2008 Health and Food Technology

Higher

Finalised Marking Instructions

2008 Home Economics
Health & Food Technology

Section A – Short Response Questions

Question		Response						Marking Guidelines
1	Name **two** sensory words which may be used to describe texture.	1.	Crispy	11.	Thick	21.	Smooth	**1 mark** 2 x ½ mark for each sensory descriptor
		2.	Crunchy	12.	Stringy	22.	Dry	
		3.	Chewy	13.	Light	23.	Moist	
		4.	Crumbly	14.	Rubbery	24.	Fluffy	
		5.	Hard	15.	Doughy	25.	Rough	
		6.	Gritty	16.	Creamy			
		7.	Soft	17.	Runny			
		8.	Greasy	18.	Thin			
		9.	Lumpy	19.	Stodgy/dense			
		10.	Tender	20.	Spongy			
		Accept any other word which can be used to describe texture.						

Question		Response	Marking Guidelines
2	List **two** factors which influence consumer choice of food.	1. Advertising/marketing 2. Promotional techniques 3. Available income/disposable income 4. Cost 5. Lifestyle/shift work/working families 6. Cultural/religious/ethical beliefs (eg vegetarians) 7. Increased awareness of healthy eating/health 8. Personal taste/preference 9. Technological innovations/increase in online shopping 10. Environmental issues (accept example) 11. Range of outlets/restaurants selling food 12. Peer pressure 13. Geographical location 14. Aesthetic appeal 15. Equipment/skills/time available 16. Nutritional knowledge 17. Ethical Beliefs eg vegetarians 18. Allergies/food intolerance 19. Climate 20. Age Accept any other factor which influences choice of food.	**1 mark** 2 x ½ mark for each factor

	Question	Response	Marking Guidelines
3	Name **two** fat soluble vitamins.	1. Vitamin A/retinol/beta carotene. 2. Vitamin D. 3. Vitamin E. 4. Vitamin K.	**1 mark** 2 x ½ mark for each vitamin
4	State **two** functions of water in the diet.	1. Improved absorption of water soluble vitamins/vitamin B complex/ vitamin C. 2. Reduces risk of dehydration. 3. Regulates body temperature. 4. Reduces risk of constipation/bowel disorder/diverticulitis. 5. Improved lubrication of joints/membranes. 6. Improved brain function. 7. May help behaviour/concentration. 8. Improved digestion of food. 9. Keeps lining of mucus membranes/digestive tract/bronchial tubes moist. 10. Transports nutrients round the body. 11. Required for many metabolic reactions. 12. Required for all body fluids (digestive juices, mucus, plasma, saliva, blood, lymph, sweat and urine). 13. Helps remove waste products/toxins. 14. Helps make faeces soft/bulky	**1 mark** 2 x ½ mark for each function

Question		Response	Marking Guidelines
5	Identify **two** factors which may lead to obesity.	1. High intake of fat/fatty foods. 2. High intake of sugar/sugary foods. 3. High intake of convenience/take away foods. 4. High fat methods of cooking. 5. Low intake of fruit/vegetables. 6. Low intake of TCC/foods high in NSP. 7. High consumption of snack foods. 8. Snacking between meals. 9. Large portion sizes. 10. Consumption of foods high in calories. 11. High consumption of alcohol. 12. Little/no exercise. 13. Sedentary lifestyle. 14. Peer/family influences. 15. High energy/calorie intake. 16. High protein intake	**1 mark** 2 x ½ mark for each factor
6	What does the abbreviation **GM** stand for?	Genetic Modification. Genetically Modified.	**1 mark** for correct abbreviation

Question		Response	Marking Guidelines
7	Describe **one** effect of adding too much liquid to a baked product.	**Cakes** 1. May result in a heavy doughy/dense texture. 2. Top of cake may be cracked. 3. Fruit will sink. 4. Heavy fruit cannot be held evenly. 5. Prevents rising **Scones** 1. Dough will spread causing the scone to loose shape. 2. Prevents rising **Pastry** 1. A hard/tough shortcrust pastry will result. **Bread** 1. Too much liquid will result in a coarse/grain texture. **Custard** 1. The mixture will be too thin/won't set.	**1 mark** for correct effect Headings are provided to help the marker and are not required
8	State **one** cause of diverticular disease.	1. Low NSP intake. 2. Low intake of fruit/vegetables. 3. Low intake of wholemeal bread/cereals/pulses. 4. Low fluid intake/insufficient water in the diet. 5. High intake of fat. 6. High intake of refined/convenience foods. 7. Lack of physical exercise/activity.	**1 mark** for correct cause

Question		Response	Marking Guidelines
9	Give **two** advantages of using sugar substitutes.	1. Helps to reduce the sugar content of foods. 2. Lower/no energy value/low calorific value 3. Can help reduce risk of tooth decay/dental caries. 4. Increased choice of foods for the healthy option industry. 5. Reduces risk of obesity. 6. Can be used in a variety of foods for diabetics. 7. Small amount required due to intense sweetness. 8. Can enhance the sweetness of foods. 9. May help in a weight loss diet.	**2 marks** 2 x 1 mark for each advantage
10	State **two** areas covered by the Sale and Supply of Goods Act 1994.	1. Goods must be of satisfactory quality. 2. Goods must fit the description given. 3. Goods must be fit for the purpose for which they are intended. 4. Consumers have a reasonable time to accept/reject goods if they are faulty. 5. Entitlement to refund/replacement if goods are faulty	**2 marks** 2 x 1 mark for each area

Question		Response	Marking Guidelines
11	Identify **two** practical ways to reduce salt intake.	1. Choose low salt alternatives (eg low salt crisps/low salt margarine/low salt breakfast cereals etc). 2. Use herbs/spices for flavouring instead of salt. 3. Taste food before adding salt. 4. Reduce intake of salty snacks (eg crisps, peanuts – accept examples). 5. Limit intake of processed/convenience foods (accept examples). 6. Reduce the amount of salt added to food during cooking. 7. Choose foods packed in mineral water/sunflower oil rather than brine. 8. Use salt substitute/Lo Salt. 9. Reduce consumption of take away meals. 10. Do not add salt at the table. 11. Check food labels for salt content before purchasing.	**2 marks** 2 x 1 mark for way

Question		Response	Marking Guidelines
12	State **one** advantage and **one** disadvantage of extruded foods.	**Advantages** 1. Longer shelf life. 2. Makes snacks appear more attractive/appealing/palatable. 3. Starch is easier to digest/more easily absorbed into the blood stream. 4. Uses readily available/cheap ingredients. 5. Adds fun dimension for young children through different shapes/sizes of cereals/noodles/pasta. 6. Some extruded foods may contain slightly higher levels of NSP. 7. Savoury snacks can be fortified with vitamins. 8. Can be processed with no added fat. 9. Increased range of foods. **Disadvantages** 1. Deep fried products may be high in fat. 2. Some extruded foods may be low in NSP. 3. Extruded foods/savoury snack foods may contain high quantities of salt/ sodium. 4. Extruded foods/savoury snack foods may contain high quantities of monosodium glutamate/additives. 5. Cheap ingredients are used to produce high cost extruded food products.	**2 marks** 1 mark for advantage 1 mark for disadvantage

Question		Response	Marking Guidelines
13	Explain **two** ways of incorporating air into a baked product.	1. **Sieving** This enables more air to be trapped between the flour particles (helping the product to rise when baked). 2. **Whisking** This enables the egg protein/albumin to stretch trapping small bubbles of air (in stable foam resulting in a light textured product). 3. **Rubbing in** The fat is rubbed into thin film surrounding the flour which traps air (enabling the product to rise when baked). 4. **Creaming** Individual fat crystals surround tiny air bubbles trapping air (which allows the product to rise when baked). 5. **Kneading** Kneading of bread dough traps air/enables the gluten to develop (which helps the bread to rise). 6. **Beating** This enables more air bubbles to be trapped between a loose foam (helping the product to rise).	**2 marks** 2 x 1 mark for each way of incorporating air

Question		Response	Marking Guidelines
14	State **two** advantages of using market research in the food industry.	1. Identifies products already available to see if there is a need for a particular food product/to ensure they are manufacturing a food product which is wanted. 2. Investigates the lifestyles of potential customers to see if the new food product meets the needs/wants of the consumer. 3. Identifies a target market/gap in the market for a particular food product (to see if the new product is viable.) 4. Identifies market trends to see if their food product would be successful/ popular (at a particular time.) 5. Establishes why consumers want to buy a certain food product (as this will help them with any marketing/promotion ideas.) 6. Establishes when a consumer would buy a particular food product (so gives them an idea of when to introduce the food product to the market.) 7. Collects consumer's views on existing food products (therefore ensuring their food product is bigger/better than any others.) 8. Identifies competitors so ensures their food product will be successful. 9. Identifies how much people are willing to pay for food products (therefore ensuring their food product is affordable/suitably priced.) 10. Establish reason for drop in sales of a food product. 11. Identify likes/dislikes of consumers which may be taken into account during food product development.	**2 marks** 1 mark for **each** advantage

Section B

1 a)	Identify and explain **four** factors which may assist in the prevention of osteoporosis.

Marking Instructions:
4 x ½ mark for identification of factor.
4 x 1 mark for each explanation linked to prevention of osteoporosis.

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. Calcium rich diet/ adequate calcium intake	1. High intake of calcium in childhood/younger life/during the main stages of development help to raise peak bone mass/helps to prevent the development of **osteoporosis** in later life. 2. Calcium is necessary for the formation/maintenance/development of bones/helps achieve peak bone mass/ensures strong bones are developed/helps to reduce the risk of developing weak/brittle bones/**osteoporosis**. 3. Calcium combines with phosphorous to produce calcium phosphate which is the main substance necessary for bone hardness/strength/ helps to achieve peak bone mass/helps to prevent **osteoporosis**.
2. Vitamin D rich diet	1. Vitamin D helps the absorption of calcium in the body which helps to achieve peak bone mass/helps prevent **osteoporosis**. 2. Vitamin D helps the absorption of calcium, which is essential for bone formation which reduces the risk of **osteoporosis**.
3. Exposure to sunlight/ ultra violet light	1. Exposure to sunlight/ultra violet light is essential for the synthesis of Vitamin D. Vitamin D is essential for calcium absorption (in the intestines) for bone formation which helps prevent **osteoporosis**.
4. Phosphorous rich diet	1. Phosphorous combines with calcium to produce calcium phosphate which is the main substance necessary for bone hardness/strength/ helps to achieve peak bone mass/helps to prevent **osteoporosis**. 2. Phosphorus is necessary for formation/maintenance/development of bones/helps achieve peak bone mass/ensures strong bones are developed/helps to reduce the risk of developing weak/brittle bones/**osteoporosis**
5. Low fat/saturated fat intake	1. A high intake of fat/saturated fat may lead to poor calcium absorption which could contribute to **osteoporosis**.
6. Low sodium/salt intake	1. This will slow down the loss of calcium from the bones and help to prevent **osteoporosis**.

