CARIBBEAN EXAMINATIONS COUNCIL

REPORT ON CANDIDATES' WORK IN THE CARIBBEAN ADVANCED PROFICIENCY EXAMINATION MAY/JUNE 2008

FOOD AND NUTRITION (REGION EXCLUDING TRINIDAD AND TOBAGO)

FOOD AND NUTRITION

ADVANCED PROFICIENCY EXAMINATION

MAY/JUNE 2008

GENERAL COMMENTS

The Caribbean Examinations Council administered its sixth open examination in Unit 1 Food and Nutrition and its fifth open examination in Unit 2 in May 2008. 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.

UNIT I

Paper 01 - Short Answer Questions

Paper 01 in both Units consisted of nine compulsory short-answer questions. Candidates were required to answer all 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 was 90. In Unit 1, the mean mark was 39.32 and in Unit 2, the mean mark was 56.05.

PAPER 02 - Structured Essay

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

The compulsory question in Section I was worth 45 marks and all others were worth 25 marks each. Overall, candidate performance was good. The maximum possible mark was 120. In Unit 1 the mean was 65.50. In Unit 2 the mean mark was 68.70.

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 percent to the candidates' final grade.

Performance on this paper was generally good, with a mean score of 62.40 out of 90 in Unit 1, and 69.71 out of 90 in Unit 2.

DETAILED COMMENTS

UNIT I

Paper 01

Short Answer Questions

Question 1

This question tested candidates' understanding of assessing nutritional status, indicators used on the Caribbean Growth Chart, and how geographical location and food fallacies influence food choices.

The overall performance of this question was satisfactory.

Part (a) of the question was fairly well done. Most candidates were familiar with the nutrition indicator "weight for age".

Part (b) was fairly well done. Although candidates were able to explain the means of assessing nutritional status the majority of them were unable to use the correct terminology, for example anthropometry, clinical assessments, biochemical tests and dietary evaluation.

In part (c), most candidates demonstrated a good understanding of how food choices are shaped by geographical location and food fallacies.

Question 2

This question tested candidates' understanding of the impact of good nutrition for persons living with HIV/AIDS, and the dietary changes needed to help slow down their weight loss.

Candidates did not score well on part (a). The majority of the candidates were unable to identify an enzyme that will be excluded from the digestive process if the pancreas is damaged by the HIV/AIDS virus and state the function of that enzyme. The majority of candidates listed pancreatic juice, but did not name any enzyme. Expected answers included amylase, lipase, trypsin, chymoytrypsin and peptase.

In Part (b) the calculation of the energy contained in the serving of peanut butter was very well done.

In Part (c), candidates were expected to outline dietary changes that persons with HIV/AIDS should make in order to help slow down their weight loss. Candidates were able to list at least one method. Surprisingly, many candidates focused on guidelines that would speed up weight loss, such as moderate intake of fats and carbohydrates as well as increasing fibre in the diet. Expected answers included moderate use of fibre; increase in high calorie foods; avoidance of drug/nutrient interactions that may decrease absorption of nutrients; and, balanced nutrient intake so that nutrients can be absorbed efficiently.

Question 3

This question tested candidates' understanding of the conditions that can contribute to under-nutrition in children and the effect on the growth line of a growth chart when children move from a state of good health to a state of under-nutrition.

Performance on Part (a) was only fair and posed some difficulty to candidates. The majority of candidates were unable to clearly state how the conditions fever, diarrhoea and vomiting could lead to under-nutrition.

Part (b) was generally well known. The candidates were required to state what happens to the growth line on the growth chart of a child who is moving from a state of good health to a state of under-nutrition. Candidates were expected to state that the line goes in a horizontal direction or levels off and that the line moves in a downward direction. However, the majority stated that the line goes downwards.

Question 4

This question tested candidates' understanding of why the use of colours in convalescent cookery can have a positive effect on nutrition intake, and the use of convenience foods to develop lunch menus for persons on a regular diet.

Performance on this question was very good.

In Part (a) the majority of candidates were able to link the relationship between the use of colours in cooking for convalescents and the fact that this would encourage them to eat. However, they were unable to indicate that colours in fruits and vegetables represent various nutrients. For example, carotene in carrots and pumpkin represents vitamin A, and convalescents were recovering from illness or surgery and therefore needed nutrient-dense foods.

