

CARIBBEAN EXAMINATIONS COUNCIL

**REPORT ON CANDIDATES' WORK IN THE
SECONDARY EDUCATION CERTIFICATE EXAMINATION**

MAY/JUNE 2010

**FOOD AND NUTRITION
GENERAL PROFICIENCY EXAMINATION**

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GENERAL COMMENTS

The 29th Food and Nutrition Examination was administered by the Caribbean Examinations Council in May/June 2010.

Paper 01 – Multiple-Choice Questions and Paper 02 – Structured Essay Questions

This examination took the form of two papers: (i) a multiple choice paper of 60 items worth 60 marks and (ii) a structured essay paper of seven questions worth 16 marks each. The structured essay paper was divided into Parts A and B respectively and reflected two profiles: candidates' ability to recall information, represented by the symbol K, and to use such information to give context, represented by the symbol UK.

Part A comprised three compulsory questions which were taken from the following modules: Module 3 – Diet Health and Nutrition; Module 6 – Food Preservation and Module 11 – Food Preparation Methods.

Part B comprised four optional questions which were taken from the remaining nine modules of the syllabus. Candidates were required to choose any two optional questions in addition to the compulsory questions. Eighty marks were available for this paper. In terms of popularity rankings, Question 5 was extremely popular; Questions 4 and 7 were of medium popularity while Question 6 was the least popular.

Overall candidates' performance was satisfactory.

Paper 03 – School Based Assessment

This paper consisted of three practical assignments; each valued 20 marks with a maximum total of 60 marks. All assignments were structured by the class teacher or groups of teachers. Assignments one and three were assessed by the class teacher, while assignment two was jointly assessed by the class teacher and an external moderator.

DETAILED COMMENTS

Paper 02 – Structured Essay Questions

Question 1

This question focused on Diet, Health and Nutritional Status. Generally the performance was satisfactory.

Candidates were required to explain the term 'vegan'; name one organization within the region that provides information on the benefits of becoming a vegan; state three effects other than obesity of a high-fat diet and explain two benefits of having adequate fibre in the diet. In addition, candidates were asked to plan an appropriate two-course lunch menu for a vegan and to suggest two lifestyle practices, other than diet, that one can follow to reduce body weight.

Part (a) was widely known. Most candidates were able to give a suitable definition for the term 'vegan' such as '*a strict vegetarian is someone who eats only plant food*'. Some candidates who may not have been familiar with the term 'vegan' indicated that a vegan is someone who wants to lose weight.

In Part (b), many candidates named known organizations such as CFNI, PAHO and local Home Economics associations that were involved in providing information on the benefits of becoming a vegan. A large number of candidates named local organizations for which they were awarded the mark.

Part (c) was generally well known by candidates. Popular answers were

- heart disease
- hypertension
- cancer
- stroke
- diabetes

Although the question specifically requested that candidates state three effects, **other than obesity**, of a high-fat diet on the body, a few candidates disregarded this and gave obesity as a response.

Part (d) (i) posed some difficulty to many candidates. They were able to state the benefits of having adequate fibre in the diet but struggled to provide an explanation.

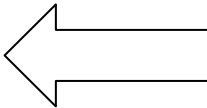
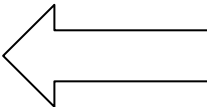
Some complete responses were as follows:

- Prevents varicose veins and hernias due to faeces being soft and bulky
- Fills the stomach and thus provides a feeling of fullness or satiety
- Soluble fibre lowers serum cholesterol by binding bile or fatty compounds
- Fibre absorbs water and binds other food residues to itself, thus ensuring that the faeces are soft and bulky and pass easily out of the body in minimum time
- Makes faeces soft and bulky thus prevents constipation

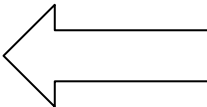
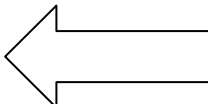
Many candidates were able to score at least 50 per cent of the marks available for Part (d) (ii). The unsuitability of the menu based on the fact that they listed meat and fish dishes coupled with an incorrect format made candidates lose marks. The format of a two-course menu comprises either **a main course and a dessert or an appetizer and a main course**. The menu should reflect dishes rather than ingredients or food as was seen in many of the menus produced by the candidates.

A sample of both menu types is as follows

A

Stewed Chunks and Beans Boiled Rice Red Cross Salad	Main Course 
Patriotic Pudding	Dessert 

B

Cream of Pumpkin Soup	Appetiser 
Casserole Chunks Seasoned Pasta Tossed Garden Salad	Main Course 

Please note carefully the basic features of the menus

- Correctness of format
- Suitability of dishes for a vegan
- Nutritionally balanced
- Variety in colour, texture and flavour

The majority of candidates suggested **exercise** as the lifestyle practice that one can follow in order to reduce body weight in Part (d) (iii). Very few candidates gave responses such as

- reduce stress
- obtain sufficient sleep
- limit alcohol intake
- eat meals on time
- avoid shopping when hungry
- do not watch television or read while eating
- seek counselling if you are emotionally disturbed

Although the question asked specifically to suggest two lifestyle practices, **other than diet**, few candidates gave diet-related practices.

