



General Certificate of Secondary Education

Design and Technology (Food Technology) 3542

Full Course Higher Tier

Mark Scheme

2007 examination - June series

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1 (a) Name one research method that manufacturers use to gather this information.

Methods used may be:

- Questionnaire
- Surveys
- E – mail
- Interviews

(1 mark)

(b) Describe how this research method is carried out.

- Place carried out
- Clear aim, objective, purpose
- Type of people to ask / target group / audience
- Number of people asked
- Examples of types of questions asked
- Analysis of results / data
- Explanation of how results ensured fair testing
- Conclusions drawn from results
- Evaluation of research method
- How results may benefit future product development

Qualified answer or two simplistic answers **(2 – 3 marks)**

Simplistic answer **(1 mark)**

(3 marks)

(c) Explain why Ciabatta bread has become more popular.

- Changes in consumer preferences
- More foreign holidays / travel opportunities
- Italian influences
- Good for sandwiches
- Multi cultural society
- Consumers experiment more with food
- New technology, better distribution, transport for raw materials.

Qualified answer or two simplistic answers **(2 marks)**

Simplistic answer **(1 marks)**

(2 marks)

(d) Describe different ways of developing white bread to make it more appealing to consumers.

Any of the following;

- Change of flour type
- Increasing fibre content to meet healthy option needs
- Addition of flavour e.g. adding sun-dried tomato, herbs, nuts, grains
- Changing portion sizes
- Addition of topping / decoration / finish / garnish
- Using environmentally friendly ingredients e.g. organic
- Addition of texture
- Changing of shapes / style presented

Mixture of simplistic and qualified answers (**4 – 6 marks**)

Simplistic answer (**1 – 3 marks**)

(**6 marks**)

Total for question 12 marks

- 2 (a) (i) Using information from the table, name the type of flour which is most suitable for a healthy option bread product.

Wholemeal

(1 mark)

- (ii) Give reasons for your choice.

- Lowest in kcal
- High fibre – good for digestion, removal of waste products
- High in iron – healthy blood

Qualified answers well explained or number of simplistic answers
(4 marks)

Qualified answer or two simplistic answers (2 – 3 marks)

Simplistic answer (1 mark)

(4 marks)

- (b) (i) Name the type of flour from the table that is most suitable for making a *well risen* loaf of bread.

Strong white flour

(1 mark)

- (ii) Give reasons for your choice.

- Contains protein 'gluten'
- To improve elasticity
- To assist rising / light open texture

Qualified answer or two simplistic answers (2 marks)

Simplistic answers (1 mark)

(2 marks)

Total for question 8 marks

3 (a) Use notes and sketches to show two different design ideas for a Wrap or Roll product.

Each sketch should reflect the design criteria.

- Ideas produced must be different products; not variations of the same product.
- Ideas should be communicated through the use of notes and sketches, including 2D, 3D or cross sections.
- Ideas should be suitable for providing a healthy option.
- Should include a bread product with a savoury filling.
- Suitable for eating without cutlery.
- Notes may show the main features of the product e.g. dimensions, shape, texture, colour, finishing techniques, cooking / preparation methods, portion control.

For each sketch

Recognisable sketch / prose showing good communication of main features of a relevant product (**4 – 5 marks**)

Sketch / prose shows basic ideas for a relevant product but not clearly communicated (**2 – 3 marks**)

Sketch / prose attempted but inappropriate choice of product (**1 mark**)

2 x 5 marks (**10 marks**)

(b) Explain how this design will

(i) offer sensory appeal,

May refer to:

- Different textures in filling
- Different texture in bread product
- Use of toppings / finishing techniques
- Use of flavouring / dressing in both bread product and filling
- Use of aroma
- May give examples of how ingredients give variety

Qualified answers well explained or number of simplistic answer (**4 marks**)

Qualified answer or two simplistic answers (**2 – 3 marks**)

Simplistic answer (**1 mark**)

(**4 marks**)

(ii) be suitable for vegetarians.

May refer to:

- Using vegetable based food sources
- Vegetable protein
- Alternative protein e.g. quorn, TVP, tofu, soya
- Absence of meat based foods
- May note that vegans are stricter than other vegetarians as they will not eat animal products either e.g. eggs
- May give reasons why consumers may be vegetarians

Qualified answers well explained or number of simplistic answers
(4 marks)

Qualified answer or two simplistic answers **(2 – 3 marks)**

Simplistic answer **(1 mark)**

(4 marks)

(c) Give a different reason why each ingredient is used.

