

# **Design & Technology (Food Technology)**

General Certificate of Secondary Education **GCSE 1954**

General Certificate of Secondary Education (Short Course) **GCSE 1054**

## **Mark Schemes for the Components**

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**June 2006**

**1954/1054/MS/R/06**

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### General Certificate of Secondary Education Design and Technology (Food Technology) (1954)

#### MARK SCHEME ON THE COMPONENTS

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**Mark Scheme 1954/01, 1054/01  
June 2006**

**Question 1****(a) 4 x 1 mark**

- Suitable for microwaving/microwave/microwave symbol
- Suitable for recycling/recycle/recyclable
- Vegetarian(not Vegan)
- Suitable for freezing/frozen/keep in freezer/freezer

**(b) 3 x 1 mark**

- Food product name
- Address of manufacturer
- Name of manufacturer
- Storage conditions required
- Shelf life – use by date, best before date, date code. **DO NOT ACCEPT SELL BY DATE**
- Instructions for use / cooking instructions
- Place of origin
- Weight or volume
- Description of food product
- Allergies

**(c) 1 x 1 mark**

- Whole Wheat

**(d) 2 x 1 mark**

- Use of bright colours/colourful/adding colour
- Use of bold writing/writing stands out
- Interesting serving suggestions
- Clear pictures of the product/adding pictures/cartoons
- Celebrities endorsing the product
- Events endorsing the product
- Use of interesting / different fonts/fancy writing
- Being able to view the product/see through packaging/window on packaging
- Promotions
- Interesting shape

**Question 2****(a) 1 x 1 mark**

- Refrigerator/fridge
- Chiller cabinet

**(b) 1 x 1 mark**

- Between 0 and 8 °C
- Accept any figure within the 0 to 8°C. range

**(c) (i) 1 x 1 mark**

- Milk

**(c) (ii) 1 x 1 mark**

- Cornflour

**(d) (i) 1 x 1 mark**

- Appearance

**(d) (ii) 2 x 1 mark**

- Piping cream/icing
- Fruit decoration on top, may state specific fruit
- Nuts
- Chocolate – grated / sprinkles / vermicelli
- Hundreds and thousands
- Sweets – credit if specific brand is stated e.g. smarties
- Dragees (silver or coloured balls)
- Rice paper pictures

**(e) 3 x 1 mark Do not accept easier/quicker**

- Do not need to buy any equipment to make the custard
- Consistency of colour
- Consistency of thickness
- Do not need to employ skilled workers /fewer workers
- Reduces/ save costs-not ingredients
- Quicker than making in it/ saves time
- Not lumpy
- Don't have to wait for the custard to cool/production time reduced
- Don't have to buy in lots of different ingredients/use as many suppliers

## Question 3

**(a) 2 x 1 mark**

- Looking at existing products/taste testing of existing products
- Recipe books / leaflets
- Internet
- Surveys / questionnaires interviews/ideas from people
- TV programmes

**(b) 3 x 1 mark**

- 1 mark for clearly shown layers
- 1 mark if in a bar shape
- 1 mark for named fruit

**(c) 4 x 1 marks**

**Maximum of 2 marks for each specification point. Information should relate to the product drawn in 3b**

Marks are awarded for explanation for each point.

Mark is awarded for showing how the ingredients meet the specification points.

To contain a variety of textures	Identifies ingredients which provide the different textures e.g. flour & fat provides the crunchy texture. Use of syrup in the mixture makes it chewy Soft icing on the top Dried fruit / marshmallow / chopped up mars bars etc. provides chewy texture Use of chocolate chips / nuts to provide a crunchy texture
To have layers	Explanation of how they have achieved layers e.g. Use of coating / enrobing of the top of the biscuit. A filling of some description e.g. jam, fruit, icing, etc. between two biscuits.

**(d) 1 x 1 mark**

- Card
- Paper
- Plastics / low density plastic films / polypropylene
- Foil



**Question 4****(a) 1 x 1 mark for identifying the benefit****1 x 1 mark for explanation****Do not accept quicker on its own**

- Speed – some tasks can be completed in less time e.g. clip art / paint draw programmes are quicker than drawing by hand
- Do not accept quicker on its own
- Accuracy – more accurate costings can be done using spreadsheets, nutritional analysis more accurate
- Changes – Information can be stored and changes can be made quickly e.g. change to ingredients can affect nutritional profiles
- Professional / higher quality finish – can be achieved for the packaging / labelling
- Size – different aspects of the packaging can be quickly changed

**(b) 2 x 1 marks**

- Quicker than doing it manually
- Ensures the same amount of sauce is on each pizza base
- Ensures each pizza will be the same therefore reduces the risk of customer complaint
- To reduce human error / more accurate

**(c) 2 x 1 mark**

- Storage of ingredients
- Proving
- Baking
- Freezing
- Cooling
- Despatch

**(d) 2 x 1 mark**

- Checking of the finished product for size
- Checking of the finished product for colour
- Checking of the finished product for shape
- Checking of the finished product for weight
- Checking for foreign bodies / metal detection
- Checking of quality of raw ingredients from the suppliers
- Packaging sealed correctly
- Tasting and testing of the final product
- Safe shelf life
- Selection of sample to be kept at the end of each production run/microbiological testing

(e) 2 x 1 mark

1 mark for a statement

1 mark for qualifying the statement, this includes if candidates give examples.