Responses in Part (b) indicated that candidates were familiar with ways of ensuring that pre-schoolers included adequate dietary fibre in their diet. The majority of candidates were able to list inclusion of fruits as well as vegetables and other high-fibre foods.

In Part (b) many candidates planned menus with two courses, but did not indicate the convenience foods used. Others did not follow the correct format for menu writing or provided only the main course.

Question 5

This question tested candidates' understanding of the health effects of an excessive intake of vitamin A and vitamin C, and food groups that should be promoted in an effort to control energy intake.

The overall performance on this question was weak.

Performance on Part (a) was only fair. Most candidates were aware that there were toxic effects of excessive consumption of vitamin A. They also were, to a large extent, familiar with the fact that vitamin A, being a fat-soluble vitamin would be stored by the liver and other organs of the body. Some correctly gave the effects of its toxicity such as slow growth in children and damage to connective tissues.

In Part (b) many candidates demonstrated that they understood the food groups that should be promoted in an effort to control the energy intake. There were, however, quite a few candidates who listed nutrients instead of food groups.

Question 6

This question tested candidates' understanding of the conservation of nutrients.

The overall performance on the question was weak.

In Parts (a) and (b) some candidates recognized the nutrients that were lost as a result of baking soda being added to the cooking water of peas and beans and lettuce leaves being cut instead of torn. They noted that the alkalinity of baking soda would soften tissues as well as lead to a loss in water-soluble nutrients. Similarly, most candidates were aware that when lettuce leaves are cut, they are exposed to the oxygen in the air which leads to oxidation of vitamin C.

In Part (c) some of the candidates correctly identified how the refrigerator helps to conserve the nutrients in butter and pumpkin, while others did not discuss the effect of each.

Question 7

This question tested candidates' understanding of removing a build-up of minerals from a percolator, and precautions to reduce the risk of electrical shock.

In general, responses to this question were weak.

Part (a) was challenging to many candidates, who seemed not to be familiar with a percolator is. The expected answer was as follows:

(i) Fill the percolator with equal amounts of cold water and white vinegar.

(ii) Assemble all parts, plug in and let go through the perk cycle.

(iii) When perking has stopped, let sit another 15 minutes.

(iv) Unplug and drain the percolator.

Alternately lime scale remover could be used instead of vinegar.

Performance on Part (b) was fairly good as candidates gave good responses for precautions that could be taken to reduce the risk of electrical shock from a percolator.

Question 8

This question tested candidates' understanding of symptoms of physiological shock as a result of severe cuts and burns; the first response that is recommended in the first aid treatment of shock; and, methods of tenderizing tough cuts of meat prior to cooking.

The overall performance on the question was poor.

In Part (a), although some candidates responded fairly well, many did not pay attention to the term 'physiological shock' and therefore correct symptoms were not provided. Expected responses included: irritability; altered consciousness; pale clammy or moist skin; rapid breathing; discomfort; and, rapid pulse. The first response treatment included covering the victim with a warm blanket, re-assuring the victim, making the victim comfortable or having the victim lie down.

Performance on Part (b) was only fair. Candidates confused methods of tenderizing tough cuts of meat with cooking methods and were not able to score maximum marks. 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.

Question 9

This question tested candidates' understanding of the scientific principles underlying properties of eggs and ways of making eggs more appealing to children.

The overall performance on this question was weak.

Performance on Part (a) was weak. Most candidates were unable to explain the scientific principles underlying the emulsifying and thickening properties of eggs. However, many candidates were able to cite examples of how these properties of eggs were used in food preparation.

Expected responses include that lecithin in egg yolk acts by stabilizing the emulsion between oil and water and that this property is often used in the making of salad dressings, such as mayonnaise or in ice-cream production. In terms of thickening properties, the proteins present in eggs, mainly ovalbumin and mucin, coagulate when heated, forming a gel. This property is often used to thicken custards and soufflés.

In Part (b), the majority of candidates gave excellent responses for ways in which eggs can be prepared to make them more appealing to children.

Paper 02 - Structured Essay

Section I - Compulsory Question, Modules 1, 2 and 3

Question 1

This question tested candidates' understanding of the importance of iron intake in the diet of a young child; enhancers and inhibitors as they relate to absorption of iron; preparation techniques for increasing the iron intake of children; developing menus for children who are anaemic; creating a recipe for a snack using coloured vegetables; and, illustrating interesting shapes to encourage children to consume vegetables.

This compulsory question was attempted by all the candidates and the overall performance was fairly good.

