

Examiners' Report
June 2015

GCE Design and Technology 5FT02 01

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Introduction

The format and structure of this question paper is now well established. It is clear that teachers and candidates are familiar with the layout and have used past papers and previous examiners' reports during preparations for this examination.

On the whole candidate performance is improving on the two questions that assess QWC (Quality of Written Communication) by providing answers that have more structure. Candidates' level of response to the describe and explain type questions is showing improvement.

Centres are asked to remind candidates the space made available for giving the answer has been specifically designed for how much writing is needed to gain maximum marks.

Centres are continuing to make good progress with their teaching and learning activities in Food Technology. The delivery of knowledge, understanding and skills for a wide range of ingredients, components, materials and processes in the Food Technology course continues to show improvements in student outcomes in all areas of the specification. This is through the use of primary and secondary foods in food preparation, processing and preservation, nutrition and health issues, product analysis and product manufacture topics in both domestic and industrial areas of study.

There were a range of levels of outcome for candidates, as to be expected. This paper contained a broad and varied distribution of marks across the paper, which achieved a good balance of recall, selection, application and communication of knowledge and understanding in Food Technology, as well as product analysis and evaluation, through short and extended writing activities and communication of ideas through the design question.

Candidates are reminded to keep their answers within designated areas and use concise sentences or bullet points where appropriate.

'Explain' style questions continue to cause problems for some candidates and teachers are advised to prepare candidates in the use of the following command words:

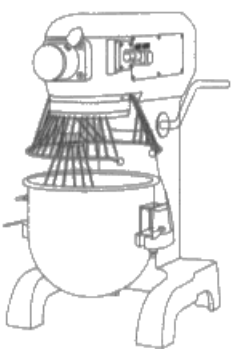
- Give, State, Name (1 mark) - These type of questions will usually appear at the beginning of the paper or question part and are designed to ease candidates into the question with a single statement or short phrase for one mark.
- Describe, Outline (2+ marks) - These types of questions are straight forward. They require candidates to describe something in detail. Some questions may also ask candidates to use notes and sketches, therefore, marks can be gained with the use of a clearly labelled sketch.
- Explain, Justify (2+ marks) - These types of questions require candidates to respond in a little more detail - single statements will not achieve full marks. A valid point should be made and then justified.
- Evaluate, Discuss, Compare (4+ marks) - These type of questions are designed to 'stretch and challenge' candidates. These questions require candidates to make a well balanced argument, usually involving both advantages and disadvantages.

The coverage of the subject content was thorough and varied, effectively testing the candidate's technical knowledge and understanding of Food Technology. The 'ramped' nature of the exam paper and variety of question 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.

Many centres made use of scribes or readers and the number of scripts that were illegible was greatly reduced this year. However, handwriting continues to be variable, with some answers illegible as a result. Some candidates lost marks through carelessness or lack of thought and effort. It is essential that candidates are made aware of the necessity to write neatly with a clear and legible black (hand writing) pen.

5FT02 paper requires candidates to answer 14 questions in 90 minutes.

Question 11 (a) (1)

Equipment/Component	Name	Use
	<p>Industrial mixer</p> <p>(1)</p>	<p>Mix and combine ingredients</p>

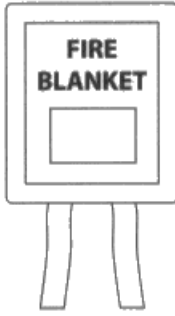


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Examiner Comments

This is a good introductory question and it was answered well by most candidates, identifying correctly industrial mixer. There were quite a few candidate's who incorrectly labelled 'mixer' and were unable to secure a mark for this simplistic statement.

Question 11 (a) (2)

	<p>Fire blanket</p>	<p>To extinguish fires. e.g. chip Pan fire.</p> <p>(1)</p>
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ResultsPlus

Examiner Comments

Many candidates achieved one mark for correctly identifying the correct use of fire blanket with the most popular answers focussing on putting the fire out. Comments about using with a fire were too vague and did not achieve a mark.

Question 11 (c)

There were mixed responses to the classification of fish with the majority knowing about white and oily fish, but were definitely confused in identifying shellfish and crustaceans.

(c) Fish can be classified into different groups. Name **one** fish for each group.

(4)

White fish	cod
Oily fish	salmon
Shellfish	oyster
Crustaceans	crab



ResultsPlus
Examiner Comments

This is an example of a correct answer to this question.