- Many households recycle rubbish, therefore consumers would consider purchasing products that are made using minimum packaging materials
- Government encouragement of businesses to reduce the amount of rubbish going in to land fill sites
- Saving resources e.g. plastics made petroleum, paper / card from trees
- Global warming
- Reduces costs to the manufacturer – they do not need to buy as much material
- Awareness of global issues
- Saving money / costs – these costs can be passed onto the consumer
- Consumers make informed choices about packaging

**Do not accept opposites for advantages/disadvantages**

**Question 5 Foundation / Question 2 Higher 2006****(a) 1 x 1 mark**

- 40 – 45 mins

**(b) 1 x 1 mark**

- 2.95g

**(c) 1 x 1 mark**

- Helps to prevent constipation
- Helps to prevent bowel disease e.g. diverticulitis
- Helps to prevent bowel cancer
- Healthy digestive system
- Helps food move through the digestive system
- Reduces the risk of piles

**(d) 2 x 1 mark**

- Addition of vegetables to the meat mixture high in fibre – e.g. sweet corn
- Addition of beans to the meat mixture e.g. beans / baked beans / kidney beans / black eyed
- Addition of peas to the meat mixture e.g. peas / chick pea
- Addition of lentils to the meat mixture e.g. green or red do not have to be specific
- Instead of mashed potato use slices of potato that still have their skins on
- Addition of whole meal breadcrumbs on the top of the pie will add fibre and crunch
- Add bran

**Credit if candidate suggests addition of vegetables that contain fibre.  
Do not accept TVP / textured vegetable protein.**

**(e) (i) 2 x 1 mark**

- Costs reduced
- Change in flavour
- Reduced fat content
- Change in colour
- Easier to store
- Longer shelf life
- Suitable for vegetarians
- Increases fibre / NSP content

**(ii) 1 x 1 mark**

- Drier than meat
- Will need to add more liquid to the meat mixture
- Colour not as defined
- Less attractive than meat
- Will need to add extra flavourings

**Do not accept opposites for advantages and disadvantages.**

**(f) 2 x 1 mark**

- Longer shelf life / longer period of time to sell the product in
- Easier to stack in the supermarket
- Not as much waste
- Easier to transport



**Mark Scheme 1954/02, 1054/02**  
**June 2006**

## Question 1

**(a) 1 x 1 mark for identifying the benefit****1 x 1 mark for explanation****Do not accept quicker on its own**

- **Speed** – some tasks can be completed in less time eg clip art / paint draw programmes are quicker than drawing by hand e.g. to show variations
- **Accuracy** - more accurate costings can be done using spreadsheets, nutritional analysis more accurate
- **Changes** – Information can be stored and changes can be made quickly eg change to ingredients can affect nutritional profiles/colour/appearance/shape
- **Professional / higher quality finish** – can be achieved for the packaging / labelling
- **Size** – different aspects of the packaging can be quickly changed

**(b) 2 x 1 marks****Do not accept quicker on its own**

- Quicker than doing it manually/saves time
- Ensures the same amount of sauce is on each pizza base/correct amount of sauce/ equal quantities
- Ensures each pizza will be the same /reduces the risk of customer complaint/ looks the same
- To reduce human error / more accurate

**(c) 2 x 1 mark**

- Storage of ingredients
- Proving
- Baking
- Freezing
- Cooling
- Despatch/transport

**(d) 2 x 1 mark**

- Checking of the finished product for size
- Checking of the finished product for colour
- Checking of the finished product for shape
- Checking of the finished product for weight
- Checking for foreign bodies / metal detection/no metal
- Packaging sealed correctly/wrapped properly/correctly
- Tasting and testing of the final product/ random sampling
- Safe shelf life/date stamp/best before date( **Do not accept use by date**)
- Selection of sample to be kept at the end of each production run/microbiological testing

**(e) 2 x 1 mark****1 mark for a statement. Answers must relate to the manufacturer****1 mark for qualifying the statement, this includes if candidates give examples.**

- Many households recycle rubbish, therefore consumers would consider purchasing products that are made using minimum packaging materials.
- Government encouragement of businesses to reduce the amount of rubbish going in to land fill sites.
- Saving resources eg plastics made petroleum, paper / card from trees.
- Reduces costs to the manufacturer – they do not need to buy as much material
- Awareness of global issues
- Saving money / costs – these costs can be passed onto the consumer.
- Consumers make informed choices about packaging

**Question 2****(a) 1 x 1 mark**

- 40 – 45 mins

**(b) 1 x 1 mark**

- 2.95g

**(c) 1 x 1 mark**

- Helps to prevent constipation.
- Helps to prevent bowel disease eg diverticulitis.
- Helps to prevent bowel cancer
- Healthy digestive system/good for the digestive system
- Helps food move through the digestive system.
- Reduces the risk of piles

**(d) 2 x 1 mark**

**Credit if candidate suggests addition of vegetables that contain fibre.**

**Do not accept TVP / textured vegetable protein.**

**Do not accept 'add more vegetables'**

- Addition of vegetables to the meat mixture high in fibre – eg sweet corn
- Addition of beans to the meat mixture eg beans / baked beans / kidney beans / black eyed,
- Addition of peas to the meat mixture eg peas / chick pea
- Addition of lentils to the meat mixture eg green or red do not have to be specific
- Instead of mashed potato use slices of potato that still have their skins on.
- Addition of whole meal breadcrumbs on the top of the pie will add fibre and crunch.
- Add bran
- Addition of Quorn

