



2013 Health and Food Technology

Advanced Higher

Finalised Marking Instructions

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Part One: General Marking Principles for Health and Food Technology Advanced Higher

This information is provided to help you understand the general principles you must apply when marking candidate responses to questions in this Paper. These principles must be read in conjunction with the specific Marking Instructions for each question.

- (a)** Marks for each candidate response must always be assigned in line with these general marking principles and the specific Marking Instructions for the relevant question. If a specific candidate response does not seem to be covered by either the principles or detailed Marking Instructions, and you are uncertain how to assess it, you must seek guidance from your Team Leader/Principal Assessor.
- (b)** Marking should always be positive ie, marks should be awarded for what is correct and not deducted for errors or omissions.

GENERAL MARKING ADVICE: Health and Food Technology Advanced Higher

The marking schemes are written to assist in determining the “minimal acceptable answer” rather than listing every possible correct and incorrect answer. The following notes are offered to support Markers in making judgements on candidates’ evidence, and apply to marking both end of unit assessments and course assessments.

Each question is marked out of 25. Markers should use the full range of marks available as indicated in the mark descriptors for an A, B and C response at the top of each question.

Candidates should be rewarded according to the quality of thought revealed in their answers. They should not be rewarded solely, or even mainly, according to the quantity of knowledge conveyed. In progression from Higher a more advanced grasp of the skills of analysis, synthesis and interpretation is required. Credit will be awarded according to the degree of success with which the candidate:

- gives an answer which is relevant to the question and is explicitly related to the terms of the question
- is able to make the various distinctions required by the question
- responds to all the elements in the question in a coherent manner
- applies knowledge and explains, analyses, discusses rather than simply stating facts
- develops the skills of analysis and evaluation through critical appraisal.

