

GCSE

Home Economics (Food and Nutrition)

Unit B003: Principles of Food and Nutrition

General Certificate of Secondary Education

Mark Scheme for June 2016

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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 should be read in conjunction with the published question papers and the report on the examination.

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Annotation	Meaning
BP	Blank Page – this annotation must be used on all blank pages within an answer booklet (structured or unstructured) and on each page of an additional object where there is no candidate response.
?	Unclear
λ	Caret sign to show omission
×	Cross
L1	Level 1
L2	Level 2
L3	Level 3
L4	Level 4
REP	Repeat
SEEN	Noted but no credit given
	Tick

C	Questio	n Answer	Mark	Guidance
1	а	 ONE mark for each correct answer. TWO required. Where - Refrigerator/fridge/below 5°C/between 5°C. Reason – Slows bacteria (micro-organisms) growing/slows down curdling/extend shelf life/ reduces the risk of food poisoning. 	[2]	If the reason is correct but the storage conditions are not, one mark can be awarded. Do not accept "stops bacteria growing" Do not accept any reference to going off or keeping fresh. If a fridge temperature is stated it has to be correct.
	b	 ONE mark for each correct answer. THREE require Hard – Cheddar cheese Soft – Cottage cheese Veined – Blue stilton 	ed. 1x3 [3]	Allow "Stilton" on its own. Allow "Cottage" on its own.
	С	ONE mark for each correct answer. THREE require Protein Fat Calcium Vitamin A Vitamin D B vitamins (or named) Phosphorus Sodium	ed. 1x3 [3]	Do not allow "water" as it is not considered a nutrient
	d	 i ONE mark for each correct answer. ONE required. • Whole /full fat (milk) 	1x1 [1]	Do not accept "blue top milk" unless qualified with whole or full fat Do not accept "cows milk" Do not accept brands of formula milk

Question	Answer	Mark	k Guidance	
d ii	 ONE mark for each correct answer. ONE required. Contains the fat soluble vitamins - A/D/E/K. They need the fat for brain/nerve development/ more energy. For strengthening bones and teeth (calcium/vitamin D). Good source of protein for growth. 		Only accept the first bullet point without any further explanation.	
е	ONE mark for each correct answer. ONE required. • Lactose intolerance	1x1 [1]	Accept "lactose" on its own.	
f	 ONE mark for each correct answer. TWO required. ONE mark for each correct explanation. TWO required. Reduce the cost – Make milk a cheaper option or subsidise the price. Give free milk/hand out at breaks – No cost implications/barriers. More likely to try/become familiar with. Offer smoothies/milkshakes/flavour milk – contain milk as a main ingredient. Different taste/more enjoyable/ try something different. Posters – promoting the health benefits of consuming milk. Celebrities/characters could be on the posters. Attract children/colourful. Sell milk – make milk one of the drink options at meal and/or break times/breakfast clubs. Readily available. Get involved in local/national campaigns/ school competitions - promote drinking of milk. Local firms wanting to promote. 	2x2 [4]	Mix and match as long as they make sense and are not repeated. Do not accept any reference to packaging.	

Question	Answer	Mark	Guidance
	 Offer milk based foods - such as bread puddings, custards, cereal. Variety – Offer soya and goat for those intolerant to or do not like cow's milk. Rewards scheme – reward for regular drinking of milk. Toy/money off another product. Projects in lessons/cookery sessions/demonstrations (show/ tell/ teach the children) – Lessons include why milk is important and how to use milk in recipes or give new ideas. Why it is good for them. School visits to farms – children see where milk comes from, encourages them to try milk/take an interest. 		
		tal marks	: 15

