

GCSE

Design and Technology: Food Technology

Unit **A525**: Sustainability and technical aspects of designing and making 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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Annotations

Annotation	Meaning
LI	Level 1
L2	Level 2
L3	Level 3
SEEN	Noted but no credit given
✓	Tick
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.

Question	Answer	Marks	Guidance
1	A	1	
2	В	1	
3	В	1	
4	C	1	
5	A	1	
6	Microwave	1	
	Microwave safe.		
	Suitable for microwaving		
7	Bubble and squeak	1	1 mark
	Cheese and potato pie		Accept any suitable named product
	Cottage pie		Do not just accept pie on its own
	Croquettes		Do not accept potato served as an accompaniment e.g.
	Fish pie		sausage and mash
	Fish cakes		
	Gluten free cakes / lemon drizzle / lemon and orange		
	cake		
	Gnocchi		
	Pastry		
	Potato cakes		
	Potato pancakes		
	Potato waffles		
	Potato scones		
	Rissoles		
	Samosa		
	• Scones		
	Shepherd's pie		
	Soup		
	Vegetarian Kofta		
8	Ensure the survival of traditional English varieties	1	1mark
	Fresher		Do not accept reduces transport costs, better for the
	Less food miles / air miles / not travelled so far		environment
	May be cheaper than imported foods		Do not accept cheap / cheaper unless it is qualified
	May have a better flavour / taste / texture		
	Reduce carbon footprint / CO2 emissions / greenhouse		
	gases / pollution		

Q	uestion	Answer	Marks	Guidance
		Support local farmers / economy/ companies / product is local		
9		 Allergic reaction / allergy Asthma Difficulty in breathing Headaches Hyperactivity Link to cancer Nausea Skin rashes Tightness of face / neck / chest Want them to eat natural foods / can mask poor quality ingredients 	1	1 mark Do not credit hyper on its own Do not accept health problems Do not accept reference to healthier
10		 Biodegradable / compostable Can be made from recycled material Recyclable Renewable / sustainable Trees can be replanted 	1	1 mark Do not accept environmentally friendly / eco friendly
11		False	1	U
12		True	1	
13		False	1	
14		True	1	
15		True	1	
16	(a)*	 Balance meals -based on the Eatwell Plate / Eatwell Guide– added health benefits, weight loss. Link to Government guidelines / recommendations Breakfast – high in calories - lack of fresh fruit / slow release energy foods / low GI foods to sustain through morning at school / regulate blood sugar levels / breakfast is considered the most important meal of the day. 	6	6 marks Accept reference to either the Eatwell Plate or Eatwell Guide. Do not award level 3 unless clear reference to government recommendations If candidates list in bullet form or just give swaps of food – maximum marks – 2
		 High red meat consumption -(red meat in lasagne) higher in fat Lack of variety in foods Lack of water intake – could be tired / poor skin / dehydration - lack of concentration (Eatwell guide 6-8 		Do not accept reference to exercise. Level 3 (5–6 marks) Thorough discussion, showing a clear understanding of how and why Mary's diet should be changed, detailed reference

Question	Answer	Marks	Guidance
	glasses) Make own food from fresh, try and get help to plan meals No fish, - lacks omega-3, low fat, protein food Not enough calcium - have smoothies as a drink / milk based. Not enough fibre - reference to the function of fibre in the diet. Makes suitable changes / includes more fruit and vegetables / preferably raw / use of whole cereal products e.g. whole wheat bread / pasta. Not enough fruit and vegetables - at least / 5 a day / substitute snacking foods such as cake / chocolate for fruit and vegetables / will increase fibre as well as vitamin content of diet / fruit and vegetables do not contain fat. Not enough iron - intake needs increasing because of being a girl / periods, therefore good source of vitamin C needed to help absorb iron. Reduce the number of ready meals bought and consumed — usually high in fat, sugar, salt and energy; low in fibre, vitamins and minerals Too much energy/calories/Kcal/kJ - reference made to how to adapt recipes / shopping for lower calories / fat / sugar alternatives. Ref to the Eatwell plate / Eatwell Guide as a model to base eating patterns on. Too much fat – especially saturated fat - reference made to how to adapt recipes / shopping for lower fat alternatives. Ref to the Eatwell plate / Eatwell Guide as a model to base eating patterns on / smallest portion of the Eatwell plate Too much salt/sodium caused by eating processed food - make own food, avoid processed foods, use alternatives to salt to season foods Too much sugar - suggesting alternative foods for energy snacks e.g. fruit / raw vegetables and alternatives for fizzy drinks e.g. water / milk		made to the government recommendations. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate can demonstrate the accurate use of spelling, Level 2 (3–4 marks) Adequate discussion, showing an understanding of how and why Mary's diet should be changed, some reference made to the government recommendations. There will be some use of specialist terms, although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation Level 1 (1–2 marks) Basic discussion, if candidates only write in point form a maximum of 2 marks should be awarded, showing some understanding of how and why Mary's diet should be changed, limited reference made to the government recommendations. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised or 'list like'. Errors of grammar, punctuation and spelling may be intrusive. 0=no response worthy of credit

