



General Certificate of Secondary Education

Design and Technology: Food Technology 3552

Short Course Foundation Tier

Mark Scheme as of May 2008

2008 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.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' 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.

Throughout the paper simplistic, unqualified answers are given 1 mark, qualified or extended answers will be credited with 2 marks where available.

1

- (a) Name three different hot drink products that may be sold in cafés.**

Any 3 of the following

Answers must be hot drink products!

- Tea
- Coffee
- Latte
- Cappuchino
- Espresso
- Fruit teas e.g. lemon
- Hot chocolate
- Horlicks / ovaltine
- Herbal teas e.g. camomile
- any other relevant answer

3 x 1 mark

(3 marks)

- (b) What are the advantages of using the following materials?**

- (i) Polystyrene**

- Can be moulded into shape
- Protects from damage
- Available in different thicknesses
- Light
- Durable
- Heat resistant /good insulator

2 x 1 mark

(2 marks)

- (ii) plastic**

- Cheaper than other materials
- Can be moulded into different shapes
- Strong / durable to protects from damage
- Available in different thicknesses
- Lightweight
- Transparent
- Moisture resistant / impermeable
- May be recyclable

2 x 1 mark

(2 marks)

Total for question

7 marks

2 (a) (i) Name the ingredient used in the largest quantity.

Wholemeal

(1 mark)

(ii) Complete the table to show which ingredients contain the following.

Fibre	Wholemeal flour, celery seeds
Flavour	Celery seeds, onion, wholemeal flour, salt
Raising agent	Yeast, sodium bicarbonate

3 x 1 mark

(3 marks)

(iii) Why is the following information on the label important?
This product has been made in a factory which uses nuts

- Consumers may have allergies/ cause a reaction
- Warning to consumers
- Raising awareness/ letting consumers know
- Shows no nuts used in product
- But may have come into contact with ingredient, e.g. on production line
- Protects manufacturers from liability / legal procedures

2 x 1 mark

(2 marks)

(b) Give three reasons why computers are used when designing food packaging.

- Efficient, time saving
- High quality presentation skills/quality product
- Consistent product /can be reproduced accurately
- Range of templates can be produced
- Easy to change design
- Professional outputs
- CAD can simulate prior to making , ensuring no mistakes
- Cost effective
- saves manufacturer time
- less staff
- more reliable
- accurate data/ measurements
- less human error
- allows experimentation with colours, fonts, graphics etc
- easy to import information from other documents

3 x 1 mark

(3 marks)

Total for question

9 marks

3

- (a) **Use notes and sketches to produce two different design ideas for a muffin. Your design ideas must meet the above design criteria.**

Do not draw any packaging.

Recognisable annotated sketches reflecting general design criteria:

- notes and sketches
- meets needs of a healthy option product (low fat, sweeteners, wholemeal flour, named fruit etc
- more than one flavour - may be sweet or savoury
- offers a texture different to the soft, sponge of muffin e.g. juicy, crisp, crunchy- (chunks/grated/pieces carrot/fruit,..) nutty,... needs to be made obvious by annotation
- shows a topping
- suitability for batch production, number served, scaling of ingredients
- extra information e.g. sizes, toppings. nutritional information etc

Recognisable annotated sketches reflecting general design criteria 5 marks

Recognisable annotated sketch but some point omitted or repeated 3-4 marks

Products are not suitable 1-2 marks

Products described are unsuitable and lack annotation 0 mark

2 x 5 marks (10 marks)

- (b) **Explain how this design idea is suitable for consumers wanting a healthy option muffin.**

Answers may give examples relating to any of the following:

- Low fat e.g. use of polyunsaturates / reduced fat instead of butter
- Low sugar/ e.g. sweetener in place of sugar
- High fibre / NSP e.g. use of wholemeal flour
- Low in calories
- Additive free
- Meets special dietary needs – examples may be credited
- Non allergenic, nut free, gluten free, milk free, vegetarian.
- Addition of fruit/ vegetables e.g. provides 5 a day portion,

Detailed relevant answers or up to 4 simplistic answers 3 -4marks

A mixture of full or simplistic answers 2 marks

Simplistic answer 1 mark

(4 marks)

(c) Write a three point *product specification* for your chosen design idea.

Points describe what product is like, can do or what can and cannot be changed, e.g.

- Portion size
- Weight
- Number served
- Storage instructions
- Specific methods named
- Specific ingredient choices named
- Packaging details

3 x 1 mark **(3 marks)**

(d) Complete the table to show three main ingredients used to make your chosen muffin product. Give a different reason for using each ingredient.

