CARIBBEAN EXAMINATIONS COUNCIL

Caribbean Advanced Proficiency Examination®

SYLLABUS

GEOGRAPHY

CXC A21/U2/09

Effective for examinations from May–June 2010

CAPE®

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NOTE TO TEACHERS AND LEARNERS

This document CXC A21/U2/09 replaces CXC A21/U2/03 issued in 2003.

Please note that the syllabus has been revised and amendments are indicated by italics.

First issued 2002
Revised 2009
Amended 2016

PLEASE NOTE

This icon is used throughout the syllabus to represent key features which teachers and learners may find useful.

Introduction

The Caribbean Advanced Proficiency Examination (**CAPE®**) is designed to provide certification of the academic, vocational and technical achievement of students in the Caribbean who, having completed a minimum of five years of secondary education, wish to further their studies. The examinations address the skills and knowledge acquired by students under a flexible and articulated system where subjects are organised in 1-Unit or 2-Unit courses with each Unit containing three Modules. Subjects examined under CAPE may be studied concurrently or singly.

The Caribbean Examinations Council offers three types of certification at the **CAPE®** level. The first is the award of a certificate showing each **CAPE®** Unit completed. The second is the **CAPE®** Diploma, awarded to candidates who have satisfactorily completed at least six Units, including Caribbean Studies. The third is the **CXC®** Associate Degree, awarded for the satisfactory completion of a prescribed cluster of *eight* **CAPE®** Units including Caribbean Studies, Communication Studies *and Integrated Mathematics. Integrated Mathematics is not a requirement for the **CXC®** Associate Degree in Mathematics.* The complete list of Associate Degrees may be found in the **CXC®** Associate Degree Handbook.

For the **CAPE®** Diploma and the **CXC®** Associate Degree, candidates must complete the cluster of required Units within a maximum period of five years. *To be eligible for a **CXC®** Associate Degree, the educational institution presenting the candidates for the award, must select the Associate Degree of choice at the time of registration at the sitting (year) the candidates are expected to qualify for the award.* Candidates will not be awarded an Associate Degree for which they were not registered.

Geography Syllabus

♦ RATIONALE

Geography is a discipline transcending the boundaries of the natural and social sciences. Central to the development of geographical understanding is the ability to appreciate how physical and human forces interact to give identity to places and to create recognisable spatial patterns. The study of Geography allows a clear understanding of causal relationships at different geographic scales - local, regional and global. It facilitates an understanding of many of the central issues emerging from human exploitation of natural resources.

A course in CAPE Geography must cultivate in students an appreciation of the complexity and inter-relatedness of the environment in the Caribbean and the wider world. Specifically, the course in CAPE Geography must respond to the needs of individuals and society. For individuals, it must respond by deepening their interest in geographical knowledge and skills and enabling them to pursue higher education goals. It must also equip individuals for the increasing number of work situations in which integrative and graphical skills are important. For the society, it must respond by creating an awareness of *the importance of living in harmony with the environment. It must foster an informed respect for cultural heritage and an understanding of the need for the sustainable use of resources and the consequences of their misuse.*

♦ AIMS

The syllabus aims to:

1. develop an understanding of the location and distribution of geographic phenomena;
2. develop an understanding of the nature of Physical and Human Geography and their interactions;
3. explain the processes at work in Physical and Human Geography;
4. develop an understanding of the environmental consequences of human action;
5. develop an appreciation of the current social and economic problems in their geographical setting;
6. encourage an appreciation of the dynamic nature of Geography;
7. help in the understanding and application of spatial models and concepts to the study of Geography;
8. develop an understanding of the range of techniques, the acquisition of practical skills, and an appreciation of information technology that enhance geographical knowledge;
9. create awareness of the variety of Caribbean environments through field activities;

10. promote knowledge and understanding of world geography;

11. develop an understanding of the place of the Caribbean in the wider world;

12. encourage a critical and reflective approach to the study of Geography.

♦ SKILLS AND ABILITIES TO BE ASSESSED

The skills and abilities which students are expected to have developed on completion of the syllabus have been grouped under three main headings:

(i) Knowledge and Comprehension;
(ii) Use of Knowledge;
(iii) Practical Skills.

