



General Certificate of Secondary Education

Design and Technology (Food Technology) 3542

Full Course Foundation Tier

Mark Scheme

2006 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.

1 Savoury food products may be sold at sporting events.

(a) Name three savoury food products that may be held in the hand.

Any 3 of the following...answers do not have to relate to pastry products.
Answers must be savoury foods but not drinks!

- pies
- pasties
- quiches
- potatoes / chips
- turnovers
- burgers
- samosas
- fajitas
- scotch eggs
- spring rolls
- kebabs
- rolls
- sandwiches / bread products
- crisps
- nuts
- any other relevant answer

3 x 1 mark

(3 marks)

(b) World-class sporting events attract many people.

Name two different factors that affect the choice of foods made by

- (i) sports people taking part in the events;**
- (ii) people watching the event.**

Factors affecting choice of foods:

Each answer may refer to spectators or competitors as appropriate, if factor relates to both credit must be given on both occasions e.g. age, gender, culture

- Age
- Gender
- Culture / tradition
- Lifestyle
- Type of sports event
- Indoor or outdoor events
- Personal preferences / likes / dislikes / appeal / interest
- Special dietary needs e.g. vegetarian, weight control, allergies, healthy
- Cost of foods on sale
- Amount of energy needed for event
- Season of year
- Hot or cold foods preferred
- Nutritional value of foods
- Advertising
- Size of portion
- Ease of use, convenience
- Any other answer as relevant to either sports person or spectator.

4 x 1 mark

(4 marks)

2 A manufacturer is gathering information about existing products.

What information may they gather from

(a) existing pasta products,

- Ingredients – different fillings, types of pasta used
- Finish
- Portion size
- Colour
- Shape
- Sensory profile
- Different production methods
- Methods of cooking
- Methods of preparation
- Appearance - sizes, shapes, colour

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

(b) information on the *packaging* of a pasta salad product?

- Cost
- weight
- Packaging materials
- Storage instructions
- Shelf life
- Preparation instructions
- Ingredients used
- Number of portions / size
- Special claims
- Nutritional profile
- Additives
- Name and address of manufacturer – website / helpline number
- Recycling information / Barcode / county of origin
- Product description / image

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

3

**A test kitchen is developing design ideas for savoury snacks.
The snacks will be sold to people watching large sporting events.
The snack product must meet the following design criteria:**

- use ready prepared pastry
- have a savoury filling
- be suitable to hold in the hand.
- offer a variety of flavours and textures.
- appeal to a range of consumers

(a) Use notes and sketches to produce two different design ideas which meet the design criteria.

Do not draw any packaging.

Sketches should reflect the design criteria.
Ideas should be communicated through the use of notes and sketches, including 2D, 3D or cross section sketches

For each design idea:

Recognisable annotated sketches reflecting general design criteria	5 marks
Recognisable annotated sketch but some point omitted or repeated	3-4 marks
Products described lack detail, suitability or annotation.	1-2 marks
Products described are unsuitable and lack annotation	0 mark
	2 x 5 marks (10 marks)

(b) Which of your design ideas will you choose to develop?

No marks given for choice. If no idea ticked read response to ascertain which product chosen.

Explain how this idea meets the following design criteria:

(i) ‘suitable to hold in the hand’

- small in size
- not too hot to hold, e.g. suitable for placing in a holder
- firm casing / will not break up easily e.g. flaky pastry
- not too greasy
- has an outer structure to contain a filling, e.g. pastry
- convenient shape for holding
- filling – not too runny
- do not need cutlery to eat

A mixture of full or simplistic answers 2-3 marks

Simplistic answer 1 mark

(3 marks)

(ii) ‘appeal to a range of consumers’.

Answers may give examples relating to any of the following:

- Age related considerations
- Cultural needs – answers identify ingredients that give a taste of other countries foods / flavours
- Physical needs: special dietary needs – examples may be credited
- Non allergenic, nut free.
- Economic needs: cost, use of seasonal foods to keep cost down

Detailed relevant answers

3 marks

A mixture of full or simplistic answers

2 marks

Simplistic answer

1 mark

(3 marks)

(c) Explain in more detail about the ingredients used in your chosen design idea.

