

# FOOD AND NUTRITION

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Paper 6065/01

Written

## General comments

There was a wide range of marks achieved in this paper. Some candidates scored well, demonstrating a sound knowledge of the subject and an ability to apply that knowledge to a variety of topics. Examples were given where appropriate. The performance of many candidates was, however, disappointing. Sometimes candidates were unable to give basic facts so were not able to offer explanations or examples to illustrate the points made. Some answers suggested that questions had not been read carefully because the information given was not relevant to the topic. The need for questions to be read carefully and answers planned cannot be emphasised enough. Most scripts showed little evidence of planning. Answers were often brief and contained little information.

There seemed to have been sufficient time for candidates to answer the required number of questions. There were, however, a number of rubric errors; candidates sometimes answered all questions in **Section B** instead of choosing four from six. Handwriting was generally good and easy to read but there were a few instances where writing was too small and proved difficult to decipher. Many candidates seemed to have been guided by the mark and space allocations for each question or part question but there were examples of answers covering just a few lines. The presentation of scripts was generally good but a large number of candidates did not complete the grid on the front cover as requested. It is time-consuming for Examiners to look through scripts and complete the grid before marking can begin. Additional pages were often tied together too tightly, making it difficult to turn pages without tearing the answer paper. Sometimes sheets were assembled in the wrong order. Candidates are responsible for checking that instructions have been followed and pages are in order before scripts are handed in. Candidates must be reminded that a space should be left between each question and part-question. It is helpful if a line is drawn at the end of each question. There is no need to begin each answer on a new sheet or to write on only one side of the answer paper.

## Comments on specific questions

### **Section A**

#### **Question 1**

- (a) Most candidates were able to give a good definition of the term "balanced diet". An appropriate definition is that it is a diet that contains all nutrients in the correct proportion.
- (b)(i) Although there are six elements that combine to form protein - carbon, oxygen, hydrogen, nitrogen, phosphorus and sulphur - candidates were able to score full marks by identifying any four of them.
  - (ii) Four functions of protein were asked for and most candidates were able to list growth, repair, maintenance and energy; some candidates correctly noted that protein is important for the manufacture of enzymes, hormones and antibodies.
  - (iii) A definition of High Biological Value protein must include the fact that all indispensable amino acids are present.
  - (iv) The only examples are meat, fish, milk, cheese, eggs and soya.
  - (v) Low Biological Value protein lacks at least one indispensable amino acid. Many candidates were unsure of this so were often unable to distinguish between HBV and LBV protein.

