CARIBBEAN EXAMINATIONS COUNCIL

REPORT ON CANDIDATES' WORK IN THE CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®

MAY/JUNE 2012

FOOD AND NUTRITION

GENERAL COMMENTS

In Unit 1, overall performance was comparable with that of 2011, 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 Meat Planning) than on Module 3 (Food Preparation and Service: Principles and Methods).

In Unit 2, overall performance was comparable with that of 2011, with 98 per cent of candidates achieving Grades I–V. Candidates' performance on the School-Based Assessment also improved. Candidates' performance on all three modules — Module 1 (Caribbean Food Ways and Food Systems), Module 2 (Food Science and Technology) and Module 3 (Food Preparation and Service: Large Quantity and Commercial) — was similar.

DETAILED COMMENTS

UNIT 1

Paper 01 – Multiple Choice Questions

Paper 01 in both units consisted of 45 multiple-choice items drawn from all three modules. Candidates' performance on this paper was good for both units.

Paper 02 – Structured Essay

Section I – Compulsory Question

Modules 1, 2 and 3

Question 1

This question tested candidates' understanding of nutrition during early childhood; growth charts; complimentary feeding; harmful effect of excessive consumption of fat; meal planning; kitchen design and labour-saving devices. It was attempted by all candidates. Overall performance on this question was good.

In Part (a) (i), the majority of candidates were able to provide nutrition guidelines for early childhood. Some candidates focused on specific nutrients needed during early childhood, while others focused on public health initiatives for improving nutrition in general rather than on guidelines for early childhood nutrition. Expected responses included:

- Avoid spicy and hot foods
- Introduce solid foods at six months of age
- Exclusive breastfeeding is recommended because it gives children the best start in life
- Continue complementary feeding until the child is two years old
- Use moderate amounts of salt in preparing foods
- Introduce one new food at a time.

In Part (a) (ii), candidates were required to interpret the line on a growth chart. About ten per cent of the candidates did not attempt this part of the question. Those who attempted it responded well, indicating that the child whose growth pattern was presented in the chart was malnourished for most of the time. Candidates were expected to clearly track the growth pattern and provide the following explanation:

> *A descending line is a very dangerous sign for the child; it usually means that the child has experienced some serious illness and the body weight has declined. A horizontal line means that the child is not gaining weight and this is also dangerous; an ascending line means that the child is gaining weight and this is good.*

In Part (a) (iii), candidates were able to state ways in which a mother could increase the energy intake of her children apart from breastfeeding. Many candidates stated that complementary foods should be used or that the multi-mix principle should be used while some gave responses such as balanced diet or complementary feeding. Expected responses included:

- Add powdered milk to buns, cakes or pastries
- Increase snacks given between meals
- Add some fried snacks to daily menus
- Increase meat portions

In Part (b) (i), candidates were provided with the stimulus that due to a drought, members of a fishing community had begun to rely on nuts from palms as their staple. Candidates correctly stated that the nuts were rich in fats. Stronger candidates observed that the fats from the nuts would be saturated. They were able to state that the long term over-consumption of fats would have a negative effect. These effects included obesity, hypertension, heart disease and atherosclerosis. A few candidates listed high blood cholesterol, which is likely to result due to the high levels of saturated fats in the nuts. Some candidates correctly posited that the community will be negatively impacted over time, by having many obese persons.

In Part (b) (ii), candidates were provided with a list of items and were asked to use them to formulate a day's menu. They were expected to list at least three meals and use all the items in the menu. Candidates were awarded marks for nutrition balance, aesthetic appeal and for employing a variety of cooking methods and dishes. About ten per cent of the candidates lost marks by only presenting one meal of the day. A model answer was:

Breakfast	*Snack*
Oats porridge with milk	*Saltfish fritters*
Bakes	*Orange juice*
Lunch	*Dinner*
Stewed Chicken	*Creole Saltfish*
Cornmeal dumplings	*Steamed rice with red beans*
	Mixed Vegetable salad

In Part (c) (i), candidates were required to demonstrate their knowledge of kitchen layout and design by giving factors to be considered when designing a soup kitchen for the nursery school in the given community. Candidates focused on ergonomic features of the kitchen, such as space and height requirements, and on hygiene matters such as proper garbage disposal. Some of the candidates indicated that the kitchen should have bright colours or wall posters or that it should be safe for children. Though the question was generally well done, most candidates omitted factors such as adequate ventilation, lighting, two-compartment sinks and work flow.

