. The insoluble NSP/dietary fibre found in beans may not be beneficial to a **vegetarian** as the NSP/dietary fibre may bind with iron limiting the absorption and so possibly contributing to anaemia.
- N 2. The beans contain iron and NSP/dietary fibre which may be a disadvantage to the **vegetarian** as the NSP/dietary fibre may bind with the iron therefore making it unavailable and so possibly contributing to anaemia.

- N 3. The beans contain calcium and NSP/dietary fibre which may be a disadvantage to the **vegetarian** as the NSP/dietary fibre may bind with the calcium therefore making it unavailable and so possibly contributing to rickets/osteoporosis/osteomalacia.
- N 4. The bean burger may be bound together with egg which will not be beneficial to all **vegetarians** as if they are a vegan they will not eat any animal products so making this food unavailable.
- N 5. The bean burger may be seasoned with salt which may be bad for the vegetarian as this may contribute to high blood pressure/coronary heart disease in later life.
- N 6. The bean burger may be fried which will add additional fat; this may be a disadvantage to the **vegetarian** as it could contribute to them suffering from obesity/coronary heart disease in later life.

### **Wholemeal Roll**

#### **Positive**

- P 1. Wholemeal roll contains low biological value protein which is good as the **vegetarian** will have to eat a variety of low biological value foods to ensure they have all the essential amino acids **so** this allows them to grow/repair damaged tissue.
- P 2. The 'B' vitamins found in wholemeal roll will be beneficial to a **vegetarian** as it will release energy from the carbohydrate so allowing them to benefit from consuming the carbohydrate/ giving them more energy.
- P 3. The wholemeal roll contains iron which will be beneficial to a **vegetarian** as their intake may be low as they do not eat red meat (good source of iron) **so** ensuring they don't suffer from anaemia.
- P 4. The wholemeal roll contains calcium which will be beneficial to a **vegetarian** as their intake may be low if they are a vegan/do not consume dairy products (good sources of calcium) so ensuring they don't suffer from osteoporosis/rickets/osteomalacia.
- P 5. The insoluble NSP/dietary fibre found in wholemeal roll will be beneficial to a **vegetarian** as it may help remove waste from the body **so** preventing constipation.
- P 6. Wholemeal roll tends to be low in fat/saturated fat which will be beneficial to a **vegetarian** as there is no increased cholesterol **so** this may prevent narrowing of the arteries/preventing obesity/preventing coronary heart disease in the future.
- P 7. The wholemeal roll will contain complex carbohydrate which will help give slow release energy and will prevent the **vegetarian** feeling hungry **therefore** not snacking on high fat/ sugar products preventing obesity.
- P 8. The wholemeal roll contains folic acid which will be beneficial to a **vegetarian** as it is required for the formation of red blood cells, iron levels may be low **so** this could help prevent anaemia.

#### **Negative**

- N 1. Wholemeal roll contains NSP/dietary fibre which may not be suitable for the **vegetarian** as it may lead to indigestion/fullness after the meal **which** may mean they do not eat enough nutrients in other meals during the day.
- N 2. The wholemeal roll contains calcium and NSP/dietary fibre which may be a disadvantage to the **vegetarian** as the NSP/dietary fibre may bind with the calcium **therefore** making it unavailable to the body to prevent rickets/osteoporosis/osteomalacia.
- N 3. The wholemeal roll contains iron and NSP/dietary fibre which may be a disadvantage to the **vegetarian** as the NSP/dietary fibre may bind with the iron **therefore** making it unavailable to prevent anaemia.
- N 4. The wholemeal roll may be spread with butter/margarine which will add additional fat; this may be a disadvantage to the **vegetarian** as it could contribute to them suffering from obesity/coronary heart disease in later life.
- N 5. The wholemeal roll will contain salt/sodium **which** may be bad **as** it will contribute to high blood pressure/coronary heart disease in later life.

## Green salad

### Positive

- P 1. Green salad tends to be low in fat/saturated fat which will be beneficial to a **vegetarian** as there is no increased cholesterol **so** this may prevent narrowing of the arteries/preventing coronary heart disease in later life/preventing obesity.
- P 2. The 'B' vitamins found in the green salad will be beneficial to a **vegetarian as** it will release energy from the carbohydrate **so** allowing them to benefit from consuming the carbohydrate by releasing energy.
- P 3. The green salad may contain iron which will be beneficial to a **vegetarian** as their intake may be low as they do not eat red meat (good source of iron) **so** ensuring they don't suffer from anaemia.
- P 4. The green salad may contain calcium which will be beneficial to a **vegetarian** as their intake may be low if they are a vegan/do not consume dairy products (good sources of calcium), so they don't suffer from osteoporosis/rickets/osteomalacia.
- P 5. The green salad will contain Vitamin C which may be good for the **vegetarian** as it may help them to absorb the maximum amount of iron from foods **so** preventing anaemia.
- P 6. The green salad will contain Vitamin A which may be good for the **vegetarian** as it is important for eyesight/antioxidant vitamin.
- P 7. The green salad may provide the antioxidant vitamins A/C/E which may be good for the **vegetarian** as they will help maintain immune system/reduce risk of CHD/Cancer.

### Negative

- N 1. The green salad could have a dressing on it which may add additional fat; this may be a disadvantage to the **vegetarian** as it could contribute to them suffering from obesity/coronary heart disease.