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G	Question	Answer	Mark	Guidance
2	a	 ONE mark for each correct answer. THREE required. Roasting - Conduction Boiling - Convection Grilling - Radiation 	1x3 [3]	
	b	 ONE mark for each correct answer. TWO required. Allows fat to drip from the meat/reduces fat Not adding any fat/oil/less fat needed/ doesn't cook in fat/oil 	1x2 [2]	Do not accept "healthier" unless qualified.
	с	 ONE mark for each correct answer. TWO required. Scoring Pounding/hammering/hitting/beating Marinating/soaking in acid/lemon juice/alcohol/vinegar/commercially prepared meat tenderiser 	1x2 [2]	Do not accept "soaking" without an example or description of what the meat is soaking in.
	d	 ONE mark for each correct answer. TWO required. ONE mark for each correct description. TWO required. Change in texture/firmer – heat makes the skin/fat crispy. Shrinking – the heat denatures the protein/the meat shrinks due to the heat. Loses water. Increased flavour – the heat melts the fat in between muscle fibres adding flavour/ meat extracts come to the surface. Tenderises/makes tender – the cooking makes the meat softer/succulent due to protein denaturing. Easier to chew. Colour change (pink to white or red to brown) - the muscle fibres/blood change colour during heating. 	2x2 [4]	Any changes must be explained.

Que	stion	Answer	Mark	Guidance
		 Less B vitamins – B vitamins are heat sensitive so are destroyed when cooking. Less digestible protein – if the meat is overcooked and dry the proteins becomes hard and less easy to digest. Bacteria are killed – due to the high temperature and/or sufficient cooking time. 		
e	i	 Weighing ONE mark for each correct answer. ONE required. Ensures correct flavour/taste/texture/not doughy/rises. Ensures correct consistency - not dry or too wet. Ensures you have the correct proportions/amounts. Don't have too much or too little. 	1x1 [1]	Do not accept "make the recipe work" or "make a successful loaf"
e	ii	 Kneading ONE mark for each correct answer. ONE required. Develops gluten/elasticity/stretches the gluten Adds/traps air Activates the yeast 	1x1 [1]	
e	iii	 Proving ONE mark for each correct answer. ONE required. Allows the dough to double in size before baking/ allows the yeast to work/allows dough to rise Allows gas bubbles/carbon dioxide/air to expand/push up dough Gives yeast time to multiply and allows carbon dioxide to be created/allows fermentation 	1x1 [1]	

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Question	Answer	Mark	Guidance
e iv	Baking ONE mark for each correct answer. ONE required. • Set mixture/creates framework • Caramalisation of sugars to form crust/make crust • Dextrinisation/golden brown • Kills yeast • Burns off alcohol • Kills bacteria/micro-organisms • Water turns to steam/creates a spongy texture	1x1 [1]	Do not accept "to make hard" unless qualified with crust/top Do not accept "bread rises"
f	 ONE mark for each correct answer. THREE required. Fat – Add flavour/changes texture/shortens gluten strands/give colour/traps air/stays moist for longer. Sugar – Add flavour/sweetens/add texture/ adds colour/ softens gluten strands/caramelises/traps air. Egg – Setting of the mixture/helps form structure/ adding colour/glaze/emulsifier/traps air/provides moisture/to make rise/binding/ holding together. 	1x3 [3]	Do not allow repetition of answers (i.e.) "add colour" can only be used once. Do not accept "flavour" or "texture" or "colour" without further qualification (i.e.) adds, gives, sweetness. Do not accept "tastes nice" or "tastes better"
g	ONE mark for each correct answer. THREE required. Creaming Whisking Beating Folding Rubbing in Sieving 	1x2 [2]	
I	Question 2	total - 20	