In Part (c) (ii), candidates were required to suggest labour-saving devices that could be used for food preparation in the soup kitchen. They were also required to outline the use and to describe the care of the stated device. Candidates listed items such as blender, microwave cooker, food processor and pressure cooker. They were familiar with the uses of each as well as the general care.

Section II – Optional Questions

Module 1

Question 2

This question tested candidates' understanding of calculating energy requirements; identifying categories of foods and nutritional strategies for the prevention of chronic diseases.

The overall performance on this question was good. Forty-two percent of the candidates responded to this question.

In Part (a), some candidates adequately completed the list of different categories of food. Many candidates equated energy foods with those high in fats and carbohydrates. They included foods such as potatoes, rice, pasta products and oils for energy foods. For protective foods, candidates suggested a range of fruits and vegetables, grains and organ meats. For the body building foods, candidates listed meats, fish, eggs and milk. A few candidates incorrectly listed green vegetables or starch-based foods under the category of body building.

In Part (b) (i), candidates were given the number of calories needed by a male, as well as the grams each of protein, carbohydrate and fat consumed at breakfast; most candidates correctly

calculated the remaining number of calories needed to make up the 2400 calorie daily energy requirement.

In Part (b) (ii), candidates experienced difficulty stating the recommended percentage of energy in the diet that should come from fat. The majority of candidates were unfamiliar with the percentage of fat recommended and percentages given ranged from 20 per cent to 50 per cent. Some candidates did not respond to this section of the question. Although candidates were penalized for not stating the correct percentages, they were awarded points for demonstrating their understanding of the process of calculating the number of grams of fat.

The correct calculation is given below:

30% energy from fat is recommended
30% of 2400 = 720 kcal
770 kcal / 9 = 80 g

Part (c) which required candidates to outline nutritional strategies for the prevention of chronic diseases was done well.

Question 3

This question tested candidates' understanding of the terms *satiety, hunger and appetite*, their knowledge of eating behaviours and instruments used to take anthropometric measurements. This question was attempted by 58 per cent of the candidates. Performance on this question was fairly good.

In Part (a), candidates were presented with a scenario in which Joan and her friend experienced hunger, satiety and appetite. They were required to use the scenario to explain the terms. Most candidates were able to define the given terms, however not many of them actually related the scenario to the terms. They were expected to state that

> *the sights and smells emanating from the ice-cream parlour prompted the girls' appetite. The girls became hungry after using up calories in the gym and this prompted food-seeking behaviour. Having eaten the food and ice cream, the girls were full to satisfaction and could not eat their home-cooked dinner (satiety).*

Part (b) posed a challenge for many candidates. They were required to list ways in which the eating habits of a Caribbean family who had moved to Europe may change. This tested their knowledge of factors that affect eating behaviour and food choices. Some candidates gave vague responses such as availability, cost likes and dislikes. Expected responses included:

- Use of more convenience foods because of greater availability
- Expected use of more potato products as a staple
- Adjustment of the meal pattern to suit activities
- Greater variety of food choices, which would include Mediterranean , Asian and African

In Part (c) (i), candidates were required to describe three methods that medical staff could use to determine the ideal weight of adults. Candidates were familiar with BMI and weight for height. However, the responses on anthropometrics were often vague. A few candidates gave methods suitable for children such as weight for age and head circumference. For anthropometrics, candidates were expected to mention skin fold thickness and waist circumference.

Part (c) (ii) required candidates to list two instruments used to take anthropometric measurements. Many candidates listed the scale and tape measure. Only a few candidates listed instruments such as stadiometers, skin fold calipers or length boards.

Section III – Optional Questions

Module 2

Question 4

This question tested candidates' understanding of eating patterns in the Caribbean, their ability to plan meals with food appeal and palatability and their knowledge of food storage.

This question was attempted by 60 per cent of the candidates. The overall performance was very good.

Performance on Part (a) was good. Candidates were required to describe the main meals of the day and to include a menu for one. Candidates were very familiar with the meal patterns. The candidates who did not gain a high score simply did not respond to a section of the question or did not give a balanced menu. This emphasizes the importance of careful reading and interpretation of the question.

