CARIBBEAN EXAMINATIONS COUNCIL

REPORT ON CANDIDATES' WORK IN THE ADVANCED PROFICIENCY EXAMINATION

MAY/JUNE 2011

GEOGRAPHY

GENERAL COMMENTS

This year, 2,088 candidates wrote the CAPE examinations in Geography. The number writing Unit 1 was 1,349 while 739 wrote Unit 2. The overall performance on Unit 1 was better than Unit 2, particularly in Paper 02.

There were some improvements in map-reading skills. However, the new areas of the revised syllabus presented some challenges in Module 2 (Hydrological, Fluvial, Coastal and Limestone Environments) of Unit 1 and Module 3 (Development and Disparities in Development) of Unit 2. It was evident that candidates had a weak grasp of the material in these two modules.

DETAILED COMMENTS

UNIT 1

Paper 01 – Multiple Choice

Paper 01 comprised 45 multiple-choice items with 15 items assessing each module across the three cognitive levels — Knowledge and Comprehension, Application of Knowledge and Practical Skills.

For Unit 1, the mean percentage score was 54.2 with a standard deviation of 9.6. For Unit 2, the mean percentage score was 55.2 and the standard deviation was 9.8.

Paper 02 – Free Response

Section A

Question 1

This question was compulsory and assessed map-reading skills. The question was based on an extract of St Vincent on a scale of 1:25 000. There was an improvement in performance compared with former years. In fact, the performance here was the best of all the questions with more than 40 per cent of the candidates earning over 25 marks. The marks earned ranged from 1 to 42.

Part (a) — the sketch outline of the coast (i), the locating of the settlements (ii) and the drawing of the road — was very well done but some candidates failed to reduce the scale to 1: 50 000. Some candidates did not follow the instruction to shade and name the settlements and a few of them took the road beyond London.

Part (b) was also generally well done. The majority of the candidates recognized the influence of relief, drainage, transportation or the distribution of settlements. They were less successful in Part (c) (i) and (ii) requiring a description and explanation of the drainage pattern. Most candidates described the main pattern — radial — although a few of them confused it with centripetal. However, they did not identify minor patterns, for example, the annular pattern to the north and east of the crater. They could have mentioned the fact that *eastward flowing streams were longer and more tortuous. The reasons for the pattern were the conical nature of the mountain, the fact that the summit was closer to the west than the east coast and the influence of the shape of the crater on the short subsequent streams*. Some candidates wrote from knowledge rather than from map evidence.

Part (d) was exceptionally well done and many candidates scored between 12 and 15 marks from a maximum of 15. However, a few candidates listed hurricanes and flooding as geological hazards. Acceptable responses were *volcanic eruptions, earthquakes, landslides when resulting from earthquake and emissions of toxic volcanic gases, bombs*. Candidates should note that volcanic eruptions are hazards and not volcanoes.

Part (d) (ii) was also well done. Candidates described areas that could be affected by a hazard as well as policy measures that could mitigate the effects such as *early warning systems, monitoring, building codes, exclusion zones*. In Part (d) (iii), however, a few candidates gave individual measures rather than responses from a disaster management agency. Part (d) (iv) was also well done. Candidates mentioned the benefits of tourism, research and agriculture arising from the nature of the area.

Module 1: Population and Settlement

Question 2

Part (a) (i) was well done. The majority of candidates were able to give a good definition of doubling time. However, they were less successful in trying to explain the effects of doubling time in Part (a) (ii). Instead, they focused on the effects of population growth. They were expected to distinguish between a situation in which the population of a country doubled itself in a short time and one in which doubling time was fairly long. In the former, population growth was rapid and this would slow the pace of economic development. A longer doubling time and slower growth had more favourable effects on development. In Part (b) (i), candidates were asked to calculate doubling time from a graph and the majority of them had no difficulty in interpreting the diagram.

In Part (c) (i), candidates did not understand the term *form* when applied to settlements. The terms 'form', 'pattern' and sometimes 'shape', were used interchangeably. 'Nucleated', 'linear' and 'dispersed' are terms used to describe the form of settlements. Many candidates discussed the hierarchy of rural settlements. As a result, Part (c) (ii) which required an explanation of their formation was poorly done. Even those candidates who correctly identified nucleated settlements discussed them in terms of urban rather than rural settlements as the question demanded. Nucleated rural settlements develop, for example, around mineral resources, in areas of intensive farming and at crossroads. Thirty-nine per cent of the candidates attempted the question. The mean on Question 2 was 10.15 and the range 0–25 marks.

