

FOOD STUDIES

Paper 9336/01

Theory

Key Messages

Candidates need to take more notice of the mark allocation in each question – for example, if a section has five marks and another ten marks then the candidate should expect to spend twice as long answering the ten mark section.

It is very important to read the question carefully, as failure to do so may result in failing to answer it correctly. An example of this was in **Question 8(b)**.

General Comments

The candidates showed good use of time in the examination, with only a few failing to complete the final question. The balance of the essays, however, was not always correct. This is a three hour examination in which four questions, each worth 25 marks, are to be answered. Candidates should allow about 45 minutes for each question. Planning should take five minutes, a five mark section about eight minutes and a ten mark section approximately 16 minutes.

Sometimes candidates appeared to choose a question because they could answer one section without realising the small mark allocation for that particular part.

Some candidates did not number their answers which made marking much more difficult. Where an answer booklet makes provision in a grid for the questions attempted, the candidates should fill this in.

All questions were attempted, with **Questions 1, 2, 4 and 8** the most popular.

Comments on Specific Questions

Section A

Question 1

- (a) The question asked the candidates to discuss the absorption and uses of calcium and iron. Many of the answers tended to deal with the uses but ignore the absorption. When discussing the absorption the candidates should have included phytic acid, oxalic acid and tannin which interfere with absorption. They also needed to include substances which aid absorption, for example vitamin D (Ca), vitamin C (Fe), etc. The candidates needed to explain the differences between haem and non-haem iron and how non-haem iron is reduced from ferric to ferrous by vitamin C. Good answers should have included normal functioning of nerves and muscles and clotting of blood as well as the formation and maintenance of bones and teeth.
- (b) This section was quite well done. Nearly all candidates knew that a deficiency of calcium causes rickets, osteomalacia and osteoporosis. They did, however, have difficulty in describing the symptoms and often mixed up osteomalacia and osteoporosis. Again nearly everyone knew that a deficiency of iron causes anaemia but did not explain the causes and the symptoms.
- (c) Almost all the candidates were able to name the required number of sources.

Question 2

- (a) Most candidates gained full credit in this section but many spent too long answering it.
- (b) This section was well answered with most candidates gaining full credit.

- (c) Candidates should have discussed the role of fat in a healthy diet. They needed to mention the quantity of fat to be included in a healthy diet and the factors which influence energy requirements.
- (d) In this section the candidates needed to discuss the role of HDL and LDL cholesterol, how the arteries become narrower, the lumen smaller, hypertension, arteries becoming blocked and possible heart attack. They also could gain credit by discussing saturated fats, polyunsaturated fats, trans fatty acids and hydrogenation.

Question 3

- (a) Candidates found this section challenging. They were able to discuss the structure of carbohydrates, fats and proteins but were unable to explain how energy is released. They could have shown the breakdown by enzymes of disaccharides to monosaccharides, the absorption of glucose, and then the production of energy. Deamination needed to be discussed with reference to proteins.
- (b) This section was well answered with many candidates gaining full credit. However, this was a section in which many candidates wrote too much in comparison to (a). Factors determining energy requirements included gender, age, body size, activity of the thyroid gland, thermogenic effect of food, occupation, activity level, state of the body/health, climate, maintenance of constant body weight, reduction of body weight, function of glands/internal organs, personality, amount of sleep and stage in life cycle.
- (c) Most candidates were able to discuss the results of taking in more energy than needed, namely obesity, CHD and diabetes.

Question 4

- (a) Candidates tended to perform well in this section. They were able to discuss the factors which influence a person's choice of food. They were able to expand upon the availability of food, economy, culture and social habits, nutritional knowledge, state of health and the appearance, flavour and texture of food.
- (b) Quite a lot of candidates failed to read the question carefully and included points other than dietary. If a candidate mentioned a correct nutrient and function then full credit could be obtained.
- (c) Many candidates who had not read part (b) carefully enough struggled with this section. They were asked to include points other than dietary in this section, but because they had not done so in the previous section they included dietary points in this one.