Part (b) was fairly well done as most candidates were able to highlight the importance of planning meals with food appeal and palatability for the elderly. Though most candidates were familiar with the concept, they did not always relate this to the elderly. Salient points expected were:

- The elderly may lack appetite due to decreased function of their senses;
- They may not get the full taste of foods given;
- Their social activities may be decreased so meal times need to be interesting;
- Foods need to be visually attractive for those who have lost their sense of smell, and very aromatic for those who may be visually impaired.

Part (c) required candidates to outline rules for storage in a nursing home. Most of the candidates performed well on this section.

Question 5

This question tested candidates' understanding of the multi-mix principle of meal planning, their knowledge of nutritive value of canned and frozen vegetables and nutritional information on labels.

This question was attempted by 40 per cent of the candidates. Overall performance on this question was good.

Performance on Part (a) was good. Candidates were asked to state the four major food groups used in multi-mix meal planning and identify the chief nutrient in each of the stated groups. Most candidates scored full marks.

In Part (b), the majority of candidates were unable to explain the difference between the nutritive value of canned mixed vegetables and frozen mixed vegetables. Expected responses included:

- The comparatively short heat treatment for frozen vegetables in order to de-activate the enzymes allows for a longer retention time of the nutrients
- Leaching of nutrients from the vegetables in the can is greater because the vegetables are soaking in liquid
- Freezing de-activates the enzymes which may cause the breakdown of some nutrients

Part (c) was very well done as evidenced by the candidates' ability to discuss the importance of the reading of labels for persons suffering with chronic diseases. Candidates went beyond just listing the points to giving detailed explanations. For example, *a diabetic person would need to know the total calories as well as the amount of sugars present in order to control his/her calorie intake.* A few candidates observed that labels allow persons to compare food products and make better choices.

Section IV – Optional Questions

Module 3

Question 6

This question tested candidates' understanding of adapting recipes for large groups; modification of recipes, sensory evaluation and the use of food garnishes. Performance on this question was fair. The question was attempted by 70 per cent of the candidates.

Performance on Part (a) was not good. Several candidates did not attempt this part of the question. It is assumed that those candidates were unfamiliar with the steps required to carry out the calculations needed to adapt the recipe. This process must therefore be taught and students

must be given practice in adapting recipes both in terms of increasing quantities and decreasing quantities. The steps required for the calculations are listed below:

- Step 1 involves finding the conversion factor.
  The given recipe caters for five persons. The recipe is to be adapted for 25 persons. To find the conversion factor, divide the required amount, 25, by the original amount, 5
  25/5 = 5

- Step 2 — multiply each quantity in the recipe by the conversion factor and round off each quantity, if necessary, to the nearest measure available.

In Part (b) (i), most candidates were able to modify the recipe to make it into a tasty one-pot meal. Expected responses included:

- Add some starch, such as potatoes, green bananas, breadfruit and cassava
- Add coloured vegetables such as pumpkin, carrots and green beans
- Add to its tastiness by putting in some herbs or spices
- Incorporate these new ingredients, for example, boil yams and puree in blender, before adding to soup or add diced carrots and chopped spinach and simmer for a further ten minutes
- Use a good proportion of ingredients

In Part (b) (ii), some candidates misinterpreted the question and simply listed sensory characteristics, rather than stating how the principles of sensory evaluation could be used to develop the modified recipe. Expected responses included:

- Select a panel to evaluate the soup. In the case of the soup, it is pertinent to have a group of persons on the panel who have an interest in drinking soup.
- Choose the right time, such as mid-morning, when persons are neither hungry nor satiated.
- The soup samples should be at the correct temperature (hot), so as to correctly evaluate taste.
- The portion should be small but adequate enough for persons to evaluate each sensory characteristic.
- An instrument for recording responses should be provided, such as a form, questionnaire or evaluation sheet.
- The results of the panel's evaluation should be assessed.
- Adjustments should be made to the recipe, not based on the researcher's preferences, but based on the findings of the panel.

Part (b) (iii) was generally well done as evidenced by the ability of candidates to give suitable garnishes for one pot soups.

Question 7

This question tested candidates' understanding of the changes which occur when meat is cooked; suitable starch dishes to accompany grilled steak; and knife cuts.

Performance on this question was good. The question was attempted by 30 per cent of the candidates.