Knowledge and Comprehension (KC)

The ability to:

- define terms and recall facts on a range of geographic phenomena;
- describe geographical processes;
- describe factors contributing to the development of natural and human environments;

Use of Knowledge (UK)

The ability to:

Application	- use facts, concepts and principles in unfamiliar situations;
Analysis and Interpretation	- organise information as a basis for classification, apply skills to illustrate geographical phenomena, interpret and make inferences from geographical data, compare and contrast geographical information, and appreciate the limitations of data;
Synthesis	- combine parts to make a meaningful whole and draw conclusions from geographical information;
Evaluation	- make judgements based on evidence and make relevant recommendations.

Practical Skills (PS)

The ability to:

- use scales for measurement;
- interpret maps and a variety of stimulus material used in Geography;
- collect and collate data used in geographic analysis;
- select techniques and methodologies appropriate to different contexts;
- draw maps, diagrams, sketches and graphs;
- use quantitative techniques appropriately.

♦ PREREQUISITES OF THE SYLLABUS

Any person with a good grasp of the Caribbean Secondary Education Certificate (CSEC) Geography Syllabus, or the equivalent, should be able to pursue the course of study defined by this syllabus. However, success in the course of study will also depend on the possession of good verbal and written skills.

♦ STRUCTURE OF THE SYLLABUS

This syllabus consists of two Units of 150 hours each, comprising three Modules of 50 hours each. Each Module is compulsory. Each Unit comprises a physical, human and integrated component.

Each Unit forms a coherent course of study, which should prepare candidates for the world of work, and further studies at the tertiary level.

Unit 1: Population Geography, Geomorphic Processes and Hazards

Module 1	-	Population and Settlement
Module 2	-	Hydrological, Fluvial, Coastal and Limestone Environments
Module 3	-	Natural Events and Hazards

Unit 2: Climate, Economic Activity and Development

Module 1	-	Climate, Vegetation and Soils
Module 2	-	Economic Activity
Module 3	-	Development and *Disparities in Development*

♦ UNIT 1: POPULATION GEOGRAPHY, GEOMORPHIC PROCESSES AND HAZARDS

MODULE 1: POPULATION AND SETTLEMENT

GENERAL OBJECTIVES

On completion of this Module, students should:

1. understand the factors affecting the growth and distribution of human populations and the forms and functions of their settlements;
2. *develop an understanding of demographic processes;*
3. develop appropriate skills and techniques in Human Geography.

SPECIFIC OBJECTIVES

Students should be able to:

1. *explain the factors that influence population distribution using case studies;*
2. assess the methods that depict population distribution;
3. *analyse components of population change;*
4. *analyse the components of population structure;*
5. explain the causes and consequences of population change;
6. assess the method of depicting population density;
7. explain the factors that influence population density;
8. explain the relationship between population density and resources;
9. analyse the types, patterns and factors affecting the location of rural settlements;
10. analyse changes in rural settlements in *more developed countries* (MDCs);
11. *apply urban models to the growth of the city and the development of functional zones in less developed countries (LDC);*
12. explain the processes and problems of urbanisation in MDCs and LDCs and the solutions to urban growth;
13. use topographical maps to analyse population distribution and settlement patterns;
14. apply appropriate investigative and practical techniques.

UNIT 1
MODULE 1: POPULATION AND SETTLEMENT (cont'd)

CONTENT

1. ***Population Distribution***

   (a) Factors influencing population distribution on a global scale.

   (b) *Case studies of factors affecting population distribution at a local and regional scale.*

   (c) Methods of depicting population distribution- dot, *Lorenz curves*.

   (d) The merits and demerits of the methods of depicting population distribution.

2. ***Population Change – Natural***

   (a) Factors influencing birth rate, death rate, natural increase, fertility rate, *life expectancy, doubling time.*

   (b) The demographic transition model and its applicability to the experiences of developed and developing countries.

   (c) *Population policy – case studies of pro-natalist and anti-natalist policies.*

3. ***Population Change – Migration***

   (a) Types of migration: *international, internal, permanent, temporary, voluntary, forced.*

   (b) *Causes and consequences to source (sending) and host (receiving) countries. Case studies.*

   (c) *Calculation of population growth rates and construction of flow lines.*

4. ***Population Structure***

   (a) Population structure in LDCs and MDCs.