Question 3

In Part (a) (i), a few candidates confused population distribution with density but the majority of them described distribution as the spread of people over the earth's surface. Similarly in Part (a) (ii), the majority identified the dot map as the method of depicting population distribution on a map. However, many candidates had difficulty describing a disadvantage of the method, for example, the difficulty of recalling data, the assumption that there is an even distribution and the choice of the right values.

The figure in Part (b) showed the relationship between GDP and per capita income of a country and candidates were asked to describe the condition of the population at three points on the graph. This

task posed a little difficulty. Similarly, most candidates were able to state at which point Canada would be located on the graph.

In Part (c), candidates were asked to write an essay explaining three causes and two consequences of suburbanization. The responses were poor. Candidates do not have a proper grasp of the term. They discussed rural-urban migration or decentralization, which, in either case, was incorrect. Suburbanization involves the movement of people from the centre towards the edges of the built-up area. There are social (congestion, crime), economic (ability to pay for the cost of travel) and political incentives to move. The movement produces, for example, an aging population in the centre. The mean on Question 3 was 10.03.

Module 2: Hydrological, Fluvial, Coastal and Limestone Environments

Question 4

The stimulus in Question 4 was a table presenting measurements of three rivers and in Part (a) (i), candidates were asked to calculate the hydraulic radius of each. Few candidates appeared to know the formula for the calculation. Since the answer to Part (a) (ii) (hydraulic radius, wetted perimeter, the most efficient stream) depended on the calculation in Part (a) (i), candidates resorted to guesswork. For Part (a) (iii), Stream C with the greatest hydraulic radius was the most efficient since the greater the hydraulic radius the greater the energy of the stream. Most candidates were able to identify ways in which human activity increased run-off.

Part (c) required candidates to outline two reasons why the mean velocity of a stream either remains constant or increases downstream. Most candidates could not describe downstream changes. As a consequence of the decrease in roughness, there were changes in the nature of the load and in the depth of the water.

Part (d) focused on three reasons why the surface of the limestone region is broken. The responses were poor. The reasons include micro features on the surface where rainwater stands in pools – karrens, fluting on the edges of clints — as well as macro features — swallow holes, uvalas.

This was a very popular question attempted by over 80 per cent of the candidates. Approximately four per cent scored 20 marks and more. The mean was 8.3 and the range 0–27.

Question 5

In Part (a), candidates were shown sketches of two drainage basins and asked to draw two storm hydrographs to illustrate the response of each to similar amounts of rainfall. The responses were fair but many candidates found this task difficult. The critical point was a determination of the lag — fairly long in the elongated and short in the circular basin.

In Part (b), candidates were asked to describe two land forms, for example, flood plains. Most of them correctly named the land forms but they explained their formation rather than described their appearance. The responses to Part (c) were extremely poor. The question required an explanation of the development of landforms resulting from the submergence of coastlines. Many candidates did not even attempt this section. When they addressed the question they ignored land forms of submergence — rias, estuaries, fiords, Dalmatian coast — and discussed deltas, spits etc.

Approximately 19 per cent of the candidates attempted this question. The mean at 3.86 was the lowest of all the questions and the range 0–19.

Module 3: Natural Events and Hazards

Question 6

In general, the performance on this question was extremely poor. Very few candidates were able to calculate the flooded area shown on the sketch map in Part (a) although they should have been assisted by the grid. This seems to be a neglected skill. A few candidates who were familiar with the procedure neglected to convert the answer to km^2 as requested.

In Part (b), candidates were asked to identify factors that affected the intensity of an earthquake. Some of them confused the word *intensity* with *effect* and gave as a response the time of day. Examiners expected a discussion of epicentre, focus and rock structure. A large number of candidates confused focus, the point at which pressure is released with epicentre on the surface.

In Part (c), candidates were asked to explain the absence of volcanism at transform margins and collision zones. Most candidates correctly linked the absence of volcanism to the fact that there was no subduction at these locations but too much time was spent discussing plate margins even when they had no relevance to the question.

In the final section, Part (d), candidates were required to give reasons why factors such as unusual animal behaviour, seismic activity and ground deformation were signs of an impending major earthquake. The responses were poor. Most candidates knew that they were signs but did not give reasons. However, there were a few candidates who wrote of the significance of the small shocks known to occur around the epicentre, and the seismic gap, strain energy causing land deformation and the possibility that animals were reacting to high frequency noises and the smell caused by methane leaks.

