

# FOOD AND NUTRITION

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**Paper 0648/02**  
**Practical**

## Key messages

Candidates should be encouraged to make suitable choices of dishes which fulfil the test requirements and demonstrate the use of a range of ingredients, skills and a variety of cooking methods.

From 2017, the inclusion of photographs as supporting evidence will be compulsory. One good quality, clear picture of the candidates' finished dishes and table settings is required.

All centres must ensure they are familiar with the instructions published by the University of Cambridge International Examinations, which is sent to all centres. These instructions clearly state that five of the eight published tests are to be used in each centre and that these are allocated to candidates in strict alphabetical order (by surname). Test numbers (not syllabus number) along with full candidate and centre details are to be written on planning sheets and mark sheets.

Centres should ensure that they are using the up-to-date documents for administration of the practical tests. Summary mark sheets, attendance register, authentication declarations and MS1 should all be included with the sample work.

In larger centres, where there is more than one examiner involved in marking the practical tests, rigorous internal moderation should take place. The sample provided for external moderation should then include marked work from each person involved in the marking process.

Examiners should refer to the Practical Test Training Handbook, available online from the CIE website and ensure that the mark scheme is accurately, rigorously and consistently applied across the cohort.

All examiners should refresh their knowledge of the instructions and mark scheme annually and seek accreditation to assess work where appropriate.

## General comments

Many centres required no adjustments to marks awarded, and most adjustments made were minimal. Only in a few cases were adjustments of more than 10% required, with a small number of centres producing inconsistently marked work.

The most successful centres presented work of a good standard where candidates have been very well supported enabling them to show their achievement through well directed teaching, and submit interesting and varied work which meets the assessment criteria. Many candidates had tried hard to plan appropriate menus in response to the test questions. However, in several centres, candidates often chose low skill dishes or ones which did not meet the requirements of the test. The main issues lie in the interpretation of the test requirements and ensuring the planning is more accurate. Candidates generally need more guidance and practice with menu planning so that they can accurately answer the demands of the test allocated and demonstrate sufficient skills and different cooking methods. Candidates who are aiming for high grades should be making their dishes from scratch and keeping the use of convenience foods to a minimum, unless the test asks for them. They need to make skilled and complex dishes which demonstrate their knowledge of consistencies and cooking methods and which require a range of manipulative skills. Centres are reminded that drinks should not be made, unless specifically required and cannot be awarded any marks.

Centres are reminded that only one set of carbonised preparation sheets should be issued to each candidate and marks reduced where candidates use extra sheets. Only the top copy is to be forwarded to the moderator, the pink copy remains at the centre. Preparation sheets should be fastened together with staples or treasury tags in the correct order. Marks should be carefully totalled, scaled and transferred to the summary sheet and MS1. These marks must be checked by another person for accuracy. Where half marks appear in the final total, these should be rounded down, not up. There is a very useful conversion table in the Training Handbook.

It is a requirement of that all candidates' work must show evidence of marking, with annotation clearly written on the work to evidence how and where marks have been awarded or reduced. Examiner annotation should be in a different coloured pen so that it stands out from the candidates' work. There were excellent examples of marking in some centres, with clear, accurate and helpful annotation. In some centres, examiners failed to annotate in sufficient detail – some did not provide any commentary at all. Detailed annotation both on the front sheets and within the work itself ensures that moderation is both fair and consistent.

Where photographs were included, it was evident that candidates had tackled their practical tests with enthusiasm and enjoyment. There were many wonderful examples of colourful arrays of food with appropriately dressed tables and place setting for meals. All candidates do need to consider what the final overall presentation would look like and plan to make colourful dishes or use suitable garnishes to enhance their tests.

Good practice was seen in centres where candidates listed their dishes clearly for **parts (a) and (b)** of the question and indicated which dishes include particular ingredients or methods required by the question. Examiners are reminded to indicate on the choices sheet how many marks have been awarded for each individual dish with justification given on the mark sheet. In the main, marks for choices were awarded accurately and fairly, with some exceptions. If a dish is awarded 4 marks for Choices, it should be marked out of 7 for Results; conversely any dish with marks reduced to a maximum of 3 in Choices for low skill level should then be marked out of maximum 5 for Results.

Planning should include brief but accurate details of preparation and cooking methods, cooking times and oven temperatures. Candidates should indicate on their time plans how they will test that each item of food or recipe is cooked – for example they should state that a sponge cake would be baked until 'golden brown and springy to touch', pasta 'cooked until al dente'. There were many good examples of 'dovetailing'. This is a complex skill that allows candidates to show how, while one dish is cooking, another is being prepared or decorated. Candidates should use dovetailing to demonstrate the efficient use of time and to allow them to make dishes of a higher skill level within the time allowed; and where dovetailing is not evident, the maximum marks available for the time plan are 5. Time left at the end of a plan indicates a lack of skill in the dishes chosen or errors in timing for other processes. Some of the plans were written over too many pages. The maximum should be two and any extras should mean that marks are adjusted as it is an indication of too much detail being put into the time plans. Time plans should indicate sufficient work to fill 150 minutes; no less and no more.

