



**General Certificate of Secondary Education  
June 2012**

**Design and Technology: Food  
Technology** **45451**

**(Specification 4545)**

**Unit 1: Written Paper**

**Final**

***Mark Scheme***

---

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for standardisation each examiner analyses a number of students' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this Mark Scheme are available from: [aqa.org.uk](http://aqa.org.uk)

Copyright © 2012 AQA and its licensors. All rights reserved.

**Copyright**

AQA retains the copyright on all its publications. However, registered schools/colleges for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Set and published by the Assessment and Qualifications Alliance.

This mark scheme is intended as a guide to the type of answer expected but is not intended to be exhaustive or prescriptive. If candidates offer other answers which are equally valid **they must be given full credit**.

Responses are to be assessed according to the **quality** of the work rather than the number of points included. The following level descriptors are intended to be a guide when assessing the quality of a candidate's response.

**Low** The candidate has a basic but possibly confused grasp of the issues. Few correct examples are given to illustrate points made. This candidate does not have a clear idea of what s/he is writing about

**Intermediate** The candidate has some knowledge but there will be less clarity of understanding. Some correct examples given to illustrate points made. This candidate knows what s/he is writing about but is confused in part.

**High** The candidate has a thorough understanding of the issues and has provided relevant examples to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding.

**Section A****1. (a)(i) QUESTION 1**

Identify **how** the pasta salad meets the advice given by the eatwell plate.

Responses may include two simplistic generic responses such as 'contains vegetables' or may be qualified for second mark with additional linked information such as 'contains vegetables' – tomatoes/salad leaves or 'contains vegetables as part of the 5 a day' or contains vegetables which the eatwell plate tells us to eat a large amount.

- Keeps within the balance/ratios identified within the eatwell plate.
- Contains pasta as largest/main/starch carbohydrate ingredient
- Contains portions of vegetables. Maybe qualified with specific names of vegetables/contribution to a 5 day links (does not fulfil whole 5 a day requirement alone)/proportion links
- Does not have any high sugar ingredients as it is a savoury product
- Contains dairy foods as the product contains cheese/only gives a small proportion as required by eatwell plate.

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"> <li>• The candidate has a basic but possibly confused grasp of the eatwell plate. This candidate does not have a clear idea of what s/he is writing about and may only identify the use of pasta as the main ingredient and incorrectly identify the use of dairy foods. 0-1 marks</li> <li>• The candidate has some knowledge of the eatwell plate This candidate knows what s/he is writing about 2 marks</li> </ul>	<b>2 marks</b>
---	----------------

1. (a)(ii) Identify how the pasta salad product does not meet the advice given by the eatwell plate.

- Identifies the high fat content
- Absence of meat, fish, eggs or beans – non dairy protein
- May identify the need for extra vegetables (cucumber has little nutritional value, other than this there is only tomatoes or salad leaves)
- Proportions of eatwell recommendations are not fully met within product..(but may also correctly mention that this is only one product not a full days meals)

Candidates may qualify answers with any of the following:

- Names of specific ingredients that support their responses  
e.g. identifies the high fat content - from the cheese/fried crouton/cream dressing
- May suggest modifications in qualifying initial answers e.g. replace the croutons with nuts to add more protein
- Correct links to missing or required nutrients may be awarded marks e.g. lack of vitamins, first class protein

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"> <li>• The candidate has a basic but possibly confused grasp of the eatwell plate. This candidate does not have a clear idea of what s/he is writing about 0-1 marks</li> <li>• The candidate has some knowledge of the eatwell plate This candidate knows what s/he is writing about 2 marks</li> </ul>	<b>2 marks</b>
--	----------------

1. (a)(iii) Suggest two different ways to make the pasta salad a healthier option product.

\*Responses must indicate an action along with a reason for full 2 marks in each section.

\*Modifications may refer to the eatwell plate requirements or to more generic healthier option requirements e.g. 5 a day.

- Removal/reduction of fat content e.g. cheese/cream /crutons
- Modifications may include the use of low fat alternatives e.g. low fat cheese/reduced fat cream/vinegar based dressing, addition of lean meat such as chicken
- Improving vegetable content./ addition of extra named vegetables
- Addition of meat, fish, eggs or beans for protein
- Use of whole wheat pasta to increase fibre content  
Qualifications may include reference to dietary/nutritional needs e.g. link fibre with healthy digestion system or added ingredients linked with improved nutrient content.
- Addition of alternative proteins (e.g. soya, quorn and tofu) to reduce fat content and increase protein and increase fibre.