**Additions should be suitable for a cottage pie**

**(e) (i) 2 x 1 mark**

- Costs reduced.
- Change in flavour
- Reduced fat content
- Change in colour
- Easier to store
- Longer shelf life
- Suitable for vegetarians/religion
- Increases fibre / NSP content
- Low risk food for manufacture

**Do not accept healthier**

**(e) (ii) 1 x 1 mark**

- Drier than meat
- Will need to add more liquid to the meat mixture
- Colour not as defined
- Less attractive than meat
- Will need to add extra flavourings/lack of flavour/taste
- Lots of soya is G.M./people want to avoid G.M.
- Lack of Vitamin B12

**Do not accept opposites for advantages and disadvantages.**

**(f) 2 x 1 mark-answers must relate to the retailer**

- Longer shelf life / longer period of time to sell the product in/lasts longer than a cook-chill product
- Easier to stack in the supermarket
- Not as much waste
- Easier to transport
- Low risk of damage to the product



**Question 3****(a) 2 x 1 marks for drawing**

- 0 marks for a poor drawing.
- 1 mark for a drawing that can be understood.
- 2 marks for a clearly drawn diagram(s) with clear annotation.

**Put ticks on drawing**

**4 x 1 mark for notes / explanations of how each specification point has been met.**

**One mark for each specification point**

**Includes suitable filling**

- Explains how the filling is enclosed in the pastry.
- Uses appropriate filling which can be enclosed in the pastry – may make reference to consistency / thickness of the filling.

**Suitable to be frozen**

- Reference to the ingredients being suitable to be frozen/not changing shape when defrosted/retain quality/will defrost successfully

**Reflect another country or culture**

- If name of product is given in notes / explanations.
- Reference to typical ingredients from another country / culture – must state ingredients that reflect the country or culture

**Be attractive**

- Use of appropriate glazes for sweet or savoury products.
- Use of pastry finishes – eg fluting edges, crimping edges.
- Pastry decorations on top.
- Garnishes as appropriate eg vegetables on a quiche.
- Interesting shape

**(b) 4 x 1 mark**

**Marks are awarded for describing.**

**Maximum 2 x 1 marks for brief descriptions.**

**When awarding two marks for a description it must be detailed and qualified**

Example of where 2 marks could be awarded

**The final product specification (one mark), which is when final, decisions and are recorded eg amount of onion or size of a product are detailed (one mark)**

- Final product specification
- Control system
- Scaling up of the recipe
- Equipment decisions
- Refining of the taste / texture / appearance of the final product/quantities of ingredients
- Costing
- Shelf life
- Factory trials
- Packaging development
- Reheating instructions

**Question 4****(a) 2 x 1 mark Answers must relate to consumers**

- Lack of time / busy life styles / less time to prepare and cook foods.
- Saves buying lots of different ingredients that may not get used/people on own/ storage problems
- Cheaper than purchasing a wide variety of different ingredients.
- Do not have the skills / knowledge of how to make the different foods.
- Wide variety of foods available to cater for different tastes.

**(b) 4 x 1 marks**

**1 mark for a brief explanation (maximum 2 marks)**

**2 marks for a detailed explanation including suggesting how the problem could be solved.**

**No data needed but how product development team will improve the burger**

**Candidates may refer to the individual product profiles or may discuss factors generally and relate them to the profiles.**

- Need to carry out further recipe development to improve the areas of identified need – shape, spiciness and even texture.
- Once the product development team feel they have got the recipe correct they will need to carry out further tests. Eg with consumers to test the further developed product
- May complete triangle tests to compare with the first product profile – has it improved or not / which they prefer
- **Shape** Mixture was too wet causing it to go out of shape.  
Less egg or more breadcrumbs required in the mixture.  
Use of a mould to ensure it is round.
- **Spiciness** Addition of more coriander and / or cumin and / or paprika and / or curry powder as these are the ingredients which provide the spiciness.  
Addition of less coriander and / or cumin and / or paprika and / or curry powder as these are the ingredients which provide the spiciness.  
May suggest other ingredients to improve the spiciness eg chillies, curry powder / paste.
- **Even texture** Reference to the size / fineness of the minced lamb – needs to be more finely minced.  
Onion is not chopped finely enough

**Do not credit add more spices candidates need to show they understand which ingredients provide the spiciness.**

**(c) 2 x 1 for each explanation. Explanation is not about cost/profit**

**1 mark for brief explanation**

**2 marks for detailed explanation**

**Eg of a response deserving 2 marks**

The product needs to be transported from the factory to the shop (1 mark) the cost of the transport which may be specialised e.g. chilled storage will need to be considered (1 mark)

- Purchase of specialised equipment/staff training/maintenance/repairs
- Overheads such as fuel, lighting, cooling, equipment, heating, depreciation, wages, labour costs
- Advertising-if a product is promoted it is more likely to be a success
- Profit-to pay share holders, to re-invest, repay capital, loans
- Distribution costs-refrigerated lorries/ food miles
- Inner and outer packaging-environmental issues, printing costs
- Marketing/Offer have to be taken into consideration eg buy one get one free
- Testing research and development-establish market, extending ranges
- Staffing linking to issues other than payment e.g. insurance, training, bonus, pension

## Question 5

- (a) **1 x 2 marks for each point explained in detail**  
**1 mark for each briefly explained point. (max 2 marks)**