- (vi) Cereals, pulses, nuts and gelatine are examples of LBV protein. Credit was given for naming examples of cereals, pulses and nuts.
  - (vii) There were many excellent accounts of the digestion and absorption of protein. Credit was given for identifying enzymes, the part of the digestive tract in which each one of them works, and the name of the digested product at each stage. Amino acids were usually known to be absorbed by blood capillaries in the villi that are found in the walls of the ileum.
- (c) (i) Most candidates were able to state that calcium is used for the formation of bones and teeth. It was less well known that calcium is important for the clotting of blood and for the function of nerves and muscles.
- (ii) Many candidates correctly identified the sources of calcium. The most frequent answers given were milk, cheese and yoghurt. Bread and green vegetables were seldom mentioned.
  - (iii) Most candidates knew that calcium deficiency could result in rickets or osteomalacia.
  - (iv) The symptoms of rickets were known to be weak bones which bend under the weight of the body causing bow legs and knock-knees. The skull is often fragile. Those suffering from osteomalacia have brittle bones that fracture easily.
  - (v) Most candidates correctly stated that vitamin D helps the body to absorb calcium.
  - (vi) It was well known that milk, cheese and butter are good sources of vitamin D and that oily fish, fish liver oil and eggs provide valuable amounts.
- (d) (i) Candidates were usually able to give good reasons for the reduction of saturated fat in the diet.
- Saturated fat is associated with cholesterol which is deposited on the walls of arteries, narrowing and sometimes blocking them. This can lead to coronary heart disease, hypertension, and strokes. Excess fat is stored under the skin and around internal organs and leads to obesity. Credit was given to every correct fact given so those candidates who gave detailed answers generally scored full marks.
- (ii) This part of the question required candidates to suggest ways to reduce fat in the diet. This gave the opportunity to relate theoretical knowledge to practical situations. Many found this difficult. It was expected that mention would have been made of reducing the amount of red meat in the diet, the need to trim excess fat from meat and the recommendation to avoid fried foods. Foods that contain fat, for example pastries, cakes and chocolate should be eaten in moderation and low fat alternatives to cheese, butter and yoghurt should be chosen.
- (e) There were many excellent accounts of the special nutritional needs of young children, indicating knowledge and understanding of the topic. Candidates were usually able to give sound reasons for the nutrients mentioned. It was known that protein is needed for growth, calcium helps to build strong bones and teeth and vitamin D helps the body to absorb calcium. Iron is needed for the formation of red blood cells; vitamin C helps in the absorption of iron. Starch is important for the production of energy. Fat also provides energy and since it is a more concentrated source some fat should be included in a young person's diet because it is less bulky than starchy food. Some candidates correctly noted that sugar should be avoided because it can lead to tooth decay. No credit was given for suggesting sources of the nutrients mentioned since this was not asked for in the question.

## **Section B**

### **Question 2**

- (a) It was expected that candidates would be able to give four different reasons for serving sauces. Sauces add colour, flavour and moisture to meals; they provide a contrasting texture and add interest to a dish. Sometimes sauces counteract the richness of a particular dish, for example apple is served with roast pork and orange sauce with roast duck. Each different reason and each example to illustrate the given reason was credited.

- (b) Many candidates were able to give excellent accounts of the making of cheese sauce by the roux method. Marks would have been gained for noting that flour and margarine are mixed together over a gentle heat. The mixture is stirred with a wooden spoon. The pan is removed from the heat and the milk is added gradually, stirring well between each addition of milk. The pan is returned to the heat and the sauce is boiled for three minutes, stirring all the time. Finally the grated cheese is added off the heat. Reasons for each stage of the process should have been given.
- (c) There was a wide range of examples of dishes that included cheese sauce. The most popular answers were macaroni cheese, lasagne, cauliflower cheese, pasta bake and eggs au gratin.
- (d) It was well known that sauce will be lumpy if it is not stirred when milk is being added and when it is being boiled. A number of candidates correctly noted that lumps could occur if liquid is added too quickly or if the pan is not removed from the heat before the addition of milk.
- (e) Many candidates gave three ways to reduce the amount of fat in the sauce. Low fat spread could be used, skimmed milk contains little fat, and less cheese or margarine could have been used. Replacing milk with water or using a smaller quantity of milk were not appropriate suggestions.

### Question 3

- (a) The importance of cereals was generally well understood. Cereals are cheap, easy to grow, transport and store, and can be used in a variety of ways in both sweet and savoury dishes. The majority of candidates noted that cereals are a source of carbohydrate which is important for energy. Credit was given to those who stated that whole grain cereals are a valuable source of Non-Starch Polysaccharide.
- (b) Candidates were usually able to name four different cereals. Some answers listed both corn and maize although they are different names for the same cereal.
- (c) It was usually stated that cereals should be kept in a cool, dry place to prevent the formation of mould. Most candidates mentioned that regular checking is important and that stocks should be used in rotation; old supplies must not be mixed with new. There were many valid points and all were credited. Reasons for the advice given were also given credit.
- (d) Many candidates were unable to identify three different types of flour. Appropriate answers would include plain flour, strong flour, self-raising flour, wholemeal flour, wheat germ flour and brown flour. Credit was given to those candidates who named cornflour. The uses of each of types of flour mentioned were usually well known. Facts about different flours were often very vague. It was expected that mention would have been made of the gluten content in strong flour, the baking powder in self-raising flour and the NSP in wholemeal flour. Better answers included information on the extraction rate of different types of flour and commented on the shorter shelf-life of wholemeal flour due to the fat in wheat germ becoming rancid.