Part Two: Marking Instructions for each Question

Section A

Question			Expected Answer/s	Max Mark	Additional Guidance
1	a		<p>Read the report carefully.</p> <p>Using the information in the report and your own knowledge, answer the question below.</p> <p>Outline the main issues of the report.</p> <p>4-5 marks The candidate is able to clearly outline five of the main issues in the report.</p> <p>3 marks The candidate is able to clearly outline some of the main issues in the report.</p> <p>1-2 marks The candidate is able to outline one or two of the main issues in the report.</p>	5	
			<p>Answers should make reference to the following points:</p> <ol style="list-style-type: none"> 1. Perfectly good food is being thrown out by consumers. 2. Households waste too much money on food going to waste 3. Wasting food is detrimental to the environment/climate. 4. £5billion worth of uneaten food is thrown out every year by householders in the UK. 5. Families can waste 10 – 25% of their weekly shop. 6. Each household throws out around £680 of food each year. 7. Food thrown away is still in date and still in its packaging. 8. Energy, water, packaging are all wasted if uneaten food is thrown away. 9. If this avoidable food waste had been consumed, it would prevent the equipment of 1.7 million tonnes of carbon dioxide entering the atmosphere. 10. Much of the food which is wasted is due to confusion over date labels. 11. New labelling guidelines have been released in a bid to help shoppers save money by not throwing away perfectly good food. 		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	a	<p>12. Food and drink should only be labelled with one date – either a 'best before' or a 'use by'.</p> <p>13. "Sell by" or "display until" dates, used for stock control reasons and have nothing to do with the produce being unsafe to eat will be phased out.</p> <p>14. Retailers have made it perfectly clear they do not support key elements of the new guidelines.</p> <p>15. There is a need to educate consumers about the two basic terms – use by and best before.</p> <p>16. But reducing food waste requires a change in people's attitude and behaviour.</p> <p>17. The "Love Food Hate Waste" Campaign aims to educate consumers and reduce waste.</p> <p>18. Smart packaging – which flags up when food is going off – is being developed.</p> <p>19. A natural preventative – bisin – has been discovered by scientists to increase shelf life.</p> <p>20. Bisin has the potential to prevent food poisoning.</p> <p>21. Consumers and the food industry both have a responsibility to prevent food waste and maintain food safety.</p> <p>22. Supermarkets do not agree that labelling is confusing customers.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
1	b		<p>Discuss the role of additives in the prevention of food waste.</p> <p>8-10 marks The candidate is able to develop a full and coherent discussion of the role of additives in the prevention of food waste. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p>6-7 marks The candidate is able to develop a discussion of the role of additives in the prevention of food waste. Some of the main points will be identified with explanation.</p> <p>1-5 marks The candidate is able to identify some of the main points of the role of additives in the prevention of food waste. The discussion is limited with no explanation.</p>	10	
			<p>Answers should make reference to the following points and link to the prevention of food waste:</p> <p>General Points</p> <ol style="list-style-type: none"> 1. Additives are natural or synthetic substances that are added to food to serve particular purposes eg improve the keeping quality of food. 2. Shelf life would not be as good, products would not be as attractive and they would be dearer. 3. Foods have a longer shelf life and so the consumer can store the products for a longer period of time – convenience factor. 4. Food is safer for longer periods of time/ wastage of food is reduced in the home as microbial spoilage is reduced or impaired. 5. They have opened up an area of packaging of foods and so aid to the consumer in terms of storage. 6. Sensory value of the food – flavour, colour and texture is improved by additives therefore encouraging consumption so minimising waste. 		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	b	<p>Preservatives</p> <ol style="list-style-type: none"> 7. Food preservatives have been used for centuries. Humans first learned to preserve meat and fish with salt and smoke so that it would last through the winter. 8. Preservation of food is necessary to ensure a safe supply of nutritious food to all individuals. It is a way of preventing wastage of food when this is in quantities too great for immediate consumption. 9. They help to keep food safer longer by reducing microbial spoilage. 10. They prevent wastage of foods for retailers/consumers as shelf life is extended. 11. Most preservatives are used to prevent the growth of fungi moulds and yeasts so preventing food wastage. 12. Ascorbic acid is effective over a wide range of foods eg beverages, dairy products, fish and seafood, fat based products, fruit and vegetable products, baked goods and confectionary products. 13. Benzoic acid and other benzoates are used as preservatives to prevent yeasts and moulds from growing, most commonly in soft drinks. 14. Sulphur dioxide and sulphites have a very efficient bacterial effect more so than other preservatives and are therefore used when control of bacterial growth is essential. 15. They are used to preserve a wide range of products including soft drinks, packet soup, dried bananas and apricots, tinned crabmeat, sausage meat, burgers, beer, wine quick frozen chips and jams. 16. Preservatives such as nitrites and nitrates are used to cure and preserve a variety of meats, including ham, bacon and luncheon meats. 		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	b	<p>17. Scientists have discovered a natural preservative that could keep food fresh for years by destroying harmful bacteria. The agent called bisin is produced by harmless bacteria and has the capability of destroying a wide range of food decomposing germs including E-coli, salmonella and listeria.</p> <p>18. Researchers claim that bisin can extend the life many daily foods which have strict use-by dates including seafood, meat, eggs, dairy products and canned goods. By using the new preservative many foods remain intact for several years and in some cases there would be no need for refrigeration.</p> <p>Antioxidants</p> <p>19. If used properly they can usefully extend the shelf life of the shelf life of the ingredient and/or the food product in which they have been used.</p> <p>20. Antioxidants prolong the shelf life of foods by protecting against deterioration caused by exposure to air.</p> <p>21. They prevent fats becoming rancid so extending the shelf life, preventing waste and unpleasant flavours.</p> <p>Emulsifiers/Stabilisers</p> <p>22. To maintain product quality and freshness so preventing waste.</p> <p>23. Extends the shelf life so reducing waste.</p> <p>Colours</p> <p>24. Restores the colour in food lost due to processing/enhances colours in certain foods making them more attractive/encouraging consumption therefore reducing waste.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
1	b		<p>Acidulants</p> <p>25. Acidulants are food additives used to impart a sharp, characteristic taste to foods. They also assist in the setting of gels, eg jams, and act as preservatives.</p> <p>26. Acidulants are widely used in processed foods such as soft drinks, deserts, jams, sweets, soaps and sauces. They contribute to taste but are also used to preserve foods by creating an acid environment that prevents the growth of micro-organisms.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
1	c		<p>Critically discuss how food labelling influences consumer choice of food.</p> <p>8-10 marks The candidate is able to critically discuss how food labelling influences consumer choice of food. They demonstrate a clear understanding of the issues involved, giving a full analysis.</p> <p>6-7 marks The candidate is able to critically discuss how food labelling influences consumer choice of food. They demonstrate an understanding of the issues involved, giving some analysis.</p> <p>1-5 marks The candidate is able to critically discuss how food labelling influences consumer choice of food. They demonstrate a limited understanding of the issues involved, giving limited analysis.</p>	10	
			<p>Answers should make reference to the following points linked to consumer choice of food:</p> <p>General Points</p> <ol style="list-style-type: none"> 1. Food labelling is the means by which consumers get information about their food. 2. It is important this information is clear and not confusing so consumers can make informed choices about the food they buy. 3. Food labels are a useful source of information, primarily to inform consumers and enable them to make a decision on which food to buy. 4. By apparently providing reliable relevant information, primarily to inform consumers and enable them to make a decision on which food to buy. 5. Through the labelling requirements in place it makes sure of consistency for the industry and for consumers so they can find the information they need to make these food choices. 6. All food must be clearly marked with its name and description so that the consumer knows exactly what the food is/takes account of likes and dislikes. 		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	c	<p>7. Most pre-packaged food must show a list of ingredients - consumers can then make their choice based on likes and dislikes.</p> <p>8. In the ingredient listings all additives (except flavourings) must be identified, eg colouring, preservatives, etc. This may be important to consumers due to allergies/hyperactivity in children.</p> <p>9. Potential allergens are listed to allow consumers who have allergies to avoid the product.</p> <p>10. Date marks on food products should help consumers make safe and optimum use of the foods they buy.</p> <p>11. Pre-packed food products should carry a date of minimum durability. This would normally be a 'best before' date, which is the date up to and including which the food will be in the best condition.</p> <p>12. A 'use by' date should be used on pre-packed foods that are microbiologically highly perishable and could be a danger to the consumer's health.</p> <p>13. A description of good storage conditions to ensure consumers store correctly.</p> <p>14. Date marks will influence a consumers choice of food if they want to plan meals ahead.</p> <p>15. Clear cooking instructions will help the consumer decide whether they have the skills/time/equipment to prepare the product.</p> <p>16. Place of origin – Some consumers may boycott products from certain countries on moral or political grounds.</p> <p>17. Changing the image of foods, eg soups are now heavily promoted as a way to achieve the Scottish dietary target of 400 g of fruit and vegetables required daily.</p> <p>18. Front of pack labelling introduced to help make decisions easier for consumers.</p> <p>19. Traffic light labelling system developed to make life easier for shoppers.</p>		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	c	<p>20. The red, amber and green panels on the front of food should allow people to assess the levels of essential nutrients in food. Consumers can see at a glance if the food is high, medium or low in certain nutrients which will then help them decide whether they want to purchase that particular item or not.</p> <p>21. Increase in manufacturers and supermarkets adopting traffic labelling to allow fair comparisons when choosing foods.</p> <p>22. Some supermarkets are using the Guideline Daily Amount (GDA) labelling which some consumers prefer and find it easier to interpret.</p> <p>23. Most labels contain nutritional labelling which allows consumers to make healthier choices.</p> <p>24. If the food label is bold and colourful then a consumer may be more drawn to it.</p> <p>25. Labels are meant to inform consumers so the more information they give the easier they should be to understand without misleading the consumer.</p> <p>26. Voluntary food labelling can supply useful information to consumers.</p> <p>27. Individual pieces of voluntary information may be given linked to consumer choice of foods.</p> <p>28. The recycling symbol may encourage consumers who are concerned about the environment to purchase the food product.</p> <p>29. Health claim can influence consumers choice of food.</p> <p>30. Food companies do not have to provide nutritional information, but if they are making a claim such as 'low sugar' or 'low fat' they need to provide nutritional information to support that claim.</p> <p>31. Marketing terms are phrases used by business to inform the consumer about the nature of their product. Many of these terms such as 'fresh', 'pure', 'light' and 'natural' are not defined in law but when used must not be misleading for consumers.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>32. Information from consumers suggests that some people find labels difficult to use.</p> <p>33. Labelling is not sufficiently precise to enable those with specific allergies to avoid those ingredients to which they react. The use of terms like “nuts”, “vegetable protein”, “lecithin” and “modified starch” may unnecessarily restrict the choice of those who are allergic to some.</p> <p>34. Consumers observing strict religious or other dietary regimes often find it difficult to decide from the information on the label if a food is genuinely free of animal products.</p> <p>35. Consumers want to be able to support those foods produced humanely and think it essential that information about the production systems used should be given clearly on the label.</p> <p>36. Consumers want more information about the country of origin of the products they buy, particularly on meat and poultry, and their products.</p> <p>37. Many consumers have serious difficulties in using the information on food labels because of the way it is presented and the print size used.</p> <p>38. Different supermarkets and manufacturers are using different types of front of pack labelling which can be confusing for the consumer.</p> <p>39. Brand names may influence consumer choice.</p>		

