CARIBBEAN EXAMINATIONS COUNCIL

REPORT ON CANDIDATES' WORK IN THE ADVANCED PROFICIENCY EXAMINATION MAY/JUNE 2010

FOOD AND NUTRITION

GENERAL COMMENTS

The Caribbean Examinations Council administered its eighth examination in Unit 1 Food and Nutrition and its seventh examination in Unit 2 in May 2010. This year was the first time that the Unit 1, Paper 01 and Unit 2, Paper 01 consisted of multiple choice items.

There are some areas of the syllabus where greater depth of coverage is required. These areas are highlighted in the detailed comments on individual questions.

Paper 01 - Multiple Choice Questions

Paper 01 in both units consisted of 45 multiple choice questions. Candidates were required to answer all questions. There were 15 questions on each of the three modules in the unit. Paper 01 tested the grasp of critical nutrition principles and mastery of relevant skills. The maximum possible mark was 90. Candidates' performance was good. In Unit 1, the mean mark for Paper 01 was 55.44 and in Unit 2, the mean mark for Paper 01 was 57.07.

Paper 02 - Structured Essays

Paper 02 in Units 1 and 2 consisted of seven essay questions which tested objectives across all modules. It was divided into four sections. Section I consisted of one compulsory question which tested three of the modules. Section II to Section IV each comprised two optional questions. Candidates were required to answer one question from each section. Questions in Section II were based on Module 1, those in Section III on Module 2 and those in Section IV were based on Module 3.

The compulsory question in Section I was worth 45 marks and all other questions were worth 25 marks each. Overall, candidates' performance was good. The maximum possible mark was 120. In Unit 1 the mean was 73.05; in Unit 2 the mean mark was 73.11.

Paper 03 - Internal Assessment

Paper 03, the Internal Assessment, comprised a portfolio of two assignments. Candidates were expected to conduct research on a selected theme in the syllabus. The research in the first assignment was expected to form the basis of the experimentation and product development in the second assignment. Paper 03 was worth 90 marks and contributed 30 per cent to the candidates' final grade.

Performance on this paper was generally good, with a mean score of 59.68 out of 90 in Unit 1, and 60.56 out of 90 in Unit 2.

DETAILED COMMENTS

UNIT I

Paper 01 - Multiple Choice Questions

Paper 01 consisted of 45 multiple-choice items with 15 items from each module. Candidates' performance on this paper was very good.

Paper 02 - Structured Essay

Section I - Compulsory Question
Modules 1, 2 and 3

Question 1

This question tested candidates' understanding of calculating and comparing the percentage of total calories obtained from the energy nutrients; dietary guidelines for adhering to the Recommended Dietary Allowances (RDAs); planning menus; nutritive value of genetically modified foods; kitchen organization and service of desserts.

The compulsory question was attempted by all of the candidates. The overall performance on this question was good.

In Part (a) (i), candidates were required to calculate the percentage of total calories obtained from carbohydrates, proteins and fats having been given the total number of calories obtained from each. This aspect of the question posed an enormous challenge to candidates. It is recommended that in preparing for the examination, candidates be provided with guidance and practice in calculating a variety of problems involving energy values. Many candidates interpreted the question to be one which required a 4, 4, 9, calculation. Only a few of the candidates were able to accurately complete the calculations. The calculations are as follows:

1000 kcal from carbohydrates
400 kcal from protein
720 kcal from fat
1000+ 400+720= 2120

Carbohydrates	$\frac{1000}{2120} \times 100$	= 47.2%
Protein	$\frac{400}{2120} \times 100$	= 18.9%
Fat	$\frac{720}{2120} \times 100$	= 33.2%

In Part (a) (ii), most of the candidates experienced difficulty in comparing the actual intake of persons with the recommended intake of 15 per cent calories from protein, 55 per cent from carbohydrates and 30 per cent from fat. Since they did not have the correct calculations from (a) (i), it was difficult to provide appropriate advice regarding the intake of each nutrient. A few candidates used their general knowledge that a high intake of fat can be harmful and offered advice based on this, but could not address the insufficient intake of carbohydrates or high intake of protein.