Section B

Question 5

- (a) Candidates did not fully explain the importance of raising agents. They tended to say that raising agents make mixtures rise but often failed to include such points as giving a light texture, more attractive appearance, contributing to the characteristic structure/shape of a product, increasing bulk and volume, and making the product more digestible.
- (b) Candidates needed to give more than one example of flour which could be used in bread making. They could have mentioned stoneground, wheatgerm, brown/wheatmeal, strong flour, plain flour, a mixture of wholemeal and white flour, and starch-reduced flour as being suitable, but self-raising and soft white as being unsuitable. When reasons for suitability of the flours were also given full credit for the question was attained.
- (c) This was another section in which candidates scored well. They discussed the role of gluten, the role of enzymes, fermentation, kneading, proving, production of carbon dioxide, gelatinisation and dextrinisation.
- (d) Candidates needed to discuss the production of carbon dioxide and alcohol during fermentation, the enzymes, maltase, sucrase, diastase and the reactions, the gas pushing up the dough, the heat of the oven killing the yeast and coagulation of the gluten.

- (e) This was the most challenging section of this question. Candidates failed to explain the Chorleywood process, mentioning only the use of a food processor and proving the dough in a warm place.

Question 6

This question was not popular. Those candidates who did attempt it did not give sufficient information.

- (a) When candidates gave flavouring as a use of sugar they should have given more information, e.g. as a sweetener in beverages. Popular answers included food for yeast, adding colour, as a syrup, as a glaze, helping fat to incorporate air, for cake decoration and for preserving. Other uses which could have been included are retention of moisture, preventing development of gluten, delaying coagulation of protein in eggs and gluten, strengthening protein in stiffly beaten egg-white, preventing coagulation of protein in egg-yolk on freezing and in confectionery.
- (b) Most candidates were able to name diabetes, dental caries and obesity as problems associated with a high sugar intake. They were able to describe how obesity is caused, but often became confused when trying to discuss tooth decay and diabetes. The second part of this section was to suggest ways of reducing sugar in the diet. Most candidates did not give enough suggestions. They could have included reducing the amount of sugar in recipes, limiting the intake of sweets / chocolates / cakes and biscuits, having breakfast cereals which are not sugar coated, choosing canned fruit in fruit juice instead of syrup, using fresh fruit in meals, reducing intake of sweet snack foods and reading the labels on processed foods.
- (c) Candidates misread this question and wrote about honey, treacle, etc. instead of sugar alternatives such as saccharin, sorbitol and aspartame.

Question 7

Although this question was not popular, most of the sections were done well.

- (a) Emulsification was a topic that candidates were able to explain in detail with nearly all giving mayonnaise as an example.
- (b) This was the section which required the most information. Some candidates were confused with the difference between a sol and a gel. Gelatinisation is a topic which is often included at O Level but the definition needs greater depth at A Level. A good answer should include a description of gelatinisation at the molecular level.
- (c) Candidates were able to describe oxidative rancidity but tended to be a little vague sometimes, for example, including fat rather than unsaturated triglyceride.
- (d) Pasteurisation was a topic in which most candidates gained full credit. Answers included information such as it extending shelf life, killing pathogenic organisms, making products safer, and its use in the treatment of milk, fruit juice and liquid egg. Many candidates described the Holder and Flash process methods of pasteurisation and discussed the effects on flavour and nutritive value.
- (e) Very few candidates were able to answer this part correctly. Many confused AFD with home freezing. A few candidates knew that sublimation takes place.

Question 8

This was a popular question and fairly well answered.

- (a) (i) Candidates needed to include sufficient points. Most candidates stated that foods should be bought when in season as they are cheaper when plentiful, to compare prices, make a list, avoid impulse buys and buy cheaper cuts of meat. Other points made were to buy in bulk when food is cheap, freeze or preserve foods to use when unavailable, to not buy too many perishable foods at one time as they may deteriorate which will cause wastage, to plan ahead, make use of coupons, vouchers, special offers, etc.