Any of the 3 main ingredients used in the chosen design

3 x 1 mark

Relevant **different** reasons given for use of main ingredients, e.g.

- Binding e.g. eggs
- adding texture e.g. wholemeal flour
- adding flavour e.g. fruits/nuts
- adding nutritive value e.g. wholemeal flour
- adding colour e.g. fruits
- moisture e.g. milk
- aroma e.g. fruits
- enriches e.g. eggs
- raising agent e.g. baking powder
- adds bulk/ main ingredient/structure e.g. flour
- other relevant e.g. healthier option ingredient

3 x 1 mark

(6 marks)

(e) Use notes, sketches or flowcharts to describe the processes needed to make your chosen idea in a test kitchen.

Marks awarded for prototype made in test kitchen not large scale production.

N.B. answers do not need to cover all aspects in order to gain full marks.

Look for candidate showing awareness of different aspects e.g. at least one reference to time/temperatures, named process, control checks...

- Logical sequence shown through the main stages of the flow chart/notes/stages/steps

Preparations

- Kitchen hygiene
- Personal hygiene
- Weighing ingredients
- Equipment e.g. pre heating oven

Production

- Preparing product e.g. mixing ingredients together
- Preparing filling/ topping/decorations as relevant
- Dovetailing of tasks
- Named processes e.g. baking, grating, piping
- Importance of mixing ingredient quickly – key production point referred to.
- Finishing techniques

Control checks:

- timings
- temperatures
- food safety e.g. clean equipment (not just 'washed')
- portion control
- checks on size, shape e.g. use of indented baking tins, use of paper cases **must** refer to portion control for mark.
- feedback
- safety precautions e.g. use of oven gloves
-

Detailed answer showing logical plans	9-10 marks
Detailed answer showing logical plans but with minor omissions	6-8 marks
Some parts of the answer may not be logical or be omitted	3-5 marks
Simplistic answer giving some relevant planning	1-2 marks
	(10 marks)
Total for question	33 marks

4

(a) Describe different control procedures that are used at each stage when making coated biscuits.

Storing ingredients

- quality/use reputable suppliers
- use by dates
- check for initial packaging in good condition
- check for physical contaminants e.g. insects
- cool / refrigerator
- cleanliness
- covered/packaged
- ambient/room temperature

2 marks

Cooking the biscuits

- do not accept 'right place'
- correct times
 - correct temperatures
 - even colour
 - position in oven
 - spacing on baking sheet

2 marks

Coating the biscuits

- cleanliness
- even layer/coverage
- designated tolerance/thickness
- consistency of chocolate
- appearance e.g. no drips
- cleanliness
- not contaminated

2 marks

(6 marks)

(b) Explain one method of melting chocolate to be used for coating biscuits in a *test kitchen*.

May use

Microwave oven method –

- glass/plastic bowl,
- short time,
- break up of chocolate
- do not allow to burn

Melting on the hob

- in a bowl
- over pan of hot water
- care not to boil dry
- not to let water into chocolate
- use of cooking chocolate.

3 x 1 mark

(3 marks)

(c) **What are the causes of the following problems when making biscuits?**

Problem	Cause	
A piece of metal is found in a cooked biscuit	<ul style="list-style-type: none"> • Lack of personal hygiene by workers – no jewellery, hair pins • Quality checks have not taken place • Metal from packaging not checked • Machinery faulty /Poor maintenance of machines 	2 marks
Biscuits crumble when removed from the tray	<ul style="list-style-type: none"> • Faulty metal detector • Not allowed to cool • Removed too soon/too late • Too thin • Overcooked / undercooked • Too dry 	2 marks
		(4 marks)

(d) **Biscuits are often made by batch production. Explain what is meant by batch production.**

- Recipe can be scaled up easily
- Equipment can be used for other products / so less cost to manufacturer
- Can be made by a small team of workers
- Suitable for short production runs/ batches can be repeated
- Recipe can be easily adapted to take other flavours, toppings etc
- Suitable for using Cad/Cam to produce
- Easy recipe for quality control

Detailed relevant answers	3 marks
A mixture of full or simplistic answers	2 marks
Simplistic answer	1 mark
	(3 marks)
Total for question	16 marks

5

(a)

(i) Explain how this fruit slice product is suitable for consumers with different special dietary needs.

High fibre diet:

- Wholemeal flour includes bran
- Soft brown sugar is not as processed as white sugar
- Apricots are a source of fibre.

Vegetarian/vegans

- No foods from direct animal sources

High energy diets

- High in calories

Allergies

- No allergy ingredients e.g. nuts

May mention age related needs

May mention health benefits of product e.g. reduced risk of heart disease

Detailed answer, or mixture of simplistic and detailed answers

5-6 marks

Some detailed or several simplistic answers

3-4 marks

One detailed answer or two simplistic answers

1-2 marks

(6 marks)

(i) Which ingredients help to give a golden colour to the fruit slice?