Slightly more candidates (51 per cent) responded to this question than Question 7. The mean mark earned by candidates was 6.7 and the range 0–22.

Question 7

This was the second of the two questions that were based on hazards. Part (a) tested candidates' knowledge of primary and secondary hazards and the responses were quite good. Lava flows, lahars, nuees ardentes are primary, while landslides, tsunami and fires are secondary effects of volcanic hazards.

In Part (b), candidates were required to briefly describe two methods of flood prediction. Flood hydrographs are constructed after precipitation events and are not predictive. Steam gauging, satellite observations and statistical models are employed. This section was not well done and it was clear that there is a knowledge gap.

In Part (c), candidates were required to outline two reasons to support engineers who argue against the construction of levees. There are several reasons. *Levees give a false sense of security and encourage*

building in potentially dangerous areas; they force floods to rise vertically rather than flow laterally and the higher the levee the higher the level of the river; they often fail. Very few candidates were able to find two convincing arguments against the construction of levees.

In Part (d), candidates performed fairly well. Shield volcanoes, cinder cones, strato/composite volcanoes were the most common constructional landforms described. However, many candidates described intrusive features which had no surface expression.

UNIT 2

Paper 02 – Free Response

Question 1

This was the compulsory map work question which was based on an extract of May Pen, Jamaica on a scale of 1:50 000.

Part (a) (i) required a description of the distribution of vegetation and it was well done. Most candidates correctly identified woodland trees and scrub, marsh/swamp and mangrove. Unfortunately, there were still many candidates who could not give correct grid references. The correct sequence is easting before northing. There were curious references such as 'west of easting' and 'north of northing' which were unacceptable. Just as unacceptable were references to 'above' and 'below' rather than 'north' and 'south'. Some candidates continue to name crops.

The question testing knowledge of quadrant analysis, Part (a) (ii), was very poorly answered. There is limited knowledge of this technique. In addition, candidates identified the wrong grid square.

Parts (b) (i) and (ii) were well done. The descriptions of agricultural land use were good in (b) (i) as were the accounts for the dominance of sugar cane in (b) (ii). However, the problem of grid references surfaced here and, in fact, throughout the question.

The majority of candidates scored no marks for Part (c). They were asked to identify internal disparities in a section of the map extract. They did not appear to understand that a comparison was necessary. For example, the forested, transport poor, eastern section was in marked contrast to the agricultural, industrial western section. Many candidates made no reference to the map. Other candidates who could not read grid references based their answers on the wrong areas.

Part (c) (ii) required policy initiatives to reduce disparities. Many of the responses given were not related to the areas in question. Others were unfeasible. There could have been suggestions for a nature reserve around the marshes and swamps or the possibilities for expansion around Salt River or the expansion of grazing in Harris Savanna.

The mean score was 16.3 and the range 0–38.

Module 1: Climate, Vegetation and Soils

Question 2

Just over 23 per cent of the candidates selected Question 2. In Part (a), candidates were required to draw a cross section of a hurricane. Most of them were unable to do so. They did not appear to understand what a cross section is and there was a failure to focus on wind direction. The majority of candidates was able to define soil texture and structure in Part (b) (i) but some of them confused the two and some examples would have strengthened the discussion.

Texture has far-reaching effects on soil properties but candidates did not fully appreciate the relationship needed in Part (c). Soil texture controls the size of pores and hence aeration and drainage. It affects the availability of nutrients and ease of cultivation. Candidates must be able to develop these relationships.

There were a few good responses to Part (d) (i) and (ii). Many candidates explained the different types of rainfall. They did not make the connection with adiabatic cooling and vertical movements or with orographic rainfall. Candidates mentioned the formation of fogs with lateral movement. The mean mark was 6.84 and the range 0–25 marks.

Question 3

About 78 per cent of the candidates selected this question. Most of them identified latosols as the soil profile represented in the diagram in Part (a) (i). However, although the majority of candidates identified leaching/eluviations as the process represented by the arrow in Part (a) (ii), their descriptions were not specific to the soil type — the removal of silica, leaving behind iron and aluminum and inhibiting the development of a clear boundary between A and B.

In Part (b), many candidates confused the term with heat budget. The majority of candidates understood the concept of the urban heat island in Part (c) and could state differences between the climate in urban and rural areas. They lost marks because they did not develop their responses.

Many candidates confused the vegetation of areas experiencing continental climate, Part (d), with that of the equatorial. Examiners expected a discussion of the variation as one moved from wetter areas near the rainforest through woodland and into dry areas with thorny species. The mean on this question was 9.14 and the range 0–27.

