Cambridge Assessment International Education

Cambridge International A Level

FOOD STUDIES **9336/02**

Paper 2 Practical Test **October/November 2020**

MARK SCHEME

Maximum Mark: 100

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently, e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5: Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).
GENERIC MARKING PRINCIPLE 6: Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Science-Specific Marking Principles

1	Examiners should consider the context and scientific use of any keywords when awarding marks. Although keywords may be present, marks should not be awarded if the keywords are used incorrectly.
2	The examiner should not choose between contradictory statements given in the same question part, and credit should not be awarded for any correct statement that is contradicted within the same question part. Wrong science that is irrelevant to the question should be ignored.
3	Although spellings do not have to be correct, spellings of syllabus terms must allow for clear and unambiguous separation from other syllabus terms with which they may be confused (e.g. ethane / ethene, glucagon / glycogen, refraction / reflection).
4	The error carried forward (ecf) principle should be applied, where appropriate. If an incorrect answer is subsequently used in a scientifically correct way, the candidate should be awarded these subsequent marking points. Further guidance will be included in the mark scheme where necessary and any exceptions to this general principle will be noted.
5	‘List rule’ guidance For questions that require ***n*** responses (e.g. State **two** reasons …): • The response should be read as continuous prose, even when numbered answer spaces are provided. • Any response marked *ignore* in the mark scheme should not count towards ***n***. • Incorrect responses should not be awarded credit but will still count towards ***n***. • Read the entire response to check for any responses that contradict those that would otherwise be credited. Credit should **not** be awarded for any responses that are contradicted within the rest of the response. Where two responses contradict one another, this should be treated as a single incorrect response. • Non-contradictory responses after the first ***n*** responses may be ignored even if they include incorrect science.

6 Calculation specific guidance

Correct answers to calculations should be given full credit even if there is no working or incorrect working, **unless** the question states 'show your working'.

For questions in which the number of significant figures required is not stated, credit should be awarded for correct answers when rounded by the examiner to the number of significant figures given in the mark scheme. This may not apply to measured values.

For answers given in standard form (e.g. $a \times 10^n$) in which the convention of restricting the value of the coefficient (a) to a value between 1 and 10 is not followed, credit may still be awarded if the answer can be converted to the answer given in the mark scheme.

Unless a separate mark is given for a unit, a missing or incorrect unit will normally mean that the final calculation mark is not awarded. Exceptions to this general principle will be noted in the mark scheme.

7 Guidance for chemical equations

Multiples / fractions of coefficients used in chemical equations are acceptable unless stated otherwise in the mark scheme.

State symbols given in an equation should be ignored unless asked for in the question or stated otherwise in the mark scheme.

Examples of how to apply the list rule

State **three** reasons … [3]

A

1. Correct	✓	**2**
2. Correct	✓	
3. Wrong	×	

B (4 responses)

1. Correct, Correct	✓, ✓	**3**
2. Correct	✓	
3. Wrong	ignore	

C (4 responses)

1. Correct	✓	**2**
2. Correct, Wrong	✓, ×	
3. Correct	ignore	

D (4 responses)

1. Correct	✓	**2**
2. Correct, CON (of 2.)	×, (discount 2)	
3. Correct	✓	

E (4 responses)

1. Correct	✓	**3**
2. Correct	✓	

F (4 responses)

1. Correct	✓	**2**
2. Correct	✓	
3. Correct CON (of 3.)	× (discount 3)	

G (5 responses)

1. Correct	✓	**3**
2. Correct	✓	
3. Correct Correct CON (of 4.)	✓ ignore ignore	

H (4 responses)

1. Correct	✓	**2**
2. Correct	×	
3. CON (of 2.) Correct	(discount 2) ✓	

I (4 responses)

1. Correct	✓	**2**
2. Correct	×	
3. Correct CON (of 2.)	✓ (discount 2)	

Question	Answer	Marks	Guidance
Section A			
1(a)(i)	Dishes chosen – four dishes – suitability	**4**	
1(a)(ii)	Variety of skills chosen without repetition	**4**	
1(b)(i)	Choice of dish to that includes a good source of iron	**1**	
1(b)(ii)	Degree of skill for dish chosen in **(b)**	**1**	
	Time Plan		
	Sequence	**5**	
	Methods	**5**	
	Cooking temperature and cooing times	**5**	
	Shopping list	**1**	