### Question 4

- (a) Many candidates misread the question and gave accounts of cooking vegetables in general. The question related to green (leafy) vegetables so some of the points made were irrelevant. Vitamin C can be lost in a variety of ways during the preparation, cooking. It was expected that candidates would be able to state that vitamin C is water-soluble, it is destroyed by heat, by oxidation and by the enzyme ascorbase present in cell walls. The use of bicarbonate of soda, an alkali, causes vitamin C, an acid, to be neutralised. Credit was given for facts relating to preparation, cooking and serving, and for explanations. It was well known that vegetable should be prepared just before cooking, they should not be soaked, cooking should be in a small amount of boiling water with a lid on the pan and serving should be immediately after cooking. Candidates were usually unable to explain the effect of each instruction on vitamin C. No credit was given for simply stating that the vitamin would be destroyed if the processes described were not carried out. It is important that precise information is credited in order to differentiate between candidates. General statements usually suggest a lack of understanding.

- (b) This part of the question was often answered well. Candidates were able to suggest several different uses of sugar in cooking and could usually give examples to illustrate their answer. Sugar is used for giving a sweet flavour, it increases the energy value of foods and is an important preservative, for example in jam. It helps to aerate creamed mixtures and is used in bread-making to feed yeast. Many candidates discussed the use of sugar in sweets and icings and noted that when heated it caramelises, giving a brown colour. This is important in cake-making and in the preparation of desserts such as caramel custard. There were many other possible answers and all relevant information was credited.
- (c) There were many excellent accounts of the importance of food labelling. Candidates noted the types of information found on food labels and often gave good reasons for each point made. The list of possible answers is extensive but candidates usually noted the name of the product, the ingredients, the name and address of the manufacturer, the weight, instructions for cooking and storing and serving instructions. Reference was often made to the nutritional information found on packaging and its importance for those on special diets or for comparing similar products. Some answers referred to the importance of noting additives included in the product; others mentioned that vegetarians would need to refer to the ingredients list before choosing a product. The quality of answers indicated a good understanding of the topic on the part of most candidates.

### Question 5

- (a) The majority of candidates were able to identify some of the reasons for preserving food. Preservation allows food to be transported, foods last longer so wastage is reduced, and foods can be enjoyed out of season so meals can be more varied. Foods can be preserved in many ways and preserved food is useful in emergencies. Most candidates were able to explain that micro-organisms are destroyed during most methods of preservation so food spoilage is prevented.
- (b)(i) This part of the question was poorly answered. Candidates often failed to appreciate the difference between refrigeration and freezing so many answers were confined to the storage of food in the refrigerator. The most frequently given rule for freezing food at home was that foods should be wrapped before storage; few candidates were able to give a reason for this. It was expected that candidates would know that foods should be “fast frozen” to prevent the formation of large ice crystals within cells. This causes damage to cell walls and spoils the texture of food when thawed. A headspace should be allowed when freezing liquids to allow for expansion. It was rarely noted that vegetables should be blanched to destroy the enzymes which cause spoilage and that air should be removed from packages to prevent the surface of the food from drying.
- (ii) Few candidates knew that the temperature for storing food in a domestic freezer is  $-18^{\circ}\text{C}$ .
- (iii) It was well known that freezing delays food spoilage because bacteria are dormant at the temperature in the freezer therefore they are unable to multiply. Few answers contained any further information. It was hoped that candidates would be able to explain that because the water content of food is frozen it is unavailable to bacteria. They require moisture for growth so growth is prevented. Bacteria also need warmth; the temperature in the freezer is too low. In addition, at low temperatures enzymes are ineffective.
- (iv) A frozen food label should give the name of the food, the date of freezing and the quantity, or the number of portions contained. The ‘best before’ date could be given as could any special points, for example the amount of added sugar.
- (v) Candidates rarely gave reasons for the types of packaging suggested. Credit was given for noting that plastic bags and plastic boxes are suitable. Aluminium foil, greaseproof paper and thin polythene are also used but additional information was seldom given. Better candidates were able to explain that packaging should be waterproof and should be strong enough to prevent damage. Square containers are easier to stack and are more economical of space. Credit was given for mentioning that all packaging and containers must be sealed tightly to prevent the entry of air and the evaporation of water. All valid information was credited, whether it was examples of packaging or explanations for its use.