   (b) Construction and interpretation of population pyramids.

   (c) Interpretation of population structure in LDCs and MDCs.

   (d) Dependency ratios - calculation and implications.

   (e) *Youthful and ageing populations. Case studies.*

UNIT 1
MODULE 1: POPULATION AND SETTLEMENT (cont'd)

5. ***Population and Resources***

   (a) Population density and method of depicting population density –choropleth maps.

   (b) The merits and demerits of choropleth maps.

   (c) Optimum population, underpopulation and overpopulation.

   (d) *Carrying capacity and factors influencing changes in carrying capacity.*

   (e) Models of population growth in relation to resources –Boserup and Malthus.

6. ***Settlement Processes***

   (a) *Rural settlements – types and patterns.*

   (b) Physical and human factors affecting the location of rural settlements. Case study.

   (c) *The effects of changes in rural settlements in MDCs.*

   (d) The process and problems of urbanization in MDCs and LDCs *including the rank –size rule and primacy.*

   (e) *Causes and consequences of sub-urbanization, counter-urbanization, re-urbanization or gentrification in MDCs.*

   (f) The models of Burgess, Hoyt, Ullman & Harris *and their applicability to cities in the developing world.*

   (g) Solutions to urban growth in MDCs and LDCs.

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives of this Module, teachers are advised to engage students in the teaching and learning activities listed below.

1. Use transparencies to show world population distribution and discuss patterns.

2. Use overlays with relief and vegetation to show relationship between population distribution, landforms and vegetation.

3. Teach students how to construct and interpret dot maps and choropleth maps using statistics. Care must be taken to distinguish between map representation of distribution and density.

4. Advise students to collect population statistics from the Internet and use these to construct population pyramids for a MDC and a LDC.

5. Have students design and administer questionnaires to conduct a survey on population movement in a neighbourhood.

6. Teach students to construct flowline maps depicting population movement, including migration in and out of the Caribbean.

7. Use topographic maps to identify and analyse settlement patterns.

8. Organise group presentations on urban problems and solutions.

Please note that many of these activities can be used in preparation for the School-Based Assessment.

RESOURCES

Chrispin, J. and Francis, J. — *Population Resources and Development,* London: Collins, 1996.

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UNIT 1
MODULE 2: HYDROLOGICAL, FLUVIAL, COASTAL AND LIMESTONE ENVIRONMENTS

GENERAL OBJECTIVES

On completion of this Module, students should:

1. develop an understanding of geomorphic processes;

2. develop appropriate skills and techniques in Physical Geography.

SPECIFIC OBJECTIVES

Students should be able to:

1. explain the main concepts, flows and processes associated with the hydrological cycle, fluvial, coastal and limestone environments;

2. explain hydrological, fluvial, coastal and limestone processes which influence the development of related landforms;

3. analyse the factors which affect the processes operating within drainage basins and within coastal and limestone environments;

4. explain the effects of human and physical interactions within drainage basins and within coastal and limestone environments over time;

5. apply concepts and processes related to drainage basins, rivers, coastal and limestone environments at different geographical scales;

6. *analyse the effect of sea level changes on rivers and coastal landforms;*

7. apply map reading skills, appropriate investigative and practical techniques *to the identification of hydrological, fluvial, coastal and limestone environments.*

CONTENT

1. ***Hydrology***

   (a) Concepts associated with the hydrological cycle and the river basin.

   (b) Major flows and factors influencing flows within the hydrological cycle, *including precipitation, stem flow, interception, channel precipitation, pathways of water movement, storage.*

   (c) The storm hydrograph and water budgets (spatial and temporal changes).

(d) Climatic, physical and biotic (human and vegetation) factors affecting drainage basin characteristics and flows.

(e) Factors influencing drainage patterns, drainage density *and their measurements, including stream ordering.*

2. ***Fluvial Processes and Landforms***

(a) Concepts associated with fluvial landforms and processes, (include competence and capacity) erosion, transportation, deposition.

(b) The major flows and processes operating within the river channel, including types of flow and variations of flow.

(c) *Stream channel morphology, including width, depth and wetted perimeter.*

(d) Stream channel characteristics, including meandering.