The marks for the final results section were often a little generous considering the number of incorrect or low skill dishes. Where this is the case the total number of marks should be reduced. For incorrect dishes a maximum of 3 ½ marks and for low skill dishes 4 or 5 maximum should be awarded, depending on the dish.

### Comments on specific questions

#### Test 1

The best choices for the two-course meal in **part (a)** indicated a well-balanced meal that had a good supply of protein, fibre, vitamins and minerals. There were good examples of meals that were not too heavy and demonstrated a variety of textures and flavours. Candidates needed to take care not to repeat methods used in **part (a)** when planning for **part (b)** of the question. For **part (b)**, the cake required needed to be made by the whisked method. Candidates sometimes produced cakes that were creamed or all-in-one method, but still called it 'whisked' and these choices were incorrect. Similarly, the biscuits also required a specific method for which the melting of butter, sugar and usually syrup is required. These needed to be skilful, and where candidates made a simple flapjack, marks needed to be reduced.

#### Test 2

This question tests the candidates' knowledge of specific ingredients and there were many suitable choices made in response. The best work was from candidates who used the specified ingredient accurately as an integral part or main feature of the chosen dish. For this type of question, the dishes all need to be complex and skilful. Where candidates choose dishes that would normally be served as accompaniments, for example, this generally reduces that skill level and marks should be adjusted accordingly. Candidates must also take care not to repeat methods used in the different dishes

#### Test 3

This question was a popular question, and many candidates correctly elevated the calcium content of the two-course meal by using cheese, tofu, broccoli or tinned fish such as sardines. For children, a well-balanced healthy meal with good supply of starchy carbohydrate was needed, along with protein, vitamins and other minerals. The meal needed to be low in sugar and child-friendly. Some of the menus produced were rather heavy for children and candidates sometimes incorrectly repeated cheese in several dishes in an attempt to include extra calcium.

For **part (b)**, candidates generally made small cakes as required. The cakes needed to be skilfully and neatly decorated to gain more than 5 marks for results. Many candidates made successful batches of biscuits for this part of the test also, but lost marks where they repeated methods or made flapjacks or pastries such as palmier instead of a biscuit.

#### Test 4

As in previous years, the 'party' question generated mixed results. The most successful candidates planned complex and skilful dishes, demonstrating a good balance of nutrients, colours, textures and flavours; with more emphasis on savoury, rather than sweet dishes. Dishes for a party need to be suitable for serving on a buffet table and be easy to portion, serve and eat. The dishes needed to be carefully chosen to complement one another, rather than a random collection of main meal dishes and/or accompaniments, plus one or two finger-foods. This test also specified a decorated cake. To gain full marks for this, the decoration needed to be neatly done and more skilful than merely dusted with icing sugar or sprinkled with nonpareils, for example. Ideally any party table should have a theme, carried through the whole menu and including the table settings. There were several good examples of this, where candidates clearly had fun preparing for their 'party'!

#### Test 5

Well-chosen responses for the two-course meal in **part (a)** provided a plentiful supply of carbohydrates, protein, vitamins and minerals for the sporty clients. Meals needed to be low in fat. Candidates needed to be careful not to repeat the vegetables and the pastry they planned for **part (b)** of the test. In the main, dishes chosen were suitable for a person with high energy requirements.

For **part (b)** the savoury vegetable dish and pastry dish were often suitable and showed different skills; for example roux sauce used in vegetables au gratin and shortcrust pastry for a fruit tart.

#### Test 6

Few centres allocated this test, which would have required skilful menu planning by candidates. Those who successfully completed this test were able to plan a balance of dishes across both **parts (a)** and **(b)** that did not repeat methods or main ingredients.

#### Test 7

For **part (a)**, this two-course meal, a low-calorie menu was required to reflect the needs of sedentary individuals. Many candidates recognised this and planned accordingly. For some, the meals chosen did not meet this requirement, repeated skills or main ingredients from **part (b)**, or omitted one or more dishes from the menu.

For **part (b)**, the chosen dishes needed to also be low in calories and easily transportable for work. High risk foods and those requiring re-heating for service are difficult to justify in this type of question.

#### Test 8

Very few centres allocated this question. The most successful candidates proved to have excellent skills in menu planning and knowledge of ingredients. Choices for **part (a)** were usually varied, balanced and contrasted the choices for **part (b)**. Knowledge and manipulation of foods requiring coating batters are a requirement of the syllabus and it would be good to see this skill being used more widely in the future. Scones are often a favourite and successful dish for candidates; however, in this case only fruit, herb or plain scones were acceptable and cheese could not be repeated here.

