

FOOD AND NUTRITION

Paper 0648/01

Theory

Key messages

- In order to do well on the higher mark questions, candidates need to give reasons, explanations and examples in their answers. They should be able to demonstrate their ability to select appropriate information and to tailor their answers to the questions set.
- Candidates should use the mark allocation for each question to guide them in the length of answer required.

General comments

The range of marks achieved in this paper was wide; there were many very good scripts and the overall standard was similar to that of previous years. Candidates who were able to explain their answers where appropriate were the most successful. Weaker candidates seemed to rely on their ability to recall facts without giving additional information where required, suggesting a limited understanding of some topics. Information learned by rote is often difficult to recall when questions are worded in an unexpected way. Sometimes answers were too long because candidates gave all the information they knew on a topic instead of selecting facts relevant to the question.

Candidates seemed to have had sufficient time to answer the required number of questions. There were few rubric errors. Some candidates answered both **Question 8(a)** and **8(b)** instead of choosing only one of them.

Scripts were generally well-presented and handwriting was clear although there were a few scripts which were difficult to read because handwriting was small. Candidates should be reminded of the need for clear handwriting. Any work which should not be marked by the Examiner must have a neat line drawn though it; correction fluid should not be used.

Mark allocations and the spaces provided for answers in both **Section A** and **Section B** should help candidates to decide on the amount of detail required in their answers. There is never any need to write in margins and in other spaces on the question paper. It wastes valuable time to write everything known on a topic.

Comments on specific questions

Section A

Question 1

- (a) Carbon, hydrogen and oxygen were known to be the elements which combine to form fat.
- (b) Most candidates were able to give at least two functions of fat. There were many possible answers; the most popular function given was that fat is a source of energy. It was also noted that fat acts as an energy reserve; it protects vital organs, preserves body heat and is a solvent for some vitamins, principally vitamins A, D, E and K. Credit was given for stating that fat gives flavour and texture to foods and gives a feeling of fullness after a meal.
- (c) Many candidates were able to give clear distinctions between saturated fat and polyunsaturated fat. They could state that saturated fats contain the maximum number of hydrogen atoms in their structure. A saturated fat molecule is composed of single bonds, it is usually of animal origin and is



solid at room temperature. Examples include butter, suet and lard although cocoa butter is an example from a plant.

- (d) Polyunsaturated fat has more than one double bond in its structure so it can accept more hydrogen. It is liquid at room temperature and is usually from plant sources although oily fish and fish liver oils are polyunsaturated. Sunflower oil, maize oil, sesame seed oil and cod liver oil were often given as examples.
- (e) It was well known that excess fat is deposited on the inner walls of arteries, narrowing the lumen and sometimes blocking the arteries. This can lead to coronary heart disease, hypertension and strokes. Excess fat may also be stored under the skin or around internal organs leading to weight gain and possibly obesity.

The question specifically referred to a diet high in saturated fat so it was hoped that reference would be made to the cholesterol found in saturated fat.

- (f) There were many excellent accounts of the digestion and absorption of fat in the small intestine. It was important that enzymes were correctly placed in the digestive system and that the end products of each process were named. Occasionally candidates gave information about the digestion and absorption of other nutrients but this was not credited.

Question 2

- (a) Most candidates correctly stated that calcium is important for the building and maintenance of bones and teeth. It is also important for the clotting of blood and for the functioning of nerves and muscles. Some candidates were able to give three correct functions of calcium, as requested, but the majority of candidates only noted the growth of bones and teeth.
- (b) Good sources of calcium were well known and included milk, cheese, green vegetables and the bones of canned fish. Candidates usually scored well.
- (c) Vitamin D was known to aid the absorption of calcium.
- (d) Rickets, osteomalacia and osteoporosis were the deficiency diseases credited.

Question 3

Most candidates were able to give some correct information on the importance of iron in the body but there were few answers with sufficient detail to be awarded full marks. It was expected that candidates would state that iron is a component of haemoglobin, the red pigment in blood which transports oxygen to cells in order to oxidise glucose. This process produces energy. It was often correctly noted that a deficiency of iron causes anaemia, the symptoms of which were usually stated correctly.