Section B

Question	Expected Answer/s	Max Mark	Additional Guidance
1	<p data-bbox="250 255 272 293">a</p> <p data-bbox="349 271 916 389">“It is predicated that obesity rates could reach 40% by 2013.” The Scottish Health Survey: Topic Report: Obesity, the Scottish Government 2011</p> <p data-bbox="349 427 879 524">Discuss how the Scottish dietary targets could contribute to a reduction in obesity levels.</p> <p data-bbox="349 555 507 584">8-10 marks</p> <p data-bbox="349 613 911 846">Candidates are able to develop a full and coherent discussion of how the dietary targets could help contribute to a reduction in obesity levels. The discussion shows a good analysis and identification of the majority of the main points with full explanations.</p> <p data-bbox="349 875 491 904">6-7 marks</p> <p data-bbox="349 934 911 1099">Candidates are able to develop a discussion of how the dietary targets could help contribute to a reduction in obesity levels. Most of the main points will be identified with some explanations.</p> <p data-bbox="349 1128 491 1158">1-5 marks</p> <p data-bbox="349 1187 911 1247">Candidates are able to identify some of the main points with limited explanations.</p> <p data-bbox="349 1276 911 1404">Answers should make reference to the following points and link to the Scottish dietary targets and the reduction of obesity levels;</p> <p data-bbox="349 1433 911 1494">Fruit and vegetables – average intake to double to 400g per day</p> <ol data-bbox="349 1523 911 1794" style="list-style-type: none"> <li data-bbox="349 1523 911 1650">1. A diet which is high in fruit and vegetables will reduce the opportunity to consume foods which are higher in fat and so lessen the risk of obesity <li data-bbox="349 1657 911 1794">2. Many ways of consuming fruit and vegetables do not involve large quantities of fat in either preparation or cooking making them lower in Kj/Kcals 	10	

Question		Expected Answer/s	Max Mark	Additional Guidance
1	a	<p>(Cont.)</p> <ol style="list-style-type: none"> Changing diet to consume more fruit and vegetables may in turn change ones palate and hopefully such changes may result in a reduction in the intake of fats and fatty foods which may help reduce obesity Feeling of satiety due to fibre content and chewing so less risk of snacking on fatty/sugary foods. Fruit and vegetables are low in fat or contain no fat so assist the overall reduction in fat in the diet and do not greatly increase calorie intake. Fruit and vegetables are low in sugar or so are useful as they do not greatly increase calorie intake. <p>Bread – intake to increase by 45% mainly using wholemeal and brown bread</p> <ol style="list-style-type: none"> Bread is rich in starchy carbohydrate and is very filling thus reducing the need to fill up on fatty foods which may help reduce obesity Bread in the form of sandwiches could contribute to a reduction in obesity because it is a filling food, but this depends on the spread or filling used. <p>Fats – average intake of total fat to reduce from 40% to no more than 35% of total energy intake Fats – average intake of saturated fatty acids to reduce from 16.6% to no more than 11% of total energy intake</p> <ol style="list-style-type: none"> Following this target would reduce the consumption of fat to satisfactory levels and reduce the energy content of the diet Fat is a concentrated source of calories which, if not used up through activities, will contribute to obesity. 		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	a	<p>(Cont.)</p> <p>11. Choice of foods lower in fat, such as fat reduced products and choice of cookery methods, would help to lower fat content of diet</p> <p>12. If this target is met it is likely that alternative sources of energy would be sought, there is an opportunity for this extra energy to come from starchy carbohydrate foods which are less energy dense</p> <p>Total complex carbohydrates increase average non-sugar intake by 25%</p> <p>13. Increasing bulk in the diet by consuming more complex carbohydrate will reduce the need to snack on fatty foods between meals which could help reduce obesity</p> <p>14. Increasing the proportion of starchy carbohydrates eaten with meals will reduce the need to serve high fat foods to make meals filling and so help reduce obesity</p> <p>15. Complex carbohydrates provide a steady supply of energy, helping blood sugar levels to remain stable and thus preventing snacking on high-fat foods.</p> <p>Breakfast cereals – average intake to double to 34g</p> <p>16. Consumption of breakfast cereals, particularly those high in fibre, reduces the need/desire to snack throughout the rest of the day. Many snack foods are high in fat and could contribute to obesity</p> <p>17. Breakfast cereals low in fat/sugar should be chosen to reduce the risk of obesity</p>		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	a	<p>(Cont.)</p> <p>Average intake of NME sugars in adults not to increase</p> <p>Average intake of NME sugars in children to reduce by half to no more than 10% of total energy</p> <p>18. Snacking on high sugar foods can add significant amounts of energy to the diet so reducing this could help reduce obesity</p> <p>19. Consumption of large quantities of highly sugared fizzy drinks could contribute to obesity, so reducing this level could lessen the risk of obesity</p> <p>20. Sugar provides calories which, if not used up through activities, may contribute to obesity so reducing this especially for children will help prevent obesity</p> <p>21. A 'sweet tooth' may develop, especially in childhood, which may be difficult to break in later life so trying to prevent this by reducing sugar intake when young could help the issue of obesity in later life.</p> <p>White fish consumption to be maintained at current levels.</p> <p>22. White fish contains only a little oil, therefore is helpful to weight control.</p> <p>23. Careful choice of cooking method, eg grilling or steaming. Will also reduce fat content</p> <p>Proportion of mother's breast feeding their babies for the first 6 months of life to increase to 50%</p> <p>24. Evidence suggests that babies which are breast fed are less likely to suffer from obesity in later life</p> <p>25. Helps the mother lose weight after childbirth and so helps prevent obesity.</p> <p>General</p> <p>26. An interest in healthy eating may be generated by knowledge of the Scottish dietary targets. This interest may result in a change of eating habits eg a reduction of fat</p>		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	b	<p>Critically discuss the role of parents in the prevention of childhood obesity.</p> <p>12-15 marks</p> <p>The candidate is able to critically discuss the role of parents on preventing childhood obesity, giving full analysis.</p> <p>9-11 marks</p> <p>The candidate is able to critically discuss the role of parents on preventing childhood obesity, giving some analysis.</p> <p>1-8 marks</p> <p>The candidate is able to critically discuss the role of parents on preventing childhood obesity, giving limited analysis.</p> <p>Answers should make reference to the following point linked to the role of parents in the prevention of childhood obesity;</p> <p>Development of sensible eating habits'</p> <ol style="list-style-type: none"> 1. Parent's eating habits are passed on to their children and children learn to like foods made by parents, there is an opportunity to make the foods eaten lower in fat. 2. Foods eaten during pregnancy may have an affect on eating habits in later life, so lower fat/sugar diet at this time may help prevent obesity. 3. The person doing the shopping is usually most involved with the provision of food and so is the main influence on the sorts of foods the child eats. 4. Lifelong eating habits are established in childhood so it is vital good habits are established in childhood 5. Parents may want their children to be healthy so may buy products lower in fat, sugar and salt and high in fruit or vegetables to help develop a taste for these and so reducing the risk of obesity now and in the future. 	15	