# FOOD AND NUTRITION

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Paper 0648/11  
Theory

## Key Messages

Questions requiring simple, straightforward answers were generally well answered.

Including more answers than the number specified in a question will not gain extra credit.

Introductory words and sentences in a question should be used to establish the type of information required in the response.

In questions for which more marks are available, it is important that candidates give reasons, explanations and examples.

## General Comments

In general, the candidates performed well and were able to demonstrate a good level of knowledge and understanding of various areas of the syllabus.

Stronger candidates were able to explain their answers, rather than relying on their ability to recall facts without giving further information.

It is important that students read questions carefully, plan their answers prior to writing and use the marks allocated and the answer space given as a guide to the required length and depth of the answer.

## Comments on Specific Questions

### **Section A**

#### **Question 1**

- (a) The majority of candidates achieved the available credit by correctly naming carbon, hydrogen or oxygen as elements from which fats and oils are formed.
- (b) The majority of candidates gained all the available credit by correctly naming vitamin A, (retinol or beta- carotene) and vitamin D, (cholecalciferol) as the vitamins found in fatty food.
- (c) Most candidates were able to explain the difference between saturated fat and polyunsaturated fat. Credit was awarded for stating that saturated fat has the maximum number of hydrogen atoms and that there are only single bonds in the structure; polyunsaturated fat has more than one double bond and can take up more molecules of hydrogen. Some candidates stated that saturated fat is usually solid at room temperature and generally found in animal foods, whereas polyunsaturated fat is liquid at room temperature and usually of plant origin.
- (d) This was generally well answered with most candidates being able to name sources of polyunsaturated fat. Correct examples given included sesame seed oil, sunflower seed oil, corn oil, groundnut oil, soya bean oil and canola oil. The most common incorrect answers were olive oil and coconut oil.
- (e) This question was asking for both knowledge and understanding. General answers referring to not eating fried food or changing the cooking method or using low fat butter were common, but did not gain credit as the question was specifically asking for ways to reduce saturated fat. Some

candidates gave good advice which demonstrated their knowledge of which foods contained saturated fat and how to modify the diet or substitute ingredients. Many candidates suggested eating less red meat, trimming visible fat from meat, choosing white meat or fish, reducing consumption of chocolate, cakes and pastries or replacing full-fat milk with skimmed milk.

- (f) A few candidates who were unclear about the definitions of specific technical terms did not explain how fats and oils can be used in cooking. Some candidates simply stated 'fat' or 'oil' as their example - it was expected that responses would include an appropriate named example such as butter, olive oil, sunflower oil, margarine etc. Most popular uses included frying, sauce-making, dressings, forming an emulsion and greasing baking tins.
- (g) In the main this question was well answered with most candidates describing heat on butter causing it to melt, bubble or sizzle, darken in colour until blue smoke is given off and then finally igniting. Some candidates also stated that butter splits into fatty acids and glycerol.
- (h)
- (i) Most candidates correctly answered that in the digestion of fat the role of bile is emulsification.
- (ii) Most candidates correctly answered that the role of lipase in the digestion of fat is the conversion of fat to glycerol and fatty acid.

### Question 2

- (a) Many candidates correctly named wholegrain cereal, wholemeal bread, yeast extract, liver, milk, eggs and legumes amongst a list of sources of vitamin B<sub>1</sub> (thiamin).
- (b) Candidates need to know the symptoms of vitamin B<sub>2</sub> (riboflavin) deficiency and not confuse them with those for other B vitamins. Correct answers included failure to grow, dermatitis, conjunctivitis, swollen tongue, cracked lips.
- (c) Many candidates achieved partial credit by correctly listing growth, release of energy, formation of red blood cells, prevention of pernicious anaemia and production of DNA as functions of vitamin B<sub>12</sub> (cobalamin).

### Question 3

- (a) The candidates who attempted this question correctly stated that a function of iodine was to produce the hormone thyroxine. Some candidates alternatively explained how thyroxine, synthesised from iodine, controls the rate of metabolism.
- (b) Those candidates that attempted this question correctly answered that the deficiency disease caused by a lack of iodine is goitre.
- (c) Most correct answers included milk, cheese, sea fish, sea salt and green leafy vegetables as sources of iodine.

### Question 4

- (a) The majority of candidates showed knowledge of sources of NSP and achieved at least partial credit. To be awarded credit, wholegrain or wholewheat cereals, rather than simply 'cereals' needed to be specified.
- (b) There was a wide knowledge of the problems associated with a lack of NSP in the diet, with a high proportion of candidates being awarded full credit. Candidates correctly identified constipation, diverticular disease, cancer of the colon, haemorrhoids and hernias as possible consequences.