Factor	Explanation
7. Exercise	1. Regular exercise will increase bone density/stimulate bone formation and reduce risk of developing **osteoporosis**. 2. In young people, exercise may raise peak bone mass reducing the onset of the **osteoporosis** in later life. 3. In adults, exercise protects against bone loss reducing the risk of/ delaying the onset of **osteoporosis**.
8. Not smoking	1. The nicotine in cigarettes can cause actual bone loss so stopping smoking can reduce bone loss/help prevent **osteoporosis**.
9. Low alcohol intake	1. As alcohol is a toxin to bone cells and increased alcohol consumption may start to decrease bone mass/eventually lead to **osteoporosis**.
10. A balanced diet	1. An unbalanced diet may result in a diet low in calcium/vitamin D/ phosphorous and bone density/mass may be affected therefore increasing the risk of **osteoporosis**. 2. Beware of substances which hinder calcium absorption (eg some forms of NSP/phytic acid which may affect bone density and increase risk of **osteoporosis**.)
11. Low intake of junk foods	1. As junk foods tend to be lacking in calcium and don't enable peak bone mass to develop. This then increases the risk of **osteoporosis**. 2. As junk foods tend to be high in fat/saturated fat which may hinder calcium absorption leading to increased risk of **osteoporosis**.
12. A healthy body weight	1. Be a healthy weight as being underweight may mean that the calcium target is not being met therefore an increased risk of **osteoporosis**. 2. As obesity could put an extra strain on the bones/indicate an unbalanced diet which may be short in calcium therefore an increased risk of **osteoporosis**.
13. HRT	1. HRT/hormone replacement treatment assists in the prevention of loss of calcium from bones/stimulates the production of new bone therefore helping to ensure that bones don't become thin/brittle/ helps prevent **osteoporosis**.
14. Low NSP intake	1. High intake of NSP in the diet could hinder absorption of calcium preventing peak bone mass and contribute to **osteoporosis**.
15. Low phytic acid	1. High intake of phytic acid in the diet could hinder absorption of calcium preventing peak bone mass and contribute to **osteoporosis**.
16. Include lactose in the diet.	1. Lactose in the diet could assist absorption of calcium/help achieve peak bone mass and so prevent **osteoporosis**.
17. Include protein in the diet	1. Protein in the diet could assist absorption of calcium help achieve peak bone mass and so prevent **osteoporosis**.

1	b)	The table opposite shows a day's nutrient content of meals eaten by a pregnant woman. 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 a pregnant woman.

Total – 6 marks (EV)

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

1. Energy Intake

1. Energy intake is well above the recommended 2140kcal which is bad **as** it could result in the **pregnant woman** becoming overweight/obese (obesity would occur if energy intake exceeds energy output).
2. Energy intake is too high and the **pregnant woman** may not be as physically active, especially in the later stages of pregnancy **so** there will be a higher risk of obesity in her/ risk of the baby being overweight.
3. The excess weight gain resulting from this high energy intake is not good for the **pregnant woman as** this could lead to additional complications such as hypertension/ varicose veins/difficult birth.
4. Energy intake is too high and this may result in excess weight gain for the **pregnant woman which** she may have difficulty losing after the baby is born.
5. Although energy intake is high, the **pregnant woman** may use this excess energy **therefore** not become overweight/obese during her pregnancy.
6. Energy intake is high, however, this may be acceptable for the **pregnant woman** in the earlier stages of pregnancy **as** extra energy is needed to support the growth of the foetus/ to enable fat to be laid down for child birth/breast feeding.

2. Protein intake

1. Protein intake is high (60g), though this could be beneficial for the **pregnant woman as** additional protein is needed for the growth/development of the baby's body cells.
2. Protein intake is high (60g), excess protein may be used as a secondary source of energy **however**, if this energy is not used by the **pregnant woman**, her/the baby's risk of obesity is increased.
3. Protein intake is high (60g), **however**, this could be beneficial for the **pregnant woman as** it would help with repair/maintenance of body tissue during pregnancy.
4. Protein intake is high (60g) and this could be beneficial for the **pregnant woman** as it could aid the absorption of calcium **which** is necessary to aid the development of the baby's bones.

3. Sodium intake

1. Sodium/salt intake is high (1800mg) and this is not good **as** it could cause the **pregnant woman** to suffer from high blood pressure/hypertension.
2. Sodium/salt intake is too high (1800mg). If these high levels of sodium/salt are maintained, the **pregnant woman** could **therefore** suffer from stroke/heart disease/ kidney disease/complications in pregnancy (which she may have an increased risk of getting if she is already overweight).

4. Fat intake

1. Total fat content is just below the recommended 35% of food energy from fat and **therefore** this helps to meet the dietary targets for the **pregnant woman**/less risk of CHD in later life.

5. Folate intake

1. Folate intake is low (220µg) and this could be a problem for the **pregnant woman as** it is water soluble/not stored in the body/a constant supply is needed to prevent (megaloblastic) anaemia.
2. Folate intake is low and this is not good for the **pregnant woman**, (especially if she is in the early stages of pregnancy/first 12 weeks of pregnancy) **as** there is an increased risk of her baby being born with neural tube defects/spina bifida.
3. Folate intake is low and this is not good for the **pregnant woman's** baby **as** folate is required for the brain development/nervous system of the foetus.
4. Low intake of folate will result in a reduction of red blood cells **which** could be even worse for the **pregnant woman** because her iron levels are also low and she may become anaemic.
5. Folate intake is low so the **pregnant woman** should consider taking folic acid supplements/increasing her intake of folate rich foods **which** will reduce the risk to her baby of being born with neural tube defects/spina bifida.

6. Vitamin A intake

1. The diet is high in vitamin A which is good **as** vision of **pregnant woman**/developing baby will not be impaired.
2. The diet is high in vitamin A which is good for the **pregnant woman as** skin/mucus membranes will not become dry which would have led to increased risk of infection during her pregnancy.
3. The diet is high in vitamin A which is good **as** the pregnant woman will have a high resistance to disease during the pregnancy/allow her to have a healthy pregnancy.
4. As vitamin A is an antioxidant her high intake could **therefore** help to prevent CHD/ cancer in later life for the **pregnant woman**/her baby.
5. Her intake of vitamin A is high. Large amounts of vitamin A can be harmful to the developing baby and **therefore** the **pregnant woman's** intake of vitamin A should be reduced.

7. Iron intake

1. Iron intake is low (10.6mg) which is not good **as** the **pregnant woman** must ensure she has enough iron (to supply her own body) to provide her growing baby with a store of iron for the first four months after birth for haemoglobin manufacture.
2. Iron intake is low and this is not good as it is required for the formation/production of red blood cells during pregnancy/birth when demand increases **which** may lead to the **pregnant woman** suffering from anaemia/tiredness/exhaustion.
3. Although iron intake is low, if this was in the form of heam iron, it would be more easily absorbed for the **pregnant woman therefore** helping to prevent anaemia.

8. NSP

1. NSP intake is low (14.6g) which is not good **as** the **pregnant woman** will be at an increased risk of constipation/diverticulitis/bowel cancer/haemorrhoids.
2. NSP intake is low and this is not good for the **pregnant woman** especially if she is in the later stages of pregnancy, **as** inactivity due to pregnancy will contribute to a greater risk of constipation/bowel disorders/haemorrhoids.
3. NSP intake is low and this is not good for the **pregnant woman** as foods high in NSP are filling and help control body weight **therefore** she will be at greater risk of obesity/ weight gain as she will have the desire to snack on fatty/sugary foods.

1 c) Explain **four** ways vitamin C loss may be minimised from fruit and vegetables.

Marking Instructions:
4 x 1 mark for each way linked to ways of reducing loss of vitamin C in fruit and vegetables.

Total – 4 marks (KU)

(Headings have been provided to assist the marker but are not required in the answer)

1. Storage

1. Fruits/vegetables should be stored for as short a time as possible as storage for a long time allows the vitamin C to be oxidised by exposure to air.
2. **Fruits/vegetables** should be bought as fresh as possible, as long term storage causes deterioration/oxidation of vitamin C.
3. Store **fruits/vegetables** in a refrigerator as low temperature slows down oxidation of vitamin C (eg put green leafy vegetables in the vegetable or salad drawer in the refrigerator).
4. Store **fruits/vegetables** in the absence of light to avoid loss/oxidation of vitamin C, (eg store root vegetables in a cool dark place/away from heat/daylight/air).
5. Avoid bruising/damage of the **fruits/vegetables** prior to storage as this will lead to destruction/oxidation of vitamin C.
6. Avoid buying ready prepared **fruits/vegetables** as these are more likely to have suffered nutrient loss because of advance preparation/storage.
7. If freezing the **fruits/vegetables**, freeze quickly so that the vitamin C is preserved.
8. Using frozen **fruits and vegetables** as these are picked fresher then frozen therefore vitamin C content is preserved.

2. Preparation

1. **Fruits/vegetables** should only be prepared as required, as vitamin C will be lost through oxidation if they are prepared in advance.
2. **Fruits/vegetables** should be cut into large chunks resulting in less surface area being exposed to the air therefore helping to minimise vitamin C loss through oxidation.
3. Avoid soaking **fruits/vegetables** in water as vitamin C is water soluble and will result in the vitamin being leached into the water.
4. When cutting **fruits/vegetables**, knives should be sharp as blunt knives cause more cells to be damaged (causing more oxidase to be released) which is responsible for destroying vitamin C.
5. Avoid peeling **fruits/vegetables** if possible as most vitamin C is just under the skin/ peeling exposes more surface to the air resulting in oxidation/loss of vitamin C.
6. Acids such as lemon juice/vinegar should be used during the preparation of **fruits/ vegetables** as this can slow down the rate of oxidation therefore minimising vitamin C loss.

3. Cooking – Effect of heat and water on vitamin C

1. **Fruits/vegetables** should be cooked for a minimum time as vitamin C is destroyed at fairly low temperatures.
2. Avoid putting **fruits/vegetables** rich in vitamin C into boiling water (as this denatures the enzyme called oxidase) which destroys vitamin C.
3. As vitamin C is water soluble it will be lost in cooking water so when cooking **fruits/ vegetables** use as little as possible to prevent the vitamin leaching out into the water.
4. **Fruits/vegetables** should be cooked for as short a time as possible as the vitamin C will leach into the water.
5. Short methods of cooking such as steaming/microwaving/stir-frying should be used to cook **fruits/vegetables** to conserve as much vitamin C as possible.
6. Serve **fruit/vegetables** immediately as vitamin C can be oxidised if **fruits/vegetables** are not served immediately or if they are kept warm.

Effect of alkaline solutions on vitamin C

1. **Fruits/vegetables** should be kept away from alkaline solutions as the presence of an alkaline solution causes vitamin C to be destroyed by oxidation.

1 d) Evaluate the use of oily fish in the diet.

Marking Instructions:
4 x 1 mark for each evaluated point on oily fish in the diet.