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Q	uestion	Answer	Marks	Guidance			
				Content	Levels of response		
3	а	Describe how a family with a limited income to ensure they have a balanced diet. • Price/own brands –Buy 'value' items as they	15	This list is not exhaustive and professional judgement must be used.	This question in marked according to the quality of response.		
		are cheaper.			0 = no response worthy of credit		
		Special offers/coupons/loyalty card -better		Some of the explanations can			
		value for money. Collect points or coupons to		be mixed and matched as long	Level 4 (13-15 marks)		
		save money.		as they make sense.	The candidate gives a		
		 Make meals in bulk – cooking more than one meal at a time to save electricity. 			comprehensive description of the potential ways a family on a low		
		 Cook one pot meals – saves money on electricity. 			income can ensure they have a balanced diet and other factors that		
		 Keep meals simple – limited ingredients, saving money. 			affect a family's choice, examples will be detailed and relevant. The		
		 Buy cheap cut of meat – cook on a low and long heat to soften. 			information will be presented in a clear and organised way. A whole		
		 Bulk meals with lentils and vegetables – 			range of specialist terms are used		
		make them go further with cheaper ingredients.			with precision. The candidate can demonstrate the accurate use of		
		 Check prices/comparison website and be aware of portion size – value for money. 			spelling, punctuation and grammar.		
		Compare product sizes and price.			Level 3 (9-12 marks)		
		 Don't go when hungry – tempted to buy 			The candidate gives a detailed		
		things you don't need.			description of the potential factors		
		 Buy food close to its sell by date and 			ways a family on a low income can		
		freeze – often a reduced price			ensure they have a balanced diet		
		 Plan meals/shopping list – ensures there is 			and other factors that affect a		
		no waste or left-overs to throw away/use left			family's choice, examples given will		
		overs for other meals/freeze.			be relevant. Information will be		
		 Use the whole item (chicken) – for example 			offered to support the answer but in		
		use the bones to create a stock.			general terms with little detail. The		

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Question	Answer	Marks		Guidance		
			Content	Levels of response		
	Market/cheaper supermarkets – cheaper			information will be offered in a		
	products/brands.			structured format. The candidate		
	 Food in season – often cheaper. 			can use a range of specialist terms		
	 Cook your own/cook from scratch – don't 			with facility. There may be		
	have ready meals or take-aways.			occasional errors in spelling,		
	 Tinned or frozen foods – lasts longer/saves 			punctuation and grammar.		
	money/less waste/saves time/saves fuel.					
	 Starchy carbohydrates – cheaper and 			Level 2 (5-8 marks)		
	filling/often fortified.			The candidate gives a description		
	 Bulk buying – saves money/time/energy. 			or makes some valid comments		
	 Checking labels – value for money. 			about ways a family on a low		
	Ensuring you get all of the nutrients you/your			income can ensure they have a		
	family need.			balanced diet and other factors that		
	Explain OTHER factors			affect a family's choice. Some		
	• Ethical considerations – some people think			examples will be given. Some		
	about organic food/air miles or the carbon			information will be relevant		
	foot print of food.			although may lack specific detail.		
	 Religion – some religion specify things that 			The candidate uses some		
	can or cannot be consumed such as Hindus			specialist terms although these		
	and pork. At a particular time of the year			may not always be used		
	certain foods are more likely to be consumed			appropriately. There may be errors		
	(i.e.) turkey at Christmas for Christians.			in spelling, punctuation and		
	Culture/special occasions – this can dictate			grammar.		
	what, when or how you can eat.					
	 Time – if someone has limited time available 			Level 1 (1-4 marks)		
	they may buy ready-made meals and or			The candidate makes general		
	convenience foods rather than cook for			comments about the way a family		
	themselves from scratch, maybe cooking			can ensure they have a balanced		
	from convenience foods rather than from			diet, which may be list like. Will		
	scratch.			give some suggestions as to how a		

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Question	Answer	Marks	Guidance		
			Content	Levels of response	
	 Skill levels – people may be limited by their cooking abilities. Quantity – portion size, no waste Facilities (cooking) – if you live in a small flat you may only have a microwave so would be limited to what you could cook. Facilities (storage) – if you live in a small flat you may not have a large fridge so may not be able to freeze much or take advantage of special offers. Family members – preference of those you are cooking for will be taken into consideration. Habit – have you always shopped in the same supermarket or eaten similar foods. Are you willing to try new things. Availability/seasons – you can only buy what is available in the shop you are shopping in, local supermarkets may not have strawberries all year round. Special diets – vegan/vegetarian /diabetic/ high blood pressure. Advertising – celebrity endorsements/packaging/bright colours Weather – Wanting warm food on a cold day or cold food on a hot day. Hot weather can also reduce appetite. Occupation – how much you energy you use (i.e.) builder vs office worker 			 family's food choice are affected, limited examples may be given. Facts may not always relate to the contents. Answers may be ambiguous or disorganised. There will be little or no use of specialist terms. Errors of grammar, punctuation and spellings may be intrusive. Candidates can only achieve a level 2 response if they only provide suggestions they do not provide any reasoning/ justifications. 	

