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# **EXAMINER REPORTS**

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## **LEVEL 3 CERTIFICATE AND DIPLOMA IN FOOD SCIENCE AND NUTRITION**

**JANUARY 2022**

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# FOOD SCIENCE AND NUTRITION

## Level 3

January 2022

### UNIT 1 - MEETING NUTRITIONAL NEEDS OF SPECIFIC GROUPS - EXTERNAL

#### General Comments

The marks awarded covered the whole of the mark range.

The Advanced Information materials had clearly been used by many of the candidates to support their revision/examination preparation.

It is important that candidates have knowledge and understanding of how to address the range of command words that are used in examination questions.

Candidates should think carefully about giving one-word responses, they need to ensure that this is appropriate to the command word/question being asked. Marks can only be awarded for explicit answers.

Candidates would be advised to make good use of the reading time to read all questions thoroughly. Errors were seen to be made because of candidates' misreading questions and choosing the wrong focus for their answers.

Where candidates clearly had a sound nutritional knowledge this enabled them to complete section A and then utilise time in answering the questions in Sections B and C in the required detail. Some excellent high-level responses were seen.

The quality of written communication (QWC) was assessed in all questions that asked candidates to 'assess', 'explain', 'discuss' and 'evaluate'. Many candidates answered these questions by making statements which, in the main, are correct but can only be awarded the lower band marks due to a lack of explanation, discussion or assessment. To access the higher band marks the candidates must explain the statements made and give examples, if appropriate. Exam technique sessions would really help support the candidates' learning and their approach to completing the exam paper to a higher level. Candidates should be encouraged to make use of paragraphs when writing a detailed response.

Candidates would be advised to make it clear when they have continued their answer in a continuation booklet to ensure answers are not overlooked. They should ensure they make clear the number of the question which is being continued and from which section. Some candidates continued their answer in the space under the lines. This is to be discouraged as when papers are scanned for marking work outside the allocated area could be overlooked.

Some candidates were seen to respond to all parts of section C as it was one question with no indication in their response as to which part they were answering. Whilst every effort will have been made to award marks appropriately it is not the role of the examiner to search for a response. Whilst question 3 and 4 in Section C do lend themselves to be answered together candidates should still be encouraged to note the part number of the question they are responding to against their answer.

## Comments on individual questions/sections

### Section A

- Q.1 The majority of candidates were able to state two factors affecting the growth of bacteria. Temperature and PH being among the most popular responses.
- Q.2 (a) Most candidates gained 2 or 3 marks. This question was generally well answered with candidates being able to name two or three allergens from the list of the 14 most common. Some candidates were seen to make a response about food intolerances rather than allergens. One or two mistook allergens to mean bacteria and named bacteria rather than allergens.
- (b) (i) (ii) a few candidates did not attempt part (b) (ii). Responses which were attempted covered the full mark range for this question. Explanations of the meaning of the term Food Allergy tended to show more understanding than that of Food Intolerance, with some excellent responses seen which were supported with specific food examples. A few responses seen focused on the cause rather than explaining the meaning.
- Q.3 (a) Most candidates were able to state two functions of water in the body. Some candidates were seen just to give a one-word response. Candidates should be advised that marks can only be awarded for explicit responses, in this case the function of water in the body needed to be stated. For example: To regulate temperature rather than just temperature.
- (b) A wide range of appropriate responses for example after intense physical activity, infection, temperature of environment, were given to this question enabling candidates to be awarded the one mark for this part of the question.
- Q.4 A high percentage of candidates did not attempt this question. It is good practice to introduce the chemical names of micronutrients when delivering the course. Tocopherol being the chemical name for Vitamin E. "Works with other antioxidants" or "boosts the immune system" were seen to be the most popular correct responses to this question.
- Q.5 Responses covered the full mark range from the most basic focusing on fats being solid and oils being liquid at room temperature through to complex explanations demonstrating knowledge and understanding of how the arrangement of carbon and hydrogen atoms, single and double bonds account for the differences in fats and oils. Detailed explanations were supported with examples. A few candidates were seen to focus on the function of fats and oils in the diet rather than explaining the difference between them.
- Q.6 (a) Liver, Red meat, Spinach were the main source cited; other good sources were accepted.
- (b) Some candidates were seen to explain what haemoglobin was as opposed to outlining its function. Most candidates were able to give a basic outline with many giving a more detailed response including reference to giving red colouring to blood cells and the transporting of oxygen to tissues in the body.
- Q.7 Those candidates who correctly identified two factors which were supported with an explanation for each one were able to be awarded full marks. Gender, age, physical activity level being the most popular factors to be explained. Some candidates were seen just to identify two factors with no explanation. One or two candidates confused BMR with BMI.