Total – 4 marks (EV)

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

1. Omega oils

1. **Oily fish** is a good source of omega 3/fatty acids which is good **as** these have been shown to reduce the risk of heart disease (**therefore** contribute to a healthy diet/lifestyle.)
2. Omega 3/fatty acids found in **oily fish** is good as it helps to make the blood less sticky allowing it to flow around the body easier **therefore** reducing the risk of heart disease.
3. Omega 3/fatty acids found in **oily fish** are good **as** known to have a role to play in the maintenance of healthy cells/the nervous system/brain development (**therefore** contribute to general good health/aid concentration.)
4. Omega 3/fatty acids found in **fish oils** are good **as** they can reduce inflammation/may help ease the pain of sufferers of rheumatoid arthritis (**therefore** help provide relief for sufferers and contribute to their general improved health.)
5. Omega oils in **oily fish** are good **as** have been linked to improved brain function and **therefore** may improve ability for children to learn.
6. Omega oils in **oily fish** are good **as** they may help prevent cancer.

2. Protein content

1. **Oily fish** is a good source of protein which is good and will **therefore** contribute to the growth/repair/maintenance of body tissues **so** maintaining health.

3. Fat content

1. **Oily fish** is a good source of polyunsaturated fats which is good **as** and these are known to assist in the prevention of heart disease/cholesterol reduction/stroke/arthritis/psoriasis (**therefore** contributing to good health.)
2. **Oily fish** is a rich source of fat which is beneficial/good **as** it supplies the body with a source of energy/fat soluble vitamins/protects organs/provides warmth/to ensure good health.
3. **Oily fish** is high in fat/energy which may be harmful/bad **as** it could lead to obesity.

4. Vitamin Content

1. **Oily fish** is a good source of some B vitamins/Thiamin (B1), Riboflavin (B2), Niacin (B6)/Biotin/Pantothenic Acid which is good **as** these vitamins are essential for the conversion of food to energy/healthy nerve tissue (**therefore** preventing tiredness/ impaired nerve function.)
2. **Oily fish** is a good source of Vitamin A which is good **as** it is required for normal growth in children/enables eyes to see in dim light/protection for surface tissues (and **so** prevents night blindness/gives healthy skin.)
3. **Oily fish** is a good source of Vitamin D which is good **as** it aids the absorption of calcium/ is essential for the development of strong bones/healthy teeth and **so** helps prevent osteoporosis.

5. Calcium content

1. If the bones of the **oily fish** are eaten which is good **as** this would contribute to calcium consumption **therefore** assisting in the maintenance of strong bones/healthy teeth/ prevention of osteoporosis/brittle bone disease.

6. Iron content

1. **Oily fish** tends to be high in iron which is good **as** it is required for the formation/ production of red blood cells **therefore** helping to prevent anaemia/tiredness/exhaustion (and so contributes to good health.)

7. Sodium content

1. Sodium/salt content of some **oily fish** is high which is bad **as** may lead to CHD/ hypertension/strokes.

8. Dietary targets

1. Increasing **oily fish** in the diet is a dietary target and this is good **as** oily fish consumption assists in providing a healthy diet.
2. **Oily fish** contain only a small amount of carbohydrate which is poor **as** it does not help contribute to the 'eat more total complex carbohydrates' dietary target.
3. Some **oily fish** are high in sodium/salt which is bad **as** it may not meet dietary target for a reduction in sodium/salt intake (to no more than 6g per day).

9. Cooking time

1. **Oily fish** can be quick and easy to cook which is good **as therefore** saving time for the consumer.

10. Convenience forms

1. **Oily fish** is available in a variety of forms/tinned/fresh/frozen/smoked which is good **as** makes it versatile/convenient for the consumer.
2. A wide range of ready to eat **oily fish** dishes are available **which** is good **as** it may help increase consumption by the consumer.

11. Toxins

1. Some types of **oily fish** have been shown to contain dioxins/heavy metals (eg mercury) which is bad as these may be harmful in high quantities (and **so** can pose health risks.)

12. Likes/dislikes

1. Many (Scottish) consumers do not like **oily fish**/are not eating the recommended intake per week which is bad and **so** the contribution of oily fish to their diet may be limited.
2. Many consumers are put off by the strong smell of **oily fish** which is bad **as** they may not choose it.

13. Cost

1. Some **oily fish** (salmon/trout) are expensive which is bad as it is only affordable to high income groups.
2. Some **oily fish** (tuna/sardines/pilchards) are inexpensive which is good **as** it can provide low income groups with a cheap source of protein/fat/omega3/B group vitamins/calcium/ iron/vitamin A/D.

2 a) Evaluate the Hungry for Success initiative in secondary schools.

Marking Instructions:
4 x 1 mark for each point, which evaluates Hungry for Success initiative within a secondary school.

Total – 4 marks (EV)

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

1. Eating for Health/Dietary Targets

1. Eating for Health document/dietary targets influenced Hungry for Success **so** has encouraged pupils to enjoy a healthier range of foods **therefore** preventing diet related diseases/obesity/bowel disorders/CHD/hypertension in later life in school children/meet dietary targets.
2. Hungry for Success has encouraged pupils to enjoy a healthier range of foods **therefore** helping school children meet the dietary targets.
3. Emphasis is placed on raising awareness by promoting healthier options at visible/ accessible areas (which still look attractive) **so** that pupils may want to purchase them and increase school meal uptake/avoid less healthy options/prevent diet related diseases.
4. Current recommendations used when calculating energy were based on a balance between energy intake and energy output, **therefore** inactive pupils would require less energy than the portion being served **which** may result in childhood obesity.
5. Promotion of appropriate food/drink is the responsibility of the whole school/community, outside sponsorship of high fat/sugar/salt products still may occur because it generates profits for the school (resulting in a conflict of interest) **so** pupils may not choose healthy options.
6. Some parents view the initiative as an intrusion on free choice/feel it is a parental responsibility as to what their children eat and **so** may ban their children from using the school canteen.

2. Nutrient Standards

1. Product specifications are being developed to meet the nutrient base standards, (resulting in a higher quality product) **which** enable pupils to consume healthier options/prevent dietary diseases/anaemia/osteoporosis in later life.
2. Provision of free drinking water within the dining room is a recognised need to enable adequate amounts of fluid to be consumed, **therefore** preventing dehydration/loss of concentration during lessons/prevent obesity/tooth decay/(type 2) diabetes.
3. Pupils on special diets/children with special needs are also catered for **therefore** preventing exclusion from the whole eating experience/supporting the health of all pupils.
4. The nutrient guidelines provided are for lunches consumed over a whole week, **therefore** pupils who dine less frequently may not benefit nutritionally.

3. Encourage uptake of school meals

1. Creating a positive school/whole child ethos, has enabled schools to form links between learning and teaching & healthy eating (and food provision) **which** enables pupils to develop knowledge and understanding of healthy eating **therefore** making healthier choices.
2. Introduction of breakfast clubs which enable pupils to start each day with healthier breakfast **which** may help prevent childhood obesity/aid concentration in school/provide a safe environment.
3. By involving Health Promotion/external agencies to help schools, enables all pupils to access school meals, **therefore** preventing pupils being stigmatised and whole school community feel involved.
4. Increase provision of snacks, vending machines/alternative supplies of food close to school helps to encourage pupils to access healthier options and **so** reduce obesity in school children.
5. By involving pupils through pupil councils etc positive suggestions regarding the whole dining experience can be made to suit their needs **therefore** making the experience an enjoyable one/increasing uptake of school meals.
6. Eliminating the stigma of free school meals by having a cashless system makes all pupils equal as it is less easy to identify present pupils who require the free meals, **therefore** this increases uptake/enjoyment of the whole dining experience for all.
7. The card system benefits parents/pupils/school caterers/health promotion **as** it can be used to monitor current use in specific ways eg stop bullying for money.
8. More till points are available/pre ordering cold lunches or increasing counter to reduce queues **therefore** pupils are likely to use the facilities/increase uptake of school meals/ increasing the canteen's profits.
9. Supportive supervision during lunchtime enables pupils to be encouraged to consume healthier choices and monitor those with food allergies, **therefore** increasing uptake of a healthier provision for all/reducing obesity.
10. Improved range of healthier options may encourage pupils to select the healthier option **therefore** increased uptake of healthier meals.
11. Improved food labelling/packaging/menus for pupils and parents to give more information has helped increase sales of healthier options **as** pupils are able to make informed choices (due to a wider understanding of healthy eating.)
12. Effective marketing when geared towards encouraging healthy choices eg taster sessions may enable pupils to actively take healthier options **as** pupils are able to make informed choices (due to a wider understanding of healthy eating.)

13. Increase incentives to make healthier choices and encourage uptake such as improving the accommodation, decorative features/atmosphere/ambience **so** that pupils may use it as a social experience/enjoy returning to make further purchases.
14. Special needs children are catered for/trained staff are provided at meal times at no extra charge to the parents **therefore** making healthier options more accessible to vulnerable groups.

4. Negatives

1. Schools may have limited flexibility with current dining room accommodation, **therefore** cannot increase provision of meals for all.
2. Curricular demands on teachers may prevent time being allocated for the involvement of all staff towards the positive school ethos, **therefore** not all healthy eating messages are standardised.
3. Lack of school funds to enable improvements/healthy eating incentives to occur **therefore** school not able to offer increased uptake at lunchtimes.
4. Limited current canteen facilities or food being brought in from another school may prevent control over food choices **which** may limit types of healthy food choices that are served.
5. Hungry for Success initiatives require strong support from local education authority **so** that they become sustainable and enable pupils to become actively involved.
6. Adequate training is required for catering staff in line with the Hungry for Success recommendations **which** may require time/additional funds/increased knowledge to enable the process to occur.
7. Improved product specifications has resulted in increased costs of school meals **which** may prevent pupils from being able to afford to purchase a healthy option meal/therefore reduce sales.
8. Private catering/brought-in catering in schools has eliminated many cooking/preparation facilities which may now have to be re-introduced **so** increasing the cost (to the taxpayer)/ making it more difficult to prepare healthy options.
9. School pupils may not like the foods on offer after introduction of changes linked to Hungry for Success and **so** may choose not to eat in school/go else where to eat leading to malnutrition/obesity/tooth decay/bowel problems.

2	b)	Identify and explain **two** cooking methods which may improve the health of school children.

Marking Instructions:
2 x ½ mark for identifying a cooking method.
2 x 1 mark for each explanation linked to improving the health of school children.
Cooking method must be identified before mark can be awarded for explanation. Where the cooking method is incorporated in the explanation this can be credited.

Total – 3 marks (KU)

Cooking Method	**Explanation linked to improve the health of school children**
1. Grilling	1. By grilling foods, fat melts and drips off (by further draining on absorbent paper) the total fat consumed is less for **school children**, preventing obesity/Coronary Heart Disease (CHD) in later life. 2. No additional fatty coatings need to be applied so the total fat consumed is less for **school children**, preventing obesity/CHD in later life. 3. A variety of lean foods can be grilled; therefore less total fat is consumed preventing obesity/CHD in later life for the **school children**. 4. A variety of fruit/vegetables can be grilled, so increasing non starch polysaccharides (NSP) content which may help prevent constipation/ bowel disorders in **school children**.
2. Baking	1. By baking foods directly in an oven the fat melts through the trivet and drips off (by further draining on absorbent paper), the total fat consumed is less for **school children**, preventing obesity/CHD in later life. 2. No additional fatty coatings need to be applied so the total fat consumed is less for **school children**, preventing obesity/CHD in later life. 3. Fruit can be baked (with dried fruit fillings), increasing NSP content which may help prevent constipation/bowel disorders in **school children**. 4. Some baked foods eg bread look/smell/taste good, making them more appetising for school children to consume, which help the **school children** feel full for longer due to the slow release energy. 5. Some baked foods eg bread look/smell/taste good, making them more appetising for school children to consume, which helps the **school children** by preventing them snacking on fatty/salty/sugary foods.