Question 2

This question focused on Food Preservation. Candidates were required to state two benefits of preserving food, explain the term 'pickling' as used in food preservation, name two food preservation methods other than pickling and explain why pickled cucumber developed mould and string beans became discoloured and soft after removal from the freezer.

Additionally, candidates were required to explain how the removal of water and the use of chemicals could be applied in preserving fish that is scaled, washed and towel dried.

Part (a) (i) of this question was widely known as most candidates stated correctly two benefits of preserving food and therefore obtained full marks. Some suggested responses were as follows:

- To add variety and flavour to the menu by making foods available out of season
- To make use of food when it is cheap and plentiful and to store it for use
- Preserved foods are easier to handle, distribute and transport on a large scale than are fresh foods
- Prevent or retard natural and microbiological decay
- For convenience as frozen and canned foods are quick to prepare

In Part (a) (ii), many candidates explained with precision the term pickling which is the '**immersion of vegetables in vinegar to prolong shelf life or destroy microorganisms and enzymes**'.

Part (a) (iii) was well done as many candidates correctly identified two preservation methods **other than pickling**. The responses included

- dehydration
- bottling
- canning
- freezing
- sterilization

However, a significant number of candidates erroneously listed blanching as a method of food preservation. This misconception may be obvious since 'blanching' is aligned to the preservation of food particularly vegetables.

Part (a) (iv) (a) was challenging, although many candidates were able to give a correct response in favour of the development of mould in pickled cucumber, they found it difficult to give a plausible reason for its occurrence. Some popular responses were

- pickled cucumber was stored in a warm place which fostered the growth of mould
- bottles were not properly sealed hence air entered which facilitated mould growth
- the cucumber initially was spoilt therefore it became more susceptible to mould growth
- the contents of the bottle were submerged in the vinegar making room for mould to develop

In Part (a) (iv) (b), many candidates obtained at least two marks for explaining that discoloration and softening of the string beans, on its removal from the freezer was due to failure to blanch and as a consequence oxidation caused spoilage or discoloration. However, a large number of candidates attributed the softness of the beans to the formation of large ice crystals, but, were unable to explain in a scientific manner that the beans were frozen slowly, therefore the cell walls became swollen to capacity, ruptured and collapsed.

In Part (b), many candidates were unable to explain in a scientific manner how the **removal of water and use of chemicals** could be applied to preserving fish that is scaled, washed and towel dried. It was observed that some candidates misused the terms 'enzymes', 'bacteria' and 'micro-organisms' and invariably interchanged them.

A model answer to show the use of the scientific principles reads as follows:

*Add salt to fish to remove water by osmosis which leads to the destruction of micro-organisms.
Provide heat treatment to fish by solar drying or any other form to remove additional moisture
by evaporation which leads to the destruction of micro-organisms.*

Question 3

Food Preparation Methods was tested in this question and the performance was satisfactory. Candidates were asked to state two dry methods of cooking and two methods of steaming. They were also required to state two advantages of steaming, suggest an item that can be prepared from yeast dough and explain one effect excess sugar would have on a yeast dough product other than being too sweet. Candidates were asked to suggest one step that caused the crust of a mango pie made from short crust pastry to become hard and tough during the preparation of the pie and explain the steps taken to ensure a perfectly smooth, lump free roux-based cream of pumpkin soup.

Part (a) (i) of this question was well known. Many candidates obtained full marks. For Part (a) (ii), a large percentage of candidates were unable to state correctly two methods of steaming, however, they were able to describe the process accurately and therefore gained marks. There was also the element of guessing as methods of cooking were randomly named.

Examples of appropriate methods are

- plate method
- saucepan method
- tiered steamer
- stepped steamer
- perforated steamer

Many candidates were able to obtain full marks for correctly stating two advantages of steaming in Part (a) (iii).

Examples of popular responses were:

- Loss of nutrients by leaching is reduced as the food does not come in direct contact with water
- Food is easy to digest and has a light texture
- Healthy method of cooking hence suitable for convalescent cookery

- More than one food can be steamed at the same time
- Food maybe cooked quickly
- Little attention is required while the food is cooking except to replenish the water supply

The majority of candidates earned the mark that was awarded for Part (b) (i) by suggesting an item that can be prepared from yeast dough. Part (b) (ii) presented difficulty to some candidates as they were unable to explain the effect of excess sugar on the yeast dough other than being too sweet. An acceptable response for this section was *'too much sugar could retard the action of the yeast and weaken the gluten resulting in a product with a close texture'*.

