

UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

MARK SCHEME for the June 2004 question papers

0648/01 FOOD AND NUTRITION

0648/01 Paper 1, maximum raw mark 100

0648/02 Paper 2, maximum raw mark 100

These mark schemes are published as an aid to teachers and students, to indicate the requirements of the examination. They show the basis on which Examiners were initially instructed to award marks. They do not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published *Report on the Examination*.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the *Report on the Examination*.

- CIE will not enter into discussion or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the June 2004 question papers for most IGCSE and GCE Advanced Level syllabuses.

Grade thresholds taken for Syllabus 0648 (Food and Nutrition) in the June 2004 examination.

	maximum mark available	minimum mark required for grade:			
		A	C	E	F
Component 1	100	60	39	29	24
Component 2	100	76	57	38	28

The threshold (minimum mark) for B is set halfway between those for Grades A and C.
The threshold (minimum mark) for D is set halfway between those for Grades C and E.
The threshold (minimum mark) for G is set as many marks below the F threshold as the E threshold is above it.

Grade A* does not exist at the level of an individual component.

June 2004

INTERNATIONAL GCSE

MARK SCHEME

MAXIMUM MARK: 100

SYLLABUS/COMPONENT: 0648/01

FOOD AND NUTRITION
Paper 1

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Section A

- 1 (a) carbon - hydrogen - oxygen 3 x 1 mark [3]
- (b) fat - protein 2 x 1 mark [2]
- (c) (i) monosaccharide
 simplest form of carbohydrate basic unit $C_6H_{12}O_6$
 breakdown product after digestion of carbohydrate
 any 2 x 1 mark [2]
- examples - glucose fructose galactose
 2 examples - 1 mark [1]
- (ii) disaccharide
 double sugar 2 molecules of simple sugar $C_{12}H_{22}O_{11}$
 any 2 x 1 mark [2]
- examples sucrose lactose maltose
 2 examples - 1 mark
- (d) (i) NSP - indigestible carbohydrate - dietary fibre - roughage
 complex molecule which cannot be broken down by humans
 any 2 points
 2 points = 1 mark [1]
- (ii) Use in the body
 adds bulk - absorbs water - softens faeces - making it easy to remove –
 stimulates peristalsis - prevents constipation/cancer of colon/haemorrhoids/
 diverticular disease/hernia etc. (max. 2)
 any 4 points
 2 points = 1 mark [2]
- (iii) Good sources
 green vegetables - skins of fruit e.g. apples - dried fruit - rhubarb –
 fruit seeds e.g. raspberries, tomatoes - wholemeal bread (not brown)
 wholegrain breakfast cereals (or named example) - brown rice –
 whole-wheat pasta - baked potato skins - pulses - etc.
 4 points for 4 examples
 2 points = 1 mark [2]

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4

Good Eating Habits in Children

eat meals with rest of family - do not allow to leave table
cut food if necessary to encourage independence -
small portions - encourage to eat everything - regular mealtimes -
no snacking between meals - do not use sweets as a reward - serve attractively –
easy to eat - no strong flavours - variety of foods - introduce new foods –
variety of colours - variety of flavours - variety of textures -
importance of breakfast - avoid sweet drinks before meals -
water to drink with meal - include fresh fruit and vegetables - etc.

(may illustrate points with examples)

10 points

2 points = 1 mark

[5]

Section A Total

[40]

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Section B

- 5 (a) Reasons for serving sauces
 gives flavour to dull dishes e.g. parsley sauce with steamed fish
 adds nutrients e.g. milk in custard
 counteracts richness of food e.g. apple sauce with pork
 improves texture / moistens e.g. gravy with roast meat
 improves appearance / colour e.g. tomato sauce with pasta
 binds food together e.g. rissoles
 adds flavour e.g. cheese sauce with cauliflower
 adds interest / variety e.g. chocolate sauce with ice-cream
 reason + example = 1 mark any 4 [4]
- (b)(i) Method of making roux sauce
 melt margarine - stir in flour - cook over gentle heat - stir all the time –
 until sandy / crumbly (or some other description) - remove from heat –
 add milk gradually - stir well between each addition - bring to boil –
 stir continually - for 3 minutes - should coat back of spoon -
 any 10 points
 2 points = 1 mark [5]
- (ii) Variations
 cheese - mushrooms - onions - parsley - mustard - sugar - brandy etc.
 any 2 examples - 1 point each
 2 points = 1 mark [1]
- (c)(i) Use a wooden spoon because
 has a broader base
 is more efficient
 will not scratch pan
 will not conduct heat / get hot any 2 points
 2 points = 1 mark [1]
- (ii) Sauce maybe lumpy because:
 milk added too quickly / in too large amounts
 not stirred well between each addition of milk
 not stirred during boiling any 2 points
 2 points = 1 mark [1]
- (d) Changes during cooking
 fat melts - is absorbed by starch grains - liquid absorbed by starch grains –
 grains soften - swell - some granules rupture / burst - gelatinise –
 sauce thickens
 any 6 points
 2 points = 1 mark [3]