3. Stir-frying	1. Little oil is used during stir-frying, so the total fat consumed is less for **school children**, preventing obesity/CHD in later life. 2. As the vegetables/fruits are stir fried for minimum time and in minimum liquid there is little loss of water soluble vitamins/B group/C, which are essential to general good health in **school children**. 3. The additions of large quantities of high NSP fruit/vegetables in stir-fry recipes help prevent constipation/bowel disorders in **school children**. 4. High amounts of complex carbohydrates can be served along with stir-frying which increases the NSP content of the meal and helps prevent constipation/bowel disorders in **school children**. 5. High amounts of complex carbohydrates can be served along with stir-frying which help the **school children** feel full for longer due to the slow release energy, preventing them snacking on fatty/salty/sugary foods. 6. Large varieties of vegetables/fruit are crisp when stir-fried/well flavoured so encourage consumption, preventing constipation/bowel disorders in school children. 7. Good quality lean meats/poultry/fish can be used in stir fries therefore less total fat is consumed preventing obesity/CHD in later life of **school children**.
4. Steaming	1. No fat is used during steaming, so no fat is consumed by **school children**, preventing obesity/CHD in later life. 2. As the food is cooked in steam (no liquid) there is little loss of water soluble vitamins/B group/C, which are essential to good health in **school children**. 3. No additional fatty coatings need to be applied after steaming, so the total fat consumed is less for **school children**, preventing obesity/CHD in later life. 4. Due to the full flavour achieved from steaming, **school children** may find the taste of fruit/vegetables appetising, so increase consumption, preventing constipation/bowel disorders in **school children**.

5. Microwaving	1. As the vegetables/fruits are cooked for minimum time/in minimum liquid there is little loss of water soluble vitamins/B group/C, which are essential to general good health in **school children**. 2. Fat does not always need to be used during microwaving so the total fat consumed is less for **school children**, preventing obesity/CHD in later life in school children. 3. A variety of fruit and vegetables can be microwaved, so increasing consumption of NSP preventing constipation/bowel disorders in **school children**. 4. Good quality lean meats/poultry/fish can be used during microwaving; therefore less total fat is consumed preventing obesity/CHD in later life for the **school children**. 5. As fish cooks quickly/easily by microwaving, this may increase consumption of polyunsaturated fat/omega 3 fatty acids leading to less (total) saturated fat, (helping to lower blood cholesterol) in the **school children**/preventing CHD in later life. 6. As fish cooks quickly/easily during microwaving, this may increase consumption of white fish, total fat consumed is less for **school children**/ preventing obesity/CHD in later life.
6. Poaching	1. Minimum liquid can be used during poaching to prevent loss of water soluble vitamins/B group/C, which are essential for general health in **school children**. 2. If liquid from poaching the foods is used to make a sauce then there is no loss of water soluble vitamins/B group/C, which are essential to general good health in **school children**. 3. No fat is used during poaching, so no fat is consumed by **school children**, preventing obesity/CHD in later life. 4. As oily fish cooks quickly/easily when poached, this may increase consumption of polyunsaturated fats/increase omega 3 fatty acids leading to less total saturated fat, helping to lower blood cholesterol in the **school children**/prevent CHD in later life. 5. As white fish cooks quickly/easily during poaching, this may reduce consumption of total fat which may be less for **school children**, preventing obesity/CHD in later life. 6. Good quality lean meats/poultry/fish can be poached; therefore less fat is consumed preventing obesity/CHD in later life for the **school children**.

7. Pressure Cooking	1. Good quality lean meats/poultry can be used within the pressure cooker; therefore less fat is consumed preventing obesity/CHD in later life for the **school children**. 2. Vegetable consumption may increase within stews/soups when cooked by a pressure cooker as there is space for additional vegetables, so increasing consumption of NSP, preventing constipation/bowel disorders in **school children**. 3. Lower fat products may be used eg pressure cooked puddings; therefore less fat is consumed preventing obesity/CHD in later life for the **school children**.

2 c) Evaluate **each** of the following technological developments.

(i) Functional foods.
(ii) Cook-chill products.

Marking Instructions:
2 x 1 mark for each point of evaluation linked to each technological development.

Total – 4 marks (EV)

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

(i) Functional foods

1. Health

1. Food products are marketed as having specific health effects which may be beneficial to general health, **therefore** consumers may consider taking the product an advantage to promote well being.
2. Functional foods may be beneficial **as** they can be used to provide a specific nutrient for a consumer not eating a product eg oily fish because they disliked the flavour.
3. Omega 3 fatty acids found in margarine may be useful for consumers who do not eat oily fish **as** they provide a valuable source of these fat soluble vitamins.
4. If family history points to heart disease, selecting a functional spreading fat (which contains plant Sterols), would be good as it may effectively control blood cholesterol throughout their life, **therefore** lowering risk of CHD.
5. Many of the probiotic drinks help to fight a wide range of food poisoning bacteria, including E coli **therefore** regular consumption may reduce the risk of food poisoning.
6. Certain bacteria found in bio yoghurts are useful as they **may** prevent diarrhoea/aid digestion **which** improves the consumer's general health.
7. As bacteria based drinks reinforce the gut, it may reduce certain food allergies, **which** improves the consumer's general health.
8. Generally, functional foods need to be eaten in a fairly large quantity and on a long-term basis to effect any improvement on health, **so** no immediate health improvements occur.

2. Convenience

1. A wide range of functional foods are now available, **so** suits most consumers' needs/likes, **therefore** more easy to obtain.
2. Convenient for today's busy lifestyles **thus** bringing about health benefits quicker than from eating conventional health foods alone.
3. Purchasing a wide range of functional foods tend to be limited to large supermarkets, **so** less accessible to rural consumers.

3. Cost

1. Some foods (eg breakfast cereals) may provide a reasonably inexpensive source of additional minerals and vitamins in the diet, **therefore** available for all to purchase/ increasing sales.
2. Need to purchase the functional foods daily for any long lasting health benefits **so** may be an expensive outlay for the consumer.
3. Certain functional foods are more expensive than similar regular foods **which** may prevent low income consumers from being able to purchase them (available only for higher income groups).

(ii) Cook-chill products

1. Quality of product

1. Cook-chill products are generally of a high quality as they are used in their best condition; **therefore** the consumer is usually purchasing a high quality product.
2. Chilling does not affect the food quality/colour/flavour/texture/nutritional value **therefore** the consumer is able to enjoy a good standard of product.
3. If using cook-chill for a large number of people, it can be more expensive than buying ingredients and cooking a meal from scratch, **therefore** it is not cost-effective to the consumer.

2. Convenience/cost

1. There is a wide range of cook-chill products for the consumer to select from and **so** the consumer is more likely to find something which suits their tastes/needs.
2. Generally cook-chill products are easy to use/prepare/cook and **so** are suitable for consumers who wish to save time.
3. Many cook-chill products are microwaveable and **so** are suitable for consumers who wish to save time/have limited food preparation skills.
4. Many products are microwaveable; **therefore** require less energy in cooking, **which** reduces the cost of the fuel that the consumer uses.
5. Many microwaveable products are heated and eaten in their original packaging, **thus** saving the consumer washing up time.
6. Cook-chill ranges can be produced in single portion sizes to suit the needs of individuals, **which** are cost effective, as the consumer does not need to buy whole list of ingredients.
7. Rely on refrigeration, **therefore** not suitable for all food products, resulting in a smaller range for consumers to buy.
8. As chilling is not an expensive process, **since** less energy is used, the consumer may benefit ultimately from reduced manufacturer's costs, resulting in lower cost end products.

3. Environmental issues

1. Chilled food products require a lot of packaging, **which** may be unacceptable to consumers who are concerned about the environment.
2. Some cook-chill products now come in biodegradable packaging **so** less harmful to the environment/more acceptable to environmentally conscious consumers.

4. Safety

1. The use of high quality products and strict hygiene conditions throughout the complete process prevents foods poisoning outbreaks, **therefore** creating less risk to the consumer.
2. Listeria can grow at 3°C **so** may be present in cook-chill food, **which** can cause food poisoning for the consumer if not stored correctly (1-3°C).
3. Yeast/moulds can continue to grow in cook-chill products if not stored correctly, **which** can cause food poisoning/spoilage for the consumer.
4. Enzymes present within the cook-chill product may continue to act, **which** may cause food to perish, **therefore** inedible for the consumer.
5. If cook-chill product is not reheated to the correct temperature then bacteria present are not destroyed **which** may cause food poisoning for the consumer.
6. Cook-chill products have a shorter shelf life than frozen, **therefore** not suitable for bulk purchase, **as** the food may perish after its use-by date.

5. Health

1. Many cook-chill food products contain additives eg preservatives/colouring which **may therefore** lead to allergic reaction for the consumer.
2. Many cook-chill products are prepared in factories that process nuts/cereals and state on the packaging that the product is not suitable for nut/coeliac sufferers, **therefore** limiting range to certain consumers.
3. There are fewer additives in cook-chill products and **so** the product is seen to be healthier/less harmful to health by the consumer.
4. Many manufacturers have introduced healthier option cook-chill ranges, **therefore** giving the consumer a greater choice/suitable for those on a weight loss diet/helps prevent obesity.
5. There is no loss of nutrients as rapid cooking and chilling prevents any nutritional loss **therefore** the consumer is able to eat a meal with little loss to nutritional value.
6. Some cook-chill products do not meet current dietary advice/are high in saturated fat/sugar/salt/low in NSP, **which** may result in obesity/heart disease/high blood pressure/constipation/bowel disorders if consumed frequently.

2	d)	Identify and explain **four** different control measures which may help prevent cross contamination.

Marking Instructions:
4 x ½ mark for each measure identified.
4 x 1 mark for each detailed explanation (linked to bacteria).
Control measure must be identified before mark can be awarded for explanation. Where the control measure is incorporated in the explanation this can be credited.

Total – 6 marks (KU)

1. Good Personal Hygiene	
Control measures	**Explanation**
(a) Ensure food handler has a high standard of personal hygiene	1. Hands must be kept clean at all times as they are in direct contact with food, and so are the main route of transferring bacteria. 2. Food handlers should follow a thorough hand washing procedure (and dry hands on disposable paper towels) especially after visiting the toilet/on entering the food room/ before handling any food/equipment/after touching their hair/ after eating/coughing/blowing their nose/after handling waste food/refuse or cleaning materials to prevent bacterial contamination. 3. Food handlers should have suitable protective clothing/hair tied back, remove jewellery/have short clean nails free from nail varnish to prevent bacterial contamination when preparing/ serving high risk food products. 4. Smoking is not permitted whilst handling food because: - cigarette ends and ash may contaminate the high risk food/ - food handlers may touch their lips whilst smoking and then transfer harmful bacteria to high risk food/ - smoking encourages coughing which produces droplets of infection over high risk foods/ - cigarettes ends placed on worktops may be contaminated with saliva which is then passed to high risk food stuffs.
(b) Wash hands thoroughly after handling high risk food	1. Hands should be washed after handling high risk foods (eg raw meat/poultry/eggs) to prevent the spread of bacteria from raw/high risk foods to cooked foods.