Part (a) (iii) was well done, as evidenced by the ability of candidates to state dietary guidelines to assist adults to adhere to the RDAs. Most candidates suggested guidelines such as eating in moderation, using the multi-mix principle, reduction of foods high in fat and using more fruit and vegetables.

In Part (b) (i), the majority of candidates were able to plan two-course lunch menus for a two-day workshop. Some of them did not write two-course menus, while a few planned a menu for lunch instead of planning menus for one day. The candidates were required to include convenience foods in their menus but these foods were not clearly indicated by many candidates. Some of the menus were quite pleasing aesthetically and included entrees such as baked, roasted, grilled or fried meats with a suitable choice of meats for each menu and appropriate accompaniments. Conversely, some menus were not suitable for lunches at a workshop, for example, sandwiches, pizza and one-pot meals.

In Part (b) (ii), candidates were required to discuss the nutritive value of genetically modified tomatoes which were made purple by adding anthocyanins from egg plant. Unfortunately, the candidates missed the opportunity of simply stating the nutritive value of the tomatoes or the phytochemicals present in the tomatoes. Expected responses included

- Vitamin C — antioxidant and anti-infective properties
- Vitamin E — antioxidant
- Beta Carotene — a yellow pigment that converts to Vitamin A
- Lycopene — a red pigment that can reduce the risk of cancer

These together with the purple coloured pigment anthocyanin which has anti-oxidant properties make the purple tomato highly nutritious.

In Part (c) (i), candidates were required to recommend steps to organize the kitchen for the preparation of main meal salads and desserts. Some candidates misinterpreted the question and discussed kitchen layouts. Candidates were expected to address the following:

- preparation of a time-plan or work-plan
- workstations set up with all needed equipment and ingredients
- standardized recipes and the correct yield available
- appropriate pre-preparation such as portioning, marinating, and batching of meats
- using appropriate work flow
- room well ventilated and lit
- proper garbage disposal

In Part (c) (ii), the candidates gave excellent descriptions of how desserts could be served.

Section II - Optional Questions
Module 1

Question 2

This question tested candidates' understanding of the nutritional considerations and precautions that must be made when planning and preparing meals for children with HIV and AIDS. This question was attempted by 35 per cent of the candidates. The overall performance on this question was good.

Performance on Part (a) (i) was very good. Most candidates were able to spell out the acronyms and adequately differentiated between HIV and AIDS.

Part (a) (ii) required candidates to state how the nutritional status of young children with AIDS may be affected. This presented some difficulty to candidates, many of whom were unable to make the connection between the virus causing disease and the depletion of nutrients from the body, thus leading to malnutrition.

In Part (b) (i), candidates' responses to the precautions that can be taken by a caregiver to assist a young child in coping with the demands of AIDS were correctly given for the most part. Expected responses included

- ensuring that the child eats on time
- having the child practise good hygiene
- educating the child about the condition
- ensuring that the child has a healthy diet
- monitoring the child's play
- ensuring that the child takes medication
- making sure that the child gets adequate sunshine
- ensuring that the child visits the doctor regularly
- making sure that the child gets adequate rest
- offering support to the child
- encouraging the child to eat
- avoid having the child eat burnt or charred foods

In Part (b) (ii), the majority of candidates gave appropriate dietary recommendations for planning and preparation of meals for children with AIDS. Popular responses included: ensure that the child gets adequate fruits and vegetables; give the child foods that he can eat and give the child nutritionally balanced meals. However, the following are some very important points with respect to HIV that were missed:

- Avoiding foods that may cause stomach irritations
- Avoiding too many high-fibre foods as this may be of concern if diarrhoea is present
- Consuming supplements such as Ensure or Pediasure
- Avoiding left-over foods
- Avoiding too many preserved foods with chemical additives
- Avoiding foods that may cause drug-nutrient interactions

Question 3

This question tested candidates' understanding of the synergistic relationship between diarrhoea, vomiting, and malnutrition in young children, and signs of good nutritional status. It was attempted by 65 per cent of the candidates. Performance on this question was good.

In Part (a), candidates were required to discuss the synergistic relationship between the three variables. Candidates had difficulty explaining the synergistic relationship even though they could define each one separately. Synergy means that two things together work more dangerously against the child. One gives rise to the other, in that vomiting and diarrhoea deplete the body of water and other nutrients causing malnutrition. Dehydration and malnutrition in turn weakens the child's resistance to infection, thereby predisposing the child to diarrhoeal diseases.