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6

(a) **Prevention of accidents when:**

(i) storing and using knives

- store away from the reach of children
- store in a sheath or knife block, or with a cork on the point
- store away from moisture to prevent rusting
- store on their own - not mixed with other cutlery
- keep well sharpened
- use on a chopping board
- do not cut into palm of hand
- cut away from the body
- use size appropriate to the task
- carry with blade pointing down towards floor
- wash individually - do not put into washing up water with other cutlery
- wash with back of knife towards hand (also dry this way)

any 6 points

2 points = 1 mark

[3]

(ii) deep frying

- never over-fill pan
- only 1/2 or 2/3 full
- do not overheat fat
- better to use oil instead of solid fat - higher flash point
- do not have flame spreading up sides of pan
- turn pan handle inwards
- do not put too much food into pan to prevent fat from overflowing dry food
- before putting into fat
- lower food gently into fat - do not throw
- do not have a kettle or boiling water nearby in case water splashes into fat have a lid or cover at hand in case fat catches fire
- turn off heat immediately after use
- allow fat to cool completely before moving it

any 6 points

2 points = 1 mark

[3]

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(iii) using electrical equipment

(Do not credit points relating to storage.)

- plugs should be wired correctly
- do not attempt to rewire plug unless sure of method
- should be no bare wires
- do not use near flames
- do not stretch / put strain on flex during use
- keep to back of bench / out of the reach of children
- do not leave flex hanging where it could be tripped over
- use of coiled flex prevents dangling wires
- use correct fuse for the appliance
- plug should not be broken e.g. no screws missing
- do not touch with wet hands
- switch off at appliance and wall before removing plug
- do not overload socket by using adapters
- follow manufacturer's instructions
- do not put motor near water when washing up
- wipe with damp cloth
- keep hands well away from beaters and blades when using
- keep hand away from blades when washing up (use a brush?)

any 6 points
2 points = 1 mark [3]

(b)(i) **Work surfaces**

- should be impervious to grease, acids and alkalis found in food and detergents
- should be smooth - with no cracks or holes
- should be big enough / enough work surfaces in kitchen + explanation
- plastic scratches, cuts and chips
- never chop or cut onto plastic - use a chopping board
- wood must be hard wood e.g. teak - does not soften when wet
- protect from hot pans by using pan stands or have a stainless steel area
- height from ground 800 - 900mm but depends on individual
- can choose colour to match kitchen decoration (plastic?)
- clean with hot, soapy water
- wipe with anti-bacterial spray
- disinfect occasionally
- clean after every use / do not leave bits of food on surfaces
- scrub wood in direction of grain, rinse and wipe dry
- marble is cold for pastry - can chip if heavy items drop on it
- have a work surface on either side of stove - to avoid walking about with food and hot dishes -
- to stack dishes when washing up

any 6 points
2 points = 1 mark [3]

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(ii) **Ventilation**

makes working more pleasant by removing excess heat which causes fatigue
– can lead to accidents

extracts steam, grease and odours which would spoil decorations and spread
to other parts of the house

open windows

cause draughts and loss of heat

cooker hood

extracts or recirculates air

placed directly above cooker hob

may have a charcoal filter to remove grease - can be replaced

if on an outside wall, fan draws in air from the kitchen, passes it through a filter
and ducts it outside - filter can be washed / replaced

extractor fan

in window or in outside wall

electric motor draws in air and passes it out

can operate by wind or draught

can reverse the blades to bring in fresh air

outside shutter prevents draughts coming inside when fan is not in use

should be cleaned occasionally to remove grease and fluff

any 6 points

2 points = 1 mark

[3]