In Part (a) (i), the responses were generally good as candidates noted the importance of iron in the diet of a young child.

Part (a) (ii) was fairly well done by candidates. However, many of them neglected to name one enhancer and one inhibitor as requested.

In Part (a) (iii), candidates were required to suggest five food preparation techniques or dietary guidelines that would be helpful to parents for increasing the iron intake of their children. While some of them were able to list the guidelines, not many of them cited examples, such as: cooking foods in larger pieces; using meat drippings and fruit pulp; reducing bulk in the diet; reducing intake of antacids; increasing calcium intake; and, serving iron-rich foods with vitamin C rich foods. In addition, some candidates ignored the term 'iron intake' and gave general guidelines for encouraging children to eat.

Part (b) required candidates to create a day's menu for a three-year-old child who was anemic. Most candidates received high scores in this section. However, some of them did not pay attention to suitability for a three-year-old and in some cases no consideration was given to enhancers and inhibitors of iron absorption. Generally iron-rich foods and snacks were provided.

In Part (c) (i), many candidates created an interesting recipe for a snack using coloured vegetables that would encourage young children to eat. Some outlined how they would prepare the vegetables, without giving the dish a name. Candidates should practice recipe writing and become familiar with the format which includes a list of ingredients with quantities as well as a method showing incorporation of ingredients and the management of temperature and service.

In Part (c) (ii), not all candidates illustrated shapes of vegetables. However, the majority of them named vegetables and stated how they could be cut.

Section II - Module 1

Question 2

This question tested candidates' understanding of the energy and protein needs of young children and the elderly, calculating energy requirements, and outlining measures that a caregiver could implement to ensure that the intake of children was adequate.

This question was attempted by 35 percent of the candidates. The overall performance on this question was fairly good.

Performance on Part (a) was very good. Most candidates adequately calculated the additional energy needed by the persons whose details were provided in the stimulus of the question.

In Part (b), candidates did not handle the comparison of the protein needs of the young child and the grandmother very well. Both sides of the argument were not discussed. For example, if one says that children require protein for growth, the comparison is incomplete unless it is stated that the grandmother is no longer at that stage of life, but does require protein for the maintenance of body tissues. Other issues that may have been addressed include: hormonal activity; quality of proteins required by both young children and older persons; and, energy needs per kilogram of body weight in the two age groups.

In Part (c), candidates were required to outline five measures that a care-giver could implement in order to ensure that the child's food intake was adequate and were to give a reason for each. Candidates were able to put forward good measures that related to regularity of feeds, nutrient density of foods, encouraging meals or coaxing during meals, ensuring manageable portion sizes and making meal times pleasant.

Question 3

This question tested candidates' understanding of nutritional benefits of the Caribbean Six Food Groups, and the benefits of breastfeeding for infants, mothers, and the environment.

This question was attempted by 65 per cent of the candidates and performance was fairly good.

In Part (a), candidates were generally unfamiliar with arranging the six food groups into three categories according to their nutritional benefits. However, they demonstrated a good understanding of the major nutrient in each group. The former GO, GLOW and GROW grouping is still useful for categorizing foods or analyzing diets.

Part (b) was done well. Candidates were aware of the nutritional, social and economic benefits of breastfeeding. However, some candidates had difficulty in identifying benefits to the environment, which would include: less disposal of waste; less industrial waste from the production of formulas; and, resources used for rearing cows could be diverted into other areas.

Section III - Module 2

Question 4

This question tested candidates' understanding of the advantages and disadvantages of the use of fat-replacers and sugar substitutes for persons on a weight-reducing diet, and the nutritional information provided on labels which is critical to the health of a diabetic.

This question was attempted by 22 per cent of the candidates and the overall performance was fairly good.

Performance on part (a) was fairly good as most candidates were aware of the benefits of using fat-replacers and sugar substitutes in terms of calorie reduction. Not many recognised that sugar-substitutes would not promote dental caries, or that very little was required to achieve a sweet taste since they had a high sweetness index. Some fat replacers are made with trans-fatty acids which can be harmful to health. Using replacers in large amounts just to fulfill satiety can also lead to diarrhea.

Part (b) was fairly well done as most candidates gave suitable responses for the types of nutrition information on food labels that were critical to the health of diabetics. A few candidates experienced some difficulty stating why nutrition information was important.

