

**CARIBBEAN EXAMINATIONS COUNCIL**

**REPORT ON CANDIDATES' WORK IN THE  
ADVANCED PROFICIENCY EXAMINATION**

**MAY/JUNE 2011**

**FOOD AND NUTRITION**

## UNIT 1

### GENERAL COMMENTS

In Unit 1, overall performance was comparable with that of 2010 with 99 per cent of candidates achieving Grades I-V. Candidates' performance on the School-Based Assessment improved. Candidates performed better on Module 1 (Principles of Nutrition and Health) and Module 2 (Food Selection and Meal Planning) than on Module 3 (Food Preparation and Service: Principles and Methods).

### DETAILED COMMENTS

#### Paper 01 – Multiple Choice Questions

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

#### Paper 02 – Structured Essay

##### Section I – Compulsory Question Modules 1, 2 and 3

###### Question 1

This question tested candidates' understanding of the importance of adequate protein and calcium intake for adolescents and combination dishes rich in these nutrients; digestion of foods in the mouth and stomach and the principles of storing dry foods. The question also tested candidates' ability to differentiate between cleaning and sanitizing and to explain why they are important to health and safety. In addition, the question tested candidates' knowledge of the changes that occur during the cooking of eggs and cheese and their ability to explain how the knowledge of the properties of eggs and cheese could be used in cooking. The question also tested candidates' knowledge of the precautions to be taken to avoid burns and electrocution in the kitchen.

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

In Part (a) (i), the majority of candidates were able to outline reasons for the importance of calcium and protein to be included in the diet of adolescents. A few candidates generalized their responses, in stating that calcium and protein were needed for 'strong bodies'. This type of general response was not awarded maximum marks. Responses given for protein included:

- growth
- repair of worn tissues
- maintenance
- building muscles
- providing energy

Other correct responses are:

- build lean body mass
- facilitate growth spurts
- essential for hormone production, thereby facilitating puberty

In Part (a) (ii), candidates were required to list three combination dishes rich in protein and calcium. It was evident that not all candidates were familiar with the term *combination dish*. Although many of them incorrectly gave three meals, it was clear that they were familiar with foods that are rich in calcium and protein. Expected responses included, but were not limited to

- custards
- fish
- florentine
- macaroni cheese/pie
- peanut punch
- cream of spinach soup
- calaloo au gratin
- salmon salad
- three bean salad
- cheese sandwiches

In Part (a) (iii), the majority of candidates correctly described the process of digestion in the mouth and the stomach.

In Part (b) (i), candidates were able to list guidelines which should be posted in a food storage area. Correct responses were:

- arrange items so that first in will be first out
- check expiry dates before using
- check food cans for dents and discard if damaged
- store transparent bottles away from light
- clean up spills immediately
- properly cover storage bins after use
- store containers with labels at the front
- do not place items on the ground

Part (b) (ii) was fairly well done. In most cases, candidates emphasized the prevention of food-borne illnesses and the removal of harmful substances that can cause illnesses. Other correct responses are:

- cleaning removes chemical contaminants and prevents rusting, which can also cause food poisoning
- cleaning reduces spoilage and removes allergens from equipment.

In Part (c) (i), candidates correctly explained the changes that occurred during the cooking of eggs and cheese.

In Part (c) (ii), many candidates experienced difficulty in explaining how knowledge of the properties of eggs and cheese could be helpful in food preparation. Some candidates interpreted this to mean how the changes referred to in Part (c) (i) affected preparation. Expected responses included:

### Eggs

- coagulation begins at around 60°C, this means that they can be successfully used to thicken custards and sauces
- the property of coagulation makes eggs effective in binding ingredients together in dishes such as meatballs and risoles
- they are an effective coating, thus preventing foods from breaking up during frying
- the presence of lecithin in egg yolk makes it an emulsifier and this property is used to make mayonnaise, which is used as a salad dressing

### Cheese

- when cheese is used as a topping on soups, sauces and pies it provides flavour and color
- when heated, it melts, forming an attractive glaze
- when baked in pastries, it blends into the flour, improving the texture and making it flavourful
- when used as a topping for pizza and macaroni pie, it melts and gives an attractive brown color

Part (c) (iii) was well done with the majority of the candidates being able to state the precautions that a canteen operator could implement to prevent burns and electrocution.

