CARIBBEAN EXAMINATIONS COUNCIL

REPORT ON CANDIDATES' WORK IN THE
CARIBBEAN ADVANCED PROFICIENCY EXAMINATION
MAY/JUNE 2009

FOOD AND NUTRITION

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ADVANCED PROFICIENCY EXAMINATION

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OVERALL COMMENTS

The Caribbean Examinations Council administered its seventh examination in Unit 1 Food and Nutrition and its sixth examination in Unit 2 in May 2009. There were some good responses to questions in both Units.

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.

GENERAL COMMENTS

Paper 01

Short-Answer Questions

Paper 01 in both units consisted of nine compulsory short-answer questions. There were three questions on each of the three Modules in the unit. Paper 01 tested the grasp of critical nutrition principles and mastery of relevant skills. Candidates' performance was satisfactory. The maximum possible mark for Paper 1 in each unit was 90. In Unit I the mean mark was 50.45 and in Unit II the mean mark was 52.30**.**

Paper 02

Structured Essay

Paper 02, in each unit 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 all 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 on Module 3.

The compulsory question in Section I was worth 45 marks and all others were worth 25 marks each. Overall, candidates' performance was good. The maximum possible mark was 120. In Unit I the mean was 70.48. In Unit II the mean mark was 68.43**.**

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 **57** out of 90 in Unit 1, and 60.89 out of 90 in Unit 2.

DETAILED COMMENTS

UNIT 1

Paper 01

Short-Answer Questions

Question 1

This question tested candidates' knowledge of the term 'satiety', digestion of carbohydrates, and the knowledge of the factors that determine a person's energy requirements. The overall performance on this question was good.

Part (a) of the question was fairly well done. Most candidates were able to accurately define the term 'satiety' and to give both of the elements, namely, 'being full to satisfaction' and 'after a meal'. However, a few candidates only included the first element of satisfaction.

Part (b) was only fairly well done. Many candidates did not fully understand the process of digestion of potatoes. Even though the majority of candidates knew that the main nutrient was starch, they did not name amylase or maltase as the enzymes responsible for the breakdown of starch to maltose and dextrin or maltose to glucose.

In Part (c), most candidates correctly stated the factors that determine energy requirements; the most popular responses were age and physical activity.

Question 2

This question tested candidates' knowledge of anthropometric indicators used to identify stunting and wasting, and the understanding of the importance of managing blood sugar levels.

Candidates did not score well in Part (a). The majority of candidates named height as the indicator for stunting rather than height for age. Similarly in the case of wasting, the candidates named weight, rather than weight for height or BMI. Skin fold thickness was also accepted as an indicator of wasting. A few candidates named 'growth chart' as the indicator; however, the chart itself is not an anthropometric indicator. Anthropometrics involve body measurements.

In Part (b), candidates presented acceptable responses regarding the importance of controlling blood sugar level, including linking high blood sugar with diabetes and its effects. Expected responses included prevention of low blood sugar (hypoglycemia) which could in turn lead to sweating, dizziness, anxiety, irritability and headaches, as well as prevention of high blood sugar (hyperglycemia), which could develop into a diabetic coma. Other complications such as slow healing of wounds and loss of limbs were cited by some candidates.

In Part (c), candidates were required to outline measures for the management of high blood sugar. Most of the candidates responded well, giving measures such as maintaining a balanced diet, taking medication, maintaining healthy body weight and regular exercise.

Question 3

This question tested candidates' understanding of the causes and risk factors associated with heart disease, and their knowledge of reliable sources of nutrition information.

Performance on Part (a) was very good. The majority of candidates were able to explain how excessive consumption of fats contributes to heart disease. Candidates noted that fatty deposits led to a decrease in blood flow to the heart, and the heart which is a muscle, can become enlarged as a result of having to work harder to pump the blood.

Part (b) was generally well known. Candidates were able to state the risk factors for heart disease, including high cholesterol intake, being male, increasing age, stress, heredity, obesity, lack of exercise, high blood pressure, smoking, excessive alcohol consumption, positive energy balance and low blood pressure.

In Part (c), the majority of candidates were not able to identify resource materials published by CFNI. 'Cajanus' was more widely known than 'Nyam News'.

Question 4

This question tested candidates' knowledge of reasons why elderly persons lose their appetite, and understanding of meal planning for the elderly. Performance on this question was very good.