## Section B

### Question 5

- (a) The majority of candidates gained most of the available credit and were well aware of reasons for preserving food. Favoured answers included: 'to provide food when supply is limited; to enjoy food out of season; to make a variety of new products such as jam or pickles; to prevent the growth of yeast, mould and bacteria; to use in emergencies such as typhoons'.
- (b) Very few candidates gained the credit by naming the flash or Holder method of pasteurising milk.
- (c) Only a few candidates were able to gain full credit for describing the manufacture of condensed milk. Some mentioned that milk was homogenised, had sugar added and that some water was evaporated, but other processing details such as the milk being heated to 80 °C/176 °F for 15 minutes before being cooled and sealed in cans were omitted.
- (d) In this question on the storage of fresh milk in the home, candidates were asked to give advice, with reasons. If the advice given was not backed up with a reason then it was not possible to gain full credit. Expected answers included: 'keeping milk in a cool place or refrigerated as bacteria reproduce more slowly in cool conditions; milk should be stored in clean containers so residual bacteria in the container cannot contaminate fresh milk; milk should be covered to prevent entry of dust or insects; milk should be stored away from strong-smelling foods like cheese or onions as milk absorbs the smell and the taste is tainted'.

### Question 6

- (a) Most candidates correctly named the rubbing-in method for making scones.
- (b) Some candidates gave an excellent response to this question, demonstrating a sound understanding of the term convection. Other candidates gave vague responses in which conduction was confused with convection. It was expected that candidates would be able to state that convection occurs in liquids and gases. The heated gas becomes less dense when heated and rises, whilst the cooler gas becomes more dense and falls. Hence a convection current is formed which will cook the scone mixture.
- (c) Candidates needed to state it was the fat in cheese which melts and the protein which coagulates. Many gained partial credit by stating that overcooking makes cheese stringy and hard to digest.
- (d) Most candidates correctly described the effect of dry heat on starch, using technological terms such as dextrinisation and referring to the colour change and formation of crisp crust.

### Question 7

- (a) This question was generally answered well with candidates showing their knowledge of how air can be introduced into a mixture and naming appropriate dishes as examples. Popular answers included sieving the flour, creaming fat and sugar, whisking eggs or using the rubbing-in method. Some candidates even mentioned the rolling and folding technique used during pastry making.
- (b) Very few candidates achieved the available credit. The question asked for examples of steam being used as a raising agent rather than as a method of cooking. Expected answers could have included Yorkshire pudding, toad-in-the-hole, éclairs or profiteroles.
- (c) Most candidates were able to name warmth, moisture or food as the conditions required for yeast to reproduce.
- (d) The majority of candidates correctly named carbon dioxide as the gas produced during fermentation.
- (e)  
(i) The majority of candidates correctly stated that yeast will be killed or destroyed if boiling water is used to make the dough.

- (ii) Most candidates were aware that if dough is put into a freezer the yeast will become dormant or will remain inactive. Some incorrectly stated that the yeast will die.
- (f) Most candidates were awarded partial credit for suggesting suitable types of flour for bread-making. Strong, plain flour or wholemeal flour were the more popular choices. Additional credit was given if a correct reason for the given flour was stated, such as: 'strong flour has high gluten content; plain flour used as yeast is the raising agent; wholemeal flour adds colour, flavour, B vitamins or NSP'.

### Question 8

- (a) Some candidates covered many areas from the mark scheme with some good explanations for their answers. Answers concentrating on personal or food hygiene were not asked for in the question and therefore were not awarded credit. To gain credit candidates needed to give reasons for points made. Expected answers included: 'clean work surfaces and equipment regularly to prevent cross-contamination; empty rubbish bins regularly to prevent attracting pests; clean tea towels and dish cloths regularly to prevent growth of microorganisms'.
- (b) Most candidates stated that flooring should be non-slip to prevent falls, easy to clean to maintain hygiene standards, non-absorbent to maintain the appearance and prevent having to replace flooring frequently. A few mentioned ensuring the colour complemented the rest of the kitchen decoration. Very few named types of flooring such as laminate, quarry tiles, vinyl tiles or ceramic tiles. To gain the majority of the available credit, candidates needed to give reasons for factors stated.
- (c) Candidates needed to give reasons for factors suggested in order to gain the available credit. Most popular answers included: 'pans being selected with a well-fitting lid to save fuel; choosing stainless steel pans which are good conductors of heat and are hard-wearing; choosing a variety of sizes to suit cooking different quantities of food'. Some even mentioned opting for non-stick surfaces as they are easier to clean.

### Section C

#### Question 9

- (a) Candidates were expected to answer this question in the form of an essay. General meal planning advice did not gain credit as the question was specifically related to the nutrients required by a pregnant woman.

Candidates should have identified several dietary needs and meal planning requirements, specific to pregnant women, illustrated their answer with the use of good examples and used appropriate terminology.