Question	Answer	Marks	Guidance
1(c)(i)	**Explain the terms coagulation and syneresis and give examples to illustrate your answers.** **coagulation** when heated protein molecules change structure and are denatured; this is a permanent change and is irreversible; the properties of protein alter making them less soluble, more viscous and they harden or set; egg albumin coagulates at 60 °C; can become solid and opaque; the yolk sets at 70 °C and will become dry and hard eventually; at 65 °C myoglobin in meat changes from red to brown; muscle fibres collagen and elastin in meat shrink; small amount of shrinkage in fish; in milk lactalbumin and lactoglobulin coagulate to form a skin on top of the milk; gluten starts to coagulate at 80 °C. **syneresis** the extraction / weeping / expulsion of a liquid from a gel; occurs when eggs are overcooked and as the protein shrinks the liquid that has been enclosed is squeezed out; examples are scrambled eggs, emulsified sauces – baked egg custard dishes or crème brûlée	**6**	*Any six points but must discuss both coagulation and syneresis for 6 marks*

Question	Answer	Marks	Guidance
1(c)(ii)	**Explain with examples, the effects of (a) acid and (b) agitation on protein** **acid** When acids such as vinegar or lemon juice are added to milk the protein denatures causing the proteins, like casein, to unwind and unfold; the unfolded proteins are then free to interact with each other and clump together in a way they could not do when they were properly folded. The milk takes on a curdled appearance; milk can also curdle when the bacteria in milk ferments the lactose into lactic acid; the pH is lowered, and the milk protein coagulates. Vinegar, lemon juice and wine can be used to marinate meat which softens the protein. **agitation** egg – during foam formation when egg whites are whisked the globular proteins start to unfold and entangle air which causes partial coagulation of the protein ovalbumin; examples meringues and sponge cakes.	**4**	*Any four points but must discuss both acid and agitation for 4 marks*
1(c)(iii)	*Practical reasons for choice* Include skills used – use of seasonal foods – ease of obtaining foods – e.g. grown in garden / in season – oven management – cost – serving	**4**	
1(c)(iv)	*Nutritional value of dish chosen in **(b)*** Must give four nutrients and appropriate functions	**4**	
Section B			
	Manipulative skill and method of working (Marked at the centre)	**26**	
Section C			
	Results and serving (Marked at the centre)	**30**	

Question	Answer	Marks	Guidance
Section A			
2(a)(i)	Dishes chosen – four dishes – suitability	**4**	
2(a)(ii)	Variety of skills chosen without repetition	**4**	
2(b)(i)	Choice of dish that includes a good source of iron	**1**	
2(b)(ii)	Degree of skill for dish chosen in **(b)**	**1**	
	Time Plan		
	Sequence	**5**	
	Methods	**5**	
	Cooking temperature and cooing times	**5**	
	Shopping list	**1**	
2(c)(i)	**Describe the changes that take place when a whisked sponge is baked.** Eggs coagulate – mixture sets / hardens; gluten also coagulates and stretches to form the framework of the cake; dextrinization of the flour causes the cake to turn brown; starch gelatinises and thickens the mixture; air / gas expands – mixture is forced upwards and outwards to form the shape of the tin; liquid evaporates into steam and provides further gas for expansion; maillard browning occurs due to the reaction between proteins in the eggs and flour and carbohydrates in the sugar and flour.	**6**	