- Ingredients need to be accurate
- Specially named ingredients / standard components
- Correct proportions
- Functions need to be appropriate and match with ingredients chosen

Strong flour	Elasticity, bulk, structure
Yeast	Raising agent
Sugar	Food, flavour
Water	Warmth, moisture
Topping / finish	As appropriate
Salt	Flavour

Qualified answers well explained or number of simplistic answers
(4 marks)

Qualified answer or two simplistic answers **(2 – 3 marks)**

Simplistic answer **(1 mark)**

1 x 5 marks for ingredients

1 x 5 marks for different functions

(10 marks)

(d) Describe how a quality finish could be added to your chosen design idea.

- Adding toppings e.g. seed, egg wash, milk, egg glaze, patterns, garnish, decoration
- May also describe how carried out, equipment / techniques used

Qualified answer or two simplistic answers (**2 marks**)

Simplistic answer (**1 mark**)

(2 marks)

(e) Produce a plan for making your chosen design idea in a test kitchen. You may use flow charts, diagrams, notes or sketches in your answer.

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

- Logical sequence
- Raw ingredients
- Specialist terminology, timings, temperatures
- Named processes
- Personal hygiene
- Kitchen hygiene
- Food safety
- Control checks
- Feedback
- Clarity of instruction
- Final product
- Finishing techniques

Answer showing logical plans, clarity of instruction and detail

(9 – 10 marks)

Logical planning with a range of different information covered

(6 – 8 marks)

Some parts detailed, may not be logical, some key areas for successful production omitted

(4 – 5 marks)

Simplistic answer giving some relevant planning

(1 – 3 marks)

(10 marks)

Total for question

40 marks

4 (a) Describe two different control checks used when making bread rolls, at each of the preparation stages listed below.

Preparation Stage	Control checks used
Choosing raw ingredients	Any checks related to: reliable supplier, datemarks, condition of packaging, storage conditions / temperatures, portion controls, visual checks 2 x 1 mark
Preparing and shaping the dough	Any checks related to: temperature controls, timing, quality control of sizes of portions / shapes, consistency, weight 2 x 1 mark
Cooking the bread rolls	Any checks related to: temperatures, checking reliability of equipment, thermostats, packaging materials, timing, position in oven, colour, refractor checks 2 x 1 mark

(6 marks)

(b) What is the difference between a *quality control check* and a *critical control check*?

Quality controls	Quality control where 'hazards' are non hazardous e.g. size, shape, colour, portion size, finish, appearance
Critical controls	A critical control check identifies hazards which may be harmful to the consumer making the product unsafe to eat, e.g. temperature, time, hygiene, bacterial contamination

(4 marks)

(c) Results of different control checks on chicken salad wraps show the following problems.

Complete the table above to show

- (i) the cause of each problem,**
- (ii) how each problem may be prevented.**

Problem	Cause	How to prevent this problem
A tortilla wrap falls to pieces when filled	Wrap is stale	Use correct proportions of ingredients
	Filling is too bulky or wet	Quality control checks for consistency, sizes and shapes, freshness of filling / ingredients
	Incorrect handling when filled/rolled	Wash salad before use / sanitised
An insect is found in a salad sandwich	Wrap is too small	Visual checks
	Poor hygiene standards	Use insect exterminator
	Salad not washed before use	Routine hygiene inspections
	Raw ingredients not covered during storage	Hygiene checks
	Not checked on delivery / preparation / no visual checks for physical contamination	

2 x 4 marks (8 marks)

- (iii) Name one problem in the table that is identified by a quality control check.**

Tortilla falls apart

(1 mark)

- (iv) Name one problem in the table that is identified by a critical control check.**

Insect in sandwich

(1 mark)

Total for question 20 marks

5 (a) (i) What is meant by the term *standard component*?

- Ready made component
- May give examples

Qualified answer or two simplistic answers (**2 marks**)

Simplistic answer (**1 mark**)

(**2 marks**)

(ii) What are the advantages and disadvantages of using standard components?

- Saves time
- Saves energy
- Consistent product
- Good if staff do not have the skills needed
- Good if equipment needed to make product is not available
- Saves purchase / storing of raw ingredients
- Less storage needed
- May not be exactly as wished
- May be high in fat, sugar
- Lack of control over manufacture / supply
- Less risk of cross contamination during production

Qualified answers well explained or number of simplistic answers

Includes both advantages and disadvantages (**5 – 6 marks**)

Qualified answer or two simplistic answers (**3 – 4 marks**)

Simplistic answer (**1 – 2 marks**)

(**6 marks**)

(b) Name and describe one method of sensory testing used to find out consumer preferences for these different types of white bread.

