



**General Certificate of Secondary Education
June 2011**

Design and Technology: Food Technology 45451

(Specification 4545)

Unit 1: Written Paper

Final

Mark Scheme

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2011 DESIGN AND TECHNOLOGY: FOOD TECHNOLOGY MARK SCHEME

This mark scheme is intended as a guide to the type of answer expected but it 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 and provides clear evidence of understanding.

Section A
QUESTION 1

1 (a) Candidates should respond by completing and annotating the given sketch.

Sketches should show:

- Design ideas for snacks e.g. pizza fingers, breadsticks, small mini rolls, calzones, bread twists, garlic bread, foccacia, ciabatta, naan, soda bread, bagels, muffins, crumpets
- Design ideas for dips: e.g. healthier options, combinations of mixtures of sour cream, cottage cheese, light soft/cream cheese, tomato salsa, mint yoghurt, thousand island, tomato sauces, houmos BBQ, raita, garlic, chilli etc * should reflect healthier options.

Annotations for each design idea should include:

- 1 Evidence of following the design brief, i.e. ideas should communicate different savoury snacks, plus **two** different dips and annotations
- 2 Using different bread based snacks – with the 'bread' element clearly identified
- 3 Provide choices for consumers from healthier options e.g. low in fat, sugar, salt, high in fibre, 5 a day portions etc
- 4 Suitability for providing sensory appeal e.g. aroma, colour, texture, shape, variety of flavours, finishing techniques...
- 5 Other relevant design information, e.g. nutrients, dimensions, detailed description of ingredients

Do **not** accept: products cooked with breadcrumbs, crisps, tortillas, nachos, biscuits, pastries, popadoms.

Marks awarded as follows:	
<ul style="list-style-type: none">• Sketch and/or annotation attempted but only one design criteria met may be an inappropriate choice of product 0-3 marks	10 marks
<ul style="list-style-type: none">• Sketch/annotation shows basic ideas for a relevant products that meet most of the design criteria – but may not be clearly communicated 4-7 marks	
<ul style="list-style-type: none">• Recognisable sketch/annotation showing good communication of main features and fitting all the design criteria for a relevant product 8-10 marks	

1 (b)(i) Candidates should produce a plan for making the bread based snack using the chart given.

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:

- Clear, logical schedule, well organised, e.g. preparation of equipment, pre-heating oven etc.
- Specialist terminology-named processes, e.g. knead, prove, chop, bake.
- Key times / time controls
- Key temperatures / temperature controls
- Portion control
- Size / measurement
- Weighing of ingredients
- Shape / consistency controls
- Feedback from control checks
- Finishing techniques used
- Personal hygiene, e.g. clean hands
- Kitchen Hygiene, e.g. clean equipment
- Food hygiene, e.g. controls preventing contamination
- Safety point for workers, e.g. use of oven gloves

*Answers may appear in any column

Marks awarded as follows:

- Simplistic answer giving limited or no relevant planning
0-3 marks
- Some parts detailed, may not be logical, some key areas for successful production omitted
4-5 marks
- Logical planning with a range of different information and checks
6-7 marks
- Answer showing logical plans, clarity of instructions and detail
8-9 marks

9 marks

1 (b)(ii) Candidates should identify an ingredient from their design idea that provides carbohydrate.

e.g. flour, oats, gluten, free flour, potatoes, seeds, sugar, fresh fruit / vegetables etc. Do **not** accept 'bread'.

Marks awarded as follows:

- Candidate gives incorrect ingredient or fails to answer
0 marks
- Candidate correctly gives basic answer or name of carbohydrate rich ingredient e.g. flour
1 mark

1 mark

1 (b)(iii) Candidates should explain the health problems that occur when too much or too little carbohydrates are eaten.