Question		Expected Answer/s	Max Mark	Additional Guidance
1	b	<p>(Cont)</p> <ol style="list-style-type: none"> 6. Encouraging the eating of a variety of foods at an early age is likely to promote good eating habits throughout life 7. Encouraging children to eat the correct balance of foods/nutrients contributes to the maintenance of a healthy weight/reduces risk of obesity 8. Children should be encouraged to eat proper meals so reducing the need to snack on fatty sugary foods which are high in calories 9. Children may be unwilling to try new healthy options if they have not seen and tried them at home, so offer a wide range of foods to children 10. Financial situation of the family may mean that foods consumed at home are limited, these limited choices may be a cause for similar unhealthy choices at school 11. Parents can buy a range of fruit and vegetables to have at home so the choice is there. By putting the fruit bowl at children's height, they can access it easily and so snack on this rather than high fat/sugar snacks 12. Changing cooking methods at home to reduce fat content 13. Breastfeeding babies introduces their palate to a broader range of foods at an earlier age which means they are more likely to eat a wide range of foods in later life which may include less fatty/sugary types. 14. Provide 'healthy' lunch boxes which are nutrient dense rather than energy dense. 15. Encourage children to eat a good breakfast every day as this is known to reduce the desire to snack throughout the day 16. Make meals at home filling to reduce snacking between meals. 17. Encourage children to get involved in cooking and understanding food at home. 		

Question		Expected Answer/s	Max Mark	Additional Guidance
1	b	<p>(Cont.)</p> <p>18. Reward healthy food choices, eg sticker scheme/avoid the use of rewards which focus on unhealthy foods, eg trips to fast-food outlets, sweets.</p> <p>19. Do not have fatty/sugary snacks readily available at home. Start providing healthy options when children are very young. It can even be too late once they are toddlers to change some eating habits.</p> <p>20. Encourage children to choose the fruit and vegetables when shopping.</p> <p>Attitudes towards food</p> <p>21. If food is used as a comfort it can lead to eating for the wrong reasons and may lead to obesity</p> <p>22. If food is used as a treat it can lead to eating for the wrong reasons and may lead to obesity</p> <p>23. Encouraging meals to be a social occasion more time is spent eating so a greater feeling of fullness which lead to less snacking/grazing</p> <p>24. If meals seen as a social occasion then there is less eating on ones own which is often when overeating takes place</p> <p>25. Family meals encourage children to try new foods so this could reinforce good eating habits</p> <p>26. Children copy adults eating habits so it is vital they are good role models.</p> <p>Changes to exercise patterns</p> <p>27. Parents can encourage children to exercise more by setting a good example and exercising themselves</p> <p>28. Parents can walk children to school instead of taking the car</p> <p>29. Parents can take children to the park, swimming lessons etc and make exercise part of their life</p>		

