

Home Economics (Food and Nutrition)

General Certificate of Secondary Education **1973/02**

Paper 2

Mark Scheme for June 2010

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Question	Answer	Mark
1 (a)	<p>Any four from:</p> <p>Base your meals on starchy foods</p> <p>Eat lots of fruit and veg/5-a-day</p> <p>Eat more fish</p> <p>Cut down on (saturated) fat</p> <p>Cut down on sugar</p> <p>Try to eat less salt – no more than 6g a day</p> <p>Get active and try to be a healthy weight/exercise</p> <p>Drink plenty of water</p> <p>Don't skip breakfast/3 meals a day</p> <p>Eat more/increase fibre/NSP</p> <p>Cut out foods with high additions of additives</p> <p>Base your meals on the Eat Well plate</p> <p>Drink less alcohol</p>	[4]
(b)	<p>A well-balanced diet includes food from some of each of the five main food/nutrient groups in the correct proportion.</p> <p>These are</p> <ul style="list-style-type: none"> • Bread, cereals (including breakfast cereals) and potatoes (starchy foods) • Fruit (including fresh fruit juice) and vegetables • Meat and fish • Milk and dairy foods • Fat and sugar • Fibre <p>For two marks both correct proportions and food groups are required</p>	[2]
(c)	<p>Reasons for choice:</p> <p>Lower in fat</p> <p>Lower in sugar/no added sugar/intrinsic in fruit</p> <p>NSP/Fibre. Fruits/jacket potatoes/sweet corn</p> <p>Examples of cooking methods/foods that follow dietary guidelines eg jacket potato instead of chips</p> <p>5-a-day/vitamins and minerals in salad and fruit</p> <p>More starchy foods/slow releasing energy</p> <p>Low in salt, a little in tuna</p> <p>Advised to eat more fish</p> <p>Advised to drink more water</p> <p>Balanced meal//follows Eat Well plate</p> <p>NOT healthy</p> <p>Candidates must not simply repeat/quote the menu</p>	[5]

Question	Answer	Mark
1 (d)	Any five points from: Costs Colour/appearance Taste Texture Likes and dislikes/suits everyone Time of year Foods available/shops available What have they already eaten that day Skills of the cook Equipment available Time available to prepare meal Number of people catering for/portion sizes Special needs Allergies/health issues Age of people eating meal Variety of foods/meals/don't use all ready meals	[5]
(e)	Any four from: Posters/leaflets displayed throughout school Change to vending machines- from 'junk' to healthy options/healthy food on sale Chips restricted on menus Talks Teaching Water available/water fountain Fresh fruit available Breakfast clubs Advice in guidelines/letters to parents Parent teacher associations Training of school dinner ladies – NVQ's By providing a healthy school meal with guidance on choice Ideas for parents/students on healthy lunch box Healthy tasters Encouragement of extra exercise	[4]
	Total:	[20]

Question	Answer	Mark
2 (a) (i)	11510 – male 8830 – female	[1] [1]
(ii)	Men generally have a larger body size Have a higher metabolic rate They often have more physical jobs	[2]
(iii)	Older people generally less active Teenagers are more active Energy needed for growth in young people but older people have stopped growing	[1]
(b)	Put on weight /obesity/ excess energy is stored as body fat	[1]
2 (c)	Any two from: Basic minimum calorie requirement needed to sustain life in a resting individual Number of calories burnt if you slept all day The energy needed when the body is not moving about The amount of energy needed when the body is completely at rest	[2]
(d)	Any two from: Proteins Carbohydrates Fats Must name nutrients and not give examples of foods	[2]
(e)	Any three from: Activities (accept one example only) At rest (accept one example only) Growth Metabolism Exercise Pregnancy Breast feeding Muscles/movement Maintain normal body temperature Body's function – heartbeat, breathing – at rest Tissue repair Concentration/brain function/not tired	[3]
(f)	Any two from: Children/0-12 years Teenagers/13-19 years Pregnant/breast feeding women Athletes People doing heavy manual work	[2]
	Total:	[15]