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"> <li>• The candidate has a basic but possibly confused grasp of healthier option changes. One correct example may be given. Candidate may only be able to give basic answer or name of ingredient to be added 0-1 mark</li> <li>• The candidate has some knowledge but there will be less clarity of understanding. Some correct explanations given to illustrate points made. This candidate knows what s/he is writing about but is confused in part. 2-3 marks</li> <li>• The candidate has a thorough understanding, giving two changes and has provided relevant explanations to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding. 4 marks</li> </ul>	<p><b>4 marks</b></p>
---	-----------------------

1. (b)(i) Notes and/or Sketch shown for **two** different design ideas for pasta products.

Here are the design criteria for these pasta products:

The design ideas should:

- contain pasta
- be suitable for serving as a hot main meal.
- contain a homemade sauce
- follow the advice given by the Eatwell plate.

Annotation **must** explain how your ideas meet each of the design criteria.

Sketches should show:

- Design ideas for suitable pasta products e.g. lasagne, Bolognese pasta products, carbonara, ravioli, etc.
- Products may use tomato sauces, curry sauces, chilli sauces etc.

Annotation should include reference to:

- use of **named/described** pasta
  - be suitable for serving as a **hot** main meal. Not a salad product as shown earlier in the question.
  - follow the advice given by the Eatwell plate. Annotation must give reference to at least one of the recommendations e.g. use of a non-dairy protein, addition of fruit/vegetables (knowledge can be identified by 5 a day comments), proportions of starch
  - contains a homemade sauce. The name of the sauce used is not sufficient for award of credit. Additional information such as a key ingredient, method etc. is needed to verify it is a homemade sauce and not simply a standard component.
  - Examples – *homemade tomato sauce* credit as tomato is the key ingredient, whereas *homemade white sauce* is incorrect as no key ingredient or method.
  - Clarity of explanation/communication of design idea is essential for full marks. The quality of annotations must be considered.
-



---

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"><li>• one design criterion met. May be an inappropriate choice of product. 0-3 marks</li><li>• basic ideas for relevant products that meet most of the design criteria – but may not be clearly communicated 4 -7 marks</li><li>• good communication of main features and fitting all the design criteria for relevant products 8 -10 marks</li></ul>	<p><b>10 marks</b></p>
---	------------------------

1. **(b)(ii)** Using the layout below, complete a plan for making your chosen design idea in the test kitchen.

Candidates should show an awareness of different aspects of planning that make up a production system e.g. at least one reference to some of the following may be included within the plan.

Stages of making

- Cooking/preparing of pasta (may use standard component or freshly made)
- Correct use and preparation of equipment e.g. pasta machine, heavy based pan for white sauce.
- The preparation of other ingredients e.g. homemade sauce (standard components not credited in this product) n.b. generally sauces are not boiled.
- Specialist terminology-named processes
- Finishing techniques addition of topping, garnish
- Key times e.g. for cooking/chilling freshly made pasta
- Key temperatures: oven temps, low heat,/high
- Storages e.g. refrigerator for chilling pasta

## Quality control checks

- Size/portion control e.g. thickness of freshly made pasta
- Weighing of ingredients or weigh accurately.
- shape e.g. rolling pasta into tubes
- Feedback from control checks e.g. what to do if sauce goes lumpy
- Finishing techniques used e.g. consistency

## Hygiene and safety checks

- Personal hygiene e.g. clean hands (not just 'wash')
- Kitchen hygiene e.g. clean surfaces/equipment
- Food hygiene e.g. covering foods, use of food probes
- Safety points for workers e.g. safety using named equipment

Clear logical schedule – place a tick at the end of the response.

**\*Do Not** credit packaging, metal detection or bulk production as this is a test kitchen

\*Answer **MUST** include some control checks included for the award of full marks

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"> <li>• Simplistic answer giving limited or no relevant planning 0-3 marks</li> <li>• Some parts detailed, may not be logical, some key areas for successful production omitted 4-6 marks</li> <li>• Logical planning with a range of different information that covers stages of making, control checks , and preparation/cooking of both pasta and the homemade sauce. 7 -9 marks</li> <li>• Answer showing logical plans, clarity of instruction, a range of control checks 10-12 marks</li> </ul>	<p><b>12 marks</b></p>
--	------------------------

**Total for question 30 Marks**

**TOTAL MARKS FOR SECTION A 30 MARKS**



**SECTION B**

2. (a)(i) Why is it important to research existing products before starting to design new products?