Descriptions may be for any named form of testing, e.g. difference tests, ranking tests, rating tests, profiling. Name of test should be given for full marks. Do not accept preference test.

Descriptions may include:

- Place where carried out
- Type of people to ask / target group / audience
- Number of people asked
- Fair testing considerations
- How results are recorded
- Analysis of results / data
- Conclusions drawn from results
- How results may benefit future product design

Qualified answers well explained or number of simplistic answers
(5 – 6 marks)

Qualified answer or two simplistic answers **(3 – 4 marks)**

Simplistic answers **(1 – 2 marks)**

(6 marks)

Total for question 14 marks

6 (a) (i) What is meant by the term CAD?

CAD means computer aided design

(1 mark)

(ii) What is meant by the term CAM?

CAM means computer aided manufacture

(1 mark)

(b) Give examples of how CAD and CAM may be used in bread production.

CAD Examples may give one detailed answer or two simplistic examples.

- Designing the appearance of product, calculating nutrient content, model portion sizes, cost / profit, calculating shelf life, analysis of sensory data, presenting information for labelling, showing assembly procedures, packaging design.

CAM Examples may give one detailed answer or several simplistic answers.

- Monitoring production process, e.g. temperature changes, controlling changes, feedback from monitoring, use of computer controlled equipment, e.g. breadmaker, microwave oven, electronic scales
- Must give example of CAD and CAM for full marks

(4 marks)

Total for question

6 marks

7 (a) Why is seafood a high risk food?

- Moist
- Protein
- Easily contaminated by bacteria
- Short shelf life

Qualified answer or two simplistic answers (**2 marks**)

Simplistic answer (**1 mark**)

(**2 marks**)

(b) At what temperature should high risk foods be stored in a refrigerator?

0 – 5 C°

(**1 mark**)

(c) How do retailers ensure that chilled foods do not fall below the correct temperature?

- Regular checks
- Monitoring by staff
- Train staff in food hygiene
- Alarms if electric supply cut or temperature lowered
- Checking doors are shut correctly
- Checking fill levels are correct
- Checking equipment / chillers are defrosted regularly
- Temperature logging
- Correct use of food probes

Qualified answers well explained or number of simplistic answers (**4 marks**)

Qualified answer or two simplistic answers (**2 – 3 marks**)

Simplistic answer (**1 mark**)

(**4 marks**)

8 (a) (i) 'May contain wheat, gluten, eggs and milk'

- Given as a warning
- Danger foods for some consumers
- Allergy advice information
- Indicates place where made may have had these ingredients used on the production line
- These ingredients may not have been used in product or appear on ingredient list

Qualified answer and / or simplistic answers (**2 – 3 marks**)

Simplistic answer (**1 mark**)

(**3 marks**)

(ii) 'Use by 25.10.07'

- Given as a warning
- Indicates food must be used before this date
- After this date food is not safe to be eaten
- May increase risk of food poisoning
- Legal requirement for this to be displayed

Qualified answer and / or simplistic answers (**2 – 3 marks**)

Simplistic answer (**1 mark**)

(**3 marks**)

(b) How do manufacturers of takeaway products ensure that the packaging they use is environmentally friendly?

- Use of packaging materials that are environmentally friendly
- Use of recyclable materials
- Examples e.g. paperboard
- Labels to show disposal of packaging after use
- Keeping packaging to a minimum

Qualified answers well explained or number of simplistic answers (**4 marks**)

Qualified answer or two simplistic answers (**2 – 3 marks**)

Simplistic answer (**1 mark**)

(**4 marks**)

Total for question 10 marks

9 **How do food manufacturers of takeaway sandwich products ensure they meet the needs of consumers who have special dietary needs?**

- Labels inform customers
- Labels may include allergy advice: gluten / nuts / milk etc
- Labels include health advice / nutritional details / fat content / energy value per portion/pack
- Guide to portion size
- Age related needs – special food for children
- Range of diet specific products, e.g. coeliac, vegetarians, low fat, high fibre, low salt, low calorie – with specifically related examples

Qualified answers well explained or number of simplistic answers
(6 - 8 marks)

Qualified answer or two simplistic answers **(4 - 6 marks)**

Simplistic answer **(1 - 3 marks)**

(8 marks)

Total for question 8 marks

Total for paper 125 marks