Module 2: Economic Activity

Question 4

Part (a) (i) required a definition for the term ‘biotechnology’. Many candidates defined biotechnology as improvement in technology (machinery). The term refers to *the use of biological agents to produce goods and services using scientific and engineering principles*. Candidates earned low marks in this

section. Performance on Part (a) (ii), the advantages and disadvantages of the use of biotechnology, was better. However, candidates were unable to expand their responses to gain six marks. They could have mentioned the modification of crops such as tomatoes in order to increase the shelf life and the success of efforts to improve the quality and output in plant and animal husbandry. However, there were threats to biodiversity and the threat of transfer of genetic material to weeds making them difficult to control.

The stimulus material in Part (b) (i) comprised three pie charts showing employment by sector in less developed countries (LDCs) and more developed countries (MDCs). Candidates were asked to identify differences in employment. Candidates tended to compare within LDCs and MDCs rather than describe differences with different levels of development. Some of them attempted to give reasons for differences and this was not required.

In the final part, (b) (ii), candidates were asked to explain why the size of the tertiary sector may be seen as an indicator of the stage of economic development. They did not appear to grasp what was needed. Many candidates did not know what the tertiary sector comprised. They failed to discuss the implication of the movement from the production of raw materials to that of services. Seventy-four per cent of the candidates responded to this question. The mean mark was 9.7 and candidates earned from 0 to 26 marks.

Question 5

Twenty-six per cent of the candidates attempted this question. The majority was able to name four of the six stages of Butler's Tourist Resort Life Cycle although the spelling was unacceptable — exploration, involvement, development, consolidation, stagnation, decline. The majority also could name a country at the fourth stage in Part (b) (ii). The table in Part (b) showed shares of world manufacturing production. The majority of candidates could not interpret it. Some of them ignored the table and gave reasons for the changes in the manufacturing industry.

In Part (c), candidates were asked to discuss factors responsible for industrial change in an LDC outside the Caribbean. Several of them selected a Caribbean country. Candidates struggled because it was clear that they were unfamiliar with an actual case study. They could have focused on India where there was a move from chemical and manufacturing industry to high technology industries after the accident at Bhopal. The government enacted policies such as trade liberalization and invested in research and development. They took advantage of their strategic location in Asia; the size and cost of the labour force whose knowledge of English is an asset as well as the development of off-shoring.

The mean mark earned by candidates was 9.69 and the range 0–26 marks.

Module 3: Development and Disparities in Development

Question 6

Approximately seventy-eight per cent of the candidates responded to Question 6. In Part (a), they were asked to describe the trend in Australian aid as depicted in line graphs. The problem was the same as that experienced in previous years. Candidates described the rise and fall of every line in every year and failed to comprehend the implication of the word 'trend'. With the exception of East

Asia, there was little change in the level of aid to the countries shown over the period. Aid to Papua New Guinea and Africa declined slightly while that to the Pacific and South Asia increased marginally.

East Asia showed two periods of decline, 1996–1997 and 2000–2001. This is a trend. The question was allocated a maximum of four marks and there was no need for candidates to write pages. Few candidates were familiar with the Physical Quality of Life Index, a composite of infant mortality, life expectancy and adult literacy. Candidates should not confuse adult literacy with education.

In Part (c), candidates were asked to discuss ways in which aid to developing countries could stimulate and harm development. The performance here was below expectation because the question was very similar to one asked in 2010 — ways in which aid can stimulate growth. The comments on the 2010 performance which appeared in the Report on Candidates' work, 2010 are still relevant: *The responses were the type of simplistic statements that one would expect of candidates who were guessing. Aid, they said, was used to build houses*. (p 9)

The same could be said of responses in 2011. There has been no improvement. Candidates could have pointed to the examples of Korea and Taiwan where aid was targeted and directed to specific problems and where there was success. But aid often comes with conditions and policies not suited to the local environment. There is the example from Jamaica where social services were neglected.

Part (d) which focused on gender disparities was very poorly done and revealed several gaps in candidates' grasp of concepts such as life expectancy at birth and sex ratio at birth. In so far as life expectancy is concerned, women live longer. The mortality gap widens over the life course, for example, risky lifestyles of men and dangerous occupations. Regarding the sex ratio at birth, candidates should discuss the preference for boys in many societies and the technology that allows selective abortions. In education, a higher percentage of women is illiterate and in many countries, fewer girls are enrolled in primary schools. Candidates could discuss the opposition to the education of girls in many countries and the many reasons why girls are kept at home. It should be noted that the question stipulated enrolment and not attendance at school. So the poor attendance of boys in some Caribbean countries is not really relevant.

