



2014 Health and Food Technology

Advanced Higher

Finalised Marking Instructions

© Scottish Qualifications Authority 2014

The information in this publication may be reproduced to support SQA qualifications only on a non-commercial basis. If it is to be used for any other purposes written permission must be obtained from SQA's NQ Assessment team.

Where the publication includes materials from sources other than SQA (secondary copyright), this material should only be reproduced for the purposes of examination or assessment. If it needs to be reproduced for any other purpose it is the centre's responsibility to obtain the necessary copyright clearance. SQA's NQ Assessment team may be able to direct you to the secondary sources.

These Marking Instructions have been prepared by Examination Teams for use by SQA Appointed Markers when marking External Course Assessments. This publication must not be reproduced for commercial or trade purposes.

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

Question		Expected Answer(s)	Max Mark	Additional Guidance
1.	(a)	<p>Outline the main issues in 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 one or two 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>		
		<p>Answers should make reference to the following points:</p> <ol style="list-style-type: none"> 1. Scotland is the most obese country in the UK with 65% of adults being classed as obese or overweight/37% of adults being overweight and 25% being obese. 2. The World Cancer Research Fund has stated that the two main factors which contribute to obesity are poor diet/ consuming too much sugary/fatty/ processed foods and sedentary lifestyles. 3. The WCRF think big changes like better labelling would help people make healthier choices. 4. Changes to town planning could encourage physical activity. 5. Others believe that the introduction of a 'fat tax' to be added to the cost of unhealthy food and drink to discourage their consumption is the answer. 6. Researchers believe that increasing the cost of 'junk food' could mean fewer people buying them. 7. This might lead to a drop in obesity rates and subsequently fewer deaths from heart disease. 8. Subsidising the cost of fruit and vegetables for consumers might help increase their consumption. 9. The food industry is against the fat tax as it might damage the food industry and lead to job losses. 10. Research suggests that if the tax is high enough it will put people off buying these foods. 11. Increasing the cost of sugary drinks may have the most beneficial effect on health 	5	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>12. By the time they start school one in ten/ 10% of Scottish children are obese.</p> <p>13. More people are dying from obesity related illnesses in Scotland every year and this is very costly to the health service.</p> <p>14. Despite government guidelines for exercise most people still lead sedentary lives/rarely take regular exercise, which contributes to obesity.</p> <p>15. Not being overweight/obese reduces the risk of cancer/heart disease and type 2 diabetes.</p> <p>16. A “fat tax” could reverse the risk of obesity.</p> <p>17. Important that consumers are able to access healthier options which are affordable.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
(b)	<p>8-10 marks The candidate is able to develop a full and coherent discussion of the health implications of being overweight and obese. This 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 health implications of being overweight or obese 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 health implications of being overweight or obese the discussion is limited with no explanation.</p>		
	<p>Answers should make reference to the following points linked to the health implications of being overweight and obese:</p> <ol style="list-style-type: none"> 1. Being overweight increases the risk of developing some types of cancer. 2. Being overweight and obesity are established risk factors for cancers of the oesophagus/bowel/kidney. 3. Overweight women also have an increased risk of womb cancer. 4. Overweight men have increased risk of prostate/bowel cancer. 5. Obesity increases the risk of breast cancer in post-menopausal women. 6. Evidence suggests that obesity and being overweight increase the risk of gallbladder/pancreatic/colon cancers. 7. Weight is also a factor in cancer survival. Obese or overweight people are less likely to survive than those of a healthy weight. 8. Overweight people are more likely to develop high blood pressure. 9. Being obese can make it more difficult for blood to pump through the heart increasing the risk of high blood pressure. 10. Being overweight is a major risk factor in the cause of heart disease. 11. Obesity increases the risk of having a stroke. 12. People who are obese are more at risk of developing angina. 13. Being overweight is a major risk factor in the cause of type 2 diabetes. 14. Obesity increases the risk of varicose veins/haemorrhoids/swollen ankles. 	10	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>15. People who are obese have a tendency towards high blood cholesterol levels.</p> <p>16. Problems with hip, knee and back joints and arthritis are more common in obese people.</p> <p>17. Obese people have reduced mobility and agility and so exercise less.</p> <p>18. Psychological problems, such as low self-esteem and lack of confidence can result from obesity.</p> <p>19. Overweight people often suffer from psychological disorders such as depression and anxiety.</p> <p>20. Dental caries may be a problem if obesity is caused by eating a high sugar diet.</p> <p>21. Complications can occur during surgery with obesity.</p> <p>22. People who are overweight experience difficulties during pregnancy and childbirth.</p> <p>23. Obese people may be more at risk of reduced fertility.</p> <p>24. Overweight/obesity has been suggested as a risk factor for developing asthma.</p>		