- Improved labelling – clearer, often using large bold fonts to promote this –link to offers relating to healthy eating
- Production of ‘healthier’ options, which are sometimes, targeted at specific groups e.g. Blue Parrot, Weight Watchers etc.
- Reduction of fat, sugar and salt in traditional foods eg baked beans with no added salt and sugar/crisps, biscuits, cakes, ready made meals, may also add alternative ingredients. **Must be qualified**
- Supermarkets responding to government initiatives – targeting areas such as bread, breakfast cereals and ready meals (Sainsbury’s)
- Manufacturers are regularly reviewing sodium, fat and sugar content of foods and reducing them where possible e.g. carrying out nutritional profiles
- Traffic light system to be introduced on some foods in relation to the saturated fat, salt, sugar content –supermarkets own versions. Candidates must show an understanding  
Consumers are therefore able to make informed choices quickly.
- Actively **marketing** reduced fat / salt / sugar foods in a positive way e.g. through offers, use of in store magazines, TV, tastings

- (b) **2 x 1 mark**  
**If just list of diseases award 1 mark**

- Higher than average blood pressure that can lead to an increased risk of heart disease or strokes
- Osteoporosis – reduction in salt contributes to the prevention of bone demineralisation
- A high consumption of M.S.G./ highly processed foods can cause kidney damage

**Do not credit ‘ heart attacks’, ‘heart problems’**

- (c) **4 x 1 mark**  
**1 mark for each discussed point.**

Do not credit a list

**Do not make reference to nutritional requirements**

Example for one mark.

Peoples religious beliefs can affect what people eat eg Hindus will not eat beef, as it is a sacred animal to them.

- Cultural - reference to countries, foods, origin
- Costs of food products - reference to limiting choices, limited income
- Personal preferences - likes, dislikes, appearance
- Lifestyle - reference to ready meals, busy lives, eating separately
- Ethics/Moral beliefs - vegetarians, environmental footprint, fair trade, farmer markets, boycotting
- Storage facilities - own freezer, cupboard space
- Cooking facilities - reference to electrical goods
- Religious beliefs - muslims/pork, hindus/beef, jews/kosher
- Peer pressure - celebrity endorsement
- Food trends - smoothies

- Food scares / publicity eg BSE, CJD, GM, food poisoning/e-coli, listeria and pregnant women
- Advertising - packaging, BOGOF, celebrity endorsement
- Age-type of food preferred e.g. older/traditional
- Disability - may affect skills, RSI/limit choice
- Foods in season-home grown foods, better flavour
- Skills - lack of knowledge, ability
- Product reputation - may buy Heinz beans instead of own brands
- Special dietary needs-intolerances - coeliac, diabetics, lactose, nuts, shellfish
- Access to shops/internet



**Mark Scheme 1954/03**  
**June 2006**

1 (a) 1 mark for each correct answer. Maximum 3 marks. [3]

- Apron
- Overall/jacket/white coat
- Gloves/Rubber gloves
- Hat
- Hairnet
- Beard guard/Net
- Moustache guard/Net
- Special footwear
- Chain mail gloves
- Mask
- Sleeve protectors

(b) 1 mark for each correct answer. Maximum 3 marks. [3]

- Wash hands before handling food/after using toilet/blowing nose/sneezing/smoking/after handling raw meat or high risk food/when entering the food prep area
- Use paper towels/hot air dryer for drying hands
- Do not touch hair/face/mouth/nose/don't pick scabs/don't pick spots/don't pick cuts/don't pick nose
- Don't cough/sneeze over food
- No eating
- No smoking near food
- If you are feeling sick/report illness to supervisor
- Clean fingernails/keep fingernails cut short/no nail varnish
- No jewellery/rings/watches
- Cover scabs/cuts with (blue) plaster
- Wash equipment/utensils/preparation areas
- Use correct cleaning materials
- Stay in correct preparation area e.g. colour coded zones
- Walk through a sanitized bath to clean protective boots as they enter the food prep area
- Clean all surfaces before and after working with food
- Put long hair up/tie back
- Keep raw food and cooked food separate

**Do not accept do not handle foods with a cold/flu  
Do not accept any reference to the wearing of clothing**

(c) 1 mark for each correct answer. Maximum 2 marks. [2]

- Point down when cutting/point away when cutting
- Hold by handle/keep fingers away from blade
- Correct knife for the job
- Keep sharpened
- No chips in blade
- Wear protective clothing e.g. chain mail
- Hands/handles not greasy
- Cut on a stable surface e.g. chopping board
- Store correctly e.g. knife block/roll/drawer (all facing same direction)
- Wash after use to prevent contamination
- Care when washing

**Do not accept do not run/keep away from children/clean**



(d) 1 mark for each correct answer. Maximum 2 marks.

[2]

- Chopping/breaks down food/cut into small pieces/making breadcrumbs
- Pureeing/blend/liquidise/make milkshake/soup
- Mixing/creaming/rubbing in
- Slice/grate/dice