Performance on Part (a) was only fair. Candidates did not describe the changes which occur in a cut of steak while it is being grilled but gave one-word responses such as *shrink, coagulate, flavor* or *colour changes*. Expected responses included:

- Muscle protein is coagulated
- Gelatinization of collagen occurs, converting the protein to a more soluble form
- Maillard compounds are formed from the reaction of carbohydrates with amino acids.
- Muscle juices /drippings are lost in the dripping pan or fire, resulting in shrinkage of the meat.
- When the fat dripping from the meat comes into contact with the fire, it breaks down forming some carcinogenic compounds.
- The colour changes from red to brown due to the formation of met-haemoglobin from haemoglobin.

Part (b) was well done as evidenced by the ability of candidates to list suitable starch dishes to be served with the grilled steak. Some candidates were able to fully describe the preparation of this dish. In order to gain maximum points, candidates needed to name the dish, describe its preparation, such as *washing, peeling* and *dicing*, describe the method of cooking such *as boiling, sautéing*, describe the incorporation of other ingredients such as *herbs, milk, coconut milk* and also to describe its method of service, for example, *pipe into rosettes on prepared plates, scoop unto prepared tray* or *arrange in scallops on platter and garnish with a sprig of parsley*.

Part (c) required candidates to illustrate suitable cuts for stir-fried carrots. Popular responses included *julienne* or *strips, dice, rondelles* or *rounds*, and *semi-circles*. Candidates were generally unfamiliar with diagonal cuts, curls or brunoise/fine dice. Several candidates did not focus on the word *illustrate* and hence lost marks for not illustrating the cuts.

UNIT 2

Paper 02 – Structured Essay

Section I – Compulsory Question

Modules 1, 2 and 3

Question 1

This question tested candidates' understanding of assessing nutritional facts concerning cultural beliefs; the effects of excessive consumption of margarine on health; production of local fruit preserves; food labelling and developing recipes.

Overall performance on this question was good.

Part (a) (i) was not well done. Candidates were required to show their knowledge of the nutritional facts of green bananas. Responses to this part of the question were quite surprising. At this level, it was not expected that over half of the candidates would incorrectly state that green bananas are a good source of iron. The remainder correctly noted that they were rich in starch, fibre and potassium.

In Part (a) (ii), candidates were required to use the nutritional facts stated in Part (a) (i) to evaluate the cultural belief that homemade tonics from immature green bananas or plantains, roots and stems of the plant are good suppliers of vigour and strength, and cure bad blood (anaemia). Many candidates confirmed that the popular belief that green bananas are a good cure for bad blood (anaemia) is still very prevalent. Teachers therefore need to revisit their lessons on popular fads and fallacies and reinforce the need for scientific evidence to support popular beliefs.

Candidates were expected to list *carbohydrates, fibre and potassium* as nutrients present in green bananas and note that

> *it is a fact that because green bananas are rich in starch and therefore a good source of energy, the tonic can be said to supply vigour and energy. The potassium present can help to maintain fluid balance, however the tonic will not cure bad blood — the common name for anaemia — since green bananas are not a source of iron.*

In Part (a) (iii), candidates in response to the impact of excessive margarine on health, correctly stated *that the excessive consumption of margarine will result in too much fat in the diet, which could lead to obesity*. Some candidates stated that the *high levels of saturated fat could lead to*

high cholesterol which could lead to a build up of plaque and therefore lead to atheriosclerosis. Other responses given included:

- The high levels of fat could also lead to cardiovascular disease and poor circulation
- Build up of fat around the internal organs could cause damage to these organs
- When persons become obese, they may have difficulty breathing.

Performance on Part (b) (i) was generally good. In response to the stages in the production of a local preserve, most candidates gave good responses and provided enough detail in order to gain maximum marks. Several candidates tried to generalize the stages of production and did not focus on a particular fruit. This was to their disadvantage since the choosing of a local fruit preserve helped to provide focus. For example, if a candidate named orange marmalade, this provided an example and a point of reference that would guide them through their response. They were then able to list the stages as follows:

***Selection**:*	*Choose firm, mature oranges (but not overripe) as these have more pectin and will provide the best flavour.*
***Cleaning**:*	*Wash fruit to remove dirt or dust and make it fit for consumption*
Processing:	*Peel and shred rind, separate pulp for boiling, remove seeds*
***Addition of Sugar**:*	*Measure pulp and peel, measure sugar and add to pulp*
***Heating**:*	*Bring pulp mixture to the boil, and add additional pectin. Add measured peel. Test for doneness, when mixture drops off a wooden spoon in flakes, remove from heat.*
***Packaging**:*	*Sterilize jars and pour mixture into prepared jars*
***Labelling**:*	*Label to provide ingredients list, date of production , expiry and other required specifications.*

Part (b) (ii) which required candidates to list the information that must be included on food labels to ensure that the product meets international standards was very well done. However, not many candidates stated that ingredients should be listed in descending order, or that net contents could be in terms of count or other measures, in addition to net weight.