Stronger candidates named several nutrients required and some gave a full and appropriate reason for the inclusion of that nutrient. Suggestions included protein, calcium, iron, vitamins B, C and D. Some candidates also mentioned essential fatty acids for brain growth and the inclusion of folate to prevent spina bifida.

A few candidates mentioned the need to reduce fat, sugar and salt intake, avoid unpasteurised soft cheese, raw or partially cooked eggs and other meal planning considerations, but often only gave vague related reasons for these requirements during pregnancy.

**(b)** The majority of candidates answered this choice of question.

Responses were expected to be in the form of an essay as the question stem stipulated that a discussion was required. Essay answers need to be carefully organised with good explanations, and points identified need to be extended to demonstrate knowledge and understanding.

Answers need to be precise, cover each section of the question equally, be relevant to the question asked and to avoid over-elaboration of certain points to the detriment of others. Candidates knew about both methods of cooking. For credit to be awarded, they also needed to extend and discuss the statements they had made.



# FOOD AND NUTRITION

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Paper 0648/12  
Theory

## Key Messages

Questions should be read carefully to ensure full understanding of the type of answer required.

The length and quality of answer should be tailored to the credit available.

Candidates should ensure that the response given is relevant to the specific requirements of the question.

To be awarded the maximum available credit, candidates need to give reasons, explanations and examples in their answers which demonstrate their ability to select appropriate information and show understanding of the question topic.

## General Comments

It is important that candidates fully understand the meaning of command words such as name, state, give, describe, discuss and explain. One word answers are rarely sufficient to gain credit; examiners generally look for qualification of a point. To gain full credit for questions asking for an explanation, candidates need to give answers supported with relevant linked examples or reasoning.

It is important that candidates comply with the question set, especially for questions where more credit is available.

## Comments on Specific Questions

### **Section A**

#### **Question 1**

This question was generally well answered. Most candidates gained the available credit and gave a full explanation of the term *balanced diet* as being a diet that contains all nutrients in the correct proportion. When incorrect this was because 'correct proportion' was not included in the answer.

#### **Question 2**

- (a) The majority of candidates gave the correct answers of oxygen, hydrogen, carbon and nitrogen and achieved the available credit. Some gave sulfur, which was accepted.
- (b) There was evidence of the knowledge of protein complementation where HBV and LBV or LBV and LBV foods can be mixed in the same meal. Very few candidates referenced the lack of amino acids being compensated by the other. There were some good examples used to illustrate how combining two LBV foods can produce an HBV. The most popular examples of complementary proteins were baked beans on toast and lentil soup and bread. Examples such as chilli con carne or spaghetti bolognaise made with TVP mince or rice pudding made with soya milk would have been acceptable answers.
- (c) Good knowledge was shown by the candidates on protein function. Most stated that these functions were growth, repair, maintenance and energy. A few noted that protein can be used for the manufacture of enzymes, hormones and antibodies.
- (d) Very few candidates could name two deficiency diseases caused by a lack of protein. Most correct answers identified kwashiorkor but only a minority referred to marasmus.

- (e) Most candidates gained most of the available credit by correctly explaining that excess protein is stored as fat under the skin, which may lead to obesity. Several candidates stated that the kidneys excrete excess protein as urea in urine and some mentioned deamination of protein.
- (f) Most candidates achieved at least partial credit by stating that proteins coagulate when heated. Better answers included details on denaturation and the fact that overheating causes protein food to become less digestible.
- (g)
- (i) A good proportion of candidates correctly identified pepsin as the enzyme found in the stomach which converts protein to peptides. Quite a few candidates incorrectly named peptin or peptones.
- (ii) The majority of candidates correctly named rennin as the enzyme which clots milk. Lactose or lactic acid were the most common incorrect answers.
- (iii) Very few candidates identified trypsin as the enzyme produced by the pancreas which converts proteins to peptides. Many took the information from the question and referred to pancreatic acid or pancreatic juice, or sometimes trypsinogen rather than trypsin.
- (iv) Very few candidates identified erepsin as the enzyme which converts peptides to amino acids.

### Question 3

- (a) Many candidates correctly identified a function of iron in the body. The most common answer was the formation of haemoglobin. Some mentioned transporting of oxygen to cells and that iron helps prevent anaemia.
- (b) There were very few correct answers relating to the function of chloride in the body. The most common correct answer was that chloride helps to form hydrochloric acid.
- (c) Many of the candidates who answered this question were able to state that iodine prevents goitre or is involved in synthesis of the hormone thyroxine.
- (d) Very few candidates who attempted an answer achieved the available credit. When answered correctly, the majority referred to the development of bones and teeth.

### Question 4

- (a) Many candidates gained the available credit for stating two functions of vitamin A. The most popular answers being: 'the production of visual purple, aiding sight in dim light, preventing night blindness and healthy skin'. Sometimes candidates referred to growth but did not reference children, or just stated 'good for eyesight'.
- (b) Candidates were usually able to identify two sources of vitamin A, however when fish was identified the classification of 'oily' was omitted so credit could not be awarded. Likewise, meat should have been described specifically as red meat.

