



# Examiners' Report June 2011

GCSE Design & Technology: Food 5FT02 01



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#### Introduction

In the second year of this examination, candidates have continued to make good progress with the specification and there were a range of levels of outcome, as to be expected with the mixed cohort of students. This paper was well received and answered, with very few candidates failing to attempt the questions. The coverage of the subject content was broad, and varied, effectively testing the candidates technical knowledge and understanding of Food Technology. The 'ramped' nature of the exam paper and variety of questions styles and command words promoted accessibility to students of all ability levels. Progression and application of knowledge and understanding within the subject area was evident, promoting stretch and challenge opportunities for higher ability candidates.

Marks were scored evenly across all areas of the paper, with effective differentiation across the paper. More centres should make use of scribes or readers as there were many papers that were illegible as candidates were possibly not English speakers or could not read and/ or write. Handwriting was variable, with some answers illegible as a result, some candidates lost marks through carelessness or lack of thought and effort.

5FT02 paper requires candidates to answer 14 questions in 90 minutes. The multiple choice questions and short answer questions were well received. Short, concise answers tended to fair better than lengthy responses that were too wordy or in deed went beyond the space for answers. Many candidates managed to write at considerable length in this time for the extended writing tasks. However, some of the answers were not focussed on the question. Relevance rather than length is the key to high marks. Additional pieces of paper are unhelpful to the marking process, and centres should note that the amount of space provided in the booklet for answers, is more than we would expect any answer to take, and not a recommendation of the amount candidates should write.

Centres need to be aware of the necessity to prepare candidates for this exam by ensuring that they have a full understanding of the requirements of different question types: name, state, give, describe, outline, evaluate and explain. Often, candidates had difficulty in achieving the full marks for questions asking for an explanation, because answers were not supported with relevant linked examples or reasoning. Additionally, some of the technical questions relating to food products and nutritional understanding were incorrect or vague. Centres must focus on technical understanding, to enable candidates to access the higher marks. The design question was extremely well received, and significant improvements have been seen with the quality of sketched and written communication by candidates. Additionally, the extended writing answers were much better organised, with good planning and use of terminology presented by candidates.

# Question 11 (a) (i)

Grater: Size reduction/grating / grate named ingredient such as: cheese/ bread/ carrot/ apple/celeriac/ potato/ chocolate/ vegetables/fruit

Slice or shred were not accepted as the image is of a handheld grater used for grating/size reduction.

Tool/Equipment	Name	Use
	Grater	grates Foods Such as choese or carrots etc into very Smalland chin Strips (1)
Exa	Suits Plus miner Comments identifying use of equip	
Tool/Equipment	Name	Use
	Grater	grates Foods Such as Cheese Or Carrots etc into very Smalland chin Strips (1)
	suits lus miner Comments arded.	

Tool/Equipment	Name	Use
	Grater	used to grate cheese or carobs
		used to chop veratables



# Question 11 (a) (ii)

Vegetable knife: peel/cut/slice/chop/dice fruit and /or vegetables.

A well answered question by all candidates





# Question 11 (a) (iii)

Named equipment: Electric balloon whisk/hand mixer/hand whisk/whisk.

A well answered question by all candidates.

# Question 11 (a) (iv)

Named equipment: sieve

This was the only answer accepted.





## Question 11 (b)

This question was well answered by the majority of candidates. Most candidates were able to correctly name two other nutrients found in milk. The main error occurred where the stem of the question was repeated in the answer.

(b) Milk is rich in protein. Name two other nutrients found in milk. (2) Carcium 1 Vitamin A 2





Candidates must revise thoroughly the nutrients and their sources, functions and deficiencies as prior preparation for the exam paper, as this is a topic that underpins the whole qualification.

## Question 11 (c)

Any three from the following milk products were suitable answers:

Cheese

Yoghurt

Cream

Creme fraiche

Fromage frais

Butter

Ice cream

Any other named milk product was not acceptable. Candidates scored well in this answer.

