

# FOOD AND NUTRITION

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Paper 0648/01

Theory

## General comments

There was a wide range of marks gained in this paper. Many candidates achieved high scores, indicating a sound knowledge and understanding of the subject and an ability to apply that knowledge to a range of questions. Explanations and examples were usually given when required, although weaker candidates tended to give facts without further information. Their answers were often very brief and essays showed little or no evidence of planning.

Candidates seemed to have had sufficient time to answer the required number of questions. There were few rubric errors. Handwriting was generally good although on a few occasions writing was very small and difficult to decipher. Scripts were neatly presented and candidates seemed to have made good use of mark allocations and the amount of space provided for answers.

## Comments on specific questions

### **Section A**

#### **Question 1**

- (a) Most candidates were able to give four functions of fat. It was known to provide warmth, energy, protection and insulation and to act as a solvent for vitamins A, D, E and K. Many candidates noted that fat gives flavour and texture to food and gives a feeling of fullness because it slows down digestion. Some candidates correctly mentioned that fat is important for the formation of cell membranes.
- (b)(i) Many candidates were unable to define saturated fat. Saturated fat has only single bonds in its structure. It contains the maximum amount of hydrogen and is solid at room temperature. Animal fats are usually saturated. Some candidates were able to show some of this information in a diagram. Many candidates were able to give an example of saturated fat, butter being the commonest example given.
- (ii) Monounsaturated fat has one double bond in its structure and can accept more hydrogen. Olive oil was the example most frequently given. Some candidates named fatty acids as examples but the question required the name of a specific fat.
- (iii) Polyunsaturated fat has more than one double bond so it can accept more hydrogen. It is liquid at room temperature and usually comes from plants. Again, several candidates showed some of this information in the form of a diagram. Examples given included maize oil, cod liver oil, palm oil and sunflower seed oil.
- (c) There were many excellent accounts of the digestion and absorption of fat. Those who had learnt and understood the processes were rewarded with full marks.
- (d) Most candidates were able to give one or two reasons for reducing the amount of fat in the diet. It was known that excess fat is stored, leading to obesity, coronary heart disease and hypertension. Some candidates correctly noted that excess fat might lead to breathlessness and a lack of self-esteem.

- (e) Many ways to reduce fat in the diet were suggested although there was much repetition in answers. It was recommended that foods should not be fried and that reduced-fat products such as cheese and yoghurt could be consumed. It was often noted that chicken and fish contain less fat than red meat. It was not appropriate to suggest using less fat when frying.

### Question 2

- (a) Most candidates were able to give two functions of vitamin A. It was known to be associated with the formation of visual purple which helps vision in dim light. It is important for the health of the skin and for making mucous membranes moist. Like other vitamins, it promotes growth.
- (b) Animal sources were known to be butter, eggs, milk, cheese, offal and fish oils. Good plant sources include carrots, green vegetables, tomatoes and apricots.
- (c) Night blindness is the deficiency disease associated with a lack of vitamin A. It was surprising that a large number of candidates incorrectly identified the deficiency disease as blindness.
- (d) Most candidates were able to gain full marks for stating that vitamin D assists the absorption of calcium and is important for the formation of bones and teeth.
- (e) Milk, cheese, eggs, oily fish and fish liver oils were known to be good sources of vitamin D and most candidates knew that the action of sunlight on the skin produces the vitamin.
- (f) Rickets, osteomalacia and osteoporosis were the deficiency diseases associated with a lack of vitamin D. Credit was given for naming any one of them.

### Question 3

- (a) Most candidates were able to give a reasonable account of the importance of Non-Starch Polysaccharide. It was known to absorb water, making waste soft and bulky and thus easier to expel. Some candidates correctly stated that it can reduce blood cholesterol and remove toxins from the body. The conditions, which can result from a lack of NSP, were well known. There were, however, a few Centres from which candidates were unable to give any correct information on the topic. It is clearly stated in the syllabus and plays an important role in healthy eating.
- (b) Some of the sources of NSP given were too vague. It is important that named examples of fruit and vegetables are given rather than generally mentioning fruit and vegetables. Apple and potato skins are a good source as are wholegrain cereals, brown rice, pulses and oats. A wide range of examples was credited.