In Part (a), the majority of candidates were able to suggest reasons why elderly persons lose their appetite. Popular answers were loss of teeth, which made chewing a painful exercise, slower metabolic rate, use of some medications that may suppress appetite, and reduction of sense of taste. Other important reasons included special diet which might be monotonous or restrictive, loneliness or stressful circumstances, reduced salivation and slow digestion.

In Part (b), candidates demonstrated their menu-planning skills by planning for the elderly, a breakfast menu which included two convenience foods. Most candidates were able to plan a suitable menu but did not always include the convenience foods. Suitable convenience foods included instant cereals, canned juices, corned beef and sardines.

Question 5

This question tested candidates' understanding of the importance of nutrition information on food labels, and health effects of an excessive intake of Vitamin A. The overall performance of this question was good.

Performance on Part (a) was good. Most of the candidates were able to list foods for which nutrition information is not required by law. Some expected responses included fresh fruits, fresh vegetables, fresh fish, fresh meat and poultry as well as small packaged items such as sweets and cakes. Several candidates listed items such as flour, sugar and rice. It is important to note that these items are retailed in some territories in small bags without labels, however these products do leave the factories in labeled bags as required by law.

In Part (b), many candidates demonstrated their understanding of the importance of providing nutrition information on food labels.

In Part (c), the majority of candidates were not able to explain why an excessive intake of Vitamin A can lead to a health problem. They gave responses such as it causes night-blindness, diarrhoea and vomiting. Expected responses included: Vitamin A is a fat-soluble vitamin, therefore it is readily stored by the body and accumulates in the liver and other parts of the body. Vitamin A is also not readily excreted by the body, therefore its accumulation can have toxic effects. One of its effects is slow growth in children. The condition is known medically as hypervitaminosis.

Question 6

This question tested candidates' understanding of storage of food, and destruction of microbes during microwave cooking. The overall performance of the question was good.

In Part (a), the majority of candidates demonstrated their understanding of cross-contamination and conditions that increase the growth of micro-organisms by explaining how lettuce which was shredded on a meat board and then stored in a damp plastic bag in the refrigerator could have been the source of food poisoning at a party.

In Part (b), candidates confused food storage with food preservation. Methods of storing food included dry storage, refrigerator and freezer.

Part (c), which required candidates to describe how microbes are destroyed during microwave cooking, posed difficulty for the majority of candidates as they scored poorly on this part of the question.

Appropriate responses included:

1. Cover the food whenever possible, since this allows proper heating of the surface and containment of the heat.

2. Stir and rotate food at least once or twice, as this allows for cooking of the exterior of the food and equalizes the distribution of the temperature throughout.

3. Insert the oven temperature probe or meat thermometer at several spots to allow the cook to check that the food has reached a temperature that destroys bacteria.

4. Set oven at the correct temperature as adequate heat is needed to cook and to destroy bacteria.

Question 7

This question tested candidates' knowledge of safety precautions in the kitchen, and the Heimlich manoeuvre. In general this question was done very well.

Part (a) was very well done as candidates were able to list appropriate precautions to prevent accidents.

Performance on Part (b) was only fair as some candidates were unable to name the Heimlich manoeuvre and describe it. A few candidates named CPR even though they were describing the Heimlich manoeuvre.

Question 8

This question tested candidates' understanding of methods of tenderizing tough cuts of meat prior to cooking, steaming puddings, and garnishing foods. The overall performance on the question was poor.

Part (a) was only fair. Candidates confused methods of tenderizing tough cuts of meat with cooking methods. Some candidates were familiar with at least two procedures, namely, pounding to break up muscle fibres and the use of enzymes or meat tenderizing powders.

In Part (b), the majority of candidates were unable to explain the guidelines to be followed when steaming a pudding. Expected responses included covering tightly, keeping boiling water on hand to replenish, ensuring that there was enough steam, and removing the cover to test whether the pudding was done, thus avoiding toughness.

Part (c) was well done as candidates gave appropriate garnishes for making a beef roast appealing to the eye.

Question 9

This question tested candidates' understanding of the scientific principles responsible for the browning of fruits and vegetables that have been peeled, and the changing of vegetables from bright green when raw to an olive green when cooked, and appropriate modifications to increase iron content, iron availability, energy value and flavour of a recipe.