Question		Expected Answer(s)	Max Mark	Additional Guidance
	(c)	<p>8-10 marks The candidate is able to critically discuss the factors other than diet which may contribute to obesity. 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 the factors other than diet which may contribute to obesity. They demonstrate an understanding of the issues involved, giving some analysis.</p> <p>1-5 marks The candidate is able to critically discuss the factors other than diet which may contribute to obesity. They demonstrate a limited understanding of the issues involved, giving limited analysis.</p>		
		<p>Answers should make reference to the following points linked to obesity:</p> <p>Lack of exercise</p> <ol style="list-style-type: none"> 1. Lack of physical exercise means less energy is used in daily activities which may lead to obesity. 2. Lack of sports facilities locally or the cost may be too high may restrict exercise which may lead to obesity. 3. Lack of money – money may be perceived as necessary to engage in exercise classes/sports gym. 4. Sedentary lifestyle, particularly of young people (TV/computer games) means less energy is used in daily activities which may lead to obesity. 5. Parents may be inactive and do not encourage teenagers/children to take part in sports outside school. This may contribute to obesity. 6. Parents may be concerned about the safety of children outdoors so physical activity, such as playing in the park or street, is not allowed thus increasing the risk of obesity. 7. Poor weather in Scotland is not always conducive to outdoor exercise so the population generally may be less active, increasing the risk of obesity. 	10	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>Advertising and media</p> <p>8. The majority of advertising of food products is for those which can contribute to obesity.</p> <p>9. Very little for healthier options this may encourage overeating.</p> <p>10. Special offers, eg buy one get one free, can encourage over-purchasing of foods, which if unhealthy can promote overeating.</p> <p>11. Use of cartoon/TV characters on foods can encourage purchase of less healthy options/over buying.</p> <p>Manufacturers</p> <p>12. Some manufacturers are making slow progress at adapting foods to make them lower in fat/sugar so choice of these foods may be limited.</p> <p>13. New labelling schemes are not always understood fully by consumers so may be ignored so poor food choice may be made.</p> <p>Skills/knowledge</p> <p>14. Lack of preparation/cooking skills/interest means a reluctance to prepare fresh foods such as fruit and vegetables/food from scratch, so convenience/takeaway foods, which can be higher in calories, are consumed.</p> <p>15. Children learn poor eating habits from parents so problem continues down the generations.</p> <p>16. Messages often confusing and contradictory – as a result people stick to what is familiar, which leads to obesity.</p> <p>17. General lack of nutrition education may mean people do not actually know what to do to reduce their risk of obesity.</p>		
	<p>Resources</p> <p>18. Limited finances may result in cheaper, higher fat/sugar convenience foods being consumed more regularly so increasing the risk of obesity.</p> <p>19. Poor housing/cooking facilities reduce the ability and willingness to prepare fresh foods/more high fat/sugar convenience foods may be used, which exacerbates the obesity problem.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>Lifestyle</p> <p>20. Lack of time for shopping and food preparation – quick-to-prepare meals/convenience foods that require little food preparation and cooking are preferred. These foods are often high in fat and sugar.</p> <p>21. Increased ownership of microwaves and freezers makes convenience-type foods very useful for busy families but may impact on obesity levels.</p> <p>22. The huge increase in convenience foods and eating outlets can lead to people eating too many convenience or takeaway foods, which again often have a high energy value.</p> <p>23. Influences of peers on food choices.</p> <p>Psychological factors</p> <p>24. If a person is anxious, depressed, bored or lonely, then she/he may find eating a great comfort and overeat.</p> <p>State of health</p> <p>25. Wheelchair users or those with impaired mobility may be more at risk of obesity.</p> <p>26. Genetic factors may be an influence.</p> <p>27. Prescription drugs such as steroids.</p>		

