

**CAMBRIDGE INTERNATIONAL EXAMINATIONS**

GCE Advanced Level

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## **MARK SCHEME for the October/November 2013 series**

### **9336 FOOD STUDIES**

**9336/02**

Paper 2 (Practical), maximum raw mark 100

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 will not enter into discussions about these mark schemes.

Cambridge is publishing the mark schemes for the October/November 2013 series for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level components and some Ordinary Level components.

| Page 2 | Mark Scheme                         | Syllabus | Paper |
|--------|-------------------------------------|----------|-------|
|        | GCE A LEVEL – October/November 2013 | 9336     | 02    |

### 1A Recipe Choice

- (a) (i) Four dishes, each showing a different method of cooking (4 × 1) [4]  
(ii) Suitability of dish selected to show that use (4 × ½) [2]  
(iii) Variety of skills without repetition (4 × ½) [2]
- (b) (i) Dish which includes at least one good source of calcium (1) [1]  
(ii) Degree of skill avoiding repetition with Section (a)(i) (1) [1]

**Maximum 10**

### Time Plan

**Maximum 8**

### Written Answer

#### (i) **Reasons for toughness in meat**

old animal – long – thick muscle fibres – well-used muscle –  
presence of collagen / connective tissue –  
animal not rested before slaughter – glycogen in muscles is reduced –  
and less lactic acid is produced during hanging –  
incorrect method of cooking – dry method for tough meat (6 points)

#### **Tenderising before cooking**

beating / pounding – cutting across muscle fibres / mincing – scoring –  
acid marinade – lemon juice / vinegar / wine –  
enzymes which break down proteins –  
papain from papaya – bromelain from pineapple – ficin from figs (6 points)

#### (ii) **Changes when meat is cooked by a moist method**

protein coagulates / meat shrinks – juices squeezed out –  
extractives, water soluble vitamins etc. go into water –  
thiamine destroyed by heat / some loss of riboflavin and niacin –  
fat melts – collagen – insoluble – converted to gelatine – soluble –  
muscle fibres loosen – meat tenderizes –  
colour change from red – myoglobin – to brown – hemichrome – (8 points)  
2 points = 1 mark [10]

(iii) Practical reasons for choice [4]

(iv) Nutritional value of dish chosen in (b). [4]

**Maximum 18**

### C Results and Serving

- (a) At least four dishes, each showing a different method of cooking.  
Marks to be allocated for each dish according to degree of skill and  
variety of foods. (Range 5–7) [26]
- (b) Dish which includes at least one good source of calcium – skilful [8]  
(Reduce maximum if skill is lacking)

**Maximum 34**

| Page 3 | Mark Scheme                         | Syllabus | Paper |
|--------|-------------------------------------|----------|-------|
|        | GCE A LEVEL – October/November 2013 | 9336     | 02    |

## 2A Recipe Choice

- (a) (i) Four dishes, each showing a different use of sugar. (4 × 1) [4]
- (ii) Suitability of dish selected to show that use (4 × ½) [2]
- (iii) Variety of skills included without repetition (4 × ½) [2]
- (b) (i) Dish which includes at least one good source of calcium (1) [1]
- (ii) Degree of skill involved avoiding repetition with Section (a) (1) [1]

**Maximum 10**

## Time Plan

**Maximum 8**

## Written Answer

### (i) **Ways to reduce sugar consumption**

avoid adding sugar to beverages – use artificial sweeteners in beverages –  
 choose diet / low calorie carbonated drinks –  
 reduce amount of sugar in recipes – avoid canned fruit in syrup –  
 fewer cakes and biscuits – reduce consumption of sweets / chocolate –  
 avoid sugar-coated cereals – read nutritional labels and choose wisely  
 choose fresh fruit juice instead of cordial etc. (6 points)

### (ii) **Problems associated with a diet high in sugar**

#### Diabetes

high level of glucose in blood – body does not produce enough insulin –  
 a hormone which stimulates the body to make use of glucose / for energy  
 leads to high level of glucose in blood – and its excretion in urine –  
 can damage kidneys / eyes / feet / nervous system / heart

#### Obesity

excess sugar I diet – converted to fat – stored under skin – adipose tissue /  
 around internal organs – extra weight puts strain on heart –  
 may cause hypertension / CHD / arthritis / breathing difficulties