Effects of too much carbohydrates:

- Excess carbohydrates are stored as fat
- Can lead to obesity
- Obesity can in turn lead to heart conditions
- High blood pressure, strokes, high cholesterol (heart problems)
- Diabetes
- Excess sugars can lead to dental caries and tooth decay
- IBS (Irritable Bowel Syndrome) and other related food intolerances

Effects of eating too little carbohydrates:

- Lack of energy/lethargic/tiredness
- Weight loss
- Anorexia in extreme cases
- Too little fibre can cause constipation
- Digestion problems, diverticulosis, bowel cancer

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of carbohydrates. Candidate may only be able to give basic answer or name of ingredient. 0-1 mark
- The candidate has some knowledge but there will be less clarity of understanding. Some correct explanations give to illustrate points made. This candidate knows what he/she is writing about but is confused in part. 2-3 marks
- The candidate has a thorough understanding of both of the issues and has provided relevant explanations to support the knowledge shown. This candidate knows what he/she is writing about and provides clear evidence of understanding. 4 marks

4 marks

1 (c)(i) Candidates should explain how these products can be developed for consumers with special dietary needs.

- Named diet, e.g. diabetic, celiac, low fat, calorie controlled, vegetarian, age related etc.
- Developments as relevant to diet specified, e.g. for consumers on calorie controlled diets/diabetics, vegetarians, reduced fat, salt, sugar etc.
- Use of low fat products e.g. low fat cheeses, creams.
- Use of fresh vegetables e.g. crudities instead of carbohydrate rich dippers e.g. cucumber strips
- Use of gluten free ingredients
- Avoid double cream products
- Avoiding use of animal products for vegetarians
- Avoiding use of milk based products for those with lactose intolerance
- Avoiding use of nut products for those with nut allergies
- Other relevant points

Credit can be given for reference to 'how developed' as part of the design process, e.g. need for research prior to developing.
Correct answers should name type of diet and relevant developments.

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of consumer needs. Candidate may only be able to give a basic answer or named diet. 0-1 mark
- 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 marks
- The candidate has a thorough understanding of consumer needs 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. 3 marks

3 marks

1 (c)(ii) Cultural Needs

Use of ingredients from other countries

- Reference to named country or religion.
- Traditional products and ingredients e.g. naan bread, pitta, olives, chilli.
- Avoiding foods that may not be acceptable in other faiths e.g. red meats, halal foods.
- Other relevant points, e.g. reference to cultural / religious practices related to food preparation, serving or cooking.

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of consumer needs. Candidate may only be able to give a basic answer or name of ingredient, country or religion.
0-1 mark
- 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 marks
- The candidate has a thorough understanding of consumer needs 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. 3 marks

3 marks

SECTION B
QUESTION 2

2 (a) Candidates should select and explain which product is best for a healthy option diet.

- Product A is the best choice.

Reasons:

- Energy value is lower
- Better for those watching calorie intake
- Protein content is higher
- Better growth and repair
- Carbohydrate content is lower
- Less likely to put on unnecessary weight (linked with fat or carbohydrate content)
- Fat content is lower
- Fibre content is higher
- Better for digestion
- Salt content is lower
- Less likely to risk high blood pressure
- Qualified why product B is not suitable if relevant.

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of consumer needs. Candidate may only be able to give a basic answer. 0-1 mark
- 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 marks
- The candidate has a thorough understanding of healthy options 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. 3-4 marks

4 marks

2 (b)(i) Responses should explain the meaning of terms used above.

Marinade

- Coating/covering/soaking food in a flavoured liquid sauce for a time
- Usually overnight or several hours
- Before cooking
- So that food take up the flavour / colour / improves sensory qualities
- May give examples of food other than chicken
- May be a dry ingredient / spice (e.g. garlic) rubbed into a meat

Seal

- To seal outer layer of chicken
- Usually by frying
- At high temperature
- Purpose to seal in juices
- Retain the flavour of meat
- Makes chicken more tender/juicy/moist after cooking
- Used for all meats

Simmer

- To cook in liquid that has been heated
- Heated just below boiling point
- Liquid is slowly bubbling
- Small bubbles
- Food cooks gently – cooked on lowest temperature of the hob
- May give examples of food for simmering e.g. vegetables, sauces

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of the terms. This candidate does not have a clear idea what s/he is writing about. 0-2 marks
- 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. Some terms will be better understood than others. At least 2 of the terms are correctly answered. 3-4 marks
- The candidate has a thorough understanding of terminology 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 all three terms. 5-6 marks

6 marks

2 (b)(ii) Responses should explain why chicken products must be thoroughly cooked before serving.

