



General Certificate of Secondary Education

Design and Technology (Food Technology) 3542

Full Course Foundation Tier

Mark Scheme

2007 examination - June series

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1 (a) What are the advantages of using the following types of bread?

(i) a sliced loaf

- Convenient
- Different thickness of slices
- Saves times
- Range of products
- Easy storage shape
- Easier for young and old to use

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

Simplistic answer (**1 mark**)

(**2 marks**)

(ii) a part baked loaf

- Longer shelf life
- Good for emergencies / convenient
- Less cooking time / less fuel used
- Can be served hot
- Cut to desired slice size

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

Simplistic answer (**1 mark**)

(**2 marks**)

(b) Suggest two ways of developing white bread to make it more appealing to consumers.

Any two of the following;

- Change of flour type
- Increasing fibre content to meet healthy option needs
- Addition of flavour
- Addition of topping
- Addition of texture
- Changing of shapes / style presented
- Suited for age group e.g. shaped for children
- Healthy preferences e.g. organic, GM ingredients
- Examples of specific ingredients
- Different portion sizes
- Additions that change appearance e.g. colour
- Developing for dietary suitability e.g. vegans

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

Simplistic answer (**1 mark**)

(4 marks)

(c) Sales of bread have changed over recent years.

(i) Using the information shown in the table, name two bread products that have become more popular.

Any two from: bagel, ciabatta, croissant or naan

(2 marks)

(ii) Explain why these have become more popular.

- Changes in consumer preferences
- More foreign holidays / travel opportunities
- Multi cultural society
- Consumer experiment more with food
- New technology better distribution, transport for raw materials

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

14 marks

2 (a) Question 2 is about choice of flour.

(i) Using the 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 answer **(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 section.
- 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.
- May mention the target group product is aimed at.
- **Accept** different types of wrap / roll bread products.

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

2 x 5 marks

(10 marks)

(b) (i) Explain how this design idea will ‘appeal to a range of customers’.

May refer to:

- Age groups e.g. children, adults, teenagers...
- Different cultures
- Special dietary needs e.g. coeliac, nut free
- Sensory appeal, e.g. through colour, texture, flavour, aroma
- Environmentally friendly – use of organic ingredients

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)

(ii) Explain how this design idea offers a ‘healthy option’.

May refer to the ‘wrap, roll or filling’

- Low fat content – cholesterol levels
- Additive free
- High fibre content
- Lower salt
- Applies 5 a day rule
- Good balance of nutrients
- High / low kcal and meeting energy needs
- Suitability for vegetarians or other special dietary needs
- Dietary needs specified target groups

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) Complete the table to show four main ingredients used to make your chosen design idea. Give a different reason why each ingredient is used.

	Main ingredients as relevant to chosen idea	Reasons for use as relevant to ingredient chosen
Wrap or roll bread product	Strong flour	Elasticity, bulk, structure
	Yeast	Raising agent
	Sugar	Food, flavour
	Water	Warmth, moisture
	E.g. raw ingredients as described in the design idea.	E.g. addition of colour, flavour, texture, aroma, nutrients, moisture
	Standard components may be included	
	4 x 1 mark	4 x 1 mark

(8 marks)

(d) Write a step-by-step plan for making your chosen design idea in a test kitchen.

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 / standard components / QA
- Specialist terminology timings temperatures
- Named processes for bread and filling
- Personal hygiene
- Kitchen hygiene
- Food safety
- Control checks
- Feedback
- Clarity of instructions
- 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)

- (e) **Name two other food items that could be included with your Wrap or Roll product in a healthy option lunch box. Give a reason for each choice.**

Items may include any of the following;

- Fruit products, e.g. apple, oranges
- Snack foods, e.g. salad items cucumber batons, celery sticks...
- Crisps...healthy option variety
- Mini finger snacks e.g. chicken pieces
- Tubes of cheese / yoghurts / fromage frais, e.g. frubes
- Drinks, e.g. fresh fruit juices
- Cereal bars
- No yoghurts as cutlery needed
- Any other relevant answer

(2 marks)

Reason for choice must link with food item chosen:

- Nutrient value
- Dietary needs met
- Low fat, sugar, salt options
- High fibre options
- Additive free options
- Balance between sweet and savoury
- Calorific value
- Convenience

(2 marks)

(4 marks)

Total for question 40 marks.

- 4 (a) Describe two different control checks used when making chicken salad wraps, 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.
Cooking the chicken	Any checks relating to: Temperature controls, timings, thoroughness of cooking, use of food probes, quality control of sizes of foods.
Storing the prepared filling	Any checks relating to: Temperatures, checking reliability of equipment, thermostats, packing materials, datemarking.

3 x 2 marks

(6 marks)

- (b) What is meant by a *critical control check*?

- A critical control check identifies where hazards may occur
- Hazards are those which may be harmful to the consumer
- Making the product unsafe to eat
- E.g. temperature, time, hygiene, bacterial contamination
- May compare to quality control where checks re non hazardous e.g. size, shape, colour, portion size

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

Simplistic answer (1 mark)

(3 marks)

- (c) **Results of control checks on chicken wraps show the following problems.**
Complete the table above to show
- (i) **the causes of each problem, (4 marks)**
(ii) **how each problem may be prevented. (4 marks)**

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 of filling.	
	Incorrect handling when filled	Wash salad before use	
An insect is found in a sandwich.	Wrap is too small	Use insect exterminator	
	Poor hygiene standards	Routine hygiene inspections	
	Salad not washed before use	Hygiene checks	
	Raw ingredients not covered	Visual checks	
	Incorrect storage		
		Total for question	17 marks

(8 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 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
- Avoids cross contamination on the production line.
- Any other relevant answer

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**)

(iii) What are the disadvantages of using standard components?