- To see what is already on market/on sale
- Ensure what you make will meet with current consumer needs
- To identify good features you will want to keep
- So you can improve on/identify weaknesses of products already on sale.
- Get inspiration for new product/use customer reviews
- Identify prices
- Identify competition
- Look for gap in the market

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"> <li>• The candidate has a basic but possibly confused grasp of importance of research. Candidate may only be able to give basic answer. 0 – 1 mark</li> <li>• The candidate has some knowledge but there will be clarity of understanding. This candidate knows what s/he is writing. 2-3 marks</li> </ul>	<p><b>3 marks</b></p>
---	-----------------------

2. (a)(ii) Describe ways in which a computer could be used to research existing products.

A computer could be useful to research existing products :

- using internet searches/websites
- Spread sheet storage/ interrogation of sales figures
- Email other suppliers/manufacturers
- Looking at images of food products on sale as secondary research
- Greater capacity for searching the market
- Comparative product analysis is easier/quicker
- Using on line surveys/questionnaires/email with target consumers
- carrying out nutritional analysis on products
- working out potential costs/ scaling up implications
- Saves on travel time/expense give advantage
- Facility to show research results neatly presented
- Information/data gathered can be stored for later use
- Can predict future trends
- More accurate than human searches

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"> <li>• The candidate has a basic but possibly confused grasp of the use of computers. This candidate does not have a clear idea of what s/he is writing about. 0-1 marks</li> <li>• The candidate has some or good knowledge of the use of computers but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2-3 marks</li> </ul>	<p><b>3 marks</b></p>
---	-----------------------

2. (b)(i) Consumers use information from the labels of food products when deciding what to buy.

**Complete the list of ingredients putting them in the correct order.**

- Order should be in order of quantity. Largest first.
- i.e. water (given)
- leeks
- potatoes
- onions
- butter
- vegetable stock cube (given.)

**Marks awarded as follows:**

Incorrect order, no ingredients placed correctly

0 marks

Some ingredients in correct place

1 marks

Correct order completed in full.

2 marks

*\*Do not tick every correct item as this may be confusing for checkers later in the process. Only show the number of ticks to represent the marks awarded.*

**2 marks**

2. (b)(ii) **400g e** is shown on the label. What does this mean?

- Contents amount weighs 400grams
- Nett weight (i.e. weight without the packaging)
- e shows average/estimated minimum amount in packet
- This may indicate it is a legal requirement. (not: approved by government as this related to additives not weight).

**Marks awarded as follows:**

- The candidate has a basic but possibly confused grasp of meanings. This candidate does not have a clear idea of what s/he is writing about.  
0-1 marks
- The candidate has some knowledge of terminology. This candidate knows what s/he is writing about but is confused in part.  
2 marks

**2 marks**

2. (b)(iii) Why is it important that the manufacturer's name and address is written on the label?

- Source/traceability of where manufactured
- If faults/problems or praise for product need somewhere to contact.
- Knowledge of contact details
- Customer redress
- It is a legal requirement



<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"> <li>• The candidate has a basic but possibly confused grasp of meanings. This candidate does not have a clear idea of what s/he is writing about. 0-1 marks</li> <li>• The candidate has some knowledge of terminology. This candidate knows what s/he is writing about but is confused in part. 2 marks</li> </ul>	<p><b>2 marks</b></p>
--	-----------------------

2. (b)(iv) Explain the following terms used on food labels.