Question 11 (d)

The vast majority of candidates only achieved 1 mark for this question. They had a good knowledge of local produce/fairtrade/ethical farming/waste, but when asked to quantify their answer, they could not or did not know how to. The most common responses were to do with fairtrade, local produce and recycling of packaging. However there was significant confusion across the cohort that buying from the local supermarket meant that this supported local business or fairtrade, despite the fact that the fruit had been flown into the UK from the other side of the world.

(d) Describe how a consumer can ensure they are buying sustainable primary food products.

(2)

On the packaging it will contain a symbol such as the red tractor symbol that will show if the ~~food~~ source & food ^{is of} ~~has~~ organically high standards ~~and~~ ^{of} quality. Symbols such as the fair trade logo will also show if the food product is sustainable.



ResultsPlus
Examiner Comments

This is a good answer, stating what to look out for.

Question 11 (e)

Hygiene and safety underpins the specification and has obvious links to this subject content. These questions were generally well answered and the candidates know about hygiene and handling high risk foods.

Logo to show the products sustainable. ✓
(e) Explain the importance of storing and handling 'high risk' foods correctly.

(2)

Bacteria growth is more common on high risk foods and this bacteria can cause illness and many infection. Therefore they should be stored ~~are~~ and handled correctly in order to stop the bacteria spread and growth.



ResultsPlus
Examiner Comments

Hygiene and safety underpins the specification and has obvious links to this subject content. These questions were generally well answered and the candidates know about hygiene and handling high risk foods.

Question 11 (f)

This question required the candidates to describe two modifications to the fish pie product that would make it suitable for a consumer who is on a lactose free diet, and also to use their product analysis and evaluation skills. Many candidates offered sound modifications to the product, focussing on removing the milk content or any ingredients derived from milk. There were many imaginative variations to the recipe, but candidates often struggled to describe how these modifications were making it suitable for the special dietary need. There were some vague statements about changing the milk content to water from some candidates, which would have made the product taste inedible.

Knowledge by the candidates about a lactose free diet was strong, however some suggested other products like water, almond or coconut milk in the sauce without giving a meaningful solution to the question.

Describe **two** modifications that would make the fish pie suitable for someone on a lactose free diet.

(4)

Instead of using cows milk, you can use soya milk as a substitute, as soya milk is lactose-free, because it's from a plant source and has HBY protein.

Instead of butter you could use low-fat spread or vegetable margarine - butter has animal origin whereas vegetable margarine doesn't.



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Examiner Comments

This question offered stretch and challenge opportunities, and this was a successful outcome for this student.

Question 12

This was a popular question, and the majority of candidates responded fully. Some of the designs were very good and were fully annotated and sketched well.

The second design was often not as detailed, possibly due to time constraints and exam pressure.

It is clear that centres are improving the teaching of this question as many candidates showed good subject knowledge and good exam technique. Repeating of an answer for the specification from design 1 to design 2 was still common, but less so than in previous years. There were less candidates than usual who just drew a sketch. Popular designs included quiche, pasties, pies, plaits, vol au vents, samosas and spring rolls.

The design question produced some excellent responses from candidates with excellent sketching and annotation from candidates across the ability range. The link between coursework activities in the design task was most apparent, with some innovative food product design work. A wide range of savoury salad products were presented with most candidates managing to illustrate and label two different ideas.

Centres continue to work hard to raise achievement in this section of the question paper. All examiners noted that there was a continued improvement in communication techniques and the ability of candidates to be creative, imaginative and at times quite inventive with their recipes.

Where candidates had read the question carefully and planned their answer methodically the sketches and annotations succeeded in showing how the design had met the specification points. The point that caused the greatest difficulty was the suitability for value for money. Responses needed to focus on ways this can be achieved. Therefore correct answers could have referenced that the food product contained products that were home grown, seasonal or batch produced to reduce manufacturing costs. Once again, candidates who planned their answers carefully were rewarded with high marks because they used the specification as a checklist to ensure they covered all of the points.

Small beef pie

Design idea 1

The sauce containing the beef would also contain nuts which provide fibre and help prevent constipation.

The small size also benefits the consumer by not costing a great deal making it cheap to purchase.