#### Coronary Heart Disease

hypertension – linked to strokes – poor blood circulation –  
 fatty deposits along artery wall / narrow / block –  
 starve heart muscles of oxygen – heart attack

#### Tooth decay

acids – produced by bacteria in mouth – break down sugars on teeth –  
 plaque is a sweet sticky residue coating the teeth –  
 bacteria convert sugars to acids – dissolve tooth enamel/ form holes

(14 points)

N.B. Must credit a maximum of **three** problems 2 points = 1 mark [10]

- (iii) Practical reasons for choice [4]
- (iv) Nutritional value of dish chosen in (b) [4]

**Maximum 18**

|               |  |                 |              |
|---------------|--|-----------------|--------------|
| <b>Page 4</b> | <b>Mark Scheme</b>                         | <b>Syllabus</b> | <b>Paper</b> |
|               | <b>GCE A LEVEL – October/November 2013</b> | <b>9336</b>     | <b>02</b>    |

**C** Results and Serving

- (a) At least four dishes, each showing a different use of sugar.  
Marks to be allocated for each dish according to the degree of skill and variety of foods. (Range 5–7) [26]
- (b) Dish which includes a good source of calcium – skilful [8]  
(Reduce maximum if skill is lacking)

**Maximum 34**

|               |  |                 |              |
|---------------|--|-----------------|--------------|
| <b>Page 5</b> | <b>Mark Scheme</b>                         | <b>Syllabus</b> | <b>Paper</b> |
|               | <b>GCE A LEVEL – October/November 2013</b> | <b>9336</b>     | <b>02</b>    |

**3A** Recipe Choice

- (a) (i) Four dishes, each showing a method of creating / introducing colour (4 × 1) [4]  
(ii) Suitability of dish selected to show method chosen (4 × ½) [2]  
(iii) Variety of skills included without repetition (4 × ½) [2]
- (b) (i) Dish which includes at least one good source of calcium (1) [1]  
(ii) Degree of skill involved avoiding repetition with Section (a) (1) 1

**Maximum 10**

Time Plan

**Maximum 8**

Written Answer

(i) **Ingredients to add colour**

fresh fruit (or one named example) – dried fruit (or one named example) –  
vegetables (or one named example) – herbs (or one named example) –  
spices (or one named example) – coffee – cocoa / chocolate –  
nuts (or one named example) – seeds (or one named example) –  
brown sugar – wholemeal flour – wholegrain pasta – brown rice –  
butter / margarine – egg yolk etc.  
cochineal

(4 points)

**Advantages and disadvantages of artificial colourings**

**ADVANTAGES**

cheap to produce – consistent finished product  
– replace colour lost during processing –  
make food attractive etc.

**DISADVANTAGES**

may not have been approved – effects on health not known –  
some children are hyperactive – allergies – asthma – eczema –  
2 points + 2 points

(4 points)

(ii) **Identify and explain three ways in which heat changes food colour**

dextrinisation – dry heat on starch – browns surface of food – pyrodextrins  
toast, surface of cakes, bread crust

caramelisation – heat on sugar – with or without water –  
sweet, brown substance – will char if overheated – toffee, cakes, biscuits

Maillard reaction – non-enzymic browning – occurs during dry heat –  
chemical reaction between amino group (protein)  
and reducing sugar / glucose – brown compounds formed –  
on roast meat, roast potatoes, cakes, biscuits

denaturation – of protein – when heated above 60°C – browns –  
on outside – fried egg / toasted cheese / skin on milk pudding –  
meat changes colour from red myoglobin – to brown hemichrome –  
4 points for each method to include name

(12 points)

2 points = 1 mark [10]

- (iii) Practical reasons for choice [4]  
(iv) Nutritional value of dish chosen in (b). [4]

**Maximum 18**

|               |  |                 |              |
|---------------|--|-----------------|--------------|
| <b>Page 6</b> | <b>Mark Scheme</b>                         | <b>Syllabus</b> | <b>Paper</b> |
|               | <b>GCE A LEVEL – October/November 2013</b> | <b>9336</b>     | <b>02</b>    |

**C** Results and Serving

- (a) At least four dishes, each showing a different method of creating / introducing colour  
Marks to be allocated for each dish according to degree of skill and variety of foods. (Range 5–7) [26]
- (b) Dish which includes at least one good source of calcium – skilful [8]  
(Reduce maximum if skill is lacking)

**Maximum 34**