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**FOOD AND NUTRITION**

**0648/13**

Paper 1 Theory

**May/June 2017**

MARK SCHEME

Maximum Mark: 100

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**Published**

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Question	Answer	Marks
1(a)	<p><i>elements which make up fats and oils</i></p> <p>carbon hydrogen oxygen;</p>	<b>1</b>
1(b)	<p><i>facts about monounsaturated fats</i></p> <p>molecule can accept more hydrogen; molecule has <u>one</u> double (carbon-carbon) bond; liquid (at room temperature); plant origin;</p> <p><u>more</u> reactive;</p>	<b>2</b>
1(c)	<p><i>sources of polyunsaturated fats</i></p> <p>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;</p>	<b>2</b>
1(d)(i)	<p><i>Type of enzyme involved in the breakdown of fat in the digestive system</i></p> <p><u>lipase</u>;</p>	<b>1</b>
1(d)(ii)	<p><i>end products of fat digestion</i></p> <p>glycerol and fatty acids;</p>	<b>1</b>

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

<b>Question</b>	<b>Answer</b>	<b>Marks</b>
3(a)	<i>another name for vitamin A</i> retinol / beta-carotene;	<b>1</b>
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;	<b>3</b>
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	<b>1</b>

<b>Question</b>	<b>Answer</b>	<b>Marks</b>
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;	<b>3</b>
4(b)	<i>effect on children due to deficiency of vitamin D</i> <u>rickets</u> ;	<b>1</b>
4(c)	<i>effect on adults due to deficiency of vitamin D</i> osteoporosis; osteomalacia;	<b>1</b>

Question	Answer	Marks
5(a)	<p><i>Symptom of scurvy</i></p> <p>fatigue / pain in limbs / red-blue spots on skin / swollen or bleeding gums</p>	<b>1</b>
5(b)	<p><i>functions of vitamin C</i></p> <p>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;</p>	<b>3</b>

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

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>	<b>5</b>

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>	<b>1</b>
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>	<b>2</b>
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>	<b>3</b>

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>	<b>2</b>
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>	<b>3</b>
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>	<b>2</b>
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>	<b>2</b>



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>	<b>4</b>
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>	<b>1</b>
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>	<b>1</b>

<b>Question</b>	<b>Answer</b>	<b>Marks</b>
9(g)(iii)	<i>this product contains wheat</i> coeliac disease warning / gluten intolerance; coeliacs know to avoid this product;	<b>1</b>
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;	<b>1</b>

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>	<b>6</b>
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>	<b>1</b>
10(b)(ii)	<p><i>example of preserving in the home by the use of an acid</i></p> <p>pickling;  chutney making;</p>	<b>1</b>
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>	<b>2</b>

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