### Question 4

There were many excellent accounts of the particular dietary needs of manual workers and full marks were frequently awarded.

Although manual workers, like every other individual, require all nutrients in order to have a balanced diet, the question required the identification of the special need of that group. Manual workers need fat and carbohydrate for energy, protein for repair and vitamin B to release energy from carbohydrates, fats and protein. Because they perspire when carrying out heavy work, additional amounts of water and salt will be required. Calcium ensures that muscles function correctly and vitamin D assists in the absorption of iron. Iron is important for the production of haemoglobin which carries oxygen around the body. When glucose is oxidised in cell respiration energy is produced.

Credit could only be given to points which related to the needs of the group in question. General points were not appropriate.

## Section B

### Question 5

- (a) The nutrients in eggs were well known. It was disappointing to note that many candidates listed calcium as a nutrient in eggs. This is only found in the eggshell which is not consumed so calcium cannot be named as a nutrient.
- (b) The uses of eggs were well known by many candidates and good examples of dishes to illustrate each use were often given. The most frequently named uses were coating, binding, glazing, aerating, thickening and setting. Many answers included information on the use of eggs for emulsifying or for decorating. Poorer candidates listed ways of cooking eggs such as boiling, frying and poaching. This information did not relate to the question unless it was preceded by the fact that eggs can be served as a meal so cooking methods alone could not attract marks. A few candidates confused glazing with brushing melted fat or oil onto baking tins to prevent sticking; others confused glazing with coating.
- (c) Most candidates were able to give some information on the storage of eggs but answers tended to be too short and lacking in detail. It was well known that eggs should be kept in a cool place, for example a refrigerator, so that they will keep longer. It was rarely mentioned that bacteria multiply more slowly at low temperatures. Most candidates were aware of the fact that eggs should be stored away from foods with strong smells, for example fish, cheese and garlic. Eggshells are porous and allow the egg to pick up the strong aroma of other foods. Many answers correctly included advice not to freeze whole eggs; expansion of the egg when it is frozen causes the shell to crack, allowing bacteria to enter. Credit was given for noting that eggs should be used in rotation and not after the 'Use by' date, and for mentioning that, to avoid the removal of the protective coating, eggs should not be washed before storing. This may be associated with bacteria, for example *Salmonella*, affecting the egg and causing food poisoning.
- (d) Most candidates were able to state that protein coagulates when heated causing the egg to solidify. Better answers gave the temperatures at which the egg white and the egg yolk coagulate. Most mentioned that the egg white becomes opaque and that when heating is prolonged the yolk becomes dry and crumbly. Better candidates were able to describe the formation of a grey-green ring around the yolk of a hard-boiled egg, but few were able to explain that it is formed of ferrous sulphate, the iron being present in the yolk and the sulphur in the egg white. Many candidates noted that, with prolonged cooking, egg becomes difficult to digest.

### Question 6

- (a) It was disappointing that few candidates were able to give precise information about flaky pastry. Plain, white flour should have been recommended. Some candidates noted that the flour should be strong because of its high gluten content. Wholemeal flour can be used but gives a heavier textured pastry. It does, however, contain NSP and will add colour and flavour to flaky pastry. It was usually stated that margarine and butter will give the pastry colour and flavour, and that fat must be hard so that it does not melt while the pastry is being made. A mixture of lard and margarine was often suggested. To gain full marks for this section candidates were required to comment on the choice of both fat and flour.
- (b) There were few good descriptions of the method of making flaky pastry although the topic is clearly identified on the syllabus. Most candidates mentioned that flour and salt should be sieved and gave appropriate reasons for this process. It was expected that detailed information on rolling, folding and sealing the edges of pastry would have been given. A few candidates were credited for giving some of this information in diagrammatic form. The requirements of the question were clear so those who knew the method and understood the reasons for each process gained full marks.
- (c) The range of dishes which could be made with flaky pastry was wide. Some candidates mentioned Cornish pasties and sausage rolls, others named Eccles cakes, savoury plait, cream slices and Russian fish pie. No credit was given for simply stating 'pie' since it is not a named dish.