## Question 6

- (a) Most candidates gave several examples of ways to save money when choosing food. They included buying foods in season, shopping in markets, using “money off” coupons and growing foods at home where possible. Bulk buying was suggested, as was the advice to reduce the use of convenience foods. Few answers referred to the use of cheaper sources of protein foods, for example cheese and eggs. Tough cuts of meat, which cost less, can be tenderised by moist cooking methods. Some candidates noted that waste must be reduced by making use of leftover foods and by cooking only the amount of food needed. There was a wide range of possible suggestions for saving money when choosing food and credit was given to all valid points made and to examples which supported the facts given.
- (b) Examples of ways of saving time when planning, preparing and cooking food were often limited to using a microwave oven or pressure cooker. A number of candidates wrote at length on making a time plan. Time plans do not save time; they are concerned with time management. It was expected that the use of convenience foods, labour-saving equipment and quick cooking methods would have been discussed. Several candidates correctly noted that if food is prepared and cooked in bulk and then frozen, for example, time could be saved in the future because dishes may only need to be reheated after defrosting. Many candidates stated that foods such as potatoes cook more quickly when cut into small pieces; sometimes root vegetables need only be scrubbed rather than peeled before cooking which saves time. If dishes are cooked and served in the same container there will be fewer items to wash. As usual, credit was given for all appropriate suggestions and for examples to illustrate them.
- (c) Candidates usually noted that ovens and hot plates should be switched off after use to avoid wastage of fuel and that using all shelves in the oven at the same time is economical of fuel. Many points could have been mentioned, for example ensuring that lids are used on pans and that just the right amount of water is boiled for tea and coffee. Pre-heating an oven for more than ten minutes is unnecessary and cutting food into smaller pieces allows quicker cooking. Convenience foods are usually economical of fuel because they require short cooking times. It was surprising that few candidates suggested that pan lids should be used where appropriate, flames should not be too high to avoid wasting heat and the base of a pan should be the same size as the hotplate whenever possible. Microwave ovens and pressure cookers save fuel because they shorten cooking time, and steaming is economical of fuel because several dishes can be cooked at the same time over one pan of boiling water.

As in other parts of the question, candidates generally gave correct information but answers were often too brief. When part of a question carries five marks candidates should realise that several different points need to be made in order to score well. Explanations and examples to illustrate points made are always rewarded.

## Question 7

- (a) Most candidates were able to state that raising agents make mixtures light by the introduction of air and that gases expand on heating. This increases the volume of the mixture. Better answers noted that the open texture produced is usually more attractive and the product is easier to digest.
- (b) Air can be introduced into mixtures in many ways, for example by sieving dry ingredients, by creaming fat and sugar, by rubbing fat into flour and by rolling and folding certain pastries. Egg whites can be whisked as can whole eggs and sugar. Identifying five of these methods and illustrating each method with an example could have scored full marks. Answers, however, were often too vague. It was not enough, for example, to list methods such as sieving, creaming and rubbing in without stating the ingredients used in each process. Named pastries and cakes were expected as examples of each method identified. This confirms that candidates understand the information given.
- (c) There were many excellent explanations of rules to follow when making bread with yeast. It was apparent that the process was familiar to many candidates. They noted that warm liquid and a warm working area encourage the fermentation of yeast, they stated that kneading distributes yeast evenly and helps to develop gluten and that rising gives time for the production of carbon dioxide. It was rarely mentioned that a hot oven is necessary for baking because yeast is destroyed by heat. This prevents further production of carbon dioxide. Full marks were awarded to those candidates who identified five different rules and were able to give a reason for each of them.