- (ii) Insufficient points were given in this and the following sections. The points which were included were using a microwave, pressure cooker and a tiered steamer. Other points included using a slow cooker which has a large capacity but uses minimum fuel and in which meat and vegetables can be cooked together, using the zones of heat in an oven and filling all of the oven shelves, using the residual heat, using a fan oven where all the oven is at the same temperature and therefore can batch bake, using bromelin/ficin/papain to tenderise the meat in order to reduce the cooking time, grilling/frying foods and checking the size of pan in relation to hot plate/ring.
- (iii) Occasionally candidates mixed up the answers in (ii) and (iii) giving ways of saving fuel when in fact they were ways of saving time. Points which could have been included were using quick methods of cooking, convenience foods, labour-saving equipment such as food processors, electric mixers, blenders, etc., pressure cookers, microwaves and an automatic timer on an oven, etc., and choosing tender cuts of meat or cooking fish and eggs.
- (b) This was another section where candidates did not always read the question carefully. The question asked candidates to discuss the factors that affect food choices in their country. Successful candidates were those who did as the question required and referred to the situation within their country. Many candidates did not do this but instead discussed general factors such as personal preference, state of health, age, etc. When answered correctly, candidates included factors such as climate and extreme weather, e.g. floods, cyclones, drought, etc. War was mentioned by some, as was the type of land governing the crops grown, and the suitability for animals or crops, the importing of food linked with expense, the availability of equipment such as freezers for long term storage, the proximity of towns with markets or supermarkets, the variety of foods available, growing food in the garden or rearing animals or poultry. The influence of advertising in magazines and on television could have been included, and also the opening of fast food restaurants such as McDonalds and KFC. There were some very interesting and well written answers in this section.

FOOD STUDIES

Paper 9336/02

Practical

Key Messages

- To score full marks in the Choice Section, candidates must ensure that all of the dishes chosen relate to the statement which introduces the question.
- They must indicate how each of their chosen dishes is appropriate.
- A variety of skills, without repetition, is expected.
- The List of Ingredients for each dish must be precise; fish must be named and cuts of meat identified.
- Plans of Work should list the tasks to be undertaken in the 30 minutes' Preparation Time. Dishes must not be prepared in this time. The method of making each dish, its cooking temperature and time and its serving must be included in the plan.
- Time for washing up should be included in the plan.
- Candidates should read the written questions carefully and make sure that their answers are tailored to the question.

General comments

The quality of the written answers was generally good. Scripts were set out clearly and candidates seemed to have had sufficient time to complete all sections of the paper. Occasionally pages were assembled in the wrong order; each carbonised sheet has a page number printed on it and these should be used. It is the responsibility of each candidate to ensure that their own pages are in order before scripts are handed in.

Teachers who undertake the marking of the Practical Examination are reminded that the mark scheme published by Cambridge must be followed accurately. Reference must be made to the list of dishes planned on page 1 of the Preparation Sheets. If a dish lacks skill, the maximum mark available for that dish must be reduced; if a skill is repeated in other dishes, the maximum marks must be reduced on the second, and any subsequent occasions. The marks left over cannot be transferred to other dishes; consequently, the total mark for Results will be less than the maximum possible mark. Examiners must not reduce the maximum mark available for dishes if it is considered that they are not a good choice. Choice marks are awarded by the UK Examiner. Overseas Examiners allocate marks for the dishes chosen on the degree of skill involved in the preparation of that dish. Occasionally Examiners marked dishes out of maximum mark which was not available for that dish. Reference must be made to the mark scheme published by Cambridge to ensure that a consistent standard is maintained.

