

Examiners' Report  
June 2013

GCE Design and Technology 6FT03 01

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## Introduction

The focus of this paper is to examine students on the knowledge they have developed 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 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 candidates' knowledge and understanding of the topic areas.

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.

It was very pleasing to see the depth of detail included in questions which required explanation and discussion. Successful candidates were able to demonstrate high level knowledge and understanding in their responses to the questions. It is evident that centres are teaching the specification well and training candidates to appropriately recognise and use the stem words which are used to differentiate questions. It was pleasing to see that candidates could apply theoretical knowledge to practical situations as with question 5. Discussions, such as with question 6, were presented in a mature fashion and frequently with depth of insight showing that candidates are using the knowledge they are acquiring in a reflective and thoughtful manner.

Less successful candidates frequently had difficulty in achieving marks in the questions which required explanations. It is not sufficient to simply provide descriptions; underlying explanations also need to be provided at this level. Less successful candidates sometimes misread questions, for instance question 7b, and consequently were unable to score highly. Less successful candidates also tended to list past answers to previous examination questions in the hope that this might score a mark. Answers must be relevant to the question. Listing a long range of possible options as answers to questions will also not allow a candidate to score highly.

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. Centres must ensure full coverage of the specification as any area could be tested. 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.

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.

## Question 1 (a)

This question required candidates to identify 4 ingredients in commercial ice cream. Most candidates could identify these.

## Question 1 (b)

This question required candidates to outline the process used to produce ice cream. Many candidates provided good responses to this question, being able to identify the process fully. The best responses focused on the pasteurisation, homogenisation and churning elements of the process. They mentioned relevant temperatures and relevant additives. Several candidates explained the process well and could identify many factors to ensure small ice crystals are produced resulting in smooth textured ice cream. Weaker responses seemed to guess at the process, did not mention any relevant temperatures and sometimes talked about chilling rather than freezing.

(b) Outline the process used to produce ice cream.

(4)

When producing soft or hard ice cream, ingredients are mixed together and pasteurised at  $72^{\circ}\text{C}$  for 15 seconds. <sup>to kill possible micro-organisms from growing</sup> Ice cream is then homogenised to help emulsify fat particles and improve the texture of the product. Stabilisers and emulsifiers are also added to improve melting resistance and to absorb large quantities of water, so that large crystals are not formed. <sup>When frozen</sup> In soft ice cream air is whipped ~~into~~ vigorously whilst it is being frozen and then frozen at  $-5^{\circ}\text{C}$  and has a 50% increase in volume. Hard ice cream has air vigorously whipped before frozen and is frozen at  $-40^{\circ}\text{C}$  and has a 100% increase in volume.

(Total for Question 1 = 8 marks)



### ResultsPlus Examiner Comments

This is a good example of an excellent response where the candidate has shown a good recall of the process as well as understanding of the process. Relevant temperatures have been provided.



### ResultsPlus Examiner Tip

This is a typical 'outline' question. For 4 marks you must identify at least 4 different stages in the process. You are not required in an outline question to explain the stages.

## Question 2 (a)

There were several good responses to this question with most candidates being able to identify the fat soluble vitamins. Many candidates were able to give good sources of the nutrients they identified. However weaker responses, although identifying the fat soluble vitamins often were not able to then provide the food sources correctly. Some candidates just provided a long list of food groups; it is not appropriate for candidates to list a long list of foods and hope for the best. The first response will be taken when asked for a single source. Some candidates would identify correctly the fat soluble vitamins but be general when giving a food source, e.g Vitamin A is found in 'meat', or vitamin D is found in 'fish'. This is not specific enough at A Level standard.

2 (a) Name **two** fat-soluble vitamins and a different food source for each vitamin. (4)

Fat-soluble vitamin  
vitamin A, retinol

Food source  
fish oils

Fat-soluble vitamin  
vitamin E, tocopherols

Food source  
wheatgerm



**ResultsPlus**

**Examiner Comments**

This response deservedly earned full marks (4) for correctly identifying two fat soluble vitamins and for naming two good food sources, one for each vitamin.



**ResultsPlus**

**Examiner Tip**

When asked to name a food source for a nutrient make sure you are very specific. This candidate has correctly identified fish oils as a source of retinol; several candidates lost marks here if they had simply written 'fish'. 'Fish' is not specific enough to warrant a mark.