Also due to the beef cubes in such a small product providing valuable energy it also adds value for money

CAM (computer aided manufacture) would be used to produce this product as an ICT food production process to ensure the quality of the design. manufacturing (8)



The rim of the pastry has been purposefully shaped in a wavy design to add a finishing technique

The small size makes it easy to transport to a picnic

The small circular design makes it ideal for batch production due to the lack of

complexity in the shape. This means it will be able to be made quickly and efficiently.

Design idea 2

The wrap has been rolled in the same way as pastry.

CAD was used to create the perfect product (computer-aided design) on the computer

chicken strips

within the filling of the product means the product is high in protein



Chicken fajeta

Easy and simple design make it easy to be made via batch production, small-sized product

making it ideal for transporting to a picnic

The wrap also contains wheat which provides fibre to the product.

small size also benefits consumers as it's value for money (Total for Question 12 = 16 marks)



ResultsPlus

Examiner Comments

This candidate gave a design of a beef pie and a chicken fajita, gaining 9 marks in total, 6 for (a) and 3 for (b).



ResultsPlus

Examiner Tip

Use the specification as a checklist to ensure that each design is annotated differently and that each point is met for the design brief.

Question 13 (a)

This question requires the candidates to demonstrate their knowledge of the working characteristics of ingredients within product analysis. It was well answered by the majority of the candidates who knew that baking powder is used as a raising agent. Many answers included bicarbonate of soda as a response.

(a) Name **one** raising agent used in the sponge cake layer.

(1)

Baking powder is used to make the cake rise.



ResultsPlus

Examiner Comments

This was a good response giving the most common method to gain the mark.

Question 13 (b)

(b) State **one** cake making technique used to make the sponge cake layer.

(1)

Whisking



ResultsPlus

Examiner Comments

This was a good response giving the most common method to gain the mark.

Question 13 (c)

There were mixed responses to this question asking for reasons why glaze is used on fruit. The most common response was to do with appearance but this would only give you 1 mark as there was no explanation. Better responses focused on the link between sales and profit - if the appearance of the fruit was attractive it would sell better.

(c) A fruit glaze has been applied to the surface of the sliced fruit layer.

Describe **one** reason why glaze is applied to the surface of the sliced fruit layer.

(2)

To enhance the colour, & make it look more appealing

To prevent the sliced fruit from browning so quickly,

(pro-long the normal colour)



ResultsPlus
Examiner Comments

This was a good response which gained the two marks.



ResultsPlus
Examiner Tip

Always check how many marks for the question.

Question 13 (d)

Candidates had varying degrees of success with this question and depended on their interpretation of the command word 'explain'. Where candidates provided a linked explanation to their initial statement, they were rewarded with the full marks.

(d) Explain **one** reason why standard components might be used in the production of the sponge fruit flan.

(2)

Standard components may be used because it is quick and easy to make a high quality dish without all of the time worked in preparation



ResultsPlus
Examiner Comments

This is a good explanation, gaining the 2 marks.

Question 13 (e)

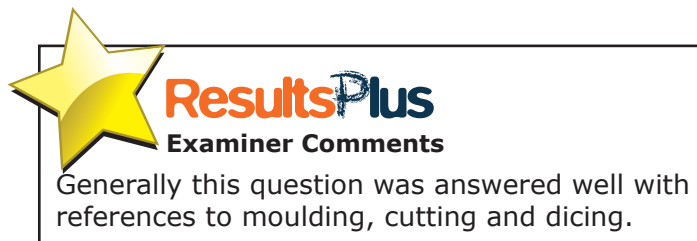
Generally this question was answered well with references to moulding, cutting and dicing.

(e) The manufacturer forms the sponge components of the fruit flan into a repeated shape using flan tins.

Give **two other** ways foods can be formed into repeated shapes.

(2)

- 1 using a ~~cookie~~ shaped cutter
- 2 dicing

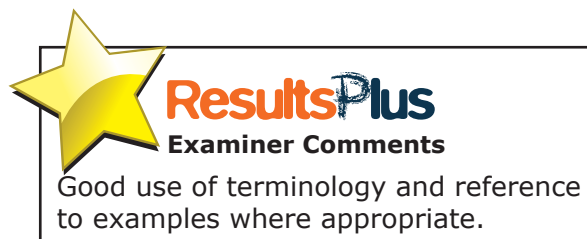


(e) The manufacturer forms the sponge components of the fruit flan into a repeated shape using flan tins.

