

FOOD AND NUTRITION

Paper 0648/01

Paper 1

General comments

There was a wide range of scores for this paper. Many candidates were able to gain high marks, demonstrating a thorough understanding of the subject and the ability to apply their knowledge to a variety of situations. They were able to give explanations and examples wherever appropriate. Weaker candidates were usually able to recall facts but were unable to offer explanations or examples to illustrate their answers. The poorest candidates demonstrated an inability to apply their knowledge, suggesting that there was a lack of understanding of the information learnt. Their responses were often very brief.

Candidates seemed to have had sufficient time to answer the required number of questions. There were few rubric errors, usually due to candidates answering **Question 8(a)** and **Question 8(b)** instead of choosing to answer one or the other. Most candidates attempted to answer all of the required questions. Handwriting was usually legible but there were a few instances of very small handwriting that was difficult to decipher. Mark allocations and spaces provided for answers should help candidates to decide on the amount of detail required in their answers. It should not be necessary to write in the margins or on additional sheets.

Comments on Individual Questions

Question 1

- (a) Most candidates were able to state that fat is composed of the elements carbon, hydrogen and oxygen.
- (b) The functions of fat were well known. Most candidates noted energy. Insulation, the protection of internal organs, the formation of cell membranes and a solvent for fat-soluble vitamins were some of the other functions mentioned. The majority of candidates scored full marks.
- (c)(i) There were few correct definitions of saturated fat. It was expected that candidates would state that saturated fat contains the maximum amount of hydrogen, the molecule is composed of single bonds or that it is solid at room temperature. Full marks were awarded for stating two correct facts. Examples included butter, lard, cream and coconut oil.
- (ii) Most candidates could not define polyunsaturated fat. Credit was given for noting that polyunsaturated fat does not contain the maximum amount of hydrogen and that the molecule has more than one double bond. Many candidates correctly stated that polyunsaturated fat is liquid at room temperature. Named examples were expected; for instance sunflower oil, corn oil and soya oil. No credit was given for giving margarine as an example since it is often made from whale oil. Sunflower margarine, however, would have been an acceptable answer.
- (d) The digestion and absorption of fat was well known by many candidates and full marks were often awarded. It was disappointing to note that some candidates were unable to give any correct facts on digestion and absorption.
- (e) Most candidates were able to explain that excess fat is stored under the skin or around internal organs causing obesity. Better answers included information on coronary heart disease, often describing how cholesterol can be deposited in blood vessels causing them to be narrowed and sometimes blocked.

Question 2

- (a) The functions of NSP were well known. Most answers included the information that NSP absorbs water, making faeces soft and bulky and easier to expel. Better answers noted that NSP stimulates peristalsis and can absorb toxins and lower the level of cholesterol in the body.
- (b) Candidates usually stated that constipation could result from a lack of NSP in the diet. Some answers correctly identified diverticular disease, cancer of the colon, haemorrhoids and hernias as possible consequences.
- (c) Credit was given for named fruit and vegetables, fruit seeds and skins, pulses, wholemeal bread and wholegrain cereals.

Question 3

- (a) There were many informative accounts of the uses of water in the body. Full marks were awarded to those candidates who gave explanations. It was usually stated that water forms the basis of body fluids but examples were not always given. Similarly, water was known to regulate body temperature and to help eliminate waste but further information was rarely given.
- (b) Most candidates were unable to define water balance. It was hoped that candidates would state that the amount of water taken into the body should be the same as the amount lost.

Question 4

There were many excellent accounts of the choice and cooking of food for the elderly. General points, which would apply to all groups in society, were not credited since the focus of the question was on the elderly. It was often noted that the amount of salt, sugar and fat should be lowered to reduce the risk of hypertension, diabetes, obesity and coronary heart disease. It was expected that the need for protein, calcium, iron and vitamins C and D would be mentioned as well as the requirement to offer smaller portions of foods which are easy to eat and digest. It should not be assumed, however, that elderly people have no teeth!