Question 5

This question tested candidates' understanding of the organisation of a kitchen area to ensure adequate food safety, indicators of the spoilage of canned foods and food hazards.

This question was attempted by 78 per cent of the candidates.

Performance on Part (a) was fairly good. Candidates gave good responses even though some focused on personal hygiene instead of standards that must be met in organising the kitchen area. Issues such as pest control, garbage disposal, suitable surfaces, adequate storage, safety, ventilation and ergonomics needed to be taken into account.

In Part (b) candidates were aware of indicators of spoilage of canned foods.

Part (c) was not done well. Most candidates were unable to identify the hazards that could contaminate foods. These hazards consist of biological agents which include bacteria, moulds, parasites and poisonous plants and animals. Chemical agents include: overuse of additives, contamination with mercury or incidental contamination by unlabelled chemicals in the kitchen and physical hazards such as equipment which may be rusted or flaked, and contamination with hair, nails, or jewelry. Many candidates listed cross contamination or poor storage but did not provide examples of contaminants.

SECTION IV - Module 3

Question 6

This question tested candidates' understanding of quality assurance and recipe modification in order to make dishes appropriate for persons on reduced fat and salt diets.

The question was attempted by 63 per cent of the candidates and performance was satisfactory. Performance on Part (a) was very good as most of the candidates were able to provide suitable responses.

In Part (b) candidates were expected to outline basic steps in sensory evaluation, which include selection of persons who have an interest in consuming foods with reduced fat and salt, choosing appropriate time of the day, serving at the correct temperature, allowing persons to sample and assess the modified dish and provision of sensory evaluation forms. Though the expected approach was not always given, responses such as making the food more palatable by using colorful garnishes, counseling patients, letting patients know the advantages of modification and allowing patients to taste were acceptable.

Question 7

This question tested candidates' knowledge of the effects of radiant heat methods of cooking on the physical and chemical properties of meat, and recipe conversion.

The question was attempted by 37 per cent of the candidates and performance was satisfactory.

Performance on Part (a) was unsatisfactory as most of the candidates experienced difficulty discussing the effects of radiant heat methods of cooking on the physical and chemical properties of meat. Most candidates named changes such as shrinking and melting. Not many candidates were able to identify changes such as: gelatinization of the collagen; development of flavours; loss of some amino acids; formation of some carcinogens; and, the breakdown of fats present in the meats.

In Part (b) candidates were required to do conversions on a meat loaf recipe for 10 persons in order to serve 220 persons. Candidates generally did well on this question although they did not always round off their quantities as required. They also needed to indicate the conversion factor in order to gain the maximum mark.

Part (c) was done very well as candidates suggested appropriate fillers that could be substituted for bread and other herbs that were used in the meatloaf.

UNIT 2

Paper 01 - Short Answer Questions

Question 1

This question tested candidates' understanding of indigenous Caribbean dishes and equipment.

The overall performance on this question was very good.

Part (a) was answered well by the majority of candidates. However, candidates did not always match the tool with the correct use, which suggests that they should not learn the names of traditional tools in isolation but should have an understanding of how they are used.

Part (b) required candidates to create a recipe for a topping or sauce using a local fruit. Many candidates listed ingredients but omitted the method and a thickening agent. In some cases no quantities were given.

Question 2

This question tested candidates' understanding of hygiene practices that should be observed by street food vendors, and guidelines for preparing foods for persons predisposed to hypertension.

The overall performance on this question was very good.

In Part (a) the majority of candidates responded to this section reasonably well by outlining hygiene practices that street food vendors should observe when presenting prepared foods to the public.

In Part (b) candidates were required to suggest guidelines that could be followed by a hypertensive family when preparing their meals. The responses of candidates were adequate and earned them maximum marks in many cases. Most candidates referred to restrictions in sodium and inclusion of more fruits and vegetables in the diet. However, other options such as avoidance of processed foods, reading of labels, observing portion control and restrictions in the use of saturated fats were not suggested.

Question 3

This question tested candidates' understanding of reasons for not relying on self-medication for the treatment of chronic diseases and ailments, and assessing the nutritional accuracy of a statement on the benefits of fish.

The overall performance on this question was good.