(c)	**Ensure food handlers are in good health**	1. As handlers with colds, spread droplet infection from coughing /sneezing over high risk foods. 2. All cuts/sores should be covered with a blue waterproof dressing to prevent the spread of bacteria onto high risk foods. 3. Food handlers suffering from diarrhoea/vomiting/a food-borne illness should not handle high risk foods as it may become contaminated with bacteria.
2.	**Good kitchen hygiene standards**	
	Control measures	**Explanation**
(a)	**Ensure all equipment/ fixtures/fittings are clean before/after preparing foods**	1. Different surfaces/boards/utensils should be used when preparing raw and cooked meat/poultry/eggs to prevent the spread of bacteria from raw to cooked foods. 2. Clean all surfaces, equipment and tools thoroughly before and after preparation to prevent the spread of bacteria from high risk foods/raw foods.
(b)	**Adequate cleaning procedures are carried out**	1. Kitchen cloths should preferably be disposable/should be bleached/disinfected/changed frequently so as to prevent the spread of bacteria from high risk foods. 2. Spillages should be wiped up immediately to prevent the spread of bacteria from contaminated foods. 3. Waste should be placed in covered bins which should be well away from food preparation areas to prevent the potential contamination from high risk foods. 4. Catering staff should carry out/apply the Hazard Analysis Critical Control Point (HACCP) system to prevent bacterial contamination at any stage. 5. Refrigerators should be cleaned weekly/regularly and spillages wiped up immediately to prevent the spread of bacteria from contaminated foods.

3.	**Correct storage/serving of high risk foods**	
	Control measures	**Explanation**
	(a) Ensure high risk foods are stored correctly	1. Separate raw and cooked meat/poultry/eggs to prevent the spread of bacteria from cross contamination of high risk products. 2. Store raw high risk products below cooked foods at the bottom of the refrigerator to prevent the spread of bacteria from cross contamination of high risk products dripping onto the cooked foods. 3. Use a separate refrigerator for raw foods to prevent the spread of bacteria from cross contamination of high risk products dripping onto the cooked foods. 4. High risk foods should be covered to prevent the spread of bacterial contamination.
	(b) Refrigerate at a temperature of 1-4°C	1. High risk and perishable salad products must be kept in refrigerator at a temperature of 1-4°C to prevent bacteria multiplying. 2. Regular daily checks should be taken to ensure the refrigerator is functioning at a maximum of 1-4°C to prevent bacteria multiplying.
4.	**Correct cooking/reheating of high risk foods**	
	(a) Cook until 75°C	1. A minimum centre of 75°C should be reached in high risk foods and confirmed by a food probe thermometer as most harmful bacteria are destroyed at this temperature. 2. Microwavable high risk foods also require a minimum centre of 75°C to be reached and checked in different places by a food probe thermometer as most harmful bacteria are destroyed at this temperature.
	(b) Reheat until 82°C	1. Small numbers of bacteria may have survived original cooking and continued to multiply; increasing the temperature may destroy bacteria that would result in contaminating high risk foods.

5.	**Correct storage of cooked high risk foods**	
	(a) Cooling of high risk foods within 1-1½ hours	1. High risk foods should be cooled down within 1-1½ hours of cooking and covered and refrigerated to prevent the bacteria multiplying at room temperature.
	(b) Cool food thoroughly before placing in refrigerator	1. Warm high risk foods must not be placed in a refrigerator, as this may increase the core temperature causing bacteria to multiply.
	(c) Observe use-by date	1. High risk foods should not be mixed from separate batches/ careful monitoring/labelling with dates is required to ensure correct disposal of foods past their use-by date to prevent deterioration/bacterial contamination.

2	e) Explain **three** responsibilities of the Environmental Health Officer.

Marking Instructions:
3 x 1 mark for each responsibility of the Environmental Health Officer.

Total – 3 marks (KU)

Enforcement of the Food Safety Act 1990 and hygiene regulations covering food premises

1. Officers can enter food premises on routine checks/investigate complaints.
2. Officers can take away food samples to be tested and make videos as evidence.
3. Officers can issue an improvement notice to food premises, which specify the contravention and the improvements required with a set timescale to adhere to.
4. If the officer decides there is imminent risk of food poisoning to consumer's health an emergency prohibition notice may be served, (which may include closure of the premise or a ban on using a certain piece of equipment.)
5. Food can be inspected by officers to see if it is safe and retain/seize/condemn food where necessary.

Responsible for general food safety

1. Liaise with schools/community groups to provide advice, training and support on local environment, public health and food safety issues.

3 a) Explain **each** of the following stages in the development of a novelty cake

(i) Concept screening
(ii) Prototype production
(iii) First production run
(iv) Launch.

Marking Instructions:
4 x 1 mark for each explanation linked to each stage of development and the novelty cake.

Total – 4 marks (KU)

Explanation of development stage

(i) Concept screening

1. The manufacturer needs to compile a design specification for the **novelty cake** as a process for eliminating some products.
2. This stage is important as it allows the production process progression, moving away from initial ideas to actual **novelty cake** developments.
3. Specification allows the cake manufacturer to eliminate **novelty cake** ideas that might be costly/difficult to process/not meet other constraints.
4. It would be too costly to trial every idea for a **novelty cake**, therefore only the cakes that match specification can be tested.
5. Period whereby prototypes are created for a possible range of **novelty cake** products and some may be eliminated.

(ii) Prototype production

1. A prototype is an example/specimen of what the **novelty cake** may be like.
2. The prototype is a replica of the original plan for the **novelty cake** and measured against the specification.
3. The prototype **novelty cake** is tested for appeal and may be further modified/rejected.
4. It enables testing to be carried out to avoid costly mistakes before the first production run of the **novelty cake**.

(iii) First production run

1. Allows for the production of the **novelty cake** for the first time as a full production run, so the cake can be assessed.
2. Allows the quality assurance team to test the **novelty cake** to ensure quality and/or uniformity of standards during the manufacturing process.
3. An important stage in the development of the **novelty cake** as it affects many other stages eg if ingredients for the cake changed then the labelling would require to be changed.

(iv) Launch

1. An important stage of the plan as the **novelty cake** is now on sale.
2. Piloting of the **novelty cake** may be carried out 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). Piloting to gauge success of the product.
3. Market monitoring, finally the **novelty cake** 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 the **novelty cake**.
5. Market research may provide regular feedback so that the manufacturers can continually re-think/re-adapt the marketing approach of the **novelty cake** as quickly, economically and effectively as possible.
6. Market research may provide regular feedback on the **novelty cake**. This allows the product to continue to be refined and improved.
7. Test marketing carried out to monitor initial sales of the **novelty cake** – manufacturer would adjust marketing if necessary.
8. Market monitoring – final launch of **novelty cake**, analysis of sales to establish its position against other/rival top selling novelty cakes.
9. Market research to provide regular feedback so manufacturer can rethink/readapt the marketing approach for **novelty cake** as quickly/economically/effectively as possible.
10. **Novelty cake** 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.
11. Shops may decide where the **novelty cake** may be situated (which aisle/shelf/point of sale) to attract most attention/customers.
12. Type of shop suitable for launching the **novelty cake** may have to be carefully considered to ensure high profile during launch and correct target group attracted.
13. A range of promotional techniques need to be used to help promote the sales of the **novelty cake** eg in store tasting session/or special offers/money-off coupons/television advertisements.

3	b)	The star profile below shows the results of testing the novelty cake. Evaluate the suitability of this novelty cake for a toddler.

Marking Instructions:
5 x 1 mark for each valid evaluation point, linked to the suitability of the novelty cake for a toddler.
Only 1 mark per descriptor.

Total – 5 marks (EV)

1. Appearance (5)

1. The toddler may enjoy the attractive appearance of this **novelty cake** as it has a high rating, **therefore** making the novelty cake suitable for the **toddler**.
2. The standard of presentation of cake decoration may be high, so the parent may be tempted to buy the **cake** as it has received a top 5 score **therefore** the parent may be confident it would appeal to the **toddler**.

2. Colour (4)

1. The **toddler** may be attracted to the bright colours within the cake and **therefore** enjoy the bright appearance of the **novelty cake**.
2. The **novelty cake** must be quite colourful **as** it has a fairly high rating of 4, which means it is quite colourful, **as toddlers** are fond of bright contrasting colours this may make the cake a suitable choice for the **toddler**.
3. The high colour rating for the **novelty cake** is a disadvantage as it means there may be colouring additives within the cake, **which** may cause hyperactivity/allergies in the **toddler**.

3. Sweetness (3)

1. The **novelty cake** has quite a high score of sweetness which may be unsuitable for the **toddler** as it may be high in sugar **therefore** could cause tooth decay/obesity/(type 2) diabetes later in life.
2. The **novelty cake** has quite a high score for sweetness, **which** may be suitable for the **toddler** as most toddlers like a sweet flavour.
3. This **novelty cake** has quite a high score for sweetness resulting in the toddler forming a high sugar awareness of his/her palate; **therefore** the **toddler** may become dependant on a sweet tooth craving.
4. The **novelty cake** has quite a high score for sweetness; this may indicate a high sugar intake which could **therefore** provide a quick energy source for an active **toddler**.

4. Creamy (3)

1. A score of 3 means the **novelty cake** has a fairly high creamy texture; this may be suitable for the **toddler**, **as** it may contain high-energy ingredients, which may provide the toddler with energy to expend.
2. A score of 3 means the **novelty cake** has a fairly high creamy texture; this may be suitable for the **toddler**, **as** a creamy texture may enable the toddler to chew/eat the cake more easily.
3. A score of 3 indicates the **novelty cake** has quite a high score for creaminess; this may not be suitable for the toddler **as** it may lead to obesity in later life due to the high fat content within the creamy mixture.

5. Moistness (4)

1. A high score of 4 makes this **novelty cake** suitable for a **toddler** as a moist cake may be easier to eat, **therefore** preventing the toddler from choking on dry crumbs.
2. A high score of 4 makes this **novelty cake** suitable for a **toddler** as the toddler may be used to eating moist textures from semi-pureed foods, **therefore** there may be a confidence/enjoyment when chewing the cake and no safety issues from choking.
3. As most moistness in cakes comes from high fat content, this **novelty cake** may not be suitable for the **toddler as** it may lead to obesity in later life.
4. As the **novelty cake** has a high score for moistness, there may be less chance of the cake drying out, **which** enables the cake to have better keeping qualities and so leftovers can be stored for later use/less waste for parents of **toddler**.

6. Crumbly (1)

1. The **novelty cake** has a very low score of 1, making this cake suitable for a **toddler** to eat, **as** he/she may be less likely to choke on crumbs when chewing the cake.
2. The **novelty cake** is not very crumbly, therefore it may be easier to cut standard slices of cake for the **toddler** to eat, making sure they do not consume too much, **therefore** preventing tooth decay/obesity.
3. The **novelty cake** has a low score for crumbliness, which may prevent the **toddler** from making a mess when eating the cake, **therefore** saves parent time clearing up/avoids damage to carpet/more hygienic environment for the child/prevent upset.