Before the Practical Examination, the Examiner must prepare an Individual Mark Sheet for each candidate. The maximum mark available for each dish, together with the mark awarded, must be clearly indicated on the Individual Mark Sheet. Some candidates chose dishes that were not appropriate or were not sufficiently skilful for an Advanced Level Practical Examination. Apple crumble, muffins and fried rice are examples of such dishes. If a candidate does choose a simple dish, the maximum mark possible for that dish must be reduced. It is clearly stated in the Confidential Instructions that marks for each dish should be awarded according to the degree of skill demonstrated. Where dishes show insufficient skill the maximum mark must be reduced. It is clear that teachers who are undertaking the examining of practical work do not always follow this guidance. It is possible that none of the candidates in a Centre will have their dishes marked out of the maximum mark; it should not be assumed that the maximum mark will be appropriate for everyone. Teachers must use their discretion and their professional judgement to ensure that the maximum mark fairly reflects the complexity, or otherwise, of the dish. Detailed comments must be written to justify each mark awarded. It is not satisfactory to use single words to describe results. Dishes must not be stated to be 'satisfactory' or 'good'. Reference should be made to colour, flavour and texture of dishes and perhaps to consistency if appropriate. Occasionally Examiners made one statement to cover all dishes, for example, 'Everything this candidate produced was excellent in every way'. This is clearly inappropriate because it does not consider the merits, or otherwise, of individual dishes. Sometimes the mark awarded seemed to be

too high when comments suggested that there were many negative points to be taken into account when deciding on a mark for the dish. If a dish is inedible because it is undercooked or overcooked it should be given zero.

Any dish planned but not served must also be given zero and those marks cannot be transferred to other dishes. Any dish prepared and which is not on the original plan made under examination conditions cannot be awarded a mark. It is unlikely that all dishes prepared by a candidate will be worthy of full marks; indeed it is rare for any dish to be worth full marks so Examiners should not use the maximum mark without careful consideration. All of the work carried out in the Preparation Session is marked externally; this is clearly stated in the Instructions to Centres but occasionally overseas Examiners have made comments on choice and have marked the Order of Work and the written answers.

It is important that Examiners gave as much information as possible on each candidate's Method of Work in order to justify the mark awarded. Candidates who demonstrate few skills cannot score high method marks. In some Centres every candidate was given an exceptionally high method mark; it is difficult to imagine that every candidate was able to work to such a high standard throughout the Practical Test.

Time plans were generally very good and gave clear instructions on methods, cooking times and temperatures, and, in most cases, the method of serving. Better plans gave details on garnishes and decorations. Most candidates listed an appropriate amount of work to be carried out in the half an hour preparation time before the start of the Practical Examination. Candidates should be reminded that they must not include any processes that are part of the preparation of dishes. Occasionally Examiners remarked that a candidate had planned inappropriate work for Preparation Time. Many Time Plans were much too detailed, giving precise information for every stage of preparation. This is not necessary and takes up too much time during the Preparation Session. It results in a plan, which is not useful during the Practical Examination, because the candidate finds it too complicated to follow. Some Time Plans were not realistic; methods were not broken down into stages and the whole method was written out as in a recipe. Again, this would not be useful in a Practical Examination because it would not indicate any work done while a dish was cooking. Sometimes there was insufficient time for cooling a dish before decorating, or a dish to be served cold was the final dish to be prepared. Many candidates listed too much work for the last half an hour of the test. This allowed no time for 'over-running' during the first two hours of the test and may have resulted in some dishes not being properly cooked or served. Some candidates were unable to 'dovetail' their dishes and listed all stages of each dish, one after the other. It was expected that all plans would note that washing up would be done at least twice during the test and then a time for washing up would be included at the end of the test.

Some candidates did not use actual times in their order of work; they broke down the available time into blocks of 20 minutes, 15 minutes or whatever was appropriate for the processes being carried out. Although the times, when added together, gave a total of the two hours and thirty minutes allowed for the Practical Test, the value of such an order of work during the Practical Examination is doubtful. Candidates need to be able to compare the time on their plan with the actual time on the clock in the room in order to judge whether they are working ahead of time or behind time. The Examiner also needs to be able to make such judgements when checking a candidate's Time Plan against the clock so appropriate comments can be made on the Individual Mark Sheet.