Question	Answer	Marks	Guidance
2(c)(ii)	**Discuss four ways in which carbon dioxide can be produced to raise mixtures.** bicarbonate of soda with moist heat gives off carbon dioxide with a residue of sodium carbonate / washing soda – used in gingerbreads where the flavour of washing soda is masked by the spices used; $2NaHCO_3 \rightarrow Na_2CO_3 + H_2O + CO_2$; heat washing soda + water + gas bicarbonate of soda + an acid e.g. cream of tartar / sour milk / lemon juice produces carbon dioxide. baking powder – has the correct proportion of bicarbonate of soda and cream of tartar (2 parts acid to 1 part bicarbonate of soda). self-raising flour is plain flour that contains baking powder. yeast feeds on sugar and when warmth and moisture are provided, fermentation will occur which produces carbon dioxide and alcohol	**4**	Each point must be discussed 1 mark may be awarded for naming 4 correct ways to introduce carbon dioxide.
2(c)(iii)	*Practical reasons for choice* Include skills used – use of seasonal foods – ease of obtaining foods – e.g. grown in garden / in season – oven management – cost – serving	**4**	
2(c)(iv)	*Nutritional value of dish chosen in **(b)*** Must give four nutrients and appropriate functions	**4**	
Section B			
	Manipulative skill and method of working (Marked at the centre)	**26**	
Section C			
	Results and serving (Marked at the centre)	**30**	

Question	Answer	Marks	Guidance
Section A			
3(a)(i)	Dishes chosen – four dishes – suitability	**4**	
3(a)(ii)	Variety of skills chosen without repetition	**4**	
3(b)(i)	Choice of dish that includes a good source of iron	**1**	
3(b)(ii)	Degree of skill for dish chosen in (b)	**1**	
	Time Plan		
	Sequence	**5**	
	Methods	**5**	
	Cooking temperature and cooing times	**5**	
	Shopping list	**1**	

Question	Answer	Marks	Guidance
3(c)(i)	**List six nutrients found in wheat and state why they are needed by the body.** LBV protein – needed for growth and repair / secondary source of energy / formation of enzymes / hormones carbohydrate / starch – needed for energy; fats provide a concentrated source of energy / surround and protect vital organs / forms adipose tissue for insulation / forms cell membranes, especially in the brain / source of fat soluble vitamins / source of stored energy / provides a feeling of fullness. thiamin / B1 – coenzyme – required for the release of energy from carbohydrates and fats / normal growth in children / nerve function; riboflavin / B2 – coenzyme – release of energy from protein, carbohydrate and fats; niacin / B3 – coenzyme – required for the release of energy from carbohydrates and fats; vitamin E – antioxidant / destroys free radicals in the bloodstream and from damaging cell membranes / helps protect against cancer, heart disease, arthritis; iron – production of haemoglobin / red blood cells to transport oxygen round the body; phosphorus – helps to build strong bones and teeth; calcium gives strength to bones and teeth; magnesium – promotes the absorption and assimilation of other minerals including calcium and phosphorus / prevents calcification of soft tissue; selenium – healthy immune system / antioxidant / thyroxin metabolism; zinc – makes new cells and enzymes / helps process carbohydrates, fats and proteins / helps heal wounds; iron and calcium bound to phytic acid – limited use in the body; phytic acid – storage form of phosphorus – binds minerals in the digestive tract making them unavailable; potassium – helps regulate fluid balance, muscle contraction and nerve signals and may help reduce blood pressure and water retention, protect against stroke and prevent osteoporosis and kidney stones;. manganese – for brain and nerve function;	**6**	

Question	Answer	Marks	Guidance
3(c)(i)	folate – helps form red blood cells and prevent anaemia, to make DNA and other genetic material; **Also allow:** vitamin B6 – allows the body to use and store energy from protein and carbohydrates in food, forms haemoglobin to enable red blood cells to transport oxygen;		
3(c)(ii)	*Explain the changes that take place when bread is baked.* Warmth and sugar encourage fermentation – during fermentation maltase converts maltose to glucose – invertase converts sucrose to fructose and glucose – zymase converts glucose and fructose to CO_2 and ethanol; carbon dioxide expands and makes the bread rise; gluten stretches and coagulates at 70 °C and forms the framework of the bread; liquid changes to steam and alcohol / ethanol evaporates; heat kills the yeast at about 55 °C; starch gelatinises due to moist heat on starch; crust forms and browns due to dextrinisation of starch	**4**	
(iii)	*Practical reasons for choice* Include skills used – use of seasonal foods – ease of obtaining foods – e.g. grown in garden / in season – oven management – cost – serving	**4**	
(iv)	*Nutritional value of dish chosen in **(b)*** Must give four nutrients and appropriate functions	**4**	
Section B			
	Manipulative skill and method of working (Marked at the centre)	**26**	
Section C			
	Results and serving (Marked at the centre)	**30**	