(e) The influence of physical, biotic (human and vegetation) and geological factors on the long and cross-profiles of rivers, valleys and changes over time. *Include sea level changes.*

(f) The measurement and calculation of stream velocity, stream width, and channel geometry.

(g) Weathering and its influence on river basins: aerial and sub-aerial processes.

3. ***Coastal Processes and Landforms***

(a) Wave formation, structure, types.

(b) Major flows (for example, longshore drift) and processes (for example, marine erosion, deposition and wave refraction) operating in coastal environments.

(c) The influence of the processes of erosion, transportation and deposition on the development of related landforms, including cliffs, beaches, bars.

(d) Formation and distribution of coral reefs (including the theories). *Threats to coral reefs.*

(e) The influence *of human* and geological factors (rock type and structure) on the shape and form of coastal landforms.

(f) *The influence of sea level changes on coastal landforms.*

4. **Processes and Landforms in Limestone *Environments***

   (a) Characteristics of limestone as a rock.

   (b) Chemical weathering *processes and* limestone. *Include formula.*

   (c) *Characteristics and development of limestone landscapes. Cite specific examples.*

   (d) *Factors affecting the development of limestone landscapes.*

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives of this Module, teachers are advised to engage students in the teaching and learning activities listed below.

1. Use diagrams in the teaching of concepts and flows, such as the hydrological cycle, the storm hydrograph and water budgets.

2. Illustrate how the shape of the storm hydrograph reflects factors operating within the drainage basin, for example, in rural and urban environments.

3. Integrate the following concepts in the teaching of hydrological cycle – precipitation, evaporation, evapotranspiration, interception, infiltration, percolation, runoff, overland flow, base flow, through flow, field capacity and soil moisture deficit.

4. Promote a holistic understanding of the drainage basin as being influenced by climatic, physical and biotic factors.

5. Use case studies, for example, Caribbean examples of water budgets or hydrographs, in the teaching and assessment of this topic.

6. Compile a list of interesting websites on hydrology where students can extend their knowledge and view 3-dimensional simulations of flows and processes.

7. Organize simple field exercises where students can measure and calculate stream velocity, stream width and channel geometry.

8. Select at least two contrasting rivers to be used as case studies in the study of concepts, processes and landforms. This will help students to apply general and theoretical understandings to examples of concrete phenomena.

9. Use topographic maps to show how geology, vegetation and human factors influence the long and cross-profile of rivers.

10. Discuss with students the variety of coastal environments found in the Caribbean, for example, volcanic, limestone, mangrove, coral reefs, deltas and estuaries. This will provide a framework for the study of coastal flows and processes.

11. Teach students the rudiments of drawing and labelling of field sketches.

12. Discuss with students the range of limestone landscapes. Change in limestone landscapes over time should be highlighted.

13. Use topographic maps to integrate concepts related to rivers, coasts and limestone.

14. Incorporate the formula describing the chemical weathering of limestone into the teaching of this topic.

Please note that many of these activities can be used in preparation for the School-Based Assessment.

RESOURCES

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UNIT 1
MODULE 3: NATURAL EVENTS AND HAZARDS

GENERAL OBJECTIVES

On completion of this Module, students should:

1. understand *and appreciate* the differences between natural events and natural hazards;
2. *appreciate the relationship between the natural and human environments;*
3. *develop appropriate skills and techniques in Geography.*

SPECIFIC OBJECTIVES

Students should be able to:

1. distinguish *among* a natural event, a natural hazard and a *disaster*;
2. describe the different types of hazards;
3. explain the causes and consequences of flooding;
4. explain as natural events, the formation of plates and the processes involved in the movement of plates;
5. describe the distribution and characteristics of landforms resulting from plate movement;
6. describe the impact of floods, volcanoes and earthquakes as hazards;
7. assess the responses to hazards;
8. *use topographical maps to analyse vulnerability to hazards*;
9. apply appropriate investigative and practical techniques.

CONTENT

1. *Natural Events, Hazards and Disasters*

    (i) Concept of a natural event, hazard and *disaster*.

    (ii) Types of hazards – technological, tectonic, climatic and geomorphological.