## Lemon meringue pie

### Positive

- P 1. The lemon meringue pie will contain vitamin C from the lemons which may be good for the **vegetarian** as it may help them to absorb the maximum amount of iron from foods so preventing anaemia.
- P 2. One of the main ingredients in the lemon meringue pie is eggs (which may be good for the **vegetarian** as it is a source of high biological value protein which they will be lacking in their diet by not eating meat) and **so** gives them all the essential amino acids to allow them to grow/repair correctly.
- P 3. The lemon meringue pie will provide carbohydrate which will be good for the **vegetarian** as it will provide them with energy to carry out their daily activities.
- P 4. The cream will provide a source of high biological value protein which is good as the **vegetarian** may be lacking protein (from not consuming meat products) so giving them all the essential amino acids to allow them to grow/repair correctly.
- P 5. One of the main ingredients in the lemon meringue pie is egg this may be good for the **vegetarian** as it contains vitamin B12 **which** may be lacking in their diet from not eating meat **therefore** helping to prevent (certain forms of) anaemia.
- P 6. One of the main ingredients in the lemon meringue pie is egg this may be good for the **vegetarian** as it is a source of Vitamin D (which is seldom found in plant foods) **so** helping to absorb calcium preventing osteoporosis.
- P 7. One of the main ingredients in the lemon meringue pie is egg this may be good for the **vegetarian** as it contains Vitamin A **which** may be good for the **vegetarian** as it is important for eyesight/antioxidant vitamin.
- P 8. Vitamin B1/2 found in the egg which is used in making lemon meringue pie will be beneficial to a **vegetarian** as it will release energy from the carbohydrate allowing them to benefit from consuming the carbohydrate by giving them more energy.
- P 9. Vitamin B2 found in egg which is used in making lemon meringue pie will be beneficial to a **vegetarian** as it will release energy from the carbohydrate protein/fats.
- P 10. Vitamin B1 found in white flour which is used to make pastry case for the lemon meringue pie will be beneficial to a **vegetarian** as it will release energy from the carbohydrate/allowing them to benefit from consuming the carbohydrate.

**Negative**

- N 1. One of the main ingredients in the lemon meringue pie is eggs which may not be suitable for all **vegetarians** as if they are vegan they will not eat products of animals and so will lack protein.
- N 2. The lemon meringue pie may contain a high sugar content which may not be good for the **vegetarian** as a high intake of sugar can contribute to tooth decay/obesity.
- N 3. One of the main ingredients in the lemon meringue pie is the pastry which tends to be high in fat; this may not be good for the **vegetarian** as a high intake of fat can contribute to obesity/coronary heart disease in later life.

**Cream**

**Positive**

- P 1. The cream will provide fat soluble vitamins which may be good for the **vegetarian** as vitamin A is important for eyesight/antioxidant vitamin.

**Negative**

- N 1. The cream has a high saturated/fat content which may not be good for the **vegetarian** as a high intake of saturated fat can contribute to obesity/coronary heart disease in later life.

- d) Explain the benefits of **each** of the following technological developments in food production.
- (i) Fat replacers
  - (ii) Myco-proteins

**Marking Instructions:**

4 x 1 mark for **each** explanation linked to food production.  
At least 1 mark from each area.

**Total – 4 marks (KU)**

(i) **Fat replacers**

1. Fat replacers will replace the fat source in **food products** (with a vegetable oil-based product) ensuring products have a lower fat content/contribute to the dietary target reduce consumption/eat less fat.
2. Fat replacers have a lower energy value than fats and can be used to create healthy option/weight reduction **food products**.
3. Fat replacers are free from cholesterol and so **foods can be produced** for people suffering from heart disease.
4. When manufacturing cakes/desserts fat replacers can be used to produce **food products** lower in energy/fat.
5. Fat replacers can be used to replace fats and oils for frying/baking of snack **food products**/crisps/tortilla chips/biscuits.
6. There are a wide range of different fat replacers allowing a wide range of **food products** to be manufactured with less fat.
7. Fat replacer/oatrim can be used to replace large amounts of fat and therefore can contribute to the reduction of animal fat in the **food industry**.
8. Fat replacer/olestra can be used when frying foods (as heat stable) allowing **food products** that are fried to have less fat.
9. Fat replacer/whirl can be used to replace butter/margarine allowing **food products** that contain these ingredients to be manufactured with less fat.
10. Fat replacer/dairy-lo/simplesse can be used in a variety of dairy products allowing these **food products** be manufactured with less fat.
11. Fat replacers allow a greater range of low fat/low calorie products to be produced.

(ii) **Myco-proteins**

1. Myco-proteins are low in fat/low in calories and can be used to create healthy option/weight reduction **food products**.
2. Myco-proteins can be fresh/frozen/chunks/minced so can be used to create a wide range of **food products**.
3. Myco-proteins can be easily frozen/chilled allowing them to be used to create a wide variety of **food products**.
4. Myco-proteins need no preparation therefore can make the time taken to **produce food** lower.
5. Myco-proteins can be used as a replacement for meat as they contain a source of protein which makes them suitable to be used when **producing foods** for a vegetarian.
6. Myco-proteins contain zinc/vitamin B which makes them suitable to be used when **producing foods** for a vegetarian as they often lack this nutrient.
7. Myco-proteins do not shrink on cooking therefore there is no waste making them economical to use in **food production**.
8. Myco-proteins contain no fat/grizzle/bone like meat therefore there is no waste making them economical to use in **food production**.
9. Myco-proteins contain NSP/dietary fibre therefore a small quantity will be filling making them economical to use in **food production**.
10. The nutritional quality of myco-proteins does not change during cooking/freezing making the final **food product** have a high nutritional value.
11. Myco-proteins are similar in texture/colour to chicken so therefore should be able to be used as a substitute for chicken in **food production**.
12. Myco-proteins absorb flavours from other ingredients which will ensure that the final **food product** has a good flavour.

3 e) Evaluate the influence of television on consumer's choice of food.

**Marking Instructions:**

4 x 1 mark for each valid evaluation point linked to television and choice of food.