Question 4

There were many very informative accounts on planning meals for convalescents and those recovering from surgery. It was usually suggested that protein should be included for repair, iron to replace blood lost during surgery and calcium for blood clotting or to repair fractures, if appropriate. Some candidates correctly identified vitamin C and vitamin D as being necessary for the absorption of iron and calcium respectively. It was usually noted that meals should be small and frequent and should contain a limited amount of fat because fat is difficult to digest. A low carbohydrate diet was often recommended because convalescents are not usually very active. Few candidates mentioned that it was important to follow medical advice.

Section B

Question 5

- (a) There were many excellent accounts of the method for making shortcrust pastry. Reasons for each stage of the process were usually given. It was apparent that candidates were familiar with the method.
- (b) Most candidates were able to mention some of the rules for rolling pastry. Credit was given for noting that pastry should not be turned over or stretched. Large amounts of flour should be



avoided when rolling out pastry otherwise the proportion of fat to flour will change. It was known the rolling should be in a forward direction and must be in short strokes. Heavy handling will press out air which has been trapped during preparation.

- (c) Candidates were able to name some of the dishes that could be made with shortcrust pastry. Popular suggestions included meat pie, Cornish pasties, fruit pie, quiche, sausage rolls, curry puffs, lemon meringue pie and jam tarts.
- (d) Most candidates knew that plain flour is used for shortcrust pastry because the raising agent is air. White flour makes pastry rise more easily because of its lighter texture. Soft flour which has a low gluten content will produce a more crumbly pastry. Credit was given to those who stated that wholemeal flour could be used or it could be mixed with white flour; the result would be a pastry with a nutty flavour and a rougher texture and which contains iron and NSP. The fat used for shortcrust pastry should be hard and cold so that it does not melt during rubbing in. Lard will give a crumbly pastry but it has a poor colour and flavour. Margarine and butter have a good colour and flavour although butter is more expensive. A mixture of lard and margarine will have the qualities of both fats so is often used.

Question 6

- (a) There were many suggestions for saving money when planning, preparing and cooking meals. Credit was given for facts, reasons and examples where appropriate. It was often suggested that buying foods in season or in bulk could save money but if too much is bought at once and suitable storage is not available, money could be wasted because food may perish before it is used. Some candidates suggested that some fruits and vegetables could be grown at home; others noted that convenience foods should be used infrequently because of their cost. Others recommended making a shopping list or checking what was available at home before buying more. It was also suggested that prices should be compared and that the consumer should take advantage of discount vouchers and special offers. Other points made were that cheaper protein foods could be used, for example pulses, eggs and cheaper cuts of meat and that waste should be avoided by cooking only what is required or using left-over foods in another dish. All valid points were credited and many candidates gained the maximum mark possible.

Most candidates were able to suggest one or two ways of saving fuel when cooking family meals but there were very few accounts worthy of full marks. Credit was given for noting that microwave ovens and pressure cookers reduce cooking time therefore fuel consumption is lower. A tiered steamer can cook several dishes while using one hob; batch baking ensures that the oven is used to capacity and lids on pans reduce heat loss and shorten cooking time. Some candidates correctly noted that the oven should be preheated for no more than ten minutes and that by cutting root vegetables into small pieces less time, therefore less fuel, will be required. It was often suggested that convenience foods would save time because some of the preparation and cooking may have been done. If cooking time is saved then fuel will be saved but some candidates did not make the connection between saving time and, therefore, saving fuel.

- (b) The advantages and disadvantages of using convenience foods were well known and many candidates scored the maximum mark possible for this section. Convenience foods are known to save time, energy, fuel and effort. They can be quick and easy to prepare, easy to transport and store and are useful in emergencies. A wide variety is available and the product is the same every time. Some cooks may have neither the skill nor the equipment to make dishes they can buy. Convenience foods, however, have their disadvantages as noted by most candidates. They are expensive and serving sizes are small. Some of the nutrients lost during processing are not replaced, but artificial colourings and flavourings can be added to attract consumers. The effect of these additives is not always known; some can cause allergic reactions or hyperactivity in children. Convenience foods are often high in fat, salt and sugar and low in NSP.

Question 7

- (a) Most candidates were able to identify some of the nutrients in pulses but answers were generally limited to protein, starch and iron.
- (b) Some candidates gave four examples of pulses but most answers were limited to beans and lentils. Occasionally soya was mentioned. It was apparent that the majority of candidates had limited knowledge and understanding of the nutritive value and sources of pulses.

- (c) The importance of pulses was often limited to their use as a source of protein in vegetarian diets. Some noted that they were easy to store because they are dry and that they are cheap to produce, but few mentioned their importance in protein complementation and the fact that they can be used in a wide variety of dishes, for example soup, humus and cutlets.