Q	uestion	Answer	Marks	Guidance
16	(b)	 Reduce the fat Add more vegetables Drain off excess fat Reduce the amount of beef / bacon / meat Reduce the amount of cheese Reduce the amount of oil / use thin layer of cooking spray Remove the fat from the bacon Remove the meat / bacon Remove the oil from the recipe / dry fry Remove the parmesan cheese Swap the beef for Quorn or minced turkey or chicken / use TVP (textured vegetable protein) Use a reduced fat / lean minced beef Use of pulse vegetables instead of meat Use reduced fat cheese 	4	4 x 1 mark Do not accept the same answer for both parts - particularly with add extra vegetables Do not accept low fat parmesan / cheese
		 Increase the fibre content Addition extra vegetables Addition of any two named vegetables Use fresh tomatoes Use Quorn / TVP Use whole wheat spaghetti 		If adds two named suitable vegetables award 2 marks
16	(c)	 Can be used as fertiliser - as biodegradable / decomposes/ puts nutrients back into the soil / improves soil quality / cheap way of producing own compost / cheaper than having to buy compost Recycling- so that peelings are reused Saves food going to landfill sites - these will eventually be full / less CO2 emissions / methane gas 	2	2 x 1 mark Accept either two separate points or one explained point Explanations can mix and match. Do not accept better for the environment.
16	(d)	 Can cook tougher / cheaper cuts of meat successfully / tender meat Reduces fuel costs Reduces the amount of energy used Retention of B vitamins 	2	2 x 1 mark Candidates may make general points or write specifically about a piece of equipment. Do not credit the same point for the two pieces of equipment e.g. Using a pressure cooker reduces the cost of fuel Using a slow cooker reduces the cost of fuel

Qu	estion	Answer	Marks	Guidance
		Pressure Cooker Foods which normally take a long time to cook e.g. stews casseroles cooked in less time than in the oven / saves time / cooks quickly Whole meal can be cooked in one pan Slow cooker Allows meals to be cooked when you have been out all day. Convenient		
16	(e)	 Animal welfare is monitored Farmers preserve wildlife habitats Food or drink has met high production standards Foods produced safely Fully traceable back to independently inspected farms in the UK Hygiene in production Mark of quality Reliable source UK source 	1	1 mark Accept any reference to food / water / shelter / space under animal welfare.
16	(f)	Use by dateUse by	1	1 mark
16	(g)	 Final cost of the food product – consumers make choices based on price / foods cost more / more used higher cost of the food / affects profits / use less energy and the price will be less to the customer/may mean more sales. Carbon footprint / eco footprint – linked to consumer choice / reputation of manufacturer. CO2 emissions - global warming / which can damage the environment / reference to ozone layer / pollution / climate change Food miles – transport / CO2 production Using non renewable energy – will eventually run out / need to consider alternatives. 	4	4 x1 mark 2 marks for statements 2 marks for explanations
17	(a)	 Cooked meat above the raw meat Tomatoes in the salad drawer 	3	3 x1 mark Do not accept raw meat in the salad drawer and tomatoes