'Best before'

'Organic'

Best before:

- Lower/medium risk foods usually display this (may qualify by indicating high risk foods will display 'use by' dates.)
- May give example of low risk food
- States date food will begin to deteriorate
- Recommends when food should be eaten but can be eaten after date given (eaten at own risk after the given date)
- After given date may be deterioration of qualities
- After given date possible reduction in colour flavour, texture

Organic:

- Food in natural state/ not modified or anything added to.
- No chemicals /e.g. pesticides, insecticides etc. used in production
- Indicated rigid rules applied/followed by manufacturer

<p><b>Marks awarded as follows:</b></p> <p><b>Mark is an overall mark and is NOT divided into 2 equal sections.</b></p> <ul style="list-style-type: none"><li>• The candidate has a basic but possibly confused grasp of the use of the terminology. This candidate does not have a clear idea of what s/he is writing about. May only refer to one of the terms given. 0-1 mark</li><li>• The candidate has some knowledge of the use of terminology but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. Candidate will have attempted both terms. 2-3 marks</li><li>• The candidate has a thorough knowledge of the use of terminology but there will be clarity of understanding. This candidate knows both terms well. 4 marks</li></ul>	<p><b>4 marks</b></p>
--	-----------------------

**2. (b)(v)**

Explain the reasons for the advice given on the label.

Instructions given:

‘Store in a cool, dry place.

Pour unused contents into non metallic containers.

Once opened eat within 2 days’

**‘Store in a cool, dry place.**

- Low temps will prevent bacterial multiplying,
- Micro-organisms/Bacteria will be dormant in cool temps
- May note key temperatures /danger zone 5-63C
- Possible cause of food poisoning
- Dry place will prevent extra moisture contaminating soup affecting taste and quality.

**Pour unused contents into non-metallic containers.**

- Chemicals can affect sensory qualities e.g. flavour.
- Food hygiene practices
- Metallic container may cause reaction/deterioration of foods

**Once opened eat within 2 days**

- Quality of soup will deteriorate (do not accept ‘go off’) if left longer than recommended.
- Links with time and multiplication of micro-organisms if conditions are not correct.
- Instructions are given to inform/warn consumers.
- Instructions are there for the safety of and to prevent harm coming to the consumers.
- Once open available for micro-organisms to grow and therefore must be stored correctly to prevent harm to consumer.
- Time, moisture, warmth ideal conditions for micro-organism growth.

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"><li>• The candidate has a basic but possibly confused grasp of food hygiene. This candidate does not have a clear idea of what s/he is writing about. 0-2 marks</li><li>• The candidate has some knowledge food hygiene but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. Candidate will have attempted both terms. 2-3 marks</li><li>• The candidate has a thorough knowledge of food hygiene but there will be clarity of understanding. 4 marks</li></ul>	<p><b>4 marks</b></p>
--	-----------------------

**TOTAL FOR QUESTION 20 MARKS**

3. (a) Describe two developments that would improve the chocolate cake.

Improvement areas any 2 relevant (**not** creamy filling as this gained full marks in the test.) 1 mark for identifying an improvement area only if followed by a description. Identifying area without description 0 mark.

Uneven shape/appearance

Actions:

- Use portion control-consistency
- Use of same size tins each time
- Line tins accurately- allows for easy removal no damaging cake appearance.
- Accurate weighing of ingredients
- Aeration of mixture
- Training of staff for better finishing techniques
- Quality control checks put into place e.g. not opening oven door during cooking.

Improvement area;

Lack of chocolate flavour

Actions:

- Increase amount of cocoa/chocolate used .Not adding 'chocolate flavour'
- May link extra chocolate will relate to improvements in both colour and flavour in one action.
- Accurate weighing of ingredients
- Accuracy in proportions of ingredients
- Use a different type of chocolate e.g. 70% cocoa solids

Improvement area

Lack of light airy texture

Actions:

- decrease amount of cocoa used
- Accurate weighing of ingredients
- Accuracy in proportions of ingredients
- Lack of aeration/not sieving flour

Improvement area:

Dark coloured sponge

Actions:

- use dark chocolate instead of white/milk
- increase amount of cocoa/chocolate
- use dark chocolate instead of drinking chocolate.
- Cook for longer.
- Use brown sugar instead of white.
- Not adding food colouring!