The most successful candidates were able to give most of the details noted above.

- (d) Few candidates were able to state that TVP is Textured Vegetable Protein and is made from soya beans. There were some excellent accounts of TVP being used to replace or extend meat in a dish because it is spun into fibres which resemble meat fibres before being shaped into mince, chunks or sausages. It has no saturated fat, it is useful for vegetarians and is a cheaper alternative to meat. It has a long shelf-life because it is dry, there is no waste and it requires little cooking. Answers were a little disappointing because few candidates gave more than one or two points in a section which had an allocation of five marks.

- (e) It was pleasing to note that many candidates were able to score full marks for their accounts of the preparation and cooking of red kidney beans. They were known to contain toxins which can be destroyed by boiling for 15 minutes. Good descriptions, with reasons, were given of soaking beans to soften them and to shorten cooking time, and the need to destroy toxins in order to prevent food poisoning.

Section C

Question 8

- (a) This question gave candidates the opportunity to demonstrate their knowledge of the variety of ways to prevent food poisoning when storing, preparing and cooking food. Some candidates gave the conditions required for bacterial growth and noted the symptoms of food poisoning. There were many good accounts of the safe storage of food in a refrigerator, and long-term methods of preservation were generally noted, often with the scientific principles underlying the methods mentioned. The need for clean containers was usually mentioned. May candidates were able to explain that the temperature in a domestic refrigerator will slow down the rate of growth of bacteria but freezing will prevent bacterial growth. When the temperature is suitable bacteria will multiply once more.

Most candidates gave good accounts of personal hygiene points which must be observed when preparing food. The need to sterilise kitchen cloths was often mentioned as was the importance of keeping animals and insects out of the kitchen because they bring bacteria with them.

The need for thorough cooking in order to destroy bacteria, especially in meat and eggs, was often noted. Some candidates identified eggs as a possible source of Salmonella. The dangers of reheating food or keeping it warm were sometimes mentioned. Answers, however, often lacked depth and detail.

- (b) Candidates were usually able to identify many of the nutrients in milk and, in most cases, gave at least one function of each of the nutrients identified.

There are many methods of treating milk to extend its shelf-life and all those identified were credited. Details of the processes were usually given; the temperatures for the pasteurisation process were often well known and details of other methods of treating milk were noted. Among those frequently described were drying, condensing, evaporating, sterilising and Ultra Heat Treating. Exact temperatures and times, if appropriate, were expected.

Candidates were usually able to note that butter, cheese, cream and yoghurt are dairy products but they were often unable to explain the processes involved in their production. There were, however, some excellent accounts and several candidates scored full marks for their chosen answer.

Both of the questions in **Section C** required candidates to plan their responses carefully. It is essential that answers contain facts, explanations and examples if they are to be worthy of high marks. Candidates must be sure to read the questions carefully and to tailor their responses according to what they consider to be the key points of the questions. All valid points were credited and many candidates produced excellent answers.



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Paper 0648/02

Practical

Key messages

- Practical Examination Summary Marksheets should be included in the submission to Cambridge and marks should be filled in correctly on the MS1.
- Work should show evidence of marking, with supporting reasons which are specific to the work of each individual candidate. This is particularly important in the Method of Working and Results sections of the work.
- Dishes chosen should show a variety of skills and should include a variety of ingredients.
- Photographic evidence of the results is not compulsory but can be helpful in verifying the marks.

General comments

Candidates generally produced work of a reasonable standard and many of the test questions were answered well. Practical test sheets were usually arranged in the correct order and correctly labelled. Although many Centres included all the correctly completed mark sheets, a number of Centres did not include all that was required. Practical Examination Summary Marksheets were sometimes missing and marks were not always filled in correctly on the MS1. There were a number of addition, scaling and transfer errors. It is very important that all marks are independently checked on all the work and the marksheets before the work is submitted.

Examiners should provide detailed annotation for all sections of the work on the Practical Examination Working Marksheets. This should refer to the actual dishes being prepared and should be specific to the individual work of each candidate. A number of Centres presented brief and vague annotation, using words such as “good” or “excellent” for all sections of the work and for every candidate. The annotation should give reasons which support the marks awarded. This is particularly important in the Method of Working and Results sections of the work so that the Moderator can understand how the cooking progressed and how the dishes looked and tasted when they were served. Very few Centres included photographs of the results. Although photographs are not compulsory they are certainly helpful in verifying the marks awarded for results.