(c) Name three dairy food products that are made from milk. (3) 1 yog of E 2 cheese 3 cream



Results Plus Examiner Tip

Primary and secondary foods will be used throughout practical work and it is an opportunity to consider how they have been prepared and processed to meet the needs of the recipe or consumer. (c) Name three dairy food products that are made from milk. (3) 1 Cheese 2 Yoghurt 3 Cream (whipped, clotted or single/double)



## Question 11 (d)

This question produced mixed responses, with many A/B/C candidates correctly identifying two other preservation treatments for milk. Errors started to occur where candidates confused storage and preservation techniques, or wrote down muddled abbreviations.

(d) Pasteurisation is used to extend the shelf life of milk. State two other preservation treatments that are commonly used for milk. (2) 1 Sterilisation 2 UHT (Ultra Heat Treatment) -





## Question 11 (e)

Candidates answered this question with varying degrees of success, depending on their interpretation of the command word 'explain'. Where candidates provided a linked explanation to their initial statement, they were rewarded with the full two marks. Regrettably, many candidates just listed the undesirable effects of milk going off, with no further explanation.

Milk curdles/sours/separates due to presence of lactic acid bacteria/past best before date (1 mark), which can cause an unpleasant smell/ texture/taste/reference to lumpy (1 mark)

(e) Milk is a highly perishable food.	
Explain <b>one</b> undesirable effect of milk going off.	
	(2)
The milk can areadle and thicken giving	the
milk a your facte and undesirable lumpy fest	une
0	



This answer names an undesirable effect of milk going off (curdles), and links this to the unpleasant taste (sour) and (lumpy) texture. A good answer for two marks.



If candidates consider the statement they have written, and then add.... because ....to their statement, it will allow them to explain the rest of the question and hopefully make the question more accessible to achieve the full marks.

# Question 11 (f)

Candidates are familiar with high volume production and there were many excellent answers referencing:

- · Popular product/consumer demand (1)
- Easy to adapt product line to alternative flavour/taste/colour (1)
- · Consistent quality/flavour/texture/consistency (1)
- $\cdot$  Few ingredients required (1)
- · Fast/quick (1)
- $\cdot$  Easy to produce (1)
- $\cdot$  Short shelf life (1)

The most common answers referred to the speed of the production line, popularity of the product and short shelf life.

(f) Give two reasons why milk shakes are made in high volume. (2)y are a popular product



(f) Give two reasons why milk shakes are made in high volume.

(2)

2 it a highly consumed product



#### Question 11 (g)

This question required candidates to describe two modifications to the fruit milk shake drink product that would make it suitable for a consumer following a lactose intolerance diet, using candidate's product analysis and evaluation skills. Many candidates offered sound modifications to the food product, focussing on the type of milk or need to remove the milk altogether to create a different style of drink product. There were many imaginative smoothies and fruit based drinks mixed with juice, water or ice. However, candidates often struggled to describe how these modifications were making it suitable for the special dietary need. Vague statements about changing the sugar were not worthy of any marks. This question offered stretch and challenge opportunities, and in the main this was a successful outcome to those students.

Some good technical knowledge displayed in this answer, referencing the choice and selection of alternative ingredients.

(g) The following recipe was used to produce a prototype drink product. 300ml cows milk 50g strawberries 15g sugar Describe two modifications that would make the drink product suitable for a consumer with lactose intolerance. (4)Replacing the cons milk with soya milk, because sorge milk is produced ecially for those with lactore uster instead of cons mills and changing the quartities to add some it juice to

**Examiner Comments** 

Two good quality answers.

(g) The following recipe was used to produce a prototype drink product.

300ml cows milk

50g strawberries

15g sugar

Describe **two** modifications that would make the drink product suitable for a consumer with lactose intolerance.