## Section B

Q.1 This question was attempted by all candidates. The candidates' responses varied depending on their knowledge of food hygiene systems for example H.A.C.C.P, FIFO and legislation for example Food Safety Act 1990, General Food Law Regulations 2004, Food Safety and Hygiene (England) Regulations 2013, along with their ability to apply this knowledge in their discussion of the statement in the question. The most simplistic answers just mentioning examples of human error in relation to poor food hygiene practices without any specific reference to systems or legislation. It was not enough simply to put the word system or legislation into their response without showing any understanding or application of these terms. Those candidates awarded marks in the higher mark bands clearly had a more in-depth understanding and were able to write a detailed discussion which included accurate information relating to systems and or legislation with supporting examples for instance the uses of named colour coded chopping boards for named foods, the use of different food preparation areas in the kitchen for raw and cooked foods, monitoring procedures for identified critical control points, which are put in place to reduce the chance of human error. Some candidates were seen to use bullet points to give a list of facts, to access the higher mark bands a discussion was required.

Q.2 This question was attempted by most candidates though one or two seen not to attempt the second part. (a) Some candidates were seen just to recall facts about protein. Most responses showed at least a basic knowledge of protein structure, but candidates appeared to be less familiar with the terms essential and non-essential amino acids and how the number of these present affect the 'quality' biological value of the protein. To access the top mark band good use of subject specific terminology needed to be demonstrated, as was the case in some excellent responses which were seen. These referred to the correct number of different amino acids, knew that eight were essential and were able to name at least one of these, along with named examples of commodities to support their explanations. It is good practice to encourage candidates to learn the names of at least one amino acid.

Responses to part (b) ranged from the simplistic to the very well informed. Most candidates appeared to be familiar with the term denaturation, but some found it more difficult to formulate a detailed response. Some excellent responses were seen by candidates who clearly had good knowledge of the chemical structure of proteins and support their descriptions with examples of reversible/irreversible denaturation.

Q.3 Not all candidates attempted this question. A wide spread of marks were awarded for those who did attempt a response. Where the question had been misread or misunderstood candidates were seen to write about the role of the three preservation methods in controlling bacteria and improving shelf life. Where done well, candidates were able to describe the effect that each method had on the water-soluble vitamins B and C, were able to discuss sensory qualities in relation to appearance, taste and texture. There was some confusion when it came to evaporated milk, with some responses discussing the sensory qualities of condensed or dried milk powder. Good descriptions showed application of knowledge of the process of pasteurisation, ultra-heat treatment and evaporation and the impact these had on nutritional and sensory qualities of milk. Some candidates were obviously familiar with the processes of these methods of milk preservation but did not describe their effect on nutritional or sensory qualities.

- Q.4 This question was attempted by the majority of candidates with most being able to access some marks. Some candidates had not read the focus for the question and wrote in detail about different religious beliefs, responses needed to demonstrate application of nutritional knowledge in their assessment of how nutritional needs can be met when following specific diets based on religious principles. Where the focus was understood most were able to discuss how requirement for protein could be met. More detailed responses were able to differentiate between high biological and low biological proteins and link examples to specific diets. Some excellent responses were seen demonstrating knowledge of named macronutrients, micronutrients and how requirements for these could be met whilst following specific diets based on a range of religious beliefs with which they were familiar.