- Needs reputable supplier
- Not always as fresh as home made
- Cannot change specification easily
- Expensive
- Needs storage

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

Simplistic answer (**1 mark**)

(**2 marks**)

(b) (i) Name one method of sensory testing these samples of cheese sandwich fillings.

Any named form of testing e.g. difference tests, ranking tests, rating tests, profiling. (Do not accept preference tests)

(**1 mark**)

(ii) Using notes and / or sketches, describe how this sensory test is carried out.

- Place where carried out
- Type of people to ask / target group / audience
- Number of people asked
- Fair testing considerations: e.g. identical amounts, blindfolds, water between samples, individual testing booths

Qualified answers well explained or number of simplistic answers

(5 marks)

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

Simplistic answers **(1 mark)**

(5 marks)

(iii) Name two ways the results can be recorded on a computer.

- Charts / profiles
- Use of computer
- Labelled graphics
- Analysis of results / data
- Pie charts
- Graphs
- Charts / bars
- Radar charts
- Spreadsheets
- Word processed report

Two simplistic answers **(2 x 1 mark)**

(2 marks)

(iv) Explain how the results can be used.

- Conclusion drawn from results
- How results may benefit future product design
- Further testing / trialling with target consumers

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

Simplistic answers **(1 mark)**

(2 marks)

Total for question 18 marks

6 (a) (i) What is meant by a consistent product?

- All products are the same
- Every time made
- Must indicate similarities in size, shape, colour, portion size

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

Simplistic answer (**1 mark**)

(**2 marks**)

(ii) Name one item of electrical equipment which could be used to give a consistent product when making the filling.

- Food processor
- Blender
- Electronic scales
- Electric food slicer
- Any other relevant answer

(**1 mark**)

(b) What are the advantages of using CAM (Computer Aided Manufacture) to help achieve a consistent product when making bread rolls?

- Less human error / greater accuracy
- Quicker
- Clearly presented
- Can make changes easily
- Cheaper than remaking product to trial change

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

Simplistic answer (**1 mark**)

(**3 marks**)

Total for question

6 marks

7 (a) (i) 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**)

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

0 – 5°C

(**1 mark**)

(iii) Why should seafood sandwiches be kept refrigerated until use?

- Bacteria multiply
- When in warm temperatures / danger zone
- If taken out of refrigerator too early
- Risk of food poisoning
- Must be kept below room temperatures

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

Simplistic answer (**1 mark**)

(**3 marks**)

(b) Ready prepared sandwiches are stored in chiller cabinets. How do retailers (shopkeepers) make sure that the chiller cabinets do not fall below the correct temperature?

- Regular checks
- Monitoring by staff
- Temperature logging
- Use of temperature probes correctly
- Train staff in food hygiene
- Alarms if electric supply cut or temperature lowered
- Check doors are closed
- Check / monitor fill levels
- Defrost regularly to meet standards

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

8 (a) Explain the meaning of the following information often seen on food packaging.

(i) 'May help as part of a calorie controlled diet'

- May only be low calorie compared to other similar products
- No good alone if eaten with high calorie foods
- Low calorie diet has fewer kcals
- May give examples of food found on

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

Simplistic answer (**1 mark**)

(3 marks)

(ii) 'Contains wheat, gluten, eggs and milk'

- Given as a warning
- Danger foods for some consumers
- Allergy advice information
- Indicates place where made use of these ingredients on the production line

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

Simplistic answer (**1 mark**)

(3 marks)

(b) Give reasons why manufactures of takeaway products may use the following packaging materials.

(i) paperboard

- Cheap
- Can be printed on
- Can be folded into shapes
- Light to carry
- Easy to store
- Recyclable

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

Simplistic answer (**1 mark**)

(3 marks)

(ii) plastics

- Fairly cheap
- Mouldable
- Easy to store
- Light
- Recyclable
- May be transparent
- Some can withstand extreme temperatures

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

Simplistic answer (**1 mark**)

(**3 marks**)

Total for question 12 marks

Total for paper 125 marks

**GCSE DESIGN AND TECHNOLOGY: FOOD TECHNOLOGY 2007
Question Paper Assessment Grid - Full Course Foundation Tier**

Content / Skills	AO1 (25%)	AO2 (50%)	AO3 (25%)
Materials and components			
Composition etc. of food	3c) 4		3c) 4
Working characteristics of food	2a) 1		2a) 4
Effect of temperature		4a) 2	
Effect of other factors	2b) 1		2b) 2
Design and Marketing Influences			
Food product development	1b) 2		1b) 4
Stages of development		3a) 10	3b) 4
Application of procedures	5b) 6	3d) 10	
Labelling etc.		4b) 3	
		5a) 8	
		8a) 9	
Social and economic implications	1a)4 3c) 3	7b) 4	3e) 3
Processes and Manufacture.			
Combining different ingredients	1c) 4		3b) 4
Importance of proportions		4c) 2	
Additives			
Use of equipment	6a) 3 b) 4	4c) 2	
Micro organisms and enzymes		4a) 2 4c) 2	
Preservation methods		4a) 2 4c) 2 7a) 6	
Approximate marks per AO:	FC 31 marks; SC 25 marks	FC 63 marks; SC 50 marks	FC 31 marks; SC 25 marks.
	32	62	31