**Marks awarded as follows:**

- The candidate has a basic understanding of improving products. Few criteria are given. This candidate does not have a clear idea of what s/he is designing  
0-2 marks
- The candidate has some knowledge of improving products but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part.  
3-4 marks
- The candidate has a thorough understanding of designing and has provided relevant explanations to support the knowledge shown. This candidate knows what s/he is designing and provides clear evidence of understanding.  
5-6 marks

**6 marks**

3. (b) Describe ways to make sure that sensory testing is fair

**Answers may be several simplistic facts about fair testing or extended answers giving reasons why the actions are taken.**

**Clear instructions must be given before the test begins.**

- Blind testing/ Labelling of samples/ Random codes/ random order/ To disguise products
- Sips of water in between tastings/ Avoids duplicating of flavours/ fresh palate
- Control samples/ similar sized samples / To evaluate samples against
- One variable at a time/ So accuracy of results
- Lighting booths/ So colours/ appearance is not deflected/ no distractions in environment.
- No talking/ communicating with other testers/ No sharing/ bias of results.
- Results recorded / Use different / range of testers.

**Marks awarded as follows:**

- The candidate has a basic understanding of fair testing. This candidate does not have a clear idea of what s/he is designing.  
0-2 marks
- The candidate has some knowledge of fair testing. This candidate knows what s/he is writing about but is confused in part.  
3-4 marks
- The candidate has a thorough understanding of fair testing and has provided relevant explanations to support the knowledge shown. This candidate knows what s/he is designing and provides clear evidence of understanding.  
5-6 marks

**6 marks**

3. (c) Explain why manufacturers use the following ingredients when making cake products.

Flour/Sugar/Cakes/Fats/Eggs

Examples include the following and any other reasonable answer:

**flour:**

- Starch in flour adds bulk/volume/structure
- To add texture
- Raising agent e.g. SR flour
- Dextrinisation of surface.

sugar:

- Add flavour/sweeten
- Adds colour if referenced to correct type of sugar
- Traps air during creaming
- Softens the gluten in flour
- Adds moisture/hydroscopic
- Easier creaming e.g. castor sugar
- Castor sugar gives finer texture than granulated sugar
- More even appearance prevents speckled appearance.
- Caramelisation of surface sugar to give browning.

fats:

- Butter adds colour
- Adds flavour
- Adds moisture
- Traps air with sugar during creaming
- Increase keeping qualities/extends shelf life.
- Fats affect texture e.g. shortening e.g. rubbed in farmhouse cakes

Eggs:

- Adds colour
- Adds nutrients
- Enriches



- Coagulates on cooking (allow binding)
- Raising agent
- Emulsification

\*Can give credit for examples of specific ingredients/cake making methods

**Marks awarded as follows:**

- The candidate has a basic but possibly confused grasp of cake making ingredients. This candidate does not have a clear idea of what s/he is writing about **Little structure in response, several errors in spelling, grammar and punctuation**  
0-3 marks
- The candidate has some knowledge of cake making ingredients but there will be some clarity of understanding. This candidate knows what s/he is writing about but is confused. **Fairly well structured answer with correct use of some Design Technology terminology and only a small number of grammatical errors**  
4-6 marks
- The candidate has a thorough understanding of cake making ingredients and has provided relevant information to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding. **Response is well structured with a good use of appropriate Design Technology terminology. Good use of grammar, punctuation and spelling.**  
7-8 marks.

**Total for question**

**20 marks**

4. Explain how the following equipment may be used in the making of good quality, fresh bread products.

4. (a)(i) Non stick loaf tins
- Quality control –prevents sticking (may credit if response indicates what would happen if ordinary tin used)
  - Same size- consistency
  - Same shape-consistency
  - Good finish due to non-stick tin/lack of damage due to ease of removal

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"> <li>• The candidate has a basic but possibly confused grasp of equipment. This candidate does not have a clear idea of what s/he is writing about. 0-1 marks</li> <li>• The candidate has some knowledge of equipment. This candidate knows what s/he is writing about but is confused in part. 2-3 marks</li> </ul>	<b>3 marks</b>
---	----------------

4. (a)(ii) Bread maker
- Guarantees consistency of outcomes / (sizes, shapes, and crust colour- 1 only)
  - Produces the dough automatically removing human error.
  - Can be linked to computer chips for control checks.
  - Specific setting for (time, temperature control prevent burning 1 only)/allows yeast to ferment correctly, promoting consistent quality, errors less likely
  - Set outcomes degree of crispness to outside

**Marks awarded as follows:**

- The candidate has a basic but possibly confused grasp of equipment. This candidate does not have a clear idea of what s/he is writing about  
0-1 marks
- The candidate has some knowledge of equipment but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part.  
2-3 marks
- The candidate has a thorough understanding of equipment and has provided relevant explanations to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding.  
4 marks

**4 marks**

4. (b) Describe ways of adding a quality finish to a batch of fruit loaves.