Question	Answer	Mark
3	<p>Buying</p> <p>Fresh fruit and veg.</p> <ul style="list-style-type: none"> No obvious signs of damage, check for mould, no bruising, no unpleasant smell, wilting, good colour, no excess soil, even shape and size, firm not soft and spongy, in season so often cheaper, clean, reliable source, Fairtrade, food miles, clean surroundings, organic, slightly under ripe to last longer <p>Raw meat</p> <ul style="list-style-type: none"> Good colour (deep red for beef, pale pink for pork and pinkish red for lamb), no unpleasant smell, no excess fat, fat is firm, no juices running from meat, if in packaging check not torn or leaking, quality standard mark, in date/good expiry date for wrapped, raw meat, reliable source, clean surroundings, origin, food miles, organic <p>Cook/chill ready meal</p> <ul style="list-style-type: none"> In date, packaging intact, stored at correct temperature, reliable source, clean surroundings, check labelling, check storage conditions required <p>Storage</p> <p>Fresh fruit and veg</p> <ul style="list-style-type: none"> At correct temperature, cool dry dark place, ventilated, remove from polythene (sweats), green veg should be stored in sealed container in refrigerator temps 0°C - 5°C, use as soon as possible, some fruits suffer from chill injury so store at room temperature, some fruits make others deteriorate so store separately eg bananas <p>Raw meat</p> <ul style="list-style-type: none"> In refrigerator temps 0°C - 5°C, covered, clean sealed container, on bottom shelf of fridge, away from cooked products, mustn't be allowed to drip or touch other foods, follow any instructions on the label, check use by dates Freeze it if not frozen before temps -18°C to -25°C, covered, labelled, dated, appropriate packaging <p>Cook/chill ready meal</p> <ul style="list-style-type: none"> In refrigerator temps 0°C - 5°C, check use by date, follow storage instructions on packaging Freeze it if not frozen before temps -18°C to -25°C, covered, labelled, dated, appropriate packaging <p>A HIGH level of response 12-15 marks</p> <p>Both parts of the question will have been considered in depth. Information will be specific to the buying and storage of fresh fruit and vegetables, raw meat and a cook/chill product with sound recall and application of knowledge. A range of specialist terms used.</p> <p>A MID level of response 7-11</p> <p>Both parts of the question will have been considered but responses may be superficial and lacking depth. Information will be reasonably well organised but may be factual recall. The candidate uses some specialist terms.</p>	

Question	Answer	Mark
	A LOW level of response 0-6 All aspects of the question may not have been covered. Some obvious general facts will be given. Information may be muddled and not used to support points made. The candidate uses few, if any, specialist terms. Candidates with one two word answers in a list cannot achieve a high level response.	
	Total:	[15]

Question	Answer	Mark
4 (a)	Any four from: Protein Fat Calcium (yolk) Phosphorus (yolk) Iron (yolk) Zinc Vitamin A Vitamin D Vitamin B-thiamin, riboflavin and B ₁₂	[4]
(b)	Any one from: Consumer choice More natural Quality Taste Media influence – Jamie Oliver Moral reasons	[1]
(c)	<p>Method 1</p> <p>Carefully lower the egg into a bowl of water. A very fresh egg will immediately sink to the bottom and lie flat on its side. This is because the air cell within the egg is very small.</p> <p>As the egg starts to lose its freshness and more air enters the egg, it will begin to float and stand upright. The smaller end will lie on the bottom of the bowl, whilst the broader end will point towards the surface.</p> <p>Method 2</p> <p>Break the egg onto a flat plate. The yolk of a very fresh egg will have a round and compact appearance and it will sit positioned quite high up in the middle of the egg. The white that surrounds it will be thick and stays quite close to the yolk.</p> <p>A less fresh egg will contain a flatter yolk, that may break easily and a thinner white that spreads quite far over the plate.</p> <p>Method 3</p> <p>Candling. Hold a light up to the egg.</p>	<p>[2]</p> <p>[2]</p>

Question	Answer	Mark
(d) (i)	<p>Coagulation – protein coagulates during cooking at approx 63°C. The white becomes opaque (loses transparency) and sets. Yolk sets. Changes from liquid to gel. Due to shape of polypeptide molecules changing which results in denaturation (this is change of state and is irreversible)</p> <p>Examples</p> <p>Main dish eg omelette/fried/poached/boiled/scrambled egg coagulates</p> <p>Thickening eg sauces due to coagulation of eggs on heating</p> <p>Binding eg fish cakes due to coagulation of eggs on heating</p> <p>Coating eg scotch eggs due to coagulation of eggs on heating</p> <p>[2 marks for explanation 1 mark for example]</p>	[3]
(d) (ii)	<p>Emulsification – egg yolk contains emulsifying agent (lecithin). If oil and vinegar mixed together and egg yolk added, the oil suspended in small water droplets in vinegar and mixture stable. When making mayonnaise, the egg lecithin surrounds oil particles, preventing them from joining and discharging oil.</p> <p>Examples mayonnaise/hollandaise</p> <p>[2 marks for explanation 1 mark for example]</p>	[3]
	Total:	[15]