- Wholemeal flour
- Soft brown sugar
- Apricots
- Polyunsaturated margarine

Two named ingredients

2 x1 mark

(2 marks)

(b) (i) Describe one way of developing the fruit slice product to improve the flavour.

- Addition of different fruits or mixture of fruits, e.g. blueberries, cranberries
- Addition of more fruit
- Any other idea that adds 'fruit' flavour, essences
- Addition of spices e.g. nutmeg, cinnamon
- Addition of extra sweetness
- Use of further sensory testing

Detailed answer

2 marks

Simplistic answers

1 mark

(2 marks)

(ii) Describe two ways of developing the fruit slice product to improve the texture.

- Addition of nuts, coconut, seeds
- Oats in place of wholemeal flour
- Any other idea that adds 'crunchy'
- Cook for correct time to give crunch
- Reference to the method of making e.g. rubbing in correctly
- Dried and fresh fruit added
- Different types/quantities of ingredients used e.g. types of fat, flours, sugar to change outcome
- Size of ingredients e.g. grated v chopped

(4 marks)

- (c) **Use the chart below to describe a method of research used to find out consumer preferences for new fruit slices.**

Answers may refer to

Answers should describe the following:

Research method:

- Method chosen - e.g. profiling tests, paired testing, questionnaires, internet surveys, comparison tests, ranking, rating, interviews with target audience, sensory testing...
- Sample questions may be credited
- number of testers,
- how carried out ,
- target group

Method of recording findings:

- organisation,
- use of spreadsheet, word document, bar chart , sensory profile, etc to record results
- fair testing

How results may be used:

- use of responses to inform future plans/design new product
- meeting consumer preferences e.g. flavour, texture, appearance
- to boost sales
- to compare product with competitors product
- to improve product

Any other relevant answers may be credited up to maximum of 5 marks.

(5 marks)
Total for question 19 marks

6

(a) Explain how food workers should be dressed when they are working in a food production area.

- Hair tied back / wear hairnet/beard cover
- Clean overalls/aprons
- No jewellery
- White boots
- Disposable gloves
- Giving reasons why items are to be used e.g. hygiene, personal safety, avoiding contamination

Detailed answer, or mixture of simplistic and detailed answers

5 marks

Some detailed or several simplistic answers

3-4 marks

One detailed answer or two simplistic answers

1-2 marks

(5 marks)

(b) List four health and safety rules that must be followed by food workers when using an electric blender.

- Keep away from water
- Follow manufacturers instructions
- Check condition of flexes/plugs
- Do not use with wet hands
- Do not leave flexes across water supplies
- Fit top securely
- Hold securely / securely based during use.
- Take care with hot liquids
- Keep fingers / clothing/hair away from blades
- Have training in correct use of equipment
- Equipment should be clean before/after use
- Personal safety precautions/ Wear clean, protective clothing
- Concentration during use/ do not leave unsupervised.
- Use suitable sized pieces of food.
- Check equipment has passed safety checks. PAT tests

Some detailed or several simplistic answers

3-4 marks

One detailed answer or two simplistic answers

1-2 marks

(4 marks)

(c) Describe an action taken to control each of the hazards

* actions should relate to prevention not actions after the event.

Step	hazard	Action
Buying fruit	Mould found on strawberries	<ul style="list-style-type: none"> • Buy from reputable supplier • Check before buying • Use by date mark (do not accept 'fresh') • Stock rotation • When buying check stored in chill cabinet
Storage of milk	The milk tastes sour	<ul style="list-style-type: none"> • Keep in refrigerator • Cool 0-5C • Sealed/ Covered <ul style="list-style-type: none"> • Store in door or away from other raw foods • Check use by date • Stock rotation

4 x 1 mark

(4 marks)

(d) Why do manufacturers show the AFS symbol on some milk products?

- Known as the red tractor symbol
- A guarantee of quality/ shows food has been checked before sale.
- Found on animal, dairy, sugar, fruit and flour products.
- Foods carrying this label have complied with approved standards for food safety, hygiene, animal welfare, equipment used, animal foods, animal health, environmental and responsible use of pesticides, and waste.
- All products can be traced back to the farm /supply chain
- The union flag log indicates food has been produced in U.K./England

Detailed answer, or mixture of simplistic and detailed answers

2-3 marks

One detailed or two simplistic answers

1 marks

(3 marks)

Total for question

15 marks

Total for question paper

100 marks