UNIT 1
MODULE 3: NATURAL EVENTS AND HAZARDS (cont'd)

2. ***Flooding***

   (i) *Types of floods - riverine, coastal, estuarine.*

   (ii) Causes of floods - types of precipitation events, influence of human activity, sea level changes, drainage basin characteristics.

3. ***Plate Tectonics***

   (i) Continental drift and plate tectonics.

   (ii) The formation of plates, global distribution and the direction of movement of plates.

   (iii) Processes operating at different types of plate margins and hot spots.

   (iv) *Earthquakes - magnitude, relationship to plate boundaries, seismic waves and faulting.*

   (v) *Distribution and characteristics of volcanoes in relation to plate boundaries.*

   (vi) Formation of island arcs and origin of fold mountains.

   (vii) Positive impact of volcanic and earthquake activity.

   (viii) Value of folded and faulted landscapes.

4. ***Volcanoes, Earthquakes and Floods as Hazards***

   (i) Earthquakes - *primary and secondary effects and factors influencing these effects.*

   (ii) Types of volcanic eruptions, characteristics of volcanic material, nature of the hazards.

   (iii) Case studies of the negative impact of floods, earthquakes and volcanic eruptions.

   (iv) *Photo interpretation, hazard risk maps.*

5. ***Response to Hazards***

   (i) Current capabilities in predicting earthquake, flooding and volcanic activities.

   (ii) Individual and collective responses to earthquake, floods and volcanic hazards before the occurrence and after the occurrence.

   (iii) Government responses to hazards - earthquakes, floods and volcanoes.

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives of this Module, teachers are advised to engage students in the teaching and learning activities listed below.

1. Provide students with opportunities for organising and categorising an array of different hazards. In this way students will grasp the variety of types of hazards that occur. This exercise also provides opportunities for teachers and students to choose a hazard for purposes of School-Based Assessment that is different from those emphasised in the syllabus. Thus, if landslides are more contextually relevant to certain locations than floods, volcanoes or earthquakes, then students and teachers can offer a study of such phenomena for the School-Based Assessment.

2. Organise discussions with students so that the distinction between natural events and hazards becomes clear. For example, the effect on man is important in defining an extreme event as either a natural event or a hazard. At the same time, the role of man is also important in creating and intensifying the risk of hazards.

3. Vary the kind of studies offered for School-Based Assessment. For example, if one's context does not offer suitable studies of natural events and hazards, the interpretation of photographs could be used.

4. Explore the use of different resources as an aid in the teaching of this topic. For example, the Internet can provide up-to-date information, such as photographs, statistics and commentaries on news, such as a recent hazard.

5. Advise students to undertake research on natural events and hazards in libraries and on the Internet. Discuss the findings. This would enable students to have a better understanding of the concepts of plate margins, hazards and natural events.

6. Organise a debate between two (2) groups of students on positive and negative effects of volcanic and/or earthquake activity. Positive effects of earthquakes that can be researched by students include value of seismic waves in revealing the interior structure of earth, other scientific value, formation of scenic landscapes, exposure of economic minerals, and formation of waterfalls.

7. Organise visits to areas that have experienced disasters. The visits could assist students to appreciate the causes and consequences of different types of hazards.

8. Advise students to compile records in scrapbooks with photographs and newspaper clippings as sources of current information. This should provide material for students to develop case studies.

9. Utilize documentaries from audio visual and other media to broaden and deepen knowledge of different types of hazards and responses.

Many of these activities can be used in preparation for the School-Based Assessment.

Note to Teacher:

Transcend the normal disciplinary boundaries of geography. This topic is integrated (physical and human) and interdisciplinary. Thus, there is a general sociological input in this issue that should be teased out in "Response to Hazards". For example, it is evident that how people respond to a disaster is linked to the concept of symbolisation - disasters create an image which is uniform, compelling and shared by those who experience the event. However, victims of earthquakes and other disasters, if not injured, become a significant source of help, if they are trained in first aid.

RESOURCES

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Caribbean Examinations Council	*Population Geography, Geomorphic Processes and Hazards, Unit1, 2009.*
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♦ UNIT 2: CLIMATE, ECONOMIC ACTIVITY AND DEVELOPMENT

MODULE 1: CLIMATE, VEGETATION AND SOILS

GENERAL OBJECTIVES

On completion of this Module, students should:

1. understand the principles governing climate and weather systems, the development of vegetation and soil;
2. develop appropriate skills and techniques in Geography;
3. apply appropriate investigative and practical techniques.