Give **two other** ways foods can be formed into repeated shapes.

(2)

- 1 cutting using "cookie cutters" to make shapes.
- 2 moulding food into shapes by hand.



Question 13 (f) (i)

This question was answered well by most candidates with many gaining the full 2 marks. One mark was often gained for stating the packaging would be recyclable. The most popular correct response was 'using local fruit to reduce the food miles' or 'growing organically without the need for pesticides which can cause pollution'.

identical. ✓
(f) Explain why the sponge fruit flan is successful at meeting the following specification points.

(i) Environmentally friendly

uses fresh fruit which ^{are} ~~can~~ be grown ⁽²⁾
and can be grown naturally without
modification/fertilisers that cause ~~pollution~~
pollution.



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Examiner Comments

This is a good example of what was just stated, and it gained the full marks.

Question 13 (f) (ii)

(ii) Good quality

(2)

A mould is used to create the flan
shape meaning that it will always look
neat. Also, the fruit glaze makes the
flan look ~~cake~~ to appealing and appetising.



ResultsPlus
Examiner Comments

The most popular response gaining two marks was 'glazing being used to improve the appearance'. This is a good example.

Question 13 (g)

As an extended writing exercise linked to QWC, this question proved to be very challenging for many candidates. This question is marked using the level descriptors outlined in previous sample assessment materials. Candidates must demonstrate accurate technical vocabulary linked to food technology and a good understanding of the evaluation process. Where writing communicates answers effectively and with clarity and organisation, candidates were rewarded with high marks. It is possible to provide three to four well explained and evaluated points to achieve the high marks. Candidates could answer this question in either a bullet pointed list or in paragraphs, focussing on the main comparisons and similarities between the two recipes. To move the response from a weak or average answer to one that is worthy of full marks requires explanation of each comparison together with clear effective communication throughout the response.

*(g) A range of different ingredients is used to make the sponge fruit flan.

Recipe A Ingredients	Recipe B Ingredients
Flour	Wheat flour
Caster sugar	Sugar
Whole eggs	Whole eggs
	Stabiliser: humectant
	Glycerol
	Whey powder
	Dried egg white
	Salt
	Raising agents
	Flavouring
	Preservative: potassium sorbate

B
O
R
I
S
C

Evaluate the use of natural and artificial ingredients in the sponge fruit flan recipes for the manufacturer.

(6)

Recipe A ingredients would be used in a one off production, as all the ingredients are natural, so they will create a unique and flavour. Whereas in recipe B the ingredients are artificial, which is more likely to be a factory made product as the flavours will be ~~the~~ consistent and the finish will

be identical. By using artificial ingredients, like in recipe B, it is easier to make recipe adaptations, as they change the artificial to cater for a specific need. The ingredients in recipe B ~~has~~ have a longer shelf life, because preservatives like potassium sorbate is used. The cost per unit would be lower for recipe A, as less ingredients are used. ~~The~~ using artificial ingredients ~~or~~ create a more luxurious flavour due to adding flavouring. They also create a nice finish, as colouring can be used. However, natural ingredients create a more authentic product.



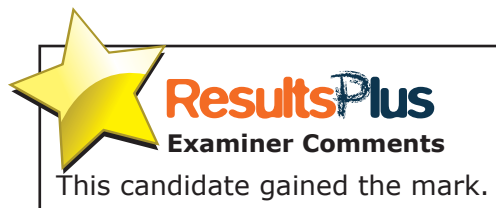
ResultsPlus
Examiner Comments

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

Question 14 (a) (i)

Generally there were many disappointing responses to this question, with many clearly guessing the answers. There were some serious misconceptions which will need to be addressed for the next academic year by centres. Toothpaste is not a food. Water and tea are the best sources of fluoride.

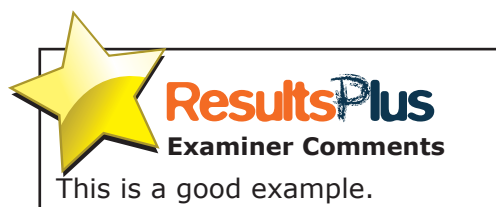
Fluoride	(i) water, tea (1)	Strengthens teeth against tooth decay	Gum disease Tooth decay
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Question 14 (a) (ii)

Most candidates could accurately name a food rich in iron, with red meat, egg yolk and spinach being the most popular, although there were some very dubious spelling mistakes. Many candidates left the answer for the deficiency disease of iron blank. There were a few incorrect references to skin and eyes.