- (d)** Few candidates were able to give more than one or two points on the composition, use and storage of baking powder. It was hoped that baking powder would be known to be a mixture of bicarbonate of soda (sodium bicarbonate), an alkali, and cream of tartar (tartaric acid). With moist heat, they react to produce carbon dioxide, leaving a colourless and tasteless residue. A starchy ingredient is also present which absorbs moisture, preventing a reaction between the other components during storage. Baking powder is used in creamed cake mixtures, scones and suet pastry. It should be stored in an airtight container because dampness encourages the acid and alkali to react. Carbon dioxide would be given off resulting in a poor result when used in mixtures. Again, all correct information was credited but few candidates were able to give precise information.

# FOOD AND NUTRITION

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Paper 6065/02

Practical

## General comments

Most candidates produced work of a reasonable standard.

Many Centres labelled their work clearly, arranged the work in the correct order and sent the top copies to CIE as requested. However, a few Centres did not label the work with the allocated test numbers, did not arrange the work correctly and did not check that the addition of marks was correct. Top copies of the examination sheets should be retained for use by the Examiner, while the candidates use the second copies (pink) during the practical examination. Only the marked top copies should then be sent to CIE. The bottom copy (pink) should be collected in after the practical examination and should be retained by the Centre until after the publication of results, as this is the only copy of the candidates work if the top copies should go missing. The top copies should not be used by the candidates during the test but, as some of these were splashed with food this year, it seems that this was the case and this is not acceptable.

Some Centres were still not following the regulation that the five chosen tests should be “allocated to the candidates in strict alphabetical order”. Centres **must** follow the procedures for allocating the tests as detailed in the Confidential Instructions provided by CIE.

It is also important that all work shows evidence of marking by the Examiner on every page. Some work showed no evidence that it had been marked, except for the marks shown on the Individual Candidate Mark Sheet. It is also necessary to show clear annotation individual to each candidate on the Individual Candidate Mark Sheet to justify the marks allowed for each section. On some occasions full marks were awarded to some sections of the work without any supporting reasons. This is particularly important in the methods and results sections where the work is not seen by the Examiner at CIE.

A few Centres were allocating marks in the results section for the finished dishes according to their own scheme. There is a clear mark scheme for the choice and results sections which varies each year for each question and it is vital that this is followed carefully. On some occasions it was necessary to make some adjustments to the marks where dishes chosen were unsuitable to fulfil the test requirements or when marks awarded were very high for too few dishes showing too few skills. Examiners should read all sections of the mark scheme very carefully before marking the work. Teachers who examine the Food and Nutrition practical/coursework component **must** be accredited by CIE.

The Choice section of the preparation sheet should show which dishes the candidate has chosen to answer the question set. These should be arranged in order according to **parts (a) and (b)** of the question.

It should be clear which dishes are being served as a meal if the question asks for this.

Dishes should be named and recipes should be given alongside each dish, methods are not required here. Recipes should include the ingredients required to make the dish, with descriptions of the foods if required. It is not sufficient just to list “meat” or “fish” as the particular type of food may be crucial to the resulting dish. Candidates should weigh their foods in ounces, grams or cups and should not mix all the measurements in one recipe.

Care should be taken to ensure that candidates answer the question fully. A two course meal could be a starter and a main course or a main course and a dessert, both are acceptable. The dishes which are chosen should be suitable for the occasion, e.g. foods for an outing should pack well without breaking and should keep well in a suitable state for serving. Ice cream, which some candidates chose, is not the most suitable food for packing.