Q	uestion		Answer	Marks	Guidance
		Raw meat on the bo	ottom shelf		on the top shelf
17	(b)	Preservation Method Bottling	Food preserved by this method Fruit Sauces	4	4 x1 mark Do not accept the same food product more than once.
		Canning	 Vegetables Casseroles Fish Fruit Meat Name of canned food e.g. macaroni cheese Sauces Soups 		Accept any correct answer for example Do not accept different types of the same product e.g. fruit as an answer for one product and a named fruit for another product
		Curing	VegetablesFishMeat		
		Drying	 Any named dried fruit Any named dried herb Any named dried vegetable Coffee Egg Fish Grains Meat Milk powder Pot noodles / snack pot Soups 		
		Freezing	 Bread Cakes Fish Fruits Icecream Meat Named ready meal 		

Question		Answer	Marks	Guidance
		PiesVegetables		
	Jam making / marmalade	 Any named fruit which is suitable for jam making / marmalade 		
	Modified atmospheric (MAP) / controlled atmospheric (CAP)	Fruits and vegetablesFishMeatFresh pasta		
	Pasteurisation	CreamMilkFruit juice		
	Pickling	ChutneyEggsFishNutsVegetables		
	Salting	FishMeatLemonsVegetables		
	Smoking	Fish Meat		
	Sterilisation	Any named canned productFruit juiceMilk		
	UHT - Ultra heat treatment	CreamFruit juicesMilkPrepared saucesSoups		
	Vacuum packing	FishMeatChestnuts		

Q	uestion	Answer	Marks	Guidance
17	(c)*	 Avoid cross contamination - clear explanation reference transferring of bacteria from raw to cooked foods / direct / indirect cross contamination / use of different coloured chopping boards for different foods Check dates on perishable foods before preparing them. Clean work surfaces / equipment before and after food preparation / use of sanitiser Defrost frozen - to ensure that they are properly cooked / foods before preparation unless it says they can be cooked from frozen High standard of personal hygiene - personal hygiene rules are followed ref – washing hands / removal jewellery etc Leave perishable food in fridge till ready to use - reference to the slowing down of bacteria in fridge Use colour coded equipment Wash fruits and vegetables before using 	6	If candidates list in bullet form – maximum marks – 2 Level 3 (5–6 marks) Thorough discussion, showing a clear understanding of the advice you would give to consumers about preparing food hygienically in the home. Specialist terms will be used appropriately and correctly. The information will be presented in a structured format. The candidate can demonstrate the accurate use of spelling, grammar and punctuation. Level 2 (3–4 marks) Adequate discussion, showing an understanding of the advice you would give to consumers about preparing food hygienically in the home. There will be some use of specialist terms, although these may not always be used appropriately. The information will be presented for the most part in a structured format. There may be occasional errors in spelling, grammar and punctuation. Level 1 (1–2 marks) Basic discussion, if candidates only write in point form a maximum of 2 marks should be awarded, showing some understanding of the advice you would give to consumers about preparing food hygienically in the home. There will be little or no use of specialist terms. Answers may be ambiguous or disorganised or 'list like'. Errors of grammar, punctuation and spelling may be intrusive. 0=no response worthy of credit
17	(d)	 Enforce food safety laws Ensure food is safe / fit to eat Give a hygiene rating Instigate prosecutions if necessary / close down Offer advice and support Provide training for food handlers / give talks Reduce sources of contamination / monitor working conditions and hygiene / inspect work places Remove any suspect food 	2	2 x 1 mark Accept answers which are related to food only

Question	n Answer	Marks	Guidance
	 Trace cause of food poisoning outbreak/follow up complaints Trace sources of contamination / food poisoning 		
18 (a)	 Amount of food we eat balances - with the amount of energy we use If the amount of food consumed is greater than the energy used - then weight increases If the amount of food consumed is less than the energy used - then weight is lost 	2	2x1 mark
18 (b)	Starch	1	1 mark
18 (c)	Savoury product - Candidate indicates no additional sugar is in the recipe (unless required e.g. in a sweet and sour sauce) Candidates list main ingredients Seen in the name of the dish. Contain a complex carbohydrates - Flours, Named cereals Named fruits and vegetables Oats, Seeds e.g. sunflower Starchy foods e.g. rice, pasta, cous cous, noodles, vegetables which are starchy e.g. peas, beans, lentils, breakfast cereals, cassava, potatoes Whole grain rice / pasta. Contains proteins Beans Cheese Eggs Fish Lentils	6	6x1 mark If not designed an 'eat on the go' product - no marks Labelled foods should be clearly linked to the specification point e.g. Wholemeal bread – complex carbohydrate 1 mark for how it is savoury 1 mark for complex carbohydrate food 2 x 1 mark for protein foods 1 mark for how it is attractive 1 mark for quality of annotation / or explaining how it is suitable to eat on the go

