

FOOD STUDIES

Paper 9336/01

Theory

Key Messages

Candidates should take careful note of the command word in the question to ensure that they are answering in the anticipated manner or detail. Candidates were unable to gain full credit for a question beginning with the command word 'discuss' if their answer was a list of definitions or examples only.

Candidates should select their four questions with care, in particular ensuring that they are confident to answer the part of the question allocated the most credit.

General Comments

All questions were attempted, with **Questions 3, 5 and 7** being the most popular. **Question 1** was the least popular.

Comments on Specific Questions

Section A

Question 1

- (a) (i) – (iv) Most candidates who answered this question knew that B vitamins help to release energy from macro-nutrients and assist in growth. Sources of the specific B vitamins were well known, as were the effects of deficiencies of each B vitamin. The deficiency diseases pellagra and beri beri were occasionally confused with each other and very few candidates discussed the symptoms of wet and dry beri beri. Cobalamin was the least discussed of all the B vitamins.
- (b) Many candidates did not supply a full answer to this question and focused only on the solubility of B vitamins in water and their destruction at high temperatures. Specific details, such as the light-sensitivity of riboflavin or the relative stability of niacin were rarely seen.

Question 2

- (a) The best answers linked a factor which affects energy needs with an explanation. Some answers were vague and gave an accurate list of factors, but with no discussion as to why energy needs are affected. In particular, candidates offered little explanation as to why BMR, the thermogenic effect of food, and the function of the thyroid affect energy needs.
- (b) In almost all cases, candidates were able to give the correct names of the macro-nutrients. There was less certainty about the energy available from 1 g of the nutrient and some candidates confused the units joule and calorie.
- (c) A common error in this question was to discuss the digestion of protein, fats and carbohydrates, starting in the mouth. Many candidates wrote a considerable amount that was not relevant to the question.
- (d) Answers which simply restated the question were not credited. In general, candidates correctly described the effects of positive and negative energy imbalances.

Question 3

- (a) This question was answered extremely well. Most candidates mentioned that the body is made up of approximately 70% water and discussed its functions in the body such as lubrication, keeping faeces soft and maintenance of body temperature.
- (b) This question was well answered with many candidates able to explain the importance of NSP in the diet in detail. Sources of NSP were also well known by candidates, in particular green leafy vegetables and wholemeal products. For many candidates, their answers discussing symptoms of a deficiency of NSP were repetitive and focused too narrowly on symptoms affecting the lower part of the intestines only.
- (c) This part of the question was less well answered than parts (a) and (b). Many candidates did recognise that the absorption of some minerals would be reduced, but few were able to explain the link between green leafy vegetables / cereals and phytates. Some candidates stated that too much NSP would cause diarrhoea, but did not discuss the more common symptoms of bloating and flatulence.

Question 4

- (a) Most candidates were able to correctly name at least six nutrients and their functions in the body. Good answers named particular proteins, such as ovalbumin and vitellin, and also explained that the fat from the yolk is saturated fat and contains cholesterol. Candidates who gave calcium as a nutrient were only credited if they explained that the calcium is in the shell and is therefore unavailable to the body. Candidates who simply wrote out a list of nutrients gained only very limited credit.
- (b) Many candidates scored well on this question with most candidates describing the effects of coagulation and the correct temperatures at which the coagulation occurs. Knowledge of iron sulfide causing discolouration around the yolk, and of the occurrence of syneresis was also evident from many candidates, although descriptions of these processes were not always entirely accurate.
- (c) In this question, candidates achieved credit if they were able to suggest uses of eggs and provide suitable examples of these uses. Answers that listed uses without suggesting suitable dishes or giving explanations did not score well.
- (d) Some good accounts of protein digestion were given. Sometimes candidates did not identify the parts of the intestines or names of the digestive enzymes correctly.