Candidates should avoid repeating ingredients in their chosen dishes, e.g. chicken soup followed by chicken casserole. They should also avoid repeating methods, e.g. using the rubbing-in method for three of their dishes.

Some candidates chose many low skill dishes, e.g. jelly, salads, while some others used canned foods or bottles of drink in their recipes. These should be avoided whenever possible as full marks for choice should

not be awarded for low skills. There should be a good variety of colour, texture and flavour in the dishes served and if meals are required they should be balanced.

Some Examiners were awarding marks which were too high for too few dishes, for incomplete meals or for tests which showed very few skills.

Some candidates produced very good time plans with named dishes, brief methods, temperatures and times for cooking, times for washing up and serving details.

Candidates should only be allowed 2 ½ hours for cooking and should fill all this time with skillful work. The first dish should be shown to start at a particular time, e.g. 9.00 am with the next dish starting at 9.20 am, etc. Candidates should not be simply listing "10 minutes", "15 minutes", etc. for each dish. Preheating of ovens should be shown, but only for 10 – 15 minutes, as longer than this is not economical.

Dovetailing in the preparation of dishes should be shown so that candidates are not simply making one dish after another and waiting while each dish cooks. Washing up should be shown three times in the plan.

Brief methods should be given and should be correct, e.g. "rubbing-in" is a method, "shortcrust pastry" is not a method.

Some candidates had poor sequences in the time plan such as preparing dishes late in the plan which needed setting or chilling, making cakes and attempting to ice them as soon as they were taken out of the oven.

Quite a number of candidates served their dishes throughout the test as soon as they were ready. Part of successful planning should include sequencing dishes so that meals can be served in the correct order of courses towards the end of the test. Time should be allowed for serving and some detail should be given about garnishes or decorations.

Most of the shopping lists were good but candidates need to take care that they describe their ingredients, e.g. plain or self-raising flour and that they list the exact amounts they require.

### **Comments on specific questions**

#### **Question 1**

Many candidates chose three different protein dishes although some did not choose dishes which were suitable for the main course of a meal. The meal for the schoolboys was usually good but care should be taken to ensure that the meal is balanced. Suitable drinks were served.

#### **Question 2**

A variety of five dishes were chosen but sometimes these were not very suitable for an outing, e.g. they may be difficult to transport, may not keep well for future use or would need to be served hot. A number of candidates served one drink only when the question required two drinks.

#### **Question 3**

Generally this question was answered well. Candidates provided filling meals with plenty of energy for the manual workers. Biscuits and scones were made but sometimes these were both made by the same method.

#### **Question 4**

Candidates produced a variety of dishes suitable for the fundraising event. Sometimes these did not include a good variety of skills, e.g. using lemons for very simple lemonade. Additional dishes were prepared but it was not always clear which dishes were for the snack.

#### **Question 5**

This question was usually well answered, with many fruit and vegetables being used in the meal. Biscuits and cakes were made but sometimes these were both made by the same method and on many occasions they were not decorated as required by the question.

#### **Question 6**

Meals were prepared but they were not always the most suitable for a convalescent. Many fried foods were served or foods which needed a lot of chewing or had very strong flavours. Batter mixtures were prepared well, usually pancakes or banana fritters, and creamed cakes were served.

**Question 7**

Two different pastries were prepared well but often these were made into two similar dishes, e.g. two pies. Meals were completed with a choice of desserts but care should be taken that the chosen desserts show skill.

**Question 8**

Vegetarian meals were prepared but candidates need to ensure that no meat or fish are used, not even beef stock. Many meals did not include sufficient alternative proteins to make the meal balanced. Suitable desserts and fruit drinks were served. Cakes were made although the whisking method was not always used as required by the question. Biscuits were suitable to illustrate the melting method.