Examiners' Report/
Principal Examiner Feedback

Summer 2015

Pearson Edexcel GCE
AS Design and Technology
Food Technology Unit 2 (6FT02/01)
Design and Technology in Practice

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General Observations

Teaching of the current specification continues to be of a high standard, enabling students to be very successful in this unit. Teachers are delivering the breadth and depth of knowledge required to be successful in the written examination. The questions on this year's paper enabled students to demonstrate detailed knowledge in a variety of topics. The use of technical vocabulary increases and enables students to access the higher marks.

Question 1

1a – a straightforward knowledge question which was answered correctly by most students. Some candidates gave fructose as being less sweet than sucrose.

1b – the effects of heat on sugar were described well – most popular responses focussed on the colour change that occurs during caramelisation. Candidates sometimes stated incorrectly that this was an enzymic browning reaction.

1c (i) – the vast majority of candidates knew that pectin was the gelling agent.

1c (ii)– most candidates demonstrated good knowledge of how to create a firm gel in jam making. Some responses to this question were too vague for a mark e.g. "heat" or "pH". At AS level it is expected that students would be able to give more precise information.

1d – the differences between amylose and amylopectin have been taught well by most centres and many students gained full marks for this question. Others misinterpreted the question and simply described the process of gelatinisation.

Question 2

2a – the use of solvents to extract flavours was widely identified and higher ability candidates were able to provide details such as the benefits of using steam.

2b – most candidates understood that an "evaluate" question required advantages and disadvantages to be included in their response. This question was well answered and it was pleasing to see some students discussing the sustainability of natural flavours. Reading questions carefully is vital. Some candidates lost marks because they discussed the reasons why manufacturers use flavours.

Question 3

3a – many candidates drew a diagram and gave a written explanation ensuring they gained full marks. Most gained their two marks for identifying one glycerol molecule and three different fatty acids. Few included the remaining water molecule. Candidates who did not explain that the fatty acids had to be different only gained one mark.

3b – this was a "describe" question and so required students to give ONE method of preventing oxidative rancidity which needed to be expanded. Many gained full marks by explaining the reason for adding an anti-oxidant. Others lost a mark for stating more than one method without any explanation.

3c - many students gave excellent, accurate explanations of essential fatty acids and this 6 mark question enabled them to demonstrate detailed knowledge of the topic. The many functions of EFA's in the body were identified and explained well. Regrettably a number of candidates either misread or misunderstood the question and wrote at length about essential amino acids.

Question 4

4a - a straightforward knowledge question which was answered correctly by most students.

4b – there were many possible correct answers and the majority of students gained full marks for this question. Some responses required a specific example to gain the mark e.g."cheap" as this is not always the case for dried foods.

4c – a question in three parts that required one fact that was explained for each part.

With regard to "size reduction" many candidates took this to mean uniformity of size for even heat penetration. Others saw size reduction as necessary to fit products into packaging. Those who gained full marks primarily stated that size reduction increased surface area resulting in a quick rate of water loss.

The need to blanch was well answered in many cases with students understanding that this was linked to enzymic action. Others incorrectly referred to bacterial growth.

The addition of preservatives was generally identified as necessary to extend shelf life with more able candidates referring to their effect on colour.

Question 5

5a – This question examined part 2.5:3 (Preservation processes) of the specification, specifically the effect of controlled atmosphere storage on fresh foods. Most responses identified the effect on micro-organism growth and many were able to accurately explain the effect of reducing oxygen or increasing carbon dioxide. Few candidates included the effect on mould formation or that CA delays the ripening process.

5b – many students performed very well in this "comparison" question and frequently gained full marks. However a high percentage included details of each process which gained them no marks as the question asked for the "**effects"** of pasteurisation and sterilisation. It was disappointing to see some candidates gaining no marks because they got their descriptions mixed up. In a comparison question responses must state at least one fact for **each** method to gain full marks.

Question 6

6a – This question examined part 2.5 (Quality) of the specification, specifically the importance of critical control points in food production. This question provided students with an opportunity to apply knowledge gained during their coursework "Portfolio of Creative Skills" in the examination. Many gave detailed explanations of two CCP's gaining full marks. The need for time and temperature control as well as storage condition were the most frequently described. **Critical** control points relate to the prevention of microbial growth whereas control points may relate to quality. Some candidates were not able to make this distinction.

6b – many students gave excellent, accurate descriptions of how the rate of freezing affects the quality of food products. Fundamentally this question needed an explanation of how the speed of freezing would affect the size of ice crystals leading on to descriptions of the impact on texture. Consequently students who just discussed the conversion of water to ice were unable to gain any marks. Underlining the key words is good practice and may assist students to answer the question correctly.

Question 7

7a –it was clear that the role of emulsifiers is taught well in most centres. The use of technical vocabulary was pleasing and many candidates were able to write detailed explanations, writing much more than was required for 10 marks. Their detailed knowledge was a credit to centres. Whilst the use of emulsifiers in immiscible liquids was understandably the most frequently discussed, many candidates also referred to their functions in bread making and ice-cream. Students are advised to plan their response to longer questions to ensure their response is in a logical order.

Summary

Based on student's performance on this paper, the following points may assist centres in the delivery of this unit:

- Familiarise students with the specification prior to the examination.
- Encourage students to read the stem of a question and also to underline key words. This may focus their thoughts and ensure they give the correct response for that question.
- Ensure that students correctly interpret the command words used in the questions.
- For longer response questions students may benefit from writing a plan so that their answer is written in a logical order.
- Where relevant make links between Units 1 and 2. For example, students would have written a risk assessment as part of their Product Manufacture topic.
- Whilst answering previous exam questions is a useful tool for examination preparation, students need to realise that the focus will change and ensure they are answering the question that has been set in their examination.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
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