SECTION B

Question		Expected Answer(s)	Max Mark	Additional Guidance
1.	(a)	<p>A – 8-10 marks Candidates will be able to discuss almost all of the reasons how fruit and vegetables contribute to diet and health. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p>B – 6-7 marks The candidate will be able to discuss most of the reasons how fruit and vegetables contribute to diet and health. Most of the main points will be identified with explanation.</p> <p>C – 4-5 marks The candidate will be able to discuss a few of the reasons how fruit and vegetables contribute to diet and health. The discussion will show limited or no explanation.</p>		
		<p>Answers should make reference to the following points: showing the link between fruit and vegetable intake to diet and health. Candidates may provide positive or negative answers</p> <p>Water content</p> <ol style="list-style-type: none"> 1. Usually have a high water content so will contribute to liquid intake for the day/help prevent constipation. 2. Prevent dehydration. <p>Protein content</p> <ol style="list-style-type: none"> 3. Pulses are a good source of cheap protein – growth, repair and maintenance of body cells and tissue. 4. Pulses are a good source of lysine – protein required for growth. 5. Pulses when eaten in combination can supply all the essential amino acids. 6. Pulses have the lowest fat content of any protein food. <p>NSP/Dietary fibre content</p> <ol style="list-style-type: none"> 7. Dietary fibre/NSP in fruit and vegetables combines with cholesterol and bile salts preventing cholesterol from being absorbed/lowers cholesterol levels – reducing the risk of CHD. 	10	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>8. Fruit and vegetables which are a rich source of Dietary fibre/NSP reducing the risk of constipation and bowel disorders.</p> <p>9. Fruit and vegetables which are high in NSP and promote a feeling of fullness reducing the risk of snacking on high fat/sugar snacks between meals and so contributing to a reduced risk of obesity.</p> <p>10. Fruit and vegetables which are high in NSP and promote a feeling of fullness reducing the risk of snacking on high fat/sugar snacks between meals and so reducing the risk of type 2 diabetes.</p> <p>11. Fruit and vegetables which are high in NSP and promote a feeling of fullness reducing the risk of snacking on high fat/sugar snacks between meals and so reducing the risk of CHD.</p> <p>12. Fruit and vegetables which are high in NSP and promote a feeling of fullness reducing the risk of snacking on high fat/sugar snacks between meals and so reducing the risk of certain types of cancer.</p> <p>Carbohydrate content</p> <p>13. Vegetables such as peas, beans, corn, potatoes contain varying amounts of carbohydrate needed by the body for energy.</p> <p>14. Naturally sweet – prevents snacking on processed sugars which increase tooth decay.</p> <p>15. A diet containing fruit and vegetables which are naturally sweet reduces the risk of snacking on sugar snacks between meals and so contributing to reducing the risk of dental caries.</p> <p>16. Research has shown that intrinsic sugars in fruit can potentially contribute to dental caries.</p> <p>17. A diet containing fruit and vegetables which are naturally sweet reduces the risk of snacking on sugar snacks between meals and so reducing the risk of obesity.</p> <p>18. A diet containing fruit and vegetables which are naturally sweet reduces the risk of snacking on sugar snacks between meals and so reducing the risk of Type 2 diabetes.</p> <p>19. A diet containing fruit and vegetables which are naturally sweet reduces the risk of snacking on sugar snacks between meals and so reducing the risk of CHD.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>20. A diet containing fruit and vegetables which are naturally sweet reduces the risk of snacking on sugar snacks between meals and so reducing the risk of certain cancers.</p> <p>Fat Content</p> <p>21. Fruit/vegetables are low in fat which reduces the risk of snacking on fatty foods so reducing the risk of obesity.</p> <p>Anti – oxidant role</p> <p>22. Fruit and vegetables are good sources of anti-oxidants – these have a vital role in the prevention of CHD, cancers etc.</p> <p>23. A diet lacking in fruit and vegetables may result in a deficiency in antioxidants which counteract free radicals reducing senility and early ageing.</p> <p>24. Antioxidants are vital to health as they are substances which act in the body’s first line of defence against unwanted damage.</p> <p>25. If there is an imbalance between antioxidants and free radicals, high levels of free radicals can attack proteins, fatty acids, DNA, which can result in chronic illness eg CHD, cancer, degeneration of the eyes so it is vital to have a good supply of antioxidants in the diet.</p> <p>26. Studies consistently show that people who have high intakes of fruit and vegetables (and antioxidants vitamins) have lower levels of cancer and CHD.</p> <p>27. Antioxidants help protect against damage by free radicals, these are formed internally as a by-product of metabolism whenever oxygen is involved and externally they are left behind by smog, cigarette smoke, pollution, pesticides.</p> <p>28. Vegetables and fruit contain phytochemicals which are known to help prevent certain human cancers.</p> <p>29. Cruciferous vegetables (cauliflower, Brussels sprouts, cabbage and broccoli) contain indoles a type of phytochemical which may offer some protection against cancer. A diet lacking in fruits and vegetables prevent this benefit.</p> <p>30. A diet lacking in fruit and vegetables may not contain enough phytochemicals which can reduce the risk of cardiovascular disease, cancers and problems associated with ageing.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>31. A diet lacking in fruit and vegetables will also be lacking in Flavonoids which are cardio protective and are powerful antioxidants and scavenge free radicals.</p> <p>32. Evidence exists that a diet lacking in fruit and vegetables can increase the risk of chronic disease, particularly cancer.</p> <p>33. A diet lacking in fruit and vegetables increases the risk of cancer; in particular mouth/pharynx/larynx/oesophagus/lung/stomach/pancreas.</p> <p>34. Yellow and red vegetables/fruits are high in carotenoids which function as anti-oxidants and can be converted into retinol (vit A) in the small intestine.</p> <p>Micro nutrients – vitamins</p> <p>Vitamin A/carotene</p> <p>35. Alpha-carotene – high intakes linked to decreased risk of lung cancer.</p> <p>36. Beta-crypto xanthan – high intakes linked to decreased risk of cancer of the cervix.</p> <p>37. Lycopene – high intakes linked to decreased risk of prostate cancer in men.</p> <p>38. Lycopene is fat soluble and is carried in the blood stream attached to the dangerous LDL cholesterol where it seems to work in conjunction with Vitamin E preventing LDL from oxidation – helps prevents CHD.</p> <p>39. Lutein and Zeaxanthin – appear to protect the macula of the eye from deterioration and therefore loss of vision in older adults.</p> <p>40. Carotenoids – found in many fruits and vegetables; if consumed in high quantities linked to reduced risk of cancers.</p> <p>41. If diet is high in carotenoids there is a lower risk of macular degeneration of the eye.</p> <p>42. Beta Carotene – inactivates free radicals.</p> <p>43. Beta Carotene – improves the immune capacity of the body.</p> <p>44. Beta Carotene – inhibits the early stages of tumour development.</p> <p>45. Necessary for formation of visual purple – a pigment found in the retina and required for vision in reduced light.</p> <p>46. Necessary for good eyesight especially night vision – important for elderly with failing eyesight.</p> <p>47. Required to keep the mucous membranes in the throat, digestive and bronchial and excretory system moist and free from infection.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>48. Required for the maintenance and health of the skin and surface tissues.</p> <p>49. Required for the normal growth of children, retinol is essential for the growth and metabolism of all body cells.</p> <p>Vitamin C</p> <p>50. Vitamin C in its antioxidant role neutralises oxygen free radicals and has been shown to reduce cancers.</p> <p>51. Aids the absorption of iron especially vegetable sources reducing risk of anaemia.</p> <p>52. Required for the formation of connective tissue and helps in the healing of cuts and wounds.</p> <p>53. Required for the building and maintenance of skin and linings of the digestive system/may help prevent cancer of digestive tract.</p> <p>Vitamin E</p> <p>54. Has an important role as an antioxidant – protects cell damage against free radical damage.</p> <p>Vitamin B 2</p> <p>55. Riboflavin is required to release energy from protein, carbohydrate and fat.</p> <p>56. It is also involved in the transport and metabolism of iron in the body and is needed for the normal structure and function of mucous membranes and skin.</p> <p>57. Although there is no specific deficiency disease, low intakes lead to dryness and cracking of the skin around the mouth and nose.</p> <p>Folic Acid (folate)</p> <p>58. Important for women intending to become pregnant and in the first 3 months of pregnancy – to help prevent spina bifida in the baby and megaloblastic anaemia in mother</p> <p>59. Essential for normal growth.</p> <p>60. Essential for the formation of red blood cells.</p> <p>61. Required for the release of energy from food.</p> <p>62. Important for the production of nucleic acids RNA and DNA.</p> <p>63. Important for lactating women.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>Micro nutrients – minerals</p> <p>Phosphorus</p> <p>64. An essential component of all bones along with calcium.</p> <p>65. An essential component of all tissues.</p> <p>66. A vital metabolic compound.</p> <p>67. Vital in the repair of bones eg after a fall.</p> <p>Potassium</p> <p>68. Deficiency may result in mental apathy, muscular weakness/wastage.</p> <p>69. Certain vegetables are high in potassium which helps to lower blood pressure.</p> <p>Magnesium</p> <p>70. Needed in the body for the functioning of some enzymes.</p> <p>71. Necessary for the maintenance of the excitability of nerve and muscle membranes.</p> <p>Iron</p> <p>72. Required for the formation of red blood cells/prevention of anaemia.</p> <p>73. Iron in green, leafy vegetable may be unavailable to the body due to the presence of phytic acid/NSP.</p> <p>Other</p> <p>74. Add variety to the diet – crunchy texture/colour encouraging their consumption.</p>		