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8	(a)	Mark bands	Descriptors	Part marks	Total
		High	<ul style="list-style-type: none"> - The candidate is able to give many points to consider when planning meals - Demonstrates clear understanding of the reasons for considering points - Comments are precise and related to specific points - Can give several HBV foods - Understands complementary proteins - Names soya and suggests uses - TVP usually noted - Specific terminology is used where appropriate - Many examples given to show how HBV proteins can be provided 	11 – 15	15
		Middle	<ul style="list-style-type: none"> - The candidates can give a few points to consider but does not always qualify points made - Factual content is sound but is not always linked to examples to illustrate points - Accurate information about sources of HBV protein but usually named foods - May mention pairing proteins but not always fully explained - Some examples given of protein pairing 	6 – 10	
		Low	<ul style="list-style-type: none"> - The candidate can give a few points to consider but does not always give examples or further information to support points made - The information will be general and lack specific detail - A few examples of HBV protein food given - Limited knowledge of complementary protein but may give an example - May mention soya and some of its uses - Limited knowledge of the topic will be apparent 	0 – 5	

Page 10	Mark Scheme	Syllabus	Paper
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The answer may include the following knowledge and understanding.

- cost
- time available
- equipment available
- foods available
- left-over foods
- season
- weather
- individual requirements
- likes and dislikes
- occasion
- skill of cook
- colour - flavour - texture of whole meal etc.
- (Supporting information to illustrate each point)

HBV protein

- soya beans - soya products - flour, tofu, milk etc. (max. 2)
- TVP - spun to make fibres - resembles texture of meat -
mince, sausages, burgers, chunks etc. (max. 2)
- Mixture of LBV foods - beans on toast, lentil soup and bread etc. (max. 2)
- HBV + LBV - soya and cereals, soya and nuts etc. (max.2)

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(b) Mark bands	Descriptors	Part marks	Total
High	<ul style="list-style-type: none"> – The candidate is able to give many reasons for preserving food – Can give examples to illustrate – May give scientific principles of preservation – Can name many methods of preservation and usually gives named examples of food – Candidate demonstrates a clear understanding of the topic – Comments are precise and related to named examples – Specific terminology is used where appropriate 	11-15	15
Medium	<ul style="list-style-type: none"> – The candidate is able to give several reasons for preserving – Usually attempts to give additional information in support of statements – Several methods of preservation named – Foods often given to illustrate – Some scientific explanations attempted – Information accurate but not all issues are considered – Response tends to be factual and does not always indicate understanding of the points made 	6-10	
Low	<ul style="list-style-type: none"> – The candidate can give a few reasons for preservation. – Does not consider a wide range – Examples are given but few attempts to explain principles. – The information will be general and lack specific detail. – Limited knowledge of the topic will be apparent. 	0-5	

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The answer may include the following knowledge and understanding.

Reasons for Preserving Food

- to provide food when supply is limited
- to enjoy food out of season
- to add variety to the diet
- to cope with a glut
- prevents waste
- prevents food spoilage / going bad / decaying
- allows food to be transported from area to area / between countries
- to enjoy produce of other countries
- to store when quality is best and cost is lowest
- to save money
- to save time later
- to use in emergencies etc.
- to prevent decay - destroys micro-organisms by halting enzyme action
- to retain as many of the qualities of fresh food as possible
 - e.g. flavour, colour, appearance, texture, nutritive value
- to prevent the re-entry of micro-organisms by sealing well

Methods

- Bottling / Canning
 - Heat destroys micro-organisms
 - Sealing prevents re-entry
- Jam-making
 - Heat destroys micro-organisms
 - Sealing prevents re-entry
 - High sugar concentration prevents growth of yeasts, moulds and bacteria
- Salting
 - Removal of moisture
 - Micro-organisms need moisture to multiply
- Pickling
 - Addition of chemicals
 - High vinegar (acid) concentration prevents growth of micro-organisms
- Drying
 - Removal of moisture
 - Micro-organisms need moisture to multiply
- Freezing
 - Water unavailable
 - Temperature too low for activity of micro-organisms
- Smoking
 - Chemicals deposited on surface of food
 - Phenols
 - Inhibit bacterial growth
- UHT
 - High temperature destroys bacteria
 - Sealing prevents entry of further microbes

June 2004

INTERNATIONAL GCSE

<p>MARK SCHEME</p>
<p>MAXIMUM MARK: 100</p>
<p>SYLLABUS/COMPONENT: 0648/02</p> <p>FOOD AND NUTRITION Paper 2</p>

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This generic mark scheme is for guidance only. It should be used in conjunction with the confidential mark scheme sent to Examiners for each examination session. The confidential mark scheme refers to the allocation of marks for the specific tasks set in the practical examination.

PRACTICAL - GENERIC MARK SCHEME

Paper 2 – Practical

The detailed mark scheme is to enable Examiners to maintain a uniform standard.

