Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students’ responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students’ scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students’ 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.

Further copies of this Mark Scheme are available from aqa.org.uk
Question 1

<table>
<thead>
<tr>
<th></th>
<th>a</th>
<th>b</th>
<th>c</th>
<th></th>
</tr>
</thead>
</table>
| 1 | Cheese  
Yogurt  
Butter/ghee  
Cream/double/single/sour/clotted  
Crème fraîche  
Fromage frais  
Buttermilk  
Kefir (fermented milk drink)  
Ice cream | Vitamin A  
Vitamin B group  
Thiamin (B1)  
Riboflavin (B2)  
Niacin (B3)  
Vitamin D  
Vitamin B12  
Folic Acid | Iron  
Vitamin C  
Fibre |   |

3 marks may be awarded for naming 3 different products from the list plus any other appropriate responses. Do not accept product names e.g. Actimel.

2 marks may be awarded for naming 2 different vitamins from the B group. (Candidates do not have to name both the B group and the scientific name for one mark).

2 marks may be awarded for naming 2 different vitamins from the B group. (Candidates do not have to name both the B group and the scientific name for one mark).
<table>
<thead>
<tr>
<th>d</th>
<th>Nutrient</th>
<th>Reason</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Milk contains more protein than fizzy drinks</td>
<td>Needed for grow and maintenance of body cells</td>
</tr>
<tr>
<td></td>
<td>Milk has a higher fat content</td>
<td>Children need fat for energy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fat is a protein sparer</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fat in milk is a good source of the fat soluble</td>
</tr>
<tr>
<td></td>
<td></td>
<td>vitamins A and D.</td>
</tr>
<tr>
<td></td>
<td>Milk contains calcium. No calcium in fizzy</td>
<td>Needed for growing bones and teeth</td>
</tr>
<tr>
<td></td>
<td>drinks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High sugar content</td>
<td>Empty calories</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Could cause obesity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Could lead to tooth decay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Encourages a sweet tooth</td>
</tr>
</tbody>
</table>
### Question 2

<table>
<thead>
<tr>
<th>2</th>
<th>a</th>
<th>(i)</th>
<th>Stomach</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>a</td>
<td>(ii)</td>
<td>Fat</td>
<td>1</td>
</tr>
</tbody>
</table>
| 2 | b |   | Act as a catalyst/biological catalyst (1)  
Increase the rate of chemical reactions (1)  
Breaks down large molecules of food into smaller ones so that they can be absorbed (1)  
Release of nutrients from food (1) | 2 | For 2 marks the response should show a simple, accurate response which demonstrates an understanding of the function of enzymes. |
| 2 | c |   | In the mouth salivary amylase breaks down cooked starch into maltose  
Action of chewing breaks food into smaller pieces.  
Saliva moistens food and aids swallowing.  
In small intestine amylase/carbohydrase breaks starch down to maltose.  
Maltase breaks maltose to glucose / Disaccharide to monosaccharide.  
Absorbed into bloodstream from the small intestine. | 6 | 1 – 3 marks  
Simple response showing a basic understanding of some of the processes of digestion.  
4 – 6 marks  
More detailed response showing a good understanding of how starchy food is digested. For full marks the mouth and the small intestine need to have been identified and some use of technical terminology. |
### Question 3

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **3 a** | Time available may be limited  
Cost of buying individual ingredients  
Skill of cook may be limited  
Consistency  
Lack of equipment/cooking facilities  
Lack of storage (for ingredients)  
Good shelf life  
Can be cheaper/cost of buying cakes may be prohibitive  
Consistency of product is guaranteed.  
Good taste/appearance | 2 | Accept any 2 answers from suggestions given plus any other appropriate responses.  
Do not accept ‘quick’. |
| **3 b** | Add colour  
Add flavour  
Provide a consistent result  
Preservation/helps cakes keep longer/Storage time  
Prevent staling  
Keep costs down/less wastage | 3 | Accept 3 simple answers from suggestions given plus any other appropriate responses.  
If candidate gives only 2 good quality suggestions with good, accurate explanation they may be awarded 3 marks. |
| **3 c** | **Cellophane**  
Keeps cake fresh/prevents staling/prevents bacterial contamination  
Light in weight  
Waterproof  
See through  
**Cardboard**  
Strong/Protection  
Can be recycled  
Can be printed with information  
Cheap to produce | 3 | Accept any 3 points from suggestions given.  
To gain full marks candidates must have referred to both packaging materials. |
### Question 4

#### Part a

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomatoes</td>
<td>Tomato sauce for pasta, Bread (for stuffing, gratin toppings, fish etc)</td>
</tr>
<tr>
<td>Bread</td>
<td>Breadcrumbs (for stuffing, gratin toppings, fish etc)</td>
</tr>
<tr>
<td>Roast chicken</td>
<td>Sandwiches, Curries, Risotto etc</td>
</tr>
<tr>
<td>Cheese</td>
<td>Gratin, sauces, toasties, pizza topping, filling for baked potatoes etc</td>
</tr>
</tbody>
</table>

- Credit one suggestion from the list plus any other appropriate responses.
- For full marks candidates must give one different example for each food.