(i) What type of ready-made pastry is used in your design idea?

Any of the following:

- frozen
- ready rolled
- packet ready prepared
- chilled
- block

do not accept ‘fresh’ or brand names

or May also be credited with correct name of pastry type, e.g.

- shortcrust
- flaky
- rough puff
- choux

(1 mark)

(ii) Give one reason why ready-made pastry is used.

reasons for use of ready prepared pastry:

- Saves time
- Less staff needed
- Less specialist equipment needed
- Consistency of product guaranteed
- Less skilled workforce needed
- Less skill needed / ease of use

(1 mark)

- (d) **Complete the table to show three main ingredients used to make *the filling* for your product.
Give a different reason why each ingredient is used.**

Any of the 3 main ingredients used in the FILLING of the chosen design 3 x 1 mark

Relevant reasons given for use of main ingredients e.g.

- binding
- adding texture
- adding flavour
- adding nutritive value
- adding colour
- moisture
- aroma
- enriches
- adds bulk / main ingredient / structure
- accept generic names of ingredients e.g. meat, vegetables

3 x 1 mark

(6 marks)

(e) Use the chart below to describe the processes and control checks needed to make your chosen idea in the *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, sketches and annotation can be credited.

- initial preparations, i.e. self, kitchen, ingredients
- preparing pastry
- preparing filling
- assembling filling and pastry
- cooking pastry product

Other aspects to identify:

- dovetailing of tasks
- specialist terminology – named processes
- timings
- temperatures (200-220C)
- personal hygiene
- kitchen hygiene
- food hygiene
- safety precautions
- safety checks
- finishing techniques
- QC and QA procedures / checks on size, shape etc
- consideration given to HACCP in production plan
- feedback
- clarity of instructions

Detailed answer showing logical plans

8-10 marks

Detailed answer showing logical plans but with minor omissions

5-7 marks

Some parts of the answer may not be logical or be omitted

3-4 marks

Simplistic answer giving some relevant planning

1-2 marks

(10 marks)

(f) Use notes and sketches to describe one method of giving a *quality finish* to your chosen design idea.

Using notes and sketches answers should show method used for a quality finish on pastry product chosen.

e.g.

- egg
- milk
- other appropriate glaze e.g. honey, BBQ sauce
- toppings: e.g. nuts, seeds
- other appropriate toppings e.g. cheese
- decorative edgings
- choice of equipment. e.g. pastry cutters, brushes
- methods used
- quality controls e.g. sealed edges, evenness of finish
- lattice, leaves.

Recognisable prose and sketches reflecting finish

5 marks

Recognisable prose / sketch but some point omitted or repeated

3-4 marks

Simplistic answer giving some relevant planning

1-2 marks

(5 marks)

4 **The following instructions are shown on the packaging of baking potatoes.**

(a) **Explain why it is important that the instructions are followed.**

‘wash before use’

- legal requirement
- warns consumer
- danger of food poisoning if not followed
- spoils quality
- removal of chemical / physical sources of contamination

‘pierce skin and place on a tray’

- easier and safer to remove from oven on tray
- stops skin from splitting
- potato may burst if instruction not followed
- quality of final product at risk

‘brush surface with vegetable oil and salt before cooking’

- helps to give a quality finish
- brushing will give even colour
- salt adds flavour
- prevents sticking

Detailed answer

2 marks

Simplistic answers

1 mark

3 x 2 marks

(6 marks)

(b) A test kitchen is developing a new range of fillings for the baked potatoes.

The results of a rating test on a new filling are shown below.

(i) Give reasons why consumers may dislike this design idea.

- vegetarian not eat flesh
- dislike spicy tastes e.g. curry
- allergic to nuts
- dislike one or more of the foods offered
- dislike the sensory appeal of the product e.g. smell, flavour..
- dislike mixture of sweet and savoury together / proportion of ingredients
- may be on low fat diet / low Kcal and not eat mayonnaise

Detailed answer, or mixture of simplistic and detailed answers

3-4 marks

One detailed or two simplistic answers

1-2 marks

(4 marks)

(ii) Suggest ways to improve this filling.