3	c)	Identify and explain **four** categories of additives, **other than colour**, used in the food industry.

Marking Instructions:
4 x ½ mark for identification of additive category.
4 x 1 mark for each explanation. Category of additive must be identified before mark is awarded for explanation. Where the category of additive is incorporated in the explanation, this can be credited.

Total – 6 marks (KU)

Additive Category	**Explanation**
1. Preservatives	1. Used within cured meat products/bacon/ham to extend their shelf life. 2. Used within baked products/soft drinks/fruit juices to extend their shelf life. 3. Can be added to certain fruits (eg apples) to prevent browning/ discolouration of the product. 4. Often used in perishable foods to enable products to be available out of season.
2. Antioxidants	1. Used within high fat products to prevent the food from turning rancid (eg butter – E320). 2. Used within dried soups/cheese spreads/sausages to prevent the food from turning rancid/unpleasant flavour/deterioration. 3. Ascorbic acid (Vitamin C is a natural antioxidant found in fruit) can be used to prevent other fruits turning brown (eg brushing lemon juice on a peeled banana).
3. Sweeteners	1. Intense sweeteners/saccharin/aspartame is many times sweeter than sugar and therefore is used in small quantities, diet drinks/slimming bars to produce lower calorie food products. 2. Bulk sweeteners/Splenda/hydrogenated glucose syrup are used in similar quantities to sugar. Added to jams/chocolate to allow diabetics to eat the food.
4. Emulsifiers/ stabilisers	1. Help to mix food products (oil and water), which would naturally separate (eg salad dressings). 2. Used in the production of low fat spreads as the additives allow fats and oils to mix together with water. 3. Lecithin is a natural emulsifier used when making mayonnaise.

5.	**Raising agents**	1. Sodium bicarbonate is used to lighten baked products (eg sponges/ pancakes).
6.	**Thickening agents/ gelling agents**	1. Used to form a gel to thicken sauces, mainly plant gums (such as carob gum).
7.	**Nutrients**	1. Vitamins/minerals are used to fortify certain foods/functional foods/ breakfast cereals/bread/spreads.
8.	**Flavourings/flavour enhancers**	1. Used to produce artificial flavours in the food where "real" flavours may add to cost (eg strawberry flavoured yoghurt indicates it is not made from real strawberries). 2. Used to give food a distinct flavour eg vanilla ice cream. 3. Monosodium glutamate (MSG) is a flavour enhancer used in Chinese/savoury meals, it intensifies the flavour of the dish but has a distinctive aftertaste. 4. Used to increase the flavour which may have been lost in processing.
9.	**Anti-caking agents**	1. Used in salt/other dry powdery foods of prevent clumping/allow ease of flow. Accept eg soup powders/cake mixes/icing sugar/milk powders/drinking chocolate.
10.	**Acidulants**	1. Used to add a sharp taste to foods/assist in gel setting/act as a preservative.

3 d) Evaluate the use of fast food in a child's diet.

Marking Instructions:
3 x 1 mark for each valid evaluation point linked to fast food and children.

Total – 3 marks (EV)

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

1. Fruit and Vegetables

Positive

1. Many **fast food** ranges include prepared fruit/vegetables/fruit smoothies/fruit drinks **which** is good **as** this can help prevent constipation in the **child**/bowel disorders in later life/helps child increase intake of fruit and vegetables in line with dietary targets.
2. **Fast food** ranges of prepared fruit/smoothies/vegetable sticks/prepared salads are good as they help **children** to select lower sugar alternatives to regular drinks/puddings, **which** may help to prevent tooth decay/obesity/diabetes in later life.
3. Many **fast food** outlets have a wide range of salad options **which** is good as this could be a suitable option for a **child so** could help prevent obesity/tooth decay/constipation/bowel disorders/CHD in later life.

Negative

1. Many **fast foods** are low in fruit and vegetables which is bad as this makes them unsuitable for a **child as** it could lead to constipation/bowel disorders.

2. Fat

Positive

1. Individualised menu is good **as** it enables **children** to select low fat **fast food** options **therefore** reducing total fat content and may prevent obesity in later life/help child meet dietary target for a reduction in fat/saturated fat intake.
2. "Kids" meals contain smaller portions of **fast food** than regular size portions which is good **so** total calorie intake is less **which** may prevent **children** (from gaining extra calories) in becoming obese/CHD in later life.
3. Lower total fat **fast food** options are now available/low calorie dressings/low fat cheese **which** is good **as** this reduces total fat content and **thus** preventing **childhood** obesity/CHD in later life.

Negative

1. Majority of options available from **fast food** menus include high fat/saturated fat, which is bad **as** they are unsuitable for a **child as** it could increase cholesterol/lead to coronary heart disease in later life/obesity.
2. As menu offers varied ranges, hungry child may opt for larger sized portion of **fast food which** is bad **as** this may contain more calories and may lead to **childhood** obesity.
3. Many **fast foods** are high in trans fats/hydrogenated fats **which** is bad as if consumed by a **child** over a regular period may lead to rise in cholesterol/coronary heart disease in later life.

3. Total Complex Carbohydrates (TCCs)

Positive

1. Wider range of **fast food** sandwiches is now available which is good **as** this can help child meet dietary target for increase in TCCs/fills **child** up to prevent snacking on high fat/ sugary food to prevent obesity/tooth decay/prevents constipation/bowel disorders.
2. Bigger variety of **fast foods** containing TCCs are being introduced (potato wedges/pasta dishes/rice dishes) which is good **as** if consumed by a **child** may help increase NSP content **which** may prevent constipation/bowel disorders in later life.

Negative

1. One of the most popular **fast food** items consumed by children is French Fries, **which** is bad **as** they contain high fat content and may lead to **childhood** obesity/coronary heart disease in later life if consumed frequently.

4. Sugar

Positive

1. Many **fast food** drinks are now low sugar/sugar free which is good **as** this makes them suitable for a **child as** they can help prevent obesity/tooth decay/(type 2) diabetes in later life/help child meet dietary target for a reduction in NME sugars.

Negative

1. **Fast foods** may contain a high percentage of extrinsic sugars from **children's** drinks/ puddings **which** is bad as this can be harmful as they may lead to an excess of body fat or **childhood** obesity/diabetes in later life.
2. Most **fast foods** contain a high percentage of sucrose/glucose within the **child's** diet which is bad and **therefore** harmful **as** it could lead to tooth decay/obesity/diabetes in later life.

5. Salt/sodium

Positive

1. As individual sachets of seasoning may be available in **fast food** outlets which could be good **as children** can opt to not add extra salt onto their meal, which may prevent an excess of sodium, **therefore** reducing the child's blood pressure.
2. Many **fast food** ranges are now available in low salt versions which are beneficial/good **as** it can help the **child** meet dietary target for a reduction in salt/help prevent hypertension/ strokes/CHD in later life.

Negative

1. Some **fast foods** may contain a high percentage of salt/sodium **which** is bad **as** may result in the **child** suffering from high blood pressure if consumed frequently.

6. Vitamins and minerals

Positive

1. Increased availability of fresh fruit salad **fast food** products provides the **child's** diet with (A/C/E) vitamins is good as this provides antioxidants thought to help reduce the risk of cancer.
2. Certain **fast food** products (eg beef) are high in iron content, **which** can be beneficial/good if consumed frequently by a **child**, as it may prevent anaemia.
3. Certain **fast food** products include a high dairy content which may be good as this provides calcium for the **children**, **therefore** preventing rickets/poor bone or teeth formation.

Negative

1. Lack of fruit/vegetables within some **fast food** ranges is bad as this prevents the **child** from gaining (A/C/E) vitamins **which** provide antioxidants thought to help reduce the risk of cancer.
2. Only certain **fast food** products eg beef contain high iron content, which is bad **as** if the **child** did not consume beef this may lead to anaemia.
3. Some **fast foods** contain no dairy products which could be bad if the **child** consumed these frequently this may prevent their diet having a high calcium intake **which** is required to prevent rickets/poor bone or teeth formation in children.

7. Protein

Positive

1. Most **fast foods** consumed by **children** contain protein **which** is beneficial/good as it is required for the children's growth, maintenance and repair of body tissues.
2. Wide range of complimentary proteins/lentils/pulses available in some **fast foods** to ensure adequate balance of proteins is good as this is required for the **children's** growth, maintenance and repair of body tissues.
3. Wide range of high and low biological value proteins available in **fast food** to cater for every **child's** needs, which is good as this ensures a suitable meal/snack is available which prevents the **child** from getting hungry/underfed.

Negative

1. The content of the protein mainly contained in fast food products tends to be of low biological value, which may be bad as it may not provide enough essential amino acids to allow children to grow/maintain/repair body tissues.
2. If too many high protein **fast foods** are consumed by the **child** and their lifestyle is inactive this may be bad as excess protein may be converted to fat, **which** results in childhood obesity.

8. Water

Positive

1. Bottled mineral water may be available from **fast food** outlets which is good as it may be an option within the "kid's meal", **which** if taken, helps to prevent dehydration within the **child**/aids concentration.

Others

1. If **fast food** is consumed only occasionally this may not be harmful to a **child as** it is unlikely to lead to obesity/tooth decay/(type 2) diabetes/CHD in later life.
2. The types/frequency of **fast food** being consumed by the **child** may need to be examined in comparison to the child's diet as a whole **before** an accurate analysis could be given of any potential negative health effects.
3. Most **fast foods** do not cater for special dietary needs that some **children** may have, lactose intolerance/Coeliac's disease/diabetes/food intolerance **which** is bad as this may prevent them from being able to visit such outlets **so** the child has less choice available to him/her.
4. Many **fast foods** contain additives **which** could be potentially harmful to a **child's** health as it may lead to food intolerance/hyperactivity/allergies.
5. Some **fast foods** may contain GM ingredients/non-organic which is good as parents with environmental/health concerns may be unlikely to purchase such products for their **child**.
6. Many **fast foods** can be bad as they may be expensive for the parent to purchase for the **child** therefore present poor value for money.
7. Many **fast foods** can be addictive to **children** which is bad as they may lead to a high dependency on these foods resulting in obesity/CHD in later life.

3	e)	Explain **two** ways in which European Directives have influenced consumer law in the UK.

Marking Instructions:
2 x 1 mark for each explanation linked to influence on consumer law.

Total – 2 marks (KU)

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

1. Weights and Measures

1. UK minimum weight system/average weight system indicated by e mark.
2. Basic foods can only be sold in pre-determined packs eg coffee/tea/sugar to allow for price comparison of commodities easily.
3. Metric measurements must now be included on food products.

2. Additives

1. Additives must be passed as safe by the European Union before a licence for use is permitted.
2. Directives stipulate how additives must be tested on food labelling (ie E number with additive category) before usage.