## **Section II – Optional Questions**

### **Module 1**

#### Question 2

This question tested candidates' understanding of the risks and challenges faced by pregnant teenagers, and the nutritional requirements of pregnant teenagers. This question was attempted by 61 per cent of the candidates.

The overall performance on this question was good.

In Part (a), some candidates correctly outlined the physical risks of a pregnancy during the early teenage years. Responses given included issues related to body image, such as *loss of shape*, *loss of hair*, *breasts becoming large*, and *becoming malnourished*. Expected responses included:

- low birth weight babies
- premature babies
- stillborn babies
- having miscarriages
- developing anaemia, tooth loss and bone loss
- risk of dying during childbirth
- difficult delivery

In Part (b) (i), most candidates were able to identify important nutrients, for example, protein, iron, calcium and vitamin C, needed during pregnancy, but did not discuss the need for these nutrients.

An example of a fully discussed point is that *additional calories are needed to cater for the mother's continued growth as well as the baby's development.*

Part (b) (ii) was well done. Expected responses included:

- having to set new priorities or change plans
- concerns about body image
- being subjected to peer pressure which may make her not want to heed the advice of elders
- economic difficulties
- lack of social support
- inadequate health care, especially if she tries to hide the pregnancy in the early months

### Question 3

This question tested candidates' understanding of the risk factors of hypertension, and the benefits of consuming a nutritionally balanced vegetarian diet for reducing the risk of hypertension. This question was attempted by 39 per cent of the candidates. Candidates' performance on this question was fairly good.

In Part (a), candidates focused on the impact of hypertension such as developing strokes or dying, instead of explaining risk factors for developing hypertension. Expected responses included:

- excess weight, especially in the upper body
- age
- heredity
- gender
- race
- high salt intake
- stress
- high alcohol intake
- smoking
- arteriosclerosis and diabetes

An example of a complete explanation is: *Age — as persons age, their arteries may become narrower, thus causing the blood pressure to rise.*

Part (b) was not well done. Only a few candidates were able to establish linkages between vegetarianism and reducing the risk of hypertension. Most candidates either did not have a full grasp of what a vegetarian diet entails or could not link vegetarianism to reducing the risk of developing hypertension. Expected responses were:

- adequate and balanced vegetarian diets are usually low in animal fats, which are saturated, so that there is less build up of plaque on the walls of the blood vessels
- retention of calcium is optimal, which helps to maintain normal blood pressure

- high fibre content, this helps with the regular elimination of waste thereby reducing a number of stresses on the body
- vegetarians may use less processed foods. Processed foods are usually high in sodium, a high level of sodium increases blood volume thereby increasing blood pressure
- vegetarians are usually meticulous in their diet and avoid alcohol, which is one of the risk factors for hypertension
- vegetarians also tend to use less caffeinated beverages such as malt drinks, carbonated beverages, tea and coffee. Caffeine raises blood pressure
- the diet tends to be lower in calories, because of the lack of meat products. This in turn reduces the risk of obesity, which is one of the risk factors for hypertension
- the diet is also low in cholesterol. Bad cholesterol can cause increased blood pressure
- certain plant foods such as watermelons, cucumbers, grapefruit and lemons are successful in lowering blood pressure. These foods are usually taken regularly as a part of the diet

### **Section III – Optional Questions**

#### **Module 2**

#### Question 4

This question tested candidates' understanding of planning meals for toddlers. It was attempted by 74 per cent of the candidates. The overall performance was very good.