- Identification of when finish applied : before or after cooking
- Brush on beaten egg glaze/ with pastry brush /to give shiny or glossy finish.
- Egg spray for large scale
- Sugar solution –melt sugar in water –cool- brush on
- Brush with milk glaze before sprinkling with sugar
- Brush top sprinkle spices e.g. cinnamon, grated zest sprinkled on before cooking
- Make cuts across the top before cooking to give interesting textures/shapes/pattern for visual appeal
- Add decoration e.g. fruits, crystallised/caramelised sugar, peel etc.
- Add icing e.g. Chelsea buns, iced buns

**Marks awarded as follows:**

- The candidate has a basic but possibly confused grasp of finishes. This candidate does not have a clear idea of what s/he is writing about  
0-1 marks
- The candidate has some knowledge of finishing techniques but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part.  
2-3 marks
- The candidate has a thorough understanding of finishing techniques and has provided relevant explanations to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding.  
4 marks

**4 marks**

4. (c) Discuss how preservatives may be used to help produce quality food products. Give examples to support your answer.

**Preservatives**

- To allow foods to stay fresh for longer/maintains quality for longer time.
  - To retain colour, shape, nutrients
  - Improve flavour enhance flavour.
  - So foods can be used out of season
  - To extend selling time /improve profits/convenience
  - Extended shelf life may encourage consumers to buy more if they know preservative used.
  - May include discussion points around profit margins as food stays on sale for longer
  - Examples may include: different types of preservatives e.g. emulsifiers, sugar, salt, vinegar etc. or examples of foods where preservatives may be used. e.g. jams, frozen foods, baked products, fruits, fruit juices, bacon, sausages, pickles, chutneys, foods in brine.
  - Prevents growth of microorganisms.
- No more than 2 marks allocated for 2 examples of foods or 2 preservatives or 1 of each.

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"><li>• The candidate has a basic but possibly confused grasp of preservatives. This candidate does not have a clear idea of what s/he is writing about. 0-2 marks</li><li>• The candidate has some knowledge but there will be less clarity of understanding. This candidate knows what s/he is writing about 3-5 marks</li></ul>	<p><b>5 marks</b></p>
--	-----------------------

4. (d) Explain why food manufacturers use modified starches  
Include two examples of food products where modified starch may be used.

- Modified starch are sometimes called smart foods
- Pre gelatinise - thickens without cooking.
- Examples: found in processed foods as a filler or to add texture.
- May give credit for up to 2 examples .e.g. Cup a soups, instant desserts –instant whip , table sauces, mayonnaise, pies/gravies, pizza toppings, pot snacks, some frozen foods, sweeteners.

**Additional functions for modified starches.**

- In pizza toppings – topping thickens when heated in the oven and will not run off the pizza
- Pre–gelatinised starch is used to thicken instant desserts without heat. Cold liquid such as milk can be added and the dessert will thicken.
- Sauce/gravy granules – boiling water can be added to thicken without the sauce going lumpy.
- Modified starch is used as a fat replacer in low fat meals.
- Modified starches allow sauces to be reheated with no syneresis. This is useful in dishes that are cooked from frozen e.g. lasagne.
- The noodles in “pot snacks” are pre gelatinised, so boiling water will rehydrate and “cook” them.
- Modified starch is used in “cup a soups” to improve mouth feel, thicken the drink/soup when the boiling water is added and blends uniformly without lumps.

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"><li>• The candidate has a basic but possibly confused grasp of substances. This candidate does not have a clear idea of what s/he is writing about. 0-2 marks</li><li>• The candidate has some knowledge but there will be less clarity of understanding. This candidate knows what s/he is writing about 3-4 marks</li></ul>	<p><b>4 marks</b></p>
---	-----------------------

**Total Marks for Question 20 Marks**

5. (a)(i) Explain why consumers choose to buy takeaway products instead of making the food themselves.
- Lack of skills
  - Lack of time and effort / busy lifestyles make takeaways convenient as instant foods little cooking or preparation needed.
  - Quick and easy
  - Availability of take away foods
  - Prefer tastes of takeaway
  - Convenient for gatherings/special occasions/parties
  - Wide selection of multicultural options available
  - Consumer may lack skills needed /Food expertly cooked by specialist chefs with knowledge of special equipment/methods etc.
  - Some takeaways specialise in different dietary needs and can be helpful for consumers dealing with different needs. E.g gluten free.
  - Takeaways may prove cheaper than buying all ingredients needed.
  - less clearing up/washing up
  - Other relevant answers