### Question 5

- (a) Many candidates were able to name at least two correct sources of NSP but credit could only be awarded by specifying wholegrain, wholemeal or brown in the answer with reference to bread, cereals and rice.
- (b) This question was generally well answered with many candidates gaining full credit showing a great deal of knowledge and understanding of the reasons for the importance of NSP in the diet. Most answers included the information that NSP absorbs water, making faeces soft and bulky and easier to expel so preventing constipation. Some candidates noted that NSP stimulates peristalsis, can absorb toxins, helps to prevent diverticular disease, cancer of the colon and haemorrhoids.

### Question 6

This question asked candidates to include reasons for guidance given when planning and serving meals for an elderly convalescent person. Many candidates provided several relevant points but needed to provide supporting reasons to be awarded credit for each point.

Answers which related to meal planning for all groups in society, for example to provide carbohydrate for energy, protein for growth and iron because women need it for menstruation, were not credited.

It was expected that the need for protein, calcium, iron and vitamins C and D would be mentioned, together with appropriate reasons specific to the needs of an elderly convalescent person.

Answers tended to concentrate on the nutritional aspects of planning meals. Reference could have been made to following doctor's advice, providing a variety of colour, texture and flavour in meals to add interest and encouraging eating to promote recovery, or the need to provide smaller portions of soft food which are easy to eat and digest.

## Section B

### Question 7

This question proved to be challenging for many candidates. Often methods of cake-making such as creaming, whisking, melting or rubbing-in were identified with examples. Candidates should have shown their knowledge of the use of carbon dioxide as a raising agent in mixtures by naming the use of bicarbonate of soda in gingerbread or baking powder used in scones or yeast used in making bread.

### Question 8

Answers needed to consist of more than one word, to be precise and detailed and the examples given to be appropriate. Creditable answers stated that food is cooked to make it safe to eat, to change or develop the colour, texture and flavour of food, to give variety to the diet or that cooking is necessary for some processes. Some candidates noted that cooking food provides hot dishes in cold weather and that cooking vegetables reduces their bulk and allows more to be eaten. All answers should have included examples to show extended knowledge of syllabus content.

### Question 9

Conduction was described for convection and radiation was often described as convection. Sometimes the method was partially correct but not the dish used as an example.

It was expected that candidates would be able to explain that convection is carried out through liquids and gases. The liquids or gases become less dense when heated and rise, whilst the cooler liquids or gases become more dense and fall. Hence, a convection current is formed. Boiling potatoes, steaming fish or baking a named cake would all have been credited as suitable examples.

It was expected that candidates would have described radiation as a heating process which does not require physical contact between the heat source and the food being cooked. Rather, it is carried out by electromagnetic rays which travel in straight lines from the source of radiation and are absorbed by the food. Grilled steak, spit-roasted chicken, BBQ sausages or a suitable named dish cooked in the microwave would all have been credited as examples.

### Question 10

- (a) The majority of candidates correctly stated the method of making shortbread biscuits was creaming or rubbing-in.
- (b) It was expected that candidates would state that the function of sugar was to sweeten, provide texture or aerate the mixture and the butter provided colour, a rich taste or smell, or moisture to prevent the biscuits from being dry.
- (c)(i) Candidates must ensure that they have knowledge of the requirements of a coeliac diet. Many responses referred to reducing flour, butter and sugar or using wholemeal flour. Very few suggested using an alternative, non-gluten flour such as amaranth, maize flour, gram flour, soya flour or rice flour.

- (ii) A high proportion of candidates achieved the credit for this question by stating that the basic recipe ingredients could be adapted for a person with diabetes by reducing the amount of sugar used.
- (iii) It was expected that candidates would show knowledge and understanding of the requirements of a person with CHD by reference to unsaturated or polyunsaturated margarine instead of butter. Responses which either referred to reducing the butter content or using low fat butter or margarine were not awarded credit.
- (d) A lot of answers showed candidates were aware that the biscuits needed to be stored in a container. They also needed to state that the container should be airtight. It was expected that candidates would be aware that the biscuits would absorb moisture from the air and so lose their original crisp texture, so needed to be kept in a sealed container. Some answers did refer to the need to prevent insects from entering the container, which were credited.
- (e) Most candidates could identify two flavour variations for the basic shortbread biscuit recipe. Popular answers included vanilla essence, chocolate chips, dried fruit and cocoa.