Candidates responded fairly to Part (a) as they were able to identify at least two reasons why self-medication was unwise. Popular responses included: the unavailability of information on the level of active ingredients and the possibility of further complications. Many candidates stated that the person's condition was likely to worsen. Other expected answers were: (i) self medication relied on the trial and error method; (ii) there is no scientific evidence to support claims made; (iii) food items or parts of plants used may mask the symptoms and yield misleading blood test results; (iv) may lead to quick temporary relief and cause persons to stop taking medication or stop monitoring their condition; (v) there was no credible explanation for the apparent health benefits; and, (vi) during self-medication, there was no monitoring by health professionals.

In Part (b) many candidates showed an excellent understanding of assessing the nutritional accuracy of the statement "Fish is a brain food".

Question 4

This question tested candidates' understanding of the measures that farmers could take to ensure that produce reached consumers in good condition.

The overall performance on this question was weak.

Performance on Part (a) was only fair. Candidates' responses, for the most part, focused on storage and packaging. Other anticipated responses were: (i) harvesting of slightly under-ripe produce in order to ensure firmness by the time it reached the consumer; (ii) sorting according to size or type and rejecting damaged produce in order to ensure consistency of quality; (iii) providing suitable transportation, for instance, trucks and vans must be sanitized; and, (iv) providing a suitable temperature for transporting.

In Part (b), candidates experienced difficulty comparing the effects of green peas preserved by freezing with perseveration by canning. While candidates seemed to be familiar with the two methods of preservation, they were not able to provide clear distinctions between the effects of these two methods on green peas. Many of them were able to state the temperature differences but did not state the effect of these temperature differences on the peas. Also they were aware that in both cases micro-organisms were destroyed or rendered inactive. Generally frozen peas retain more of the nutrients, namely, the water-soluble vitamins, whereas the heat treatment given to canned peas causes a loss of the water-soluble vitamins. Minerals are better retained in the frozen peas, while minerals may be leached out in the canning liquid of canned peas. The canned peas have a saltier taste because of the added salt, whereas frozen peas have a taste and texture closer to that of the fresh peas. There are also differences in colour and sodium content which could have been highlighted.

Question 5

This question tested candidates' understanding of food additives.

In Part (a) candidates were required to name nutrients that were commonly used as additives and give an example of a food to which each was added. Many candidates misinterpreted the question and named additives such as salt and sugar. It is also very important that when candidates are asked to name nutrients, that they be specific in naming them and not just state ***vitamins and minerals***.

Part (b) required candidates to distinguish between intentional additives and incidental additives. About fifty percent of the candidates were able to provide adequate explanations. However, more studies on food additives need to be conducted to improve students' understanding and to help them to distinguish between preservatives and additives.

Question 6

This question tested candidates' understanding of physical changes that occurred in legumes when they were soaked, and ways of serving legumes.
The overall performance on this question was good.

Part (a) was done fairly well as many candidates were able to name nutrients in legumes. Simply stating minerals and vitamins as the responses would not have garnered any points.

In Part (b) (i), candidates listed physical changes that occurred in legumes, when they were soaked and cooked. The majority of candidates stated changes such as the legumes swell and soften. Other expected responses were: gas-producing oligosaccharides were removed; foam was formed during cooking; and, beans became palatable and digestible.

For Part (b) (ii), most candidates named stews in response to ways in which legumes could be utilized. Other ways include: burgers; steaks; puddings; loaves; shakes; muffins; spreads; pate's; salads; desserts; and, beverages.

Question 7

This question tested candidates' understanding of ensuring consistent portion sizes, and quality assurance in food preparation and service.

The overall performance on this question was fairly good.

In Part (a) many candidates had difficulty identifying measures that could be taken to ensure

consistent portion sizes. Expected responses included: (i) use of standard portioning tools; (ii) use of measuring machines; (iii) use of standard-sized glasses for beverages; (iv) use of established serving sizes; (v) training of employees in portioning; and (vi) checking of plates before they leave the kitchen.

Performance on Part (b) was good. Many candidates were able to identify expectations of customers other than consistent portion sizes. Responses included: meals served on time; cold foods served cold; and, hot foods served hot; hospitable staff; tasty and attractive meals; clean, pleasant atmosphere; tasty food; and, clean attractive surroundings.

Question 8

This question tested candidates' understanding of using the multi-mix principle when planning meals for large groups, and evaluating menus.

In Part (a) candidates demonstrated an understanding of the multi-mix principle when planning meals for large groups.

Part (b) required candidates to evaluate a two-course menu for nutritional balance and sensory appeal. Many candidates noted that the menu lacked nutritional balance especially in relation to the use of coloured vegetables. However, not many candidates addressed the lack of variety in colour and texture. They also did not mention that there were foods which would provide good taste appeal.