**Marks awarded as follows:**

- The candidate has a basic but possibly confused grasp of consumer choices does not have a clear idea of what s/he is writing about  
0-1 marks
- The candidate has some knowledge of consumer choices less clarity of understanding. This candidate knows what s/he is writing about but is confused in part.  
2-3 marks
- The candidate has a thorough understanding and has provided relevant advantages to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding.  
4 marks

**4 marks**

5. (a)(ii) Explain some of the disadvantages of takeaway foods.
- Often seen as unhealthy/often high in fat and salt
  - Some takeaways thought to contribute towards health problems/not helpful for consumers wanting healthier options
  - Packaging to deal with
  - Price considerations: Expensive to buy, but some can be cheaper than buying individual ingredients to make at home.
  - Often use artificial additives
  - May need to travel to buy
  - May not have what you like
  - No control over outcomes/ do not know what goes into the food
  - Often use large number of additives/e numbers which can be detrimental to health
  - Cannot guarantee freshness/quality
  - May cause food poisoning if not cooked/stored/reheated safely or hygienically
  - No control over source of foods/suppliers
  - Some people e.g. young generation are over reliant on takeaways and therefore do not learn cooking skills.

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"><li>• The candidate has a basic but possibly confused grasp of consumer choices does not have a clear idea of what s/he is writing about 0-1 marks</li><li>• The candidate has some knowledge of consumer choices less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2-3 marks</li><li>• The candidate has a thorough understanding and has provided relevant advantages to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding. 4 marks</li></ul>	<p><b>4 marks</b></p>
---	-----------------------

5. (b)(i) Which product will provide:
- the lowest energy per 100g .....jacket potato products  
1 mark
- the highest fibre content per 100g? .....whole wheat pasta  
products  
1 mark

**2 marks**

5. (b)(ii) Why is whole wheat pasta a good choice for consumers with an active and healthy lifestyle?

Give your reasons.

Cannot repeat just the name of the nutrient. Must be qualified from the chart, example high protein or 12.5 grams with reason for the second mark

- More calories / for maintaining energy levels/slow sustained release of energy.
- High protein / to support growth and repair of muscles
- High in carbohydrates /sustained energy
- Some fat but this also needed for energy/relatively low fat content.
- High in fibre /for digestive system support
- Light to digest
- Aids Glycaemic index

Reasons needed for full marks.

**Marks awarded as follows:**

- The candidate has a basic but possibly confused grasp of consumer choices does not have a clear idea of what s/he is writing about  
0-1 marks
- The candidate has some knowledge of consumer choices less clarity of understanding. This candidate knows what s/he is writing about but is confused in part.  
2-3 marks
- The candidate has a thorough understanding and has provided relevant advantages to support the knowledge shown. This candidate knows what s/he is writing about and provides clear evidence of understanding.  
4 marks

**4 marks**

5. (c) Many consumers choose jacket potato products because they are low in fat, but some consumers are concerned about the low protein content. State two ingredients that could be used together for a low fat and high protein filling for a jacket potato. Give reasons for your choice of ingredients.

Fillings

As long as it is suitable count for a mark each and an extra mark can be credited where indicated low fat or high protein in any area of the response.

High protein - do not accept generic names of ingredients e.g. meat, fish

- Baked beans
- Chicken
- Peas
- Fish - named

Low fat

- Tinned fish e.g. tuna in brine/spring water /skinless tuna steak
- lean meat
- Low fat mayonnaise
- Low fat dressings

Also: both low in fat and high in protein:

- Use of quorn, tofu
- Use of pulses, beans, lentils
- Use of low fat fresh vegetables
- Mayonnaise also contains protein rich eggs.
- Not cheese unless lower/reduced fat indicated

Other reasons :

- May refer to healthy options/5 a day/eatwell
- Popularity if ingredients
- Contrasting flavours, hot/cold, textures