SPECIFIC OBJECTIVES

Students should be able to:

1. explain the factors affecting the receipt of solar radiation;
2. explain the factors influencing atmospheric circulation;
3. explain the conditions influencing and resulting from moisture in the atmosphere;
4. explain weather systems and their associated conditions;
5. *analyse climate change and global warming;*
6. explain microclimates and the formation of local winds and fogs in mountains and valleys;
7. explain the distribution and the characteristics of the major types of vegetation;
8. explain soil formation, soil types, soil erosion and conservation;
9. explain the interrelationships among climate, soil, vegetation and human activities;
10. use topographical maps to analyse the distribution of vegetation;
11. apply appropriate investigative and practical techniques.

CONTENT

1. ***Atmosphere and Weather Systems***

   (i) Global heat budget*, including long and short wave radiation, albedo.*

(ii) Global surface and upper wind circulation, *including jet streams, Rossby waves.*

(iii) Global patterns of vertical and horizontal temperature and pressure variations.

(iv) Atmospheric humidity (absolute and relative humidity).

(v) Condensation, types of precipitation*, types of rainfall and mechanisms of raindrop formation.*

(vi) Lapse rates.

(vii) Weather conditions resulting from atmospheric stability, instability and *conditional instability.*

(viii) Development of high and low pressure systems: anticyclones, depressions, hurricanes, Inter Tropical Convergence Zone (ITCZ) *and weather conditions associated with weather systems, air masses and fronts.*

(ix) Interpretation of synoptic charts.

(x) *Long and short-term climate change, global warming – causes, effects, solutions.*

(xi) The concept *of microclimates.*

(xii) Urban, rural and mountain microclimates.

2. ***Vegetation Types***

(i) The distribution and characteristics of tropical rainforest, tropical grasslands, temperate grasslands, northern coniferous forests.

(ii) The relationships between vegetation types and climate and human factors.

(iii) The opportunities and problems associated with the development of the tropical rain forests.

(iv) Variations in vegetation in response to differences in rock type, altitude, slope angle and drainage in a local area.

(v) Vegetation studies using quadrats and transects.

3. ***Soil Formation and Soil Conservation***

(i) The nature and properties of soil: soil profile, texture, structure, organic matter content, water, air.

(ii) *Processes of soil formation, including weathering, leaching.*

(iii) The interrelationships among parent material, climate, vegetation, topography, human activity and time on soil formation.

(iv) The formation *and characteristics* of the soil types which develop under tropical rainforest and temperate grasslands.

(v) The study of soil horizons in the field.

(vi) *Soil erosion and effectiveness of soil conservation methods, including agroforestry. Cite specific examples.*

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives of this Module, teachers are advised to engage students in the teaching and learning activities listed below.

1. Sketch a profile of the atmosphere to identify zones such as, the troposphere and emphasise that weather changes take place in the troposphere.
2. Provide the data for the construction of temperature/height graphs to teach the concept of lapse rates. Emphasise the different mechanisms influencing the environmental and adiabatic lapse rates.
3. Listen to and look at the weather news on the radio and television to appreciate daily weather phenomena.
4. Practise interpreting synoptic weather charts.
5. Visit a meteorological station to understand the use of instruments in weather forecasting.
6. Use quadrats and transects to study vegetation distribution and density in a local area.
7. Conduct field trips to study soil profiles.
8. Organise discussions to explain the relationships among climate, vegetation, soil and human actions.
9. Organise field visits to local areas to collect soil samples and conduct simple tests for texture and structure.

Please note that many of these activities can be used in preparation for the School-Based Assessment.

RESOURCES

Caribbean Examinations Council	*Population Geography, Geomorphic Processes and Hazards, Unit 1, 2009.*
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O'Hare, G. and Sweeney, J.	*The Atmospheric System*, Edingburg: Oliver and Boyd, 1986.
Park, C.	*Tropical Rainforest*, London: Routledge, 1992.
Richardson, D. and St. John, P.	*Methods of Presenting Fieldwork Data,* UK: The Geographical Association, 1997.
Strahler, A. and Strahler, A.	*Introducing Physical Geography*, New York: John Wiley and Sons, 2005.
Warburton, P.	*Atmospheric Processes and Human Influence*, London: Collins, 1995.