## Question 2 (b)

This question derives from the 'Contribution of nutrients to the diet' area of the specification. It is important for students to be able show an understanding, use and contribution to the diet of a range of given nutrients. Several candidates struggled to outline dietary functions for vitamins B1 or B2, although the dietary functions of vitamin C were better identified.

(iii) Vitamin C (2)

1. Ascorbic acid is ~~is~~ involved in the production of collagen, it is used in the connective tissue and bone
2. It aids wound healing and the absorption of iron



### ResultsPlus Examiner Comments

This response shows an excellent understanding of the role of vitamin C (ascorbic acid) in the diet. It shows high level knowledge in writing about the formation of collagen and the absorption of iron. Aiding wound healing is not such a high level response although is also correct. This response earned 2 marks out of 2.



### ResultsPlus Examiner Tip

When asked for one response, do not give a long list, as the first response will be taken as the given answer.

### Question 3 (a)

This question is focused on fish preservation and specifically freezing fish. The best responses focused on enzymic and bacterial activity and the effect of freezing on these. Good responses also focused on the quality of the fish, the retention of nutritional value and of flavour compounds. Relevant temperatures involved in the freezing process would frequently be mentioned.

3 (a) Explain why the freezing process is an effective method of preserving fish.

(4)

Freezing is an effective method of preserving fish only if the fish is frozen straight after catching. Only the freshest fish should be frozen. Freezing stops enzymic deterioration and inhibits bacterial growth, but does not kill.

The fish can then be kept as fresh as possible until needed.

However, only the freshest of fish should be frozen because upon thawing a poor quality of fish is made poorer.

Freezing fish does not limit how the fish can be transported, it can be moved to locations processing in the same state.



**ResultsPlus**

**Examiner Comments**

This is a good response identifying limiting enzyme activity and preventing growth of bacteria thus extending the shelf life of the fish. It further highlights the need to use only the best quality fish to freeze to ensure good quality on thawing. It achieved full marks.



**ResultsPlus**

**Examiner Tip**

It is important to focus on what the question is asking you to do. A number of candidates lost marks on this question by bringing in to their response everything they had learned about fish from the course, for instance focusing on fish odours. Not only did these candidates waste time, they wandered away from the subject of the question asked.

### Question 3 (b)

The requirement for this question was that candidates would be able to demonstrate a good knowledge of the nutritional contribution to the diet of fish. Many candidates compared and contrasted the nutritional value of oily and white fish well, identifying accurately the specific nutrients in each type of fish which make them valuable in the diet. Most candidates identified fat content, protein content, relevant vitamin and mineral content. It was pleasing to see many candidates focus on the polyunsaturated nature of the fatty acids and to highlight the value of oily fish in providing omega 3 fatty acid.

Weaker responses tended to not focus on the question, comparing habitat and shelf life, or identifying a range of white and oily fish instead of focusing on the nutritional value, thus missing valuable marks. The question is only focusing on nutritional value. Some candidates spoke at length on the value of essential fatty acids, or just one nutrient, at the expense of identifying further nutrients in oily and white fish. Weaker responses compared white fish to oily fish in general, or made non specific comments such as 'white fish is healthy'.

Value of planning was evident as a number of candidates departed from the question.

(b) Compare and contrast the nutritional value of oily fish with that of white fish. (6)

Oily fish contains more oil than white fish. The oil in oily fish is stored in the flesh of the fish, ~~and~~ unlike in the white fish where it is stored in the liver. Both oily fish and white fish are sources of protein. They are <sup>both</sup> high biological value <sup>proteins</sup> as they contain all the essential amino acids. White fish contains less fat-soluble vitamins than oily fish because the fat-soluble vitamins eg. vitamin A and vitamin E in the oily fish are stored in the flesh and humans consume the flesh of oily fish. In white fish the consumer will get less fat-soluble vitamins as they are stored in the liver and the consumer doesn't consume the liver of fish. If both types of fish was canned then the consumer would receive more calcium as the bones of the fish would be softened by calcium. Both oily fish and white fish contain phosphorus which helps cell membranes to function properly.



#### ResultsPlus Examiner Comments

This candidate has compared and contrasted the nutritional value well, identifying accurately the specific nutrients in each type of fish which make them valuable in the diet. The candidate has correctly identified the fat content of each type of fish and explained where the fat is to be found. They have correctly focused on fat soluble vitamins and highlighted useful minerals. This response almost achieved full marks and would be further improved by identifying the polyunsaturated nature of the fat and also talking about the important omega 3 fatty acid.