Part (b) was well done by candidates, since they were quite familiar with the benefits of physical exercise to children. Many of them were able to score maximum marks for this section. Expected answers included: *helps them to perspire thereby getting rid of toxins, increases bone density; increases activity level and healthy lifestyle; helps children to eat better; and participation in competitive sports increases social well being*.

In Part (c), most of the candidates identified physical signs of good nutrition, however, the majority were unable to list a laboratory test which could determine nutritional status apart from stating "blood" or "urine" test. Expected responses were *haemoglobin test, blood glucose, blood cholesterol or glucose in urine*.

Section III - Optional Questions
Module 2

Question 4

This question tested candidates' understanding of planning meals for lacto-vegetarians and reading labels on convenience food packages.

This question was attempted by 68 per cent of the candidates. The overall performance was very good.

Performance on Part (a) was good as candidates were able to plan menus which were suitable for lacto-vegetarians. Unfortunately, about 40 per cent of the candidates did not read the question thoroughly and therefore missed gaining maximum marks on some parts of the question. For instance, some candidates planned one meal instead of a day's menu. Some candidates included fish on the menu, even though it was for a lacto-vegetarian, while other candidates ignored the format for menu writing.

Candidates responded well to Part (b) as they gave suitable responses for reasons why labels on convenience food packages should be read. Popular answers included:

- For ease in identifying products that have ingredients that they may be allergic to
- For identifying manufacturer's information, so as to be able to get redress

- Find instructions for use
- Checking expiry dates
- Identifying ingredients which may be of animal origin

Other suitable answers could be:

- Helping with portion control
- Identifying foods that are fortified with nutrients they may need such as iron
- Allowing for comparison nutrients in different foods, thus enabling them to make wise choices

In Part (c), most candidates adequately discussed possible benefits of the use of convenience foods. Responses included: *saving time, fuel, and energy; adding variety to the diet; economical; easy to prepare and longer shelf life*.

Question 5

This question tested candidates' understanding of safety of stored foods. It was attempted by 32 per cent of the candidates. Performance on Part (a) was very good. Candidates were generally familiar with criteria for assessing the safety of canned foods stored for several years. However, a few candidates misinterpreted the question to mean safety measures for storage of canned foods.

In Part (b), candidates were required to discuss hazards that may cause food-borne illnesses apart from bacterial contamination of foods. Unfortunately, many of the responses given related to bacterial contamination, such as poor personal hygiene, cross contamination of foods, flies and other pests coming into contact with foods.

Expected responses included:

- Illness caused by parasites such as tapeworms, flatworms and roundworms that may be caused by eating fish or pork that is undercooked
- Mercury contamination from long-lived fish such as shark and tuna that may have become contaminated with mercury through industrial waste
- Ciguatera or Red Tide poisoning from toxins in certain seafood
- Use of poisonous plants such as certain types of mushrooms
- Chemicals from utensils
- Viruses
- Mould
- Yeast

- Allergens in certain food products and accidental addition of poisonous substances to food

Part (c) was done well as candidates demonstrated that they were familiar with guidelines for storing foods in the freezer. However, many could not provide adequate justification and therefore did not score maximum marks. Some expected responses were:

- foods should be properly wrapped
- foods should be labelled
- foods should be properly portioned to avoid thawing and re-freezing
- frozen meats should be thawed in the refrigerator or microwave and not at room temperature
- vegetables should be blanched before freezing
- the first in, first out rule should be observed
- over-packing the freezer may cause food not to freeze thoroughly

Section IV - Optional Questions
Module 3

Question 6

This question tested candidates' understanding of microwave cookery and kitchen equipment. It was attempted by 85 per cent of the candidates. Performance on this question was good.

Performance on Part (a) was very good. Most of the candidates identified advantages of using the microwave cooker apart from reducing cooking time even though some ignored the clause, 'apart from reducing cooking time'. Popular answers were *easy to use, saves energy, nutrients are conserved*. Some other responses that were expected were *less likelihood of food poisoning as food does not have to be kept warm, frozen food can be defrosted safely, the oven itself does not heat up, making it comfortable to work in the kitchen,* and *it is convenient to use*.