Performance on Part (a) was satisfactory. Some candidates made general meal planning guidelines and did not link them to planning meals for toddlers, while others focused primarily on preparing attractive meals and using different shapes and colours. Expected responses included:

- eating meals together helps to develop good eating habits
- the stomach of a toddler is small, therefore frequent meals of small portion sizes should be given
- breast-feeding may continue early in the morning and late at nights, as this helps to secure the continued well-being of the child
- eating snacks in between meals and at bedtime will provide toddlers with adequate calories to cater for their high energy requirements
- crushed meals should be three mixes, in order to adequately cater to micronutrient needs
- snacks should include fruit juices or fruit together with iron-rich crackers or foods to promote proper absorption of iron

Part (b) was done very well as most candidates were able to plan a day's menu for the toddler. The menu should have included three main meals and two snacks. Providing two, three or four mixes would ensure that meals are nutritionally balanced, while a variety of

colours, textures and flavours would ensure that there is aesthetic appeal. The overall day's menu should provide adequate calcium and iron. Though this part was generally well done and the more alert candidates demonstrated an awareness of the fact that breast-feeding may still be taking place, there were some obvious deficiencies in the knowledge of some candidates. Quite a few of them listed only three meals — breakfast, lunch and dinner — and many of the meals were regular family meals with no indication that they should be crushed or specially prepared for the toddler.

#### Question 5

This question tested candidates' understanding of the nutritional value of coloured vegetables and fruits, and the principles underlying nutrient conservation in fruits and vegetables during storage, preparation and cooking. This question was attempted by 26 per cent of the candidates. The overall performance on this question was good.

Performance on Part (a) was satisfactory. Candidates were generally familiar with the nutritional value of fruits and vegetables. For the vegetables, some candidates listed appropriate nutrients and gave relevant examples, which earned them maximum marks. Very few candidates listed iron or calcium as nutrients prevalent in vegetables. For fruits, very few candidates were able to identify fructose, carotene or potassium as nutrients present in fruits.

In Part (b), the majority of candidates demonstrated that they were familiar with principles underlying nutrient conservation during storage, preparation and cooking.

### **Section IV – Optional Questions**

#### **Module 3**

#### Question 6

This question tested candidates' understanding of work simplification as it related to organizing, preparing and holding food. It also tested their knowledge and understanding of the use and care of walk-in refrigerators and gas ranges. The question was attempted by 24 per cent of the candidates. Performance was satisfactory.

Performance on Part (a) was very good as evidenced by the ability of candidates to adequately discuss stages in the organizing and preparing of food, that is, mise-en place, preparation of the meal, holding of the prepared food and cleaning up.

In Part (b), most candidates were able to explain guidelines for the care and use of walk-in refrigerators and gas ranges.

#### Question 7

This question tested candidates' skill in adapting recipes for large groups and adapting recipes to reduce the cholesterol content of the meal. It also tested candidates' knowledge of preparation methods in cooking and their ability to make and select suitable garnishes. The question was attempted by 76 per cent of the candidates. Performance on this question was good.

Performance on Part (a) was very good as most candidates were able to adapt the meat loaf recipe which originally gave a yield for ten persons, to one with a yield for 70 persons.

Part (b) was done very well.

Part (c) was generally well done as most candidates selected beef burger patties, meat balls or meat patties. A few candidates gave unexpected responses such as meat loaf stuffed with breadcrumbs, or omelette. Candidates were generally able to describe the preparation of their dishes and appropriately suggested the method of cooking to be used.

Part (d) posed difficulty for some candidates as they could not describe the preparation of the garnishes; in some cases, sauces and salads were listed as garnishes.

## UNIT 2

### GENERAL COMMENTS

In Unit 2, overall performance was comparable with that of 2010 with 97 per cent of candidates earning Grades I-V. There was a decline in the candidates' performance on the school-based assessment. Candidates performed better on Module 1 (Caribbean Food Ways and Food Systems) and Module 3 (Food Preparation and Service: Large Quantity and Commercial) than on Module 2 (Food Science and Technology).

