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Examiners' Report/ Principal Examiner Feedback

Summer 2014

Pearson Edexcel GCE in Design & Technology

6FT02 Paper 01

Design & Technology in Practice

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UNIT 6FT02

Design & Technology in Practice

General Observations

Centres are to be congratulated on their teaching of the specification for 6FT02. It is clear that teachers are confidently delivering the breadth and depth of knowledge required to be successful in the written examination. The range of questions, both in content and demand, effectively enabled clear differentiation. Many students demonstrated detailed knowledge of processes and offered detailed and accurate explanations in the most challenging of questions. Fewer students failed to understand the key command words ensuring that marks were rarely lost in this way.

Question 1

Question 1a – a straightforward knowledge question which was answered correctly by most students, with 'steam' and 'abrasion' as the two methods most frequently given.

Question 1b – the benefits of blanching were understood and many students gave more than two correct benefits.

Question 1c – the differences between sorting and grading continue to be difficult for students to describe. This was an effective differentiation question. To gain full marks for Q1c(i) it was necessary for the response to include reference to sorting involving separation by a **physical characteristic** with the second mark being given for an example. For Q1c(ii) the key word is **quality**.

Question 2

Q2a and Q2c – very well answered with most students gaining full marks for these parts of question 2.

Q2b – very few students were able to name more than one component of dietary fibre. Many identified functions instead – this is examined at A2. Part 2.3 (1) of the specification requires students to learn basic characteristics of carbohydrates and fibre is named here.

Q2d and Q2e – centres are teaching retrogradation well and many students demonstrated their understanding – often writing detailed descriptions of syneresis for example. The relevant characteristics of amylose and amylopectin were often described in parts d and e. Preventing retrogradation (part Q2e) was not as well answered and incorrect responses often included vague reference to additives, temperature or pH.

Question 3

Q3a - most students correctly named two pigments. Many were unable to spell words such as 'carotenoids' correctly and, whilst they are not penalised for this, occasional spelling activities would be valuable for developing accurate technical vocabulary and literacy.

Q3b – those who read this question carefully were able to gain full marks with 'consistency', 'cost' and 'availability' being the most popular responses. Some students misinterpreted the question and gave advantages of all colours and not the specific advantages of **artificial** colours. Others confused colours with **flavours**.

Q3c – students did better in this question when they read the stem carefully ie "explain the use of the following **three** food additives in the food industry." Keeping this in mind was important to ensure that relevant information was given. For example – many students described how an emulsifier worked rather than its use in the food industry. In Q3c(i) some students discussed the antioxidant vitamins – this is not relevant to the question set.

Question 4

This question examined part 2.5 (Quality) of the specification, specifically the content of a food product specification. In addition the question provides students with an opportunity to apply knowledge gained during their coursework Portfolio of Creative Skills in the examination. For this reason the mark scheme included the key words students are likely to have used in their own product specifications such as "form" and "function". It was clear that many students had been taught this topic in this way and, when correct descriptions were given, maximum marks were gained. Other students were less knowledgeable and either described HACCP or labelling requirements.

Question 5

Q5a – responses to this question were frequently both detailed and accurate. Many students correctly discussed how temperature **affected** bacterial growth. However to gain full marks at AS level the following points should be noted:

- Chilling will not **prevent** bacterial growth and so is not acceptable.
- Knowledge of temperatures are expected at AS level. Marks were not given where students simple stated that bacterial growth was prevented by heat.

This question asked for two ways to prevent bacterial growth and there were four marks available. Students should understand that two marks will be the maximum for each example.

Q5b – in 2.4:2 "Underlying microbiological principles" the specification clearly separates hygiene into Kitchen, Personal and Food. Centres are advised to ensure that students fully understand these distinctions. The

focus in this question was to explain how a food manufacturer should ensure their **premises** met hygiene regulations. Underlining the key words is good practice and may assist students to answer the question correctly. Many lost marks as a result of giving several **personal** hygiene practices. Others lost focus and described in detail the consequences of failing to meet regulations.

Question 6

Q6a – well answered with caramelisation and the maillard reaction as the most common responses.

Q6b(i) - many explained denaturation accurately describing the change to protein and an example of what causes this. Higher ability students were able to describe the consequences such as increasing viscosity.

Q6b(ii) – many students gave excellent, accurate explanations of biological value, whereas others lost marks for failing to include the key word **"essential"** when describing amino acids. Some students were confused and referred to "essential **fatty** acids". This question asks for an explanation and so it is important that students give a fact which is then explained to gain maximum marks.

Q6c(i) and Q6c(ii) – this question examined students' knowledge of the nature of proteins in terms of their function. It was clear that some students were not familiar with the terminology in the question (ie structural and physiologically) even though these are taken from the specification. The command word in this question was "describe" and therefore required students to give a point and develop it for full marks. Many students gained full marks for stating that structurally protein is needed for growth with an example such as muscle. Few gained two marks for Q6c(ii) as they gave two different contributions eg hormone and enzymes, rather than developing one of these answers.

Question 7

Q7a – the canning process has many stages and it was clear that this is taught well. The expectation in a describe question is that students will avoid writing a list or use bullet points. Students are advised to plan their response to longer questions to ensure their response is in a logical order. Higher ability students were able to give reasons for processes such as cooling cans slowly and many wrote much more than was required for 8 marks. Their detailed knowledge was a credit to centres. Some students incorrectly stated that cans should be rapidly cooled.

Q7b – a more challenging question than Q7a, but many students gave at least one reason why cans may spoil. The focus here was on incorrect procedures during manufacturing, not spoilage caused by simply dropping cans or after being opened. Many students were able to identify a reason such as insufficient heat treatment and then explain the consequence of this.

Summary

Based on student 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.
- For longer response questions students may benefit from writing a plan so that their answer is written in a logical order.
- Displays or activities which feature relevant technical vocabulary may assist students to learn the spelling of these key words.
- Where relevant, make links between Units 1 and 2. For example, as part of task A (product investigation) pupils investigate the purpose of ingredients. This can be effectively linked to materials, components and working properties in Unit 2.
- 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:
http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx

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