Examiner's Report
Principal Examiner Feedback

Summer 2017

Pearson Edexcel GCE
In Design &Technology (6FT03)
Paper 01: Food Products

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications are awarded by Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk. Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk

Summer 2017
Publications Code 6FT03_01_1706_ER

The focus of the 6FT03 paper is to examine students on the knowledge they have developed throughout the course of this qualification on a range of food commodities, aspects of nutrition, product development and food innovation. Students are required to have a comprehensive knowledge of the main food commodities, their composition, basic processing and typical spoilage patterns.
A sound knowledge of nutrition and its influence on the diet, contemporary lifestyle issues and new product development is particularly important for food technologists. Similarly, consumer behaviour, demographics, modern lifestyles, cultural changes and sustainable issues have an influence on new product development. It is also important for students to be aware of the influence of new technologies and materials on the development of new food products.

The coverage of this paper effectively tested the students' knowledge and understanding of the topic areas and provided opportunity to apply this knowledge. The 'ramped' nature of the exam paper and variety of question styles and command words promoted accessibility to students of all ability levels. Progression, application of knowledge and understanding within the subject area was evident, with stretch and challenge opportunities for higher ability students. Marks were scored across all areas of the paper, with effective differentiation across the paper.
The purpose of this report is to share with centres general examples of the types of responses where students answered well and also to consider areas where students did less well, especially regarding common mistakes which caused students to lose marks. It is suggested that this report is read with reference to, or in conjunction with, the 2017 mark Scheme for this paper.

Question 1

Question 1 derives from the nutrition section of the unit. This question allowed students the opportunity to show knowledge of nutrition and the opportunity to identify deficiencies of the nutrients concerned.

Question 1(a) The best responses correctly identified a function of protein in the diet and most students were able to achieve the mark available. It was a good start to the paper with many showing clear understanding of the question and most being able to give a correct answer. It was pleasing to see a great variety of correct responses, with the majority focusing on growth and repair of body cells.

Question 1(bi) Most students were able to achieve 2 marks out of the three available by identifying the growth and maintenance of healthy bones and teeth. However, it is to be expected at A Level stage, that students can identify the function of calcium in the diet in further roles such as the regulation of metabolic processes or the transmission of information via the nervous system or the control of muscle contraction or in blood clotting. The best responses gave 3 correct different examples.

Question 1(bii) A good proportion of students were able to identify a medical condition resulting from the deficiency of calcium.

Question 1(c) There were several excellent responses to this question. Students could clearly communicate a description of the effect on the body of a deficiency of ascorbic acid. Responses ranged from descriptions of the effect on absorption of iron or effects on the immune system. Many students identified scurvy as the resulting long term illness. Good responses evidenced understanding and focused on the question.

Question 2

Question 2(a) focused on the malting process. The best responses outlined the process clearly explaining how starch in barley breaks down to produce maltose from which the malt is extracted. Where students did less well, there was focus on the fermentation process in beer making with lengthy descriptions of the beer making process but often completely neglecting the malting process. Students should plan their responses to ensure the focus of their response remains correct. This was an example where students answered the question in their heads rather than the one on the paper.

Question 2(b) focused on the pickling process for fruit and vegetables. Excellent responses identified products which could be pickled and showed high level knowledge of this process. It was evident that some centres have taught this process through interesting practical work. Medium responses identified commodities which can be pickled and focused on the use of acid to preserve food by inhibiting the growth of bacteria and the effect on the action of enzymes. Where students did less well, their responses outlined yeast fermentation often talking of the production of CO2 and alcohol, completely irrelevant to the pickling process.

Question 3

Question 3 is derived from the nutrition section, specifically focusing on the use of energy in the body, energy balance and obesity as well as the use of Dietary Reference Values.
Question 3(a). Most students could correctly state three factors which affect an individual's energy requirements. There was a good range of responses.

Question 3(b) It was very pleasing to see the excellent responses to explain how an individual who is obese can reduce their body mass index whilst making reference to energy balance. Most students achieved full marks on this question.

Question 3(c) expected students to evaluate the use of Dietary Reference Values by health professionals in assessing diets. It was therefore expected that advantages and disadvantages would be given in students' responses. Students who did well showed factual knowledge and gave good examples of the use of DRVs whilst correctly identifying the limitations. For full marks, a good evaluation was provided.

However, there were some very generalised responses which did not demonstrate an understanding of the use of DRVS. Some wrote about dietary guidelines, e.g. 5 a day, with no reference to DRVs. Some good descriptions giving the use of DRVs could not achieve full marks because no evaluation was offered.

Question 4

Question 4(a) focused on the process used to produce evaporated and condensed milk, - 3.32c) of the subject specification. The best responses provided evidence of knowledge of both processes. To achieve full marks, students needed to compare and contrast the processes. Both similarities and differences needed to be mentioned. There is a considerable difference between the production of both products as well as similarities. Where students didn't do so well, it was evident they were not familiar with the processes involved, although most students could identify that condensed milk has a higher proportion of sugar.