**Total – 4 marks (EV)**

**(Headings have been provided to assist marking but are not required to be provided by the candidate.)**

**Advertising**

**Positive**

- P 1. Recent legislation to the television screening of **food** products may have reduced the exposure of high fat/sugar/salt **foods** to children **so** preventing parents being pressurised into buying the products.
- P 2. Adverts for food on the television show consumers what **food** products are available which may be good as they might find out about a new food product which could be beneficial to their health.
- P 3. Adverts for food on the television show consumers what **food** products are available which may be good as they might find out about a food deals/promotions which could save money
- P 4. Adverts for **food** on the television often give factual information which may be good **as** it could educate the consumer about **food products**.
- P 5. The Food Standards Agency produce factual adverts for television (traffic light/ saturated fat) which is good for the consumer **as** it gives them (unbiased) information on which to make **food choices**.

**Negative**

- N 1. Many adverts for food on the television are for foods high in sugar/fat/salt which may be bad as this may encourage people to **choose these foods which** may result in obesity/hypertension/heart disease in later life.
- N 2. Adverts for food on television are shown at times when the main target group will be watching which could be bad **as** it may make people choose foods they would not normally buy/promote unhealthy **food choices**.
- N 3. Many food adverts on television are endorsed by celebrities which could be bad as the image it promotes could mislead the consumer **therefore** promoting unhealthy **food choices**.
- N 4. Adverts for food on the television often give factual information which may be bad **as** often not all the facts are given and the consumer may be misled as to the benefit of a **food product**.

**Television programmes**

**Positive**

- P 1. Television documentaries provide information to the consumer which may be good **as** it helps to educate/promote healthy **food choices**.
- P 2. Television documentaries provide information to the consumer which may be good **as** it helps to educate the public when there are health scares linked to **food** (eg foot and mouth, BSE.)
- P 3. Television chefs may encourage the public to prepare food which may be good **as** the consumer may eat less processed **foods**/foods containing additives.
- P 4. Television chefs will use a wide variety of ingredients which may be good as it will alert the consumer to what is available and **so** may make them use these **foods**.
- P 5. A famous chef on television which may be good as the public may then purchase the ingredients/prepare the recipes and **so** may improve their choice of **foods**.

**Negative**

- N 1. Although the public may watch television chefs they may not actually prepare any of the recipes which is not good **therefore** these programmes may not encourage the consumer to change their choice of **food**.
- N 2. Television documentaries provide information to the consumer which may be bad **as** it may not give all the information to make an informed choice and consumers may make bad **food choices**.

### **Sponsorship of programmes**

#### **Positive**

- P 1. Food companies are now sponsoring television programmes which may be good because consumers are associating foods with the programme and **so** could make healthier **food choices**.

#### **Negative**

- N 1. Food companies are now sponsoring television programmes which may be bad because consumers are associating foods with the programme and **so** could make poor **food choices**.

### **Product placement**

#### **Positive**

- P 1. **Food** products are often placed in popular television programmes/soaps/film which is good as when healthy foods are shown being consumed by their idols **so** it may encourage greater consumption.

#### **Negative**

- N 1. **Food** products are often placed in popular television programmes/soaps/film which may be bad as when unhealthy foods are shown being consumed by their idols **so** it may encourage greater consumption.

- 4 a) Explain **one** cause and **one** effect on health of **each** of the following dietary diseases.
- (i) Dental caries
  - (ii) Diverticulitis

**Marking Instructions:**

2 x 1 mark for cause of **each** dietary disease.

2 x 1 mark for **each** related effect on health.

If the effect is mentioned when explaining the cause of the dietary disease the mark should be awarded.

**Total – 4 marks (KU)**

**(i) Dental Caries**

**Causes**

1. Too little calcium/phosphorus/Vitamin D.
2. Lack of vitamin C.
3. Eating too much salt.
4. Eating soft foods which don't require chewing.
5. Drinking juice which is acidic/diet drinks.
6. Eating sticky/sugary snacks between meals.
7. High consumption of non-milk extrinsic sugars.
8. Poor oral hygiene/ineffective brushing of teeth/  
not flossing/not using fluoride toothpaste/not  
visiting dentist.

**Effects**

1. Gum disease.
2. Removal of teeth.
3. Impaired growth (painful to eat).
4. Reduced body weight (painful to eat).
5. Nutritional deficiencies.
6. Heart disease

**(ii) Diverticulitis**

**Causes**

1. Low NSP/dietary fibre intake.
2. Low intake of Wholemeal roll/cereals/pulses.
3. Low intake of fruit and vegetables.
4. Low fluid intake (insufficient water in the diet).
5. High intake of refined and convenience foods.
6. Lack of physical exercise/activity (to keep  
intestines active).
7. High fat/saturated fat intake.
8. Stress (has a knock on effect).

**Effects**

1. Abdominal pain.
2. Vomiting.
3. Diarrhoea/constipation/bowel  
cancer.
4. Fever.
5. Flatulence.
6. Bloating/swelling.
7. Complication – life threatening  
infections in the abdomen.
8. Pockets formed on the intestine.