The section of written work requiring candidates to give practical reasons for their choice of dishes was answered very well by many candidates. Sometimes comments were made about the type of meal for which the dish would be suitable or perhaps suitable accompaniments for the dish. These are not practical reasons for choice. It was expected that perhaps candidates would mention that the ingredients for a dish were easily available or that the cost was not high. Sometimes it was noted that seasonal produce or garden produce would be used or that a dish could be cooked and served in the same dish thus saving washing up time. Other points could have been that a dish was to be served cold and did not require the use of an oven or that the use of labour-saving equipment was demonstrated. There were numerous possible practical reasons why particular dishes could be included in a Practical Test and every point made by a candidate was carefully considered. It was not appropriate to discuss possible variations or to mention that a dish could be made in advance and frozen for future use.

Candidates were asked to comment on the nutritional value of the dish chosen in part **(b)** of the question paper. Many answers, however, related to all of the dishes chosen. There were many excellent accounts but there were also a number of vague responses. Precise information is required at Advanced Level. It is expected that candidates will note, for example, that egg contains fat, which is a source of energy, or that HBV protein, which is important for growth, is obtained from milk. Nutrients must be linked to ingredients and to functions. It is not enough to state that the dish contains iron or that vitamins and minerals are found in

the dish. Several candidates attempted to calculate the nutritional value or the number of kilocalories in the dish chosen in part (b). None of the questions required this information. This serves to reinforce the need for candidates to read questions carefully before giving their responses.

Comments on specific questions

Question 1

This question was a popular choice and those candidates who selected it usually chose an appropriate range of dishes to show different uses of eggs. Unfortunately, many candidates did not indicate the use of eggs each of the dishes demonstrated. The Examiner is not able to determine the use that the candidate had in mind when choosing the dish. There were, however, good examples of eggs being used to lighten, to coagulate, to thicken and to form an emulsion. Some candidates demonstrated the use of eggs for coating, binding and glazing. As long as each dish showed a different use and demonstrated appropriate Advanced Level skills, the requirements of the test were met. The written part of the question was well addressed. Candidates were usually able to highlight the advantages and disadvantages of including eggs in family meals. Nutrients were identified and it was usually noted that eggs are versatile, cheap, and quick to cook and easily digested if lightly cooked. It was well-known that egg yolk contains saturated fat which is associated with cholesterol; it may block arteries and is linked to coronary heart disease. There were many excellent accounts of the effect of heat on eggs. Coagulation temperatures were generally accurate and sound descriptions were given of the changes which occur when an egg is boiled.

Question 2

This test was the choice of many candidates. Although most of them were able to plan and prepare dishes which showed the use of different High Biological Value foods, there were a number of instances where candidates repeated the HBV food, for example, they chose to use meat in more than one dish. The type of meat or fish used was rarely identified. As in the previous question, some dishes lacked the skill expected at Advanced Level.

The majority of candidates were able to identify the types of High Biological Value protein foods available locally and scored well. Accounts of providing HBV protein to vegetarians were less well addressed. It was hoped the candidates would note that meat and fish should not be consumed by any type of vegetarian. Different types of vegetarian diet were often identified and appropriate HBV foods noted. Soya and soya products were usually mentioned but candidates generally seemed unsure about complementary proteins. They often gave as examples cereals with milk or eggs with bread. These are clearly not options for many vegetarians. The best answers demonstrated that by combining two LBV protein foods the indispensable amino acids missing in one of them could be supplied by the other.

Question 3

This question was the least popular choice although it was chosen by a number of candidates. Although the dishes chosen were usually good examples of the use of fresh and preserved fruit and vegetables, there were occasional examples of repetition. Some candidates chose more than one dish using canned fruit. The range of choice was wide; fresh fruit and vegetables could have been used in many dishes, dried fruit, canned fruit and vegetables and frozen fruit and vegetables were all available. Many dishes lacked the degree of skill expected at Advanced Level. Some candidates seemed to associate the use of fruit and vegetables with basic dishes such as pies and crumbles, neither of which was expected.