<p><b>Marks awarded as follows:</b></p> <p><b>Allow up to 2 marks for up to 2 relevant ingredient identified</b></p> <p>Lean meat, fish, cheese, eggs, peas, beans, lentils, pulses, vegetables.</p> <p>Allow up to 2 marks for reasons.</p> <ul style="list-style-type: none"><li>• The candidate has a basic but possibly confused grasp of nutrition content of foods 0-1 marks</li><li>• The candidate has some knowledge of nutrient content of foods s/he is writing about but is confused in part. 2-3 marks</li><li>• The candidate has a thorough understanding of the nutrient content of foods explanations support the knowledge shown in both sections. This candidate knows what s/he is writing about and provides clear evidence of understanding. 4 marks</li></ul>	<p><b>4 marks</b></p>
--	-----------------------

5. (d) Explain how manufacturers could reduce the kcal content of savoury rice products.
- Reduce any high calorie ingredients e.g. reduce or replace any meat content with vegetables, use spray oil in place of liquid oil
  - Reduce amount of rice used by increasing vegetable content.
  - Wash rice prior to cooking to remove excess starch.
  - Do not fry rice
  - Boil or steam rice in preparation.
  - Use low calorie alternative /spray oils
  - Other relevant modifications

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"><li>• The candidate has a basic but possibly confused grasp of fat content of foods 0-1 marks</li><li>• The candidate has some knowledge of fat content of foods s/he is writing about. 2 marks</li></ul>	<p><b>2 marks</b></p>
---	-----------------------

**TOTAL FOR THIS QUESTION 20 MARKS**

6. Discuss a range of religious and cultural needs that manufacturers must consider when designing new food products. Include examples of different multicultural foods in your answer.

For example:

**Religious preferences**

- Following of religious food laws e.g. banned ingredients
- E.g. Islam, Judaism no pork, food prepared in particular way e.g. halal, kosher, special butcher
- Hindus do not eat beef as cows are considered sacred
- Most Buddhists are vegetarian due to belief that pain inflicted will be reflected on you
- Christian celebrations e.g. fasting for lent, Easter, Christmas
- Muslims dietary laws found in holy book Qu'ran and pork/pork products are forbidden.
- Muslims will only eat Halal meats slaughtered in a prescribed manner
- Jewish food laws means only kosher foods are consumed and animals are slaughtered in ritualistic manner. Not allowed shellfish and pork
- Rastafrians strict L'tal no pork/fish over certain size, and eat plenty of fruit and veg
- Sikh's mainly vegetarians , rarely drink tea/coffee/alcohol
- Festivals often mean speciality foods need to be served or removed from diets during these times. E.g Divali, Ramadam, Eid ul Fitr, Christmas, Jewish passover, Easter...
- Other relevant responses.

**Cultural preferences**

- Use of ingredients native to the consumers country
- E.g. names of national dishes/foods and name of country
- Use of cooking methods native to country
- Vegetarian /Vegan must link to religion/beliefs/culture.
- Special festivals e.g Christmas, Shrove Tuesday pancakes

Candidates should be credited with discussion on multicultural ingredients, national and regional influences on diet and food choices e.g. British, /European, Indian, Chinese etc.



Allow 1 mark for culture / religion

Allow 1 mark for explanation

If candidate presents a list of religions / cultures with examples of preferred foods, award a max of 7 marks.

For the top mark range, candidates need to show a thorough / detailed understanding of the requirements and what the manufacturer needs to consider. This may include dishes for specific times of year, festivals, cooking methods. Refer to holistic marking.

<p><b>Marks awarded as follows:</b></p> <ul style="list-style-type: none"><li>• The candidate has a basic but possibly confused grasp of religious and cultural issues. This candidate does not have a clear idea of what s/he is writing about. <b>0-4marks</b></li><li>• The candidate has some knowledge of causes of religious and cultural issues but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. <b>5-7 marks</b></li><li>• The candidate has a thorough understanding of religious and cultural issues and has provided relevant explanations to support the knowledge shown in both sections. This candidate knows what s/he is writing about and provides clear evidence of understanding. <b>8-10marks</b></li></ul>	<p><b>10 marks</b></p>
--	------------------------

**TOTAL MARKS FOR SECTION B 90 MARKS**

**Total marks for paper 120**

**UMS conversion calculator [www.aqa.org.uk/umsconversion](http://www.aqa.org.uk/umsconversion)**