- 4 b) Evaluate breastfeeding for **each** of the following.
- (i) The mother
  - (ii) The baby

**Marking Instructions:**

4 x 1 mark for **each** valid evaluation point of breast feeding linked to the mother/baby  
At least one mark from **each** area

**Total – 4 marks (EV)**

(i) **The mother**

**Positive**

- P 1. **Mothers** who are **breastfeeding** use up extra calories which is good **as** it allows the mother to lose excess weight (fat stores) gained during pregnancy.
- P 2. **Mothers** bond more readily with babies when **breastfeeding** which is good **because** it establishes a close emotional attachment to the child.
- P 3. Medical evidence suggests important advantages to **mothers** who **breastfeed as** they have a lower risk of developing breast cancer/ovarian cancer/reduced risk of osteoporosis after the menopause.
- P 4. **Mothers** who **breastfeed** will find it an advantage **as** there are no bottles to warm in the middle of the night/no equipment to sterilise/no preparation time required **therefore** making life more convenient for the mother.
- P 5. **Mothers** who **breastfeed** their babies are able to provide milk immediately (it's always at the correct temperature) which is good if the baby is hungry **therefore** making it less stressful for baby and mother.
- P 6. **Breastfeeding** is good for **mother** and baby as it allows for quiet time **therefore** allowing mother some relaxation in what can be a busy day.
- P 7. **Mothers** who **breastfeed** will find it more economical which is an advantage as there is no extra equipment/formula milk to buy **therefore** saving money.
- P 8. **Mothers** who **breastfeed** will find it more environmentally friendly which is good **as** there are no plastic bottles/formula milk containers/electric sterilisation.
- P 9. **Mothers** who **breastfeed** can express milk by use of a breast pump which is good **as** it allows partners/relatives/friends to take over allowing mother time to herself/closer involvement of family.
- P 10. Breast milk is germ free which is good **as** it allows the mother to feed the baby without causing stomach upset.

**Negative**

- N 1. **Mothers** who do not **breastfeed** may find it more difficult to lose excess weight which is bad **as** breastfeeding uses up extra calories **therefore** helping to lose weight (fat stores) gained during pregnancy.
- N 2. Some **mothers** may start **breastfeeding** but find feeding uncomfortable/painful which is bad **as** they may be put off and stop/give up breastfeeding quickly.
- N 3. **Mothers** who are breast feeding may develop mastitis/infection and so have to take antibiotics and so this is bad **as** it may put the mother off breast feeding.
- N 4. Some **mothers** may not want to **breastfeed as** they feel uncomfortable/may not like the idea of feeding in public which may be bad **as** they may have feelings of guilt at not providing the benefits of breastfeeding.
- N 5. **Mothers** who **breastfeed** may have to take all night time feeds which is a disadvantage **because** mothers are more likely to be tired during day.
- N 6. **Mothers** who do not **breastfeed** may be at a disadvantage **as** medical evidence suggests that breastfeeding offers a lower risk of developing breast cancer/ovarian cancer/reduced risk of osteoporosis after the menopause.
- N 7. **Mothers** who are **breastfeeding** must avoid certain medicines **as** they can be passed on into the breast milk which may be difficult for the mother **as** she may have to do without the relief that medication can give.
- N 8. **Mothers** must avoid drinking alcohol/smoking whilst **breastfeeding as** their effects can be passed on through breast milk to the baby which may be difficult **because** the mother may have an addiction/dependency/find it very stressful to give up.

(ii) **The Baby**

**Positive**

- P 1. An advantage of **breastfeeding babies** is that they will gain the correct proportion of nutrients **which** are needed for their growth and development of body tissue and organs.
- P 2. **Babies** are less likely to become overweight when **breastfed** which is good as they decide to stop feeding when full **therefore** do not gain unnecessary weight/may be less likely to be overweight in later life.
- P 3. **Babies** who are **breastfed** will find it easier to digest milk which is good **because** there is less chance of nappy rash and stomach upset.
- P 4. **Breastfed** babies are provided with antibodies which is an advantage **as** they protect **babies** from bacterial/viral infections (eg gastro intestinal infections/diarrhoea).
- P 5. Medical evidence suggests **breastfed babies** have an important advantage over bottle fed **as** they have a lower risk of developing asthma/obesity/diabetes/allergic reactions (eczema)/an increased IQ.
- P 6. **Breastfeeding** can help the baby to bond with the mother which is good **as** it helps the **baby** to feel more comforted/secure.

**Negative**

- N 1. **Babies** whose mothers smoke whilst **breastfeeding** are at a disadvantage as the chemicals from the cigarette will pass into breast milk **which** may cause a number of health problems (colic/possible links to cot death).
- N 2. Alcohol can pass into breast milk from mothers who drink which is bad **as** the **breastfed baby** may suffer the effects of the alcohol (may feel unsatisfied and frustrated during feeds/sleepy/poor growth).
- N 3. Foods which have strong flavour and are eaten by the mother can affect the taste of breast milk which is bad for the **baby** who is **breastfeeding as** the baby will detect this and may become very fussy/refuse to feed.
- N 4. **Babies** who are not **breastfed** may be at a disadvantage **as** they will not receive the antibodies from the mothers milk **which** protects babies from bacterial/viral infections eg gastro-intestinal infections, diarrhoea.
- N 5. **Babies** who are not **breastfed** may be at a disadvantage **as** medical evidence suggests that breastfed babies have a lower risk of developing asthma/obesity/diabetes/allergic reactions (eczema)/an increased IQ.
- N 6. **Babies** who are **breastfed** may not be efficient feeders and therefore not get enough milk **which** means they get upset/do not put on weight.

4 c) Evaluate ready meals in relation to **different** Scottish dietary targets.

**Marking Instructions:**

4 x 1 mark for each point which evaluates ready meals to a **different** Scottish dietary target.