The written part of the answer gave candidates the opportunity to identify appropriate methods of preserving fruit and vegetables. Examples to illustrate the methods chosen were not always given. Many candidates were unable to give the principles of the methods of preservation they named. It was expected, for example, that candidates would state that jam has a high concentration of sugar which inhibits the growth of microbes, or that when fruit and vegetables are frozen; the temperature is too low for the growth of bacteria. They were many excellent accounts of the advantages and disadvantages of using preserved fruit and vegetables. As usual, all valid information was credited.

There were many excellent choices of skilful dishes which demonstrated the reduction of fat. Some candidates, however, showed the reduction of fat in one of the ingredients, for example using skimmed milk, but still included butter, cheese and cream. Both sweet and savoury dishes were produced. Sometimes, however, candidates repeated a skill previously demonstrated, or chose a dish which showed limited skill. Rich cakes and pastries demonstrated a poor choice since the reduction of fat in cakes and pastries

compromises the result. The dish asked for in part **(b)** of the question specifically stipulated that the dish must be skilful. Marks were sometimes lost because the dish chosen was too simple.

Candidates should be encouraged to consider each question carefully and to look for key words to help them with their choice of dishes. Part **(a)** requires candidates to choose dishes to illustrate the statements made to introduce the questions as well as to include a range of skills. In part **(b)**, the emphasis is on the demonstration of skill; dishes appropriate at Ordinary Level/IGCSE are seldom demanding enough at Advanced Level.

FOOD STUDIES

Paper 9336/03
Unsupervised Work

Key Messages

The aims and objectives of the Coursework Investigation are clearly set out in **Section 6** of the syllabus. This is not confidential information and it is suggested that each candidate is provided with a copy of the relevant pages in order to assess their work as their investigation progresses. It would be a valuable reference document and would provide a checklist at all stages of the investigation.

The mark allocation for each part of the investigation is given, together with indicators for scoring within each section. These mark allocations should be used to guide candidates on the amount of detail required at each stage. If a section is omitted, the marks for that section will be lost; they cannot be transferred to another section.

It is not necessary to print each page on card or to stick written pages onto card. This makes handling of the work more difficult.

General Comments

The Coursework Investigations were well presented and were both interesting and informative. The majority of candidates had obviously invested a lot of time and effort in carrying out their investigation and producing their report. Some of the topics chosen did not, however, lend themselves to investigative work; others were too wide-ranging because clearly defined parameters had not been set. Most of the topics had clearly defined titles set within realistic frameworks. The poorest studies had titles that did not reflect either the investigation or the conclusion. Candidates should be reminded that the title of the investigation must be an accurate reflection of its content. It is recommended that, on completion of the investigation, consideration is given to the title. It may benefit from rewording to reflect the work carried out and the conclusions drawn.

It was most helpful when the framework set out in the syllabus was followed. This clearly identifies each section of the investigation in a logical order and gives useful information on the criteria used to award marks.

Choice / Justification

In most cases, the topic chosen was relevant to the syllabus although parameters were not always clearly defined. The title must indicate the limitations of the study. This can be illustrated by considering two titles, both of which were presented. "Do Pre-School children have enough Protein in their Diet?" and "An Investigation into the Amount of Protein in the diet of Pre-School children at _____ Nursery". Some studies did not lend themselves to a range of investigative procedures. A few candidates chose to investigate the importance of iron for teenage girls. There is a vast amount of information already available on this topic and the title did not suggest that a new approach would be taken. Candidates should be aware that their choice of topic and the methods of investigation undertaken have a direct influence on the marks available to them. Candidates should be encouraged to choose a topic that will allow them to demonstrate their ability to collect data in a variety of ways. Reasons for their choice of topic for investigation must always be given; marks are allocated for this aspect of the study. Most candidates gave at least one reason, although stronger candidates gave several. Many candidates, however, gave no indication of why a particular topic had been chosen. Appropriate reasons for choice could be that a subject is of special interest or that the participants of the study are fellow candidates and will be easy to contact. Occasionally candidates seemed to confuse their reasons for choice with the aims and objectives of the investigation.