In Part (c), many candidates were able to score maximum points for creating a recipe for a product which uses barley or cassava flour rather than wheat flour, in order to appeal to persons with an allergy to wheat flour. Some interesting dishes were developed, such as patties, lasagna, pizza, cupcakes and muffins. Some candidates used cassava in their recipes, rather than cassava or barley flour as required and others described the method without naming the dish. Some candidates did not mention temperature management which included oven temperatures, description of stove top temperature such as low, medium or high heat, and cooking time.

Section II – Optional Questions

Module 1

Question 2

This question tested candidates' understanding of functions of food-regulating agencies after a natural disaster; food safety measures that should be practised by consumers after a hurricane; and maintaining adequate nutrition after a hurricane.

Overall performance on this question was very good. The question was attempted by 39 per cent of the candidates.

Part (a) was fairly well done although there was a fair amount of overlap and repetition in the responses to the functions of food regulatory agencies in relation to dealing with natural disasters. Expected responses included:

- Inspection of food establishments
- Examination of selected samples of food
- Checking of food storage bonds
- Overseeing the removal of unsafe products
- Discarding of food and food-packaging material that were submerged in flood waters
- Overseeing of decontamination exercises at food establishments
- Notification to the public of hazards and public education.

For Part (b), most candidates included measures such as *discarding any food items that would have come into contact with flood waters; sanitizing all equipment and food surfaces; discarding items from the refrigerator if there was a power outage lasting for more than four hours; discarding any perishable items that would have undergone spoilage; and boiling water and disinfecting water with chlorine bleach*. Very few candidates stated that wooden spoons, boards and other wooden utensils should be discarded as they would be difficult to sanitize or that baby feeding utensils should also be discarded.

Part (c) was not done well. In response to suggesting guidelines that should be followed by caregivers to ensure adequate nutrition and health of the family after a hurricane, vague responses were given. An example of a very popular response was 'providing a balanced diet or ensure that everyone gets equal portions'. Expected responses included:

- Taking care of vulnerable groups such as the elderly, diabetics and children
- Ensuring that there is a variety of foods from the various food groups
- Providing foods high in energy and protein

- Providing an adequate supply of clean water
- providing supplements where necessary to assure nutritional balance

Question 3

This question tested candidates' understanding of the terms *food security, food availability, food accessibility, food utilization*; their knowledge of measures that governments can take to improve household food security and their ability to develop original recipes.

This question was attempted by 61 per cent of the candidates. The question was well done.

In Part (a) (i), candidates performed well giving appropriate definitions for the term *food security*. It is important that teachers reinforce that food security is defined *as when* ***all people*** *or the* ***whole population at all times*** *have both physical and economic* ***access to sufficient, safe and nutritious food*** *to meet their dietary needs, in order to lead a healthy and productive life*.

Part (a) (ii) required candidates to define the terms *food availability, food accessibility,* and *food utilization.* Performance on this part of the question was not good. Unfortunately, most candidates chose to repeat the terms given such as access, available and utilize when writing the definition. This was a clear indication that candidates did not have an understanding of these concepts. Candidates were expected to explain *food availability* by the use of phrases such as *sufficient quantities of food, domestic production, food in close proximity, foods in season, enough distribution outlets, adequate transportation for farmers.*

Food accessibility could have been explained through phrases such as *adequate income; resources to purchase or barter; able to buy food; able to obtain right levels of nutritious food; able to afford transportation to food outlets; can afford to buy.*

In terms of *food utilization,* the use of any of the following phrases would have demonstrated candidates' understanding: *food properly used; wastage of food avoided; proper food processing or storage practices; application of knowledge of nutrition to food preparation practices; proper nutrition and childcare practices.*

Part (b) was well done. Candidates ably demonstrated their knowledge of measures that governments could take to increase household food security.