Question		Expected Answer(s)	Max Mark	Additional Guidance
1.	(b)	<p>A – 12-15 marks The candidate is able to critically comment on the role of schools in meeting the challenge of improving Scotland’s diet, giving full analysis of the factors.</p> <p>B – 9-11 marks The candidate is able to critically comment on the role of schools in meeting the challenge of improving Scotland’s diet, giving some analysis of the factors.</p> <p>C – 7-9 marks The candidate is able to critically comment on the role of schools in meeting the challenge of improving Scotland’s diet, giving limited analysis of the factors.</p>		
		<p>Answers should make reference to the following points linked to meeting the challenge of improving Scotland’s diet:</p> <ol style="list-style-type: none"> 1. Schools can make a valuable contribution to improving the nutritional quality of children’s diets and promoting consistent messages about healthy eating within a health – promoting school environment. 2. Essential that messages taught in the classroom are backed up by foods on offer in school otherwise messages become confusing. 3. Eating well needs to be part of our daily lives – if children eat differently at school this could affect food choices out of school and the food choices of entire families. 4. Breakfast clubs must back up messages taught in the classroom and reflect dietary advice. 5. Breakfast clubs may promote a healthier start to the day and help reducing snacking. 6. After school clubs must provide children with nutritious, filling snacks to reinforce dietary advice. 7. The introduction of schemes to facilitate healthy choices which reflect dietary advice. 8. Caterers must back agreed healthy eating messages and not overtly promote less healthy choices. 	15	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>9. Senior managers/dining hall supervisors/dinner ladies/men should be aware of healthy eating messages and encourage healthy choices.</p> <p>10. Incentive schemes could be used, eg pricing, competitions, to encourage healthy choices which reflect dietary advice.</p> <p>11. Links between biology and nutrition could be used to promote the value of foods and link to dietary advice.</p> <p>12. Links between PE and dietary advice could be made via sports nutrition.</p> <p>13. Home Economics departments have a vital role to play in providing pupils with the skills to prepare healthy, nutritious foods.</p> <p>14. Home Economics department can ensure pupils have knowledge of the targets and their implications for health.</p> <p>15. Home Economics departments can link with school meals supervisors to promote good choices at lunchtime by using the curriculum, competitions, food tasting etc.</p> <p>16. Involvement of parents vital to the improvement, they must be on board, educated and well informed.</p> <p>17. School board/PTA could help organise educational activities/leaflets for parents regarding targets provided they have the necessary knowledge themselves.</p> <p>18. Joint projects between health centres and schools could help reinforce current dietary advice.</p> <p>19. The use of vending machines can be in conflict with targets if they are not stocked with appropriate choices eg at sports centres and schools.</p> <p>20. The use of sweets as prizes at school activities is in conflict with targets.</p> <p>21. Use of School Health and Well Being Groups to promote current dietary advice.</p> <p>22. Have a clear whole school policy regarding nutrition at school which links with dietary advice.</p> <p>23. Development and education of all school staff to promote current dietary advice/healthy lifestyles.</p> <p>24. Health weeks/health promoting events/plasma screens can be used to highlight diet/good health.</p> <p>25. Local Authority initiatives to improve healthy eating may be introduced in schools.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>26. The Schools (Health Promotion and Nutrition) (Scotland) Act 2007/The Nutritional Requirements for Food and Drink in Schools (Scotland) Regulations 2008 has encouraged healthy eating.</p> <p>27. Free fruit for primary 1/2 pupils has encouraged fruit consumption and allowed children to experience fruits which they might not have tried otherwise.</p> <p>28. Opportunities to work with catering staff to promote healthy eating through school dinners.</p> <p>29. Reward schemes can be used to promote the healthier options and encourage uptake.</p> <p>30. Links can be made with parents to ensure that the healthy eating message is taken into the home especially with regard to packed lunches/snacks sent to school.</p> <p>31. Schools should ensure whole school policy on healthy eating for staff as well as pupils and encourage the consumption of healthier options.</p> <p>32. Healthier options must be readily available at breaks as well as lunch and be competitively priced or cheaper to encourage uptake.</p> <p>33. Nursery/primary play a role in early education related to diet.</p> <p>34. There may be no-one to encourage or supervise children, particularly secondary children to make healthy choices at lunchtime. At this age, if wise decisions are to be made, guidance is needed.</p> <p>35. The choice available in school may be limited so children use the local shops to buy high-fat/sugar foods. If the school is near chip shops and cafes, the temptation to buy foods from these may prove irresistible.</p> <p>36. Students may prefer to 'escape' from the school environment to eat elsewhere, choosing to eat unhealthy foods. Local shops and cafes provide quick, cheap alternative lunches in surroundings which appeal to students but which may not always provide healthy choices.</p> <p>37. Vending machines in schools provide healthy options but children may bring in their own snacks from home or buy them on the way to school – these may not always be healthy.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>38. School can teach children positively about food, nutrition and health. Practical skills taught in school may encourage children to have an interest in preparing fresh foods.</p> <p>39. School meals may introduce children to new foods not offered at home.</p> <p>40. Home Economics lessons may introduce children to new foods and teach them skills to enable them to prepare their own foods.</p> <p>41. Students and staff must be allowed to comment on school meals in a meaningful and constructive way.</p> <p>42. Free school meals for all P1 – P3 pupils which should encourage children to make healthier choices from a young age.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
2.	<p>18-25 marks The candidate is able to develop a full and coherent discussion of the factors that may influence consumer's choice of organic food. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p>15-17 marks The candidate is able to develop a discussion of the factors that may influence consumer's choice of organic food. Most of the main points will be covered with explanation.</p> <p>1-14 marks The candidate is able to identify some of the main points with limited explanation.</p>		
	<p>Answers should make reference to the following points linked to consumer food choice.</p> <p>General points (linked to consumer confidence)</p> <ol style="list-style-type: none"> 1. Organic is a term governed by law, certification is provided by independent inspectors approved by the UK Register of Organic Food Standards (UKROFS). 2. Organic farmers have to prove that agro-chemicals are not used or have been used during a 2 year conversion period so organic credentials are guaranteed. 3. To be called organic the manufactured product must have no less than 95% of its agricultural raw materials produced or grown organically. <p>Positive</p> <ol style="list-style-type: none"> 4. It is considered that it produces crops and livestock without damage to the environment. 5. It avoids the use of artificial chemicals – approved fertilisers only. 6. The use of genetically modified organisms is prohibited. 7. Animals are reared without routine use of drugs/antibiotics/wormers, which may appeal to consumers. 8. Consumer concern for animal welfare – organic is better for them. 9. Concerns over pollution, non-organic agriculture uses artificial fertilisers/pesticides which can add to water pollution. 	25	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>10. Consumer can be sure the food does not contain GM ingredients.</p> <p>11. Food is thought to be safer – no incidents of BSE in organic foods in the last 20 years/less likely to harbour e-coli.</p> <p>12. It is considered to taste better/be better quality by some consumers.</p> <p>13. It is considered to be better for health – less allergies/side effects.