(4) ye the 300mbs You milk cor cons 1 .... to Same Sof amount because m 00 C 2 Co ns m Soup



#### **Question 12**

The design question produced some outstanding responses from candidates with excellent sketching and annotation from candidates across the ability range. A wide range of healthy fast foods were presented for both savoury and sweet food products. Most candidates managed to illustrate and label two different ideas. Centres have worked hard to raise achievement in this section of the question paper. All examiners noted the improvement in communication techniques and ability of the candidates to be creative, imaginative and at times quite inventive with their recipes - great work!

Where candidates had read the question carefully and planned their answer methodically; and sketches and annotation succeeded in showing how the design had met the specification points, they were rewarded with some high marks. It is not acceptable to just label the specification points; they must be annotated indicating how the design has met each point. The point that caused greatest difficulty was the suitable to be eaten hot or cold. Responses needed to focus on ways this can be achieved. Therefore correct answers could have referenced that the food product maybe reheated in oven/ grill/ microwave/all ingredients have been previously cooked, so may be eaten cold.

Candidates who planned their answers carefully were rewarded with high marks because they used the specification as a checklist, to ensure they cover all the points.



veggie curry pocket Design idea 1 (8) any Sauce -range of precessof quo teatures (protein regetables ( canots saturated fat) peas vegetable, of Molegran noon bread pocket containg jubre filling - can be micronared or eater cold ( engredients would Design idea 2 Fruit Crumble (8) Fibre - made commble topping of costs and nuts filling - motion when for the portion of formit wange of testures manata low in saturated gat plastic container (suitable to be micromared) single portion **Examiner Comments** Mixed success with these answers as there is some detail missing with the named textures and saturated fat content.



### Question 13 (a)

This was a very poorly answered question, with many candidates unable to name the protein food (rice/meat/chicken/lamb/fish/beef/turkey/pork) as the high risk food. An improvement was seen in the second part of the question which required a reason why the named protein food was a high risk food. Good answers referred to a highly nutritious protein food/high moisture content that supports the growth of micro-organisms/causes food poisoning, when not reheated sufficiently.

(a) This main meal curry product contains high risk ingredients.	
Name <b>one</b> high risk ingredient contained in the curry product, sta high risk.	ting why it is
підпільк.	(2)
Ingredient	
Protein food. Eg Chicken	
Reason	
Prone to backeria and can cause Food	Pairing Also



Name <b>one</b> high risk ingredient contained in the curry product, high risk.	stating why it is
підпі піяк.	(2)
Ingredient	
Rite	
Reason not reheated to above 72° caud cause cood point	isoning.
HAR I.C. R. LAND I. H. LAND MARKEN MARKEN MARKAN	f the metric mean



#### Question 13 (b)

Candidates are familiar with the use and choice of standard components with a good range of responses linked to time, consistency, reducing waste, quality and cost effectiveness. It is possible to differentiate answers based on the quality of the linked explanation.

(b) Explain why standard components are used in the manufacture curry food product.	e of the main meal
	(2)
Standard components are used becau	ise they are
easy to store, as most are arrived or	ready mode.
Quick to use as they don't have	to be hand
made, and can be computer and	



#### Question 13 (c)

Answers needed to focus on the principle that batch production is for a fixed number of identical items. Therefore a variety of styles/shapes/sizes/ flavours can be produced for different batches of curry meals. Some candidates offered suggestions for these ideas linked to consumer demand or seasonal variations of ingredients. Consistent quality, shelf life, recipe development, speed of production and bulk buying were all relevant acceptable answers, presented by candidates across the ability range.

(c) Give two reasons why the main meal curry product would be suitable for batch production. (2) 1 Curry 15 Suitable For batch Draductor a popular product IS. inco by differentage an be many dufferent flowours 021D 2 C con batch be made In **Examiner Comments** A good answer awarded two marks. (c) Give two reasons why the main meal curry product would be suitable for batch production. (2) 1 All the meals need to be made in the same way so batch producing them would ensure consistency. 2 The reape can be altered to change laste or flavour so producing batch would make this easier to do. them in **Examiner Comments** Good answer awarded two marks.