- (Reduce) risk of food poisoning
- Ensures safety of food and consumer
- Food is safe to eat
- Salmonella risks decreased
- References to 'danger zone' (5 – 63 °C)
- Prevent food contamination by biological sources
- Best checked with a temperature probe
- Heat food to a temperature above 72C
- For at least 2 minutes
- At this temperature **most** harmful food poisoning bacteria are killed
- Above this temperature bacteria are rendered inactive/reduced to safe level
- Chicken is a high risk food
- Chicken contains proteins and water
- Reference to frozen chickens where relevant

Marks awarded as follows:

- The candidate has a basic but possibly confused food contamination. This candidate does not have a clear idea what s/he is writing about. 0-1 mark
- The candidate has some knowledge of food contamination 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 marks
- The candidate has a thorough understanding of contamination 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. 3-4 marks

4 marks

2 (c) Candidates should explain why GDA information is useful and give examples of how the product supports adults GDA. Giving examples from the given table.

- 2 (c)(i) Why GDA is useful to consumers:**
- GDA guide consumers as to the nutritional content of the product
 - Helps consumers 'know'
 - Awareness that this is only a guide and that figures change according to age, gender, weight and activity.
 - Highlights where care needs to be taken
 - Consumers raised awareness of what they are eating to awareness of links to balanced diet
 - Allows consumers to plan foods / meals
 - Other relevant points

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of GDAs. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has a thorough understanding. This candidate provides clear evidence of understanding. 2 marks

2 marks

- 2 (c)(ii) **Using information from the table above, give examples of how the cooked chicken product meets the GDA for adults.**

Information from the table:

- Adults need 2000 kcal daily
- 90g sugar
- 70g fat
- 6g salt
- % given by product. Enables consumers to choose foods to encourage good health/avoid health related problems
- Awareness of balance
- Only 10% calories / so others can be made up by other meals in the day
- 25% sugar danger / High for one product
- 10% fat is relatively low and is a fairly good choice / but below 5% would be better!
- 25% salt is a poor choice / could lead to high blood pressure
- Other relevant points

May give specific responses, e.g. protein from chicken, fats from stir fry, chicken skin, sugar / salt from sauce

Marks awarded as follows:

- Few correct examples are given to illustrate points made. This candidate does not have a clear idea of what s/he is writing about.
0-1 mark
- The candidate has some knowledge of GDAs 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.
2-3 marks
- The candidate has a thorough understanding of GDAs 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

Question 3

- 3 (a)(i) Responses should identify the type of pastry used in the design idea and the proportions of ingredients used. Names of pastry are given below:**

Shortcrust is preferred answer but others may be accepted

	Shortcrust 2:1	Rough puff 4:3	Filo 4:1
Flour	100g	100g	100g
Fat	50g ½	75g ¾	2 tblsp oil ¼

Marks awarded as follows:

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

3 marks

3 (a)(ii) Responses should explain why some pastries use a mixture of fats

- Mention of different types of fats used in pastry i.e. lard, butter, vegetable spreads, oil.
- White fats / lard used for shortening / crumbly flaky textures
- Vegetable spreads/butter/oils used to add moisture
- Flavour
- Colour
- Reference to choices of saturated and unsaturated fats for health reasons
- Mixture enables best of different properties to enhance the product.
- Describe combinations of fats
e.g. in named pastries, traditionally shortcrust use a mixture of both

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of pastries. This candidate does not have a clear idea of what s/he is writing about and may only know the name of fats used in the pastry. 0-1 mark
- The candidate has some knowledge of pastry fats but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2 marks
- The candidate has a thorough understanding of pastry fats and their functions 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. 3 marks

3 marks

3 (a)(iii) Candidates should name a suitable packaging material for a hot hand held pastry product and give reasons for their choice.