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http://www.ran.org/ran/

UNIT 2
MODULE 2: ECONOMIC ACTIVITY

GENERAL OBJECTIVES

On completion of this Module, students should:

1. appreciate the pattern of economic activities;
2. develop appropriate skills and techniques used in Geography;
3. apply appropriate investigative and practical techniques.

SPECIFIC OBJECTIVES

Students should be able to:

1. classify economic activities and examine their changing relative importance;
2. explain the factors influencing the types and organization of agriculture;
3. describe the factors affecting the location and development of manufacturing industries;
4. evaluate the effects of agriculture*, industry and tourism on the environment in MDC's and LDC's*;
5. *evaluate the potential impact of climate change on farming systems;*
6. account for economic changes in agriculture and industry;
7. analyse the factors contributing to the development of tourism;
8. apply models of economic activity;
9. use topographical maps to analyse the location of economic activities;
10. apply appropriate investigative and practical techniques.

CONTENT

1. ***Economic Structure***

   (i) The characteristics of primary, secondary, tertiary, quaternary and *quinary economic activities.*

   (ii) *The changing relative importance of the types of economic activities, the reasons for the changes and the relationship to economic development.*

2. ***Agriculture***

(i) *Modern farming in the European Union (arable, livestock).*

(ii) *Traditional (plantation, commercial and non-commercial small farming) and non-traditional agriculture (including aquaculture, hydroponics) in the Caribbean.*

(iii) The environmental, economic, cultural and political factors which influence farming in the Caribbean and the European Union (for example, transnational trading blocs, government policies, changes in trading agreements).

(iv) *The environmental impact of and environmental conflicts arising from agriculture in MDCs and LDCs.*

(v) *Von Thunen's* model of rural land use and its applicability at both the local and the international scales.

(vi) Graphs to show net profit curves and to calculate locational rents based on *Von Thunen's* model.

(vii) *The potential impact of climate change on farming systems in LDCs.*

3. ***Industry***

(i) The relevance of Weber's model of industrial location.

(ii) *The factors responsible for development and change in a major industrial region in an MDC - raw materials, technology, transport, New Industrial Division of Labour (role of Multi-National Corporations (MNC), globalisation, outsourcing, specialization, off- shoring, comparative advantage).*

(iii) *Case study of industrial change in an LDC.*

(iv) *Approaches to and problems of industrial development in the Caribbean.*

(v) Economic and social characteristics of the informal sector.

(vi) *The environmental impact of industrial development in MDCs and LDCs. Case studies.*

4. ***Tourism***

(i) *Types of Tourism, Recreation and Leisure.*

(ii) *The social and economic factors accounting for the growth and changing nature of tourism globally.*

(iii) *Island and mainland tourism - location, patterns of arrival, organization. Cite specific examples.*

(iv) *Apply Butler's Tourism Lifecycle Model to a resort in an MDC.*

(v) *Case Study - Tourism in a Caribbean territory - location, resource base, trends in arrivals, marketing, foreign and/or local entrepreneurship, positive and negative impacts and conflicts.*

