

GCSE (9-1)

Food Preparation and Nutrition

Unit J309/01: Food preparation and nutrition

General Certificate of Secondary Education

Mark Scheme for June 2018

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This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which marks were awarded by examiners. It does not indicate the details of the discussions which took place at an examiners' meeting before marking commenced.

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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Annotations

Annotation	Meaning
L1	Level 1
L2	Level 2
L3	Level 3
SEEN	Noted but no credit given
✓	Tick
BP	Blank page

Subject Specific Marking Instructions

Contradictory Responses

When a candidate provides contradictory responses, then no mark should be awarded, even if one of the answers is correct.

Short Answer Questions (requiring only a list by way of a response, usually worth only one mark per response)

Where candidates are required to provide a set number of short answer responses then only the set number of responses should be marked. The response space should be marked from left to right on each line and then line by line until the required number of responses have been considered. The remaining responses should not then be marked. Examiners will have to apply judgement as to whether a 'second response' on a line is a development of the 'first response', rather than a separate, discrete response. (The underlying assumption is that the candidate is attempting to hedge their bets and therefore getting undue benefit rather than engaging with the question and giving the most relevant/correct responses.)

Short Answer Questions (requiring a more developed response, worth two or more marks)

If the candidates are required to provide a description of, say, three items or factors and four items or factors are provided, then mark on a similar basis – that is downwards (as it is unlikely in this situation that a candidate will provide more than one response in each section of the response space.)

	Question	Answer	Mark	Guidance
1	(a)	 Always use the plunger when grating / slicing foods / do not put hands down tube when slicing / grating foods Check machine is assembled correctly Check machine is switched off when assembling / until ready to use / disassembling /removing food Check wires/plug are not damaged Check lid is on securely / correctly when using the liquidiser / blender attachment Disassembled before washing Do not allow flexes to trail / be near other hot appliances/ overhang work surfaces Do not leave unattended Do not over fill with liquids Do not overload plug socket Do not use with wet hands / switch on / switch off with wet hands/use near water Handle sharp blades with care / don't touch blades/ keep hands away from blades / don't leave sharp blade in water Switched off after use/before unplugging Use on a flat surface 	3	3 x1 mark Do not accept Do not put hands in
1	(b)	 Consistent product / evenly sliced / grated / cut / evenly mixed / no lumps Cuts more finely than doing it by hand One piece of equipment which can do different jobs / functions Saves human labour / energy Saves time / quicker / easier than doing by hand Useful if have limited hand coordination / strength / disability 	2	2 x 1 mark Do not accept quick / quicker / saves time on its own Easier must be justified e.g. easier than doing it by hand

	Questi	on	Answer	Mark	Guidance
2	(a)	(i)	5 portionsAt least 5 portions	1	1 x 1 mark
2	(a)	(ii)	 5 a day campaign / Change4Life Add colour / variety / texture / flavour to diet Can be low in calories Contain little / no fat / sodium / salt Contains antioxidants / protect against - cancers / coronary heart disease / strokes Eatwell Guide - largest portion / balanced diet / part of a healthy balanced diet Help to reduce obesity/ type 2 diabetes Increase fibre intake / reduces risk of constipation Increase micro nutrients /Vitamin C / vitamins / water soluble vitamins/ minerals (potassium, iron,) Lowers cholesterol Meet healthy eating guidelines / encourage healthy lifestyle / avoid snacking Peas, beans, lentils (pulses) provides protein Prevent memory deterioration / loss 	3	3 x 1 mark Do not accept healthy on its own
2	(b)		Fruit Blackcurrants Citrus fruits / lemons / oranges / limes / grapefruit Gooseberries Guava Kiwi Papaya Pineapple Raspberries Strawberries Tomatoes	2	2 x 1 mark one fruit and one vegetable Tomatoes – can be credited as either fruit or vegetables but can only be credited once