- (d) The reasons for poor results were not well known. There were several possible causes for each of the faults identified in the question. Pastry may not have flaked well because the oven temperature was not high enough, the fat may have been added unevenly or the rolling and folding process might have been incorrectly carried out. Some of the reasons for the pastry rising unevenly could include incorrect rolling and folding and the failure to allow time for the pastry to rest before baking.

#### Question 7

- (a) Full marks could only be gained by those candidates who discussed both the choice and care of kitchen knives. Most candidates were able to score at least half of the marks available. It was usually noted that knives are available in a range of sizes and should be chosen according to the purpose required. Stainless steel was usually recommended because it does not rust, and the need for sharpness was stressed. The care of knives was discussed less well and answers tended to be too vague. Although it was usually noted that knives should be dried well before storing to prevent rusting, few mentioned that they should be washed in hot, soapy water. Storing out of the reach of children is unacceptable as a suggestion for the care of knives unless it is linked to a statement regarding a suitable place for storage. Credit was given for suggesting that the blade could be covered by a sheath or the knife could be stored in a knife block. Credit was given for any statement that addressed the question.
- (b) There were many excellent accounts of the disposal of kitchen waste. Most candidates mentioned the need to cover waste bins, to line with a plastic bag and to empty and wash the bin every day. Good reasons were given. Credit was given to those candidates who mentioned that food waste could be composted and that glass, paper and cans could be recycled. Many candidates scored full marks.
- (c) Hygiene in shops and markets was discussed less well. It was usually noted that shops should be clean and free from insects and animals. The expiry date on packaged foods should be acknowledged. Better answers discussed the personal hygiene of shop assistants and the need for them to wear clean clothing. Appropriate storage conditions were mentioned in order to keep food in its best condition. Again, all valid points, whether facts, explanations or examples, were credited.

#### Section C

#### Question 8

Many candidates chose this question but there was little evidence of planning answers. Questions in **Section C** of the paper give candidates the opportunity to interpret questions and demonstrate their knowledge and understanding of particular topics. In this question the topic was fruit, but many answers focused on fruit and vegetables. Candidates must select appropriate information and tailor their answer to the question. The nutritive value of fruit was usually discussed, and named examples of fruit containing each named nutrient were given. It was disappointing that information was sometimes vague; credit could not be given for noting that fruit contains vitamin C. Credit was given for identifying the nutrient but it was expected that a named example, such as lemon or strawberry, would have been given.

Other reasons for including fruit in the diet were often given but answers lacked depth and detail. Fruit were known to give a variety of colour, flavour and texture to meals; they contain water and NSP and can be eaten raw or cooked. Few candidates mentioned that they can be grown at home, are preserved in many different ways and are relatively cheap to buy. All candidates gave a few of these points but most answers were brief.

Fruit can be used in many different ways in family meals but, again, answers lacked depth. Often there was a list of uses without specific examples. Poorer answers noted that fruit could be used in drinks, cakes and desserts or would list dishes including fruit, for example apple pie, orangeade and fruit salad, without specifying the use of fruit being illustrated.

The most successful candidates noted that fruit could be used in cold desserts, for example fruit salad, in hot desserts like apple crumble and in beverages such as lemonade. It was expected that examples of the use of fruit in cakes, as accompaniments, in main dishes, preserves and for decorating would have been included in the answer.

There were many interesting answers but a question, which carries a substantial number of marks, requires much information in the form of precise facts, explanations and examples.