#### ResultsPlus Examiner Tip

In any question asking for a comparison of nutritional values in different foodstuffs, it would be helpful in your plan before you start writing, to list all the major nutrients to make sure nothing is left out.



## Question 4 (a)

This question is derived from the nutrition element of the specification and is under 'contemporary issues'. 'Five a day' has been a major health campaign for many years and it is important that Food Technology students can justify the reasons for this high profile campaign. Stronger candidates were very focused on the low fat content of fruit and vegetables and how this can help prevent obesity; they would also discuss the fibre content and the relationship with the digestive system and its role in preventing digestive diseases. The role of fruit and vegetables in providing a range of vitamins and minerals featured widely. Many candidates identified specific nutrients and linked this to preventing specific diseases. Weaker responses also tended to focus on the vitamin and mineral content, but in a more general way. These responses tended not to mention fat content or NSP content. Prevention of diseases and illness might not be mentioned. This was a good question for revealing applied knowledge from the nutrition area of the course.

4 (a) The Department of Health recommends 'five a day' (fruit and vegetables).

Discuss why this recommendation is important for good health.

(6)

Fruit and vegetables are very good sources of both vitamins and minerals for example citrus fruits provides vitamin C, and bananas provide potassium. Fruit and vegetables are ~~strong~~ a good source of dietary fibre, which helps to maintain a healthy digestive system and bowel. Eating 5 fruit + veg a day ~~instead of~~ provides long-lasting release of energy which fills you up for longer, therefore preventing snacking on unhealthy products such as crisps or chocolate. Therefore they will prevent you from being hungry so this may reduce obesity.



**ResultsPlus**  
Examiner Comments

A good response covering many of the relevant points as to why 5 portions of fruit and vegetables are recommended focusing on vitamins and minerals and giving specific examples. Non-starch polysaccharide (dietary fibre) is mentioned linked to its dietary benefits and focus is given to how fruit and vegetables can prevent obesity. This response gained 5 out of 6 possible marks. The candidate could have focused on the low fat nature of fruit and vegetables and could also have discussed diseases and conditions which are thought to be prevented by consuming 5 portions of fruit and vegetables a day.

## Question 4 (b)

This question is derived from the 'Product development and food innovation' area of the specification, specifically focusing on the role of novel proteins and meat analogues on the development of new food products. Stronger candidates identified meat analogues, with the main ones being Quorn or TVP. Target markets were highlighted and candidates were able to suggest many ways in which they are used. It was good to see several candidates linking this area to topical issues such as the recent 'horse meat scandal'.

(b) Novel proteins and meat analogues are widely used in the food industry.

Describe how food manufacturers have used novel proteins/meat analogues in food product development.

(6)

Novel proteins are meat substitutes, such as Quorn or TVP. ~~They~~ food manufacturers have produced these products in order to provide vegetarians with a meat alternative ~~and~~ which will have ~~the~~ similar textures & flavours of the meat.

Due to food scares such as BSE and the horse-meat scandal, more people have chosen to eat the novel proteins due to the fact that consumers may trust them more than meat.

Food manufacturers have produced food products that are very similar to meat products such as burgers, spaghetti bolognese, but without the meat.

It provides a different range of foods that ~~even non-~~ vegetarians eat.

(Total for Question 4 = 12 marks)



**ResultsPlus**

Examiner Comments

This candidate has identified both TVP and Quorn as meat analogues. The candidate has identified target markets and highlighted the sensory qualities of meat analogues and how this can be used in product development. Food scares has been mentioned as an area where product development could be focused. A wide range of possible products have been suggested. This response in this way managed to achieve 6 marks out of 6.

(b) Novel proteins and meat analogues are widely used in the food industry.

Describe how food manufacturers have used novel proteins/meat analogues in food product development.

(6)

Food manufacturers have used novel proteins in food product development because it means they can target different people on the target market. By using novel proteins, different ranges of foods can be targeted at people who are vegetarian, vegan and people who want to have a diet which is lower in fat. Novel proteins can be targeted at people who eat a low fat diet because novel proteins contain less fat than meat products. Food manufacturers would develop a product which would contain novel protein. This would be launched into the market and the sales of the product would be monitored. If the product was successful and people brought the product then they would produce a different type of product which still contains novel proteins. An example of a brand which has developed novel proteins and now contains a range of novel protein products is 'Quorn'. 'Quorn' contains different novel protein products which include burgers, sausages and minced beef. 'Quorn' is also widely available and accessible for people who are (Total for Question 4 = 12 marks) vegan, vegetarian or want to have a diet ~~which~~ which is lower in fat.