**Must state a use/function-not an advantage**

- 2 (a) 1 mark for correct answer.
- (i) 14.9g [1]
- (ii) 08 Nov [1]
- (b) 1 mark for showing pasta shape [3]  
 1 mark for choice of colourful food  
 1 mark for crunchy texture  
 Maximum 3 marks
- Must state or clearly show the pasta shape**  
**Must state or clearly show where the colour and texture is found**
- (c) 1 mark for correct answer. [1]
- Plastic
  - Modified Atmosphere Packaging (MAP)
  - Controlled Atmosphere Packaging (CAP)
  - Tin/can
  - PVC
  - PP (Polypropylene)
- (d) 1 mark for each correct answer. Maximum 2 marks [2]
- Spaghetti Bolognese
  - Carbonara
  - Macaroni cheese
  - Lasagne
  - Minestrone soup/Italian soup
  - Ravioli
  - Pasta bake
- Do not accept Bolognese**  
**Do not accept pasta salad**
- (e) 1 mark for each correct answer. Maximum 2 marks. [2]
- To test the product against the design specification
  - To carry out sensory analysis/taste/texture/smell
  - To carry out nutritional analysis
  - to make decisions or judgements about particular ingredients/to check the quantities of ingredients
  - To find out the best method of storing the product (Shelf life)
  - To make decisions or judgements about methods of cooking the product
  - To find out if the product will sell/use for market research
  - To see what the appearance of the product is like
  - To check the correct cooking times
  - To have product sample to photograph for packaging
  - To decide what is the most suitable packaging for the product
  - To see if it appeals to target group
  - To check the quality
  - To make modifications/changes/improvements to the product

- 3 (a) 1 mark each for two suitable flavourings. Maximum 2 marks e.g. [2]
- Cocoa/chocolate
  - Coffee
  - Vanilla essence
  - Lemon juice/rind/essence
  - Orange rind/juice/essence
  - Suitable fruit flavours
  - Spices
  - Other flavourings/essences
- (b) 1 mark for one suitable ingredient to add texture. Maximum 1 mark e.g. [1]
- Chopped cherries
  - Coconut
  - Dried fruit
  - Chocolate chips
  - Wholemeal flour
  - Nuts
  - Oats
  - Fresh fruit
- Do not accept fruit on its own**
- (c) 1 mark for correct answer. [1]
- Colour/caramelisation
  - Sweeten/flavour
  - Preserve/increase shelf life
  - Hold or trap air/help it rise
- Do not accept taste on its own**
- (d) 1 mark for correct answer. [1]
- Increase cooking time
  - Add more sugar
  - Use brown sugar rather than white
  - Add chocolate/cocoa/coffee
  - Add treacle/molasses
  - Use wholemeal flour
  - Free range eggs
- Do not accept food colouring**
- (e) 1 mark each for three different suitable decorations. Maximum 3 marks. [3]
- (Pipe with) cream
  - (Pipe with) butter icing
  - Icing
  - Coat with glaze icing
  - Royal icing
  - Ready to roll icing/writing icing
  - Fondant icing
  - Flowers etc made from icing
  - Dusting with icing sugar
  - Dusting with cocoa powder

- Dusting with caster sugar
- Chocolate (coating)
- Chocolate shapes e.g. leave/chocolate chips/chocolate sprinkles/chocolate flake/grated chocolate/sprinkles
- 100s and 1000s/silver balls
- Candles
- Ribbon
- Plastic figures etc
- Lettering/messages
- Shape the cake
- Rice paper printouts/print on edible paper with edible inks
- Marshmallows
- Fruit – puree/slices/whole/jellied fruits
- Angelica/glace cherries
- Desiccated/toasted coconut
- Marzipan coating/toasted marzipan/marzipan shapes
- Sweets
- Fruits

**Any other suitable decoration accepted**

**(f) 1 mark each for two suitable ways. Maximum 2 marks.**

**[2]**

- Minimal amount of packaging e.g. sleeve rather than box
- Use recycled material
- Use materials that can be recycled e.g. paper/card/appropriate plastics
- Avoid or minimise use of plastics/minimal quantity of plastics
- Avoid mixing types of plastics
- Label plastics with name for recycling
- Unbleached paper
- Use materials that have energy/water efficient production
- Use recycle symbol to encourage consumer to recycle/message to encourage consumer to recycle
- Use litter man symbol to encourage responsible disposal
- Use biodegradable materials
- Paper from sustained forest sources
- Re-useable
- Use renewable sources

**Do not accept just a named material**

**Do not award 2 marks for tow different materials that could be re-cycled**

4 (a) 1 mark each for each correct answer. Maximum 2 marks. [2]

- Can bulk buy ingredients so save money/reduces overall costs of products
  - Products can be made in specific amounts/small amounts/to order
  - Recipes can be varied easily e.g. change the flavour
  - Equipment can be used to make other types of produce
  - Staff are semi-skilled/involved in the production (job satisfaction)/makes full use of staff skills/can be more interesting working for staff
  - Can be easy to modify products to e.g. meet changes in consumer demand/seasonal
  - Flexibility e.g. easier to alter number in batch to meet changes from client
  - Less likely to have errors/all same quality/accurate-no mistakes/identical product
  - Quicker than handmade/fast to produce large number of products
- Do not accept quicker or cheaper to make unless qualified**

(b) (i) 1 mark for correct answer. [1]

- Only need few staff
- Inexpensive to run
- Equipment used all of time/more efficiently as can be used for range of products. Non stop for 24 hours a day
- More products can be made in an amount of time than if were setting up process from scratch each time so costs reduced
- Repetition of skills so some staff can be less skilled/less training needed
- All products used to be the same quality/consistent

(ii) 1 mark for correct answer. [1]

- Expensive to set up
- Important to keep the machinery in good working order because the manufacturer needs to keep the plant running all the time to be profitable
- Dedicated to one process only. Cannot be adapted to meet customer needs
- If sometimes goes wrong it can be very expensive/very wasteful
- If there is a breakdown in any machinery then all production stops
- Quality maintenance is essential

(c) 1 mark for each correct answer. Maximum 2 marks. [2]