### **Question 9**

This question was equally popular and those who chose to answer it often scored well. No mark allocations were given on the question paper for different parts of the question although it was expected that each part of the question would be considered in detail. Credit was given for facts, explanations and examples wherever appropriate.

The reasons for cooking food were well known and examples to illustrate the reasons mentioned were usually given.

Although the methods of transferring heat were known, explanations were often poor. Most candidates correctly identified conduction, convection and radiation as methods of heat transfer. Better answers gave explanations of how heat is transferred by each method and examples to illustrate each method were usually given. There were few accurate and informative accounts of microwave cooking. Some candidates misread the question and gave information on different methods of cooking.

As previously stated, high scores can only be achieved by those candidates who not only demonstrate a clear understanding of the subject, but also support their statements with explanations and examples. Careful reading of each question followed by careful planning of answers will be rewarded by success.

# FOOD AND NUTRITION

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Paper 0648/02

Practical Test

## General comments

Most candidates produced work of a reasonable standard. The work was usually labelled clearly and arranged in the correct order. Some Centres included photographs showing the results of the work of their candidates. This is helpful in confirming the marks awarded but the photographs would be more useful if candidates were to label each dish to show clearly what is actually being served.

A few Centres did not follow instructions correctly for the allocation of tests. According to the instructions the five chosen tests should be "allocated to the candidates in strict alphabetical order". It is also important that the work shows clear evidence of marking by the Examiner on every page. Some Centres were not showing any marking on the actual work of candidates and on a few occasions it was clear that the work had not been read/marked thoroughly. The planning sheets should be marked before the actual cooking takes place. It was evident by the comments on some of the work that the planning sheets were marked after the cooking session.

All sections of the Individual Marksheets should have detailed annotation explaining why the marks have been awarded. Some Centres provided excellent detailed comments, while others simply stated that "the candidate used all cooking methods" or the work was "good" which was insufficient. The methods and results sections should have the most detail. Comments should be individual for each candidate, not repetitive for all candidates throughout the Centre. The annotation for Method of Working should show clearly how the candidate performed in the cooking. Comments on results should discuss flavour, texture and edibility of each dish.

Examiners need to take care that the mark scheme is followed carefully in all sections, particularly in Choice and Quality/Results where a specific mark scheme is provided for each examination session. The instructions state clearly that in the Method of Working if "a candidate is preparing very simple dishes the maximum mark of 55 should be reduced accordingly". When marking Quality/Results "the maximum mark must be reduced for simple dishes involving little skill". Some Centres were not following these regulations. It was necessary to make some adjustments to some of the marks which were too high when dishes chosen were insufficient or unsuitable to fulfil the requirements of the test or when supporting annotation was too brief.

Centres need to check that they are including all of the correct forms with the work: one copy of the MS1, one copy of the Summary Marksheet for the whole group (listed in candidate number order) and one Individual Marksheet for each candidate. Some Centres did not enclose all of these forms. It is important that the original work of each candidate, marked by the Examiner, should be submitted. A few Centres sent photocopied work and this is not acceptable. Centres should also check marks and additions carefully throughout the work, together with the correct transfer of marks to marksheets. A number of Centres did not check carefully and errors were discovered.

The Choice section of the preparation sheet should show clearly the dishes which the candidate has chosen to answer the question set. These should be arranged in order according to parts **(a)** and **(b)** of the question. If a meal is to be planned it should be clear which dishes are to be served for the meal. Recipes should be given next to each named dish, with descriptions and amounts of ingredients required. Ingredients should be listed in ounces, grams or cups but not in a mixture of the different units. Some candidates made excellent choices, selecting dishes which showed a good variety of skills, tastes, textures and variety of ingredients and cooking methods. Some chose a limited number of simple dishes, often with repetitive ingredients and repetitive methods. Convenience foods and pre-prepared or pre-cooked ingredients should be avoided. Meals should be balanced, attractive and suitable for the people to whom they are being served. Sometimes candidates did not ensure that they were preparing what was required to answer the question set. Accompaniments and/or desserts were sometimes missing from the meals or the candidates failed to include a particular ingredient required by the test, e.g. yeast, cheese, soya. Candidates cannot be

allowed full marks for choice if the question is not answered fully or if sufficient varied and skilled work is not included to fill the time allowed.