</p> <p>14. Several studies have shown higher levels of protein, vitamin C, calcium iron and potassium in organic vegetables.</p> <p>15. Fewer additives are permitted in organic foods so will appeal to consumers who are concerned about additives in food.</p> <p>16. Vastly increased ranges in supermarkets means there is a much wider range of goods to choose from.</p> <p>17. Increased demands are bringing cost of organic foods down.</p> <p>18. Increased popularity of delivered organic 'box' schemes/pick your own.</p> <p>19. People concerned with 'food miles' may choose to buy from farmers markets which sell organic foods.</p> <p>20. It has become more fashionable to choose organic food as it is now seen as a mainstream choice as opposed to something unusual to purchase.</p> <p>Negative</p> <p>21. Pesticides can drift over from conventional farms so food may not be completely organic.</p> <p>22. Higher price for organic food makes it too expensive for those on a lower income.</p> <p>23. Appearance of foods, especially vegetables may not be as good.</p> <p>24. Fresh vegetables products may not have such a long shelf life.</p> <p>25. No guarantee that the product is completely residue free.</p> <p>26. Some scientists believe there are no nutritional benefits.</p> <p>27. An equal number of studies shown no difference in nutritional content between organic non – other than diet which may contribute to obesity organic foods, than have shown a difference.</p> <p>28. Natural pesticides produced by plants can be more harmful than synthetic ones.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>29. Concern over the occurrence of E-coli bacteria in the manure used as fertilizer and the safety of organic crops.</p> <p>30. High levels of toxins in organic foods could be hazardous to health eg green potatoes.</p> <p>31. Foods may be contaminated by copper and sulphur containing fungicides.</p> <p>32. Recent studies have shown that organic chicken is less nutritious/contains more fat/tastes worse than free range or battery meat (plus cost considerations).</p> <p>33. Organic chicken contains lower levels of the anti-oxidant Vitamin E which preserves the flavour of the meat.</p> <p>34. Organic chicken also had lower level of Omega 3 fatty acids and some had higher cholesterol levels.</p> <p>35. There is now concern that the increasing industrialisation of organic farming to meet demands have led to a dilution of its “green” credentials and quality.</p> <p>36. May have an adverse effect on the sustainability of farming particular crops.</p> <p>37. Some organic foodstuff eg milk, tomatoes, chicken cause more damage to the environment than their non-organic counterparts.</p> <p>38. May be some concern over foreign organic foods standards and authenticity which could put consumers off buying it.</p> <p>39. Range of organic foods may be limited in some supermarkets.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
3.	<p>18-25 marks The candidate is able to develop a full and coherent discussion of the factors which contribute to good health during pregnancy. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p>15-17 marks The candidate is able to develop a discussion of the factors which contribute to good health during pregnancy. Most of the main points will be covered with explanation.</p> <p>1-14 marks The candidate is able to identify some of the main points with limited explanation.</p>		
	<p>Answers should make reference to the following points linked to good health during pregnancy.</p> <ol style="list-style-type: none"> 1. Taking advice about diet during pregnancy will encourage good health. 2. Contrary to the popular phrase 'eating for two', pregnant women do not need to double their food intake, as this may lead to weight gain. 3. An expectant mother requires a healthy and varied diet to provide her and her growing baby with the full range of nutrients. 4. During pregnancy a woman's nutritional needs increase because the diet must provide sufficient energy and nutrients to meet both the mother's usual needs and provide extra for the growth of the breasts, uterus and placenta. 5. A full range of nutrients are also required for the mother to lay down stores of nutrients to help the growth of the foetus, and for lactation. 6. It is important not to eat too many energy foods/fats/sugars as weight gain may occur because of reduced activity at the latter stage in pregnancy. 7. Poor diet during pregnancy may lead to obesity problems for the baby in later life. 8. Constipation can be a problem in pregnancy. If it is, more non-starch polysaccharides (NSP) should be taken along with increased fluid intake. 	25	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>9. Omega-3 fatty acids are required for the development of the foetal nervous system and are especially important during the last 3 months of pregnancy.</p> <p>10. The mother must have enough iron during pregnancy to supply her own body and to provide the growing baby with a store of iron for the first 4 months after birth.</p> <p>11. Iron-deficiency anaemia during pregnancy can increase the risk of the baby having a low birth weight and developing iron-deficiency anaemia during the first year or two of life therefore a diet high in iron foods is advisable.</p> <p>12. Before pregnancy and for the first 12 weeks it is advisable to take folic acid supplements to reduce the risk of cystic fibrosis/neural tube defects/spina bifida in the child.</p> <p>13. A little additional protein may be required for the development of the foetus's body cells.</p> <p>14. Too much protein, however, could contribute to weight gain.</p> <p>15. The baby's bones are supplied with calcium provided by the mother's diet. A diet low in calcium may result in the formation and calcification of the baby's bones being affected.</p> <p>16. It is important that calcium intake is maintained to ensure that calcium deposits from the mother's bones and teeth are not used for the developing baby.</p> <p>17. A diet low in vitamin D may result in poor calcium absorption and as a result the formation and calcification of the baby's bones may be affected.</p> <p>18. A diet low in vitamin D can lead to low birth weight and tetany in the baby and osteomalacia in the mother.</p> <p>19. To enable iron to be absorbed, foods rich in iron and vitamin C are required.</p> <p>20. Vitamin C is also required for the baby's tissue formation.</p> <p>21. Vitamin A is essential for good health, however, large intakes during early pregnancy have been linked to birth defects.</p> <p>22. Drinking alcohol during pregnancy can damage the unborn child, so pregnant women are advised to avoid alcohol.</p> <p>23. Drinking alcohol during pregnancy, especially in large quantities (alcoholism), may in some cases result in foetal alcohol syndrome.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>24. This may affect growth, brain development, mental retardation and organ defects in the unborn child.</p> <p>25. The Foods Standards Agency (FSA) advises pregnant women to limit the amount of caffeine they consume to no more than 200 mg a day.</p> <p>26. High levels of caffeine can result in babies having a low birth weight, or even lead to pregnant mothers miscarrying.</p> <p>27. Pregnant women should not smoke. One effect of smoking may be to reduce the flow of blood to the placenta and so reduce or slow down the supply of nutrients to the foetus and affect foetal growth. This may result in a low birth weight.</p> <p>28. Pregnant women should limit oily fish to up to two servings per week. The FSA has set a maximum limit on oily fish consumption due to the risk of exposure to pollutants such as dioxins and polychlorinated biphenyls, which have been found in oily fish.</p> <p>29. Pregnant women should avoid the fish marlin, swordfish and shark because of potential exposure to methylmercury which could damage the foetus.</p> <p>30. The FSA also advises pregnant women that the amount of tuna eaten should be limited to no more than two portions per week or four medium-sized cans a week as tuna may contain mercury, which at high levels can harm a baby's developing nervous system.</p> <p>31. Staying physically active during pregnancy is important to promote general health and help to alleviate common complaints during pregnancy such as backache and constipation.</p> <p>32. Listeriosis in pregnancy may cause miscarriage, still-birth or severe illness in the new born baby. Pregnant women are advised to avoid paté and blue-veined and soft cheese such as Brie and Camembert.</p> <p>33. Toxoplasmosis is an illness caused by a parasite found in cat faeces.</p> <p>34. The illness can, in rare cases, be passed to the unborn baby via its mother, resulting in illness.</p>		