Section B

Question 5

- (a) This question was a very popular choice and many candidates showed good knowledge of the reasons why people choose to be vegetarians. Most candidates were able to give at least four reasons which typically referred cruelty to animals, religion, family tradition and cost. It was not sufficient for a candidate to say that it is healthier to be a vegetarian unless this was qualified by explaining that meat products contain saturated fat. Some candidates wrote in detail about the different types of vegetarian diets which was not awarded credit.
- (b) To score well in this question candidates should have discussed which nutrients would be lacking in the body, as a result of the exclusion of animal products in the diet; the effects of this on the body; and possible solutions. The best performing candidates were able discuss factors such as the differences between haem and non-haem iron. Some candidates misread the question and explained the deficiencies that arise from a lack of protein, which was not awarded credit.
- (c) Most candidates gave a good account of the role of soya products in providing high biological value protein in a vegetarian diet and many candidates were also able to discuss the complementation of low biological value proteins. Very few candidates showed knowledge of the different types of vegetarian in this question, and many did not explain that eggs and dairy products can also provide high biological value protein to lacto-ovo vegetarians.

Question 6

- (a) Many candidates gave answers which included a lot of repetition. Most candidates correctly mentioned that preservation increases shelf life and prevents the growth of bacteria.
- (b) This part of the question was not well answered. Candidates named the various methods of preservation, such as freezing, drying, canning and pickling, but did not explain the principles of preservation behind each of these methods, such as addition of a chemical preservative to inhibit the growth of microorganisms for jam making, pickling and salting.
- (c) The best answers for this question were those that named a type of food and made a suggestion of where it should be stored, with an explanation of why it should be stored there. Some candidates were not specific enough in their answers.
- (d) Many of the responses to this question showed a lack of thorough understanding of the term cross contamination. Many candidates gave vague answers about not putting raw food and cooked food together but did not identify the type(s) of food in question or explain the reasons why. Many of the suggestions given for avoidance of cross contamination were also not specific enough.
- (e) Knowledge of food poisoning bacteria was evident. The most common types of bacteria given were *Salmonella*, *E. coli* and *Listeria*. Many candidates did not effectively link the the food poisoning bacteria to a typical food source.

Question 7

- (a) Some candidates were able to give an excellent account of the role of additives in processed foods and showed good knowledge of the specific names of permitted additives, also explaining that additives may be natural or artificial. In the main, answers were generalised and talked about improving food products by altering texture, appearance and flavour. Most candidates mentioned colourings and flavourings but many were unable to provide suitable examples.
- (b) Candidates showed good knowledge of the purpose of food labelling and gave detailed accounts of several specific pieces of labelling information and their usefulness. Candidates who simply provided a list of what a label may include gained only very limited credit.
- (c) Good answers were written by many candidates who focused on factors such as the political situation in their country, climatic conditions, transport systems and a lack of investment in agricultural developments. Some candidates incorrectly discussed food choice rather than food supply.

Question 8

- (a) There were some good answers to this question although some candidates did not suggest example foods or give satisfactory explanations or reasons.
- (b) This question was well answered and showed good knowledge of all methods of heat transference. Many candidates used diagrams to explain convection currents. Whilst candidates knew that microwave cooking uses radiation, many candidates gave inaccurate information about how a microwave oven works.
- (c) This question was well answered and the majority of candidates gained full credit for this question.

FOOD STUDIES

Paper 9336/02

Practical

Key Messages

- It is important that the candidates' preparation sheets are assembled in the correct order; to assist with this, each carbonised sheet has a page number printed on it.
- Examiners who undertake the marking of the Practical are reminded that the mark scheme published by CIE must be followed accurately. Reference must be made to the list of dishes planned by the candidate on the Plan of Work. Centres are reminded that all the work carried out in the planning session is marked externally.
- If a dish lacks skill, the maximum credit available for that dish must be reduced. If a skill is repeated in other dishes, the maximum credit available must be reduced on the second and any subsequent occasions and may not be transferred to other dishes. If a dish is inedible because it is undercooked or overcooked, no credit should be given.
- Before the Practical, Examiners must prepare an individual Working Mark Sheet for each candidate. The maximum credit available for each dish, together with the actual credit awarded, must be clearly indicated on the Working Mark Sheet.
- Detailed comments must be written to justify the credit awarded. Reference should be made to the colour, flavour and texture and consistency of dishes, as appropriate.
- No credit should be awarded for any dish which is planned but not served, and credit cannot be transferred to other dishes. Any dish prepared which was not included on the original plan cannot be credited.
- It is important that Examiners give as much information as possible on each candidate's method of working, in order to justify the credit awarded. Candidates who demonstrate only low-level skills cannot be credited awarded high credit in this section.