Question	Expected Answer/s	Max Mark	Additional Guidance
2	<p>Discuss the stages involved in the product development process of an organic vegetable soup.</p> <p>18-25 marks</p> <p>The candidate is able to develop a full and coherent discussion of the stages involved in the product development process of an organic vegetable soup. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p>15-17 marks</p> <p>The candidate is able to develop a discussion of the stages involved in the product development process of an organic vegetable soup. Some of the main points will be identified with explanation.</p> <p>12-14 marks</p> <p>The candidate is able to develop few stages involved in the product development process of an organic vegetable soup. The discussion is limited with no explanation.</p> <p>Answers should make reference to the following points linked to product development process of an organic vegetable soup.</p> <p><u>Market Research</u></p> <ol style="list-style-type: none"> 1. Development of ideas from market analysis, perhaps even trialling of organic vegetable soups, looking at, for example why a particular flavour is popular, looking for something similar but new. 2. To find out if there is a gap in the market which could be filled by this organic vegetable soup eg indulgence/ economy market. 3. To find out consumers opinions regarding a suitable product. 4. To find out about the competition, what is available and what could be adapted. 5. It could also be used to evaluate the product gaining important public opinions on for example, its sensory qualities, cost, packaging etc. 	25	

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <p><u>Concept Generation</u></p> <ol style="list-style-type: none"> 6. This is an important stage as it involves developing ideas for new products. 7. Thinking stage – thinking up new ideas, perhaps even looking for a gap in the market. 8. This stage allows the organic vegetable soup to be developed from market analysis/trialling existing organic vegetable soups to establish why they are popular/ disassembly or analysis of existing organic vegetable soups product. 9. Brainstorming sessions by individuals or teams may take place. 10. Manufacturers do not want to replicate something which is already on the market, they must put a new slant on it. 11. Things such as cost (if using organic ingredients which are more expensive making the overall product more expensive), portion size, flavour, texture and appearance will be considered at this stage. 12. Particular target groups may also have to be considered –people who buy organic products on a regular basis. 13. This is one of the initial stages and without it the development process cannot take place. 		

Question	Expected Answer/s	Max Mark	Additional Guidance
	<p>(Cont.)</p> <p><u>Concept Screening</u></p> <p>14. Consider all ideas, keep some and discard some.</p> <p>15. This stage is important as it allows the production process to move away from initial ideas to actual development issues.</p> <p>16. Allows the manufacturer to develop a specification against which to develop ideas.</p> <p>17. Specification allows manufacturer to eliminate ideas that might be costly, difficult to process/not meet other constraints.</p> <p>18. The cost of ingredients may have an impact on the final recipe for the organic vegetable soup. The recipe may need to be altered/quality may be compromised.</p> <p>19. The best ideas are taken forward and a specification is written.</p> <p>20. Allows product ideas to be generated so that a prototype can be developed.</p> <p><u>Development of a prototype</u></p> <p>21. Food producers will research the quality and cost of every ingredient used in the organic vegetable soup. This could mean travelling to other countries to access the best/most suitable quality.</p> <p>22. A prototype is an example or specimen of what the organic vegetable soup will be like.</p> <p>23. This would be done in a test kitchen and the organic vegetable soup is developed here and measured against the specification.</p> <p>24. The organic vegetable soup will be tested for appeal, perhaps using a small experienced team to carry out a sensory evaluation, and it may be further modified, accepted or rejected.</p> <p>25. The prototype will be discussed by all interested parties – the client, design team, production team, marketing team, costing team etc.</p>		

Question	Expected Answer/s	Max Mark	Additional Guidance
	<p>(Cont.)</p> <p><u>Product testing</u></p> <p>26. Many manufacturers test new products on potential consumers before moving on to large scale production, so various opinions can be obtained.</p> <p>27. Scaling up is required from initial recipe for one that is suitable for mass production for the organic vegetable soup.</p> <p>28. This would allow the organic vegetable soup to be further refined or eliminated as a result of consumer opinions.</p> <p>29. It allows for a range of possible solutions to be further refined with the most suitable organic vegetable soup being kept.</p> <p><u>Packaging design</u></p> <p>30. This is when the packaging design team would consider the image of the organic vegetable soup and the target market and start to create a design which will attract consumers and help to sell the organic vegetable soup.</p> <p>31. The type of packaging will be investigated, tested and costed.</p> <p>32. Legal labels will be designed and produced.</p> <p>33. Sustainable and environmental ideas and materials for the packaging might be discussed, researched and considered.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont)</p> <p><u>First production run</u></p> <p>34. This allows for the production of the actual organic vegetable soup for the first time as a full production run so the run can be assessed for success/new machines may be required.</p> <p>35. It enables the quality assurance team to test the organic vegetable soup to ensure quality, safeguard staff health and uniformity of standards during the manufacturing processes.</p> <p>36. It allows the manufacturer to maintain food safety standards and to consider HACCP issues.</p> <p>37. This stage allows for potential production problems to be sorted out before large scale production begins as this may in future result in 'down time' when production has to be stopped.</p> <p>38. This is a vital stage as it is here that changes may take place which could affect other aspects of the product eg changes to the ingredients will result in changes having to be made to the ingredients list on the label/ ordering of new equipment/ machinery to carry out specific parts of the process.</p> <p><u>Marketing plan</u></p> <p>39. This allows for a range of activities to be developed to promote the organic vegetable soup eg where it will be sold, position in the shop, special introductory offers etc.</p> <p>40. This is important as it may help determine the initial price of the organic vegetable soup eg low to attract new customers, higher to denote quality.</p> <p>41. Packaging can now be finished to take account of marketing plans/ product price.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <p><u>Product launch</u></p> <p>42. An important stage of the plan as the organic vegetable soup is now on sale.</p> <p>43. Piloting of the product could 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 product).</p> <p>44. Market monitoring: finally the organic vegetable soup is launched into the national market-place. Promoting awareness to future customers.</p> <p>45. Sales figures will be checked very carefully initially and gain the key role of market research will provide regular feedback so that manufacturer can continually rethink and readapt the marketing approach as quickly, economically and effectively as possible.</p> <p>46. Market research will provide regular feedback. This allows the product to continue to be refined and improved.</p> <p>47. If successful the product will continue to be sold.</p> <p>48. If sales are low then the product may be withdrawn and the product refined or rejected.</p> <p>49. Type of retail outlet suitable for launching a product may have to be carefully considered to ensure a high profile during launch and the correct target group attracted.</p> <p>50. A range of promotional techniques need to be used to help promote the sales of the organic vegetable soup eg in store tasting/special offers/TV adverts etc.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <p>Use of computer technology in food production</p> <p>The candidate could include reference to the use of computer technology at some of the stages in the product development process previously outlined.</p> <p>51. Computer Aided Design (CAD) software encompasses all areas of product development, from idea generation and research, investigating the functionality and interactivity of different ingredients, producing manufacturing flow-charts to assess food safety issues, knowledge-based systems and innovative imaging systems for product quality and fault diagnostic purposes.</p> <p>52. Computer Aided Manufacture (CAM) is increasingly used by the food industry to help in the manufacture of food products. There has been an increasing demand for machines to take over the more complex operations previously carried out by hand, eg chopping/peeling of vegetables. This would improve consistency and quality control, reduce overheads and increase production capacity.</p> <p>53. Computer Integrated Manufacture (CIM) means that computers are used as an integral element of the entire manufacturing process. It involves computer-based process control and automation; operations and information systems for manufacturing and quality control. The hope that profitability can be increased or maximized with automation has been a driving force for computer integrated manufacturing (CIM).</p>		