Question			Expected Answer(s)	Max Mark	Additional Guidance
			<p>35. As a safeguard, pregnant women should not eat raw or undercooked meat, unpasteurised goat's milk or goat's cheese, or unwashed raw fruit and vegetables due to the risk of toxoplasmosis.</p> <p>36. Pregnant women should avoid eating raw eggs or food that contains eggs that are raw or partially cooked as this could result in salmonella food poisoning.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
4.	<p>A – 18-25 marks The candidate is able to develop a full and coherent discussion of the techniques used by food manufacturers to persuade consumers to buy their products. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p>B – 15-17 marks The candidate is able to develop a discussion of the techniques used by food manufacturers to persuade consumers to buy their products. Most of the main points will be covered with explanation.</p> <p>C – 12-14 marks The candidate is able to identify some of the main points with limited explanation.</p>		
	<p>Answers should make reference to the following points linked to the persuasive techniques used by manufacturers:</p> <p>Packaging and labelling</p> <ol style="list-style-type: none"> 1. Information is given using a variety of media – television, radio, magazine, poster advertising, food labelling and advertising. 2. By apparently providing reliable relevant information about products so consumers can decide for themselves. 3. Use of simple messages in adverts/food labels which reassure consumers that they have made the correct choice eg shredded wheat or a healthy heart/Special K image of a slim woman. 4. Colourful eye catching packaging/ revamping package design of foods eg milk is now available in plastic bags to fit into fridge jugs. 5. Changing the image of foods eg Heinz tomato soup is now being promoted as part of the 5 portions of fruit/veg a day. 6. Changing the name of an existing product – Marathon became Snickers – to enhance/revamp the appeal of a product. 7. Appealing to brand loyalty – consumers will stay with an existing brand name they recognise and will choose new products based on brand loyalty. 	25	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>Adverts on television, radio, magazines, posters, internet and in store</p> <p>8. Adverts which appeal to snobbery – eg after dinner mints.</p> <p>9. Adverts which appeal to sentimentality eg Werthers Original Toffees.</p> <p>10. Sex appeal in adverts eg Special K/Muller mousse, yoghurts, rice.</p> <p>11. Concerns over public concerns eg additives will encourage manufacturers to jump on the band wagon for additive free food promotion on packages.</p> <p>12. Emphasising the health and environmental benefits eg of organic foods.</p> <p>13. Ensuring adverts are aimed at the correct target group for example timing of television adverts.</p> <p>14. Manufacturers of high fat/sugar products screen their products during programmes which both adults and children watch.</p> <p>15. Young children are a vulnerable group and some manufacturers target their advertising and labelling deliberately at this group or their parents.</p> <p>16. Food adverts and labelling will make use of familiar cartoon characters, Heinz tinned products eg beans & sausages often have latest characters on labels.</p> <p>17. Use of celebrities to promote product eg sports people, celebrity chefs, soap stars etc.</p> <p>18. Children’s loyalty to these characters and the accompanying songs and jingles will help to sell the products.</p> <p>19. Use of humour/slogans within promotions.</p> <p>20. Special offers and special introductory offers by manufacturers eg buy one get one free/buy two get third free.</p> <p>21. Sampling in supermarkets to persuade purchase.</p> <p>22. Location in supermarket/store/product placement to encourage sales eg sweets placed near checkouts at child height often leads to additional purchases by parents.</p> <p>23. Use of competitions to encourage purchase/re-purchase.</p> <p>24. Collect labels/tokens for promotional gifts.</p> <p>25. Use of text messages to promote products.</p> <p>26. Use of internet to promote products.</p> <p>27. Postal leaflet promotion.</p> <p>28. Food manufacturer’s websites.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>29. Sponsorship/advertising at an event.</p> <p>30. 'Pop up' adverts on websites/social media to encourage purchase.</p> <p>Lifestyle factors</p> <p>31. Promoting the product as contributing to "health eating" given consumer's concern over diet as a whole.</p> <p>32. Promoting the convenience of food products to adults in today's lifestyles eg microwave pasta/sauces.</p> <p>33. Children susceptible to brand name adverts so manufacturers take advantage of this.</p> <p>34. Manufacturers rely on the "pester power" of children to persuade their parents to buy their food products/free toys/free gifts.</p> <p>35. Parents will know that the purchase will not be wasted as the children want the products – this will motivate parents to buy and is important to those on a limited income who cannot afford to purchase products the children will not like/eat.</p> <p>Other</p> <p>36. One of the biggest factors which encourage consumers to repeat buy products is the reliability and high quality of a product.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
5.	<p>A – 18-25 marks Candidates are able to develop a full and coherent discussion of the beneficial effects of micro-organisms in the production of foods. The discussion shows good analysis and the identification of the majority of the main points with full explanation.</p> <p>B – 15-17 marks Candidates are able to develop a discussion of the beneficial effects of micro-organisms in the production of foods. Most of the main points will be identified with explanations.</p> <p>C – 12-14 marks Candidates are able to identify some of the main points with limited explanations.</p>		
	<p>Answers should make reference to the following points linked to the beneficial effects of micro-organisms in food production:</p> <p>Cheese:</p> <ol style="list-style-type: none"> 1. Micro-organisms added as “starter” culture. 2. Cheese is produced by coagulating the milk protein casein to form a curd from which whey is extracted and the resultant curd is allowed to mature depending on the type of cheese being produced. 3. Starter culture is added to assist the process of coagulation. 4. Choice of starter culture will determine the flavour and textural properties of the curd. 5. Direct vat inoculation cultures are concentrated cultures in freeze dried or frozen form – now widely used as starter cultures. 6. Lactic acid bacteria are used as starter cultures. 7. Key role of lactic acid bacteria is to convert the milk sugar lactose into lactic acid. 8. Acid production during cheese making is essential in the formation of a gel ie curd from the milk casein. 	25	