- Weight sensors/load sensors to check consistent quantities
- Volume sensors-make sure consistent amount is used
- Temperature sensors for cooking/cooling/chilling/freezing
- To control thickness of e.g. dough/pastry
- To control viscosity of mixtures
- Flow rates of e.g. chocolate coating
- To detect colour changes/colour and shade of baked products
- Sensors to detect metal/foreign bodies/metal detectors
- Moisture sensors to check moisture content
- pH level to test acidity
- Counting number of product items-electronic eye
- Speed of conveyor belt within tunnel oven/enrobe
- Microbiological sensors to test bacterial content

**Must state the use of the sensor**

**Do not accept just the name of the sensor**

- (d) **1 mark for stating the use of CAD in the designing of packaging.**  
**1 mark for explaining how the quality of the packaging is improved by using this method.** [2]

**Designing the information on the packaging label**

Uses of CAD

Digital imaging/nutritional software/drawing/painting software/scanning

**Designing the layout for the net**

Plotter for the net

**Accept appropriate software**

**Explanation**

- Easy to change/adopt the design to new products (e.g. new/improved product)
- If you make a mistake you do not have to start again
- Clearer, neater than handmade
- Wider range of colours/effects available-than by hand
- Quality is improved by the appearance of professional finish
- Can be seen and trialled before it is produced avoiding errors and cost
- Greater accuracy/nets can be cut by machine

- (e) **1 mark for each correct answer. Maximum 2 marks.** [2]

- Advertising e.g. TV/radio/billboards/posters/magazines/newspapers/internet/etc
- In-store promotion/tasting
- Free samples in store/free samples in post/giveaways
- Leaflets
- Free recipe ideas
- Magazine feature
- Attractive packaging
- Special offers/BOGOF
- Slogans
- Money off coupons
- Loyalty points when buy product
- Use of famous people

- 5 (a) 1 mark for the correct answer. [1]
- Lard
  - Bacon
- (b) 1 mark for each correct answer. Maximum 3 marks. [3]
- TVP/soya mince/soya
  - Nuts
  - Beans e.g. red kidney beans
  - Peas e.g. chick peas
  - Lentils
  - A named suitable vegetable
  - Tofu
  - Meat substitutes/veggie sausages/Tivall/Cauldron/ and other products
  - Suitable cereals e.g. Bulgur Wheat
  - Rice/seeds
  - Sauce made with soya milk
- Do not accept Quorn**  
**Do not accept any items that are in the original filling**
- (c) 1 mark each for each correct answer. Maximum 2 marks. [2]
- Read ingredient list
  - "Suitable for vegetarians" written on packet
  - Vegetarian symbol on packet
  - Name of product e.g. "veggie burger"
- (d) Four marks for 2 qualified reason  
Two marks for 2 reasons or a list (No explanation) [4]
- Health issues
  - Medical advice
  - Weight loss
  - Avoiding animal/saturated fats
  - Fashion/following trends
  - Religion
  - Moral/animal welfare/rights
  - Avoiding antibiotics/growth promoters
  - BSE and other scares
  - Don't like meat
  - Cost of meat
  - Wide range of vegetarian products available
- Do not accept allergy**





**Mark Scheme 1954/04**  
**June 2006**

- 1 (a) 1 mark each for each correct answer. Maximum 2 marks. [2]
- Can bulk buy ingredients so save money/reduces overall costs of products
  - Products can be made in specific amounts/small amounts/to order
  - Recipes can be varied easily e.g. change the flavour
  - Equipment can be used to make other types of products
  - Staff are semi-skilled/involved in the production (job satisfaction)/makes full use of staff skills/can be more interesting working for staff
  - Can be easy to modify products to e.g. meet changes in consumer demand/seasonal
  - Flexibility e.g. easier to alter number in batch to meet changes from client
  - Less likely to have errors/all same quality/accurate-no mistakes/identical products
  - Quicker than handmade/fast to produce large number of products
- Do not accept quicker or cheaper to make unless qualified**
- (b) (i) 1 mark for correct answer. [1]
- Only need few staff
  - Inexpensive to run
  - Equipment used all of time/more efficiently as can be used for range of products. Non stop for 24 hours a day
  - More products can be made in an amount of time than if were setting up process from scratch each time so costs reduced
  - Repetition of skills so some staff can be less skilled/less training needed
  - All products used to be the same/consistent quality
- (ii) 1 mark for correct answer. [1]
- Expensive to set up
  - Important to keep the machinery in good working order because the manufacturer needs to keep the plant running all the time to be profitable
  - Dedicated to one process only. Cannot be adapted to meet customer needs
  - If something go wrong it can be very expensive/very wasteful
  - If there is a breakdown in any machinery then all production stops
- (c) 1 mark for each correct answer. Maximum 2 marks. [2]
- Weight sensors/load sensors to check consistent quantities
  - Volume sensors-make sure consistent amount is used
  - Temperature sensors for cooking/cooling/chilling/freezing
  - To control thickness of e.g. dough/pastry
  - To control viscosity of mixtures
  - Flow rates of e.g. chocolate coating
  - To detect colour changes/colour and shade of baked products
  - Sensors to detect metal/foreign bodies/metal detectors
  - Moisture sensors to check moisture content
  - pH level to test acidity
  - Counting number of product items-electronic eye
  - Speed of conveyor belt within tunnel oven/enrobe
  - Microbiological sensors to test bacterial content
- Must state the use of the sensor.**  
**Do not accept just the name of the sensor**

