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FOOD AND NUTRITION

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Paper 1 Theory

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MARK SCHEME

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This document consists of **13** printed pages.

Question	Answer	Marks
1(a)	<i>elements which make up fats and oils</i> carbon hydrogen oxygen;	1
1(b)	<i>facts about monounsaturated fats</i> molecule can accept more hydrogen; molecule has <u>one</u> double (carbon-carbon) bond; liquid (at room temperature); plant origin; <u>more</u> reactive;	2
1(c)	<i>sources of polyunsaturated fats</i> sesame (seed) oil; sunflower (seed) oil; maize oil; corn oil; flax oil; rape seed oil / canola; palm oil; oily fish (or named e.g.); fish liver oil (or named e.g.); soya bean oil; safflower oil; nut oil (or named e.g.) nuts;	2
1(d)(i)	<i>Type of enzyme involved in the breakdown of fat in the digestive system</i> <u>lipase</u> ;	1
1(d)(ii)	<i>end products of fat digestion</i> glycerol and fatty acids;	1

Question	Answer	Marks
1(e)	<p><i>ways saturated fat intake could be reduced in meals</i></p> <p>eat red meat only occasionally / eat smaller portions; trim off visible fat from meat; eat fish in place of meat high in saturated fat; use vegetable oils such as sunflower / olive oil instead of saturated fats such as butter; flavour foods with herbs / spices instead of saturated fat rich toppings and sauces; read labels carefully to check saturated fat content; reduce consumption of ready made /processed meals due to high saturated fat content / increase consumption of home-made meals; use lower fat versions e.g. semi-skimmed milk, skimmed milk, yoghurt over cream or use less of the full fat products; use meats low in fat, e.g. chicken; remove skin from poultry; use lean cuts of meat; use less fat in cooking; grill / bake / steam / boil foods instead of frying / roasting;</p>	5
1(f)	<p><i>name of deterioration process of fats and oils</i></p> <p><u>rancidity</u>;</p>	1

Question	Answer	Marks
2(a)	<p><i>nutrient formed from amino acids</i></p> <p><u>protein</u>;</p>	1
2(b)	<p><i>sources of protein suitable for a lacto-vegetarian</i></p> <p>milk; cheese; eggs; Quorn; beans; peas; cereals / named cereal; nuts; pulses; soya; yoghurt;</p>	3

Question	Answer	Marks
3(a)	<i>another name for vitamin A</i> retinol / beta-carotene;	1
3(b)	<i>plant sources of vitamin A</i> green leafy vegetables (or one named e.g. spinach / watercress / parsley / cabbage); papaya; carrot; apricots; pumpkin; squash; tomatoes; orange; margarine;	3
3(c)	<i>effect on the body of a deficiency of vitamin A</i> night blindness / xerophthalmia; bone development in children; poor growth in children; dry skin; mucous membranes; chest infections	1

Question	Answer	Marks
4(a)	<i>sources of vitamin D</i> oily fish (or named e.g.); fish liver oil (or named e.g.); butter; eggs; sunshine; margarine; (fortified) breakfast cereals; milk; cheese; yoghurt; red meat (or named e.g.); liver;	3
4(b)	<i>effect on children due to deficiency of vitamin D</i> <u>rickets</u> ;	1
4(c)	<i>effect on adults due to deficiency of vitamin D</i> osteoporosis; osteomalacia;	1

Question	Answer	Marks
5(a)	<i>Symptom of scurvy</i> fatigue / pain in limbs / red-blue spots on skin / swollen or bleeding gums	1
5(b)	<i>functions of vitamin C</i> to make connective tissue / formation of collagen; heals wounds / fractures; absorption of iron; antioxidant; helps to build strong bones and teeth; production of blood / walls of blood vessels; build / maintain healthy skin; healthy gums; support the immune system / helps prevent illnesses; resistance to infection / helps prevention of infection; building / maintenance of linings of digestive system;	3

Question	Answer	Marks
6(a)	<i>plant sources of iron</i> cocoa / plain chocolate; curry powder; black treacle; dried fruit (or named e.g.); pulses / soya beans / beans / peas; green vegetables (or named e.g.);	2
6(b)	<i>animal sources of iron</i> liver; kidney; red meat (or named e.g.); corned beef; eggs;	2