Performance on Part (a) was poor. Most candidates were unable to explain the scientific principles underlying the changes in the fruits and vegetables during peeling. Some candidates were familiar with oxidation. However, they did not explain the exposure of enzymes present in the fruits when peeled and the formation of melanins. In the case of vegetables, the majority of candidates failed to explain that when cooked, the membrane that prevents the acids in the vegetables from coming into contact with the chlorophyll is broken, thus becoming permeable. They could have further explained that the volatile plant acids evaporate with steam. Non-volatile acids remain in the water, causing changes in colour. In addition, covering the pot can cause the volatile acids to remain in the cooking water.

Part (b) proved difficult, as few candidates gave appropriate responses. Candidates were expected to make modifications to a recipe that would increase each of the following:

1. Iron content - adding an iron rich food such as wheat germ, nuts or molasses
2. Iron availability - adding food rich in a vitamin C such as lemon juice or by removing the food with an inhibitor, such as removing milk
3. Energy value - adding sugar, honey or avocado
4. Flavour - adding cinnamon or essence

Paper 02 - Structured Essay

Section I – Compulsory Question

Modules 1, 2 and 3

Question 1

This question tested candidates' knowledge of the sources of important nutritional information; modifications suitable for addressing wasting caused by chronic diseases; ability to analyse menus and make suitable modifications for elderly persons; ability to explain methods of attractively preparing vegetables; and to conduct sensory evaluation of new dishes.

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

In Part (a) (i), candidates were required to identify resource materials for various types of nutrition information including the number of calories that should be consumed daily, the nutrient content of foods and food that can be substituted within the same group. This aspect of the question posed enormous challenges to candidates. Only a few of the candidates were able to accurately identify sources of the nutrition information requested. It was expected that candidates would have noted that the recommended daily allowances and the daily food guide provide reliable information on the number of calories needed by an individual. Information on the nutritional content of foods can be garnered from food composition tables and nutrition labels on foods, while information on substitutions of foods can be obtained from Food Exchange lists and Food Group.

In Part (a) (ii), most of the candidates experienced difficulty in supplying modifications suitable for addressing wasting caused by chronic diseases. Even those candidates who understood wasting did not know how to correctly address this situation. However, some candidates provided excellent suggestions, such as ensuring that there were enough enhancers to aid in the absorption of nutrients such as calcium and iron. Expected responses were as follows:

- Adding suitable high-energy foods such as honey, avocado and olive oil to salads
- Increasing protein in the form of grated cheese, peanut butter and other minced or grated forms of protein foods
- Increasing frequency of meals
- Adding powdered milk to foods and beverages
- Using prepared nutritional supplements
- Adding coconut milk to beverages, rice dishes, stews and custards

In Part (b) (i), where the candidates were required to analyse a given menu, most candidates were able to score high marks. Many candidates pointed to the fact that the menu was high in fat, salt and sugar.

Expected answers included:

- The menu was not mechanically soft and could pose difficulties with chewing and swallowing.

- The predominant cooking method was frying, which could mean that many persons could develop stomach upsets or indigestion.

- The diet was also lacking fruits and vegetables, making it unbalanced.

In Part (b) (ii), candidates suggested changes to the menu to make it suitable for elderly persons.

In Part (c) (i), candidates were required to suggest dishes in which carrots and broccoli could be attractively prepared. Many candidates gave steamed or boiled vegetables although these methods do not usually yield dishes that are very attractive. Some very attractive vegetable items included carrot cake, pizzas, vegetable pureed soups or beverages, chocolate cake with vegetables included and vegetable cheese pies. In writing the recipe for the dishes, candidates did not include a method of preparation.

In Part (c) (ii), the candidates were familiar with sensory characteristics but could not outline the steps in conducting the sensory evaluation. Important steps in sensory evaluation are as follows:

- Selecting a panel of testers within the target group
- Providing water for testers
- Devising an evaluation form

- Allowing testers privacy to give their own responses
- Collecting and analysing responses
- Modifying the product after each evaluation until the desired result is obtained

Section II

Module 1

Question 2

This question tested candidates' knowledge of the reasons for the difference in the energy requirements of a grandmother and a grandson, ability to calculate energy requirements, and to outline strategies for ensuring that the energy needs of adolescents are met.