Question	Answer	Mark	Guidance	
	Vegetables Broccoli Brussel Sprouts / sprouts Green leafy vegetables e.g. cabbage / kale / pak choi Kohlrabi New potatoes, Peas Peppers / red / green/ yellow / bell pepper Spinach, Tomatoes Watercress			
2 (c)*	Advantages Can be cheaper / saves money Encourages use of seasonal British foods / better quality Fresher – ref to nutritional content / vitamin content Less time in transit therefore fresher Local / regional varieties of products available, often not seen in supermarkets Red Tractor / Soil Association / Organic mark reference to better standards. Reduced food miles / carbon footprint / pollution / energy required to transport food Some people consider they have a better flavour / texture Supporting local economy / farmers / farm shops Supporting use of traditional foods to UK / specific locations Disadvantages Cannot buy all the fruits and vegetables in one place Cannot support Fairtrade initiatives Climate – cannot grow certain crops e.g. bananas Limited variety / seasonally dependent	8	Must address advantages and disadvantages to be in Band 3 Band 3 (6–8 marks) There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated, showing a clear understanding and evaluation of the advantages and disadvantages of buying fruit and vegetables grown in the UK. Specialist terms are used appropriately and correctly. Band 2 (3 – 5 marks) There is a line of reasoning presented with some structure that is in the most part relevant and supported by some evidence showing an understanding and evaluation of the advantages and disadvantages of buying fruit and vegetables grown in the UK. There will be some specialist terms used although these may not always be used appropriately.	

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Question	Answer	Mark	Guidance
	 May be more expensive to buy local foods May increase personal use of fuel to shop Maybe limited supply as weather dependant Outlets selling local produce not accessible to all 		Band 1 (1 – 2 marks) The information is basic and communicated in an unstructured way. The candidate shows limited understanding and evaluation of the advantages and disadvantages of buying fruit and vegetables grown in the UK. Answers may be ambiguous or disorganised. (0) marks: no response worthy of credit

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	Question	Answer	Mark	Guidance
3	(a)	Enables cells to function properly	4	4 x 1 mark
		 Ensures mucous membranes and lungs /eyes /mouth / skin are kept moist / lining of the digestive system is moist /creation of saliva 		
		 Helps regulate the body's temperature (37°C) / keeps us cool / sweat evaporates and cools us Helps the kidneys flush out harmful / excess / foreign substances from our blood / remove filtered waste from the body as urine It transports nutrients/ oxygen/ CO2 round the body. Provides minerals /fluoride 		
		Required to help remove faeces / keep faeces soft		
3	(b)	Being confused / unable to concentrate / disorientated Changes in blood pressure Constipation Dark coloured urine Fainting / dizziness / light headed Feeling sick / nausea Feeling weak / hallucinating Headaches Irritability Quick heartbeat/ breathing Sleepiness / tiredness / drowsy / fatigued / lethargy Thirsty / dry throat Very dry skin	4	4 x 1 mark Do not credit vomiting

Question	Answer	Mark	Guidance
4 (a)	Protein Forms enzymes. Forms hormones. Growth / growth of muscle Maintenance of cells Renewal of cell proteins Repair body tissue Secondary source of energy Transports iron	6	6 x 1 mark 1 mark for each correct nutrient 1 mark for each correct function of the nutrient Do not accept: water - this is not a nutrient the same function for two different nutrients healthy bones / teeth
	 Fat Energy. Fat protects vital organs / kidneys. Form part of structure of cells. Insulation Satiety / feel full Source of the fat-soluble vitamins / A, D, E and K. Vitamin A Beta carotene / an anti-oxidant vitamin which might protect against cancer Eyes healthy / improves night vision Growth and development Keeps the lining of the throat, digestive system and lungs moist and free from infection Vitamin D Absorption of calcium Prevents rickets / osteomalacia / osteoporosis Strong bones and teeth 		Do not accept 'improves eyesight'

Question	Answer	Mark	Guidance
	 Vitamin B2 / Riboflavin Healthy skin Helps the release of energy from carbohydrates, fats 		Do not credit Vitamin B on its own, but 'release of energy' can be credited in function
	and proteinsIt is involved in the transport and metabolism of iron		
	 Normal growth Required for the normal structure and function of mucous membranes 		
	Vitamin B12 • Involved in energy production		
	 Normal functioning of nervous system Processing folic acid 		
	Red blood cell formation		
	Calcium • Blood clotting		
	Enzyme formationHeart regulation		
	Nerve and muscle functionPrevents osteoporosis		
	 Strong bones and teeth / development / growth / maintenance / prevents rickets 		
	Sodium / salt • Nerve transmission		
	Water balance in the body		
	Phosphorus		
	 Energy production/ prevents tiredness Growth / formation / maintenance of bones and teeth/ combines with calcium to harden teeth and bones. 		
	 Muscle function Prevents depression 		
	Structure of cell membranes		