Question	Answer	Marks
7	<p><i>reasons for the use of additives in convenience foods</i></p> <p>colours to make the food look attractive; extend the shelf life / stop the growth of bacteria; sweeteners to enhance sweetness / replace sugar to make food 'low sugar'; to improve the consistency / texture to improve the appearance; to emulsify; flavourings / flavour enhancers to improve taste by adding / restoring; antioxidants to prevent rancidity/slow down enzyme activity in fruit / veg; nutrient replacement/fortification to replace/enhance loss in processing;</p>	5

Question	Answer	Marks
8(a)(i)	<p><i>gas produced when bicarbonate of soda is used to make gingerbread</i></p> <p>carbon dioxide;</p>	1
8(a)(ii)	<p><i>reasons why spices are used when making gingerbread</i></p> <p>flavour; aroma; to mask flavour of washing soda;</p>	2
8(b)	<p><i>List three methods of introducing air into a mixture</i></p> <p>sieving; creaming; whisking; rolling and folding; rubbing in; beating;</p>	3

Question	Answer	Marks
8(c)(i)	<i>raising agent used in a bread roll</i> yeast	1
8(c)(ii)	<i>raising agent in a sausage roll made with flaky pastry</i> air / steam	1
8(c)(iii)	<i>raising agent used in a Yorkshire pudding</i> steam / air	1
8(c)(iv)	<i>raising agent used in scones</i> baking powder;	1

Question	Answer	Marks
9(a)	<i>List the steps used to make the scone dough</i> sieve flour and salt; rub butter into flour; with fingertips; till fine breadcrumbs; add sugar; stir in milk; to make a soft not sticky dough; knead mixture gently;	5
9(b)	<i>functions of the butter in the recipe</i> adds colour; adds flavour / taste / enriches; holds air bubbles / holds air / traps air when rubbing in; extends shelf life; increases moisture / prevents drying out; shortens flour mixture / improves mouth feel / crumbly texture	3

Question	Answer	Marks
9(c)	<p><i>ways the recipe could be adapted to provide a savoury scone</i></p> <p>cheese; herbs; any meat e.g. salami / ham; nuts; olives; sun dried tomatoes; courgettes;</p>	2
9(d)	<p><i>ingredients which could be added to make recipe suitable for a person who suffers from constipation</i></p> <p>add sultanas / raisins / currants / cherries / any other dried fruit; add any suitable fresh fruit; add any suitable fresh vegetable; use wholemeal flour; use nuts; add bran / oat bran;</p>	3
9(e)(i)	<p><i>the scones are doughy in the middle</i></p> <p>not cooked long enough; oven too hot; too much liquid; scones cut too big; oven too cool;</p>	2
9(e)(ii)	<p><i>the scones are too thin</i></p> <p>rolled too thinly; no raising agent / plain flour / not enough self-raising flour used; wholemeal flour used; too much handling;</p>	2

Question	Answer	Marks
9(f)	<p><i>benefits of plastic as a packaging material</i></p> <p>lightweight; recyclable; can be printed on so no label needed; can be used in microwave; cheap; can be used in freezer / resistant to low temperatures; see through / can see contents; mouldable / flexible; can be coloured; resistant to moisture / impermeable; can be fused to seal / airtight; strong / durability;</p>	4
9(g)(i)	<p><i>microwave symbol</i></p> <p>shows food is microwaveable; can avoid product if microwave not available; may indicate cooking time / power level;</p>	1
9(g)(ii)	<p><i>freeze on day of purchase</i></p> <p>allows consumer to see that they can use (the scone) at a later date if frozen on day of purchase; so helps consumers plan ahead / bulk buy / take advantage of offers / save money; reduce food spoilage;</p>	1

Question	Answer	Marks
9(g)(iii)	<i>this product contains wheat</i> coeliac disease warning / gluten intolerance; coeliacs know to avoid this product;	1
9(g)(iv)	<i>Möbius loop</i> indicates that the wrapping is capable of being recycled; sometimes used to indicate that the packaging is a product of recycling;	1