Question 4(b) and (c) also derives from 3.32c) of the subject specification, but this time the focus is dried milk. For 4(b) many students achieved full marks with most correctly identifying spray drying as the process involved. Where students didn't achieve marks, they evidently had not thought the process through with many writing about roller drying or simply stating that milk is boiled until all the water evaporates. It would have been good to have seen a greater knowledge of the concept of milk being concentrated under vacuum, (and this applies also to the previous question). Without this fundamental step, these products would not be possible as the quality would be too poor.

In Question 4 (c), students who gave not so good responses stated that the effect of the drying process on milk is detrimental to protein quality, however this is only the case if the dried milk is overheated which tends not to happen in commercial dried milk manufacture. The focus of the response should have been that the nutritional content is little changed by the process, however many not so good responses simply opted for the nutritional quality being worsened by the process. Marks could be achieved in this respect where students correctly identified B group vitamins or vitamin C.

Question 5

Question 5 focused on fish quality, fish preservation and the nutritional contribution of fish to the diet from unit 3.31 a), c) and d) of the subject specification.
Question 5(a) required students to discuss factors which affect fish quality before catch and during chilled storage. The best responses were able to give a range of factors and showed good understanding. These responses easily achieved maximum marks and it was good to see many students demonstrate high level knowledge. Not so good responses tended to quote from previous mark schemes concerning the breakdown of fish tissue after rigor mortis and, for the second part of 5(a) concerning freezing fish. None of these factors were relevant to this question. Students must be very

careful not to simply regurgitate previous mark schemes as it will not achieve marks.

Question 5(b) (i), (ii) and (iii) required students to explain the importance of Vitamin A, Vitamin D and Omega 3 fatty acids in oily fish. Government guidelines encourage the population to eat at least one portion of oily fish a week and it is the provision of these nutrients in oily fish which make this type of fish so important. It is expected that Food Technology students should be able to explain why. It was very pleasing to see a good understanding of these nutrients from several students. Many responses were detailed with students having a clear understanding of the functions and importance of these nutrients in the diet. Where students did less well, they did not have the required knowledge.

Question 6

Question 6 derives from the product development section of the unit with the focus being cultural changes. It also overlapped with contemporary issues (unit 3.45) ethnic and religious avoidance. It allowed the opportunity for students to provide extended writing and there were many excellent responses with students applying their knowledge well. Most students were able to achieve at least 5 marks from this question with many of the best responses achieving full marks. There were many excellent responses with students taking the opportunity to give detailed but focused responses. Discussions allowed for in-depth consideration of the impact of cultural changes. It was interesting to read ideas of how family life has changed resulting in the time-poor society and the impact of this on the way we eat. It was good to see an appreciation of the value many different cultures have had on food product development, sold in a myriad of ways. It was good to note the recognition of how these concepts have allowed for so many different products to be developed. Good responses included discussions of street food, pop-up restaurants, food products designed to address religious avoidance. This year there were many responses identifying the use of food ingredient boxes with ready weighed out ingredients, delivered to the home for families and individuals to enjoy a wide range of meals from all over the world. All made for interesting reading. Where students did less well, there was less of a focus and responses were too broad an interpretation of what cultural changes meant. Health or demographic responses, food scares, encapsulation or other factors which did not apply to this question were outlined. In fact a number of students, in their responses wrote about any concept they have learnt, environmental factors, business factors, aging population etc. Poorer responses moved away from the focus of the question and produce a jumbled response. Students should have the confidence to stick to the focus of the question rather than try to bring in anything with a tenuous link in the hope of marks. Good responses are always focused and selective.

Question 7

Finally, Question 7 derives from the product development and food innovation section, 3,5 1e with the specific focus being on modified starches. There were several excellent responses with the best ones focusing on different types of modified starch, describing and explaining how the starch is modified and applying its use. These best responses explained the use of modified starches for the manufacturer as opposed to natural starch in a domestic context, with a good understanding of retrogradation and syneresis evidenced. There were several good examples of use given to demonstrate understanding. Technical language has been used appropriately. Such responses acquired the marks available. Students with not so good responses either didn't know about modified starch, (and there were a number of students who left this question blank meaning a loss of 10 marks) or took guesses with some poorer responses focusing on genetic modification or encapsulation or discussing nutritional values of manufactured foods. Responses tended to be either very good or very poor, with few in the middle mark area.

To sum up, successful students were able to demonstrate and apply high level knowledge and understanding in their responses to the questions. It was very pleasing to witness the depth of technical detail included in responses to questions which required explanation and discussion. There were several good responses to all questions and it was very pleasing to witness that the majority of students attempted all questions.
It would be useful for all centres to ensure the Subject Content Guide 6FT03 is referred to by both teachers and students. This can be accessed on the Edexcel website, on the GCE Food Technology page, under Teacher Support Materials.

Pearson Education Limited. Registered company number 872828
with its registered office at 80 Strand, London, WC2R 0RL, United Kingdom