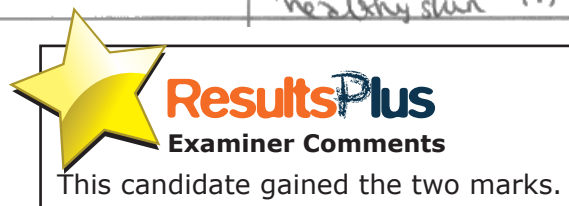
Iron	(ii) Spinach (1)	To form haemoglobin and help transport oxygen around the body	Anaemia Iron (1)
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Question 14 (a) (iii)

Vitamin A answers tended to focus on improving night vision or creating the substance 'visual purple' to aid sight in dim light. References to generally improving eye sight, either long or short sightedness, were incorrect.

Vitamin A	Red meat, oily fish, apricots	(iii) To produce 'visual purple' - substance to allow eyes to see at night maintenance of healthy skin (1)	night blindness unhealthy skin (1)
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Question 14 (a) (iv)

The answers for sodium sources were good, with many candidates referencing salt, processed foods, crisps, cheese. This was the lowest scoring question on the paper. The question was for the effect of deficiency of salt. This was either left blank with no response, or were incorrect responses referring to dehydration-excess salt intake. Muscle cramps were the desired accurate answer, but this was omitted by most candidates.

Question 14 (b)

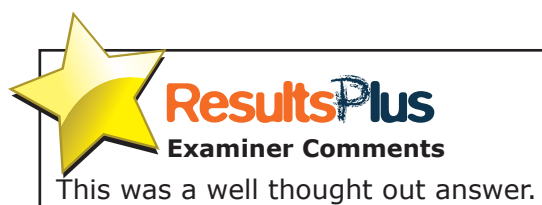
This question was poorly answered and showed some misunderstanding. There were mixed responses for the GM foods with most candidates gaining only one mark. The most common answers were 'lack of knowledge of the long term effects' and 'how safe are they for the consumer'.

(b) Modern technology can be used to create new food products.

Give **two** reasons why safety standards are needed for genetically modified foods.

(2)

- 1 The long-term effect is unknown
- 2 Cross-contamination can cause mutations of undesirable characteristics



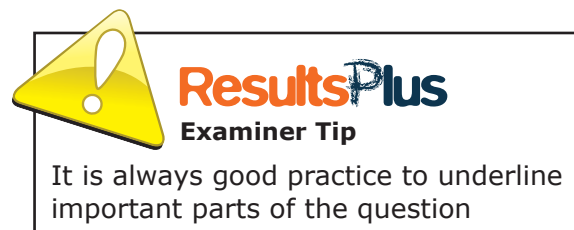
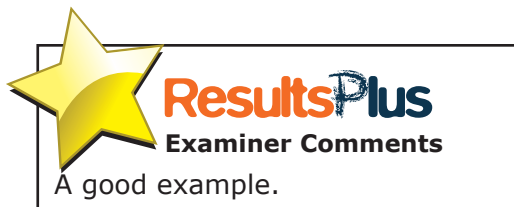
Question 14 (c)

There was a wide range of answers seen for this question with some displaying good use of terminology and linked responses with examples.

(c) Explain the value of fortifying certain foods with additional micro-nutrients.

(2)

Fortification of certain foods allows the food product to contain micro-nutrients that it does not contain, increasing its nutritional content and thus attracting more consumers as there is a higher demand for healthy food.



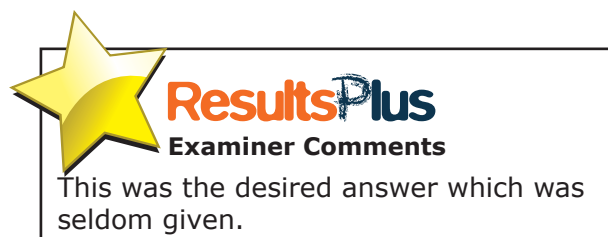
Question 14 (d)

There were wild guesses for many candidates in this question. There were also some grave inaccuracies. Many just left their answer blank. Nutraceuticals have **specific health promoting or disease preventing** properties beyond the basic function of supplying nutrients.