In Part (b) (i), most candidates were unable to explain the principles of microwave cookery. They seemed not to be familiar with the principles of microwave cookery, apart from it being based on radiation. Many of them focused on guidelines for use of the microwave cooker. The expected response was

> *the microwave oven is fitted with a magnetron which generates the microwaves. The microwave is an electromagnetic wave which moves at very high frequency. These waves are readily absorbed into food substances. The vibrations of the microwave cause agitation of the molecules within the food which leads to friction and rapid rise in the temperature of the food.*

In Part (b) (ii), candidates were expected to explain standard procedures to be followed when using the microwave oven. These procedures included

- stirring of porridges at intervals
- repositioning of chicken drumsticks
- use of oven-proof or ceramic dishes

The first two procedures were well explained, however, most candidates were unaware that the materials listed in the third procedure allow microwaves to pass through them. Candidates focused on the heat resistance or suggested that they were good conductors of heat.

Part (c) was well done as evidenced by candidates' ability to accurately provide the purpose of the equipment even though about ten per cent of them attempted to list advantages of the tools named instead of uses.

Question 7

This question tested candidates' knowledge of characteristics and accompaniments of ice-cream and preparation of custards. Performance on this question was below average. The question was attempted by six per cent of the candidates.

In Part (a), candidates were required to list characteristics of a good quality ice-cream. Performance on this part of the question was satisfactory for the most part, but vague in some cases. For instance, some candidates gave vague responses such as "texture, flavour, odour" rather than *light soft texture, pleasant distinctive flavour of whatever flavouring was used and pleasing sweet aroma*.

In Part (b) (i), candidates were required to outline the steps for preparing a custard that was thickened with cornstarch or custard powder. Only about half of the candidates who attempted this question were able to adequately respond. Important steps were omitted, such as *use of a double boiler, blending of the starch with cold water and adding the eggs after the cooking of starch and removal from direct heat*.

For Part (b) (ii), candidates were required to discuss how syneresis and retrogradation affected the quality of custard. This part of the question proved to be extremely difficult for the candidates. Syneresis is often referred to as weeping or leaking and this liquid can cause the custard to be a bit unpalatable. Retrogradation, on the other hand, causes custards to become too thick as the mixture gets colder, altering the texture.

Part (c) was very well done by the candidates who appropriately suggested interesting and creative accompaniments for home-made ice-cream.

UNIT 2

Paper 01 - Multiple Choice Questions

Paper 01 consisted of 45 multiple-choice items with 15 items from each module. Candidates' performance on this paper was very good.

Paper 02 - Structured Essay

Section I - Compulsory Question
Modules 1, 2 and 3

Question 1

This question tested candidates' understanding of eating habits, food availability in the Caribbean, genetically engineered foods and safety of processed foods.

This compulsory question was attempted by all candidates. The overall performance on this question was very good. Part (a) (i) was well done. Candidates were required to discuss factors that influence the eating habits of Caribbean people during adulthood.

In Part (a) (ii), most candidates correctly defined the term 'food availability' and provided reasons why it is necessary to increase food availability in the Caribbean. Candidates focused on *the need to have the population well nourished; trade and economics among CARICOM states; ability to attract tourists* and *reduction in infant mortality rate*.

Performance on Part (b) (i) was generally well done by candidates. This part of the question required candidates to discuss the advantages and disadvantages of using genetically engineered foods. The majority of candidates clearly outlined advantages which included *increase in shelf life and greater resistance to pests*. Other responses that were expected included *increased diversity of the world food supply* and *having more food available*. Most candidates were able to mention at least one disadvantage, expected responses were:

- There remains controversy regarding the safety of these foods to the human body
- There remains controversy regarding the safety of these foods to the environment
- Persons may be allergic to some of the ingredients in these products
- GE foods can result in a food supply that is dependent on a few specifically designed plants
- Unforeseen problems such as climate change, or a natural disaster can endanger the entire supply of a particular food
- Crops monopolize the market and lead to higher food prices and lower biodiversity of crops and other plants