Planning

The aims and objectives of the study must be clearly set out. The main aim is always to investigate the problem as set out in the title; the objectives are practical tasks that can help to achieve the overall aim. There should be several objectives since they are the benchmarks against which the success of the investigation will be judged. Sometimes objectives were set out in such a way that they could not be translated into tasks. Candidates frequently stated that one of their objectives would be to educate members of a community on a particular topic. It would be impossible to quantify the success of such an objective. Many candidates listed their proposed activities and suggested dates when they would be carried out; often actual dates were added later. This was an interesting approach since it shows the importance of thorough planning and an appreciation of the amount of time which needs to be allocated to certain procedures. Some candidates produced a diary of activities; although this shows how the investigation progressed it does not constitute a plan. A plan of activities with suggested dates should be included in the planning section and a diary of actual procedures and dates in the evaluation section. Candidates can then make comparisons and account for any differences. Some candidates, when evaluating their investigation, highlighted areas which took less or more time than expected. It allowed contingencies to be discussed, making for an interesting investigation. Candidates often commented that data analysis was a long, tedious process; sometimes the time estimated for this was too short.

Each method of data collection should be considered in detail. Candidates should justify each method chosen. When questionnaires are used, candidates should indicate how respondents are selected and if interviews are to be conducted, it is important that the reason for selecting particular individuals is given. This section should be used by candidates to demonstrate that their planning is logical and that methods of data collection have been used which best suit their needs. In most studies the methods of data collection were well justified.

Theoretical Research

This was often the weakest section of the study. Often it was too long because it contained every available piece of information on a topic. While the Internet is a valuable resource, any information gathered in this way should be incorporated into the report written by the candidate in his or her own words. Some candidates gave information from each source in turn without going on to write a summary in their own words. Candidates should use this section of the investigation to demonstrate their ability to select appropriate information and to tailor it to their own study. Information in books and on the Internet is rarely exactly what is required. It is usually obvious when text has been directly taken from books because the writing style is different from that in the rest of the investigation. If possible a variety of sources of information should be used and these should be acknowledged in the bibliography and in the text. Web addresses should also be listed. All quotations, charts and diagrams should be acknowledged. It is important to remember that the work must be of Advanced Level standard. Sometimes the bibliography listed books which lack depth of information, so are normally used at lower levels of study.

Although there is no recommended length for this section of the investigation it should be remembered that all investigative work is based on material which is already in the public domain. It must be remembered that this section has an allocation of ten marks so very long theoretical reports, sometimes in excess of twenty pages, are unnecessary. Eight sides is probably the maximum length. The research report should set the scene for whatever is to follow.

Investigative Methods

The most successful studies used a wide range of methods to collect data. Many candidates used five or six different methods. Suggestions are included in the syllabus and the Assessment Scheme indicates the range of marks available according to the number of methods chosen. Those who chose only one or two methods limited the marks which could be scored in this section. Some candidates visited factories; others observed, carried out interviews and conducted questionnaires. Many candidates collected information from markets and shops and several set up tasting panels to assess the popularity of their cooked dishes. Photographs were particularly useful because they made the study unique; they added interest and enhanced the overall attractiveness of the presentation. Photographs were not always given titles; sometimes there were several pages of photographs without any explanation of their relevance. It was expected that for each investigation candidates would state how, where, when and with whom the investigations were carried out. Most candidates correctly included a blank copy of the questionnaire used but few included a list of questions used in their interviews. Copies of letters sent and received were usually included. It was frequently stated in the planning section that interviews would be conducted or observations

carried out but in several studies there was no evidence that those procedures had taken place; sometimes no further reference was made.