**Total – 4 marks (EV)**

**Fat intake**

**Positive**

- P 1. **Ready meals** can be bought with a reduced saturated fat content/slimming/healthy ranges (by using oils which have a lower quantity/percentage of saturated fat during manufacturing) **which** is good **as** this can help meet the dietary target for **reduction in saturated fat** to no more than 11% of energy intake.
- P 2. A wide range of reduced fat **ready meals** have been produced by using fat replacers/ substitutes in the product which is a benefit to the consumer **because** it will help to meet the dietary target for a **reduction in fat** to no more than 35% of food energy/saturated fat to be reduced to no more than 11% food energy.
- P 3. Some **ready meals** may have the advantage of being produced using lower fat ingredients such as quorn/soya/tofu **therefore** helping to meet the dietary target for a **reduction in fat** to no more than 35% of food energy/saturated fat to be reduced to no more than 11% food energy.
- P 4. **Ready made** meals may have the advantage of having been produced using reduced fat versions of ingredients (such as low fat dairy products) **therefore** helping to meet the dietary target for a **reduction in fat** to no more than 35% of food energy/saturated fat to be reduced to no more than 11% food energy.
- P 5. **Ready meals** can have clear information about the amount/type of fat content on their labels which is good **as** it allows for comparison between meals **therefore** making it easier to make an informed choice that will help towards the dietary target for a **reduction in fat** to no more than 35% of food energy/saturated fat to be reduced to no more than 11% food energy.

**Negative**

- N 1. Many **ready meals** may be very high in fats from the use of processed meats/creamy sauces which is bad **as** they will not help to meet the dietary target for a **reduction in fat** to no more than 35% of food energy/saturated fat to be reduced to no more than 11% food energy.
- N 2. Supermarkets premium range of **ready meals** are often lower in fat than standard versions which is bad **as** they are often more expensive meaning consumers on a budget may not buy **therefore** they find it more difficult to meet the dietary target for a **reduction in fat** to no more than 35% of food energy/saturated fat to be reduced to no more than 11% food energy.
- N 3. **Ready meals** can have confusing information about the amount/type of fat content on their labels which is bad **as** it is difficult to make comparisons between meals **therefore** making it harder to choose a meal that will help towards the dietary target for a **reduction in fat** to no more than 35% of food energy/saturated fat to be reduced to no more than 11% food energy.

**Sugar intake**

**Positive**

- P 1. Artificial sweeteners/sugar substitutes are being used in **ready meals** which is good **as** it helps parents to meet the dietary target for a **reduction in NME sugars** by half in children.
- P 2. Some **ready meals** have gradually had the proportion of sugar reduced in the product which is good **as** the consumer/parent notices little change in taste **therefore** helping to contribute to the dietary target of **reducing NME sugar**.
- P 3. There are now many **ready meal** ranges aimed at children which use artificial sweeteners/ reduced quantity of sugars; this is good **because** parents concerned about children's health can choose meals **which** help meet the dietary target for a **reduction in NME sugars** by half in children.

### Negative

- N 1. Some **ready meals** can be high in sugar such as sweet chilli sauce/sweet and sour/sticky barbeque sauce which is bad **as** if consumed regularly they will not help towards the dietary target of **reducing NME sugars**.
- N 2. **Ready meals** are often promoted as being low in fat however they may also be high in sugar which may not be easy to identify on a label; this is bad as the consumer/parent may find it difficult to make an informed choice **therefore** are unable to meet the dietary target for a **reduction in NME sugar**.

### Salt intake

#### Positive

- P 1. Some **ready meals** may have had the quantity of salt reduced during manufacturing which is a benefit to the consumer **as** it helps them to meet the dietary target to **reduce consumption of salt** from 163mmol to 100mmol per day/to 6g per day.
- P 2. There has been an increase in the use of salt alternatives such as low salt in **ready meals** which is a benefit to the consumer as it reduces sodium content **therefore** helping to meet the dietary target to **reduce consumption of salt** from 163mmol to 100mmol per day/to 6g per day.
- P 3. **Ready meals** have seen an increase in the use of natural flavourings/herbs which is good as it helps to reduce the sodium content of meals **therefore** helping to meet the dietary target to **reduce consumption of salt** from 163mmol to 100mmol per day/to 6g per day.
- P 4. Clear information on **ready meal** labels can help to identify meals which are low in salt; this is good as it helps consumers to make an informed choice **therefore** helping to meet the dietary target to **reduce consumption of salt** from 163mmol to 100mmol per day/to 6g per day.

#### Negative

- N 1. Some **ready meals** are still high in salt content which is bad **as** it makes it very difficult for consumers to ensure that all the meals they buy are low in salt **therefore** difficult to meet the dietary target to reduce consumption of salt from 163mmol to 100mmol per day/to 6g per day.
- N 2. **Ready meals** can have confusing information about the amount of salt/sodium content on their labels which is bad **as** it is difficult to make a comparison between meals **therefore** making it harder to choose a meal that will help to meet the dietary target to **reduce salt** from 163mmol to 100mmol per day/to 6g per day.

### Fruit and vegetables

#### Positive

- P 1. The range of vegetarian **ready meals** available has increased which is good **because** they contain a higher proportion of vegetables **therefore** helping the consumer to meet the dietary target to **double intake/increase consumption of fruit and vegetables** to 400g per day.
- P 2. Healthy option **ready meals** have seen an increase in the use of fruit and vegetables which add bulk to the meal; this is good **as** it helps the consumer to meet the dietary **target to double intake/increase consumption of fruit and vegetables** to 400g per day.
- P 3. Manufacturers are incorporating more fruit and vegetables into **ready meals** which is good as it helps to satisfy the consumers demand to increase fruit and vegetables **therefore** helping to meet the dietary target to **double intake/increase consumption of fruit and vegetables** to 400g per day.

#### Negative

- N 1. Some **ready meals** may contain only a little fruit and vegetables which is bad **as** the quantity may be too small to realistically contribute to meeting the dietary target **double intake/increase consumption of fruit and vegetables** to 400g per day.