Question	on Answer	Mark	Guidance
4 (b)*	 Milk is usually pasteurised and is cooled /30°C - to destroy harmful bacteria (but cheese can also be made with unpasteurised milk). Starter culture of bacteria / lactic acid bacteria is added - lactic acid bacteria change the lactose (milk sugar) in the milk into lactic acid. Lactic acid helps to coagulate (set) the protein in the milk and to preserve the cheese. It also helps to develop the flavour. Rennet is added and the mixture is left to set - this contains an enzyme which coagulates (sets) the milk and turns it into solids - curds and whey. Curd is cut so the whey is released for hard cheese the curd is cut finely so more whey is released. For soft cheese the whey is lightly cut. Draining of the whey - soft cheese the whey is left to drain away naturally, hard cheese the curds are heated and piled on top of each other to release more whey Cheese is then milled and for many cheeses salt is added for flavour and the curd is pressed into moulds The cheese is left to ripen. The temperature and humidity are controlled to produce different types of cheese. As the cheese ripens the colour, flavour and rind of the cheese develops. Domestic production - should be linked to the scientific explanations as in commercial production Lemon juice is added to the milk as a starter culture, to produce the curds and whey. It helps to coagulate and set the protein Curds and whey are separated Cheese is squeezed remove whey Addition of salt for flavour 	6	Accept reference to commercial or domestic production Band 3 (5 - 6 marks) There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated and clearly explains the order in which milk is made into cheese and what happens at each stage. Specialist terms are used appropriately and correctly. Band 2 (3 - 4 marks) There is a line of reasoning presented with some structure. The information presented is in the most-part relevant and supported by some evidence and explains the order in which milk is made into cheese and what happens in some stages. There will be some specialist terms used although these may not always be used appropriately. Band 1 (1 - 2 marks) The information is basic and communicated in an unstructured way. The candidate shows limited understanding of how milk in made into cheese. Answers may be ambiguous or disorganised. 0) marks: no response worthy of credit

	Questio	n	Answer	Mark	Guidance
4	(c)		 Caerphilly Cheddar Cheshire Cornish Yarg Derby / Sage Derby Double Gloucester Lancashire Lincolnshire Poacher Red Leicester Shropshire Blue Somerset Brie Stilton / White Stilton / Blue Stilton Stinking Bishop Wensleydale 	3	3 x1 mark Do not accept Leicester, Gloucester on its own Blue on its own
4	(d)	(i) & (ii)	 America / USA / American – Monterey Jack, Pepper Jack Cyprus / Cypriot - Halloumi Denmark / Danish- Danish Blue, Havarti Holland / Netherlands / Dutch - Edam, Gouda, Old Amsterdam France / French- Beaufort, Boursin, Bresse Bleu, Brillat Savarin, Brie, Camembert, Chaource, Chaoumes, Chevre Coulommier, Crottin, Epoisses, Fourme D'ambert, Gaperon, Gratte Paille, Livarot, Mont D'or, Munster, Pierre Robert, Pont L'eveque, Port Salut, Raclette, Reblochon, Roquefort. St. Agur, St Albray, St. Maure, Tomme De Savoie, Vignotte Germany / German - Bavarian Blue, Cambazola, Tilsiter Greece / Greek - Feta, Halloumi India / Indian - Paneer 	1 1	2 x 1 mark One mark for cheese One mark for correct country

Question	Answer	Mark	Guidance
	 Italy / Italian - Asiago, Bel Paese, Dolcelatte, Grana Padano, Gorganzo, Fontina, Mascarpone, Mozzarella, Filante, Pecorino Romano, Pecorino Sardo, Reggiano Ricotta, Parmesan, Taleggio Poland / Polish - Rokpol Spain / Spanish - Manchego, Picos Blue, Mahon Switzerland / Swiss - Appenzaller, Emmental, Gruyere – King Cut, Sbrinz,Tete De Moine 		

	Questi	on	Answer	Mark	Guidance
5	(a)	(i)	 Mixing Flour provide food for the yeast Gluten formed -from glutenin and gliadin / activated by water Warmth speeds up the reaction of yeast Water provides the conditions yeast requires to function (warmth and moisture) – fermentation / activates Yeast is distributed throughout the mixture during mixing - so you get even rising 	2	2 x 1 mark 1 mark for the statement 1 mark for explanation Example of two mark response. Water and oil creates moist conditions for the yeast to ferment
5	(a)	(ii)	 Kneading Gluten is developed (gliadin and glutenin proteins in wheat) - forms an elastic stretchy dough This allows the gas / carbon dioxide produced to be held in / expand the dough 	2	2 x 1 mark 1 mark for the statement 1 mark for explanation
5	(a)	(iii)	 Proving Carbon dioxide produced by yeast - CO2 expands / dough rises Gluten stretches - which gives bread the structure Proteins in the flour line up and strands of gluten form to create a matrix within the bread dough 	2	2 x 1 mark 1 mark for the statement 1 mark for explanation
5	(a)	(iv)	 Baking Browning due to starch changing to sugar Dextrinisation occurs giving bread its golden colour Gases / CO2 in dough expand ('ovenspring')- until protein is set Moisture turns to steam / evaporates – due to high temperature / heat Protein / gluten coagulates /sets / hardens / - forming structure Yeast is killed - no more carbon dioxide is produced 	2	2 x 1 mark 1 mark for the statement 1 mark for explanation