In Part (b) (iii), many candidates explained with clarity why the crust of a mango pie was hard and tough and therefore earned full marks. Examples of responses were:

- The ingredients were too warm
- Over-kneading and heavy handling of pastry
- Incorrect proportion of ingredients, that is, too much water, too much flour, insufficient margarine
- Oven temperature too cool

A few candidates misinterpreted the question in Part (c). Rather than outlining the steps that contributed to a smooth lump free soup they wrote on the qualities of a good soup.

Suggested steps to follow to make the soup are dependent on one of two methods — the One Stage or the Roux method.

One Stage Method

- 1) Cook pumpkin until soft
- 2) Pass through a sieve or blend until smooth
- 3) Place fat, flour and liquid in a saucepan
- 4) Heat gently, stirring all the time until the mixture boils
- 5) Continue cooking for three minutes, stirring all the while until of a pouring consistency
- 6) Add pumpkin puree to roux stirring all the time
- 7) Bring to the boil and cook over moderate heat for 2 minutes, stirring all the time

Roux Method

- 1) Cook pumpkin until soft
- 2) Pass through a sieve or blend until smooth
- 3) Melt fat and flour, heat gently and stir for 1– 3 minutes
- 4) Remove from heat, gradually add the liquid stirring well at each addition
- 5) Return to the heat and bring to the boil, stirring all the time
- 6) Add vegetable to roux, stirring all the time
- 7) Bring to the boil and cook over moderate heat for 2 minutes, stirring all the time

Question 4

This question was of moderate popularity and generally candidates performed satisfactorily. Candidates were required to name two nutrients that can be obtained from the bran of the wheat grain, state two food preparation practices used prior to cooking that could affect the nutritive value of coloured vegetables, and to state two functions of protein in the diet of pre-schoolers. Candidates were also required to explain how the multi-mix principle could ensure adequate protein in the diet of pre-schoolers, suggest four guidelines mothers could follow to ensure that pre-schoolers eat nutritious foods and explain how one physical and one financial factor may negatively affect the nutrition of some elderly citizens.

This question was fairly well answered. Candidates were able to easily name dietary fibre or carbohydrate as one of the nutrients present in wheat bran and earned 50 per cent of the marks for Part (a) (i). However, iron, thiamine B1, riboflavin B2 and niacin are other nutrients present that were only considered by a few candidates.

It was quite clear that there was some misunderstanding with regard to Part (a) (ii) of the question as candidates gave methods of cooking rather than stated two practices done prior to cooking that may affect the nutritive value of coloured vegetables.

Acceptable responses included:

- Deep peeling that will remove vitamins and minerals under the skin
- Soaking
- Chopping and shredding very finely
- Slicing or peeling vegetables long before cooking

In Part (b) (i), most candidates obtained maximum marks by correctly stating two functions of proteins in the diet of pre-schoolers. In Part (b) (ii), it was evident that some candidates had a general idea of the 'multi-mix principle' and gave responses such as '*include foods from the six food groups*'.

Points to illustrate the multi-mix principle are as follows:

- Combine staple with food from animal
- Combine staple foods with legumes
- Combine two Low Biological Protein Foods

In Part (b) (iii), many candidates obtained maximum marks. They experienced no difficulty in suggesting four guidelines mothers could follow to ensure that pre-schoolers eat nutritious foods. Part (b) (iv) also did not pose any difficulty to most of the candidates as they gave some excellent points on physical and financial factors that are responsible for poor nutrition among some elderly.

Question 5

This question was the most popular of the optional questions. Candidates were required to state one use of each of four food preparation items in the illustration, and identify two features other than the ice maker and water dispenser to consider when selecting a refrigerator. In addition, candidates were required to name two items from a first aid kit that will be needed to treat an injury in which a small piece of broken glass was lodged in

Sarah's foot; to describe the correct steps to treat the injury; and finally to suggest four guidelines that should be given to a butcher in the local market to ensure that the meat sold is safe to eat.

Part (a) (i), was widely known. The majority of candidates correctly stated one use of each of the items in food preparation and service and therefore obtained maximum marks for that section. For Part (a) (ii), a number of candidates gave general points to consider when purchasing a refrigerator rather than identify two features found on modern refrigerators.

Acceptable responses for this section include

- digital displays
- push button defrosting
- automatic defrosting
- star rating for frozen food compartment
- temperature control button

Part (b) was well answered by most candidates. Most candidates named items in a first aid kit such as tweezers, cotton wool among others that would be necessary for the treatment of Sarah's cut and scored the marks allocated. For Part (b) (ii), most candidates obtained about 75 per cent of the marks by correctly describing the steps to treat Sarah's injury. For example:

- Raise injured foot
- Remove broken glass with tweezers
- Apply pressure with a clean pad for two minutes
- Clean cut by washing preferably with antiseptic solution
- Apply dressing or adhesive plaster firmly on cut

Part (c) was also fairly well done as most candidates suggested some practical ways to ensure that hygiene and safety practices are observed in the butcher shop.