Part (c) was well done by most candidates who developed original recipes for children in the Caribbean that included ingredients such as flour, cornmeal, nuts, eggs and dried fruit. Recipes included buns, muffins, biscuits, cookies and cakes. It was expected that some originality would be displayed and that ingredients would be in proportion and include a raising agent, where necessary. An example of a model answer is as follows:

Corn cake surprise

Ingredients

2 cups flour	*3 eggs*
1 cup fine corn meal	*1 tsp cinnamon*
1 tbsp baking powder	*1 tsp lemon zest*
2 tsps almond essence	*1 cup caster sugar*
¼ cup almond nuts, crushed	*¼ cup warm water*
1 cup ground mixed fruit	*½ lb butter*

Method

1. *Grease swiss roll pan and line with waxed or grease proof paper.*
2. *Combine butter and sugar in a deep stainless steel mixing bowl and cream together until smooth.*
3. *Beat eggs until foamy in a separate mixing bowl. Add beaten eggs to creamed mixture a little at a time.*
4. *Cream until all the sugar is melted, then add cinnamon, essence and lemon zest.*
5. *Sift together flour, corn meal and baking powder, and then fold in to creamed mixture. Fold in crushed almonds and water. Preheat oven to 350˚F. Allow to rest for fifteen minutes.*
6. *Pour half of the mixture into the swiss roll pan. Spread over ground fruits and then spread the other half of the corn meal mixture.*
7. *Place in pre-heated oven and bake for twenty minutes or until golden brown.*
8. *Cut in one inch squares and serve plain or with a custard sauce.*

Assessing the recipe above, the item chosen is original in that it has the ground fruit in the centre of the cake; for flavour, essence, lemon zest and cinnamon were used and this will appeal to Caribbean consumers; it included all the ingredients in good proportions to obtain a cake-like and slightly heavy texture and the method was fully explained.

Section III – Optional Questions

Module 2

Question 4

This question tested candidates' understanding of packaging material, consumer rights which are related to food safety; and differences between fats and oils. It was attempted by 57 per cent of the candidates. Overall, performance of this question was fairly good.

Performance on Part (a) was only fair. Candidates were provided with a framework to compare aluminium packaging with glass as a packaging material. The responses indicated that candidates

were not very familiar with the concepts, advantages and disadvantages of packaging material. Expected responses are shown below:

Material	***Product Characteristics/food compatibility***		***Consumer/marketing issues***		***Environmental Issues***		***Cost***
	Advantages	***Dis-advantages***	***Advantages***	***Dis-advantages***	***Advantages***	***Dis-advantages***	
Glass	• *Impermeable to moisture and gases* • *Nonreactive (inert)* • *Withstands heat processing*	• *Brittle and breakable* • *Needs a separate closure*	• *Transparent: allows consumer to see product* • *Can be coloured for light-sensitive products*	• *Poor portability: heavy and breakable* • *Relatively difficult to decorate*	• *Reusable* • *Recyclable* • *Often contains recycled content*	• *Heavy and bulky to transport* • *Relatively difficult to decorate*	• *Low cost material, but somewhat costly to transport*
Aluminum	•*Impermeable to moisture and gases* •*Resistant to corrosion* •*Withstands heat processing*	•*Cannot be welded* •*Limited structural strength*	•*Easy to decorate* •*Lightweight* •*Good portability* •*Not breakable*	• *Limited shapes*	• *Recyclable* • *Lightweight* • *Economic incentive to recycle*	• *No disadvantages in rigid form* • *Separation difficulties in laminated form*	• *Relatively expensive, but value encourages recycling*

In Part (b) (i), candidates' knowledge of the rights of consumers as they relate to food safety was tested. Candidates generally responded well, even though they did not always use the correct terminology. Responses provided included the *Right to Safety*, *Right to Choose*, *Right to Information* and *the Right to Redress.*

Part (b) (ii) required candidates to list the chemical elements in fats and oils. Many candidates did not attempt this part of the question, while others were able to list the elements hydrogen, carbon and oxygen.

In Part (b) (iii), most candidates correctly outlined two differences between fats and oils.

Question 5

This question tested candidates' understanding of the process of harvesting bananas; their ability to calculate the selling price of homemade preserves; and their knowledge of nutritional supplements.

This question was attempted by 43 per cent of the candidates. Overall performance on this question was very good.

Part (a) was done well by most candidates who clearly outlined the process of harvesting bananas.