- New diseases might be introduced through the mutation of genes

In Part (b) (ii), candidates listed factors that can affect the safety of processed foods. However, their responses lacked depth of explanation which resulted in them scoring less than the maximum possible marks. Responses expected included *the safety of packaging materials used; storage conditions; chemical additives; hygiene and safety practices of food handlers* and *cross contamination during processing.*

Part (c) provided candidates with scope to exercise their creativity in developing a recipe that included spinach, which would be appealing to adults. Most candidates did not create interesting and appealing recipes. Some of the recipes developed were fritters, burgers, logs, pies — other options such as pizza, omelette, croquettes and casseroles could have been suggested. It is clear that more guidance and practice needs to be given to the process of recipe writing. The following were not indicated: *name of recipe, ingredients with quantities and the method of preparation*. In writing the method, it is expected that candidates state the procedure for incorporation of ingredients, the steps to be followed in the method of cooking; the temperature to be used; the length of time for cooking or baking; and the service of the dish. A few candidates wrote menus instead of recipes.

Section II - Optional Questions
Module 1

Question 2

This question tested candidates' understanding of traditional beliefs about foods, nutritional accuracy about the beliefs; menu planning using indigenous Caribbean foods, and traditional and modern tools that can be used to prepare the dishes on the menus. It was attempted by 70 per cent of the candidates.

Part (a) was fairly well done. Responses to this question were varied and very interesting. Many candidates were able to list traditional beliefs, but could not provide an adequate assessment. Some candidates listed nutritional facts about foods rather than traditional beliefs, for example, *Milk is a good source of calcium*. An example of a widely known traditional belief in the Caribbean is that

> *"Plantains or green bananas are rich in iron and therefore build blood." In terms of nutritional accuracy, these fruits/vegetables are a rich source of starch and therefore high energy foods. They also have moderate amounts of fibre and vitamin C. Both plantains and green bananas are rich in potassium. They are not sources of iron, hence their ability to correct bad blood or anaemia is minimal, therefore the statement is false.*

In Part (b) (i), candidates were required to write a one-course menu using indigenous Caribbean food. Most candidates wrote good one-course menus, however, some wrote two-course menus, while others wrote items such as chicken and potato chips. Though these foods may be indigenous, some preferred dishes would have been *pepperpot, stews, cou cou, curries, dhal, pones, metemgee, oil down, fufu and rotis*.

For (b) (ii), candidates had to identify three traditional tools that could be used in the preparation of items on their chosen menu. Some candidates chose traditional tools, but did not in every case relate them to the chosen menu. For instance, if curry was chosen, they could say that a kahari would be used to cook the meat, while a massala brick would be used to grind the massala and a tawah would be used to cook the roti.

In Part (c), candidates did very well in responding to the question on the advantages of using modern equipment. Most candidates referred to the fact that they are easy to clean, more efficient, save time and energy and that instructions for use are provided.

Question 3

This question tested candidates' understanding of evaluating regulations relating to the handling and sale of food; and Caribbean food systems. It was attempted by 30 per cent of the candidates and was generally well done.

In Part (a), many candidates struggled to find responses to food regulations relating to the handling and sale of food. In response to the first regulation that p*assengers passing through the air and sea ports must have all food contained in their luggage inspected,* candidates responded fairly well. Some candidates mentioned important points such as *it was important to protect citizens by ensuring that food is wholesome; customs should be aware of what is coming into the country* and *controlling of diseases, for example, mad cow disease.*

For the second regulation, *food handlers must complete sixty hours of food safety training*, candidates gave responses such as *persons become knowledgeable about how to prevent food borne illness; the credibility of the business is improved; food borne illnesses are prevented and rules are established for how food should be handled*.

The third regulation, *inspecting the internal temperatures of raw and cooked foods and discarding any that is not in keeping with the established temperature standards* was the most problematic. Some students just repeated that meats not held at the required temperature should be discarded. Expected responses were as follows:

- Improper cooling and reheating of food can cause food borne illness
- Bacteria grow best in the danger zone of 41 to 140 degrees Fahrenheit, so that foods must be kept out of this zone
- Steaming tables and chafing dishes must be kept at 140°F or higher, so as to prevent foods being in danger zone temperatures

Part (b) required candidates to discuss the impact on Caribbean food systems if the importation of selected foods is restricted. Candidates responded well to this question as they considered the socio-economic and health impacts as well as the impact on food accessibility.