### DETAILED COMMENTS

#### Paper 01 – Multiple Choice Questions

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

#### Paper 02 – Structured Essay

##### Section 1 – Compulsory Question Modules 1, 2 and 3

###### Question 1

This question tested candidates' understanding of the dietary guidelines for maintaining optimum nutrition, their ability to assess nutritional facts concerning cultural beliefs and the benefits of fortification. It also tested candidates' ability to calculate the selling price of preserves and to plan a three-course lunch menu.

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

Part (a) (i) was well done. Candidates were required to provide dietary guidelines that could be followed by caregivers of Caribbean families. Dietary guidelines supplied by candidates

were in keeping with the expected responses, and were appropriately applied to the Caribbean context. A model answer for one guideline is *eat a variety of foods from the six food groups to ensure provision of a wide array of nutrients*.

In Part (a) (ii), candidates were required to give an assessment of three cultural beliefs related to food. Candidates were generally aware that these beliefs are all myths. For the belief regarding green paw paw/papaya softening the skin and giving a youthful appearance, many candidates stated that the enzyme, papain, is present in paw paws. They also contain vitamin C and E, folate acid, potassium and fibre. Under the popular belief that fish is a brain food, many candidates stated that no one food is useful for the development or functioning of the brain, thus making the statement misleading. Many candidates further stated that fish is a source of omega-3, fatty acids and protein which are very useful to the body.

For the belief that a pregnant woman should eat for two, many candidates assessed this correctly. They noted that a pregnant woman needs to nourish herself as well as provide for the growing foetus but this does not mean that she should double her food intake since doubling her intake could lead to obesity. Many candidates also noted that a well-balanced diet, rich in vitamins and minerals was necessary for a pregnant woman.

Part (b) (i) was generally not well done by candidates. They were required to explain ways in which fortification could assist in improving the nutritional status of the Caribbean population. Many candidates attempted to define fortification, but confused it with enrichment. Expected responses included:

- ensures that commonly used foods such as salt and flour are improved through the addition of micronutrients
- reduces nutrition deficiency diseases significantly
- improves children's physical and mental health
- provides an affordable source of essential nutrients

Most candidates were able to name at least two foods that are fortified. The most popular foods named were margarine, salt, flour, breakfast cereals and beverages.

Part (b) (ii), which required candidates to calculate the selling price of a preserve, was not attempted by many candidates. The candidates who responded correctly gave the name of a preserve, made a list of the ingredients, costed them, added a labour cost, then came up with a total cost. They decided on a percentage mark-up and added this to the cost price to attain the selling price.

In Part (c), many candidates were able to score maximum points for planning a three-course lunch, which included indigenous dishes of the Caribbean. In a few cases, appetizers were inappropriate or too heavy. In addition, some candidates did not observe using capital letters to start names of dishes.

## Section II – Optional Questions

### Module 1

#### Question 2

This question tested candidates' understanding of factors which influence food choices in the Caribbean and their ability to assess a menu and to modify a meal to make it suitable for an obese person.

This question was attempted by 55 per cent of the candidates. Overall, performance was very good.

Part (a) was fairly well done although there was a fair amount of overlap and repetition in the responses of candidates. Candidates were required to outline how the socioeconomic factors, income and education, influenced food choices in the Caribbean. Expected responses included:

#### Income

- income determines access to food as well as the quality and type of food and therefore food choices are wider when income is high
- persons in the lower income bracket may tend to choose familiar, low cost foods as well as convenience foods
- for those with lower incomes, nutrition may not be the key determinant in food choices but rather taste and energy density. On the other hand, persons with high income may tend to purchase lots of convenience foods and fast foods if they are very busy

#### Education

- access to information appears to be a key element to a better food pattern, also it allows persons to be more discerning of food fads and fallacies as well as marketing gimmicks
- allows persons to make better judgements and wiser food choices

In Part (b) (i), candidates were given a day's menu for a weight conscious individual and asked to identify one major food group that was missing from the menu. This did not pose any problems for candidates; however, they did not always correctly identify the major nutrients present in the selected group.