General Comments

The quality of the written answers was generally good. Responses were set out clearly and candidates had sufficient time to complete all sections.

Some candidates chose dishes that were not appropriate or were not sufficiently skilful for an Advanced Level Practical. Apple crumble, fried chicken and fried rice are examples of such dishes. Credit for each dish should be awarded according to the degree of skill demonstrated. Examiners should not award full credit without careful consideration. Discretion and professional judgement must be used to ensure that the maximum credit available for each dish fairly reflects its complexity, or otherwise. The actual credit awarded should be consistent with the comments recorded by Examiners about each dish.

Candidates' Time Plans were generally very good with clear instructions on methods, cooking times and temperatures. The best plans also provided details about garnishes and decorations. Most candidates listed an appropriate amount of work to be carried out in the preparation time before the start of the Practical; processes that are part of the preparation of dishes, such as whisking egg whites, creaming mixtures and dissolving gelatine, must not be included in this preparation time. Some Time Plans were too detailed, giving precise information for every stage of preparation.

Some candidates did not allow sufficient time for cooling a dish before decorating, or for serving cold. Many candidates listed too much work for the final half-hour of the test; consequently, some dishes may not have been properly cooked or served. Some candidates were unable to dovetail the steps required to prepare

their dishes and instead listed all stages sequentially. All Time Plans should include at least two sessions of washing up during the Practical plus one at the end. Some candidates indicated how long it would take to make a dish, rather than providing a detailed chronological sequence. Oven temperatures and cooking times must be given for each dish.

Most candidates answered **part (b)** well by preparing a skilful dish. The most common dishes prepared were tea rings, steamed pau and savarins.

Part (c)(iii) was answered well by the majority of candidates. Some candidates did not give practical reasons for the choice of dishes, however, but instead discussed the type of meal for which the dish would be suitable or possible accompaniments. Other responses which were not awarded credit included making a dish in advance and freezing it for future use, and the ease of transporting the dish home after the Practical Test.

In **part (c)(iv)** candidates were asked to comment on the nutritional value of the dish chosen in **part (b)** of the question. Some answers related to all the dishes chosen, including those in **part (a)**. There were some excellent accounts, but also a number of vague responses; precise information is required at Advanced Level. Nutrients must be linked to ingredients and to functions. Simply stating that the dish contains particular vitamins and minerals is not sufficient unless the functions are stated.

Comments on Specific Questions

Question 1

- (a) It was not always obvious which methods of cooking or ingredients were being used to save time. Some candidates mentioned using whisks or the microwave, or the use of canned foods. Many answers were repetitive, which limited the credit awarded.

Some candidates misunderstood this question and thought that saving time meant that the dishes had to be prepared and cooked in the shortest time possible.

- (c) Many answers to **part (c)(i)** were too vague. In contrast, the responses in **part (c)(ii)** were more detailed and included the use of seasonal and locally grown foods, taking advantage of special offers and taking a list when shopping.

Question 2

- (a) Most candidates correctly choose four different types of milk products. Common responses included cream cheese in a cheesecake, butter in a cake, milk in a quiche, and cheese in the filling of a gougere.

- (c) The majority of candidates was able to list a variety of different types of milk and milk products and also gave a good account about the storage of milk. Some candidates incorrectly discussed dried and tinned milk, rather than fresh milk, as required by the question. Common responses for methods of preserving milk included pasteurising, sterilising, homogenising and the preparation of condensed and evaporated milk. The best answers were precise, accurate and detailed in their discussion of the preservation methods.