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>9. Enzymes in the “starter” culture also promote the formation of volatile flavour compounds such as diacetyl and aldehydes and the synthesis of proteolytic and lipolytic enzymes involved in the ripening of cheeses.</p> <p>10. Micro-organisms may be added at the ripening stage to produce cheeses with distinctive flavour, texture and other specific characteristics.</p> <p>11. Eg varying types of micro-organisms are used to produce low levels of carbon dioxide, allowing the desired textural characteristics to be achieved in some mould ripened cheeses such as Camembert, Brie.</p> <p>12. Stilton, Roquefort is internally ripened and ripening mould added to produce blue/green veining.</p> <p>13. Blue Cheshire has secondary surface ripening by mould.</p> <p>14. Propionic bacteria brings about the production of propionic acid and carbon dioxide which contributes a distinct flavour and the development of “eyes” in certain types of cheese eg Emmental, Gruyere.</p> <p>15. Ripened cheese has a lower pH level and this suppresses the growth of spoilage and pathogenic bacteria.</p> <p>16. Lactic acid produces fresh acidic flavour of un-ripened cheese.</p> <p>Yogurt</p> <p>17. Micro-organisms added as “starter” culture.</p> <p>18. Is milk which has been fermented by micro-organisms.</p> <p>19. The milk used to make yogurt must be free from antibiotics used to treat udder infections as these antibiotics affect the bacteria used during yogurt production.</p> <p>20. Taste and texture of yogurt are determined by the carefully controlled addition of a special harmless bacteria culture.</p> <p>21. Bacteria used belong to the lactic acid bacteria group.</p> <p>22. Two types of bacteria used – lactobacillus bulgaricus and streptococcus thermophiles.</p> <p>23. These two types of bacteria are added to the milk in equal proportions usually as 0.5 – 2% of the finished product.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>24. These bacteria ferment the disaccharide sugar lactose in the milk.</p> <p>25. Under the right conditions of temperature, moisture and food they produce lactic acid.</p> <p>26. When the “starter” culture/bacteria have been added to the milk the mixture is incubated at 34°C – 44°C for 4 – 6 hours.</p> <p>27. During this time fermentation takes place, the product becomes acidic, the flavours develop and the proteins coagulate and the yogurt sets.</p> <p>28. Acetaldehyde is produced which gives yogurt its characteristic flavour.</p> <p>29. Diacetyl is produced until the acidity increases to pH 5.5.</p> <p>30. Once the level of acid reaches 0.8 – 1.8% the bacterial growth stops although the bacteria remain alive.</p> <p>31. Yogurt should be stored at 4.5°C as bacteria are still live they may grow very slowly.</p> <p>32. After approx. 10 days the acid content in the yogurt may have increased making it unpalatable and causing separation or syneresis to occur.</p> <p>33. Yeast cells from the fruit in fruit yogurts ferment the sucrose and produce carbon dioxide gas and alcohol.</p> <p>34. This can be seen by the raising of the container lid ie “blown”.</p> <p>Beverages/Alcohol drinks</p> <p>35. Used in many ways from relatively uncontrolled activities in production of tea/coffee to highly controlled action of adding commercial enzymes in the brewing and fruit juice industries.</p> <p>36. Important industrial use of yeast-production of alcohol (and bread).</p> <p>37. Economic importance lies in the ability of yeast to break down carbohydrate foods into alcohol and carbon dioxide – alcoholic fermentation.</p> <p>38. Yeast contains a collection of enzymes known as zymase which are responsible for the fermentation of sugars such as glucose, into ethanol and carbon dioxide.</p> <p>39. Rice, corn or other un-malted grains are added in beer manufacture as sources of additional or ‘adjunct’ carbohydrate for fermentation by saccharomyces yeast into ethyl alcohol and carbon dioxide.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>40. Without adjunct cereals the limiting nutritional factor for yeast fermentation would be protein.</p> <p>41. This means that carbohydrate would remain after fermentation and produce a heavier type of beer.</p> <p>42. Malt is barley grain that has been germinated to point of roots and stems just beginning to appear. It is then dried to halt growth but leave the enzyme activity intact.</p> <p>43. Germination results in enzyme activity which converts starches in the malted barley and other grains into sugars which can easily be fermented by yeast during the fermentation step.</p> <p>44. Yeast cannot utilise the starch in the cereal grains for conversion to ethanol and carbon dioxide, unless germination has taken place.</p> <p>45. Hops are plants, the flowers of which contain resins and essential oils that contribute a characteristic bitter flavour and pleasant aroma to beer. They also contain tannins which add to colour.</p> <p>46. Hops are added during brewing and after the enzymes of malt have converted the starch to sugar maltose.</p> <p>47. Hops have a mild preservative property and add to the foam holding capacity of the beer. These are secondary functions to the role of hops in flavour and aroma.</p> <p>48. Wine has been made by the fermenting of grapes for thousands of years.</p> <p>49. The sweetness and alcohol content of wines are interrelated because fermentation converts the grape sugars to ethanol as more alcohol is produced, sweetness decreases when virtually all the sugar is fermented the wine is without sweetness and is said to be 'dry'.</p> <p>50. Dry wines contain all of the alcohol that the specific grape is capable of yielding under the conditions of fermentation – generally 12-14% alcohol by volume.</p> <p>51. Natural fermentation generally yields an alcohol concentration of less than 16% by volume even if more sugar is added because this amount of alcohol is toxic to yeast and stops fermentation.</p> <p>52. As grapes mature, the wine yeast <i>Saccharomyces euipsoideus</i> naturally accumulates on the skin.</p>		