It was attempted by 35 per cent of the candidates. Overall the performance was fairly good.

Performance on Part (a) was very good. Most candidates were able to provide four reasons for the difference in the energy requirements of a grandmother and her grandson.

In Parts (b) (i) and (ii), candidates' calculations of kcal which comprised the meal eaten at lunch and the amount needed to meet the energy requirements of the teenager were correct for the most part. Some candidates did not multiply or add correctly but clearly demonstrated that they understood the process involved.

In Part (b) (iii), although candidates gave appropriate strategies that could be used by the teenager to ensure that his energy needs were met, for example, planning balanced meals, and increasing food intake, they were unable to explain specific strategies. Expected responses included:

- Having snacks between meals
- Using food supplements
- Increasing portion sizes
- Consuming foods high in calories
- Checking labels for energy content
- Using the multi-mix principle

Question 3

This question tested candidates' understanding of ways in which adequate protein intake could be maintained while cutting food costs, and the ability to plan low cost menus.

It was attempted by 65 per cent of the candidates. Performance was fairly good.

In Part (a), candidates were required to discuss ways that a housewife could maintain adequate protein intake for her family, while cutting costs. The majority of candidates were able to answer this question adequately. However, some candidates merely listed points rather than providing discussion on each. Candidates discussed points such as: the use of textured vegetable proteins, soymilk and beans which are cheaper alternatives. Many candidates did not discuss the use of complementary proteins as expected.

Part (b) was not done well. Some candidates did not develop a low-cost day's menu, instead they planned lunch menus.

Section III

Module2

Question 4

This question tested candidates' ability to plan meals for toddlers using the multi-mix principle, and nutrient conservation.

It was attempted by 22 per cent of the candidates. The overall performance was fairly good.

Performance on Part (a) was very good. Candidates were able to plan a five-day snack menu which was suitable for toddlers. A few candidates lost marks because they included potentially hazardous foods such as peanuts or fruits with stone-like seeds.

Part (b) was fairly well done as most candidates gave suitable ways to achieve nutrient conservation in vegetables. Some expected responses that were not provided by the candidates included:

- Preparation of vegetables just before serving time; using sharp knives to cut vegetables
- Paring vegetables as thinly as possible
- Eating vegetables raw
- Discarding bruised and damaged leaves of vegetables

Question 5

This question tested candidates' knowledge of the nutrients found in the Caribbean food groups and understanding of the importance of adequate iron intake, and reasons why persons with chronic diseases should read the nutrition information on food labels.

It was attempted by 78 per cent of the candidates.

Part (a) was well done by most candidates. Candidates were generally familiar with the food groups of the Caribbean; however they needed to be specific in the naming of vitamins and minerals. For instance, for the food group fruits one of the major nutrients is vitamin C and not merely vitamins.

In Part (b), candidates were required to discuss iron and its importance in the diet. This was well done by most candidates. The majority of candidates indicated that iron forms a part of the haemoglobin molecule in the blood and is particularly important to teenage girls because of the monthly loss of blood through menstruation.

Part (c) was done well. Candidates demonstrated that they were familiar with the dietary requirements for persons suffering from diabetes and hypertension.

Section IV

Module 3

Question 6

This question tested candidates' understanding of the measures required for setting up well-organized food preparation areas and knowledge of kitchen layout and knife skills.

Performance on this question was good. The question was attempted by 63 per cent of the candidates.

Performance on Part (a) was very good. Most of the candidates mentioned areas such as adequate storage, colour of walls, floor surface, ventilation, adequate equipment, water supply and pest control as measures which should be put in place to ensure that premises were suitable for food preparation. A few candidates misinterpreted the question and wrote responses related to personal and kitchen hygiene.

In Part (a) (ii), most candidates were able to sketch suitable kitchen layouts, showing all the work centres. Others either did not sketch the layout or omitted one of the work centres.

In Part (b), candidates were expected to illustrate and label knives. Most candidates were able to answer this question adequately. However, some candidates could not name all four parts of the knife as required.

Question 7

This question tested candidates' knowledge of heat transfer, and decorations for cakes.

Performance on this question was unsatisfactory. The question was attempted by 37 per cent of the candidates.