Question	Answer	Mark
5 (a) (i)	Any three – must be accurate Milk chocolate Dextrose Glucose (syrup) Honey Molasses Lactose	[3]
(ii)	Any two – must be accurate Emulsifier (soy lecithin) Titanium dioxide Beef gelatine Stabiliser (xanthan gum) Flavourings Raising agent (sodium hydrogen carbonate, diphosphates)	[2]
5 (b)	<p>Keep food safe for longer by protecting it against growth of micro-organisms Prolong shelf life –stops food going rancid Make it look more attractive by use of colours Allow fats and oils to mix together with water Adds flavours lost in processing Raising agent Anti-caking agent Flour improvers Thickening ingredients Addition of nutrients Enhances texture Addition of sweeteners to reduce sugar content Increases variety of foods available</p> <p>A HIGH level of response 7-10 marks Details of the question will have been considered in depth. Information, which must be qualified, will be specific to benefits of additives in food products with sound recall and application of knowledge. A range of specialist terms used.</p> <p>A MID level of response 4-6 The requirements of the question will have been considered but responses may be superficial and lacking depth. Information will be reasonably well organised but may be factual recall. The candidate uses some specialist terms.</p> <p>A LOW level of response 0-3 All aspects of the question may not have been covered. Some obvious general facts will be given. Information may be muddled and not used to support points made</p>	[10]
Total:		[15]

Question	Answer	Mark												
6	<ul style="list-style-type: none"> Describe how microorganisms can influence, both positively and negatively, the foods we eat. 													
	<table border="1"> <thead> <tr> <th></th><th>Positive</th><th>Negative</th></tr> </thead> <tbody> <tr> <td>Bacteria</td><td>Used to make yoghurt and cheese Probiotic foods</td><td>Food poisoning from toxins</td></tr> <tr> <td>Moulds</td><td>Used in cheese making Used to make quorn (mycoprotein)</td><td>Harmful to body if eaten</td></tr> <tr> <td>Yeasts</td><td>Used in bread, wine and beer</td><td>Ferment sugars into carbon dioxide and alcohol in jams, fruit yoghurts and fruits</td></tr> </tbody> </table>		Positive	Negative	Bacteria	Used to make yoghurt and cheese Probiotic foods	Food poisoning from toxins	Moulds	Used in cheese making Used to make quorn (mycoprotein)	Harmful to body if eaten	Yeasts	Used in bread, wine and beer	Ferment sugars into carbon dioxide and alcohol in jams, fruit yoghurts and fruits	
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	<ul style="list-style-type: none"> Explain, with examples, the principles involved in the preservation of food at home. <p>At home</p> <p>Jam making – uses high temperatures and sugar to destroy microorganisms and prevent others growing. Fruit stewed in water and high concentration of sugar, boiled. When cool sets.</p> <p>Pickling – uses vinegar (acetic or ethanoic acid). Preserves fruit, fish and hard boiled eggs by using acid to destroy microorganisms. Chutneys and relishes are thick sweet sauces made from vegetables and fruit being cooked with sugar, salt, vinegar.</p> <p>Drying – herbs, some fruits dried to preserve. Tie herbs in bundles and dry upside down in a warm place to remove water which removes microorganisms. Dry fruits on trays in an oven at low temperature.</p> <p>Freezing – freezer no higher than -18°C. Blanch vegetables by dipping into boiling water for short time and then placing in iced water. Blanching stops action by enzymes. Bacteria made dormant by cold temperatures.</p> <p>Bottling – fruit and vegetables placed in special glass jar containing either salt or sugar. Jars are sealed and heated to high temperature to destroy microorganisms.</p> <p>Salting – used to preserve fish and meat as microorganisms can't grow in high concentrations of salt. Adds flavour.</p>													

Question	Answer	Mark
6 cont.	<p>A HIGH level of response 14 – 20 marks Both parts of the question will have been considered in depth, with clear description of positive and negative effects of microorganisms in foods. Clear explanation of principles of preservation with examples and sound recall and application of knowledge. A range of specialist terms used.</p> <p>A MID level of response 7 – 13 Both parts of the question will have been considered but responses may be superficial and lacking depth. Information will be reasonably well organised but may be factual recall. The candidate uses some specialist terms.</p> <p>A LOW level of response 0 – 6 Both aspects of the question may not have been covered. Some obvious general facts will be given. Information may be muddled and not used to support points made. The candidate uses few, if any, specialist terms.</p> <p>Candidates with one two word answers in a list cannot achieve a high level response.</p>	
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