Suitable materials:

- Polystyrene (not cardboard)
- Paperboard
- Tinfoil
- Plastics
- Paper

Marks awarded as follows:

This candidate does not have a clear idea of what s/he is writing about and does not identify a suitable material. 0 marks

Candidate correctly identifies a suitable packaging material. 1 mark

1 mark

3 (a)(iv) Reasons for choice as appropriate to material chosen:

- Withstands heat if hot product to be held in hand
- Folded/moulded into shapes to support product / flexible
- Moisture/grease/acid resistant
- Lightweight
- Non absorbent
- Does not taint food
- Strong. Less likely to break product
- Cheap as it will be thrown away later
- Impact on environment/recyclable/biodegradable
- Transparent, so you can see product
- Easy to print onto
- Other relevant answers, e.g. extensions explaining **why** properties are important

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of packaging materials. This candidate does not have a clear idea of what s/he is writing about and may only identify a suitable material. 0-1 mark
- The candidate has some knowledge of pastry fats but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2 marks
- The candidate has a thorough understanding of packaging materials 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. 3 marks

3 marks

3 (b) Candidates should explain what is meant by the term controlled conditions in relation to sensory testing techniques.

Candidates should communicate their knowledge and understanding focusing on 'sensory testing'. Responses come from both prose and annotated sketches (note question says 'or' so both are not required).

- Controlled conditions:
Refers to having all conditions the same, so unbiased / no way of influencing tester / neutral conditions
- So useful comparisons can be made between samples
- Same size samples
- Identical dishes
- Identical quantities of food
- Coded samples
- Same light conditions
- Noise free area
- Smell free area
- Individual booths for privacy
- Blind testing/blindfolded
- Clarity of instructions given to taste
- Water/cracker to refresh mouth after each tasting
- Similar charts used to record outcomes

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of controlled conditions. This candidate does not have a clear idea of what s/he is writing about. 0-2 marks
- The candidate has some knowledge of controlled conditions 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 controlled conditions 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. 5-6 marks

6 marks

4 (a)(i) Responses should identify reasons why fewer consumers are buying white flour.

- Wider awareness of other products
- Less home baking
- Increased purchasing of frozen pastry and of ready made products
- Healthy option choices – more fibre / NSP in whole meal / healthier
- More culturally aware so other flour choices are chosen as preference
- Technological advances mean more choices available
- White flour is seen as traditional and consumers now want to be more adventurous (e.g. because of increased travel)
- Other relevant responses

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of market trends. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of market trends but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2 marks
- The candidate has a thorough understanding of market trends 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. 3 marks

3 marks

4 (a) (ii) Candidates should explain why a bakery should use wholemeal flour.

- Wholemeal flour will meet needs of consumers who want a healthy option / healthier
- To expand range of products on offer
- Addition of NSP/Fibre
- Improves texture
- Colour of scone
- Different flavour to scone

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of ingredients. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of ingredients but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2 marks

2 marks

4 (a)(iii) Candidates should describe different control checks that take place when dried fruit is delivered to the bakery.

Answers may include: (focus in on *delivery*)

- Checking datemark
- So that it will be safe to use/consume
- Condition of packaging
- Visual checks of fruit
- Conditions of seal
- Conditions need to be specific, e.g. clean, dry
- Check for pest infestation / foreign bodies
- Correct type of fruit
- Quantity ordered/weight check
- If not as ordered to be returned
- Conditions related to delivery van, i.e. level of cleanliness
- Other relevant answers

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of control checks. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of control checks but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2 marks
- The candidate has a thorough understanding of control checks 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. 3-4 marks

4 marks

- 4 (a)(iv) Answers should describe a computerised control check made during scone production. Candidates should then explain why computers are used for this check.**

Control checks carried out by computers:

- Timing
- Temperatures of oven
- Metal detection
- Weigh of ingredients
- Quality Control, e.g. shape, size
- Portion control
- Other relevant checks

Why computers are used:

- More accurate than humans in minute measurements
- Less staff needed / cost reduction in long term
- Humans may be unable to carry out the check
- Safety
- Speed / quicker / saves time / reliability
- Ability to record results / store results
- Automatic, 24 hours a day
- Other relevant reasons

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of computerised control checks. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of computerised control checks but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. May only give control check or information on use of computers correctly 2-3 marks
- The candidate has a thorough understanding of computerised control checks 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 both control checks and use of computers. 4-5 marks

5 marks

4 (b) Candidates should complete the given table to explain a cause and prevention of common production problems during scone making.