Performance on Part (a) was unsatisfactory as most of the candidates experienced difficulty discussing how heat is transferred during the baking of a cake in a convection oven. Very few candidates made reference to the role of the pan in heat transfer. The metal, from which most pans are made, is a good conductor of heat. In a convection oven also, heat is circulated evenly around the oven with the help of the fan. However, some of the candidates were able to state that heat is transferred by convection in the oven and that the cake is heated through the pan by conduction.

In Part (b) (i), candidates were required to write a cake recipe for a cake made by a method other than all-in-one or creaming. The majority of candidates chose to describe either the rubbed-in method or the whisking method. Candidates did not, however, state the method, nor discuss how the heat is transferred.

In Part (b) (ii), candidates were required to select a method of cooking the cake mixture which they selected in (b) (i) using the stove top and to describe the process of cooking the cake. This part of the question proved to be extremely difficult for the candidates. Steaming and dry cooking were the methods expected.

Part (c) was done very well by the candidates who appropriately suggested decorations that could be used for cakes using local fruits or other suitable food products.

UNIT 2

Paper 01

Short-Answer Questions

Question 1

This question tested candidates' knowledge of factors to be considered by the authorities responsible for procuring supplies for a hurricane shelter in order to ensure the safety of raw meat prior to cooking as well as their understanding of food hygiene and sanitation standards.

The overall performance on this question was good.

Part (a) was very well done by a few of the candidates, but the majority of candidates gave general responses about food safety and cooking of meat, instead of focusing on ensuring the safety of raw meat. Expected responses included:

- Ensure that the farmer or retailer is reputable.
- Verify that the meat was slaughtered in an approved environment.
- Ensure clean and temperature controlled transportation.
- Raw meat should be clean and well drained.
- Raw meat should be cut on surfaces designated for the cutting of meat to avoid cross-contamination.
- Portion according to how it will be used to avoid re-freezing.
- Refrigerate immediately and hold at the appropriate temperature until ready for use.

In Part (b), candidates demonstrated a clear understanding of the importance of good hygiene and sanitation standards for food vendors.

Question 2

This question tested candidates' knowledge of ethnic groups in the Caribbean that have influenced the cuisine and knowledge of procedures for the management of hypertension. The overall performance on this question was very good.

In Part (a), the majority of candidates responded well by listing ethnic groups in the Caribbean as well as dishes associated with each of these ethnic groups. A few candidates confused ethnic groups with religious groups.

In Part (b) (i), candidates accurately listed methods of lowering sodium intake in the diet.

In Part (b) (ii), where candidates were required to list other guidelines that a person with hypertension should follow, the majority of candidates focused on dietary factors rather than providing answers which addressed other lifestyle factors such as physical exercise, reduction of stress and cessation of smoking.

Question 3

This question tested candidates' knowledge of how to develop nutritious snacks, and understanding of iron-deficiency anaemia. The overall performance on this question was fairly good.

Candidates responded fairly well to Part (a) as they suggested savoury yam chips with interesting flavours such as cheese, barbecue or spicy. Others suggested muffins or cakes and some of the names were very interesting. It should be noted that when developing recipes, there must be an understanding of the characteristics of the various ingredients and the basic proportions needed to create a high-quality product.

Part (b) posed difficulty for some candidates who could not identify the negative aspect of over-consumption of beets. Most of the candidates were however accurate in stating that too little attention would be paid to other beneficial foods. Some of the candidates stated that the beets are high in carbohydrates (sugars) and that excessive consumption could lead to obesity. It was expected that candidates would establish that persons with anaemia require an iron-rich diet.

Beets are not a source of iron thus, failure to eat other iron rich foods would result in dietary shortage and cause the condition to deteriorate.

Question 4

This question tested candidates' understanding of food preservation. The overall performance was fairly good.

Performance on Part (a) was only fair. Candidates were required to identify methods of preserving guavas. The majority of candidates listed guava preserves namely, guava cheese and guava jam. Other methods include bottling or canning, dehydration and freezing.

In Part (b), candidates experienced difficulty explaining the scientific principle of using vinegar to preserve vegetables. It was expected that candidates would have explained that vinegar is acidic with a pH of 3.5, and bacteria cannot survive in solutions below pH 4.5. Instead several candidates stated that vinegar inhibits enzyme activity.