- (d) **1 mark for stating the use of CAD in the designing of packaging.  
1 mark for explaining how the quality of the packaging is improved by using this method.** [2]

**Designing the information on the packaging label**

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- Can be seen and trialled before it is produced avoiding errors and cost
- Greater accuracy/nets can be cut by machine

- (e) **1 mark for each correct answer. Maximum 2 marks.** [2]

- Advertising e.g. TV/radio/billboards/posters/magazines/newspapers/internet etc
- In-store promotion/tasting
- Free samples in store/free samples in post/giveaways
- Leaflets
- Free recipe ideas
- Magazine feature
- Attractive packaging
- Special offers/BOGOF
- Slogans
- Money off coupons
- Loyalty points when buy product
- Use of famous people

- 2 (a) **1 mark correct answer.** [1]

- Lard
- Bacon

- (b) **1 mark for each correct answer. Maximum 3 marks.** [3]

- TVP/soya mince/soya
- Nuts
- Beans e.g. red kidney beans
- Peas e.g. chick peas
- Lentils
- A named suitable vegetable
- Tofu
- Meat substitutes/veggie sausages/Tivall/Cauldron/ and other products
- Suitable cereals e.g. Bulgar Wheat
- Rice/seeds
- Sauce made with soya milk

**Do not accept Quorn**

**Do not accept any items that are in the original filling**

**(c) 1 mark each for each correct answer. Maximum 2 marks. [2]**

- Read ingredient list
- "Suitable for vegetarians" written on packet
- Vegetarian symbol on packet
- Name of product e.g. "veggie burger"

**(d) Four marks for 2 qualified reasons  
Two marks for 2 reasons or a list. (No explanation) [4]**

- Health issues
- Medical advice
- Weight loss
- Avoiding animal/saturated fats
- Fashion/following trends
- Religion
- Moral/animal welfare/rights
- Avoiding antibiotics/growth promoters
- BSE and other scares
- Don't like meat
- Cost of meat
- Wide range of vegetarian products available

**Do not accept allergy**

- 3 (a) 1 mark for each correct answer. Maximum 3 marks.  
One mark for each function.

[3]

Yeast      Make bread rise

Oil          Flavour  
              Bind  
              Moisten  
              Increase shelf life/keep fresh longer  
              Add energy/calories  
              Add vitamins

Water        Activate yeast  
              Bind/hold mixture together  
              Moisten  
              Give elasticity/develop gluten  
              Converted to steam, helps bread rise

**Do not accept bind/moisten twice**

- (b) 1 mark correct answer.

[1]

- Sun dried tomatoes/sun blush tomatoes/tomatoes
- Herbs e.g. rosemary, thyme, oregano, basil, marjoram, bay, coriander. Allow "herbs"
- Garlic
- (Red) onion
- Peppers
- Capers
- Lemon
- Ham/sausage/pepperoni
- Cheese e.g. Parmesan, mozzarella, blue cheese
- Anchovies
- Dried fruit

- (c) 1 mark for each correct answer. Maximum 2 marks.

[2]

- Transparent/helps sell the product
- Can be coloured/can be printed on
- Can be perforated
- Keeps bread fresh
- Can be sealed
- Can be made resealable
- Cheap
- Light-weight
- Waterproof
- Strong/cannot be easily damaged
- Resistant to contamination
- Recyclable/can be re-used
- Easy to open

- (d) **1 mark for stating the issue.**  
**2 for issue and explanation.**  
**2 issues fully explained. Maximum 4 marks.**

**[4]**

- Keep products at correct temperature to control bacterial growth
- Preventing products from getting squashed or damaged/stack safely/handle with care
- Prevent contact with chemicals/cleaning products/dirt/fumes/products with aromas or flavours which might contaminate
- Transportation should be as fast as possible/use shortest routes possible to prevent bacterial growth/correct size vehicle to make it cost effective
- Seals should be checked to avoid contamination
- Protective packaging – secondary packaging to avoid contamination
- Clear labelling to ensure correct delivery
- Instruction to handlers e.g. “store this way up” to prevent damage
- Staff training to reduce accidents/contamination
- Checking stock on/off vehicle/ batch numbers
- Pest/vermin control to prevent contamination
- Efficient system so stock delivered on time to ensure quality
- Size and type of vehicle required for the delivery to make it cost effective for the manufacturer

**Do not accept ‘goes off’**

**Do not accept the same explanation twice**

- 4 (a) **2x1 marks for explanation**  
**2 x1 marks for reason used.**

**Just in time**

- Products are produced in a factory only as required by the retail outlet
  - Materials and components arrive at the food factory 'just in time' for production
  - Finished products are despatched immediately they are made to the shops
  - No stock held in the factory
- [4]**

**Reasons**

- System reduces any storage of stock/ Takes up less storage space
- Allows for changes to the product to be made quickly without the need to use up any existing stock
- Relates to immediate customer requirements/EPOS system in supermarkets
- No holding of materials or stock/less expensive
- No expensive equipment needed to store products e.g. freezers
- No wastage of stock

- (b) (i) **1 mark for brief explanation, 2 marks for more detailed explanation.** **[2]**

- Help to keep food safe for longer/extend shelf life/to preserve
- Stop oils and fats from going rancid to extend shelf life
- Add colour to a product to make it more appealing/to replace original colour
- Add flavour to a product/to enhance flavour to increase its marketability
- Emulsify/stabilise to improve texture
- To sweeten to reduce sugar content by artificial sweetener/increase sales
- To prevent oxidation to extend shelf life
- To glaze to improve appearance
- To gel to improve stability
- Maybe cheaper to use than fresh ingredients
- Fortification/adding vitamins