For Part (b) (ii), in response to the health implications of the chosen nutrients, most candidates identified the roles of these nutrients or the disease associated with deficiency of the nutrient.

In Part (b) (iii), most candidates were able to modify the meal served for breakfast using appropriate indigenous foods.

#### Question 3

This question tested candidates' understanding of food safety and personal hygiene standards and factors to be considered by disaster relief organizations to ensure adequate nutrition for

persons housed in shelters after a natural disaster. It also tested candidates' knowledge of vulnerable groups and the ways in which their needs could be addressed.

This question was attempted by 45 per cent of the candidates. The question was well done.

In Part (a), candidates performed well giving appropriate responses about food safety and hygiene, specific to the wearing of jewellery while preparing food; washing hands throughout food preparation and after using the bathroom and the control of holding time as well as temperature of foods. Candidates were able to gain maximum marks in many cases.

In response to the control of holding time as well as temperature of foods, candidates stated generally, that hot foods should be held hot and that cold foods should be held cold. Many candidates did not state that food should not be held for more than four hours. Some candidates made reference to the danger zone, but did not quote the correct temperatures of between 41°F and 135°F.

Part (b) (i) requested candidates to outline factors to be considered by disaster relief organizations to ensure adequate nutrition for persons in the shelter after a natural disaster. Performance on this question was very good.

Performance on Part (b) (ii) was satisfactory. Candidates were required to address the needs of vulnerable groups. Defining the term *vulnerable groups* posed some difficulty for some candidates. Responses included phrases such as 'at risk', 'susceptible', 'special needs' and 'cannot provide for themselves'. The expected response was *vulnerable groups refer to those members of the community who are at greater risk of malnutrition or whose physiological status makes them more open to the effects of malnutrition or those who have a chronic disease or HIV/AIDS*. Candidates gave excellent examples of *vulnerable groups* such as *pregnant women, the elderly, hypertensive persons and small children*.

### **Section III – Optional Questions**

#### **Module 2**

#### Question 4

This question tested candidates' understanding of genetically engineered foods and the processing of foods from field to consumers.

This question was attempted by 16 per cent of the candidates. Overall performance on this question was good.

Performance on Part (a) was very good. Candidates were quite familiar with the benefits of and potential problems with genetically modified foods. The majority of them obtained maximum marks.

In Part (b), some candidates had difficulty responding. They misinterpreted the stages of processing tomatoes from field to consumer, instead they focused on agricultural practices and the processing of by-products of tomatoes, for example, tomato puree or salsa. Those who approached it appropriately, clearly outlined the following stages: (i) *harvesting*, (ii) *selection*, (iii) *packing to prevent damage*, (iv) *storage*, (v) *transportation* and (vi)

*distribution*. They did not mention the ripening stage which involves storage in ripening rooms with forced air coolers.

### Question 5

This question tested candidates' understanding of nutrition labelling and care instructions; criteria used to select packaging for homemade preserves; and advantages of using plastics for packaging preserves.

This question was attempted by 84 per cent of the candidates. Overall performance on this question was very good.

Part (a) (i) was generally well done although some candidates misinterpreted the instruction to mean general information on labels such as expiry date, name of manufacturer, name of product and list of ingredients. Expected responses included:

- number of servings
- serving size
- servings per container
- calories from fat
- total calories
- total fat
- total saturated fat
- total protein
- total sugars
- daily/reference values

Part (a) (ii) was well done by candidates as evidenced by the ability of candidates to correctly differentiate between use and care instructions found on food labels. An example of a use instruction is *directions for mixing*. This must be followed as it will yield the expected amount and quality of the product and prevent adverse reactions. An example of a care instruction is *refrigerate after opening*. This can prevent spoilage and food poisoning.