Part (c) required candidates to state how they would preserve and package thyme. It was obvious that many candidates were unfamiliar with the herb "thyme". A few candidates noted that the thyme should be sun-dried, packaged, and sealed.

Question 5

This question tested candidates' understanding of the importance of reading food labels, and fortification of foods. This question was very well done.

Part (a) was done extremely well, as candidates gave excellent responses to the importance of food labels.

In Part (b), candidates struggled to explain reasons why fortification was necessary in the production of flour, and many confused fortification and enrichment. Expected responses were: to improve the nutrient content of foods that are widely consumed, to conform to national nutrition regulations and to address nutrient deficiencies in the population.

Question 6

This question tested candidates' understanding of food preservation, and costing products. The overall performance on this question was satisfactory.

Part (a) was not done well as many candidates were unable to note the differences between jam and candied preserves. Those who highlighted a difference stated that jam could spread, while preserves are eaten alone.
In Part (b), most candidates showed their understanding of how to cost products by explaining the process.

Question 7

This question tested candidates' understanding of the Hazard Analysis Critical Control Points (HACCP) that should be observed during the preparation and service of chicken salad. The overall performance on this question was fairly good.

In Part (a), most candidates were able to outline the process for preparing chicken salad.

Performance on Part (b) was not good as evidenced by the difficulty candidates experienced in identifying the Hazard Analysis Critical Control Points (HACCP). Control points included: thawing chicken; cleaning and marinating; cooking to appropriate temperature; avoiding cross contamination when preparing the vegetables; washing hands after each process; and storing at the correct temperature.

Question 8

This question tested candidates' understanding of the principles of planning a menu.

In Part (a), candidates were required to plan a lunch menu for persons on a weight-loss diet. Several candidates appropriately selected soups for the appetizer, however cream was added to the soups. The addition of cream was not appropriate for persons on weight-loss diets as this would increase the caloric value of the meal.

The majority of candidates planned suitable main courses while some omitted the carbohydrate dish which changed the proportion of fat and protein, thus altering the nutritional balance. Suitable methods for cooking the main course were selected. These included, steaming, grilling, baking and broiling. Most candidates aptly selected suitable fruit-based desserts.

Part (b) required candidates to list menu-planning principles other than those used to plan the menu at (a). Many candidates identified the same principles that were considered in Part (a), namely nutritional balance, variety in colour and texture, special needs and menu format. Expected responses included: the number of persons being catered for; type of meal service; available income; use of foods in season; and the skill of staff.

Question 9

This question tested candidates' knowledge of guidelines related to maintaining a safe working environment, and understanding of the importance of quality assurance. Overall performance was satisfactory.

Performance on Part (a) was fair. Candidates were required to suggest guidelines that should be posted in the work area to assist employees in maintaining a safe working environment. Many candidates provided reasons for having a safe environment instead of suggesting guidelines.

In Part (b), candidates outlined appropriate responses for maintaining consistent quality in a catering business. Responses included profitability, maintaining clientele, avoiding law suits, and attracting new clientele through patrons telling others about the product.

Paper 02 - Structured Essay

Section I - Compulsory Question

Modules 1, 2 and 3

Question 1

This question tested candidates' understanding of how family resources influence the food choices of teenagers; knowledge of indigenous Caribbean dishes and tools used in their preparation; knowledge of regulations that apply to food labelling; methods of preparing popular main dishes enjoyed by teenagers; and quality assurance measures used when preparing and serving food.

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

Part (a) (i) was fairly well done. Candidates were required to examine how the lunch choices of teenagers were affected by the availability of family resources. For the most part, adequate answers were provided; however, all responses needed to be linked to available family resources. Responses included: with increased spending power teenagers have more choices. More choices may mean greater access to wide variety of convenience foods which are not necessarily healthy. Some poorer families may be located in rural communities which may not necessarily have access to certain foods. This limits the choices of those teenagers.

In Part (a) (ii), most candidates provided indigenous dishes and indigenous tools that were used to prepare them. In a few cases electrical appliances were named and not indigenous tools.

Part (b) (i) was generally well done by candidates as this part of the question provided them with the scope to exercise their creativity by designing a poster which included a food label for a home-made preserve, showing three types of nutritional information. The majority of candidates were able to score well in this area. They also performed commendably in explaining the role of different types of nutritional information.