Question	Expected Answer/s	Max Mark	Additional Guidance
3	<p>Discuss the contribution of antioxidants to the health of individuals.</p> <p>18-25 marks</p> <p>The candidate is able to develop a full and coherent discussion of the contribution of antioxidants to the health of individuals. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p>15-17 marks</p> <p>The candidate is able to develop a discussion of the contribution of antioxidants to the health of individuals. Most of the main points will be identified with explanation</p> <p>1-14 marks</p> <p>The candidate is able to identify some of the main points with limited explanation</p> <p>Answers should make reference to the following points;</p> <p>General points;</p> <ol style="list-style-type: none"> 1. Antioxidants neutralise or scavenge ('gobble up') substances called free radicals that would otherwise damage cells, membranes and DNA 2. Free radicals can damage cells, membranes, DNA genetic material and other body structures and so set the scene for tissue injury that eventually lead to diseases such as cancer, heart disease 3. Nutritionists believe that free radicals cause LDL – cholesterol to become oxidised, causing them to be deposited in the walls of blood vessels starting the process of atherosclerosis. LDL – cholesterol only becomes harmful when it is oxidised <p>Carotenoids</p> <ol style="list-style-type: none"> 4. Some carotenes, notably beta-carotenes, are converted into vitamin A in the intestine. Carotenoids are important in their own right as protective antioxidants 5. Has antioxidant properties – important in the prevention of cancers/disease 	25	

Question	Expected Answer/s	Max Mark	Additional Guidance
	<p>(Cont.)</p> <p>Beta-carotene</p> <ol style="list-style-type: none"> 6. It is converted to vitamin A in the body and is the best known and most abundant carotenoids, it plays an important role in inactivating free radicals 7. Helps to improve the immune capacity of the body 8. Is known to inhibit the early stages of tumour development <p>Alpha-carotene</p> <ol style="list-style-type: none"> 9. Acts as an antioxidant and is converted to vitamin A in the body. High intakes are associated with decreased risk of lung cancer. <p>Beta-cryptoxanthan</p> <ol style="list-style-type: none"> 10. Acts as an antioxidant is converted to vitamin A in the body. High intakes are associated with decreased risk of cancer of the cervix. <p>Lutein and zeaxanthin</p> <ol style="list-style-type: none"> 11. Protect the macula of the eye from deterioration, which can be a leading cause of vision loss among older adults. <p>Lycopene</p> <ol style="list-style-type: none"> 12. The most powerful antioxidant of all the carotenoids. 13. High intakes of lycopene have been linked to a lower risk of prostate cancer in men 14. Lycopene is fat soluble and is carried in the bloodstream attached to the 'dangerous' LDL cholesterol, where it seems to work in conjunction with vitamin E to protect LDL from oxidation. It may therefore have a positive effect on heart disease prevention. 15. Lycopene's role in fighting cancer of the lungs, cervix and digestive tract is also being investigated. 16. Lycopene may help to protect the skin against UV light in the short term (sunburn) as well as over the long term (cumulative effects of the sun exposure and skin cancer). 		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <p>Vitamin C</p> <p>17. Necessary for healing wound/sores – vital for old and for preventing scurvy</p> <p>18. It is an important antioxidant, especially in the regeneration of oxidised vitamin E in membranes in the body. In this way it is important in maintaining membrane structure.</p> <p>19. It has been shown to reduce cancers of the digestive tract (oesophagus, stomach and pancreas).</p> <p>20. Antioxidant properties beneficial to elderly at risk from cancers/disease</p> <p>21. Assists with the absorption of iron and prevention of anaemia – essential that women have adequate amounts</p> <p>22. Required to make connective tissue which binds body cells together</p> <p>23. Required for the building and maintenance of skin and linings of the digestive system</p> <p>Vitamin E</p> <p>24. Vitamin E is present in cell membranes, where it acts as an antioxidant and quenches free oxygen radicals, protecting the lipids of cell membranes from damage. In doing so it is rendered inactive but is restored by reacting with vitamin C.</p> <p>25. Vitamin E protects LDL cholesterol from oxidation and helps prevent CHD and certain forms of cancer.</p> <p>Selenium</p> <p>26. Selenium works in combination with vitamins C and E. It is a component of the antioxidant enzymes glutathione peroxidase, which reduces peroxides before they can attack intracellular membranes</p> <p>27. Selenium also enhances immune response.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <p>Zinc</p> <p>28. Zinc is part of the enzyme superoxide dismutase, which prevents free radicals from forming peroxides.</p> <p>Copper</p> <p>29. Copper is a component of several enzymes and as such it has an important role in many reactions, including the quenching of free radicals.</p> <p>30. Copper is also involved in forming blood cells.</p> <p>Antioxidants – enzymes</p> <p>31. Superoxide dismutase containing copper and manganese prevents free radicals from forming peroxides that can harm tissues.</p> <p>32. Glutathione peroxidase containing selenium reduces peroxides therefore preventing them from attacking cellular membranes.</p> <p>Antioxidants – flavonoids</p> <p>33. The flavonoids found in tea are powerful antioxidants and free radical scavengers. Flavonoids are associated with good cardiovascular health.</p>		