### Section C

- Q.1 All candidates were able to access some marks with their response to this question. Some are still failing to respond to the command word just identifying a list of points which they have been presented with in the profile as opposed to analysing them. In some cases, too much was being written about just one point.

At the next level candidates were able to use Joel's profile to determine his most significant current and future nutritional needs relating to his type 2 diabetes, high cholesterol level and concern about his weight gain. A few candidates were still seen just to write about his current needs. The emphasis in responses to this question needed to be on analysis of nutritional needs, both current and future. Many candidates noted that his BMI made him overweight, close to being classed as borderline obese, and discussed this in relation to his sedentary lifestyle, along with the need to decrease his calorie intake in relation to controlling his type 2 diabetes and prevent further weight gain.

At this level; as was evident in the responses awarded marks in the higher mark bands; it is expected that candidates would demonstrate application of detailed understanding of source; function; deficiency of macro and key micronutrients making clear reference to examples in Joel's example daily diet; along with his specific dietary needs. The use of terms such as "unhealthy" or statements with no direct correlation or reference to examples given in Joel's profile were still seen.

More candidates were being awarded marks in the top two bands with some very good understanding shown of the importance of ensuring a balanced diet as Joel moves into the next life stage and the bearing good nutritional intake will have on his development. It is evident in candidate responses where they have been introduced to case studies during the delivery of the course; along with the technique of how to carry out an analysis a specific case study through pre-examination practice.

The case study this year highlighted the importance of understanding that life stages cannot be taught in isolation as each one has a bearing on another.

- Q.2 Candidates had a good understanding of the affect Joel's sedentary lifestyle was having on his health and well-being. Most candidates were able to refer to the most obvious factors relating to lack of physical exercise and the need to change this to benefit both his physical and mental well-being. Practical suggestions like walking to school, if possible, trying out new sporting activities, introducing computer games which require physical activity, reducing gaming particularly prior to bedtime to improve sleep quality were among some of the positive assessments. Some responses were seen where candidates were making valid suggestions but did not assess how they would improve his wellbeing. Some excellent responses were seen in which candidates had assessed both physical activity, social and dietary changes with applied reasoning as to how they would improve his well-being.

Credit can be given for dietary changes (as listed in 1) if specific to Joel's life stage or further explanation than in section 1.

Some candidates were seen still to be answering question 1 and 2 together making the task of allocating marks to each specific question more difficult for the examiners. There is a clear distinction in what is being asked in question 1 from question 2. Candidates need to be introduced to exam technique prior to sitting the external examination. This would facilitate the opportunity for candidates to meet the requirements of the higher mark bands particularly in the case of question 1.

- Q.3 Most candidates were able to provide some detail in relation to modifications of the daily diet for Joel. This question highlighted the importance of candidates using their reading time wisely, along with being made aware that what is being examined in terms of a response will not be the same each year. It was clear from the way some candidates responded to this question that they just expected to replace the existing diet with a new one and had entered the examination with this in mind rather than reading the question and responding to its specific requirements in this case modifying the existing diet. Some candidates wasted time by suggesting more than one diet plan or writing out the meal plan which they had been given as well as their modified plan.

Those who had good knowledge of Joel's dietary requirements provided some valid suggestions in relation to what foods should be eaten whilst considering the challenges posed by making radical changes at his life stage recognising the need to keep some familiarity. Most candidates showed an awareness of the importance of complex carbohydrates, along with the inclusion of more water to replace high sugar options, the need to increase consumption of fruit and vegetables, lean protein.

At this level it is expected that the types of foods/dishes chosen would demonstrate and understanding of meal planning; along with detailed knowledge of the role different commodities and nutrients play in ensuring a balanced diet to meet the needs of Joel's lifestyle/life stage. It is expected that candidates would give specific named examples for the commodities being suggested for example skimmed milk; a few candidates were seen to use the term low fat milk. Candidates were aware of the positive impact a reduction in portion size would have.

Good practice was observed where candidates clearly laid their choices out next to mealtimes as in the question or presented in table form.