Performance on Part (b) was only fair. Candidates were required to calculate the selling price of a batch of home-made banana chips. Several candidates were able to calculate a reasonable selling price using most of the steps outlined below, whereas the remaining candidates either did not attempt this part of the question, or simply added up the cost of ingredients. Marks were awarded for the following:

- Listing ingredients with quantities
- Stating the price per quantity
- Stating the cost of production, noting fuel as well as labour costs
- Calculating the total cost per dish
- Calculating the cost per portion, which would have been obtained by dividing the total cost of the dish by the number of portions
- Calculating the percentage mark up, which provides the profit margin
- Calculating the selling price, obtained by calculating the profit and adding it on to the cost price.

Each step in the process is important and it is recommended that teachers give their students practice in calculating real selling prices.

In Part (c), candidates were required to define the term, *dietary supplement* and suggest a nutrient supplement for three different groups, namely vegans, athletes and pregnant women.

The majority of candidates were able to define *dietary supplement*; however, some of them who attempted this question did not respond to this section. Most of those who responded stated that it was a food or nutrient that was *lacking* in the diet.

In providing a dietary supplement suitable for a vegan, a popular response was protein, while a few candidates listed Vitamin B12. Many candidates gave vague responses such as 'vitamins'. In relation to dietary supplements suitable for an athlete, many candidates suggested *glucose* or *iron*; *energy drinks* and *protein bars* were also accepted as correct responses; for the pregnant woman, *calcium* and *multi-vitamins* were the popular responses. Other expected responses were *iron* or *folacin*.

Section IV – Optional Questions

Module 2

Question 6

This question tested candidates' ability to use the multi-mix principle to plan menus and their understanding of principles that should be considered when planning menus.

This question was attempted by 54 per cent of the candidates. Overall performance on this question was satisfactory.

In Part (a), candidates were required to utilize the multi-mix principle to plan a day's menu. Generally, candidates scored highly on this section. The difficulty presented was that some candidates planned the lunch menu only. In addition, some candidates were not aware that legumes was one of the major groups in the mixes.

A model menu for adolescent teenagers attending a seminar is shown below:

Breakfast

Orange juice
Instant cereal/milk
French toast
(Two mix)

Snack

Ham sandwiches and tea
(Two mix)

Lunch
Oven Fried Chicken/Orange sauce
Jerked Lamb kebabs
Rice and Red beans
Tossed Salad
Fruit Punch
Pineapple slices
(Four mix)

Dinner
Fish Pie
Corn on the Cob
Vegetable Platter
Chocolate Brownies
(Three mix)

In the above day's menu, the multi-mix principle is utilized in that each meal is either a two, three or four mix. There is variety in colours, texture, flavours, cooking methods and foods chosen at each meal. It is also appealing enough for teenagers at it includes some foods popular among them such as instant cereal, French toast, juice or punch, chicken, kebabs, pie, corn on the cob and brownies. Even though popular foods are included, nutritional balance is maintained in each meal.

Part (b) was more challenging for candidates than Part (a), as candidates were required to outline menu planning principles. Some candidates misinterpreted the question and wrote about

designing a menu card. In cases where candidates interpreted the question correctly, some of the responses were repetitious.

Question 7

This question tested candidates' understanding of Caribbean dishes, portion sizes and quality assurance measures for preparing and serving meals. It was attempted by 46 per cent of the candidates. Overall, performance on this question was fairly good.

Performance on Part (a) was very good as the majority of candidates were able to suggest Caribbean dishes including entrees, carbohydrate dishes and desserts.

Part (b) which required candidates to outline strategies for portion control and give a reason for each strategy was not well done. There was much repetition in this section as candidates attempted to find answers. Weighing and measuring were often repeated. Expected responses included:

- Use of standardized recipes
- Use of scoops and other standard serving tools
- The use of service personnel to maintain the standard serving sizes
- Determination of size according to the type of service being offered
- Conducting yield tests to find out the number of portions in a dish

In Part (c), candidates were required to outline measures for ensuring the quality of food presented at a buffet lunch. Some of the popular responses given were: *serve at the right temperature, garnish each dish, avoid cross contamination by using a separate serving utensil for each dish.*

Expected responses included:

- Follow recipes carefully to ensure good flavour and texture
- Measure ingredients accurately
- Maintain high standards of kitchen hygiene
- Use HACCP principles
- Observe proper plating of food
- Use appropriate portion sizes
- Manage holding temperatures
- Use appropriate and attractive serving dishes

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