A number of candidates produced excellent time plans showing a logical sequence of work with brief methods, oven temperatures and cooking times. Meals were served hot and in the correct order at the end of the test. The time plan should show an actual starting time, e.g. 1.00 pm, so the next dish may possibly be prepared at 1.15 pm, etc. In this example the test would be completed at 3.30 pm. Candidates should not be listing their times as "5 minutes", "10 minutes", etc. Some candidates presented incomplete time plans and sometimes it was not clear which dish was actually being prepared. Sometimes methods, cooking times and temperatures were missing, washing up was rarely mentioned and often no serving detail was given. Some sequences were poor so that dishes which required decoration or chilling were made too late. Dovetailing was often missing, candidates simply completing each dish in turn. Dishes should be served in the correct order for the meal at the end of the cooking time, not throughout the test as they are completed. Many more candidates need to consider the sequence of cooking more carefully.

Most shopping lists were good. Candidates should always list the actual amounts of ingredients they require not whole packets of food. Quite a few candidates left the section on special equipment blank when, on many occasions, special tools, baking tins or serving dishes could have been listed.

### **Comments on specific questions**

#### **Question 1**

This was not a very popular choice. Dishes chosen for the packed meal were often insufficient for a person using energy on a long walk. Quite a number of the dishes would not pack well to carry on the walk and some failed to include the yeast dish required by the question. In part **(b)** some candidates made dishes which were very similar to those chosen for part **(a)**, e.g. pastry dishes again, when it would have been better to make very different dishes for the evening meal. Cold desserts were chosen but some were very simple, e.g. jelly. Candidates need to take care that a variety of skills are shown in all their choices.

#### **Question 2**

This question was popular. Dishes were chosen well and usually showed a variety of ingredients and skills. A few candidates tried to prepare these dishes as a balanced meal when this was not required by the question.

#### **Question 3**

This was another popular question which, on the whole, was answered well. Candidates need to ensure that meat or fish products are not included in a meal for vegetarians. A few candidates included ham, minced beef or chicken stock, which were clearly unsuitable. Cheese was usually included, as required by the question, but some candidates included cheese in several dishes which should have limited their marks for choice. A variety of cereal dishes were usually prepared well.

#### **Question 4**

Dishes for the family celebration were chosen well and were usually varied in skills. In **(b)** snack dishes were usually suitable, although some candidates repeated methods already used in part **(a)**.

#### **Question 5**

This was the most popular question. Reasonable balanced meals were served but many of these contained only small supplies of iron. Green vegetables were often used, which do contain some iron, but require the addition of a food with Vitamin C to enable the iron to be fully used by the body. Better supplies of iron would be received by the inclusion of red meat or liver in the meal. Sponge cakes and biscuits were usually satisfactory in part **(b)**.

#### **Question 6**

This question was usually answered well, although many candidates could have shown more skill in the preparation of a sauce. Scones were prepared well, as were the biscuits.

**Question 7**

This was another popular question. Candidates prepared pastry well, often shortcrust pastry, but many then chose to prepare three very similar dishes, e.g. three flans or three pies. It would have been preferable to prepare three very different looking dishes with very different fillings/finishes. As the pastry was made in one batch, additional skills should have been shown in the preparation of the fillings for the different dishes chosen. The meals prepared for part **(b)** were usually good.

**Question 8**

This was not a very popular question. Two-course meals were prepared but the dish containing soya was often very low skill or contained insufficient amounts of soya for this to be the main protein in the meal. Many good cakes were prepared but a few candidates did not decorate the cake as required by the question.