Question 5

- (a) The nutrients in milk were not well known. Most candidates stated that milk contains protein but other nutrients were not always identified. It was hoped that fat, carbohydrate or sugar, vitamins A and D, riboflavin and calcium would be named.
- (b) Rules for storing milk were usually given correctly. As expected, candidates noted that milk should be stored in a clean, cool place; it should be covered and should be kept away from foods with strong odours.
- (c) Cheese, butter, cream and yoghurt were the examples of milk products usually given.
- (d) Most candidates were not able to explain why milk becomes sour. Full marks could have been scored for stating that lactic acid bacteria act on lactose converting it into lactic acid. This curdles milk, separating it into curds and whey.
- (e)(i) There were few correct descriptions of pasteurisation. It was expected that the temperature and time for one of the methods of pasteurisation would be given and that candidates would state that the process destroys pathogenic bacteria and reduces spoilage bacteria. Few facts were known.
- (ii) Ultra Heat Treatment also lacked precise detail. Again, the temperature and time for the process should have been stated and the fact that all bacteria are destroyed. Some candidates noted that the milk was sealed in foil-lined containers but very few mentioned that this would prevent the entry of more bacteria.

Question 6

- (a) The responses to this part of the question were disappointing. It was expected that candidates would state that food is cooked to make it safe to eat, to change the colour, texture and flavour of food and to create new products. Only a few candidates noted that cooking food provides hot dishes in cold weather and that cooking vegetables reduces their bulk and allows more to be eaten. Many of the answers were repetitive, naming different methods of cooking instead of giving reasons for cooking. Examples often lacked detail, for instance, if a candidate noted that cooking food allows a food to be cooked in a variety of ways, it would be expected that the example could be eggs poached, fried, boiled and so on. To simply give eggs as an example without further detail would not have been credited.
- (b)(i) Credit was given for any advantages and disadvantages of steaming. It was suggested that steaming requires little attention and that there is little loss of nutrients. Steamed food has a soft texture and is easily digested. It is, however, a slow method of cooking during which flavours and colours are not developed; steamed food has a soft texture. The kitchen may become hot when food is being steamed and there is often a great deal of condensation on windows.
- (ii) As in the discussion on steaming, all correct information was credited. Frying was known to be a quick method of cooking during which food becomes crisp and brown and an appetising flavour is developed. It does, however, require constant attention because frying can be a dangerous process. Fried food can be difficult to digest because fat is absorbed during cooking. The additional fat can contribute to obesity and coronary heart disease.
- (iii) Many candidates seemed unfamiliar with the use of a microwave oven; there were many references to the danger of radiation posed by microwaves but there is no danger since microwaves are only emitted when the door is secure. Microwave cooking is quick, the kitchen does not get hot and no preheating of the oven is required. Further time is saved because food can be cooked and served in the same dish, saving washing up. The main disadvantages are that food does not become brown or crisp, flavours are not developed and it is not possible to judge accurately when food is cooked. Hot spots may develop in food if it is not turned during cooking. Metal containers must not be used to avoid damage to the microwave oven.

Question 7

- (a) There were many excellent accounts of the method of making and baking a Victoria sandwich cake. Candidates gave adequate detail, including the oven temperature, the cooking time and a method for testing to check whether the cake was thoroughly cooked. There were a few candidates who seemed to have no experience of making a cake by the creaming method.
- (b) Most candidates could identify two ways of varying the cake. Suggestions included cocoa, coffee essence, lemon and orange rind, dried fruit, vanilla essence and chopped nuts.
- (c)(i) Many candidates found it difficult to give advice on the choice of flour for making the cake. White flour gives a lighter texture and is easier to rise. Soft flour should be used because of its low gluten content. If self-raising flour is chosen, the baking powder must be omitted because a fixed amount is already included in the self-raising flour. Wholemeal flour would, however, add colour, flavour, texture and NSP.
- (ii) Caster sugar was known to be a good choice for the creaming method because of its fine crystals that dissolve easily when creamed with fat. Soft brown sugar does, however, add colour and flavour.
- (iii) Better answers were given regarding the choice of fat. Soft margarine creams well and gives a good colour. Butter as a better colour and flavour but is more expensive and more difficult to cream.