Question 3

- (a) Again it was not always obvious why candidates had chosen their dishes and there was often repetition, particularly regarding gelatinisation. Common responses included making quiche to show the coagulation of eggs; a cake or a sauce to show gelatinisation and emulsification; and cheesecake to show the use of gelatine. A minority of candidates demonstrated the use of pectin by making a fruit topping for a cheesecake.

- (c) There were many good responses to this question with candidates discussing gelatinisation, coagulation and the use of gelatine. Some candidates also mentioned emulsification and the use of pectin.

Many candidates provided good answers for ways of varying the texture of dishes. Common responses included the use of different cooking methods; the addition of fruits and nuts; and freezing foods such as ice cream.

FOOD STUDIES

Paper 9336/03
Coursework
Investigation

Key Messages

Centres are strongly encouraged to provide candidates with access to **Section 6** of the syllabus which provides details of the specific requirements of the investigation.

Candidates should investigate topics which are appropriate to the syllabus and make reference to their original aims and objectives when drawing their conclusions and evaluating their studies. Candidates should provide evidence of any pre-testing of questionnaires and interview questions. The word count for the Coursework Investigation is 4 000 words.

General Comments

The majority of the Coursework Investigations were high-quality, interesting and educational pieces of work. The more successful candidates selected clearly-defined titles within realistic boundaries; logically followed the framework process in **Section 6** of the syllabus; and used both quantitative and qualitative investigation procedures. These candidates were able to reach conclusions which reflected their initial aims and objectives.

Some titles were too broad, such as 'Water' or 'Vitamin C'. With such wide subject matter there is inevitably a lack of parameters or structure to the Coursework Investigation and the work produced was therefore often not of the required standard. Titles linked to 'junk food' featured heavily this year.

Tasting panels should be carried out using dishes which show definite comparisons and using a relevant dish as a control. Some candidates provided excellent photographic evidence and explanations for their tasting panels and effectively demonstrated the use of techniques such as random coding.

If recipes are included in the Coursework Investigation then they should be clearly connected to the aims or objectives of the investigation. Candidates should not repeat information included in one section of the Coursework Investigation, for example the introduction, in another. Questionnaires should be appropriate for their target audience, for example the language level adjusted for questionnaires for children.

Choice and Justification

The majority of candidates chose topics relevant to the syllabus, with some helpfully identifying the section from which their ideas had originated. Some candidates selected topics which were not appropriate to the syllabus and therefore were not awarded full credit for this section of their investigation.

Candidates are expected to justify their choice of selected area of study with at least four reasons. A suitable reason could be that a subject is a topic in the local or national news. Candidates who performed less well did not provide any reasons for their choice of topic.

Candidates should clearly, but briefly, outline the investigative methods and resources they intend to use in their investigation. Many candidates were not awarded credit because they did not state their intended methodology.

Planning

This section should demonstrate detailed and logical planning. The aims and objectives must be clearly stated, with the objectives made explicit as practical tasks that can help to achieve the overall aim. There should be several objectives since these are the benchmarks against which the success of the investigation

can be evaluated. Some candidates did not present their objectives in such a way that they could be translated into achievable tasks.

Many candidates listed their proposed activities giving dates for completing particular tasks or stages. Some candidates made very effective use of Gantt charts. A diary of activities, as produced by some candidates, can be used to comment on the success of the initial plan in the Evaluation section, but does not itself constitute a plan.

The best performing candidates stated and justified each method of data collection and collation, explaining how each method would help to achieve particular objectives. Some candidates stated the methods they intended to use only, but gave no further information or justification. For example, for questionnaires or interviews, candidates should include how respondents would be selected and how they intend to analyse the data they collect. An outline is sufficient in the Planning section; further details should be given in the Investigation Skills section.