Problem 1: Hair in a cooked scone:

Cause	Prevention
<ul style="list-style-type: none"> • Lack of personal hygiene, e.g. hair not tied back • Lack of staff training • Physical contamination • Mixture not checked before use 	<ul style="list-style-type: none"> • Training for staff • Staff must always wear hair covering – hair/beard net • Improved control checks

Problem 2: scones did not rise in the oven

Cause	Prevention
<ul style="list-style-type: none"> • Incorrect proportions of ingredients, e.g. raising agent • Used plain flour or too much milk • Oven too low temp • Insufficient time in oven 	<ul style="list-style-type: none"> • Accurate weighing of ingredients • Checking of temperatures • Checking of times

Problem 3: scones of different sizes and shape

Cause	Prevention
<ul style="list-style-type: none"> • Incorrect preparation • No quality control • Portions not weighed/cut accurately • Poor staff training • Faulty computerised equipment 	<ul style="list-style-type: none"> • Staff training • Control checks on weight/quantities/ portion control • Checks on equipment

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of production problems. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of cause of problem but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2-4 marks
- The candidate has a thorough understanding of all three production problems and how to solve them 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 of all three problems. 5-6 marks

6 marks

5 (a) **Response should identify different types of food additives and explain issues related to the use of food additives in food products.**

5 (a)(i) **Types of food additives:**

- Preservatives
- Colourings
- E numbers
- Allow named additives, e.g. tartrazine, lecithin
- Flavourings
- Emulsifiers
- Natural
- Raising agents / baking powder
- Synthetic
- Stabilisers
- Anti oxidants
- Anti caking agents
- humectants
- Nutrient and flavour enhancers

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of food additives. May only give 1 example. 0-1 marks
- The candidates will give 2 correct examples of food additives. 2 marks

2 marks

5 (a) (ii) Advantages and disadvantages of food additives:

Advantages

- Natural additives – no 'chemical' content
- Enable food to be preserved
- Improved colour / flavour
- Improve sensory attributes of food
- Use out of season
- Longer shelf life
- Prevent separation of e.g. dressings
- Allow colour of product to be constant, e.g. jam
- Prevents oxidation of fats in baked products

Disadvantages

- Synthetic additives are created in a laboratory
- Safety of some additives a concern
- Make some foods look unnatural and artificial
- Additives need approval from the EU, e.g. some are removed / withdrawn
- Risk of hyper activity in children
May give examples e.g. colourings in squash
- Other health problems linked to the use of additives:
Increased asthma
Eczema
Food intolerances
- Unknown health risks of some additives

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of food additives. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of food additives but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. May only give advantages or disadvantages. 2-3 marks
- The candidate has a thorough understanding of food additives and the issue related to them, and has provided relevant explanations to support the knowledge shown in both advantages and disadvantages. This candidate knows what s/he is writing about and provides clear evidence of understanding. 4 marks

4 marks

- 5 (b)(i) **Responses should explain what is meant by the term organic and explain why more manufacturers are using organic foods.**

Organic means:

- Grown without the use of chemicals, pesticides, fungicides, herbicides, synthetic drugs, growth regulators, antibiotics, or intensive livestock farming.
- Greener / environmentally friendly food products
- Grown away from 'treated' food products
- Produced / processed / packaged without use of chemicals

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of organic foods. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of organic foods but there will be less clarity of understanding. This candidate knows what s/he is writing. 2 marks

2 marks

- 5 (b)(ii) **Why more manufacturers are using organic foods:**

- Thought to taste better
- Increase sales / market trends
- Considered healthier by some
- Meets consumer needs for 'pure' foods / increase in popularity
- In response to moral, ethical and environmental issues
- Consumers feel it is healthy and less likely to cause health problems
- Foods are more expensive but thought value for money
- Manufacturers keen to be part of new ways of food production
- Reduced Co2 emissions
- Natural farming methods/sustainability e.g. fish farming quota for cod not over fished.