(d) Give a definition for the term 'nutraceuticals'.

(1)

Prebiotic / probiotic drinks → foods with bacteria that is good ~~for~~ or beneficial to our health (Yakult drinks are good for the intestines)



Question 14 (e)

This question was a challenging A/A* question and was answered with varying degrees of success. The question this year was split into three areas for six marks. Weaker candidates generally focused on colour change, with little discussion about the effects. Texture, flavour, aroma and colour changes with specific links to coagulation, dextrinisation, temperature ranges for food safety, caramelisation and loss of vitamins (B & C) in vegetables provided our A/A* candidates real opportunity to demonstrate their excellent food science knowledge. In these cases, the answers were a pleasure to read and this is clearly an area of the specification that offers real scope for stretch and challenge for most able candidates. Technical understanding, good use of vocabulary and terminology linked to food technology as well as excellent application of knowledge and understanding were demonstrated, and often the B grade candidate achieved 3/6 marks with much credible discussion on the effects of cooking on the named foods.

This question was also left blank by several weaker candidates. Others who gained 0 marks did so by just re-writing out the question without making any valid points. As with question 13e, the full range of marks was given for this question. Weaker candidates getting 3 marks or so made different valid points with little discussion. Handwriting was again a major problem. Some centres had clearly taught this question well with many centres giving 'textbook' answers obviously learned verbatim. Many candidates only focused on labelling information in their response and it is clear that they had learned this from last year's paper. The strongest candidates structured their responses and had clearly made notes about the content of their answer before attempting it. This should be encouraged by centres as it usually led to the highest marks being awarded.

***(e) Food processing techniques can be used to change raw ingredients into food products.**

Discuss the effects of cooking on the following primary foods:

Meat

Eggs

Vegetables

(6)

~~Meat~~ While cooking meat you have to make sure raw meat is not where near cooked meat because if they are close it means bacteria can spread. So you must make sure they aren't near each other. You must also make sure you wash them to remove any blood that might be on it from the packaging. While cooking eggs you must make sure that there is no ~~egg~~^{shell} in the egg because it could have a lot of bacteria on it therefore you should always be careful while ~~cracking~~ cracking open an egg. and vegetables; you

must make sure you wash them in case of any ~~egg~~ bugs or mold is still left on it. When packing packing raw food you must make sure that you use something to preserve the ~~food~~ raw food therefore you can see it without it getting any diseases on it. ~~concern~~ is cooking it you won't get food poisoning.



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Examiner Comments

This candidate achieved no marks due to misreading the question and focussing on food handling.

Despite the inaccurate use of dextrinisation in the answer, this candidate was able to achieve the full allocation of marks due to the excellent discussion and description **available** for each of the three foods.

* (e) Food processing techniques can be used to change raw ingredients into food products.

Discuss the effects of cooking on the following primary foods:

Meat

Eggs

Vegetables

(6)

When vegetables are cooked they usually soften ~~very~~ which could provide a better texture and would also be easier to digest. However some vegetables can decolour or loose flavour, and especially when boiling water soluble vitamins such as B and C and be lost into the water and not retained so when consumed the cooked vegetable may not contain these vitamins any more. When Eggs are cooked the egg

whites gelatinize or harden and the colourless whites before turn into an opaque white colour. The white hardens quicker than the yolk sometimes as especially when boiling an egg the yolk is protected by the surrounding white and so the yolk ~~which is protected~~ could remain runny giving a pleasing texture. If cooked in fat such as oil some fat soluble vitamins could be lost. When meat is cooked the colour changes from a pink fresh colour to a lighter brown usually. Some moisture is lost giving a more rigid and chewy structure and texture, the browning of the flesh may add flavour to the meat.

(Total for Question 14 = 18 marks)

TOTAL FOR PAPER = 80 MARKS



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Examiner Comments

Despite the inaccurate use of dextrinisation in the answer, this candidate was able to achieve the full allocation of marks due to the excellent discussion and description **available** for each of the three foods.

Paper Summary

Based on their performance on this paper, candidates should:

- Keep their answers within the designated areas asked
- Use concise sentences or bullet points where these are appropriate
- Quantify their answers where appropriate
- Avoid making vague statements
- Ensure designs are annotated or labelled clearly
- Ensure their handwriting is clear

Grade Boundaries

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

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