Question 9

This question tested candidates' understanding of Hazard Analysis Critical Control Points (HACCP) and occupational safety.
The overall performance on this question was very good.

Performance on Part (a) was good. The stimulus indicated that a chicken packaging facility was implementing the HACCP approach. Candidates were required to explain the importance of critical points in the production process. Some candidates listed personal hygiene and sanitation practices. However, they did not clearly identify the points and explain the corresponding importance.

Part (b) was fairly well done. However, candidates focused on hygiene and not on occupational health and safety issues.

Paper 02 - Structured Essay

Section 1 - Compulsory Question, Modules 1, 2 and 3

Question 1

This question tested candidates' understanding of factors that influenced food customs and practices in the Caribbean; indigenous Caribbean dishes; principles of food preservation; the difference between fortification and supplementation; developing à la carte menus; and, calculating selling prices of dishes.

This compulsory question was attempted by all candidates and the overall performance was good.

Part (a) (i) was well done. Most candidates gave very good responses to factors that influenced food customs and practices in the Caribbean.

In Part (a) (ii), most candidates provided interesting original recipes using the ingredients given. Candidates needed to indicate how each ingredient on the menu was incorporated, the method used, and the management of temperature.

Performance on Part (b) (i) was generally good. However, some candidates experienced difficulty identifying reasons for preserving fruits. Popular responses included: for export; to prevent spoilage; and, to have the fruit when it is out of season. Other possible responses were to utilize excess fruit during a glut; to create a wider variety of foods; for convenience and ease of use; and, for use in other recipes such as fruit flans, cakes and puddings.

Part (b) (i) was not thoroughly answered. Most candidates were able to select the methods of preservation and name the products which were preserved by that method. However, they were limited in their responses to the principles underlying the methods of preservation. Simply stating that micro-organisms are rendered inactive is insufficient. It must be stated that the lack of moisture makes the growth of microorganisms impossible or that an acidic medium retards the growth of certain microorganisms or that vacuum packing restricts oxygen so that the bacteria which require oxygen cannot grow.

In Part (b) (ii), candidates were required to differentiate between fortification and supplementation. The majority of candidates gave good explanations for fortification and were able to provide appropriate examples. In a few cases, candidates encountered difficulty in defining supplementation.

Performance on Part (c) (i) was hampered by candidates' inability to write *a la carte* menus. In many cases options were not provided and prices were omitted. Some candidates wrote one-course menus instead of two courses as required.

In Part (c) (ii), many candidates were unable to calculate the selling price for one entrée on the menu that they wrote in (c) (i).

Section II - Module 1

Question 2

This question tested candidates' understanding of the impact of imported foods on the Caribbean food systems; availability of food; and, ensuring adequate nutrition after a natural disaster.

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

Performance on Part (a) was generally satisfactory. While many candidates had difficulty defining the term 'food systems', they were able to provide an adequate discussion on the impact of imported foods. In defining "food systems", candidates needed to include terms such as produced, transported, processed, stored, distributed, sold, consumed and regulated.

In Part (b) (i), the majority of candidates were able to provide strategies that were used by disaster preparedness organizations to ensure the availability of food in a disaster situation.

In Part (b) (ii), some candidates had difficulty providing factors to ensure adequate nutrition apart from having to consider special needs and vulnerable groups. Other issues included: ensuring the safety of foods; ensuring variety of foods; calculating daily rations; and, ensuring that nutrient-dense foods were available.

Question 3

This question tested candidates' understanding of health implications of nutrients, and the importance of food safety and hygiene regulations.

This question was attempted by 63 per cent of the candidates and it was generally well done.

In Part (a), candidates correctly identified the nutrients of each food being promoted. It must be borne in mind that implications connote possible benefits as well as possible results of excessive intake.

Part (b) requested candidates to explain the importance of food safety and hygiene regulations. Candidates focused on personal hygiene practices rather than food safety regulations. Expected responses included: provision of supervision; information and training for employees; surfaces should be easy to sanitize; premises should be secured against pests; adequate provision should be made for removal of waste; and, employees should be in possession of valid health certificates.

Section III - Module 2

Question 4

This question tested candidates' understanding of biotechnology and the importance of food protection agencies requiring the labelling of packaged foods that have been genetically modified.