Question	Expected Answer/s	Max Mark	Additional Guidance
4	<p data-bbox="347 192 924 255">Discuss the role of the media in influencing teenagers' food choices.</p> <p data-bbox="347 293 523 320">18-25 marks</p> <p data-bbox="347 358 917 591">The candidate is able to develop a full and coherent discussion of the role in which the media may influence the food choices of teenagers. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p data-bbox="347 629 523 656">15-17 marks</p> <p data-bbox="347 694 903 860">The candidate is able to develop a discussion of the role in which the media may influence the food choices of teenagers. Most of the main points will be covered with explanation.</p> <p data-bbox="347 898 523 925">12-14 marks</p> <p data-bbox="347 963 879 1025">The candidate is able to identify some of the main points with limited explanation.</p> <p data-bbox="347 1064 906 1167">Note: Candidates should link responses to the "role" of the media not focus solely on the methods employed.</p> <p data-bbox="347 1205 895 1267">Answers should make reference to the following points:</p> <p data-bbox="347 1305 560 1332">General Points</p> <ol data-bbox="347 1370 919 1939" style="list-style-type: none"> 1. Evidence suggests that teenagers take notice of simple messages, especially those that confirm what they believe or want to believe. 2. Teenagers are more likely to pay attention to the content of the message, and be persuaded by the arguments put forward for a proposition or product. 3. Advertisements for teenagers are more likely to appeal through witty or stylish imagery and subtle messages. 4. Teenagers can be bombarded with marketing. Elaborate and sophisticated advertisements on the radio, television, the Internet, at the movies, on billboards and in magazines assail them 	25	

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <ol style="list-style-type: none"> 5. Idealised media images of the female (and male) body also influences food choices; young girls are particularly at risk of developing eating disorders. 6. Many of the food advertisements aimed at teenagers are for fast foods, breakfast cereals, snacks and confectionary that are high in sugar, salt and cheap fats and are nutritionally inadequate but they are powerful and persuasive. 7. Teenagers are a vulnerable population for a lucrative market, and advertisers in the media often target specific campaigns directly at them. 8. The heavy marketing directed towards teenagers appears to be driven largely by the desire to develop and build brand awareness/ recognition, brand preference and brand loyalty eg towards a fast food manufacturer <p>Techniques used by the media:</p> <ol style="list-style-type: none"> 9. The media is very powerful when it comes to influencing teenager's food choices, a variety of techniques are used. 10. Information about products is provided by a variety of media: television, radio, Internet, text messages, magazines, poster advertising, packaging, food labelling and adverts. 11. Advertisers target teenager's by using well known characters to sell food. 12. Promotional characters/films/free gifts used to entice teenager's into fast food outlets etc. 		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <p>13. Now more restrictions on food adverts during popular teenager's programmes.</p> <p>14. The media use events such as football matches to advertise their products eg posters round the pitch.</p> <p>15. Advertisers sponsor programmes they know teenager's watch</p> <p>16. Several international fast food companies have sponsored sporting events, teams and leagues eg McDonald's is one of the largest sponsors and this can influence teenagers</p> <p>17. Product placement within teenager's TV programmes/films/soaps.</p> <p>18. Adverts put pressure on teenager's to persuade parents into buying foods.</p> <p>19. Adults/Teenager's magazines are used to target particular teenagers.</p> <p>20. Jingles are used to attract their attention.</p> <p>21. Celebrities are used to create images round foods.</p> <p>22. Promotion of free schools equipment through purchase of foods can encourage teenager's to buy/adults to buy for teenagers.</p> <p>23. Websites may promote foods to teenagers.</p> <p>24. Multi global branding allows all channels from all over the world to bombard teenagers with the same messages.</p> <p>25. Advertising could be used in a positive way to encourage teenagers to improve their food choices.</p> <p>26. The media eg articles, documentaries could be used in a positive way.</p>		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <p>27. Older children are attracted by a product's social appeal – one manufacturer targets their drinks to adolescent and young adult consumers, who enjoy entertainment, music and sports.</p> <p>28. Campaigns such as 'text2win' competitions can be found printed on food packaging.</p> <p>29. Companies create a branded presence in chat rooms by forming online communities which teenagers can eat and drink cyber versions of the junk foods.</p> <p>30. Junk food can also be placed in the background of many popular computer games.</p> <p>31. Most teenagers have mobile phones which use Apps, advertising can be cleverly placed in these apps.</p> <p>32. Many companies have their own websites which teenagers can direct themselves to and play games, enter free prize draws etc.</p>		

Question	Expected Answer/s	Max Mark	Additional Guidance
5	<p data-bbox="347 188 852 286">Discuss the choice and function of the main ingredients used in the manufacture of baked goods.</p> <p data-bbox="347 315 523 347">18-25 marks</p> <p data-bbox="347 376 852 604">The candidate is able to develop a full and coherent discussion of the choice and function of the main ingredients in baked goods. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p data-bbox="347 633 523 665">15-17 marks</p> <p data-bbox="347 694 852 855">The candidate is able to develop a discussion of the contribution of choice and function of the main ingredients in baked goods. Most of the main points will be identified with explanation</p> <p data-bbox="347 884 507 916">1-14 marks</p> <p data-bbox="347 945 879 1008">The candidate is able to identify some of the main points with limited explanation</p> <p data-bbox="347 1037 842 1167">Answers should make reference to the following points linked to the choice and function of the main ingredients in baked goods. ;</p> <p data-bbox="347 1196 635 1227">Flour/raising agents</p> <ol data-bbox="347 1256 879 1957" style="list-style-type: none"> 1. Wheat flours find their principle applications in the production of bakery products. Most bakery products are leavened, ie they are raised by some means to yield baked goods of low density 2. Yeast-raised goods include breads and sweet doughs leavened by carbon dioxide from yeast fermentation. 3. Chemically-leavened goods include cakes and biscuits raised by carbon dioxide from chemical agents, eg baking powders. Baking powders used in cake-making contain particles of sodium bicarbonate as a source of carbon dioxide when water and heat are supplied. 4. Air-leavened goods include sponges whisked to include air, which is then used to raise the product. 	25	