- (c) Most candidates were able to note one or two changes which take place during the baking of the cake but the majority of answers lacked detail. It was expected that candidates would note that the fat and sugar melt, air expands, carbon dioxide is produced by the baking powder and the cake is pushed upwards. Starch from the flour absorbs the meted fat. Sugar caramelises, starch dextrinises and a crust forms on the surface. The risen shape sets when protein coagulates. Full marks could be gained without giving a perfect account of the changes. This section illustrates well that candidates must understand what they are learning otherwise they will find it difficult to answer questions of this nature.

Question 8(a)

There were many detailed answers on different raising agents and their use, although, high scores could only be achieved if a clear understanding of the use of different raising agents was apparent and examples were given to illustrate their use. Better answers began with an explanation that gases expand on heating and that this underlies the concept of raising agents. Heat sets the risen shape of the mixture because protein in the other ingredients coagulates. Different methods of incorporating air into mixtures were often described. These included rubbing-in, creaming, whisking, sieving and rolling and folding. Examples of the methods mentioned were helpful.

Carbon dioxide can be introduced by adding baking powder, bicarbonate of soda or yeast to a mixture. There was an opportunity to include a great deal of information on any of the ingredients and methods of use. Few candidates mentioned the use of steam as a raising agent.

The best answers demonstrated a wide understanding of the topic with explanations and examples where appropriate. Poorer candidates gave general information and generally failed to use correct terminology.

Question 8(b)

Many answers lacked depth. There were few good accounts of the different types of fats and oils and their uses in the preparation of dishes. It was hoped that candidates would differentiate between solids and liquids, saturated and unsaturated fats and animal and vegetable sources since these differences are responsible for wide range of uses in food preparation. Mention was sometimes made of cholesterol and its implications but few candidates made reference to the hydrogenation of oils to create margarine of varying degrees of hardness.

The uses of fats and oils were often listed. Many candidates were able to identify several different uses such as frying, shortening, spreading, basting and aerating. Named dishes were given as examples to illustrate the uses. The best answers included scientific information with specific terminology where appropriate, demonstrating a clear understanding of the topic. Weaker answers were more general and included few facts about the differences between fats and oils. The main part of the answer was usually a list of uses with some examples.

High scores can only be achieved by those candidates who can demonstrate a sound understanding of the topic and can offer explanations for many of their statements. Credit is always given for named examples in support of the facts given.

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Practical

General comments

The work presented by candidates was generally of a good standard. Most Centres ensured that the work was labelled correctly and was arranged in the correct order. Some Centres included photos to illustrate the dishes produced by their candidates. Although this is not compulsory it is helpful in confirming the marks awarded in the results section. It is important that Centres allocate the tests correctly according to the instructions and that all candidates complete all sections of the practical examination. Mark schemes for each section of the work should be followed carefully and Examiners should mark all parts of the work as it is completed. The planning sheets should be marked before the actual cooking takes place. Some work has shown comments, which indicate that the planning sheets were marked after the practical session. In each section there should be evidence of the work produced by the candidate. This is shown in the planning sheets which are submitted to the examination board and also in the annotation by the Examiner in all sections. It is vital that there is detailed annotation by the Examiner to show how the marks were allocated. It is particularly important in the methods and results sections where the marks which have been awarded should be supported by explanation of what actually happened during the cooking session. Some adjustments were necessary when marks awarded were too high without supporting annotation and when instructions and mark allocations were not followed carefully.

In the choice section of the preparation for the practical examination candidates should provide a clear list of named dishes which they have chosen to answer the question. These should be arranged according to the requirements of the test and may be labelled parts **(a)** and **(b)**. Sufficient dishes should be chosen to fill the allocated time and to answer the question fully. A good variety of ingredients should be used and a wide variety of skills and methods shown. When meals are planned these should be attractive, balanced and suitable for the people who are to eat the meal. Accompaniments and desserts should be included to complete the meal. Marks should be deducted when meals are incomplete or when the work is very simple or repetitive. In this section some Examiners were awarding marks which were too high. Next to each chosen dish there should be a clear list of ingredients, showing the types of foods and the exact amounts required. Candidates need to take care that recipes are complete and that important foods are not missing. Clear descriptions are required, so "mixed fruit" would not explain exactly what is needed. It was pleasing to see that very few candidates used convenience foods in their recipes.