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

Performance on Part (a) (i) was fairly good. Candidates were able to identify the reasons why foods were genetically modified through biotechnology, but had difficulty naming the foods altered by biotechnology. These foods included: corn that required fewer applications of pesticides and herbicides; soy beans that are lower in saturated fats and higher in oleic acid offering better frying stability; virus resistant papayas; peppers improved to be tastier and remain firmer after harvest; potatoes that were disease resistant; rice with higher levels of iron and vitamin C; and, tomatoes with improved ripening qualities allowing them to reach full flavour and colour without rotting.

Candidates performed fairly well on Part (a) (ii) as they effectively discussed the benefits and potential problems of the use of genetically modified foods. Ethical issues and possible allergies were cited as some of the major problems, while benefits given were mainly financial or related to the quality of the foods.

In Part (c), candidates generally performed well by explaining the importance of food protection agencies requiring the labeling of packaged food products that have been genetically modified. Candidates noted food safety, environmental and consumer rights as major issues.

Question 5

This question tested candidates' understanding of the chemical and physical changes which take place during food preparation, and the criteria for selecting packaging material.

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

Part (a) was fairly well done by the candidates who attempted this question. Most candidates experienced difficulty explaining maillard browning but were familiar with enzymatic or oxidative browning, carmelization and dextrinization.

In Part (b) most of the candidates were able to provide criteria for selecting packaging material for a pastry product.

Section IV - Module 2

Question 6

This question tested candidates' understanding of organizing the preparation and service of large-scale cooking.

This question was attempted by 62 per cent of the candidates and the overall performance was satisfactory.

In Part (a) candidates responded well by outlining measures that should be taken by the kitchen staff to ensure that a meal was of high quality and well presented. Candidates placed emphasis on the preparedness of the staff as well as the presentation and service of the meal. Other expected responses were foods should be checked periodically to ensure the quality of textures, colours and flavours and recipes should be carefully followed.

Part (b) was well done by the majority of candidates who correctly noted buffet as the appropriate type of meal service and suggested effective guidelines for serving the meal.

Question 7

This question tested candidates' understanding of planning five-course menus, and identifying equipment used to prepare the dishes.

This question was attempted by 38 per cent of the candidates and the overall performance was very good.

Performance in Part (a) was very good as candidates were able to plan menus which were well balanced and aesthetically pleasing.

Candidates' responses to Part (b) were generally fair. Candidates were able to name pots and pans used to prepare dishes listed at (a) but did not always match the equipment to the appropriate dishes.

Paper 03 -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 the 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.

Some 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 - Experimentation and Recipe Modification

Candidates selected appropriate experiments and demonstrated knowledge of relevant facts. Reports were well written and presented. However, 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. Performance can be improved if recommendations to teachers are used as guidelines to help address weaknesses of candidates. Although candidates had an understanding of concepts they did not 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 they 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. Modules 3 in both Units were extremely weak. Since it might not be possible for teachers to cover every topic in class, it is suggested that candidates be given research on selected topics and be allowed to present their work in class. Greater emphasis must be placed on those concepts which can be regarded as current areas of nutrition.

Candidates should be encouraged to adhere to the following guidelines:

- Read questions carefully, paying attention to key words.
- Place emphasis on comprehending reasons for certain principles and procedures, rather than learning by rote.
- Develop responses fully, paying attention to the marks allocated for each part of a 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 will help in understanding fully nutrition concepts such as methods for assessing nutrition status of children; complementary feeding and breastfeeding; 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 to the standard that is required at the Advanced Proficiency Level.

INTERNAL ASSESSMENT

Candidates should be encouraged to adhere to the following guidelines:

- Seek guidance in choosing topics for projects as well as throughout the entire exercise.
- Select topics that are interesting and 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. Candidates must utilize a variety of sources and should be taught the APA referencing style for citing sources and developing a reference list.
- Develop rationales and explain the significance of a topic.

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 of the questions, but should discuss all the questions asked on the questionnaire or interview.

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

Assignment 2 - Experimentation and Recipe Modification

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

Candidates should 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.

Candidates should be 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 introduced 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 a baked product 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 not expected to compare the recipes to determine the changes that were made to the recipes.

Variations of basic recipes are not expected as a modification. For example, the original recipe plain cake and the modified recipe, coconut cherry cake is unacceptable.

Candidates should provide the original recipe and then conduct at least two modifications.

Experiences must be provided for candidates 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.

Candidates should 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.