**ResultsPlus**  
Examiner Comments

In this response the candidate has identified Quorn as a meat analogue and has suggested a number of products showing its versatility. This candidate has suggested two target markets - vegetarian and low fat to indicate how food product developers have used meat analogues. In this way the candidate has managed to achieve 6 marks out of 6.

## Question 5

The requirement for this question was for candidates to be able to demonstrate good knowledge and understanding of the nature of egg proteins and apply this knowledge in the context of food preparation. There were many good responses with candidates being able to identify coagulation properties, foaming properties, emulsifying properties and browning properties due to the Maillard reaction. Many candidates were able to support their knowledge with practical examples.

Weaker candidates however rushed into this question without reading the requirements properly. These candidates wrote about the function of eggs in food preparation. To achieve well with this question, it was important to focus on how the protein content of the egg enables these properties. It was not sufficient to simply list the functions of eggs. Glazing would not achieve a mark without it being linked to the Maillard reaction as the fat content of egg could also glaze the product and this is not relevant to this question. An egg can bind due to its liquid nature, again, not relevant to this question. The response should also focus on applying the knowledge to practical work with candidates being able to provide relevant examples.

5 Describe how the functional properties of egg proteins enable them to be used in a variety of ways in food preparation.

(8)

Eggs are one of the most readily used ingredients in food preparation. Their properties allow them to be used as <sup>emulsifiers</sup> ~~stabilizers~~ for coagulation, glazing etc. The proteins in eggs are readily used to bring colour to products in what is known as the Maillard reaction. The non-enzymic browning is responsible for turning biscuits ~~go~~ and cakes golden brown ~~and is possible~~ <sup>and is possible</sup> by the proteins in eggs which are ~~used~~ used in cake ~~making~~ and for glazing. ~~A~~ Another key way in which egg is used in the food industry is as an emulsifier. ~~A key example is~~ As shown in mayonnaise production this prevents the separation of an oil and water bonding. Egg protein can also be used in the coagulation process which allows the setting of cooked/baked products. The proteins are encased by air and are then responsible for ensuring the setting, basically effecting and stabilizing the structure of the product. Egg whites are used in food products as they are good at trapping air whereas the proteins in the egg yolk such as lysine have good anti-bacterial qualities which are sufficient in preventing micro-organisms attacking the product. Sometimes egg is used as a

way of changing the text and flavour qualities such as in rich  
pastry.

(Total for Question 5 = 8 marks)



**ResultsPlus**

**Examiner Comments**

This response shows good understanding of the nature of proteins in eggs. The candidate has identified browning through the Maillard reaction, coagulation, emulsifying and foaming as properties of egg proteins which enable them to be used in many ways in food preparation. Good examples are given to illustrate this too. Full marks awarded - 8 out of 8



**ResultsPlus**

**Examiner Tip**

In this type of question, providing relevant examples e.g. mayonnaise as an example of how egg protein is used as an emulsifier, helps to demonstrate knowledge.

- 5 Describe how the functional properties of egg proteins enable them to be used in a variety of ways in food preparation.

(8)

Egg whites are very good at producing a stable foam which can be used to aerate other products such as mousse or make a pre-meringue. Upon vigorous beating, the proteins in the egg whites expand and form a network that traps air in the mixture.

~~Lecithin~~ Lecithin can be found in egg yolk and is a

good natural emulsifier, it binds oil and water together in a mixture that would separate otherwise, or not bind at all. This is particularly useful in the making of products such as ~~mayo~~ mayonnaise.

When brushed onto a product prior to baking or heating, the egg forms an attractive brown glaze on the product which adds to its visual appeal.

Egg <sup>yoks</sup> are also ~~brat~~ good at binding ingredients like in the preparation of meatballs or coating a fillet of fish with breadcrumbs. The egg acts as a glue and sticks the ingredients together, and are held together very effectively even after and during cooking due to the coagulating property of egg proteins.

The coagulation of proteins in eggs means that they are used for setting products ~~up~~ upon heating. A good example of this is quiche. The fillings are added to the pastry case and then covered with a beaten ~~egg~~ egg mixture, which, upon cooking, sets firmly allowing the quiche to be cut when baked.