3. Food Labelling

1. All food must now be clearly marked with its name and description.
2. Most pre-packed foods must show a list of ingredients and how long it can be kept.
3. In the ingredient listings all additives (except flavourings) must be identified by their E number and the type of additive they are must be indicated (eg colouring, preservative).
4. EU restrictions are placed on which additives are permitted in food ie there is an approved list of additives considered safe to use.
5. Sets out details with regard to products, which have a low energy/reduced energy claim.
6. Food packages must be sold in metric weights.
7. Pre-packed foods should carry a date of minimum durability eg “best before”.
8. Highly perishable foods should have a “use-by” date, to prevent potential food poisoning cases.
9. Standardised format for inclusion of the optional nutritional labelling of food items.
10. Food manufacturers are required to currently list 12 potentially allergic ingredients (eg gluten/peanuts).
11. Directives now apply on the regulation of novel foods/lot marking/foods for particular nutritional uses.

4. Safety/Hygiene

1. Member states have agreed to harmonise food safety regulations on the retailing/catering of all foodstuffs.
2. Hygiene directives now apply to specific products such as meat/fish/milk.
3. Directives apply to use of food contact materials/packaging/contaminants.
4. Keen to harmonise standards for processed foods in the future.

4 a) Identify and explain **four** methods of food preservation.
Marking Instructions: 4 x ½ mark for identification of each method of preservation. 4 x 1 mark for each explanation. Method of preservation must be identified before mark is awarded for explanation. Where the method of preservation is incorporated in the explanation this can be credited. **Total – 6 marks (KU)**

Method of preservation	**Explanation**
1. Irradiation	1. Foods are given small does of radiation (while packed in cartons on a conveyor belt) to reduce the bacteria which cause food spoilage. 2. Process is called "ionising radiation" (similar to x-rays which pass into the food.) The rays that pass through the food kill off harmful bacteria (sterilise the food) and extend the shelf life of the food. 3. The irradiation delays the ripening of fruit/vegetables, thus slowing down the natural decay process and increasing shelf life of the food.
2. Chilling/cook-chill products	1. The process of chilling perishable foods at temperatures of between 1°C-8°C prevents the multiplication of bacteria which increases the shelf life of the food. 2. Chilled foods are refrigerated to retard/prevent deterioration and growth of micro-organisms.
3. Freezing	1. Freezing of fresh food is carried out rapidly to ensure small ice crystals form, giving better quality food. 2. Freezing at -18°C makes micro-organisms inactive, therefore increasing the shelf life of the product.
4. Freeze drying (accelerated freeze drying, ADF)	1. Food is dried under a vacuum at reduced pressure (it is then packed in moisture-proof containers which are filled with nitrogen and then sealed.) The removal of moisture prevents micro-organisms from multiplying, hence extending the shelf life of the food.
5. Modified Atmosphere Packaging (MAP)	1. The air within the pack is changed, less oxygen and more carbon dioxide/nitrogen gas; micro-organisms cannot multiply without the oxygen, hence the shelf life of product increases. 2. Bacterial growth/enzyme spoilage is retarded due to the reduction of the oxygen within the pack. 3. The package film used is waterproof and is a high gas barrier material, to improve storage and preserve the food longer.
6. Vacuum packaging	1. Uses an impermeable plastic film and air is removed under a vacuum from the pack which is then thoroughly sealed in anaerobic conditions which slows down the food spoilage rate.

7.	**Ultra high temperature**	1. A sterilising process, food rapidly heated to 140°C, held for a few seconds, which kills any bacteria present, increasing the shelf life (eg milk/fruit juice). 2. Rapid cooling and packed into pre-sterilised containers with an air tight seal prevents further recontamination until opened.
8.	**Salt (curing)**	1. Salt removes the available water from the food so that micro-organisms cannot multiply/increase shelf life.
9.	**Dehydrating**	1. Water is removed from the food preventing microbial growth and extending the shelf life of the food.
10.	**Canning/Bottling**	1. Fruits/vegetables/foods are heated to destroy any micro organisms then sealed to prevent growth of aerobic micro organisms, which increases shelf life of foods.
11.	**Sugar (jam making)**	1. Sugar is added to fruit then heated which forms crystals and makes water unavailable to micro organisms.
12.	**pH (pickling/ chutney)**	1. Sugar is added to fruit then heated which forms crystals and makes water unavailable to micro organisms. 2. Acid is added/vinegar/lemon juice/pH is lowered which makes water unavailable to micro organisms/micro organisms cannot survive in an acid pH.

4	b)	Give **three** reasons for an increase in food poisoning cases linked to Escherichia Coli (E Coli).

Marking Instructions:
3 x 1 mark for reasons. Candidate must show an understanding of how E Coli is transmitted/ contaminates food.

Total – 3 marks (KU)

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

1. Poor Personal Hygiene

1. By not washing hands before/after handling raw meats and poultry, the **E Coli** bacteria can be transferred onto cooked meats.

2. Poor Kitchen Hygiene

1. If work surfaces and equipment/tools are not thoroughly cleaned before and after use, **E Coli** can breed.
2. If work surfaces and equipment/tools are not thoroughly cleaned before and after use, **E Coli** can breed and lead to cross contamination when cooked meats use the same equipment.
3. Incorrect cleaning of milk processing plants can cause **E Coli** to rapidly multiply and contaminate unpasteurised milk.

3. Incorrect/no HACCP Procedure

1. If no HACCP being put into practice then unable to identify control measures to prevent the outbreak of **E Coli** bacteria from multiplying.

4. Poor Food Hygiene/Cooking Practices

1. Incorrect storage of meat/poultry, if high risk foods are not refrigerated between 0-5°C, **E Coli** may be able to multiply (especially at room temperature (37°C)).
2. If raw and cooked meats are not separated, cross contamination may occur, causing **E Coli** to transfer from raw onto cooked meats.
3. Incorrect cooking of meats, if meat is undercooked (especially minced products), **E Coli** may still be able to multiply as it requires a core temperature of above 55°C to kill the bacteria.
4. If meat is not served piping hot at above 82°C when reheated, **E Coli** may be able to rapidly multiply.

5. Other factors

1. Incorrectly pasteurised milk and milk products may prevent **E Coli** from being killed.
2. Contaminated water, from animal sewage can cause **E Coli** to multiply.
3. Mincing meat can spread **E Coli** throughout the meat, and if centre is not thoroughly cooked then E Coli can multiply.
4. Large scale farming/food production may result in cross contamination of **E Coli** between animals.
5. Large scale slaughterhouses may result in cross contamination of **E Coli** between animals.
6. Intensive farming methods meaning that animals are in close proximity to each other which may result in cross contamination by **E Coli**.
7. More people are consuming high risk foods (meat pies/burgers) which may be contaminated with **E Coli** thus leading to an increase in food poisoning.
8. More fast food restaurants are available which sell high risk foods (eg meat pies/burgers) which may lead to further food poisoning cases through **E Coli**.

4 c) Evaluate the nutritional suitability of the following meal for a patient recovering from heart surgery.

- Poached haddock in cheese sauce
- Peas
- Potato wedges
- Glass of cola.

Marking Instructions:
4 x 1 mark for each point evaluated in detail linked to the dietary needs of a patient recovering from heart surgery.

Total – 4 marks (EV)

Poached haddock in cheese sauce

Haddock

1. As a white fish it contains little fat/saturated fat, **therefore** this is suitable for the **heart patient** as there is no increased cholesterol, this may prevent narrowing of the arteries/prevent coronary heart disease in future.
2. Eating white fish is one of the recommended Scottish Dietary Targets as it is low in fat, **which** may prevent the **patient** from becoming obese which would put an increased strain on the **heart**.
3. Haddock contains High Biological Value protein **which** is essential in repairing the **heart patient's** cells/maintaining original heart cells to ensure total recovery back to good health.
4. As the haddock is poached, there is no additional fat being added to the meal, **therefore** preventing the **patient's** risk of obesity which may put additional strain on the **heart**.
5. Haddock is an easily digested protein which is good **as** someone recovering from **heart surgery** is likely to have difficulty digesting food/likely to be in bed **so** needs easily digested food.

Cheese sauce

1. Cheese/milk contains High Biological Value protein **which** is essential in repairing the **heart patients** cells/maintaining original heart cells to ensure total recovery back to good health.
2. Cheese/milk contains calcium, which may help build the patient's bones **as** they have undergone **major heart surgery** and may need their bones strengthened to prevent osteoporosis.
3. Cheese/margarine has a high fat/saturated fat content **which** may lead to obesity and contribute to the **patient** regaining coronary **heart disease** later.
4. Cheese contains a high salt content, **which** may contribute to high blood pressure and may contribute to the **heart patient** regaining coronary heart disease later on.
5. Cheese/margarine/milk contain the fat-soluble vitamins A and D; Vit D may help allow calcium to be absorbed **therefore** strengthening the **heart patient's** bones after their heart operation.
6. The margarine used within the sauce may have been a polyunsaturated type **therefore** this is suitable for the **heart patient as** there is no increased cholesterol, this may prevent narrowing of the arteries/preventing coronary heart disease in future.

7. The cheese sauce may have been made with the liquid from the poached fish, **which** may allow any water soluble vitamins/Thiamin to be consumed **which** may help the **heart patient's** muscle tone whilst recovering.
8. The cheese sauce may have been made with low fat ingredients, **therefore** preventing the **hearts patient's** risk of obesity/heart disease, in line with the Scottish Dietary Targets to "eat less fat".
9. Cheese sauce may not be suitable for a **heart patient** recovering from **surgery as** it is likely to be difficult to digest due to high fat content.

Peas

1. If they were fresh/frozen garden peas this would be good for the **heart patient's** diet **as** they are a starchy vegetable and high in non-starch polysaccharides **which** help prevent constipation/ bowel disorders which can be common in convalescents due to lack of mobility.
2. If the peas were tinned they would contain a higher salt level **which** may lead to high blood pressure and may contribute to the **heart patient** regaining coronary heart disease later on.
3. Peas belong to the group of starchy vegetables, in line with Scottish Dietary Targets; this may benefit the **heart patient as** they are low in fat **therefore** preventing the patient's risk of obesity and as a result coronary heart disease.
4. Peas contain low biological value protein, **however** when eaten with the cheese/fish the **heart patient's** gaining maximum value protein to enable the patient's cells to repair quickly after heart surgery.
5. Peas are high in calcium which may help build the **heart patient's** bones **as** they have undergone major surgery and may need their bones strengthened to prevent osteoporosis.
6. Peas are high in complex carbohydrates which help give slow release energy and prevent the **heart patient** feeling hungry **therefore** not snacking on high fat/salt/sugar products, preventing obesity **which** may lead to coronary heart disease.
7. Peas contain vitamin C which is one of the antioxidant vitamins **which** helps prevent cancer and heart disease, **as** the **heart patient** has undergone heart surgery, this should help prevent further occurrences of heart disease.
8. Peas are high in vitamin C which is required to make connective tissue, **as** the **heart patient** has had recent surgery they may need their body cells to bind well to help heal scars.
9. Peas are high in NSP (dietary fibre) which makes them suitable **as** someone recovering from **heart** surgery may be prone to constipation. The NSP content could help prevent this problem.

Potato wedges

1. Potatoes are starchy vegetables, in line with Scottish Dietary Targets, this may benefit the **heart patient** as they are low in fat **therefore** preventing the patient's risk of obesity.
2. Potatoes are high in complex carbohydrates which help give slow release energy and prevent the **heart patient** feeling hungry **therefore** not snacking on high fat/salt/sugar products, preventing obesity.