### **Fish intake**

#### **Positive**

- P 1. Manufacturers have increased their variety of fish **ready meals**/oily fish **ready meals** which is a benefit to the consumer **as** it gives them greater choice in helping to meet the dietary target to **maintain white fish/double oily fish consumption** from 44 – 88g per week.
- P 2. **Ready meals** that are low in fat often contain white fish which is good **as** it helps the consumer to reduce fat content as well **as** helping towards the dietary target to **maintain consumption of white fish**.
- P 3. Because fish is easily and quickly cooked many manufacturers include fish in their microwaveable/steam cuisine/chilled **ready meal** ranges which is good as saving time encourages the consumer to buy therefore helping to meet the dietary target to **maintain white fish/double oily fish consumption** from 44 – 88g per week.
- P 4. There are now many **ready meal** ranges designed for children which is good **as** it helps to increase the consumption of fish **therefore** helping to meet the dietary target to **maintain white fish/double oily fish consumption** from 44 – 88g per week.

#### **Negative**

- N 1. **Ready meals** which contain fish may also contain sauces which is bad **as** the sauce may be high in fat **therefore** although meal will help to meet the dietary target to **maintain white fish/double oily fish consumption** from 44 – 88g per week it will not help reduce fat.

### **Total complex carbohydrate**

#### **Positive**

- P 1. There is a wide range of rice/pasta **ready meals** with vegetables which is good **as** they are a convenient/easy way for consumers to meet the dietary target to **increase their consumption of total complex carbohydrates** by 25%.
- P 2. Some **ready meals** have a potato topping which is good **as** it is a convenient way of helping the consumer towards the dietary target of **increasing total complex carbohydrate** through an **increase** by 25% in **potato consumption**.
- P 3. **Ready meals** are often sold with accompaniments such as naan bread/pitta bread/tortillas which is good **as** it encourages consumers to buy and helps to meet the dietary target of **increasing daily intake of bread** by 45% mainly by using wholemeal and brown breads/ their consumption of total complex carbohydrates by 25%.

#### **Negative**

- N 1. Some rice/pasta **ready meals** may have rich/creamy/cheese sauces served with them that are high in fat/salt which is bad **because** the benefits of the dietary target to **increase total complex carbohydrates** by 25% are affected by their high fat/salt content **so** confusing consumer choice.

- 4 d) Explain how **each** of the following may influence food choice.
- (i) Available income
  - (ii) Environmental issues
  - (iii) Time available for preparation and cooking
  - (iv) Cultural influences

**Marking Instructions:**

4 x 1 mark for **each** well explained reason linked to choice of food.

**Total – 4 marks (KU)**

(i) **Available income**

1. Amount of money available can restrict/improve the options of **quantity/quality/variety/brand of food** which can be purchased/chosen.
2. High fat/sugar **food products** tend to be cheaper therefore may be purchased/chosen if there is a limited income.
3. **Fresh fruit/vegetables/previously untried foods** may not be purchased/chosen for fear of waste if income/money is limited.
4. **Ready meals** may be chosen/increase in popularity, as it may be cheaper to purchase a ready meal for one from prepare/cook from scratch if income/money is limited.
5. High disposable income/two household wages may result in more money being available for **ready meals/convenience foods/better brand foods/exotic fruits/functional foods/organic foods** as there is more money available.
6. High disposable income/two household wages may result in more money being available for choosing to **eat out in restaurants**.
7. Restricted income/unemployment may mean that consumers rely on special offers/price reductions/product promotions when choosing the **food** they will buy.

(ii) **Environmental issues**

1. Increased interest in environmental issues has led to **fewer genetically modified foods** being produced/chosen, as people are aware the effects GM crops may have on the environment.
2. Consumer may choose more **vegetarian food options** due to increased fear of animal related illnesses (eg mad cow disease/CJD).
3. Consumers may be choosing more **natural/organic/unprocessed foods** because of the concerns that manmade chemicals could be carcinogenic/contain cancer causing agents.
4. Consumers wishing to help protect the environment/help conserve energy are increasingly using microwave ovens which increases the demand for **microwave foods/meals**.
5. Consumers wishing to be more environmentally friendly are putting increasing pressure on food manufacturers to produce environmentally **friendly food packaging** (eg refillable containers/foods packaged in biodegradable material/recyclable containers)/food products as these are the only food products they may now choose foods which use less packaging.
6. Consumers may choose more **cruelty free/free range/dolphin friendly/farm assured** food product because of concerns about how animals are bred/treated (within the food chain).

(iii) **Time available for food preparation & cooking**

1. There may be families where the mother has to work and does not have **time to prepare/cook a meal**, they want something that is quick/easy to prepare that they can be eaten quickly.
2. Many working men/women do not have the **time to prepare/cook meals** so for convenience buy quick ready meals as they simply do not have the time to prepare/cook.
3. Many people today are working long hours and do not have **time to prepare/cook foods** so are increasing the demand for microwaveable meals/cook chill products.
4. Consumers who have little **time to prepare/cook food** will probably be more likely to purchase cook-chill products and ready meals.
5. **Time available for food preparation/cooking** may influence food choice as if the consumer does not have time to prepare/cook the meal then they will probably just get something quick which will more than likely be unhealthy therefore not nutritional.
6. **Time available for food preparation/cooking** may influence food choice as people will normally choose a ready meal if they have a limited amount of time as this can be microwaved whereas someone who has lots of time will usually buy ingredients and make food from scratch.
7. Some people may just buy ready meals rather than make meals from scratch due to work or family commitments as they do not **have time to make a home cooked meal**.
8. **Time available for food preparation/cooking** may influence food choice because people coming home late from work/students/people with more than one job might not have time to prepare a meal that is highly nutritious so they therefore take the easy option of a ready meal or a takeaway.
9. Consumers may make **time for food preparation/cooking** if cooking is a hobby/they like entertaining and so may choose to buy individual ingredients/make the recipe from scratch. .