The mean mark earned by candidates was 8.45 and the range 0–27 marks.

Question 7

Twenty-one per cent of the candidates attempted this question and responses were extremely poor. Candidates were required to draw a line graph in Part (a) and most did so competently. A few of them produced scatter diagrams while some had difficulties with the axes and scale.

In Part (b), most candidates wrote acceptable definitions of external debt — *the proportion of total debt owed to creditors outside the country* — as well as sustainable development — economic growth and *social progress that do not harm the prospects of future generations*.

Candidates failed in their attempt to apply Myrdal's model to an actual case study as required in Part (c). Most candidates described the model. The approach of one candidate was instructive. S/he tried to apply the model to regional disparities in income in Trinidad. S/he described the advantages which Port-of-Spain possessed and which allowed it to develop as the core region. Workers and investment were drawn into the core (backwash) and the core expanded. Incomes expanded in Port-of-Spain and

since migrants and resources were drawn from the south, the south of Trinidad remained, in effect an impoverished agricultural area.

It is clear that the candidate understood how cores develop and the backwash as described by Myrdal. However, s/he did not have a case study and so s/he drew upon popular notions in the capital about the relative backwardness of the south. This is not a true picture of regional development in Trinidad where the south is the centre of the petroleum industry and a hub of industry. The candidate had no difficulty with the model and could have done very well if s/he had information on an actual case. Many candidates did not attempt this section. In fact, many of them wrote just a few lines on this entire question.

In Part (d), candidates were required to discuss two ways in which insularity can be an obstacle to the development of small island states (SIDS). Too many candidates did not know the meaning of insularity — their being islands. They could not discuss, for example, the problems of international transport of goods, the small size of cargo and increased costs.

Candidates and teachers are encouraged to prepare adequately in order to respond to those questions where specific information on areas studied is requested.

The mean mark on this question was the lowest, 6.08, and the range 0–15.

Paper 031 – School-Based Assessment (SBA)

There was an improvement in the quality of the SBAs this year, in the sense that there were fewer poor submissions. However, there were also fewer excellent studies. There was also an improved understanding of the requirements of the SBA by teachers and the differences in the marks awarded by teachers and the moderators were less than in former years. Nevertheless, a few extremely poor studies were highly rewarded by teachers.

In many of the studies, the focus of the methodology was on how the data were collected. Some candidates went into great detail about the journey, the subdivision of the class, the description of the instruments used, the measurements. They said little or nothing about what was done with the data collected.

Many of the studies were descriptive, and the description, especially the analysis, left much to be desired. As in previous years, questionnaires were the most favoured information gathering tool and in many instances, they were inappropriately used. For example, questionnaires were used to collect information on geomorphic changes along a stretch of coastline. In addition, there was a tendency to analyse each question on the questionnaire. Candidates would present a pie chart illustrating the responses to a particular question and then describe what is shown in the pie chart. Each question was treated in this form. This is unacceptable. Each question is part of the larger picture which the candidate is presenting. Moreover, candidates should be reminded that maps and diagrams in geography are tools that replace words. Candidates should use diagrams to underscore the point being made, making reference only to what is important.

In addition, more attention must be paid to the quality of the illustrations. The pie charts and bar graphs that were indiscriminately used were inadequately labelled and the units of measurement were often missing. Sketch maps were few. There should have been more river cross profiles, beach

profiles and transects. There was too much reliance on graphs created by Excel and other software. Site maps were missing from many of the studies, were poorly constructed or not integrated and actually used in the body of the study.

Fluvial processes and coastal features/processes were very popular topics and some were very good. However, in general, the coastal studies were too descriptive. There was an increase in the use of statistical tests to measure relationships and this should be commended.

More attention must be paid to citations. Many were incomplete. Some were irrelevant. A study of rivers ought to include at least one text which deals with rivers.

Teachers and candidates *must* ensure that the topics chosen are relevant to the syllabus. Several studies were not relevant to the particular unit and in a few cases, not in the syllabus. Inconsistent marking could work against the interest of high achieving students. Adjustment to the marks of weaker studies could pull down the marks of the more deserving. For the same reason there *must* be consultation between teachers when two in one school present studies for moderation. Teachers must ensure that the standard adopted is the same.