#### Question 13 (d)

Marks varied considerably for this sub section, where candidates had to explain why the curry product was successful at meeting two specification points: suitable for reheating and provide a range of textures. Many lower ability candidates just repeated the question and were unable to receive any marks for this section. More able students applied their understanding of food components and processes by identifying that the curry product could be reheated using a microwave oven/ conventional oven due to the nature of the packaging materials, or named sauce component which prevented the product from becoming dry or unappetising, or that the curry was already cooked and could reduce the incidence of food poisoning if reheated to above 72'C. Many answers referred to the consistency of flavours and textures after reheating.

Named textures for two of the components within the curry product were well presented for the second specification point by most candidates.

(d) Explain why the main meal curry product is successful at meeting the following specification points: Suitable for reheating. (i) (2)won't dry up or affect the se when reheated. The protein food is already cooked so there is no of contamination (ii) Provide a range of textures. (2) The rice is hard, the sauce is smooth and the chicken potein is soft but chewy. There is a nge of textures.

Examiner Comments

A representation of the quality of answer submitted by candidates for this answer.



(d) Explain why the main meal curry product is successful at meeting the following specification points: (i) Suitable for reheating. (2)the curry tood is suitable for reheating because it can be placed ind microwave had beheated (ii) Provide a range of textures. (2) he rice vill have a cherry xture, and the protein od will be soft and R (N Y



#### Question 13 (e)

As an extended writing exercise linked to QWC, this question proved to be highly successful for many candidates. By using the level descriptors outlined in previous sample assessment materials, candidates generally demonstrated accurate technical vocabulary linked to food technology and a good understanding of the evaluation process. Where writing communicated answers effectively, with clarity and organisation, candidates were rewarded with high marks. It is possible to provide 3-4 well explained evaluated points to achieve the high marks. However, many candidates provided many more as either a bullet pointed list or paragraph format focussing on the main comparisons and similarities between the two methods. To move the response from a weak/average answer to one that is worthy of full marks, requires explanation of each comparison together with clear, effective communication throughout the response.

Evaluate method A compared with method B for use by a food manufacturer. (6)\* method B checks the ingredients for quality using control systems (HACCP possibly), method A w manually weighs the ingredients when manufacturing food tests must be camed out often to make sure eventhing is safe and consistant another dyperence in method B standard components such as pre-washed regetables are used to save the many factures time and in method A- the chef must manually wash the ingredients. method Buses a depositor to inject ingredients into a product, this is to make sure the correct amount is placedin all of time (concistency) in method B, at three Stages during manufacture the product/ingredients are checked for quality. This D to make sure the consumer is in no danger when consuming the product. Method A has hoquality control (Total for Question 13 = 16 marks) (continued) Method B uses black chilling to cost the product to save time. method A says to 'take and sealon cury' method B does not use this because-their products must have a consistent taite and flavour.

#### esults Plus

#### **Examiner Comments**

Évaluation and comparison in this answer is worthy of a high level response in the level descriptors.

Evaluate method A compared with method B for use by a food manufacturer. (6) Method A user gresh ingredicuts inich need to be prepared whereas Method B uses pre-prepared into. Method A makes the curry insmall ingre guartities batch mercan method B ζĴ using prod uction. Method A must be der Method Bisall inereas done mac Method Bindues Lots of quality Ch an mereas Method & A doisn system chech; Overall Method B would be e pr more 60 a good many gottes mare the use 0 actu because it is cheaper and easier to make then nethod A and Method rs and prepare 15 much More suitable for batch and uction shich for the nigh dena U) reded



A good quality answer, well organised with effective evaluation and use of subject specific terminology.

#### Question 14 (a)

An excellent range of responses provided by all candidates, demonstrating a good understanding of the current environmental and moral issues associated to Food Technology.