Candidates often interviewed busy professionals to gather information that is widely available in textbooks. Doctors should not be asked to list the causes of anaemia, for example. Candidates should be reminded that questions should only be asked which result in data which can be collated. Information on family income or on anything which has no overall bearing on the topic being investigated should not be sought. Sometimes there was a questionnaire item on family income when the respondents were young children. Adults may feel that it is inappropriate to ask about income so they may be less co-operative. None of the studies would be enhanced by interviewing and photographing patients in hospital. It is neither expected nor recommended that candidates have direct access to hospital patients. Discretion should be at the forefront of any data collection.

This is an important section to which many marks are allocated. High marks can only be achieved by those candidates who can demonstrate a detailed knowledge of each of the methods of investigation used. Those who merely name the methods they plan to use can gain few marks.

Collation of Data Collected

This section is as important as the previous one since each of the methods of data collection must be taken in turn and the information presented. Candidates usually presented data well, demonstrating their skill at computer graphics as well as their ability to present data without the use of a computer. The best studies showed many different methods of presenting data. The range included line graphs, bar charts, pie charts, comparison charts, prose and photographs. Spread sheets were used where appropriate. Most of the data was well presented although titles and keys were often omitted from charts. Data should always be presented separately from summaries and conclusions. Occasionally a collection of recipes was included for no obvious reason. Cooking dishes for evaluation and comparison is, however, a useful method of collecting data. Many candidates presented their information in a wide range of different ways. It is sometimes better for the reader to have information presented in a consistent way.

The value of prose was often overlooked. It would be perfectly acceptable to state that half of the respondents were 15 years old and half were 16 years old. This is more logical than producing a pie chart with two differently shaded areas.

Analysis / Conclusions / Recommendations

This section was sometimes omitted or dealt with very briefly. It is essential that candidates present an accurate summary of the evidence based on the data collected. It was expected that evidence would be interpreted and conclusions drawn. It is inappropriate to state the 'the data shows that.....' without giving supporting evidence. The conclusions drawn should lead candidates towards making recommendations for further action. These recommendations could be for implementation by individuals, families, organisations or governments. They may or may not be practical but they should demonstrate the candidate's ability to develop solutions based on the evidence of the study. Weaker candidates listed recommendations that had only very tenuous links to the investigation. An example of this could be that a candidate who is investigating the amount of fat in a packed lunch goes on to list ways of reducing fat in the diet. This information is in the public domain; new ideas are expected even though they may not always be practical.

Evaluations

Evaluations were often too brief. Some candidates made no reference to their original aims and objectives so were not able to state whether or not any of the objectives had been satisfied. The success or lack of success of each of the methods of investigation should be assessed since this would be valuable information for future investigations; suggestions could be made for improving weak areas. Candidates sometimes included in their list of weakness that respondents did not return questionnaires or did not take the questions seriously. Others noted that because the study was on a small scale it could not be used to make generalisations on the rest of the population. The time plan originally made could be considered and a more realistic time scale recommended. Sometimes candidates described problems they encountered and described how they had dealt with them. Most candidates were able to express some personal benefits of the study. Some said that they had gained confidence; others became more proficient at using various computer software. Several stated that they had enjoyed meeting people from other backgrounds. All of these benefits are important. It is important to note that there were many excellent accounts of individual candidate's assessments of their success.

Presentation

The general appeal of the work was good. Candidates are to be congratulated on the presentation of their work. Many showed considerable imagination in their cover design. A list of contents, acknowledgements and a bibliography were usually included. However, pages were not always numbered. Occasionally there was more than one size of print or more than one font style. Care should be taken to ensure that there is uniformity throughout. Occasionally candidates acknowledged the assistance of family and friends who helped with typing or illustrations. It should be remembered that the Investigation is part of the Advanced Level Assessment in Food Studies. It should be the work of the candidate and no-one else.

Sometimes candidates mentioned the expense involved in printing their work; although printed work looks professional there is no reason why the investigation should not be written in the candidate's own handwriting. Marks are awarded for content.