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Question	Answer	Marks	(Guidance
			Content	Levels of response
	 Gender/age – lifetime habits or traditions or trends/peer influences. Foods for different age groups. Preferences – your taste will influence what you buy. Health – are you able to chew foods or does food need to be soft to allow digestion. Pregnancy, diabetes. Allergies/intolerances – If you are allergic to an ingredient/food you will not buy it or any product that may contain it. Ability to get to shops/location of shops – can you travel to out of town/limited access or availability in smaller stores. Nutritional knowledge – how to create a balanced diet/eatwell plate. 			

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Q	uestion	Answer	Marks	Guidance		
				Content	Levels of response	
4	a	 Increase water – 2-3 litres per day/hydration/ concentration/ aids digestion/ reduce alcohol. Reduce sugar intake – less calories/ use sweeteners/ tooth decay/ no sugar in drinks/ reduces risk of diabetes. Reduce intake of fat – saturated fat/ reduces the risk of coronary heart disease/ reduces the risk of obesity/ make own meals/ reduced take-aways. 			 Marks are allocated according to the quality of response. Candidates should be able to show their depth of understanding, using correct terminology. Answers are mix and match as long as they are correct and not repeated. Level of response 4: 7-8 The candidate will give a comprehensive explanation of the changes that could be made to meet the guidelines. The information will be 	
		 Eat breakfast – follow the eatwell plate/ eat a balanced breakfast/ full for the rest of the day/ avoid snacking/ concentration. 			presented in a clear and organised way. The candidate can demonstrate the accurate use of spelling, punctuation and grammar.	
		 More starchy carbohydrates/ fibre – wholemeal products/ satiety/ constipation. Eat more fruit and vegetables – 5+ portions a day/ more fibre/ more vitamins/ minerals. Less salt - max 6g per day/ blood pressure/ reduce risk of strokes/ make own meals/ reduced take- aways. 			Level of response 3: 5-6 The candidate gives a detailed description of the changes that could be made to meet the guidelines. Examples given will be relevant. Information will be offered to support the answer but in general terms with little detail. The information will be offered in a structured format. There may be occasional errors in spelling, punctuation and grammar.	
		 Eat more fish – 2 portions per week/more oily fish/ omega-3/ heart health. 			Level of response 2: 3-4 The candidate gives a description of the changes that could be made. The candidate may give some explanations but they may lack specific	

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Q	Question		Answer	Marks	Guidance		
					Content Levels of response		
					detail. There may be errors in spelling, punctuation and grammar.		
					Level of response 1: 1-2 The candidate makes general comments about the changes that could be made which may be lis like. May give one or two suggestions for changes. Facts may not always relate to content Answers may be ambiguous or disorganised. There will be little or no use of specialist terms. Errors of grammar, punctuation and grammar may be intrusive.		
					0 = there is no response worthy of credit. NR = No response. This is given where the candidate has not attempted the question at all.		
					If the candidate has only suggested changes and has not offered any explanations, the maximum mark they can achieve is 4 (Level 2		
				Que	stion 3 total - 15		

Q	Question		Answer		Guidance
4	b		 ONE mark for each correct answer. TWO required. To get the correct/all/variety of nutrients (or named 		Do not accept "prevent" a disease
			nutrient) To get the correct amount/RDA of nutrients/ prevent 		Accept "eatwell guide"
			malnourishment		Do not accept "anorexia"
			 To reduce the risk of disease (or named disease) To maintain a healthy weight/prevent obesity/prevent being underweight To get a wide variety of foods/nutrients/all sections of the eatwell plate. 		"Deficiency" needs to be qualified.
	с	i	 ONE mark for each correct answer. THREE required. Name of the food/what it is 		Do not accept "expiry date".
			 Name & address of the manufacturer. Country of origin. 		Do not accept "what it contains" unless quantified.
			Cooking/usage instructions.List of ingredients (in descending order).		Do not accept "sell-by date".
			 Percentage of certain ingredients (i.e.) meat in sausages Allergy information. 		"Nutritional information" can only be accepted if qualified by when a nutritional claim is made.
			Shelf-life/best before date/use-by date/lot numberHow to store the food.		
			Any genetically modified food/ingredients used.Weight/volume/quantity		