14 (a) There are many issues within the food industry.	
(i) Give <b>two</b> current environmental issues within the food industry.	(2)
1 Air Miles	(4)
2 Waste Packaging	
(ii) Give <b>two</b> current moral issues within the food industry.	(2)
1 Amount of food waste	
2 vegetarians/vegans.	
(b) Describe <b>two</b> ways in which the food industry is trying to help consumers reduce	ce .



14 (a) There are many issues within the food industry. (i) Give two current environmental issues within the food industry. (2) problem- as it wasnes resources tapkaoma ß a milles are a production of the humapertialized -emmans coz emissions Give two current moral issues within the food industry. too (11) (2) Padare Forming on animals is seen to The use of 1 m many De macmeet crops are also an Modified of Generically Tho ap 2 issue.

(b) Describe two ways in which the food industry is trying to help consumers reduce

US **Examiner Comments** Accurate selection of answers. Four marks awarded.

#### Question 14 (b)

This was a good question and very well answered. Candidates knew about the excesses of packaging, food miles and Co2 emissions, which were the most common answers. The quality of detail in the answer provided good differentiation for the grade boundaries.

(b) Describe two ways in which the food industry is trying to help consumers reduce the cost of their shopping bills. (4)1 They are trying to reduce Countres other Hood from raging bar graw th peop TO. encor onw K produce th amount 2 👗 CINCI e Of. Pac IS not needed tha materials ald



Three marks awarded as the second part of the answer needs further description to warrant the full four marks. Three marks awarded.

(b) Describe two ways in which the food industry is trying to help consumers reduce the cost of their shopping bills. (4) 1 The food in war MO wind 10 amount Alasme LSEA which an heir MORONS 1035 CODIS 120101 consigners food 2 the number ot motes also is trems OVINO bo aimma to be rea custemens Di 13 ١S la ell seasenal <del>64</del> asno In 90 polatoes, saturan e 03 shawpennes such



#### Question 14 (c) (i)

Candidates presented a very mixed selection of answers, but there was evidence of the following answers across the cohort of students:

One check from:

Raw materials: washing/visual check for bruising and rotting/ sampling/ traceability or any named temperature control checks/date marks/check condition/bacterial tests (1)

Weighing/measuring: calibration of scales/ electronic scales to weigh minute quantities/ visual check of recipe/ratios/proportions of ingredients/tolerances. (1)

Packaging of foods: tamper proof/ seal/ metal detector/visual check/no damage/check codes/traceability code. (1)

(c) Quality control procedures are used throughout the food industry.
(i) Outline <b>one</b> quality control check that would take place at the following stages of production, giving a different check for each stage.
(3)
Raw materials At metal The products would be parced
through a metal detector to ensure that no
metal theses is inside the van materials
Weighing/measuring The product would be neighed / measured
by a computerised system to ensure everything is
The correct neight
Packaging of foods The product would be visually decked
to ensure all of the products never up to the
correct standard
(ii) I shalling of food halps to ansure the quality of food products for consumers



(i)		check that would take place at the a different check for each stage.	e following (3)
Raw mater	als Testing the pi	H value of raw mo	iterials to make
	they are nom	0	
Weighing/	neasuring Meauni	ng the weight or vo	Tune of the
produc	+ to make sur	ethol whis concist	artatall
time	( (They may test	taround 5 in every	bater)
	of foods Making S	we the packaging	is conrectly
Packaging			
		product. for exam	ples in atmos-



An interesting named QC check for raw materials, which could have been supported further by a named ingredient. However, the mark was awarded as the named ingredient was needed to obtain the mark.

### Question 14 (c) (ii)

A well answered question by most A/B grade candidates who knew the reason why food has date marks on the label and demonstrated good understanding with a linked response for this 'explain' question. Most C/D grade students named the date marks without making any mention of their use in food labelling. F/G grade candidates frequently misunderstood the question and wrote down 'expiry date'.