Question	Answer	Marks
10(a)	<p><i>reasons why preserved foods are useful in the home</i></p> <p>to provide food when supply is limited; to enjoy food out of season; to give variety / different flavours / textures / make new products like jam / pickles; to cope with a glut; prevents waste / food spoilage / decay / to extend shelf life; to enjoy produce of other countries; to save money when quality is best and cost is lowest; to use in emergencies / famine / war; to prevent the re-entry of microorganisms by sealing well; easy / quick to prepare;</p>	6
10(b)(i)	<p><i>example of preserving in the home by the use of high temperature</i></p> <p>jam making; bottling; canning;</p>	1
10(b)(ii)	<p><i>example of preserving in the home by the use of an acid</i></p> <p>pickling; chutney making;</p>	1
10(c)	<p><i>importance of blanching vegetables before they are frozen</i></p> <p>blanching stops action of enzymes / spoilage / decay of veg will be halted; colour retained; flavour retained; texture retained; nutritive value retained;</p>	2

Question	Answer	Marks
11(a)	<p><i>Discuss factors other than nutrition which need to be considered when preparing and serving meals for a toddler.</i></p> <p>eat meals with rest of family as eating is a sociable occasion / they learn from others and enjoy interaction; cut / mash food if necessary to encourage independence / children may be put off by too much chewing / makes the food easier to eat and digest; no bones; serve small portions which encourages child to eat everything / not daunting; have regular mealtimes; do not use food as a reward or punishment; serve food attractively; variety of colours; variety of flavours; variety of textures; avoid highly flavoured / spicy foods; serve water / non added sugar squash / diluted juice / smoothies with meal to prevent dental caries / sweet tooth; introduce new foods / wide variety of foods to reduce the chances of them becoming fussy eaters; avoid lots of greasy / fried food; avoid overfeeding to prevent risk of obesity in later life; make meal times fun positive experiences to help encourage children to eat healthily long and short term; take time to enjoy the food as children can take a long time at meal times as well as getting used to new foods; child could learn bad behaviour / negative associations if mealtimes are stressful or rushed which could discourage trying new things or eating in general / no force feeding; food must not be too hot or child may burn their mouth; do not give too many snacks children have smaller appetites and might fill up on snack rather than main meals; do not give foods containing nuts to children if a family member has a diagnosed allergy; ensure eggs are well cooked to prevent risk of salmonella food poisoning; use additive free food; avoid giving foods with high salt content; avoid foods with high sugar content; serve some finger food which is easy to manage / eat as they may not be good with cutlery; serve food on child's own special plate / cup / unbreakable crockery and utensils; involve child in food preparation;</p>	15

Question	Answer	Marks
11(b)	<p><i>Compare and contrast the advantages and disadvantages of frying and steaming as methods of cooking.</i></p> <p>frying is a dry method AND steaming is a moist method; frying quick method of cooking AND steaming slow method; frying saves fuel AND economical use of fuel for steam; frying food becomes brown / appealing colour AND steaming pale, insipid colour; frying food has crisp surface AND steaming soft texture, lacks bite; frying flavour developed AND steaming flavour not developed; frying food has appetising smell AND steaming little aroma developed; frying adds calories without adding bulk AND steaming doesn't; frying high satiety value AND steaming less filling; frying if foods are coated juices are sealed in / prevents absorption of fat; frying coating holds fragile foods in shape / prevents breaking up AND steaming food may break apart; frying adds fat / increases calorific value to product AND steaming doesn't; frying can lead to obesity / CHD AND steaming doesn't; frying needs constant attention during cooking AND steaming needs little attention; fried food may be difficult to digest AND steamed food is easy to digest; frying can be a dangerous process AND steaming is safer; frying needs skill / smoking point of oil considered / ignites easily; frying can be expensive to buy enough oil for deep fat pan; frying is more versatile, e.g. stir, deep fat, shallow; frying cannot cook large amounts at once AND steaming can / use of tiered steamer; frying if fat too hot food will be overcooked on outside and raw inside; frying if fat too cool food will absorb oil / become soggy / unappetising; frying must strain oil when cool to remove crumbs of food which can decompose and give a bitter flavour or leave dark specks on food;</p> <p>steaming little or no loss of nutrients; steaming can use a pressure cooker / electric steamer which increases boiling temperature of water so food cooks quicker; steaming may need garnishing / decorating to look attractive; steaming kitchen may be hot / causes condensation; steaming boiling water needs to be available to ensure a constant supply of steam;</p>	15