



**General Certificate of Education (A-level)
June 2011**

**Design and Technology: Food
Technology**

FOOD3

(Specification 2540)

Unit 3: Design and Manufacture

Report on the Examination

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Set and published by the Assessment and Qualifications Alliance.

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Registered address: AQA, Devas Street, Manchester M15 6EX.

General

The paper was well received and candidates found the questions accessible. On the whole candidates stuck to the question, followed the rubric and made a positive attempt to answer concisely. There are, however, many candidates who re-write the question as an introduction, which is a waste of their time.

The longer questions differentiated effectively, allowing candidates to produce a response within their capability. Only those with excellent subject knowledge and understanding were able to gain marks in the top mark band. In general, however this year it was evident that many candidates had entered the examination unprepared, relying upon a basic knowledge of the subject content and common sense to get through the paper. As a result, many candidates achieved only a third of the marks available. They would have scored better had they invested a greater proportion of time in preparation for the examination. In future years, centres should try to divide the time more evenly between coursework and preparation for the examination.

QUESTION 1

01 This was a popular question which was generally well answered. Candidates were able to use their knowledge of nutrition and nutritional deficiency to answer the question. Only the most able candidates could explain fully why people misunderstand the concept of eating healthily, although many candidates were able to offer a range of possibilities, making effective reference to topical advice and issues. There was a tendency for candidates to lose sight of the actual question however, many spending a great deal of time talking in general terms about nutrition, rather than focusing upon the nutritional needs of nursery aged children. There was also confusion about the vegetarian diet not containing protein. Many candidates spoke about complementation of proteins, however. Candidates were also confused about the requirements of certain religious groups, sometimes confusing Hindus with Muslims. It was good to see that some candidates knew the correct DRVs / RDAs for young children and in particular the need for essential fatty acids, amino acids and sufficient calories to sustain an active life.

02 Candidates were generally confident with this question. The vast majority understood the term and were able to describe the various stages. Only a few were able to describe gelatinisation from a scientific perspective however, with reference to molecules. Many gave the correct temperatures for gelatinisation.

03 Although the term was largely understood by candidates, the responses were generally not so well explained or understood as they were for gelatinisation. Some candidates were able to illustrate their answer with diagrams and many compared the use of amylase and amylopectin. It was generally recognised that this occurs when products have been left to stand or have been frozen and then defrosted.

04 Candidates were less confident in answering this question. Many confused proteins with starches, though some candidates likened the effects to the degradation of both. The majority of candidates were able to identify the seepage of water from cooked protein and could give an example such as scrambled egg.

QUESTION 2

05 This was a popular question and in general it was well answered, though in order to gain marks in the top band candidates needed to fully understand the function of additives and their application commercially. At the lower end candidates made obvious and simplistic points without really justifying their answer. The better answers were those where the candidates focused upon each of the additives, giving examples of where and why they are used in terms of manufacturing and then relating this to the needs of the consumer. Weaker responses tended to focus upon colours and flavours and shelf life. Many candidates however, discussed humectants, anti-foaming and anti-caking agents and anti-oxidants, showing a good understanding of their use.

06 Candidates either knew this or they did not, but generally the responses were good. Some candidates did not read the following question before answering this one however and went on to discuss triglycerides within this answer. Most candidates were able to identify the fact that fatty acids have different chemical makeup and that there are 40 fatty acids, some of which are essential. The more able candidates were able to discuss the chemical makeup of fatty acids.

07 This was also well answered if candidates knew the topic. Many candidates included the triglyceride diagram. Most knew the term *glycerol* but some called it *glycerine*. Some candidates muddled fatty acids with amino acids and a few muddled them with the saccharides

08 Candidates generally answered this question well, demonstrating a good understanding of hydrogenation. Only the most well informed candidates were able to gain marks in the top band however. In order to achieve the highest marks candidates needed to show greater understanding of technical details. Many candidates knew about the use of a nickel catalyst and the changes the hydrogenation makes to the chemical formation of the trans fat molecule.

