



## **General Certificate of Secondary Education**

# **Design and Technology (Food Technology) 3552**

Short Course Higher Tier

## **Mark Scheme**

*2007 examination - June series*

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 meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

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- 1 (a) Name one research method that manufacturers use to gather this type of 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 question asked
- Analysis of results / data
- Explanation of how results ensured fair testing
- Conclusion 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 white bread has become less popular.**

- More variety available
- Seen as traditional / not modern choice
- Lack of flavour
- Not seen as healthiest option.

**( 2 marks )**

- (d) 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
- Do not account for just ciabatta

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

Simplistic answer ( **1 mark** )

**( 2 marks )**

**Total for question**

**8 marks**

- 2 (a) (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 enable elasticity
- To enable 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 sections.
- Ideas should be suitable for providing a healthy option.
- Should include a filled and flavoured bread product.
- 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 feature of a relevant product. **( 4 – 5 marks )**

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

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

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

**(b) Explain how this design idea will be suitable for vegetarians.**

May refer to

- Using vegetable based food sources.
- Vegetarian 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 answer **( 2 – 3 marks )**

Simplistic answers **( 1 mark )**

**( 4 marks )**

- (c) **Complete the table to show the main ingredients used to make the chosen design idea.**  
**Give a different reason why each ingredient is used.**

- Ingredients need to be accurate
- Specifically 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
Toppings / finishes	As appropriate
Salt	Flavour

Qualified answered well explained or number of simplistic answers

**( 4 – 5 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) 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 sequences
- Raw ingredients
- Specialist terminology, timings, temperatures
- Named processes
- 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 )**

**Total for question      34 marks**

**4 (a) Describe a different control check used during each stage of making bread rolls.**

Preparation stage

Control check used.

Shaping the dough

Any checks relating to:

Quality control of sizes of portion  
/ shapes / consistency, weight  
**( 1 mark )**

Cooking the bread roll

Any checks relating to:

Temperatures, checking  
reliability of equipment,  
thermostats, timing, position in  
oven, colour, degree of  
browning, rise  
**( 1 mark )**

**( 2 marks )**

**(b) What is meant by the term *critical control check*?  
Give an example.**

- 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

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

Simplistic answer **( 1 mark )**

**( 3 marks )**



- (c) **Results of control checks show the following problems.  
Complete the table above to show**

- (i) **the causes of each problem, ( 3 marks )**  
(ii) **how each problem may be prevented. ( 3 marks )**

Problem	Cause	How to prevent this problem
Bread rolls do not rise when cooked.	Not left to prove long enough. Too hot oven. Stale yeast used. Incorrect conditions for bread making.	Check on temperatures used. Check on freshness of yeast / conditions.
A tortilla wrap falls to pieces when filled.	Wrap is stale. Filling is too bulky or wet. Incorrect handling when filled. Wrap is too small.	Use correct proportion of ingredients. Quality control checks for consistency, sizes and shapes of filling. Wash salad before use.
An insect is found in a salad sandwich.	Poor hygiene standards. Salad not washed before use. No visual checks on delivery, preparation. Ingredients not washed. Physical contamination. No visual checks.	

**6 x 1 mark**

**Total for question 11 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
- Save 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

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 sandwich fillings.**

Description 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 result are recorded
- Analysis of results / data
- Conclusions drawn form results
- How results may benefit future product design

Qualified answers well explained or number of simplistic answer

**( 5 – 6 marks )**

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

Simplistic answers **( 1 – 2 marks )**

**( 6 marks )**

- (c) Give two advantages of each of the packaging materials used for the tuna and sweet corn filling.**

Packaging material	Advantage
Plastic tub	Transparent Recyclable Can be moulded Light to carry Easy to store Re-sealable
Glass jar	Strong See through Recyclable Cheap Reseals
Metal can	Cheap Strong Easy to store Long shelf life recyclable

**3 x 2 marks ( 6 marks )**

**Total for question 20 marks**

**6 (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** )

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( **2 marks** )

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

0 – 5°

( **1 mark** )

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

- Regular checks
- Data / temperature logging
- Monitoring by staff
- Train staff in food hygiene
- Alarms if electric supply cut or temperature lowered
- Check doors are correctly shut
- Checking / monitoring fill levels
- Checking / monitoring equipment chillers defrosted regularly

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**

**7 marks**

**7**

**‘This product may contain wheat, gluten, eggs, milk.’**

**Explain how this information may help reduce any risks to the consumer.**

- 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 ingredients list
- Particularly useful for consumers who are young or old

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

Simplistic answer ( **1 mark** )

( **4 marks** )

**Total for question**

**4 marks**

**8**                      **How do food manufactures of takeaway sandwich products ensure they meet the needs of consumers who follow special diets?**

- Labels inform consumers
- Labels may include allergy advice / gluten / nuts / milk etc.
- Labels include health advice: Nutrition details / fat content / fibre content, energy value / per portion / pack
- Guide to portion size
- Age related needs, e.g. special foods for children
- Range of diet specific products e.g. coeliac, vegetarians, low fat, high fibre, low salt, low calories – with specially 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                      100 marks**