In Part (b) (ii), candidates were knowledgeable about regulations that apply to labelling food products. In Part (c) (i), candidates were required to select a popular main dish and describe its preparation. Some candidates ignored the term main dish**,** and just chose a popular dish. They were, however, able to explain its preparation.

In Part (c) (ii), in response to quality assurance measures used when providing buffet service, many candidates focused on the hygiene aspect of quality assurance but ignored some areas, such as correct holding temperature, use of separate utensils for each dish served and covering of dishes.

Section II

Module 1

Question 2

This question tested candidates' understanding of how to modify recipes to make them suitable for persons with chronic diseases, the health implications of nutrients and ability to develop original snack recipes.

This question was attempted by 37 per cent of the candidates.

Part (a) was generally satisfactory. Candidates were given a recipe for meat patties and required to suggest adjustments to the recipe to make it appropriate for a diabetic adult. Candidates were able to suggest suitable modifications to the recipe as well as give reasons why they chose those modifications. Popular answers included reducing the fat or changing the fat to low-fat margarine. Some candidates suggested changing the flour to whole wheat flour, which would increase fibre and reduce the simple sugars. Another popular suggestion was to change the meat to minced chicken or even pulses.

In Part (b), candidates were also able to identify nutrients, however, in listing the implications, many candidates simply wrote responses such as: obesity or hypertension, without giving any explanation, thereby giving the impression that nutrients named could actually cause these conditions.

An acceptable explanation would be: an excessive intake of simple carbohydrates could lead to obesity since the excess sugars not utilized for energy are converted to fats and stored under the skin of the person.

In Part (c), candidates developed interesting recipes for various types of snacks, including cakes and pastries. Some candidates did not include all the ingredients given. In developing an original recipe, attention must be paid to the proportion of ingredients as well as the method of incorporation, management of temperature, service and packaging.

Question 3

This question tested candidates' understanding of how to ensure food safety after a hurricane. It was attempted by 63 per cent of the candidates. The question was generally well done.

In Part (a), candidates struggled to find responses to the functions of food regulating agencies in ensuring the safety of food sold immediately after a disaster. Many candidates wrote responses related to kitchen hygiene, rather than more specific responses such as examining food samples, overseeing the removal of contaminated meat and other products from establishments, overseeing the decontamination of food establishments and monitoring the hygiene practices of food establishments.

Part (b) requested candidates to plan a menu to be served on the first day in a hurricane. It was expected that the meals would have consisted of a number of foods not involving too much cooking, a mix of foods that may have been frozen and refrigerated, together with some canned products as well as nutrient-dense foods.

Performance on Part (c) was very good. Candidates were able to suggest food safety measures that should be practised by families returning to their homes after flooding.

Section III

Module 2

Question 4

This question tested candidates' understanding of food preservation, and changes that occur during the cooking of vegetables and pulses.

This question was attempted by 69 per cent of the candidates. The overall performance was satisfactory.

Performance on Parts (a) and (b) was fair. The majority of candidates were quite familiar with different types of tomato products. The most popular products named were ketchup, pizza sauce and paste or puree. Other products included salsa and chutney. In terms of describing the procedure for the bottling/canning of tomatoes, most candidates were able to state that the tomatoes should be selected and prepared, bottles should be sterilized and that a preserving liquid is used in the bottles or cans. Some candidates omitted to mention that after the jars are filled, the tomatoes should be completely covered with the tomato juice, jars sealed and then sterilized. After jars have been sealed, they should also be dated and labelled.

In Part (c), candidates generally performed well by explaining the changes that occur in green leafy vegetables and dried pigeon peas during cooking. The majority of candidates were able to name some changes although the following changes were not described:

Steamed green leafy vegetables

- Cell walls become increasingly permeable when they are heated.
- Loss of turgor in the cells occurs.
- Colour changes from bright green to olive green, and if overcooked becomes dark.

Pigeon peas

- Cellulose is softened.
- Gelatinization of starch occurs.
- Peas become digestible.
- Colour changes to a darker opaque colour.

Question 5

This question tested candidates' knowledge of the criteria used to select packaging for milk products, and justification of health claims found on food packaging.

This question was attempted by 31 per cent of the candidates. The overall performance was fairly good.