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <p>27. Partially leavened goods include pie crusts, certain crackers and other items where no intentional leavened agents are used yet a slight leavening occurs due to the expanding steam and other gases during the baking process.</p> <p>28. Self-raising flour is made by adding an acidic raising agent and sodium bicarbonate to soft flour to allow carbon dioxide to be formed during the cooking process, which aerates the dough.</p> <p>29. Wholemeal flour may be used to add more NSP to baked products</p> <p>30. Fortified flours may be used to increase the nutritional value of baked goods eg fortification with folates or B vitamins</p> <p>31. Gluten free flours may be chosen for baked goods made for people with coeliac disease.</p> <p>Sugar</p> <p>1. Sugar provides sweetness to baked goods.</p> <p>2. Sugar helps to colour baked goods. When it is heated in a liquid it begins to caramelise.</p> <p>3. When sugar and amino acids interact together in baked products then non-enzymic browning takes place (also called the Maillard reaction).</p> <p>4. Sugar also helps to aerate mixtures and so makes them light and risen. When fat and caster sugar are creamed together, the air sticks to the sugar crystals. The fat surrounds the air bubbles and traps them in the mixture and so the mixture rises when cooked.</p> <p>5. Sugar increases the coagulation temperature of eggs and gluten in a mixture. The air bubbles in the mixture have more time to expand before the mixture sets, making the product lighter and well risen.</p>		

Question	Expected Answer/s	Max Mark	Additional Guidance
	<p>(Cont.)</p> <ol style="list-style-type: none"> The water-attracting property of sugar also helps to make baked products tender. Sugar takes up some of the water that would be taken up by the protein (gluten) in the flour. Gluten development is reduced and so a softer and more tender crumb is produced. Sugar may add to the energy value of baked goods, so on occasion sugar-substitutes may be used to help reduce the sugar content. <p>Fats and shortenings</p> <ol style="list-style-type: none"> Fats such as soft margarine trap air bubbles when creamed with sugar. This helps make baked products light. Fats have a shortening effect in pastry and biscuits. The fat coats the particles of flour and reduces the amount of water that can be absorbed by the flour due to the waterproof coating of fat. The plasticity of the fat allows it to surround and coat the flour particles. The shortening effect results in a crumbly short texture once baked eg shortbread, short crust pastry. Fats may add to the energy value of baked goods so on occasion fat replacers may be used to make goods more in line with the Scottish dietary targets. <p>Eggs</p> <ol style="list-style-type: none"> Thickening agent – egg protein coagulates, enabling mixtures to thicken, for example a baked quiche. Foaming – when egg whites are beaten, air is incorporated and the protein partially coagulates and forms a foam. Meringues are prepared in this way and set when baked 		

Question			Expected Answer/s	Max Mark	Additional Guidance
			<p>(Cont.)</p> <ol style="list-style-type: none"> 3. Aeration – eggs are used in creamed mixtures to produce lightness in products, air bubbles expand on heating and make mixtures rise eg a whisked sponge 4. Flavour and colour – eggs provide a rich colour to some products and also add flavour to otherwise insipid baked products. 5. Egg wash can be used as a glaze on scones or pastry to give a rich, shiny golden colour 6. Eggs may be added to baked products to improve their nutritional value <p>Bread making</p> <ol style="list-style-type: none"> 7. Bread is made from a dough of wheat flour, water, salt and yeast. 8. When the dough is baked, the increase in temperature causes the carbon dioxide bubbles to expand within the dough, thereby causing a further rise in the volume of the bread. 9. During baking, the expansion of the carbon dioxide causes the bread to rise rapidly and the alcohol is driven off. 10. The heating also causes the protein to 'set', turning the dough into bread. 11. At a temperature of approximately 54°C the yeast is inactivated. 12. The action of heat and steam on the outside of the bread forms dextrin, which converts to caramel, giving the crust its brown colour 13. Gelatinisation is also important in baked goods, for example bread and other flour goods, where it contributes to the desired crumb structure and texture of the product. 14. Storage behaviour and the rate of digestion are also affected by the gelatinisation of starch in baked goods 		

Question	Context	Elaboration	Skills Knowledge	Evaluation	Totals
Section A (a)	Food Politics	EU Directives The role of DEFRA The influence of economic, environmental factors on food consumption factors	5		
(b)	Biochemistry, preservation and processing	Food Additives – preservatives, anti-oxidants, emulsifiers, colourings	10		
(c)	Food Politics	EU Directives The influence of economic, environmental factors on food and consumption factors		10	
					25
Section B 1 (a)	Food politics	<ul style="list-style-type: none"> Food and nutrition health policies – Scotland and abroad Issues related to health in Scotland 	10		
(b)	Food politics	<ul style="list-style-type: none"> Food and nutrition health policies – Scotland and abroad Issues related to health in Scotland 		15	
					25
2	The Food Chain	<ul style="list-style-type: none"> Product design and quality. 	25		25
3	Nutrients and their effect on the health and development of individuals	<ul style="list-style-type: none"> Anti-oxidants – role in health 	25		25
4	Psychology of food	<ul style="list-style-type: none"> Influence of consumers Role/impact of the media Consumer attitudes to food issues Consumer behaviour 	25		25
5	Food commodities Food Science	<ul style="list-style-type: none"> Cereals and baked goods Eggs The properties and uses of carbohydrates, fats 	25		25

[END OF MARKING INSTRUCTIONS]