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of organic foods. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of organic foods but there will be less clarity of understanding. This candidate knows what s/he is writing about. 2 marks

2 marks

- 5 (b)(iii) **Candidates should explain the advantages and disadvantages of using locally sourced, seasonal foods in terms of sustainability.**

Reminder – this question also assesses Quality of Written Communication

Advantages:

- Contributes towards local economy
- Confidence in the producer
- Sustains local livelihoods, e.g. farmers
- Minimises amount of energy used as less travelling needed by workers or food
- Less harm to the environment – can reduce need for packaging
- Food is fresher / longer shelf life
- Food is harvested soon after produced
- Local economy boosted
- Impact on less developed countries
- Food has more nutrients
- Costs less (must qualify re seasonability)
- Use of seasonal means less wastage
- Fewer air miles

Disadvantages:

- Some food may not be available locally
- Therefore limits availability/choice
- Local stores/outlets needed
- Small farmers may find it difficult to meet standards, e.g. Red Tractor
- Can be more expensive due to intensive labour costs
- Often do not last as long due to processing, packing technologies used by large producers
- Consumers living in towns may not have as much choice
- Potential customer base may therefore be lower

And other relevant answers

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of sustainability issues. 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 causes of sustainability issues but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. **Fairly well structured answer with correct use of some design technology terminology and only a small number grammatical errors.**
4-6 marks
- The candidate has a thorough understanding of sustainability 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. **Response is well structured with a good use of appropriate Design Tech terminology. Good use of grammar, punctuation and spelling**
7-8 marks

8 marks

- 6 (a) **Candidates should use the chart to identify how the equipment is used in a test kitchen. Answers should also explain why item is used.**

A grater:

- Used when grating / shredding named ingredients e.g. cheese, vegetables, zesting oranges / lemons, spices etc

Reasons for use:

- Quality assures size of ingredient
- Offers slicing facility and different sizes
- Controlled by hand
- Good for small quantities

A steamer:

- Used cook/steam vegetables/puddings, fish, chicken

Reasons for use:

- Healthier method of cooking
- Less vitamin depletion (Vit C / Vit B1)
- Quick method of cooking
- No fat used
- Keeps food moist
- Retains flavour of food – not lost in liquid
- Advantage that several different foods can be cooked at the same time

A hand blender:

- Useful for chopping/slicing/blending foods e.g. soups/purees, sauces, batters (Not: whisking, cakes)

Reasons for use:

- Good for small quantities used in test kitchen
- Takes up less space than a large scale mixer
- Easier to use and clean too
- Consistency of texture
- Quicker than by hand / instead of large equipment
- More accurate/consistent than doing the same jobs by hand

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of using equipment. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of kitchen equipment but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2-4 marks
- The candidate has a thorough understanding of all three items of equipment 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. 5-6 marks

6 marks

6 (b) **Response should explain what food contamination means and how incorrect use and care of equipment can lead to food contamination.**

- 6 (b)(i) Food contamination means:
- That food has micro-organisms/bacteria in it
 - Food may cause food poisoning / unsafe food
 - Food becomes harmful because of physical/chemical/biological contaminants
 - Reference to high risk foods or dangers of cross contamination can be credited

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of food contamination. This candidate does not have a clear idea of what s/he is writing about. 0-1 mark
- The candidate has some knowledge of causes of food contamination but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2 marks

2 marks

6 (b)(ii) Use and care of equipment

- Prevention of cross contamination
- If equipment is not cleaned correctly before/after use of contaminants from old/previously used food may gather.
- If sanitizers not used equipment may not be completely clean
- Correct choice and use of coloured chopping boards when preparing different foods
- Chipped or damaged equipment can harbour bacteria which can be passed on to new food
- Use of correct procedure for dishwashing equipment/detergent/programmes
- Thorough cleaning and sanitising

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of food contamination and its links with use of equipment The candidate does not have a clear idea of what s/he is writing about 0-1 mark
- The candidate has some knowledge of causes of food contamination but there will be less clarity of understanding. This candidate knows what s/he is writing about but is confused in part. 2 marks
- The candidate has a thorough understanding of food contamination 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. 3 marks

3 marks

6 (c) Candidates should identify safety precautions that food workers should take to ensure they are safe when using electrical equipment.

- Training courses
- Read instructions before use
- Not using equipment when hands are wet
- Keeping electrical equipment away from water supplies
- Acting appropriately when using equipment : use only for purpose
- Do not stretch flexes
- Check on condition of equipment before use
- Regular safety checks on conditions of equipment, flexes, plugs
- Other relevant answers

Marks awarded as follows:

- The candidate has a basic but possibly confused grasp of personal safety. This candidate does not have a clear idea of what s/he is writing about.
0-1 mark
- The candidate has some knowledge of personal safety 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 personal safety 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.
4-5 marks

5 marks