### Question 11

- (a) Candidates needed to demonstrate knowledge regarding factors to consider when choosing kitchen knives. Some candidates correctly referred to selecting a variety of knives or made a statement about the handle or the blade being stainless steel. The question asked for reasons so candidates should have given a factor to consider and then expanded their answer with an explanation.
- (b) Answers tended to concentrate on keeping knives stored safely away from children and safety points about carrying them about the kitchen to avoid danger. Expected answers could have included: 'storing the knife with the blade pointing downwards in a knife block or sheath to prevent damage to the blade; ensuring the knife was dried thoroughly after washing to prevent corrosion; to only use the knife for its intended purpose; not to open tins so as to increase the life of the knife or to sharpen the knife regularly so it could be used effectively and safely'.
- (c) Many candidates provided relevant points on how to dispose of kitchen waste; to gain full credit they needed to give reasons. Stronger candidates were clearly aware of the need to recycle as much kitchen waste as possible and a great deal of information was given about composting, using scraps to feed animals and recycling glass and aluminium if possible in order to reduce the amount of waste and take care of the environment. Suggestions to empty bins daily and to wash and dry them thoroughly was stressed to prevent attracting flies and mosquitoes. Many noted that waste should be placed in a plastic bag and tied tightly to prevent animals spreading waste food. The waste bin should be kept away from the house and away from open windows so that flies do not gain access to the house from the bin area.

### Section C

#### Question 12

- (a) Candidates were expected to answer in the form of an essay using correct terminology and specialist terms. It is important that when answering questions of this nature candidates give a balanced response, tackling all areas of the question equally and including as much relevant detail as possible in their answers.

Candidates must ensure that their responses are relevant; many spent time by drawing and labelling the structure of an egg, describing ways to tell if an egg is fresh and even how to keep chickens. This was not asked for in the question and so was not credited.

Most candidates were able to identify the correct nutrients found in eggs; they also needed to provide a function to be awarded credit. When no functions were given, some candidates gained partial credit by naming four nutrients. It was expected that vitamins and minerals would be identified. Many candidates listed calcium as a nutrient in eggs; calcium is only found in the eggshell which is not consumed.

Most candidates were able to give good advice on the storage of eggs. To gain full credit, reasons for statements needed to be given. Information included the fact that they should be kept in a cool place such as a refrigerator and to use them in date rotation. It was known that eggs should not be washed otherwise the protective cuticle is removed which allows bacteria to enter through the porous shell. Other valid points noted were that eggs should be stored with the rounded end upwards so that the air space remains at the top. Eggs should be stored away from strong smells such as cheese and fish otherwise the smell is absorbed through the pores in the shell.

The different uses of eggs were well known and appropriate examples to illustrate each use were usually given. It was expected that eggs would be identified as a main meal, for example breakfast with examples such as poached, scrambled or boiled eggs. Good answers identified trapping air, glazing, emulsifying, garnishing, binding, setting and thickening and gave relevant examples.

Sometimes dishes which include eggs were listed but the function of egg in the dish was not identified. Candidates need to be clear about the use of the terms 'glazing' and 'coating'. Foods, for example fish and Scotch eggs, are coated before frying; pastry and scones are glazed before baking to give a brown, shiny surface after cooking.

- (b)** Candidates were expected to answer in the form of an essay with information presented in a clear, organised way showing the use of correct terminology and specialist terms. It is important that when answering questions of this nature candidates give a balanced response, tackle all areas of the question equally and include as much relevant detail as possible in their answers.

Many candidates used bullet point style responses which lacked examples or explanations for the points identified. This limited the amount of credit which could be awarded.

The most common type of convenience food identified was canned and frozen food. Other answers included ready to eat foods, such as biscuits or meat pies or ready to cook foods, such as cook-chill foods.

There were some good accounts on the reasons for packaging. It was usually noted that packaging prevents damage to the food during transport and storage and prevents the entry of microorganisms. Some candidates correctly stated that packaging attracts consumers and allows manufacturers to give information on ingredients, cooking and storing amongst other things.

In order to be awarded the available credit, the section concerned with why some people prefer not to use convenience food needed to give reasons to support the relevant points made. Common points identified were that the food lacked nutrients, it was not good for health, it was more expensive or portions were small. Greater credit could have been awarded if these points had been further extended to include details such as vitamin C and B group vitamins may be destroyed by heat during processing; convenience food can be high in sugar which leads to dental caries and obesity or high in salt which leads to hypertension; convenience foods are more expensive than fresh equivalents due to processing and packaging costs; small portions of convenience foods mean extra food has to be bought to feed a family which adds to the total cost of the meal.

# FOOD AND NUTRITION

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Paper 0648/13  
Theory

## **Key Messages**

Questions should be read carefully to ensure that all parts are fully answered. Candidates should pay careful attention to the command words used.

## **General Comments**

Some candidates found justification of their answers challenging.

Mark allocations and the amount of space given for the answer indicate the amount of detail required.

## **Comments on Specific Questions**

### **Section A**

#### **Question 1**

Most candidates answered this question correctly.