Some interesting guidelines given by candidates were as follows:

- Ensure shop has a supply of running water
- Avoid using wooden cutting boards
- Do not refreeze thawed meat
- Sanitize cutting boards and knives
- Do not handle money and sell meat
- Ensure that the meat has been stamped

Question 6

This question was the least popular. Candidates were required to state two disadvantages of using convenience foods; explain the term 'extraction rate' as used in the processing of wheat into flour; state three characteristics that should be considered when purchasing 'fresh' fish; identify three methods by which heat is transferred during the frying of fish that is coated with batter; describe how each method of heat transfer identified works when frying fish; and describe three effects that heat will have on the batter (made from flour and water only) during frying.

Part (a) was done very well. Most candidates were able to state two disadvantages of convenience foods and therefore obtained full marks.

For Part (b), most candidates were unable to explain the term 'extraction rate' as used in the processing of wheat into flour. It was clear nevertheless that candidates were aware that the term is associated with the processing of flour, but they were unable to explain the term correctly. Extraction rate is described as the percentage of whole grain that remains in the flour after milling.

Part (c) (i) was well done. Many candidates stated three characteristics that should be considered when purchasing 'fresh' fish and therefore obtained full marks for this section. For Part (c) (ii), most candidates identified conduction and convection as the methods by which heat is transferred during the frying of fish but could not describe how each method works. Correct responses are as shown below:

Conduction

- Heat passes through the base of the pan due to vibration of molecules and gets in contact with the oil which becomes hot.

Convection

- As the oil is heated it becomes less dense and rises. Cooler oil being heavier flows downwards to heat source then the less dense oil goes to the top. This action continues until the item is cooked.

In Part (c) (iv), most candidates described two effects heat will have on batter (made from flour and water only) during frying. A small percentage of candidates included acceptable terms in their responses such as 'gelatinization', and 'dextrinization' and were awarded marks accordingly. Some correct responses are as follows:

- Batter will dextrinize on the outside due to the presence of starch and dry heat
- Due to the presence of moist heat gelatinization will occur within the batter
- Water will vaporize due to the presence of heat

Question 7

This question was of medium popularity. Candidates were required to define the terms 'à la carte' and 'buffet service'; state two factors to be considered when planning meals; plan a three-course dinner menu for an engagement party using rice, chicken, carrots, bread and tomatoes as the main ingredients; discuss two factors to be considered when planning the layout of the kitchen in order to enhance its efficiency; and explain how a pressure cooker works.

In Part (a) (i), most candidates stated a partial definition of the term 'à la carte'. The correct response is 'a list of dishes individually priced'.

In response to Part (a) (ii), a few candidates described buffet service as follows: *This is where a variety of foods is kept in warmers so that a person may pass with a plate and choose or take his own meal.* However, the description given by the majority of candidates reads thus: *Service in which the food and tableware are arranged on the serving table and guests help themselves.* Both descriptions were acceptable.

In Part (b) (i), candidates listed two factors to be considered when planning meals but in many cases they did not plan a three-course menu as required for Part (b) (ii). The components of a three-course meal are as follows:

First course or appetizer	Carrot Soup - Croutons
Second or main course	Baked Chicken with Onion Sauce Vegetable Rice Tomato Salad
Third course or dessert	Trifle

The scores obtained by many of the candidates for Part (b) (iii) seem to suggest that much emphasis was not given to this area of the syllabus. Whereas candidates were able to state appropriate factors, these factors were not discussed.

The following factors may be beneficial in planning an efficient layout of the kitchen:

- Consider where and how to position the sink, cooker, and refrigerator to minimize walking
- Kitchen surfaces should be easy to clean, to contain the spread of microbes
- Work tops should be of the correct height for the safety and comfort of the individuals
- Ensure good lighting and ventilation, to make accidents less likely
- Adequate ventilation, to get rid of steam and food smell
- Provide a first aid box or kit to treat common accidents
- Cupboards should be easy to reach, to avoid unnecessary stretching that may result in injury
- Floor should be non-slip to prevent accidents
- Provide a work surface next to the cooker to put hot pots and pans

A small percentage of candidates had adequate knowledge of how the pressure cooker works for Part (b) (iv) but for the most part, it was poorly answered. Many candidates resorted to giving the function of the parts of the pressure cooker. A complete response in point form reads:

- The pressure increases, indicated by a hissing sound
- Water boils at a higher temperature
- Steam is forced through the food, cooking it quickly