The time plan should show how candidates work through their test in a logical sequence. Dishes which take the longest time or need to be chilled should be started near the beginning of the test. Brief details of methods should be given including cooking times and temperatures. Candidates are still failing to include these details. Pre-heating of ovens, preparation of equipment and washing up throughout the test should be shown clearly. Completed dishes should be served towards the end of the test time. Care should be taken that foods are served in the correct order as for a meal and that hot foods are served hot. Serving time should be shown on the plan with a brief indication of how dishes are completed for serving. This area particularly needs some improvement. Shopping lists were generally good, although some candidates did not list any special equipment which would be required.

When marking the actual method of cooking Examiners should include clear annotation to explain how the candidate worked. General comments such as "good", "satisfactory", "worked hard" do not explain clearly what took place. In this section some Examiners were awarding high marks for very few simple dishes. The mark scheme states clearly that a mark of 44/55 should be awarded for very good methods, excellent timing and a variety of skills. In marking the quality of dishes/results Examiners should make detailed comments about texture, flavour and edibility of each dish. The mark scheme needs to be studied regarding the allocation of marks for each dish. Dishes which have not been completed or are not part of the test cannot be awarded any marks. Comments about how the dishes were served are also required to support the marks awarded in this section.

Comments on specific questions

Question 1

This was a popular question, many candidates producing three very different dishes which included herbs and spices as required. Occasionally candidates produced one or more of their dishes without the required herbs and spices. Meals were completed although some candidates did not indicate which dish from (a) would form part of the meal. Some candidates failed to include accompaniments with their meal. A variety of suitable drinks were made; wine is not a suitable choice here, particularly as it would not show any skill in the preparation.

Question 2

This was also popular choice of question. Candidates chose well in the preparation of a vegetarian meal. Some however failed to provide a choice of desserts or provided two desserts which were very similar so limiting the marks for variety of skills. Cakes made by the whisking method were good, as were the cold drinks.

Question 3

Surprisingly this was a less popular question as it would seem to be relatively straight forward. Candidates chose a wide variety of dishes but need to take care that skills are shown and that flavours are not repeated in their dishes. Suitable cakes were chosen but were not all decorated.

Question 4

Generally candidates chose suitable dishes to illustrate the three cooking methods required by the question. Care however needs to be taken that the dishes are skilful. A piece of fish could be steamed or deep fried successfully, showing use of the cooking methods as required but this does not make an interesting or skilful result. On this occasion a sauce could have been added to complete the dish and show more skills. Meals were provided but did not always relate particularly to the needs of a convalescent i.e. easy to digest, plenty of vitamins and minerals, not too high in fat, easy to eat, etc. Suitable drinks were made.

Question 5

This was the most popular question. Batter mixtures were prepared, sometimes more than the one required, and these were included in the meal as sweet or savoury dishes. Accompaniments were sometimes missing for the meal. Shortcrust pastry dishes were prepared but some candidates also used this pastry to make the small cakes. This limited marks allowed for different skills. It would have been better if the cakes had been prepared by an alternative method e.g. creaming, to gain more marks. Candidates occasionally made scones instead of shortcrust pastry; this is rubbing in method, but not shortcrust pastry.

Question 6

This was a popular question but not all candidates answered well. Suitable meals were chosen for the people stated in the question but many of the dishes did not include good supplies of calcium and Vitamin D. Candidates could have chosen dishes which included cheese, milk, etc.

Biscuits and cakes were completed but the biscuits particularly were not always made by the melting method.

Question 7

This was the least popular question and candidates who chose to answer it usually chose simple, repetitive dishes using fruit. A wide variety of fruit and vegetables containing Vitamin C could have been incorporated in dishes which showed skills in addition to just the preparation of the foods e.g. preparation of a pastry dish with a fruit filling. Packed meals for three boys should have included one dish from (a) and at least two further sweet or savoury skilful dishes. The meals should have been suitably filling for three boys and suitable to pack. Drinks were usually chosen well.

Question 8

Evening meals prepared for two weight-watching friends were not always suitably low in calories as they often included a lot of fat, sugar, cream, etc. Care needs to be taken to answer the question set. The choice of desserts should have been varied in preparation and suitable to accompany the meal. This was not always the case. Dishes using different raising agents were made but some candidates used the same raising agent in both dishes.