Performance on Part (b) was good. Candidates were able to explain the criteria for selecting packaging material for home-made sweet preserves. Responses given included:

- durable
- attractive
- minimum negative impact on the environment
- transparent
- easy to reseal
- prevent leakages
- prevent growth of bacteria

Expected answers included:

- does not spill easily
- airtight to prevent oxidation
- keeps cost reasonable

Part (c) was done well by most candidates who clearly outlined advantages of using plastics for packaging preserved foods and stated examples of suitable packaging material for sweet preserves, other than plastic. Correct responses included:

- cardboard boxes
- foil packages
- glass bottles
- polythene

## **Section IV – Optional Questions**

### **Module 3**

#### Question 6

This question tested candidates' knowledge of the responsibilities of employers and employees in ensuring a safe environment for staff and customers, and their understanding of HACCP principles.

This question was attempted by 63 per cent of the candidates. Overall performance on this question was satisfactory.

In Part (a), candidates were required to list responsibilities of employers and employees when ensuring a safe environment for customers and staff. Many candidates focused their attention on personal hygiene practices such as hand-washing and covering the mouth when coughing and also on kitchen hygiene practices, such as mopping floors and emptying garbage. Expected responses for employers included:

- ensure that workers have food handler's permits
- organize and assign tasks to workers
- provide adequate training
- post written safety policy
- maintain the premises and equipment in good working order

Expected responses for employees included:

- observe safety rules
- observe hygiene rules
- cooperate with supervisors and fellow employees
- refrain from tampering with safety devices on equipment
- report equipment that is malfunctioning
- call for help immediately if an accident occurs
- familiarize themselves with escape routes and fire exits.

In Part (b), candidates were required to explain the importance of critical control points used in the HACCP approach to ensure the safety of pork during the production process. The majority of candidates experienced difficulty in responding to this section of the question, both in terms of identification of critical control points as well as connecting HACCP with pork production.

Expected responses included:

- *Reception* (of live pigs): at this stage waste is still being eliminated and harmful bacteria can be transmitted to the premises and the workers

- *Slaughter*: as large amounts of warm blood are present that provide ideal conditions for the growth of bacteria
- *Hanging*: the area must be sanitized as blood is still present and cross contamination may occur
- *Cleaning*: removal of hair and cleaning the insides can give rise to contamination of the flesh
- *Portioning*: during the cutting and portioning utensils must be sanitized to prevent cross contamination
- *Packaging*: the machines must be sanitized to prevent the meat becoming contaminated
- *Storing*: meat must be stored at the correct temperature to prevent microbial growth
- *Transportation and distribution*: trucks must be fitted with cold temperatures. Cold temperatures must be maintained throughout the journey to prevent the pork from being in the danger zone at any time

### Question 7

This question tested candidates' ability to calculate the real cost of meals and to explain the differences in the cost of à la carte and table d'hôte menus. It also tested their ability to discuss guidelines for organizing the food preparation and service of a banquet for 200 persons.

This question was attempted by 37 per cent of the candidates. Overall performance on this question was fairly good.

In Part (a) (i), candidates were unable to fully explain the factors which should be considered when calculating the real costs of meals served in a restaurant. The popular responses were:

- wages
- utilities
- equipment
- ingredients
- transportation
- advertising

Expected responses included:

- rent
- mortgages
- staff uniforms
- advertising

Performance on Part (a) (ii) was fairly good as the majority of candidates were able to differentiate between à la carte and table d'hôte menus. Some of them confused the two terms or they did not specify which was for à la carte and which was for table d'hôte. Important points to note are that table d'hôte menus are fixed and are usually cheaper and à la carte menus are usually offered for fine dining and carry high overhead costs.