Theoretical Research

This section has an allocation of 10% of the marks and its purpose is to allow candidates the opportunity to demonstrate their skill at collecting, summarising and presenting information relevant to their Coursework Investigation. All of the Coursework Investigations submitted included some theoretical research, but the quantity and quality was variable.

The best-performing candidates consulted a variety of books, texts, articles and websites and summarised their findings in their own words; in contrast, some candidates reproduced whole sections from publications verbatim. Many accounts were disjointed, repetitive and too long because candidates had not synthesised the information available into a coherent account. Most candidates listed their sources in the bibliography, but acknowledgement should be made to any quotation, diagram, chart, figure or table referred to within the Theoretical Research section. Credit was awarded for including relevant topical information, for example from newspaper articles or government reports.

The Theoretical Research section should include sufficient detail to form the basis for the subsequent investigative work.

Investigation Skills

This is an important section with an allocation of 20% of the marks. Some candidates restricted the credit available to them by using only a very limited number of investigative methods.

Some candidates visited local markets, shops and farms; others conducted questionnaires and compared and evaluated dishes. Many candidates effectively included photographs which enhanced the quality of their Coursework Investigation. For each investigative method used, candidates should have explained *how*, *where*, *when* and *with whom* the investigations were carried out, and which of their objectives were being met. This was not always the case.

Most candidates correctly included copies of letters or emails sent and received, as well as a blank copy of any food diaries, questionnaires or interview questions used. Relatively few candidates showed evidence that their questions had been tested before being used in the investigation.

Interviews or questionnaires should only include questions which will produce data relevant to the objectives of the Coursework Investigation and which can be easily collated. Respondent confidentiality was treated appropriately this year. Only an analysis of the data collected from the questionnaires is required for inclusion in the Coursework Investigation. The primary information from interviewees should generally be different from or go beyond that available from secondary sources.

Food diaries or food-frequency tables were valuable additions to many Coursework Investigations, particularly if used alongside appropriate checklists.

Collation and Presentation of Data

This section is worth 20% of the total marks awarded. The information from each of the methods of data collection used should be presented in an appropriate form which is clear and easy to understand and which is necessary or appropriate to the main aims and objectives of the Coursework Investigation.

Candidates' findings were generally well presented and covered a range of methods including prose, tables, line graphs, bar charts, pie charts, histograms and photographs. Titles and appropriate annotations were generally included. Candidates are reminded of the value of consistent formatting.

Conclusions

This process was often dealt with far too briefly. It is worth 10% of the total marks. Candidates should provide an accurate summary and analysis of the evidence collected based on the data from their theoretical research and investigations. Some candidates did not give evidence to support the conclusions drawn, nor did they provide relevant, evidence-based recommendations linked to the original aims and objectives.

Evaluation

This process is worth 10% of the final mark yet many candidates gave little attention to it. Some candidates did provide a thorough analysis of their study by reviewing the entire Coursework Investigation and making comments based on the strengths and weaknesses of the work. They also made suggestions for extending the research.

Candidates should consider whether the original aim and each of the objectives have been achieved. The best performing candidates restated their objectives and provided evidence of where in the Coursework Investigation these had been met. In the better Coursework Investigations, candidates also revisited their plans of action and made constructive judgements about the original proposed time frames, comparing the expected time taken with actual time expended. In these better studies, the success of the methods of data collection and collation were thoroughly evaluated.

Most candidates were able to state personal benefits they had gained from carrying out the Coursework Investigation and these were well communicated. Sometimes candidates described problems they had encountered and described how they had dealt with them.

Presentation

Almost without exception candidates produced work which was attractively presented with a consistency of formatting which was logically and sequentially organised.

It was encouraging to note that this year only a few candidates had mounted each page on card or used card dividers for each section. Such processes are unnecessary, make the work more bulky and make it more difficult to navigate through the Coursework Investigation.

Some candidates included original pamphlets and posters that they had designed themselves to use with their target group or in classrooms, canteens and meeting halls.