In Parts (a) (i) and (ii), most candidates were able to identify criteria to use when selecting suitable packaging material for milk products.

Performance on Parts (b) and (c) was poor, as most of the candidates did not seem to be familiar with health claims on labels. Therefore they focused on discussing the nutritional recommendations associated with each of the claims. Popular claims related to the various conditions were as follows:

(i) Osteoporosis - Calcium rich, may help in the prevention of osteoporosis.

(ii) Hypertension - Low in sodium, sodium free or light sodium.

(iii) Heart Disease - Cholesterol free, low in saturated fat, oatmeal helps reduce cholesterol.

(iv) Cancer - Contains lycopene, no additives, no preservatives, zero trans fat.

Section IV

Module 2

Question 6

This question tested candidates' ability to evaluate the nutritional suitability of menus for persons with chronic diseases, and to modify menus using the multi-mix principle.

It was attempted by 62 per cent of the candidates. The overall performance was satisfactory.

In Part (a), candidates responded well by evaluating the nutritional suitability of a menu for persons with chronic diseases

Part (b) was well done by the majority of candidates who were able to suggest a suitable three course menu for persons with chronic diseases.

Question 7

This question tested candidates' understanding of the factors to be considered in calculating the real cost of meals and determining portion sizes. It was attempted by 38 per cent of the candidates. The overall performance was poor.

In Part (a) candidates were unable to explain the factors which should be considered when calculating the real costs of meals served in a restaurant.

Candidates' response to Part (b) (i) was also poor. They were unable to give factors for determining portion sizes.

Performance on Part (b) (ii) was fair, as the majority of candidates were able to suggest strategies for controlling the cost of menu items such as purchasing in bulk, use of items in season, budgeting, using standard portions and avoiding the use of expensive ingredients. Other expected responses included: use of local foods; avoiding wastage; and ensuring that standard portions are used.

Internal Assessment

This paper consisted of a portfolio comprising two pieces of work which tested objectives across all Modules. Candidates in consultation with the teacher and 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 the candidates has shown great improvement.
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 become 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 effort.

Module 1 - Research

Most of the candidates selected appropriate topics and demonstrated knowledge of relevant facts. In most cases literature reviews were comprehensive, but sources used were not always cited. Data were well presented, but very little reference was made to the data. In several cases inferences, predictions, or conclusions were not attempted by the candidates. The conclusions and recommendations were not accurately or scientifically based. Similarly, they did not support the analysis of data.

Module 2 - Experimental and Recipe Modification

Candidates selected appropriate experiments and demonstrated knowledge of relevant facts. Many reports were not well written and presented. Most of the candidates did not formulate hypotheses, and. the procedures for experiments were in most cases not clearly documented. A large majority of the candidates showed very little evidence to prove that they modified the product after critical or unexpected outcomes

Recommendations to Teachers

Overall the 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 candidates. Although candidates appeared to understand the concepts they did not always elaborate and fully develop answers as was expected at the Advanced Proficiency Level. Some candidates were not fully prepared for this level of examination.

It was also clear that some 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. Performance in Module 3 of both units was extremely weak. In situations where it might not be possible for teachers to cover every topic in class, it is suggested that candidates be given the task of conducting research on the topics not covered 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 candidates revisit concepts in the CAPE syllabus which were studied at the CSEC level and that these topics be discussed in greater detailed and additional accumulated information be presented to the candidates. Teachers must be cognizant that it is possible to study nutrients at several levels, primary, secondary, tertiary, and post-graduate. At each level, the information regarding the concept of nutrients is increased.

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 obtaining fewer marks than they should have.
- 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 understand fully many nutrition concepts such as methods for assessing nutrition status of children; complementary feeding and breast feeding; nutrition-related disorders; and practices and procedures for ensuring safety of food, for example.
- 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 to the standard that is required at the Advanced Proficiency level.

Internal Assessment

Candidates 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.
- Develop rationales and explain the significance of the topic.
- 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.

Assignment 1 - Research

- Candidates 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

- Candidates 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.
- Candidates 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 example, 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 for the particular modification. 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 not 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, an original recipe for plain cake and a modified recipe for coconut cherry cake.

- Candidates 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.

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

- Candidates should be encouraged to formulate valid hypotheses.

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

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

- Candidates should develop a conclusion to summarize their findings.