- (ii) **1 mark for brief explanation, 2 marks for more detailed explanation.** **[2]**

- Health concerns e.g. suggested links to E numbers and e.g. ADHD/hyperactivity in children/cancer links/allergic reaction
- Mainly chemicals with little nutritional value/moral issues

**Do not accept 'unhealthy' unless fully qualified**

- (c) **1 mark each for brief explanation.**  
**2 marks for more detailed explanation of one issue.** **[2]**

- Animal rights
- Environmental factors
- Fair Trade
- Employment issues/exploitation of third world
- Organic/use of pesticides/growth promoters/GM foods
- Economic factors e.g. product pricing/single portions/economy range
- Quality of ingredients used by the manufacturer e.g. mechanically recovered meat in highly processed foods
- Food manufacturer's responsibility regarding the Health of the Nation/obesity

5 (a) **2x1 mark for the health benefit**  
**1 mark for detailed explanation** [3]

- Vitamins/minerals/fight infection/general good health
- Anti-oxidants/anti-cancer properties
- Increase fibre intake/healthy bowel
- Reduction in blood pressure/low salt food
- Part of balanced/varied diet/can prevent obesity
- Filling so eat less processed foods
- Natural simple sugars/good source of carbohydrates-slow energy release
- Fruit and vegetables do not contain fat/cholesterol

**Do not accept 'more healthy'**

(b) **3x1 for reasons**  
**Maximum 1 for list** [3]

- Canned foods nearly as good as their fresh equivalent/nutrients retained
- Canned foods nearly as good as their fresh equivalent/colour retained
- Long shelf-life/last long time/bacteria killed/does not allow further contamination
- Easy to store/don't need special storage e.g. freezer/fridge
- Quick to cook/reheat/ready to eat as ready cooked
- Can buy salt/sugar-free versions
- Wide variety of fruit/vegetables can be canned
- Cans can be recycled
- Easy for manufacturer/customer to transport
- Fruit and vegetables can be stored in juices/sauces to add flavour

**Do not accept "cheap"**

**Do not accept "healthy" unless qualified e.g. salt/sugar-free**

(c) **1 mark for the correct definition of genetic engineered foods** [4]  
**Up to 3 marks for the explanation of modifications made to foods with examples**

- Modify a gene which carries a particular characteristic
- Genetic make up of plant/animal has been altered to give it a particular characteristic
- Genetic material can be transferred between plants, animals and micro-organisms to control flavour, nutritional content and qualities during processing and cooking e.g. higher protein content, disease resistant, pest resistant, better colour, withstands cold, tomatoes, soya, rice, maize.

**Do not accept smart foods**



**General Certificate of Secondary Education (D&T Food Technology Short Course ) (1054)  
June 2006 Assessment Series**

**Component Threshold Marks**

<b>Component</b>	<b>Max Mark</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Paper 1	50			32	28	24	21	18
Paper 2	50	28	24	20	16			
Coursework	105	83	71	60	48	37	26	15

**Syllabus Options**

**Foundation Tier**

	<b>Max Mark</b>	<b>A*</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Overall Threshold Marks	175				103	87	71	55	39
Percentage in Grade					18.1	21.7	25.4	18.6	10.3
Cumulative Percentage in Grade					18.1	39.9	65.3	83.9	94.3

The total entry for the examination was 243

**Higher Tier**

	<b>Max Mark</b>	<b>A*</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Overall Threshold Marks	175	138	121	104	88	70	61		
Percentage in Grade		16.2	30.5	27.8	18.5	6.02	0.00		
Cumulative Percentage in Grade		16.2	46.7	74.5	93.1	99.0	99.0		

The total entry for the examination was 242

**Overall**

	<b>A*</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Percentage in Grade	8.56	16.1	14.6	18.3	13.4	11.9	8.80	4.89
Cumulative Percentage in Grade	8.56	24.7	39.3	57.7	71.1	83.1	91.9	96.8

The total entry for the examination was 485

**General Certificate of Secondary Education (D&T Food Technology Full Course) (1954)  
June 2006 Assessment Series**

**Component Threshold Marks**

<b>Component</b>	<b>Max Mark</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Paper 1	50			32	28	24	21	18
Paper 2	50	28	24	20	16			
Paper 3	50			34	30	26	22	18
Paper 4	50	31	27	23	19			
Coursework	105	83	71	60	48	37	26	15

**Syllabus Options**

**Foundation Tier**

	<b>Max Mark</b>	<b>A*</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Overall Threshold Marks	175				104	88	72	56	40
Percentage in Grade					28.13	26.0	21.4	13.6	6.4
Cumulative Percentage in Grade					28.13	54.1	75.5	89.1	95.6

The total entry for the examination was 11999

**Higher Tier**

	<b>Max Mark</b>	<b>A*</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Overall Threshold Marks	175	137	121	105	90	73	64		
Percentage in Grade		9.63	25.8	32.5	20.9	8.32	1.34		
Cumulative Percentage in Grade		9.63	35.5	68.0	88.9	97.2	98.5		

The total entry for the examination was 10179

**Overall**

	<b>A*</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Percentage in Grade	4.50	12.1	15.2	24.7	17.7	12.0	7.25	3.44
Cumulative Percentage in Grade	4.50	16.6	31.8	56.5	74.3	86.3	93.5	96.9

The total entry for the examination was 22178

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