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	Question	Answer	Mark	Guidance
5	(b)	 Makes the nutritional content similar to another product (e.g. butter and margarine) To help sell the product / health promoting benefits To increase their nutritional value / adds nutrients To replace nutrients lost during the processing of food To supplement specific dietary needs in certain countries To target a group of the population with specific nutrients 	2	2 x 1 mark
5	(c)	Brown flourMargarineWhite flour	1	1 mark Do not accept 'flour' on its own

Que	estion	Answer	Mark	Guidance
6 (a	a)	Mayonnaise Olive oil Vegetable oil Scones Butter Hard Margarine Stir-fried vegetables Lard Olive oil Vegetable oil White vegetable fat Shortcrust pastry Butter Hard Margarine Lard White vegetable fat	4	4 x 1 mark Do not accept the same fat / oil more than once Only credit mark if clearly selected fat from the drawings. (the following meet this criteria - margarine, white fat, oil)
6 (b	o)	 Angina Breathlessness Cancer Clog / block / narrow arteries Diabetes High blood cholesterol / cholesterol levels High blood pressure Obesity / overweight Osteoarthritis Strokes Varicose veins 	3	3 x 1 mark Do not accept heart attacks Do not accept one word answers

	Question	Answer	Mark	Guidance	
6	(c)	 Saturated fats - generally animal fats polyunsaturated fats - usually from vegetable sources Saturated fats are solid at room temperature – polyunsaturated fats are liquid Saturated fats – each carbon atom is combined with 2 hydrogen atoms, all have single bonds/saturated with hydrogen atoms, polyunsaturated have more than one carbon atom that can take a hydrogen atom / 2 or more double bonds 	4	4 x 1 mark 2 marks for clear statements 2 marks for the explanation / comparison	

Question	Answer	Mark	Guidance
7	 Avoid alcohol Calcium and vitamin D for her own and baby's bone and tooth development. Look for fortified foods - examples given. Named good sources of calcium / vitamin D e.g. dairy products. Consider methods of cooking in order to retain vital nutrients e.g. steaming to retain vitamin C Drinks lots of water - prevention of dehydration Folic acid - often taken as supplements during early pregnancy / reduce risk of spina bifida Foods not recommended to be eaten in pregnancy - pate, soft blue cheeses unless cooked, unpasteurised cheeses - clear explanations linked to harmful bacteria. Liver because of the high vitamin A content / vitamin A supplements to be avoided. Always eat cooked, rather than raw, shellfish Good supply of fruit and vegetables to provide fibre and vitamin C / 5 a day - to avoid bleeding gums Healthy breakfast to avoid snacking High levels of caffeine can result in babies having a low birthweight Increase fibre to prevent constipation - bowels can become sluggish, states good sources of fibre Iron - prevents anaemia and is for baby's developing blood supply Myth that you need to eat for two Not too many fatty and sugary foods - does not want to put on too much weight, only in final 3 months of pregnancy extra 200 calories needed per day Not too many salty foods as this can result in sweating or pre-eclampsia Protein for growth of the baby 	12	To be awarded marks in Band 3 candidates must make reference to the pregnant woman and the child Band 3 (9–12 marks) There is a well-developed line of reasoning which is clear and logically structured. The information presented is relevant and substantiated. Shows thorough knowledge of assessing the factors that contribute to the correct dietary advice given to women to ensure a healthy pregnancy and new born baby Band 2 (5–8 marks) There is a line of reasoning presented with some structure which is in the most part relevant. A good well-balanced answer showing good knowledge and a clear understanding of with reference to assessing the factors that contribute to the correct dietary advice given to women to ensure a healthy pregnancy and new born baby Band 1 (1–4 marks) The information is basic and communicated in an unstructured way. The information is supported by limited evidence and the relationship to the evidence may not be clear. Some analysis and demonstration of knowledge with reference to assessing the factors that contribute to the correct dietary advice given to women to ensure a healthy pregnancy and new born baby O Marks: no response worthy of credit

Question	Answer	Mark	Guidance
	 Reference to Eatwell Guide for the correct proportions of foods - still relevant to pregnant women. Vegetables and starchy carbohydrates largest portions Try to eat two portions of fish a week, one of which should be oily fish such as salmon, sardines or mackerel. Avoid having more than two portions of oily fish a week, because it can contain pollutants (toxins). Do not eat shark, swordfish or marlin. 		