(Total for Question 5 = 8 marks)



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**Examiner Comments**

An excellent, full mark response with the candidate revealing a good understanding of the properties of protein enabling eggs to be used in a variety of ways in food preparation. This candidate has focused on the coagulation properties in setting, binding and coating. The emulsifying properties of lecithin are identified. Browning is mentioned, but this would have been better if it had been described in the context of the Maillard reaction. Good examples are given with the candidate applying their theoretical knowledge to practical work.



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**Examiner Tip**

Before you start planning and writing your response, make sure you identify the key words in the question. This question asks candidates to 'describe how the functional properties of egg proteins enable eggs to be used in a variety of ways.....'. It does not ask for the 'function of eggs' in food preparation. Candidates who responded in this way missed focusing on the protein properties and were not able to achieve good marks.

## Question 6

The requirement for this question was for candidates to be able to present a balanced argument regarding the genetic modification of crops. It was very pleasing to see this done well as centres have obviously given students the opportunity to research and discuss this whilst ensuring that they are able to present a balanced viewpoint. Many candidates could outline what genetic modification entails and then proceed to give both advantages and disadvantages of the process. It was good to see examples of genetically modified foods identified and discussed. It was pleasing for the possible consequences for developing countries to be presented. Many responses were written from a well thought out and mature perspective. Many candidates achieved well with this question.

\*6 Discuss the advantages and disadvantages of genetically modifying food crops.

(10)

There are many advantages to both the farmer and the manufacturer for using genetically modified food crops. Vitamins can be added to the crop making the final product more nutritious - eg. vitamin A in rice, which is useful in developing countries as it is harder to gain all vitamins. Yield can be increased due to crops become pest & herbicide resistant, which saves farmers from losing money on damaged crops and also saves land. Crops may also be genetically modified to become drought resistant, so crops can then be grown in a wider variety of places which would save money transporting food and would also be more environmentally friendly due to less carbon emissions. Genetically modifying crops may also make them more suitable to be used in industry (less further processing) which would again save the manufacturer time and money.

However there are some disadvantages. The process is controversial as some people see it as unnatural - this may mean a drop in sales for manufacturers who use GM crops. Pests may also adapt to become resistant to pesticides meaning

GM Crops would have no effect. All of the research and development of GM crops is expensive and many of the long term affects on <sup>the</sup> environment ~~is~~ are still unknown.

(Total for Question 6 = 10 marks)



**ResultsPlus**

**Examiner Comments**

This candidate has provided an excellent discussion outlining the advantages and disadvantages of GM foods. The response justifies the reasoning well and links them into a bigger food picture, e.g. producing crops in a wide variety of places would be more sustainable. This candidate has not just given the reason that consumers feel the process is unnatural but also outlined the consequences of this. Full marks

\*6 Discuss the advantages and disadvantages of genetically modifying food crops.

(10)

Advantages of genetically modified crops include the ability to produce crops that can grow in inhospitable (harsh) environments, such as hot places in Africa. A second advantage is it can produce pest resistant crops, which means less money is spent on pesticides & so less damage is caused to the environment because pesticides are not being used. It can produce higher yielding crops, such as wheat, so less wastage & more profit can be obtained. Crops can be modified to improve their nutritional content or fortify them, e.g. putting vitamin C in rice to prevent deficiencies. As crops can be grown in harsher climates it can produce food & income for LDC countries in these conditions, such as Ethiopia.

Disadvantages include the long term health affects are unknown, an allergic reaction may develop towards the modified crop, pest resistant properties may pass on to



weeds making the more resistant, pest-resistant & climate resistant properties may be passed to pathogens & disease may be harder to defend against. Genetically modified crops are very expensive to produce & require a lot of high technology & equipment which adds onto costs of producing the crops.

(Total for Question 6 = 10 marks)



**ResultsPlus**  
Examiner Comments

A good response with focus on the impact of genetically modifying crops on developing countries, e.g. with nutritional benefits but the disadvantage of the high costs involved. - 10 marks.

## Question 7 (a)

Candidates were required to show an understanding of the process used to produce yogurt. In order to achieve marks in this question, candidates were expected not only to identify the stages but also to explain what happens at each stage, for instance when identifying the pasteurisation stage to explain that the reason is to destroy pathogens. Good responses identified and explained a number of stages. Many focused on the difference between set and stirred yogurt and the process involved for each. Weaker responses did not offer explanations.