To pass a candidate must work systematically using a reasonable degree of skill, good methods and sound recipes. At least **half** of the resulting dishes should be of a **good** standard — well served, with good appearance, consistency, texture and flavour. If the **main** dishes of the test are inedible, then a pass result should not be given.

Allocation of marks — 150

The marks should be recorded on the Practical Examination Working Marksheet. The final raw mark must be **scaled to a mark out of 100**.

The total of 150 is divided thus:

1	Preparation session — choice and plan	50
2	Method of working	55
3	Quality of dishes	35
4	Serving and appearance	10

DETAILED ALLOCATION OF MARKS

1	PREPARATION SESSION	(50 marks)	Choice	20
	(a) Choice	(Max 20)	Plan	30

General Points — applicable to each test.

The dishes chosen should meet the requirements of the specific tasks and:

- (i) show a variety of skills and processes
- (ii) combine to form well balanced meals
- (iii) have an attractive appearance
- (iv) show thought for economy in fuel and food
- (v) show an awareness of the time available for cooking and serving

Note **quantities** chosen — these should be adequate for the number being served.

Under choice, give credit for variety in texture and for inclusion of **local fruit and vegetables**.

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(b) Plan of Work (Max 30)

Please note and mark the following points:

(i) Recipe section (5 marks)

Dishes chosen must be clearly listed with the quantity of each ingredient for each dish.

(ii) Planning section (25 marks)

- 1 A logical sequence of work from beginning of test to final serving — each item followed through to serving stage. This is the most important part of the plan. It should show the candidate's ability to visualise exactly what he/she is going to do throughout the test time and to write it down in clear sequence with adequate timing.
(10 marks)
- 2 Clear indication of method for each dish, e.g. make cake — creaming method; make sauce — roux method.
(5 marks)
- 3 Oven temperature required for each dish and cooking time — although this can be incorporated in (a).
(3 marks)
- 4 Time allowed for cleaning and dish washing at convenient points in plan (**not** necessarily after every dish).
(3 marks)
- 5 Allowance of time for serving meals in correct order of courses.

Detailed timing is **not** required - a sensible guide is preferable.
(2 marks)

(iii) Shopping List

Should give correct total quantities of ingredients required under correct headings. Any special equipment should be stated.
(2 marks)

2 MARKING OF METHOD OF WORKING (55 marks)

As a general guide, 28/55 for methods which just deserve a pass, 33/55 for a really sound pass and 44/55 for **very** good methods, excellent timing and a variety of skills shown — this mark will only be given to a very able candidate. A candidate who shows little skill and who has not chosen sufficient dishes for the available time cannot be given more than 25/55 for this section.

The majority of candidates will probably gain between 28 and 42 marks.
Method of Working (Maximum 55 marks)

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The following points should be considered when deciding on this mark. The suggested sections are intended to guide the Examiner in assessing the total mark to be given for this section.

(a) The candidate's **general approach** — business-like and confident — should show in working that she/he has knowledge and clear understanding of recipes and methods being used. Sense of timing.

(5 marks)

(b) **Manipulation** – correct use of tools, skill in handling mixtures, and large and small equipment. Correct preparation of dish, meat, vegetables, fruit, seasonings and flavourings, etc.

(20 marks)

(c) Judgement of consistencies of various mixtures for e.g. scone mixtures, cake mixture etc. **before** actual cooking.

(10 marks)

(d) Good **hygienic** methods and **economy** in the use of fuel and food.

(5 + 5 marks)

(e) **Oven management** – control of heat on top of stove. Knowledge of correct oven temperatures and positioning of dishes in the oven.

(5 marks)

(f) Tidy and methodical work throughout.

(5 marks)

If a candidate is extremely untidy then more than 5 marks may be deducted – if this happens please comment on the mark sheet.

Where a candidate is preparing very simple dishes then the maximum mark of 55 should be reduced accordingly.

The term 'fresh vegetables' includes the preparation and cooking of root and/or green vegetables. Salads, which should include a variety of vegetables and fruits, may merit a maximum of 6 and dressing up to 4, according to type and skill involved.

NB. Tinned, frozen and freeze-dried vegetables and instant coffee – maximum 1 mark each. Commercially prepared fruit juice or squash = 0. These marks apply to result only. If serving and presentation of vegetables good then give credit in last section, but for tinned juice etc. no mark.

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3 QUALITY OF DISHES (maximum mark 35)

All dishes must be tasted. Each dish must be marked according to flavour, texture and edibility. Please note that the maximum marks must be reduced for simple dishes involving little skill. Dishes added after the planning session has been completed will not receive a mark.