uestion	Answer	Mark	Guidance	
 They c allergie They c loss/ w matche Gives i Helps t life/bes If they informa Limited If they 	or each correct answer. TWO required. an see what ingredients are in the food/ es/ intolerances/ vegetarian/ religion/ culture. an see what nutrients are in the food/ weight eight gain/ for a specific diet/ to see if it es healthy eating guidelines. deas how to serve the food. them avoid food poisoning (through the shelf- et before date/use by date/correct storage). have to make a complaint they have the ation that they need. d cooking knowledge – instructions. have ethical concerns such as animal welfare niles the information can be presented on the		Do not accept "safe to eat" unless qualified such as best before date/use by date.	

C	Question		Answer		Guidance
5	а	i	 ONE mark for each correct answer. TWO required. Too much causes high blood pressure/hypertension. Too much leads to dehydration. It puts a strain on/can damage kidneys. It affects stomach acid. 	[2x1] 2	
	а	ii	 ONE mark for each correct answer. ONE required. Herbs or named herb. Spice or named spice. Garlic Pepper Lemon/lime juice 	[1x1] 1	
	b		 ONE mark for each correct answer. THREE required. Protein – Growth/repair/energy. Calcium – Strengthens & hardens teeth/bones / needed for growth/helps blood clot/ helps nerves & muscles work properly/ reduces risk of osteoporosis/peak bone mass reached/ tetany. Vitamin A - Healthy skin/see in the dark/helps make visual purple/helps the body grow & develop/ antioxidant/ keeps the linings of the digestive system moist & free of infection. 	[3x1] 3	
	С		ONE mark for each correct answer. TWO required. • E.coli • Listeria • Salmonella • Vibrio cholera • Scrombrotoxin • Cigutoxin • Norovirus	[1x1] 1	Spellings do not have to be correct, just understandable.

lestion Answer	Mark	Guidance
 d ONE mark for each correct answer. TWO required. ONE mark for each correct explanation. TWO required. Store in the correct place/ at the correct temperature— in the fridge, kept between 0 and 5° Freezer -18°C. Reduces time in the danger zone. Fridge slows bacteria growth. Freezer stop bacter growth (until thawed). Store for the correct time – use fresh fish on the same day, leftover within 24hrs. Store in suitable containers or packaging – Kee the fish in a sealed container so it can't contamina or be contaminated. Defrost thoroughly – make sure the centre is thawed, not just the outside. 	(2x4) d. 8 C.	Guidance Award one mark for the point and the second mark for the explanation. The candidate must provide 4 different descriptions (i.e.) only allow cross contamination once.
	s r s. e	

Question	Answer	Mark	Guidance
	 Cook fish to the correct temperature – cook to 70-75°C ensure that the outside and inside are thoroughly cooked. Cook fish for the right time - ensure that the outside and inside are thoroughly cooked. Keep it hot before serving - make sure it is hot right the way through. Cool leftover food quickly - ensure that all leftovers are cooled and refrigerated as quickly as possible. Keep out of the danger zone. Use leftover food within 24hrs – the food has passed through the danger zone a few times so should be eaten within 24hrs to reduce the change of food poisoning. Only heat leftover food once - the food should pass through the danger zone as few times as possible so should be re-heated only once to reduce the change of food poisoning. Use coloured/separate chopping boards – cross contamination. Place raw fish at the bottom of the fridge – so it doesn't drip onto other foods. Do not re-freeze previously frozen fish – higher risk of food poisoning as possible increased bacteria levels. Preserve fish – freeze, salt, smoke to increase shelf life. 		

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