Section III - Optional Questions
Module 2

Question 4

This question tested candidates' understanding of food production and calculating the selling price of products. It was attempted by 57 per cent of the candidates. Overall performance on this question was satisfactory.

Performance on Part (a) was fair. Candidates were required to name items produced in home-based businesses and to outline the stages of production for one of the items. Most of the candidates were able to name food items produced in home-based businesses such as jams, jellies, preserves and various confectioneries. Some unexpected responses were received such as bananas, ground provisions and oranges. Candidates were, however, unable to adequately describe the stages of production. Candidates had much scope in terms of describing the stages from selection of good quality raw materials to packaging and marketing. In most cases, even though stages were named they were not elaborated upon and therefore candidates could not score maximum marks.

In Part (b), candidates were required to calculate the selling price of the food item produced in the home-based business. This posed major difficulty for most candidates as many of the elements of the pricing process were omitted. It was expected that the costing of the product would follow the format listed below:

- List of ingredients with quantities
- Price per quantity
- Inclusion of overheads such as fuel, packaging and labour
- Cost of the produced item
- Cost per portion
- Percentage mark up
- Calculated selling price which is the mark up added to the cost

Candidates can be provided with practice where actual products are produced and priced as a classroom exercise.

Question 5

This question tested candidates' understanding of characteristics of white fish, preservation of the fish and food fortification. It was attempted by 43 per cent of the candidates. Overall performance on this question was below average.

Part (a) (i) and (ii) posed difficulty to most of the candidates. Apart from stating that the flesh is white and that it flakes easily, they could not adequately address the question. Some candidates

mentioned the fact that white fish is low in cholesterol, low in fat, possess scales and flakes easily when cooked. Not many candidates mentioned that it is an excellent source of protein or that it is low in calories, compared to other types of fish. Some candidates attempted to discuss changes that take place in the fish during preservation without mentioning the method of preservation. Methods of preservation include freezing, salting, dehydrating and smoking. Changes depend on the method of preservation, but occur in the texture, weight, taste, colour and nutrient content.

Performance on Part (b) was weak as most of the candidates did not seem to be able to provide examples of foods which are fortified with nutrients that are not found naturally in the foods. Candidates seemed to miss the point that the nutrients are not naturally occurring in the foods. Many therefore provided examples such as salt being fortified with iodine or milk being fortified with calcium and vitamins A and D. Expected responses included *infant formulas*, or *cookies being fortified with iron*; *soya milk fortified with calcium, vitamins A and D*; and *fruit juices fortified with calcium.*

Section IV - Optional Questions
Module 3

Question 6

This question tested candidates' understanding of HACCP and buffet service of meals. It was attempted by 68 per cent of the candidates. The overall performance of this question was satisfactory.

In Part (a) (i), candidates were required to state the meaning of the acronym HACCP. The majority of candidates correctly stated that the acronym means Hazard Analysis Critical Control Points.

In Part (a) (ii), candidates were required to give ways in which the HACCP approach to food safety can be helpful in ensuring the quality of food in large-scale food preparation. The majority of candidates misinterpreted the question, stating mainly personal and kitchen hygiene practices. Expected answers were:

- It identifies potential hazards before they occur
- Measures can be put in place to avoid hazards
- Excellent record keeping allows for proper monitoring
- It ensures that workers are trained in food safety

Part (b) focused on the organization of a food service area. This part of the question was well done. Candidates referred to *proper arrangement of tables, setting up queues so that there is entrance and exit, organizing service by groups* and *portioning food prior to service*.

In Part (b) (ii), candidates were expected to outline measures to be put in place to avoid hazards during the service of the meal. Candidates responded with references to physical hazards that can cause accidents as well as food safety hazards that can lead to sickness.

Question 7

This question tested candidates' understanding of quality assurance in restaurants, food batching and promotion of new menu items.

The question was attempted by 32 per cent of the candidates. Overall performance was satisfactory.

In Part (a) (i), candidates were required to suggest five measures that can be put in place to address the length of time between placing an order in a restaurant and receiving the meal. Candidates responded very well to this question. Popular answers included *employing enough staff, encouraging pre-ordering, entertaining patrons while they wait, ensuring adequate pre-preparation is done and organizing the kitchen for better efficiency.* Other expected answers were *retraining of staff, holding food at the correct temperature, offering buffet service* and *ensuring that adequate and appropriate equipment is provided*.