\*7 Micro-organisms are used in the production of yogurt and cheese.

(a) Explain the stages of yogurt production.

(6)

The ~~yogurt~~ <sup>Milk</sup> is first pasteurised to 71.7°C for 13 seconds, to destroy all pathogenic bacteria such as TB and Brucella. The milk is then homogenised, this is when the milk is pushed through tiny holes at a ~~big~~ high speed to make the fat droplets smaller in the milk, for a more consistent fatty and creamy feel throughout the milk. Also ensures the fat doesn't separate from the milk. The milk is then heated to 44°C and the starter culture is added these are micro-organisms that give the yogurt its natural taste. Lactose then turns into ~~to~~ lactic acid under the heat, the protein coagulates forcing the milk to thicken. The fruit, sugar and stabilisers are then added. The stabilisers absorb most of the H<sub>2</sub>O and give the yogurt a creamy and more fluffy smooth texture. The yogurt is then cooled to 5°C this is to stop ~~the lactose~~ ~~turning into~~ even more lactic acid becoming too acidic and should only have an acidity of 5.7, when cooled the lactic acid stops becoming so acid.



**ResultsPlus**  
Examiner Comments

This response demonstrates very good understanding. Relevant temperatures are provided, different stages are identified and explained. The results of fermentation are described and explained well.



**ResultsPlus**  
Examiner Tip

The command word here is 'Explain'. Make sure this is what you do. Take each stage and write about what is happening at that stage and why it is happening. For instance, don't just say that pH is decreasing, state that because it is decreasing, the protein is coagulated by the acid resulting in thickening of the yogurt giving it the desired texture.

## Question 7 (b)

There was a great range of responses to this question. The best answers usually identified the types of mould added to cheese and were able to name cheeses which rely on added mould for their character. Good responses were able to explain that changes are brought about by the enzymes resulting from the mould attacks. These responses focused on breakdown of proteins and of fats causing the desired texture, flavour and appearance changes. Weaker responses might just state that moulds cause texture, flavour and colour changes without giving any explanation as to how these occur. Successful responses were able to bring in a 'discuss' element from the perspective that moulds can cause spoilage in cheese or be specifically added to cause desired changes.

(b) Discuss the use of moulds in the cheese making process.

(6)

Moulds are used in the cheese making process as part of the ageing/ripening stage. Depending on the types of moulds used, the final cheese could have a variety of different colours, tastes and textures.

In blue cheese, after the cheese has been pressed into a mold, penicillium blue mould is added which grows throughout the cheese, giving ~~it~~ the cheese its blue colour.

In soft cheeses such as Brie and Camembert, moulds are added to alter the texture, by hydrolysing proteins. This creates the typical soft and creamy texture.

For hard cheeses such as Red Leicester, the cheese is heated to a higher temperature and compressed more. Moulds would then be added to maintain this texture and create the various colours and flavours.

Moulds may help to preserve the cheese but also may activate enzymes which create ammonia, giving the cheese a strong smell.



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Examiner Comments

This response reveals high level knowledge, resulting in a high mark, in that it mentions the role of moulds in breaking down proteins to produce the soft and creamy texture of cheeses such as brie and camembert. The candidate also recognises that moulds activate enzymes, breaking down proteins to produce ammonia which gives the characteristic smell of cheeses which have had moulds added to them.



**ResultsPlus**  
Examiner Tip

Use technical terms as much as possible in your responses.

## Paper Summary

In summary, candidates have made good progress with the specification and there was a range of levels of outcome.

Based on their performance on this paper, candidates should:

- Read the question carefully and identify key words before they start their response. The question must be answered in the intended way.
- Ensure they are prepared by having a full understanding of the requirements of different question types: name, state, give, describe, outline, discuss, explain and evaluate.
- Use technical terms in their responses whenever possible.
- Reflect on where in the specification the question comes from in order to focus on the correct topic e.g meat analogues are under 'Product development and food innovation', so this should be the focus for the answer.
- Ensure, where temperature is obviously key in the answer, that specific relevant temperatures are always stated.
- Provide relevant linked explanations to descriptions, or linked examples to demonstrate understanding.
- Plan answers well. There is room in the given answer space for planning which should always be done for the extended writing questions.

## **Grade Boundaries**

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