#### Part b

Plan menus
- Check which foods you have in and plan around them
- Make a list when shopping and stick to it / Do not buy more or cook more than you need
- Only get BOGOFs if you know you will use them
- Do not shop when hungry/avoid pester power
- Keep kitchen organised / rotate food/arrange food so that it is within sight/ first in first out system
- Check use by dates
- Keep refrigerator at correct temperature
- Buy from frozen vegetables/makes use of freezer

- Accept any 3 answers from suggestions given plus any other appropriate responses.
Question 5

5 a  Source of protein (LBV)
Starchy (carbohydrate)
Slow release of energy/Provides energy
Low in fat
Contains the following nutrients:
- Vitamin C
- Fibre (if skins are eaten)
- Folate
- Potassium
- Vitamin B6
- Niacin
- Thiamine
- Iron
- Magnesium
- Phosphate
Filling
Versatile/can be eaten in other ways/ mash, roast, chips etc
Variety of types to choose from e.g. King Edwards, Charlotte, Maris Piper, new

3 Accept any 3 answers from suggestions given plus any other appropriate responses.
Each suggestion listed is awarded 1 mark, including each nutrient.

5 b  Convection currents in gas oven/electric fan oven
Conduction from baking sheet to potato and through potato from outside to centre.

2 1 mark
Simple response.
2 marks
Detailed response, with reference to at least 1 heat transference term.
### Method of cooking potatoes

<table>
<thead>
<tr>
<th>Method</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling</td>
<td>Quick Economical on fuel Pan could be used as a steamer and fuel saved by cooking another vegetable on top</td>
<td>Water soluble vitamins may be lost Overcooking may cause potatoes to disintegrate</td>
</tr>
<tr>
<td>Steaming</td>
<td>Less loss / higher retention of water soluble vitamins Better flavour Fuel can be saved by cooking vegetables underneath / using a tiered steamer</td>
<td>Takes longer to cook Can cause condensation in the kitchen</td>
</tr>
<tr>
<td>Roasting</td>
<td>Can be roasted with meat therefore saving fuel Good flavour/crisp texture</td>
<td>Takes longer to cook Increased fat content/calories</td>
</tr>
</tbody>
</table>

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**5 c**

Liquid and gentle heat converts the protein collagen to gelatin which dissolves in the cooking liquid to allow meat fibres to fall apart meat becomes more tender red colour changes to brown flavour improves bacteria are killed fat melts B vitamins dissolve into cooking liquid Protein coagulates/denatures/shrink.

**5 d**

6 Credit one advantage and one disadvantage of each method.

Different responses are required/

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1 – 3 marks Limited knowledge of the changes occurring during the stewing of meat.

4 – 6 marks Detailed answer showing a good range of changes to meat during stewing. For full marks candidates should use correct terminology.
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>6 a (i)</strong></td>
<td>This is the effect of dry heat on sugar (1) resulting in melting and browning (1)</td>
<td>2</td>
<td>Accept any 2 answers from suggestions.</td>
<td></td>
</tr>
<tr>
<td><strong>6 a (ii)</strong></td>
<td>This is the effect of dry heat on starch (1) resulting in browning (1) &lt;br&gt;Starch turns to dextrin (1)</td>
<td>2</td>
<td>Accept any 2 answers from suggestions.</td>
<td></td>
</tr>
<tr>
<td><strong>6 a (iii)</strong></td>
<td>This is the effect of moist heat on starch. (1) &lt;br&gt;The starch grains soften, absorb water, swell (1) &lt;br&gt;Causes mixture to thicken (1)</td>
<td>2</td>
<td>Accept any 2 answers from suggestions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Suggested changes</td>
<td>Reason for change</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Sweeten with dried fruit instead of sugar  Remove sugar from filling and change. OR Cooking apples to eating apples</td>
<td>Lower sugar intake/reduce calorie intake/reduce risk of obesity/reduce tooth decay</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leave skins on apples</td>
<td>Increase fibre, prevent constipation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change flour to wholemeal</td>
<td>Increase fibre, prevent constipation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decrease sugar in crumble</td>
<td>Lower sugar intake/reduce calorie intake/reduce tooth decay</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change butter to polyunsaturated spread (Not low fat spread)</td>
<td>Reduce saturated fat content/reduce risk of heart disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Decrease butter content (Not low fat spread)</td>
<td>Lower fat intake</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Add oats/nuts to crumble mix</td>
<td>Increase fibre</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Accept 1 mark for each change suggested and 1 mark for a valid reason. Look for different responses. Do not credit the same reason twice.
### Question 7