#### **Question 2**

- (a) The majority of candidates achieved credit for this question.
- (b) The majority of candidates gained credit for this question.
- (c) Some candidates achieved full credit for this question. The command word “describe” indicated that candidates were expected to link the use of energy with functions in the body.

#### **Question 3**

- (a) A high proportion of candidates achieved full credit for this question.
- (b) Most candidates gave the correct answers, such as dental caries, obesity and diabetes mellitus. To be awarded full credit, candidates needed to elaborate on the health problems they named by providing descriptions.

#### **Question 4**

- (a) A high proportion of candidates were able to answer this question successfully.
- (b) A high proportion of candidates were able to answer this question successfully.
- (c) Most candidates gave glucose as an end product of the digestion of carbohydrate; some candidates gave fructose or galactose as answers.

#### **Question 5**

- (a) A high proportion of candidates gained full credit for this question.
- (b) Many candidates answered this question correctly by describing the colour change brought about by surface starch changing to dextrin.

### Question 6

- (a) Many candidates incorrectly wrote answers which related to vitamins B or D. Terms such as *night vision* or *healthy eyes* should be avoided; the terms *helping vision in dim light* and *preventing night blindness* are preferred.
- (b) Candidates' answers to this question were often confused. Candidates need to have a clear understanding of the difference between sources of retinol and sources of beta-carotene.
- (c) Candidates' answers to this question were often confused. Candidates need to have a clear understanding of the difference between sources of retinol and sources of beta-carotene.
- (d) Many candidates gained most of the available credit. The most popular answers were supporting the absorption of calcium or phosphorus; and formation of bones and teeth.

### Question 7

- (a) Many candidates achieved full credit and showed exceptional knowledge and understanding. They explained their points clearly with good technical language. The most common answers included keeping the body hydrated; and helping with the removal of waste such as urine and faeces.
- (b) The majority of candidates achieved at least some credit. Common responses were lactating mothers, manual workers and athletes.

### Question 8

Some candidates did not clearly address what the question was asking. Popular answers were using less salt when cooking; and reading labels so as to be aware of how much salt is in food.

## Section B

### Question 9

- (a) Candidates need to give full reasons in their answers to this question.
- (b) Many candidates did not provide enough detail in their answers to gain full credit for this question. Those candidates who answered well gave answers which included advantages such as steamed food being easily digested so good for convalescents or the elderly; and no extra fat is used so steaming is a healthier method.
- (c) Many candidates did not provide enough detail in their answers to gain full credit for this question. Those candidates who were awarded most credit gave answers such as grilling is a quick method of cooking, so it is economical in terms of fuel energy; and the flavour of the food is retained because the outside of the food is sealed.

### Question 10

- (a) Some candidates gained most of the available credit in this question. They were able to give several reasons for serving sauces with meals with appropriate examples, including a wide variety of local dishes. Some candidates mistakenly thought that a sauce and a dressing are interchangeable; however, a sauce is a hot accompaniment to a dish whereas a dressing is cold. Candidates needed to think carefully about the examples that they choose; spaghetti with a cheese sauce does not improve colour, whereas a tomato sauce would.
- (b) The majority of candidates achieved most of the available credit in this question.
- (c) Most candidates achieved at least partial credit in this question. The most frequent suggestions were to use less cheese; and to reduce the amount of butter. Some candidates suggested using low-fat cheese. Very few candidates recommended choosing cheese with a stronger flavour and using less of it. When referring to milk, candidates are expected to use the terms semi-skimmed or skimmed milk. The use of margarine instead of butter was not an acceptable answer because the fat content of both is high.

- (d) This was generally well answered with some really original ideas given, such as basil, spinach, paprika, ham, nuts and peppers.
- (e) Most candidates managed to gain at least partial credit for saying that a lumpy sauce would result if the sauce were not stirred well between each addition of milk or not stirred during boiling.

#### Question 11

- (a) The command word “explain” indicated that candidates were expected to show connections between the points they make and the context of the question. Many candidates did not provide reasons, as required by the question.
- (b) Some candidates showed awareness of how to conserve vitamin C whilst cooking green leafy vegetables but did not give reasons for their statements.

#### Question 12

- (a) This question was quite well answered with most candidates showing awareness of some safety rules to be followed when using small electrical kitchen equipment.
- (b) There were some good answers given to this question. Most answers showed awareness that the person should not be touched until the power has been switched off; and that the person should be put into the recovery position. Most candidates advised ringing the emergency services if the person was not breathing.

#### Section C

#### Question 13

- (a) Most candidates were able to give some reasons for choosing a vegetarian diet and some candidates were able to differentiate between a lacto-vegetarian and a vegan. Candidates are reminded that, in Section C, it is strongly advised that they present their information in a clear and organised way and that they use correct terminology and specialist terms.
- (b) Candidates need to ensure that they understand the focus of the question. Some candidates did not address all of the areas of the question in their answers.