In assessing the quality of finished dishes, comments should be written on the assessment sheet about the flavour, texture and edibility of each dish.

Serving and appearance are assessed with a separate mark.

4 SERVING AND APPEARANCE (maximum 10 (usually 5 + 5))

Serving – note the following points: sequence of serving meal, correct temperature of food and serving dishes.

Appearance – attractive presentation, tasteful garnishing and decoration. Cleanliness of dishes and tablecloth. Correct use of d'oyleys (doilies) and dish papers. Suitable simple flower arrangement.

NOTE: The raw mark awarded to each candidate out of 150 must be scaled to a mark out of 100.

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FOOD AND NUTRITION (0648/2)
Practical Examination Working Marksheet
IGCSE

Centre Number					Centre Name	
June/November	2	0	0		Examiner's Name	
Candidate Number					Candidate Name	Test No.

Planning	Mark Available		Mark Awarded	
	Choice	20		
	(i)	5		
	(ii) 1	10		
	2	5		
	3	3		
	4	3		
	5	2		
	(iii)	2		
	Total	50		
Method of Working	General Approach	5		
	Manipulation	20		
	Consistency	10		
	Hygiene and Economy	5+5		
	Oven Management	5		
	Tidy and Methodical	5		
	Total	55		
Dishes Chosen	Quality/Results: Flavour/Texture/Edibility	Name of Dish	Mark Available	Mark Awarded Each Dish
		Total	35	
Serving and Appearance	Serving	5		
	Appearance	5		
	Total	10		
	Total	150		
	SCALED MARK	100		

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1	(a) Main dish and dessert Accompaniments	4 + 4 2 + 2	8 4
	(b) Decorated biscuits Choice of drinks	4 2 + 2	4 4
			20
2	(a) Three dishes to illustrate the use of (i) a cake tin (ii) a rolling pin (iii) a steamer	4 4 4	4 4 4
	(b) Main course or dessert (dependent upon dish used from a) Accompaniments	4 2 + 2	4 4
			20
3	(a) Three dishes using shortcrust pastry	3 x 4	12
	(b) Packed meal Drink	3 x 2 2	6 2
			20
4	(a) Three dishes using eggs	3 x 4	12
	(b) Scones Biscuits	4 4	4 4
			20
5	(a) Selection of dishes for a family celebration	3 x 4	12
	(b) Choice of fruit drinks Celebration cake	2 + 2 4	4 4
			20
6	(a) Main dish and dessert Accompaniments Drink	4+4 2+2 2	8 4 2
	(b) Selection of small cakes	3+3	6
			20
7	(a) Main dish and dessert Accompaniments	4+4 2+2	8 4
	(b) Choice of cold dessert	4+4	8
			20
8	(a) Three dishes to illustrate the use of (i) herbs and/or spices (ii) gelatine (iii) cheese	4 4 4	4 4 4
	(b) Main course or dessert (dependent upon dish used from a) Accompaniments	4 2 + 2	4 4
			20

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1	(a) Main dish and dessert	7 + 7	14
	Accompaniments	4 + 4	8
	(b) Decorated biscuits	7	7
	Choice of drinks	3 + 3	6
			35
2	(a) Three dishes to illustrate the use of		
	(i) a cake tin	7	7
	(ii) a rolling pin	7	7
	(iii) a steamer	7	7
	(b) Main course or dessert (dependent upon dish used from a)	7	7
	Accompaniments	3 + 4	7
			35
3	(a) Three dishes using shortcrust pastry	3 x 5	15
	(b) Packed meal	3 x 6	18
	Drink	2	2
			35
4	(a) Three dishes using eggs	3 x 7	21
	(b) Scones	7	7
	Biscuits	7	7
			35
5	(a) Selection of dishes for a family celebration	3 x 7	21
	(b) Choice of fruit drinks	3 + 4	7
	Celebration cake	7	7
			35
6	(a) Main dish and dessert	7+7	14
	Accompaniments	3+4	7
	Drink	4	4
	(b) Selection of small cakes	5+5	10
			35
7	(a) Main dish and dessert	7+7	14
	Accompaniments	3+4	7
	(b) Choice of cold dessert	7+7	14
			35
8	(a) Three dishes to illustrate the use of		
	(i) herbs and/or spices	7	7
	(ii) gelatine	7	7
	(iii) cheese	7	7
	(b) Main course or dessert (dependent upon dish used from a)	7	7
	Accompaniments	3 + 4	7
			35