Question	Answer	Marks	Guidance
Question 18 (d)	 Meat Milk Nuts Peas Quorn Seeds Soya / TVP To be attractive Colour Glazes Shape Use of decoration Way the ingredients are arranged Eatwell plate / Eatwell guide- reference to using this as a basis to choose foods to eat / linked to the proportions / description of the different groups - bread, rice, potatoes,	Marks 4	4 x 1 mark 2 x1 mark for a statements 2 x 1 mark well explained point
18 (e)	 pasta and other starch foods /fruit and vegetables / milk and dairy / meat, fish, eggs, beans, non dairy sources of protein, foods and drinks high in fat and or sugar Eating a range of foods - contain a variety of nutrients The amount of food will depend on different factors - age, occupation, health and should be adapted to meet these needs Using the 8 tips for healthy eating -base diet on starch foods, eat lots of fruit and vegetables, eat more fish / oily fish, cut down on saturated fat and sugar, reduce salt / less than 6g per day, get active, drink plenty of water, don't skip breakfast Alcohol Diabetes Eating a diet high in dairy products / red meat Eating a diet high in fat 	2	Credit a clear explanation of not having a balanced diet with an appropriate example. 2 x 1 mark Do not just credit fat / saturated fat - needs to show that they understand it is a diet high in these
	 Eating a diet high in saturated fat Family history High blood pressure / too much salt / sodium 		

Que	estio	n	Answer	Marks	Guidance
			 Lack of exercise Obesity / being overweight Raised levels of cholesterol / high cholesterol Smoking Stress 		
19	(a)		 2 more than 2 at least two portions	1	1 mark
19	(b)	i	Mackerel	1	1 mark
	(b)	ii	• Cod	1	1 mark
19	(c)		 Vitamin A / retinol / beta carotene Healthy skin Healthy eyes Healthy immune system Improves night vision Lining of the nose Maintains skin Produces pigments in retina of the eyes Vitamin D Absorption of calcium / phosphorus Prevention of rickets / osteomalacia / brittle bones / osteoporosis Strong bones Strong teeth Vitamin E / tocopherol Antioxidant Healthy skin, eyes Helps cell walls remain healthy Strengthens immune system Thought to reduce the risk of cancer and CHD Vitamin K Helps the blood to clot 		4 x 1 mark Credit function if relates to a fat soluble vitamin even if the vitamin is incorrect.

Question			Answer	Marks	Guidance	
19	(b)		• • • • • • • • • •	Body cannot make them Controls inflammations Essential to regulating body processes Helps make hormones, Helps prevent eczema Helps prevent heart disease and strokes, Helps prevent rheumatoid arthritis Helps to protect the heart May help memory / concentration Provides essential fatty acids Regulates genetic functions, Supports healthy development of baby in pregnancy / breast feeding Thins blood	1	1 mark
19	(e)	i	•	_	1	1 mark
19	(e)	ii	• • • • •	Does not add any fat to the cooking - part of a healthy diet / fewer calories Food is light in texture - easy to eat / digest / tender Gentle / delicate method of cooking - prevents breaking up of food / keeps its shape / not over cooked Moist method of cooking - prevents the food drying out Reduces loss of water soluble vitamins - vitamin B group	2	2 x1 mark 1 mark for statement 1 mark for explanation
19	(f)		•	Can adapt production line for other products Faster than other methods of production High volumes of products quickly produced Highly automated / unskilled labour / not specialised Ingredients bought in bulk / ingredients cost less Large number produced Low costs after initial set up. Orders met quickly and efficiently Wages costs reduced	2	2 x 1 mark Do not accept faster, cheaper quicker on their own
19	(g)		•	All identical / look the same Amount of coating / thickness of coating / even coating Colour	2	2 x 1 mark

Question	Answer	Marks	Guidance
	Metal detection		
	Microbiological testing		
	Moisture		
	Shape / not broken		
	• Size		
	Thickness of fish		
	Texture of coating		
	Weight		

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