(iv) **Cultural influences**

1. More people travel abroad therefore have developed different taste and want to choose to eat similar **exotic/ethnic foods** at home.
2. Increased number of ethnic groups in the UK has provided a greater choice in **takeaway foods** that are relatively cheap/hugely popular.
3. The food industry now produces a range of ready meals with a combination of ethnic ingredients making it easier for the consumer to choose to eat **food of ethnic origin**.
4. Television cookery programmes with celebrity chefs (who specialise in Chinese/Indian/Italian etc food) have given consumers a taste for more **exotic foods** and so the consumer may choose these foods when shopping/eating in restaurants.
5. Religion may influence choice of food which meet the restrictions imposed by the religion (accept examples – eg Hindu's will not eat pork/Jews will only eat Kosher meat).
6. Festivals influence the choice of food consumed as often there are **traditional food** served at the festival (accept examples eg Christmas – turkey/trimmings/Christmas pudding etc).
7. As people of other nationalities come and live in the country there has been an increased range of foods available for people to purchase **from their own culture** (eg wide range of Polish foods available in supermarkets).

4 e) Explain **four** functions of the Food Standards Agency (FSA).

**Marking Instructions:**

4 x 1 mark for **each** explanation linked to the functions of the Food Standards Agency.

**Total – 4 marks (KU)**

1. **Food Standards Agency (FSA)** is responsible for the licensing of meat processing companies to ensure hygiene controls on meat/meat products.
2. In Scotland the **Food Standards Agency (FSA)** will deal with issues relating to meat/meat products/regulations on animal feed.
3. In Scotland the **Food Standards Agency (FSA)** will deal with issues relating to food hygiene/fish/shellfish/milk hygiene/novel foods/radiological safety/food emergencies.
4. **Food Standards Agency (FSA)** supports consumer choice through promoting accurate/meaningful food labelling/issues leaflets/posters.
5. **Food Standards Agency (FSA)** protects the consumer through effective enforcement/monitoring of food related regulations/policies.
6. **Food Standards Agency (FSA)** develops food labelling/labels to give more accurate information to help with safe storage of food/prevents food safety risks/outbreaks of food poisoning.
7. **Food Standards Agency (FSA)** gives advice to the public on food safety/standards/raising awareness/educating the public via website/leaflets.
8. **Food Standards Agency (FSA)** commissions research into food related matters so the industry/public are kept up to date with food safety issues.
9. **Food Standards Agency (FSA)** represents the consumers in matters of food safety/standards so the voice of the consumer is heard.
10. **Food Standards Agency (FSA)** monitors the composition of food/food labelling/additives.
11. **Food Standards Agency (FSA)** is responsible for the protection of public health in relation to food hygiene.
12. **Food Standards Agency (FSA)** provides advice/information to the public/government on food safety via website/leaflets.
13. **Food Standards Agency (FSA)** will consult/seek advice from advisory support committees.
14. **Food Standards Agency (FSA)** commissions research to support its function/the giving of information to the public.
15. **Food Standards Agency (FSA)** monitors/enforces food safety standards.
16. **Food Standards Agency (FSA)** represents the UK on matters of food safety/food standards in the EU/worldwide.
17. **Food Standards Agency (FSA)** is responsible for the control of genetically modified food for human consumption/animal feedstuffs.
18. **Food Standards Agency (FSA)** is responsible for the licensing/inspection of manufacturers who produce irradiated food.
19. **Food Standards Agency (FSA)** aims to protect public health against chemical contaminants in food.
20. **Food Standards Agency (FSA)** provides information via website/leaflets of a range of topics/nutritional information/nutritional needs of individuals to help educate the public.
21. **Food Standards Agency (FSA)** (may attend Royal Highland Show/Good Food Show ) help educate the public on issues linked to food hygiene/safety/nutrition/healthy eating
22. **Food Standards Agency (FSA)** controls composition/sale of natural mineral water/spring water/bottled water.

## Section A

| Question      | Resource Management Unit                   |          | Consumer Studies Unit                      |          | Course Skills |            | Totals   |
|---------------|--|----------|--|----------|---------------|------------|----------|
|               | Course content                             | Mark     | Course content                             | Mark     | Knowledge     | Evaluation |          |
| 1             | Current dietary advice                     | 1        |  |          | 1             |            | 1        |
| 2             | Functional properties of food              | 1        |  |          | 1             |            | 1        |
| 3             | Function and sources of nutrients          | 1        |  |          | 1             |            | 1        |
| 4             | Factors which hinder absorption of calcium | 1        |  |          | 1             |            | 1        |
| 5             | Causes of food poisoning                   | 1        |  |          | 1             |            | 1        |
| 6             |  |          | The consumer within the European dimension | 1        | 1             |            | 1        |
| 7             | Sensory testing                            | 1        |  |          | 1             |            | 1        |
| <b>Totals</b> |  | <b>6</b> |  | <b>1</b> | <b>7</b>      | <b>0</b>   | <b>7</b> |