In Part (a) (ii), candidates were expected to outline procedures for the batching of the house special entrée. Many candidates did not understand the two major terms 'batching' which referred to the pre-preparation of the meats and 'entrée' which is the main dish (protein) of a meal. The process for completing the batching included steps such as cleaning, portioning, marinating, wrapping of individual portions, packing in batches in suitable containers, such as covered food savers or hotel pans, and placing in batches in the freezer or refrigerator.

Part (b) required candidates to suggest strategies that would encourage patrons to try a new item on the menu. Candidates responded well to this part of the question, giving several interesting promotional ideas, such as using testimonials of celebrities who had tried the item, presenting the item attractively, distributing free samples and educating the waiter/waitress about how to introduce the new item to guests.

Paper 03/1 – Internal Assessment

This paper consisted of a portfolio comprising two pieces of work which tested objectives across all modules. Students, in consultation with the teacher and using the guidelines provided by the Caribbean Examinations Council, selected the activities.

The first assignment was marked out of 30, while the second was marked out of 60. The overall performance of candidates has improved.

The majority of portfolios were very well presented. Most of the illustrations were clear and creative. In some cases, the quality of the assignments was appropriate for the advanced proficiency level while others were not of the standard expected at this level. It is imperative that teachers are aware that a portfolio should be submitted, instead of two distinct pieces.

A few candidates submitted exemplary portfolios. The work of these candidates was scientifically based and rigorous. These candidates are to be highly commended for their efforts. In some instances, the candidates used a thematic approach where the research assignment was linked to the product development.

The major area of concern continues to be the communication of information. While some candidates were able to communicate information in a logical manner with few grammatical errors, several candidates continue to present information with numerous grammatical errors which reduced the overall quality of the portfolios.

Module 1 - Research

Most of the candidates selected appropriate topics and demonstrated knowledge of relevant facts. In some cases, literature reviews were not comprehensive; some candidates often did not utilize appropriate formats for citations and in some instances the sources used were not always cited.

Data were well presented but very little reference was made to the data. The discussion of findings lacked depth of interpretation. In some cases, findings were not based on the research conducted. Instead, generalizations from the literature or guidelines were made regarding the topics.

In several cases, inferences, predictions, or conclusions were not attempted by the candidates. Sometimes the conclusions and recommendations were not accurately or scientifically based and did not support the analysis of data.

Although communication of information was satisfactory in some instances, the standard of communication for this level is extremely poor. Spelling and grammatical errors that can be easily corrected using the spell check on a computer were too often overlooked.

Module 2 - Experimental and Recipe Modification

Many creative products and modifications were attempted and most candidates utilized sensory evaluation to determine the quality of the product. Candidates selected appropriate experiments and demonstrated knowledge of relevant facts.

Many reports were not well written and presented. Most of the candidates formulated hypotheses but they were not always realistic. The procedures for experiments were in most cases not clearly documented. A large majority of candidates showed very little evidence to prove that they modified the product after critical or unexpected outcomes.

RECOMMENDATIONS TO TEACHERS

Overall performance on the examinations was satisfactory. However, performance can be improved if recommendations to teachers are used as guidelines to help address the weaknesses of students. Although candidates appeared to understand the concepts, they did not elaborate and fully develop answers that are expected at the advanced proficiency level. Some candidates were not fully prepared for this level of examination.

It was also clear that candidates were not familiar with some areas of the syllabus and so they performed poorly or omitted parts of questions. Candidates should therefore cover the entire syllabus so that they can satisfy the requirements of the examination. Module 3 in both units was extremely weak. Since it might not be possible for teachers to cover every topic in class, it is suggested that students be given research on these topics and be allowed to present their work in class. Greater emphasis must be placed on nutritional information related to control and prevention of chronic

diseases. In addition, it is important that students revisit concepts in the CAPE syllabus which were studied at the CSEC level and that these topics be discussed in greater detail and additional information be presented to them. Teachers must be cognizant that it is possible to study nutrients at several levels — primary, secondary, tertiary and post graduate — and that at each level the information expands.

