

GCE 2005
January Series



Mark Scheme

Design and Technology: Food Technology *(Subject Code 5541)*

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.

The answers given in the following mark scheme are neither exhaustive nor exclusive. Candidates whose answers do not appear directly on the mark scheme, but who have demonstrated knowledge, understanding or skills relevant to the question will receive appropriate credit for their answers.

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Dr Michael Cresswell Director General

ASSESSMENT and QUALIFICATIONS ALLIANCE**General Certificate of Education**

January Examination 2005

DESIGN AND TECHNOLOGY (ADVANCED SUBSIDIARY)

FOOD TECHNOLOGY UNIT 1 (FTY1)

Quality of Written Communication

The following marks are allocated to the quality of the candidate's written communication. Make a separate assessment of the candidate's overall ability as demonstrated across the paper using the criteria given below.

<i>Performance Criteria</i>	Marks
The candidate will express complex ideas extremely clearly and fluently. Sentences and paragraphs will follow on from one another smoothly and logically. Arguments will be consistently relevant and well structured.	
There will be few, if any, errors of grammar, punctuation and spelling.	4
The candidate will express moderately complex ideas clearly and reasonably fluently, through well-linked sentences and paragraphs. Arguments will be generally relevant and well structured. There may be occasional errors of grammar, punctuation and spelling.	3
The candidate will express straightforward ideas clearly, if not always fluently. Sentences and paragraphs may not always be well connected. Arguments may sometimes stray from the point or be weakly presented. There may be some errors of grammar, punctuation and spelling, but not such as to suggest a weakness in these areas.	2
The candidate will express simple ideas clearly, but may be imprecise and awkward in dealing with complex or subtle concepts. Arguments may be of doubtful relevance or obscurely presented. Errors in grammar, punctuation and spelling may be noticeable and intrusive, suggesting weaknesses in these areas.	1

Question 1

- (a) (i) Egg White: 88.5% water, 10.5% protein, B vitamins, trace of fat. 3 marks
(ii) Egg Yolk: 16.5% protein, 33% fat, 50% water, fat soluble vitamins, iron, lecithin. 3 marks
- (b) (i) Mayonnaise – egg yolk contains lecithin, an emulsifier which enables oil and water to mix without separating. Colour, flavour. 3 marks
(ii) Victoria Sandwich – raising agent, structure, colour, nutritional value, emulsify the fat, flavour. 3 marks
(iii) Egg Custard Tart – coagulation, colour, flavour, nutritional value, enrich pastry. 3 marks
- (c) Milk is used for – flavour, colour, consistency, binding, enriching, thickening due to coagulation of proteins. 5 x 2 marks
Any justified product will be accepted: sauces, batters, soups, fish cakes, custards, desserts, beverages, glazes on baked products, cheese and dairy products but no repetition.
- (d) Reference should be made to all of the data accurately. Clear reference to the three different types of milk and each of the nutrients stated. 10 marks
Maximum 5 marks if no data mentioned or list of data only.
- (e) Minerals and fat soluble vitamins generally remain unchanged during food production. Water soluble vitamins may be lost through dry or moist heat, oxidation, presence of an alkali, presence of water. Storage, transportation. 5 marks
40 marks

Question 2

- (a) Strong Plain Wholemeal Flour – high NSP, B vitamins, high gluten, flavour, structure. 4 marks
Yeast – raising agent, producing carbon dioxide and alcohol. 2 marks
Water – activate the yeast, correct temperature, aids gelatinisation. 2 marks
Fat – improve keeping qualities, colour, flavour. 2 marks
Salt – strengthen gluten, flavour. 2 marks
- (b) Soluble NSP – Helps to control blood sugar levels, reduce blood cholesterol. 3 marks
Oats, pulses, fruit and vegetables.
Insoluble NSP – absorbs water, increases bulk.
Wholemeal bread, flour, cereals, pasta, rice. 3 marks
- (c) To save time.
Reduce the amount of equipment required.
Less energy costs, less staff costs.
To save time sourcing, purchasing and preparing raw materials.
To ensure consistent results, size, shape, weight, flavour, stock control.
To extend range of products available – more choice.
Customer loyal – knows what to expect. 10 marks

28 marks

Question 3

- (a) (i) Rice: Long grain (Patna), Basmati, Short grain (Carolina), Easy Cook, Ground, Flaked, Wholegrain, Wild. 3 marks
- (ii) Reference to thiamine, NSP, carbohydrates, proteins, low fat. 3 marks
- (b) Clear definition of a high risk food- reheating, temperatures, cold rice products, storage. 6 marks
- (c) Addition of protein foods e.g. chicken, prawns, ham, pulses.
Increase fibre e.g. use wholegrain rice.
Increase vitamins/ minerals with fresh raw vegetables e.g. grated carrot.
Use of herbs, spices, garlic
Any well justified response will be credited. 12 marks
- (d) Upon contact with boiling water the grains absorb water and become tender. If over cooked the starch gelatinises and the grains stick together. 4 marks
- 28 marks**

Question 4

- (a) (i) Denaturation – change the properties of proteins to produce food products.
- (ii) Aeration – to add air to a product to change a structure.
- (iii) Coagulation – to change from a liquid to a solid or semi solid state - irreversible. 3 x 4 marks
- Responses should include a definition with a suitable food product to support statement.
- (b) Response may focus upon the benefits of fortification to either the consumer or the food manufacturer.
High HBV protein, fortified with iron, B vitamins to bring up nutritive value close to meat.
Wider target audience, versatility, cost effective, social, moral and environmental issues may be addressed. 8 marks
- (c) Responses may include reference to specific food products with original ideas. Reference to high protein content and wider target group therefore products suitable for all age groups and different cultures may be an issue. The use of textured vegetable protein shaped – cubed, minced and made into savoury products.
Tofu, plain or smoked. Tempeh, soy sauce, miso and their use in savoury products.
Soya milk – desserts, cream substitutes, yoghurts in the production of sweet products. 8 marks
- 28 marks**

Total marks on paper 100