## Section A (continued)

| Question               | Resource Management Unit     |           | Consumer Studies Unit                         |           | Course Skills |            | Totals    |
|------------------------|------------------------------|-----------|---|-----------|---------------|------------|-----------|
|                        | Course content               | Mark      | Course content                                | Mark      | Knowledge     | Evaluation |           |
| 8                      | Product development strategy | 2         | Food politics                                 | 1         | 1             |            | 1         |
| 9                      |                              |           | Food politics                                 | 2         | 2             |            | 2         |
| 10                     |                              |           | DEFRA   | 2         | 2             |            | 2         |
| 11                     |                              |           | DEFRA   | 2         | 2             |            | 2         |
| 12                     | Causes of food poisoning     | 2         |   |           | 2             |            | 2         |
| 13                     |                              |           | Technological developments – functional foods | 2         | 2             |            | 2         |
| 14                     |                              |           | Technological developments – hydroponics      | 2         |               | 2          | 2         |
| <b>Carried forward</b> |                              | <b>6</b>  |   | <b>1</b>  | <b>7</b>      | <b>0</b>   | <b>7</b>  |
| <b>Totals</b>          |                              | <b>10</b> |   | <b>10</b> | <b>18</b>     | <b>2</b>   | <b>20</b> |

Context: ×

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## Section B Question 1

| Question      | Resource Management Unit                      |           | Consumer Studies Unit |      | Course Skills |            | Totals    |
|---------------|---|-----------|-----------------------|------|---------------|------------|-----------|
|               | Course content                                | Mark      | Course content        | Mark | Knowledge     | Evaluation |           |
| (a)           | DRV's – overweight teenager                   | 6         |                       |      |               | 6          | 6         |
| (b)           | Current dietary advice/HFS                    | 4         |                       |      | 4             |            | 4         |
| (c)           | Functions/sources of nutrients                | 4         |                       |      |               | 4          | 4         |
| (d)           | Prevention of dietary diseases – hypertension | 6         |                       |      | 6             |            | 6         |
| <b>Totals</b> |   | <b>20</b> |                       |      | <b>10</b>     | <b>10</b>  | <b>20</b> |

Context: ×

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## Section B Question 2

| Question      | Resource Management Unit                                  |           | Consumer Studies Unit                       |          | Course Skills |            | Totals    |
|---------------|---|-----------|---|----------|---------------|------------|-----------|
|               | Course content  | Mark      | Course content                              | Mark     | Knowledge     | Evaluation |           |
| (a)           | Product development                                       | 4         |   |          | 4             |            | 4         |
| (b)           | Sensory testing   | 5         |   |          |               | 5          | 5         |
| (c)           |   |           | Current voluntary labelling                 | 4        |               | 4          | 4         |
| (d)           | Effect on storage, prevention<br>and cooking on nutrients | 3         |   |          | 3             |            | 3         |
| (e)           |   |           | Trade Descriptions Act 1968                 | 2        | 2             |            | 2         |
|               |   |           | Food Hygiene (Scotland)<br>Regulations 2006 | 2        | 2             |            | 2         |
|               |   |           |   |          |               |            |           |
| <b>Totals</b> |   | <b>12</b> |   | <b>8</b> | <b>11</b>     | <b>9</b>   | <b>20</b> |

Context: ×

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## Section B Question 3

| Question      | Resource Management Unit      |           | Consumer Studies Unit                     |          | Course Skills |            | Totals    |
|---------------|-------------------------------|-----------|---|----------|---------------|------------|-----------|
|               | Course content                | Mark      | Course content                            | Mark     | Knowledge     | Evaluation |           |
| (a)           | Causes of food poisoning      | 4         |   |          | 4             |            | 4         |
| (b)           | Functional properties of food | 4         |   |          | 4             |            | 4         |
| (c)           | Dietary needs of vegetarians  | 4         |   |          |               | 4          | 4         |
| (d)           |                               |           | Technological developments                | 4        | 4             |            | 4         |
| (e)           |                               |           | Factors affecting consumer choice of food | 4        |               | 4          | 4         |
| <b>Totals</b> |                               | <b>12</b> |   | <b>8</b> | <b>12</b>     | <b>8</b>   | <b>20</b> |

Context: ×

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## Section B Question 4

| Question      | Resource Management Unit       |           | Consumer Studies Unit                       |           | Course Skills |            | Totals    |
|---------------|--------------------------------|-----------|---|-----------|---------------|------------|-----------|
|               | Course content                 | Mark      | Course content                              | Mark      | Knowledge     | Evaluation |           |
| (a)           | Prevention of dietary diseases | 4         |   |           | 4             |            | 4         |
| (b)           | Scottish dietary targets       | 4         |   |           |               | 4          | 4         |
| (c)           | Scottish dietary targets       | 4         |   |           |               | 4          | 4         |
| (d)           |                                |           | Factors influencing consumer choice of food | 4         | 4             |            | 4         |
| (e)           |                                |           | Food Standards Agency                       | 4         | 4             |            | 4         |
| <b>Totals</b> |                                | <b>12</b> |   | <b>18</b> | <b>12</b>     | <b>8</b>   | <b>20</b> |

Context: ×

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## Question Paper Summary: Mark Allocation

| Question            | Unit title          |                    | Course Skills      |                    | Totals    |
|---------------------|---------------------|--------------------|--------------------|--------------------|-----------|
|                     | Resource Management | Consumer Studies   | Knowledge          | Evaluation         |           |
| Section A           | 10                  | 10                 | 18                 | 2                  | <b>20</b> |
| Section B           |                     |                    |                    |                    |           |
| 1                   | 20                  | 0                  | 10                 | 10                 | <b>20</b> |
| 2                   | 12                  | 8                  | 11                 | 9                  | <b>20</b> |
| 3                   | 12                  | 8                  | 12                 | 8                  | <b>20</b> |
| 4                   | 12                  | 8                  | 12                 | 8                  | <b>20</b> |
| <b>Totals</b>       | 54                  | 26                 | 51-52              | 28-29              | <b>80</b> |
| <b>Target Range</b> | <b>50-60 marks</b>  | <b>20-30 marks</b> | <b>50-55 marks</b> | <b>25-30 marks</b> | <b>80</b> |

[END OF MARKING INSTRUCTIONS]