Candidates should be encouraged to

- read questions carefully, paying attention to key words
- place emphasis on comprehending reasons for certain principles and procedures, rather than just learning by rote
- develop responses fully, paying attention to the marks allocated for each part of the question
- answer questions with a variety of key words, namely: discuss, explain, list, describe and define. Ignoring these command words and simply listing responses when required to explain, for example, resulted in candidates' inability to gain as many marks as possible
- participate in mock examinations using past examination papers and administered under examination conditions in order to develop good examination techniques
- utilize different media to become familiar with current nutrition issues
- place emphasis on research techniques, case studies and problem solving
- engage in field trips and work attachments to help them to fully understand many nutritional concepts such as methods for assessing the nutrition status of children; complementary feeding and breast feeding; nutrition related disorders; and practices and procedures for ensuring safety of food
- develop ideas, and demonstrate clarity of expression. In many cases, candidates showed some knowledge of the concept being tested, but could not adequately respond to questions at the standard that is required at the advanced proficiency level.

Internal Assessment

Students should be encouraged to

- seek guidance in choosing topics for projects as well as throughout the entire exercise
- select topics that are of interest to them and that relate to a problem in the region or community. This should ensure that there is ownership and motivation for the project
- note that literature reviews for each assignment do not have to be extensive, but, should be thorough enough to outline the problem and research relevant to the same. This **cannot** be adequately done in two to three pages. Students must utilize a variety of sources. There was a

heavy reliance on the internet and in many cases this was the only source cited. At this level of examination, it is critical that students be exposed to the correct method of citing references. It is suggested that students be taught the APA referencing style for citing sources and developing a reference list

- develop rationales and explain the significance of the topic.

Assignment 1 - Research

- Students must not only present the data but they should discuss the data clearly. They are not expected to present data on all of the questions, but should discuss all of the questions asked on the questionnaire or interview. Field observations must be adequately highlighted and discussed.

- Efforts should be made to guide students in making simple inferences and drawing conclusions yielded from the data. A summary or conclusion should be given at the end of the project.

Assignment 2 - Experimental and Recipe Modification

- Students should be advised that a detailed report must be written, which accurately records and reports all observations.

- Efforts should be made for students to understand that experiments are not completed on a one shot basis. It is necessary to repeat and modify experimental methods after critical or unexpected outcomes.

- Efforts should be made to introduce students to the role of product development and recipe modification. In addition, demonstrations should be completed before students engage in their individual assignments.

- Students should be advised that product development or recipe modification is more than removing or changing one ingredient or just throwing ingredients together. This assignment entails detailed experimentation which usually necessitates several trials prior to reaching success. For this reason, it should involve the altering of several ingredients, hence baked products is suggested as an example for modification. At this proficiency, it is unacceptable to modify the amount of fat or salt in 'beef stew' and view this as competent work. Therefore, significant ingredients should be altered.

- Each modification should be explained in detail, giving reasons why the particular modification was done. After an unexpected outcome, changes should be noted by making a statement concerning the specific modification. For example, when making a jam, the product did not set; therefore more lime juice was added to the next modification. Examiners are expected to compare the recipes to verify the changes that were made to the recipes.

- Variations of basic recipes are not expected at this proficiency as a modification. For example, original recipe plain cake and modified recipe coconut cherry cake.

- Students should give the original recipe and then conduct at least two modifications.

- Experiences must be provided for students to fully understand that a recipe is a formula, thus any change in an ingredient will necessitate a substitution of ingredients. Reliable and quality products cannot be achieved on a one shot basis.

- Efforts should be made for students to understand the role of major ingredients used in recipes, especially baked items. For example, if the amount of sugar in a creamed mixture is changed there must be a suitable substitute or the texture and flavour of the cake will be changed. The goal of recipe modification is to make changes to the ingredients yet retain the flavour, colour, shape, texture and acceptability of the product. Similarly, product development entails creating a product which is pleasing to consumers.

- Students should be encouraged to use food composition tables to determine energy values for the original and new product.

- Students should be encouraged to formulate valid hypotheses.

- Students should be encouraged to record and report methods, observations and results accurately, using tables or graphs.

- Students should include the results from the sensory evaluation in their discussion.

- Students should develop a conclusion to summarize their findings.