The practical test questions and all sections of the mark scheme should be studied carefully before any marks are awarded. It is important that candidates answer all sections of the questions correctly and choose a good variety of skilful dishes. Sometimes high marks were awarded when the chosen dishes did not fully answer the question, e.g. accompaniments missing from meals. At other times chosen dishes did not match with the particular requirements of the test, e.g. biscuits to be made by the melting method. Often high marks were awarded for all dishes, regardless of skill, yet the mark scheme clearly states that “maximum marks must be reduced for simple dishes”. A number of Centres were not following the mark scheme correctly in the Results section. The marks shown on the mark scheme were maximum possible marks for each dish yet sometimes these were exceeded.

In the Choice section many candidates chose suitable dishes which showed a variety of skills. However, sometimes a number of low skill dishes were prepared, e.g. rice pudding, jelly whip, fruit skewers, bread and butter pudding, etc. and these should not have been awarded full marks. In this section consideration should also be given to variety in ingredients and preparation/cooking methods yet some candidates repeated main ingredients, e.g. chicken, cheese, etc. or repeated methods, e.g. rubbing-in, frying, etc. Meals should be complete, balanced and include variety in taste and texture but this was not always the case. Dishes chosen for parts **(a)** and **(b)** were not always clearly labelled and sometimes it was not clear which dishes formed the meals. Most recipes were generally satisfactory.

Many of the time plans included the required details in methods, cooking times and temperatures and times for dishwashing. However, some candidates did not include these details and simply wrote comments such



as “make the pastry” (without a method) or “cook the macaroni” (without a cooking time). On many occasions serving details were unclear. Dishes prepared for a meal should be served hot and in the correct order of courses towards the end of the test. Candidates should indicate that dishes are garnished or decorated and ingredients for these should be listed in the recipes and shopping lists. Some candidates served their dishes as soon as they were ready throughout the test and this is where careful planning should have taken place when deciding the order of preparation. Shopping lists were mainly good but some candidates did not include the exact total amounts required and did not describe the ingredients, e.g. “flour” could have been shown as “200 gms self-raising flour”, “meat” could have been listed as “100 gms minced beef”, etc.

Comments on specific questions

Question 1

This was a popular question but part **(a)** was not always answered well. The evening meal for the manual workers was often incomplete as accompaniments were usually missing. Meals were not always well balanced and sometimes dishes were not very filling for someone who had worked hard. Candidates usually chose suitable dishes which packed well for part **(b)**.

Question 2

This was another popular question which was usually answered with a reasonable selection of suitable dishes. Occasionally there was repetition of methods, e.g. rubbed-in cakes and pastries. This should be avoided. Candidates also need to ensure that their selection of dishes includes variety in taste and texture.

Question 3

For part **(a)** candidates chose a good variety of dishes which included the use of three different types of flour, as required. Varied methods were used and a reasonable selection of skills was shown. Meals for part **(b)** were usually good.

Question 4

Candidates prepared two-course meals for vegetarians for part **(a)** but these were often lacking in protein. This would have made the meals unbalanced. Some dishes were low skill, e.g. pasta with a very simple sauce, and occasionally unsuitable foods were served, e.g. fish sauce. In part **(b)** whisked cakes were prepared well but biscuits were not always made by the melting method as required.

Question 5

The named ingredients were usually included in a reasonable selection of dishes to answer the test question. A number of candidates unwisely chose to use the lemon juice to make lemonade, which is very low skill. There are many more skilful dishes which could have been prepared using the lemon juice as flavouring in various cakes, puddings, sauces, etc.

Question 6

This was the least popular question. Many of the meals chosen for part **(a)** were too heavy for a person recovering from an illness and did not include plenty of Vitamin C and fluids to aid recovery. Part **(b)** was usually answered well.

Question 7

Many dishes were chosen which included a good supply of NSP for part **(a)**. Some candidates could have improved their choices by using wholemeal flour, wholegrain rice and wholegrain pasta rather than plain varieties. Meals prepared for part **(b)** were usually satisfactory.

Question 8

Most candidates prepared well-balanced and attractive meals for children. Occasionally accompaniments were missing from the meals and sometimes there was repetition of methods with part **(b)**. Most dishes for part **(b)** were prepared well.