Question	Expected Answer(s)	Max Mark	Additional Guidance
	<p>53. When crushed grapes or filtered juice is placed at a temperature of 27°C, the juice continues to ferment, yielding equal molar quantities of ethyl alcohol and carbon dioxide and traces of flavour compounds.</p> <p>54. Wine yeast is relatively resistant to sulphur dioxide and so this is added to help control undesirable micro-organisms, particularly bacteria.</p> <p>55. Sulphur dioxide is also effective in inhibiting brown enzymes of the grapes and providing reducing conditions by reacting with oxygen.</p> <p>56. Fermentation causes a rise in temperature so cooling is required to prevent yeast inactivation.</p> <p>57. Fermentation under conditions of limited exposure to air may continue until the sugar is entirely consumed, when it stops naturally, or fermentation may be interrupted prior to this point.</p> <p>58. At around 27°C, fermentation may last for some 10 days depending on wine type.</p> <p>Bread</p> <p>59. Two main forms of yeast used in bread making, – fresh yeast and dried yeast.</p> <p>60. Water requires to be blood temperature of 32°C approx. to encourage yeast to ferment.</p> <p>61. At temperature of 43°C yeast cells are inactivated and at 54°C they are killed.</p> <p>62. Yeast uses small amount of sugar as a starter ferment.</p> <p>63. The gas produced by the yeast stretches the gluten in the dough producing little bubbles which become trapped forming the characteristic framework of bread.</p> <p>64. 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 bread.</p> <p>65. During baking the expansion of the carbon dioxide causes the bread to rise rapidly and the alcohol is driven off.</p> <p>66. The amount of salt added to the dough is a delicate balance because too much salt can inhibit the yeast while too little can cause the dough to be sticky and unmanageable.</p>		

[END OF MARKING INSTRUCTIONS]