QUESTION 3

09 This question was not so popular and responses to it varied. Only a few candidates confused the word '*ethnic*' with '*ethical*'. Of course, for those that did this meant that the chances of gaining marks in this question were much reduced. Most responses included the obvious points about immigrants bringing with them their own food and dishes and this extending into take-away and restaurants outlets, which have proved to be popular in Britain. Many candidates talked about Chicken Tikka Masala as the favourite British dish, adapted from Indian cuisine to suit British tastes! Only the more able candidates were able to extend the discussion to include other observations, which enabled them to gain marks in the higher band. These candidates used examples, were able to provide sound reasoning and made reference to the question, which asked: '*To what extent.....*'.

10 Candidates either knew this well or not. However, the majority of responses showed a reasonable understanding and candidates made use of the key scientific terms to good effect. Weaker responses tended to talk about heat and mechanical action as part of the same point and often confused the effect of acid with preservation of eggs. The more able candidates discussed each aspect separately and explained, with reference to the chemical structure of protein, the effects of these actions on the protein. Many candidates provided diagrams of the chemical composition of protein but did not relate or integrate this into the question.

QUESTION 4

11 This was not a very popular question and the quality of answers varied. In general candidates recognised that they were being asked to discuss the routines and precautions that should take place when preparing high risk foods. To this extent they tended to cover many points correctly. Only the more able candidates were able to refer with some confidence to Listeria and the fact that it survives at low temperatures. Not all candidates knew the sources of Listeria and many talked about freezing the ready-to-eat food! When candidates discussed food preparation in relation to the demands of the question they did well. General answers about basic good food hygiene could only attain marks as far as the middle mark band. Only a few candidates described the procedures that take place in industry in sufficient depth and detail to gain top band marks, for example; describing the various stages of hand washing procedures, rather than just saying workers should wash their hands.

AQA apologies for this question requiring an erratum notice.

12 Most of the responses to this question demonstrated a reasonable understanding of the two methods of packaging, but there was evidence of confusion between the two at the lower end. Candidates who achieved high marks in this question were able to describe the methods and explain exactly how they extend the shelf life of foods. They could fully distinguish between the two methods and showed good knowledge of the gasses used in MAP. Only at the top level were candidates able to fully discuss the packaging materials used.

QUESTION 5

13 This was a popular question and candidates were able to argue the case well in most instances. Candidates had a good understanding of the different date stamps and what they represent. Many candidates extended their responses to include argument about consumerism and wastage of food. Some candidates were able to offer original suggestion for reducing food waste in conjunction with date stamping.

14 In general, candidates showed a good understanding of HACCP and were able to describe the various aspects of it fully. Safer Food Better Business was not so well understood, though it was evident that some candidates had been taught about the scheme and were able to provide detailed and accurate responses. The candidates who were able to describe the overall aims and workings of HACCP and Safer Food Better Business tended to score more highly than the candidates who became caught up in the specific details of procedures.

15 In general candidates missed opportunities in this question. Many misread the question and wrote a response about market research in general, rather than focusing upon the study of existing products. Answers tended to be simplistic, covering the most obvious points such as price, ingredients, and packaging.

QUESTION 6

16 This was a popular question and on the whole it was well answered. Candidates were able to provide a variety of different points and many were able to extend the argument beyond functional foods. (Some candidates did not understand the term functional foods) The candidates who attained marks in the top band provided very good responses which covered a range of different aspects and made arguments which in some cases were well considered and original.

17 Generally speaking this question was not well answered. Candidates were able to gain marks by providing obvious points such as packing the food in brine, vinegar or syrup to kill micro-organisms and sealing to prevent re-entry, but knowledge of technical details was missing. Few candidates recognised how a vacuum would be formed.

18 As with bottling, this question was not very well answered. Many of the marks gained were from obvious points rather from a sound base of understanding, thus many candidates did not gain full marks. Candidates were unsure about the two methods of canning or the need to blanch, expose to high temperatures and produce a vacuum. It was clear that the majority of candidates had no knowledge of times and temperatures required in the canning process. As a result they were unable to express fully how the method extends shelf life.

19 Candidates appeared to be more familiar with this method than the previous two. In general they knew the process and were able to provide time and temperature accurately. Many recognised ambient storage and the need to refrigerate once opened, as they did with bottling and canning.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the [Results statistics](#) page of the AQA Website.