| 7 a | Warm temperature/37°C  
Moisture  
Food  
Time  
Neutral pH  
May need oxygen | 3 | Accept any 3 answers from suggestions. |
|-----|-------------------------------------------------|---|----------------------------------------|
| 7 b | Milk/yogurt  
Meat/poultry  
Fish/shell fish  
Eggs  
Vegetables, salad, fruit  
Bread  
Cream | 3 | Accept any 3 answers from suggestions given plus any other appropriate responses. |
| 7 c | Mould grows/mould on peanuts can produce harmful toxins  
Flavour changes (souring)  
Bacterial contamination  
Physical contamination from dirty machinery or careless food handlers  
Contamination by flies, cockroaches, mice, rats, mites, domestic animals  
Contamination by chemicals/radiation/pollution  
Colour changes  
Texture changes  
Unpleasant odour | 3 | Accept any 3 answers from suggestions given plus any other appropriate responses.  
If candidate gives a good, more in depth description of two ways food can spoil reward up to a maximum of 3. |
| 7 d | Cupboard should be free from vermin and pets  
Wash shelves regularly/deal with spills immediately  
Make sure storage containers are clean  
Do not top up existing stock with new  
Store dry foods in airtight containers / seated packets  
Keep a check on approximate storage times/best before dates  
Store in a cool dry place | 2 | Accept any 2 answers from suggestions given plus any other appropriate responses. |
| 7  | e | Choose plastic/polypropylene  
Avoid wooden boards as they can harbour bacteria  
Choose different boards for different uses/colour coded e.g. green for vegetables, red for raw meat etc  
Size of chopping board  
Dishwasher safe/easy to clean | 2 | Accept any 2 answers from suggestions given plus any other appropriate responses. |

**Question 8**

| 8  | a | Alcohol can cause fetal alcohol syndrome  
Caffeine (coffee, tea and cola) – stops calcium being properly laid down in bones  
Pate, soft cheeses and cook chill meals – risk of listeria bacteria  
Raw or lightly cooked meats - food poisoning bacteria  
Liver/liver products – high levels of vitamin A (retinol) harm the unborn baby  
Raw or lightly cooked eggs – risk of salmonella food poisoning  
Shark, swordfish, tuna – may contain high levels of mercury  
Blue cheese, raw shellfish and unpasteurised milk  
Avoid spicy foods – safe to eat but may cause heartburn  
Pre-packed sandwiches/salads – risk of food poisoning – Listeria bacteria | 6 | **1 – 2 marks**  
One or two food suggestions but little or no valid reasons given.  
**3 – 4 marks**  
Two or three suggestions of foods to avoid with some justification.  
**5 – 6 marks**  
Good quality answer with at least three food suggestions and good justification as to why they should be avoided. There may be use of technical terms. |
| 8 | **Calcium** – requirements the same as non-pregnant women as body absorbs calcium more efficiently. Needed to maintain strength of her own bones and to make baby’s skeleton strong. Dairy foods, fish where bones are eaten, green leafy vegetables etc
| 10 | **Vitamin D** - for effective absorption of calcium, Fortified spreads, oily fish, eggs etc To prevent osteomalacia
|  | **Iron** – Development of haemoglobin for both baby and mother. To replace any lost through bleeds during and after birth, to prevent anaemia and to ensure mother has enough energy to cope with demands of breastfeeding. Volume of blood increases in pregnancy. Baby needs to lays down a store in last 3 months of pregnancy Red meat, oily fish, green vegetables, fortified bread/cereals, pulses, dried fruits and nuts etc
|  | **Vitamin C** to enable mother to absorb iron Citrus fruits, potatoes etc
|  | **Folic acid** – to reduce the risk of birth defects such as spina bifida Green vegetables
|  | **Fibre** – to prevent constipation especially in latter stages of pregnancy. Wholemeal cereals, fruit and vegetables
| | Energy needs increase during the last three months of pregnancy to allow for the rapid growth of the developing baby
| | **Protein** requirements increase slightly and can be met by eating HBV proteins plus bread, cereals and nuts.

**Mark Scheme**

1 – 3 marks
Answer shows only superficial knowledge of nutritional needs during pregnancy. Little mention made of nutrients by name. No links made between nutrients and foods. Basic communication skills. Poor use of grammar and punctuation. Poor spelling.

4 – 7 marks
Answer shows a clear understanding of nutritional needs during pregnancy. A range of nutrients is included with links between these and foods to eat. Satisfactory communication skills and use of grammar and punctuation. There may be some errors in spelling.

8 – 10 marks
High level of understanding of the nutritional needs during pregnancy. Good range of nutrients mentioned accurately with good links of how these can be met. Good use of grammar and punctuation. Most words spelt accurately.
| B Vitamins – important for baby's bone, muscle and nerve development. Lowers risk of pre-eclampsia. Found in milk, bread and fortified cereals. Follow healthy eating guideline – eatwell plate |