Question	Answer	Mark	Guidance
8 (a)	 Advertisements / on the television /radio / internet / cinemas / newspapers / magazines /posters / flyers / sides of buses / trains / 'pop ups' on digital media e.g. Phone, iPad etc / children, family events e.g. agricultural shows / food shows Celebrity endorsements e.g. by sports or pop stars Competitions Displays in supermarkets / shop windows Eye-catching, attractive / fun / colourful packaging / catchy slogans Family size package / portions Free gifts / games Free samples / tasting in supermarkets Nutritional claims Special money offers / 'buy one get one free' (bogof) / money-off coupons / additional points on loyalty cards / low introductory price 	4	4 x 1 mark

Question	Answer	Mark	Guidance
8 (b)	 Able to compare products -suitable for a specific target group Accurately monitor nutrient intake – correct proportions of nutrients to provide / help provide a balanced diet Allows healthy choices – lower /less fat, sugar, salt, more fibre linked to Eatwell Guide Check it is suitable for a named specific diet e.g. lower fat diet / diabetic / high fibre / low salt - to reduce the risk of dietary related diseases Provide help on a calorie controlled diet - know how many calories are in the food to prevent obesity / to meet activity needs / increase weight linked to eating disorders Provides a guide to portion size – shows contribution to daily amounts of nutrients required / dietary reference intake 	4	4 x 1mark 2 marks for reasons 2 marks for explanations Do not accept the same explanation twice 'Informed decision / choice' can be accepted as an explanation once

Question	Answer	Mark	Guidance
9 (a)	Savoury pasty Addition of seeds on top e.g. sesame seeds, poppy seeds / cheese Addition of spices / herbs to add colour e.g. curry powder / turmeric Decorative edges / fluted edges Glaze / egg glaze / milk glaze / butter on filo pastry Interesting shape Pattern / lattice on top Shortbread biscuit Added ingredients e.g. chocolate chips, fruit Crimping edges Fluted cutter Interesting shape Interesting pattern on top / use of biscuit stamp Sprinkle with sugar / icing sugar Use of icing / coating Chicken curry and rice Add colourful ingredients to the rice e.g. vegetable Adding a colourful vegetable to sauce Garnish - tomato / parsley/ coriander / herbs Serve rice shapes - using a mould / rice on outside curry in the middle Served with relevant named accompaniments e.g. chutney Use brown rice/colour the rice White bread rolls Addition of colourful ingredients e.g. sun dried tomatoes, turmeric Addition of ingredients on top / seeds on top / named seed on top / oats / named food Attractive shape / accept given shape e.g. twist / plait etc.	4	4 x 1 mark Do not accept the same method more than once

	Questic	n	Answer	Mark	Guidance
			 Cutting / patterns on top Dusting with flour Glaze /egg glaze/ milk glaze 		
9	(b)		 Digital probe Food probe Food thermometer Meat probe Meat thermometer Temperature probe 	1	1 mark Do not accept thermometer or probe on its own
9	(c)	(i)	• 0 - 8°C • 5 °C • 0 - 5 °C	1	1 mark Accept any single temperature between 0 and 8°C Accept a range between 0-8 °C e.g. 1 - 5 °C Must have the C in answer
9	(c)	(ii)	• -18 °C	1	1 mark Must have the C in answer
9	(c)	(iii)	• 5 - 63 °C • 8 - 63 °C	1	1 mark Must be a range, not a single figure Must have the C in answer
9	(d)	(i)	 Bacillus Cereus Botulism Campylobacter Clostridium (perfringens) Clostridium (botulinum) Escherichia coli / E. coli Listeria Salmonella Shigella Staphylococcus (aureus) Streptococcus 	3	3 x 1 mark

Ques	stion	Answer	Mark	Guidance
9 (d)) (ii)	 Cooked meat and poultry/ cook chill products Cooked rice Gravies, stocks, soups and stews Ice cream Dairy foods / named dairy food Named products containing fresh cream Pate Pre - packed sandwiches Protein based baby foods Fish Raw egg e.g. in chilled desserts and mayonnaise Shellfish and seafood / named shellfish or seafood Soya milk Unwashed fruit and vegetables 	3	3 x 1 mark Must state cooked meat

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