3. If the wedges are baked in the oven/chunky and fried then they may be lower in fat **therefore** preventing the **heart patient's** risk obesity and as a result coronary heart disease.
4. Potato wedges are highly seasoned for flavour, ie a high salt content, **which** may contribute to high blood pressure and may contribute to the **heart patient** regaining coronary heart disease later on.
5. Potato wedges contain vitamin C which is one of the antioxidant vitamins which helps prevent cancer and heart disease, **as** the **heart patient** has undergone previous heart surgery, this should help prevent future heart disease problems.
6. Potato wedges contain vitamin C, **which** is required to make connective tissue, **as** the **heart patient** is recovering from an operation, this may help build body cells to heal scars.
7. Potato wedges are high in NSP (dietary fibre) **which** makes them suitable as a **heart patient** recovering from **heart surgery** may be prone to constipation. The NSP content could help prevent this problem.

Cola

1. Cola is not suitable for the **heart patient** as it contains a high amount of sugar which may lead to obesity and therefore may put a strain on his heart.
2. Cola is not suitable for the **heart patient** as it is a high energy content, **which** may lead to obesity and **therefore** may put a strain on his heart.
3. If the cola was a diet drink, this would be more suitable for the **heart patient** as it has an artificial sweetener **which** is lower in calories, **therefore** preventing the patient from becoming obese and therefore may not put a strain on his heart.

4 d) Food manufacturers provide a range of information on packaging. Evaluate the usefulness to the consumer of **each** of the following:

(i) Recycle label
(ii) Vegetarian Society Approved logo
(iii) Soil Association logo
(iv) Barcode.

Marking Instructions:
4 x 1 mark for each valid evaluation point linked to usefulness of each label to the consumer.

Total – 4 marks (EV)

(i) **Recycle label**

1. Recycle sign is good **as** it enables **consumers** who are concerned with their environment to choose food packaging, **which** meets their environmental needs/indicates that the product is less harmful to the environment.
2. By selecting packaging that displays the recycle sign, **consumers** may benefit from reduced package costs eg glass becomes cheaper to produce, **therefore** saving the consumer money.
3. As there is a variety of differing recycling symbols this can be confusing for **consumers** to understand and **therefore** the consumer may not appreciate how to recycle the product.

(ii) **Vegetarian Society Approved logo**

1. Very common logo which is good as it is easily/quickly recognised/widely used **so** this may be an advantage **as** it is easy for **consumers** to select vegetarian food which suits their needs.
2. Indicates product has been approved by the Vegetarian Society which is good **as consumers** feel they are selecting food that has met certain requirements.
3. The food package logo represents "vegetarian ingredients"; **however** this may be bad and misleading **as** it may still contain ingredients unsuitable for vegans (**consumers**).
4. The logo is one of many that are used on food packaging so this may be a disadvantage/ bad **as** it may confuse **consumers as** so many symbols now appear on food products.

(iii) **Soil Association logo**

1. Very common logo, which is easily recognised/widely used so this may be an advantage/ good **as** it is easy for manufacturers to reassure **consumers** concerned with environmental issues.
2. The Soil Association logo is used in conjunction with organic food packaging **which** may be an advantage/good **as** it makes the product readily identifiable for **consumers** to purchase products perceived to have less risk to health/environment.
3. The Soil Association logo is easily recognisable and may be an advantage/good **as** it can help those **consumers** who are interested to select food packaging **which** helps the environment/prevents pollution etc.
4. By identifying the Soil Association logo on food packaging **consumers** are able to select foods, **which** have been grown without artificial fertilisers **which** may be beneficial/good **as** this may be necessary for consumers who have allergies.
5. The Soil Association logo is good as it can help those **consumers** select with confidence a food package that has been made without man-made chemicals **that** may be carcinogenic/ benefiting their health.
6. Generally the Soil Association logo on packaging comes at a higher price than the regular packaging **which** is a disadvantage/bad **as** it may prevent lower income groups/**consumers** from purchasing it.

(iv) **Barcode**

1. Barcodes are useful/good for the **consumer** on food packaging **as** they may help speed up payment at point of sale **as** the package can be electronically scanned.
2. Barcodes are beneficial/good **as** they may enable accurate pricing as the packaging is scanned at point of sale **so** less chance of **consumers** being wrongly charged.
3. Barcodes are useful/good as they may enable more efficient stock control, **which** benefits the **consumer as** it prevents empty shelves in the store.
4. The barcode is beneficial/good as it allows the **consumer** to carry out self-scanning process quicker **which** may speed up the shopping process, and so save the consumer time.
5. Limited points for self scanning of bar-coded packaging are a disadvantage **as** they bring queues **which** can be time consuming for the **consumer** to wait in.
6. Barcodes on food packaging only work successfully when packaging has not been creased/ damaged as scanner does not always read the code **which** means a longer point of sale process before paying for the **consumer**.

4 e) Explain **three** responsibilities of the Food Standards Agency.

Marking Instructions:
3 x 1 mark for each well explained responsibility.
(Headings have been provided to assist marking but not required to be provided by the candidate)

Total – 3 marks (KU)

Meat factory improvements

1. Responsible for licensing of meat processing companies to ensure hygiene controls on meat and meat products.
2. In Scotland the FSA will deal with issues relating to meat and meat products and/or regulation of animal feed.
3. In Scotland the FSA will deal with issues relating to food hygiene/fish/shellfish/milk hygiene/ novel foods/radiological safety/food emergencies.
4. FSA commission research into food related matters so the industry and public are kept up to date with food safety issues.
5. Monitor and enforce food safety standards (through the Meat Hygiene Service).
6. Licensing and inspection of manufacturers who produce irradiated food.

Improve Consumer choice

1. FSA support consumer choice through promoting accurate/meaningful food labelling/issuing leaflets/posters.
2. FSA protects the consumer through effective enforcement and monitoring of food related regulations and policies.
3. Monitoring of the composition of food and food labelling and additives.
4. FSA provide the public with information/leaflets on nutritional advice/healthy eating

Improve Food Safety for consumers

1. FSA develop food labelling/labels to give more accurate information to help with safe storage of food and therefore prevent food safety risks and outbreaks of food poisoning.
2. FSA give advice to the public on food safety and standards therefore raise the awareness and educate the public.
3. Represents the consumer in matters of food safety/standards so the voice of the consumer is heard.
4. Responsible for protection of public health in relation to food hygiene.
5. FSA provides advice and information to the public and government on food safety.
6. FSA may consult and seek advice from advisory support committee.
7. Commission research to support its function and the giving of information to the public.
8. Represents the UK on matters of food safety and food standards in the EU and worldwide.
9. Control of genetically modified food for human consumption and animal feedstuffs.
10. Protection of public health against chemical contaminants in food.

Context:		
Higher Home Economics. Analysis of the 2008 Question Paper	×	**Health and Food Technology**

Section A

Question	Resource Management Unit		Consumer Studies Unit		Course Skills		Totals
	Course content	**Mark**	**Course content**	**Mark**	**Knowledge**	**Evaluation**	
1	Sensory testing	1			1		1
2			Factors that influence consumer choice of food	1	1		1
3	Functions and sources of nutrients	1			1		1
4	Functions of water	1			1		1
5	Prevention of dietary diseases	1			1		1
6			Food politics	1	1		1
7	Factors affecting finished products	1			1		1
Totals		**5**		**2**	**7**		**7**

Context:		
Higher Home Economics. Analysis of the 2008 Question Paper	×	**Health and Food Technology**

Section A (continued)

Question	Resource Management Unit		Consumer Studies Unit		Course Skills		Totals
	Course content	Mark	Course content	Mark	Knowledge	Evaluation	
8	Prevention of dietary diseases	1			1		1
9			The impact of technological developments on consumer choice of food	2	2		2
10			Sale and Supply of Goods Act 1994	2	2		2
11	Current dietary advice	2			2		2
12			The impact of technological developments on consumer choice of food	2		2	2
13	Factors affecting finished products	2			2		2
14	Market research	2			2		2
Carried forward		**5**		**2**	**7**		**7**
Totals		**12**		**8**	**18**	**2**	**20**

Context:	
Higher Home Economics. Analysis of the 2008 Question Paper	× **Health and Food Technology**

Section B Question 1

Question	Resource Management Unit		Consumer Studies Unit		Course Skills		Totals
	Course content	**Mark**	**Course content**	**Mark**	**Knowledge**	**Evaluation**	
(a)	Prevention of dietary diseases	6			6		6
(b)	The use of DRV's	6				6	6
(c)	Effect of storage and cooking on nutrients	4			4		4
(d)	Current dietary advice	4				4	4
Totals		**20**			**10**	**10**	**20**

Context:		
Higher Home Economics. Analysis of the 2008 Question Paper	×	**Health and Food Technology**
Section B Question 2		

Question	Resource Management Unit		Consumer Studies Unit		Course Skills		Totals
	Course content	Mark	Course content	Mark	Knowledge	Evaluation	
(a)	Current dietary advice	4				4	4
(b)	Current dietary advice (cooking methods)	3			3		3
(c)			Technological developments	2 2		2 2	2 2
(d)	Cross contamination	6			6		
(e)			Environmental Health Officer	3	3		3
Totals		**13**		**7**	**12**	**8**	**20**

Context:		
Higher Home Economics. Analysis of the 2008 Question Paper	×	**Health and Food Technology**

Section B Question 3

Question	Resource Management Unit		Consumer Studies Unit		Course Skills		Totals
	Course content	**Mark**	**Course content**	**Mark**	**Knowledge**	**Evaluation**	
(a)	Product development strategy	4			4		4
(b)	Sensory testing	5				5	5
(c)			Food politics	6	6		6
(d)			Factors which influence consumers choice of food	3		3	3
(e)			European directives	2	2		2
Totals		**9**		**11**	**12**	**8**	**20**

Context:		
Higher Home Economics. Analysis of the 2008 Question Paper	×	**Health and Food Technology**
Section B Question 4		

Question	Resource Management Unit		Consumer Studies Unit		Course Skills		Totals
	Course content	Mark	Course content	Mark	Knowledge	Evaluation	
(a)	Functional properties	6			6		6
(b)	Causes of food poisoning – E Coli	3			3		3
(c)	Current dietary advice/DRV's (convalescent)	4				4	4
(d)			Current statutory/voluntary labelling	4		4	4
(e)			Responsibilities of the Food Standards Agency	3	3		3
Totals		**13**		**7**	**12**	**8**	**20**

Context:		
Higher Home Economics. Analysis of the 2008 Question Paper	×	**Health and Food Technology**

Question Paper Summary: Mark Allocation

Question	Unit title		Course Skills		Totals
	Resource Management	**Consumer Studies**	**Knowledge**	**Evaluation**	
Section A	12	8	18	2	**20**
Section B					
1	20		10	10	**20**
2	13	7	12	8	**20**
3	9	11	12	8	**20**
4	13	7	12	8	**20**
Totals	54-58	22-26	52	28	**80**
Target Range	**50-60 marks**	**20-30 marks**	**50-55 marks**	**25-30 marks**	**80**

[END OF MARKING INSTRUCTIONS]