Answers may refer to changes made as a result of any of the previous reasons e.g.

- change recipe if they want it to be a successful product
- replace chicken with veg. for vegetarians
- remove of specific ingredient...qualified 'why'
- use low / reduced fat ingredients
- remove nuts if allergy
- any relevant answer giving development linked to reasons.

Detailed answer, or mixture of simplistic and detailed answers

3 marks

One detailed or two simplistic answers

1-2 marks

(3 marks)

- (c) **Design other ideas for savoury fillings for baked potatoes for the vegetarian consumer;**
 (i)

Answers should show ideas for vegetarian filling

Sketches / notes acceptable

Ingredient list:

- list of ingredients – meat / fish not included (max 4 marks if list includes meat or fish)
- list of appropriate ingredients.
- detail of ingredients e.g. quantity, descriptors given

Reasons:

- NOT 'suitable for vegetarian' unless qualified with more detail
- Inclusion of quorn, TVP, soya, tofu
- Nutritional or sensory reasons acceptable

Recognisable prose / sketch reflecting relevant idea

5 marks

Must have responses in both sections

Recognisable prose / sketch but some point omitted or repeated

3-4 marks

Simplistic answer

1-2 marks

(5 marks)

- (ii) **consumers who prefer a low fat option.**

Answers should show ideas for low fat filling

Sketches/notes acceptable

Ingredient list:

- list of ingredients -no high fat foods included (max 4 marks if list includes high fat ingredient)
- list of appropriate ingredients.
- detail of ingredients e.g. quantity, descriptors given

Reasons:

- NOT 'low fat' unless qualified with more detail
- Ingredients should reflect lower fat alternatives, e.g. low fat cheeses, grilled meat rather than fried.
- Nutritional, production methods or sensory reasons acceptable.

Recognisable prose / sketch reflecting relevant idea

5 marks

Must have responses in both sections

Recognisable prose / sketch but some point omitted or repeated

3-4 marks

Simplistic answer

1-2 marks

(5 marks)

- 5 (a) **Control checks on batches of vegetable pies show the problems listed below.**
Complete the table below to show
 (i) **one cause of each problem**
 (ii) **how each problem may be prevented.**

Problem	Cause	prevention
Pastry crumbles and breaks	<ul style="list-style-type: none"> • Incorrect proportions • Over handling • Pastry too hot / overcooked • Used flaky pastry 	<ul style="list-style-type: none"> • Weigh accurately • Keep cool • Monitor working temp • Training staff • Quality control checks • Develop use of different pastries
Filling leaks out	<ul style="list-style-type: none"> • Incorrect seal • Not used water to join edges • Incorrect balance of filling: pastry • Pastry incorrect thickness • No steam vent • Lattice design too open 	<ul style="list-style-type: none"> • Accurate weighing • Accurate rolling of pastry • Quality control checks • Training of staff • Accuracy of seal • Steam vent placed in top
Hairs in the filling	<ul style="list-style-type: none"> • Poor personal hygiene • Poor supplier • Quality control checks not completed • Inadequate uniform 	<ul style="list-style-type: none"> • Check on suppliers • Clear specification • Quality control checks • Regular monitoring of workers
Pale product	<ul style="list-style-type: none"> • Incorrect choice / amount of fat in pastry • Not finished with egg / milk • Not cooked long enough / hot enough 	<ul style="list-style-type: none"> • Cook for longer / higher temp • Add finishing technique • Change to butter / margarine instead of white fats

4 x 1 mark

4 x 1 mark

(8 marks)

(b) Why are computers used to carry out some control checks?

- saves manufacturer time
- less staff
- more reliable
- accurate data
- less human error
- easier for monitoring
- alerted immediately if problems

Detailed, well explained answer

3-4 marks

Simplistic answer lacking detail

1-2 mark

(4 marks)

6 The table below gives information about two similar pastry products.

(a) Why is Product A a healthier option than Product B?

- lower in energy / Kcal
- more fibre
- lower in fat
- vegetables not meat
- thinner pastry
- may give examples from the table or compare with product B

Detailed answer or mixture of simplistic / well explained answers

3-4 marks

Simplistic answers lacking detail

1-2 marks

(4 marks)

(b)

(i) Explain why the following ingredients are used in shortcrust pastry.