(ii) Labelling of food helps to ensure the quality of food products for consumers. Explain the use of the date mark system in food labelling. (2) it can tell you the best before date which is where it no longer Should olisplayed bought pe because it nas the Consumer. consume 12 / TAL afte openno ISKS ſ Examiner Comments Named date mark and reference to risk. Labelling of food helps to ensure the quality of food products for consumers. Explain the use of the date mark system in food labelling. (2) Preducts are labelled with UBP-bu  $\bigcirc$ M3K SWOH ONS loon pp Consimpl Line may deprease in aveiling 1000 is the date o antal which men her good slock supermarkets must discard **Examiner Comments** Named date mark and linked explanation.

#### Question 14 (d)

CAD, CAM and CIM and their applications within the Food industry provided some excellent technical discussion focussing on the design and manufacture of food products. Candidates presented good subject knowledge of CAD and CAM, with references to their own experiences within controlled assessment and theory work. Answers need to focus on at least one use of ICT in the design and manufacture of food products:

CAD Adding pictures to text: clipart, scanned images, photos in packaging

Using CAD packages: packaging nets, product profiles, food labels, design ideas.

Research: using internet, databases, email/construct questionnaire, surveys, using word, analyse results.

Databases: recipes

Modelling: nutritional databases.

Spreadsheets: scaling, costing, stock control.

CAM Monitors and controls the automatic production of food products based on set specifications and tolerances: sensors and QC. Microwave ovens, timers, bread makers, edible icing printer, depositor, injectors.

CIM All stages in a food production process are integrated and controlled by computer systems. Computers are linked in a network and control both the machinery and the flow of information during the process

\*(d) ICT is used throughout the food industry. CAD Discuss the ways ICT can be used within the food industry in both the design and manufacture of food products. (6) (consulor CAD gary to held c OR lldry 818m the M no ni 01 to and options MO OS CAM CIVILE Compute nously the CC MA Conver maniallio wes HAN Pasier For mitter had he P into the ne Ω KhB t NOU ne out ash automa ( Dell Ø ea Ca nos had 10 envored lessshal to be 1 his means 0 ea that BRIEF, 50 HEREIBRE malle medu Durier 1sterra



A technical answer with good discussion of the use of ICT the design and manufacture of food products. 4 marks awarded.

\*(d) ICT is used throughout the food industry. Discuss the ways ICT can be used within the food industry in both the design and manufacture of food products. (6) CAD Class or no in in U ali n w 07 als 0 emplialer



and effective use of terminology.

\*(d) ICT is used throughout the food industry.

Discuss the ways ICT can be used within the food industry in both the design **and** manufacture of food products.

many ways in the road industry. ICT COA be used comp luters S be used to design the packaging for a product. Additionally 000 They can be used to calculate the cost of a product so manufacturers are able to change it is they need too. Products need to have nutritional aformation on labels by cow and ICT Sau help to calculate a products nutritional value. During manufacture, especially in factories ICT is used to control machines, giter temperatures, the speed at which products travel on conveyor belts etc. sensory analysis results can be brought up on a computer a many acuter gain product on a product. ICT can to help quality check products, that they have been cooked to a help to safe number of degrees and so on. Without ICT it would be difficult to control numboral food value in provducts. Very in manufacture and many other things (onsistenly



(6)

#### **Paper Summary**

Centres have made excellent progress with the delivery of the new GCSE Food Technology specification. Centres now have a good understanding of the requirements of the GCSE course, particularly as a result of acting on advice and support offered in the Principal Examiner's report from 2010, the Edexcel GCSE Food Technology Textbook, training meetings and Edexcel's extensive initiative of delivering free online support meetings and traditional inset meetings focusing on developing good practice, which has also been of obvious help to those centres who attended an event or who accessed the website support and exemplar materials.

This paper performed well and produced effective differentiation for our candidates.

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