- Q.4 Those candidates who had a good nutritional knowledge were seen to give excellent responses which justified in detail their chosen modifications in relation to fitness for purpose to Joel particularly as he moves into the next life stage. These high-level responses were well structured making use of connectives with points made clearly showing understanding of source; function of nutrients with named examples and evidenced in both ingredients and commodities used in their planning. At the lower end justification was weaker and tended just to focus on the most obvious relating to his type 2 diabetes and weight gain. Where the question was misunderstood there was evidence of some candidates just repeating points made in the lifestyle changes question, making no reference to their modified daily diet.

Candidates need to be discouraged from just making generic statements about the function of nutrients; responses need to show clear application to the case study. There was evidence of candidates having a detailed understanding of the function and source of nutrients, but their responses lacked application in terms of justifying fitness for purpose of their chosen modifications in relation to the dietary needs of Joel.

Where centres have encouraged candidates to answer question 3 & 4 together in table form whilst this makes responses clear to read; it is important to ensure that this does not restrict access to the top mark band which requires candidates to make an in-depth justification for their choices with sound reference to Joel's specific nutritional and personal needs.

One or two candidates ran out of time as they did not attempt question 3 and 4 of the case study.



## FOOD SCIENCE AND NUTRITION

### UNIT 2 – ENSURING FOOD IS SAFE TO EAT

#### General Comments

- A copy of the Attendance register is required to be sent with the work of the candidates.
- Please ensure that the work from candidates is hole punched, and treasury tagged or stapled in the top corner and not sent in plastic wallets.
- A copy of the External Assessment Task Mark Sheet with the centre and candidate details should be included on the front of the work for each candidate.
- Signposting of the Assessment Criteria by candidates throughout their work enhanced the marking process and is to be encouraged.
- It appeared that some candidates had copied and pasted generic notes into their response resulting in the inclusion of excessive information/information which may not be relevant.
- Familiarisation with the specification for Unit 2 which identifies the learning outcomes, content and exemplification would clarify the focus of information to be included for each assessment criteria. Candidates need to show knowledge and understanding of this information through application to the given scenario.
- Some candidates were seen to include work which appeared to be related to previous scenarios.
- There is an allocated time frame of 8 hours for the task, the quantity of work submitted should reflect this.

#### Comments on individual questions/sections

The work produced by candidates covered the whole of the mark range. Where candidates had clearly covered the specification during their guided learning hours, they were able to demonstrate their understanding of food hygiene and safety with clear application of the subject content to the scenario. Some candidates were seen to confuse food safety with accident prevention.

The scenario on which the external Assessment Task is based should always be the focus of the work which is completed. Those candidates who had interpreted the requirements of the Sixth Form BBQ external Assessment Task well were able to produce responses which remained focused on the scenario referencing specific examples; enabling them to access the higher mark bands.

The key element is the avoidance of the inclusion of and reliance on generic notes. Candidates need to be encouraged to demonstrate the application of their food safety knowledge to the Assessment Criteria which are being assessed and closely relate this to the scenario.

Candidates had mostly addressed all required criteria and thus had the opportunity to access the full range of the mark bands.

Most candidates appeared to be aware to check which two of the assessment criteria were not being assessed in this external assessment task as only one or two were seen to have included information relating to AC1.4 & AC3.4.

Evidence of the 8 hours was logged on the timesheet with date and times that work took place and signed by the supervisor and the candidate.

See below for more detailed guidance for each AC section, which should enable centres to guide candidates successfully.

The majority of candidates had completed the Unit 2 Assessment following the two distinct tasks for The Sixth Form BBQ Scenario.

**Task 1; An information guide which students who are helping to prepare the BBQ food can read to ensure a high standard of food safety is maintained throughout the event.**

**Task 2; A Food Safety Risk Assessment, (H.A.C.C.P) for the BBQ event to prevent the risk from food induced ill-health.**

### **Task 1: Information guide**

Those candidates who directed the information guide to the students who would be preparing the food and the food on the menu demonstrated excellent application of knowledge and understanding of the task.