Part (b) which required candidates to give guidelines for organizing the food preparation and service for a banquet was well done by a few candidates, but was misinterpreted by many. A few candidates focused on factors to be considered when planning a menu such as age,

special foods, skills of the workers, time needed for preparation of the dishes and following a time plan. Expected responses included:

- establish the menu to be used
- divide up the work
- organize equipment and ingredients
- collect table linen
- make appointments according to type of service and number of meals
- organize service area for children, the elderly and other persons with special needs

### **Paper 03 – School-Based Assessment**

This paper consisted of a portfolio comprising two pieces of work which tested objectives across all modules. Students, in consultation with their teachers 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 students 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 are aware that a portfolio should be submitted, instead of two distinct pieces.

This year there was an increase in the number of exemplary portfolios students submitted. This indicated that more teachers are following the recommendations outlined in the feedback reports. Conversely, it is evident that schools which are offering the subject for the first time need some guidance. The work of the students with exemplary portfolios was scientifically based and rigorous. These students are to be highly commended for their effort. In some instances, the students used a thematic approach where the research assignment was linked to the product development.

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

#### **Module 1 – Research**

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

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

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

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

## **Module 2 – Experimental and Recipe Modification**

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

Many reports were not well written and presented. Most students formulated hypotheses but they were not always realistic. The procedures for experiments were in most cases not clearly documented. Students who modified products more than three times must be commended. Some students did not modify the product until a good quality was maintained or the requirements of the hypothesis were met. A large majority of the students showed very little evidence to prove that they modified the product after critical or unexpected outcomes.

## **Recommendations to Teachers**

### Papers 01 and 02

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

It was also clear that students were not familiar with some areas of the syllabus and so they performed poorly or omitted parts of questions. Students should therefore cover the entire syllabus so that they can satisfy the requirements of the examination. There was great improvement in Modules 3 in both units. Since it might not be possible for teachers to cover every topic in class, it is suggested that students be given research on these topics and be allowed to present their work in class. Greater emphasis must be placed on nutritional information related to control and prevention of chronic diseases. In addition, it is important that students revisit concepts in the CAPE syllabus which were studied at the CSEC level and that these topics are discussed in greater detail and additional information presented to the students. Teachers must be cognizant that it is possible to study nutrients at several levels: primary, secondary, tertiary and postgraduate. At each level, the information regarding the concept of nutrients widens.

Students 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 students' inability to gain as many marks as possible
- participate in mock examinations using past examination papers 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
- develop ideas, and demonstrate clarity of expression. In many cases, students 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.

### School-Based Assessment

Students should be encouraged to

- seek guidance in choosing topics for projects as well as throughout the entire exercise
- select topics that are of interest to them and that relate to a problem in the region or community. This should ensure that there is ownership and motivation for the project.
- note that literature reviews for each assignment do not have to be extensive, but should be thorough enough to outline the problem and research relevant to the same. This *cannot* be adequately done in two to three pages, therefore literature reviews must be no less than 2,000 words. Students must utilize a variety of sources. There was a heavy reliance on the internet and, in many cases, this was the only source cited. At this level of examination it is critical that students be exposed to the correct method of citing references. It is suggested that students be taught the APA referencing style for citing sources and developing a reference list

- develop rationales and explain the significance of the topic
- present and discuss the data for the research project. 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
- provide a summary or conclusion at the end of the project
- write a detailed report which accurately records and reports all observations for the Experimental and Recipe Modification
- repeat and modify experimental methods after critical or unexpected outcomes
- explain each modification 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 verify the changes that were made to the recipes
- give the original recipe and then conduct at least two modifications
- use food composition tables to determine energy values for the original and new product
- formulate valid hypotheses
- record and report methods, observations and results accurately, using tables or graphs
- include the results from the sensory evaluation in their discussion
- develop a conclusion to summarize their findings