Ingredients	Why used
Plain flour	Main ingredient / bulk, structure, texture
Vegetable fat	Shortens, crumb, moistens, extends shelf life, adds colour
Cold water	Bind, keep cool prevent fat melting too early
Salt	Add flavour, improve shelf life

4 x 1 mark

(ii) Explain how the names of ingredients are arranged on the packaging of ready prepared pastry.

- Written in order ...descending order by weight
- largest first
- legal requirement

(2 marks)

(c) The following information is often seen on the packaging of pastry products.

- (i) What does the information mean?**
(ii) Why is the information important for consumers?

Information	Meaning	Why important
Use by 7/9/06	<ul style="list-style-type: none"> • Must be eaten by this date • Warning to consumers • Legal requirement 	<ul style="list-style-type: none"> • Food is not safe after this date • Risk of food poisoning
V	<ul style="list-style-type: none"> • Suitable for vegetarians • Special claim • Instruction for consumers 	<ul style="list-style-type: none"> • Informs that no animal foods contained • Consumers do not eat food against their beliefs
Recycle symbol	<ul style="list-style-type: none"> • Packaging material can be recycled • Re use packaging 	<ul style="list-style-type: none"> • Environmentally friendly • Aids disposal

3 x 3 marks

(9 marks)

(d)

(i) Why are food products packaged before they are sold?

- Informing consumer
- Protection of food
- Avoids tampering
- Easier to store
- Easier to transport
- Allows advertising
- Extend shelf life / preserves (not 'keep fresh')

Detailed answer or mixture of simplistic / well explained answers

3-4 marks

Simplistic answers lacking detail

1-2 marks

(4 marks)

(ii) Explain why the following materials are often used to package food products.

Paperboard is suitable because;

- Easy to fold into shape and cut
- Easy to print on
- Cheap
- Can be coated to make it water resistant
- Environmentally friendly
- Generic answers e.g. protect, preserve, contain etc can be credited

Aluminium

- Easy to mould / shape
- Fairly cheap
- Heat resistant
- Strong
- Available in different thicknesses
- Generic answers e.g. protect, preserve, contain can be credited.

Detailed answer or mixture of simplistic / well explained answers 2 marks

Simplistic answers lacking detail 1 mark

2 x 2 marks **(4 marks)**

7 (a) **Explain why colour coded equipment is used when preparing beefburgers.**

- Prevents cross contamination
- Colour coded knives/boards allow different foods to be prepared separately
- May give colours used for raw meat (red) cooked burger (yellow) / vegetables (brown) / bread (white) / salad (green)
- Keeps foods apart so that bacterial infection not at risk
- High risk foods kept separately

Detailed answer or mixture of simplistic / well explained answers

3 marks

Simplistic answers lacking detail

1-2 marks

(3 marks)

(b) **Explain how and why food probes are used when cooking and serving savoury pies.**

How:

- Bacterial wipes used before use
- Check temp reset before using
- Place in centre of pasty when cooked / outer edges may be different temperature.
- Check temp above 72C
- For 2 mins

Why:

- To measure temperature
- To check if food is safe to eat
- If below 72C not safe to eat
- To prevent contamination of food in temp danger zone

Detailed answer or mixture of simplistic / well explained answers

3-4 marks

Must give a response in both sections for full marks

Simplistic answers lacking detail

1-2 marks

(4 marks)

(c) Describe how the correct use of refrigerators and freezers will ensure that foods are stored safely.

- Store foods in to prevent bacterial growth
- Keep stock levels appropriate
- Keep temp 0-5C refrigerators / below 5C (allow 0-5C)
- Keep freezer at -18C - / -28C
- Do not leave open
- Cover foods inside
- Monitor temperature
- keep clean. Wiped with anti bacterial cleanser
- Store uncooked meats / fish at bottom of refrigerator to prevent blood dripping
- Read star ratings on package to determine safe storage life in freezer

Detailed answer or mixture of simplistic / well explained answers

3-4 marks

Simplistic answers lacking detail

1-2 marks

(4 marks)

Total for Paper

125