**AC1.1** In some instances, evidence for AC1.1 was very generic in nature. Where candidates had applied the information to the dishes on the BBQ menu, they were able to access the higher mark bands.

**AC1.2** Assess how changing conditions affect growth of micro-organisms in different environments.

Evidence for AC1.2 was not always addressed well or only briefly with the inclusion of generic notes, some candidates had referred to changing conditions such as temperature, oxygen, water and nutrients but did not go onto included discussion in relation to environments. Where candidates had discussed conditions and environments and linked this successfully to the foods on the menu, they were able to access the higher mark bands.

**AC1.3** explain how micro-organisms affect food quality.

Candidates had provided detailed descriptions of how of micro-organisms affect food quality covering bacteria, viruses and fungi; in relation to appearance, texture, smell/aroma, taste non-visible effects and nutritional content. Scientific terms were used effectively. Where candidates had applied the information to the dishes on the BBQ menu, they were able to access the higher mark bands.

**AC2.1** Explain the physiology of food intolerance.

Candidates were able to explain the physiological basis of food intolerances including wheat and lactose intolerance, some had referred to chemicals including caffeine, salicylates monosodium glutamate and histamines. Some candidates did not show clear understanding of the difference between a food intolerance and food allergy. For marks in the high band lactose, wheat and at least one other intolerance relevant to the scenario needed to show direct application to the dishes on the menu. Most candidates were able to identify the relevant ingredients from the menu. Some reference to food intolerance was also included in responses to AC2.4 and the risk assessment chart.

### **AC2.2** Explain the physiological basis of food allergies.

The majority of candidates were able to explain the physiological basis of food allergies, and most were able to identify potential links with dishes on the menu. Some candidates were confused between food allergy and food intolerance. Those who gave a more detailed response were able to demonstrate knowledge of the foods which most commonly contain allergens as listed by the Food Standards Agency; apply this to the scenario with an analysis of the dishes on the BBQ menu.

### **AC2.3** Explain the physiological basis of food poisoning.

Where candidates showed understanding and application of knowledge about the physiological basis of food poisoning, they were able to complete this Assessment Criteria to a high standard. The symptoms of food poisoning; foods which present a high risk of food poisoning and causative bacteria were identified with specific links to foods on the BBQ menu. Further evidence for this criterion was also applied well in the risk assessment chart. Some candidates just presented information in a generic chart making no reference to the scenario.

### **AC2.4** Describe the symptoms of food induced ill health.

Candidates appeared to be familiar with the symptoms of food induced ill health. Those accessing the higher mark bands related their response to symptoms of food intolerance, allergies, food poisoning whilst demonstrating direct links to the scenario.

## **Task 2 Food Risk Assessment**

The use of a risk assessment chart enabled candidates to structure their response to the three criteria being assessed.

### **AC3.1** Describe food safety hazards in different environments.

### **AC3.2** Assess risk to food safety in different environments.

### **AC3.3** Explain control measures used to minimise food safety risks.

The risk assessment should reflect the given scenario in all areas not just the food on the menu. It is important that candidates read all aspects of the scenario so that they apply their knowledge and understanding of the assessment criteria when discussing identified hazards, determined risk level, critical control measures. Justification of measures was not a requirement of this external assessment. Some candidates were seen to discuss cooking on electric cookers when the scenario stated that two gas BBQs would be available. Others were seen referring to previous scenarios in relation to food preparation areas and food on the menu. Candidates need to think about how they organise their responses to avoid unnecessary repetition.

A number of very simplistic risk assessments were seen in which there appeared to be some confusion between accident prevention and food safety. Others which were more detailed only provided generic information. Where done well, as seen in some excellent responses, candidates focused all aspects of their risk assessment to the Sixth Form BBQ scenario demonstrating good knowledge of the purpose of the risk assessment they were producing, along with how it should be written specifically for the BBQ event to prevent food induced ill-health. These included descriptions of the hazards, risk levels and control measures, taking account of purchase, delivery, storage, food preparation, transporting from preparation area to outside venue, cooking, serving, disposal of waste in relation to foods on the BBQ menu.



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