(vi) *Effect of tourism on the environment in LDCs and MDCs.*

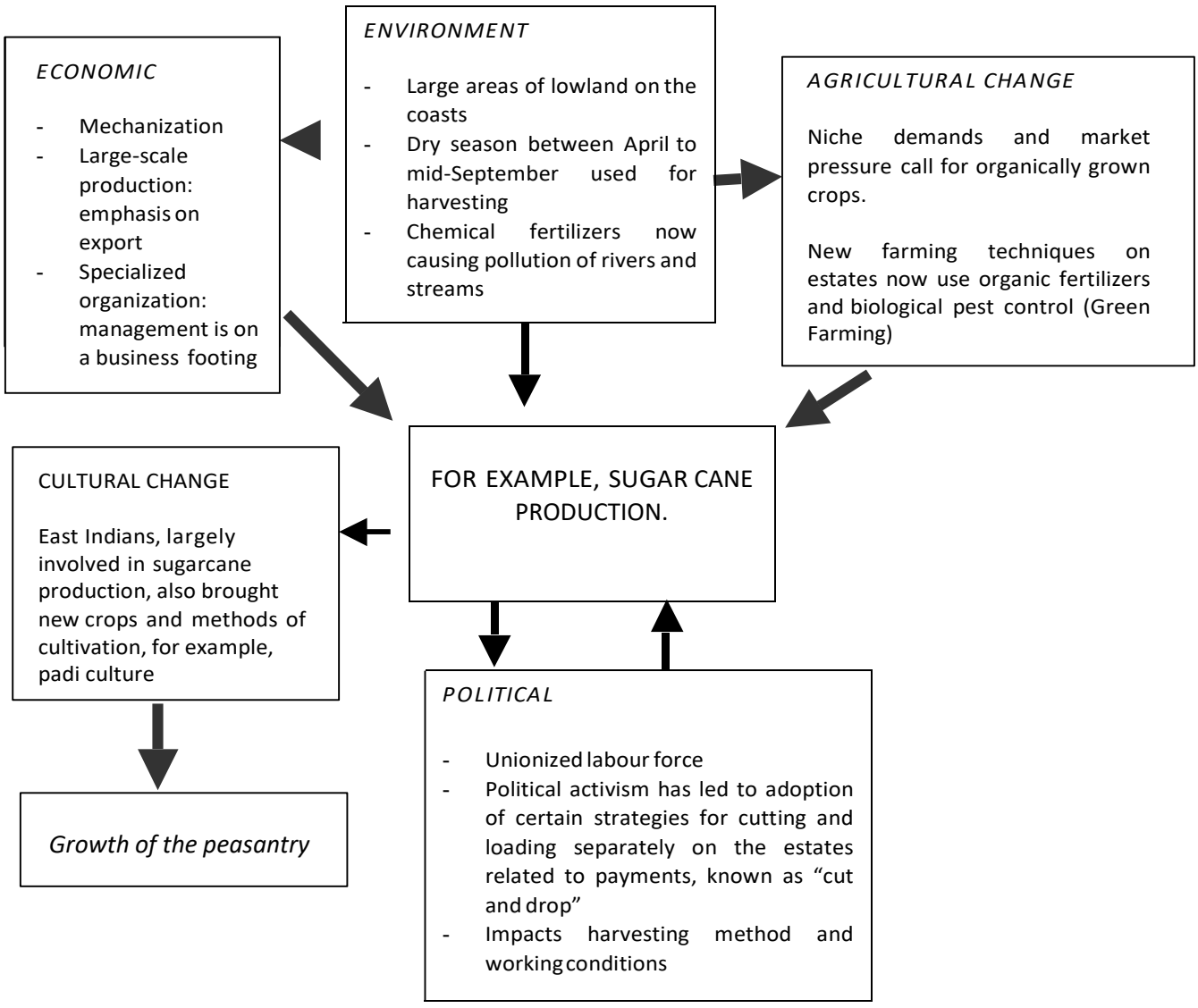
Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives of this Module, teachers are advised to engage students in the teaching and learning activities listed below.

1. Use pie charts to compare the structure of economic activities (primary, secondary, tertiary, quaternary and quinary) between countries. Students can be guided in the interpretation of these pie charts.

2. Prepare for complex topics, such as "the environmental, economic, cultural and political factors which influence farming" in a particular area by using concept maps as a brainstorming exercise (see next page). The results of such an exercise can provide a useful summary.

SOME FACTORS INFLUENCING FARMING IN GUYANA



Suggested Teaching and Learning Activities (cont'd)

3. Compare the effects of agriculture on the physical environment in both the LDC's and the MDC's to explore the differences in primary economic activity between these two groups of countries.

4. Compile a list of interesting websites that students can use to develop up-to-date knowledge on economic activity. There are websites about Dominica that offer commentary on the banana dispute between the World Trade Organization (WTO) and European Union (EU) from a Caribbean perspective.

5. Organize students into small groups to research agricultural change at the local level. For example, interviews held with established residents can yield information about farming in an area over the last 40 years. This information can be used to compare with what obtains today. Land use maps can also be used as a source of information.

6. Choose a major industrial region in a MDC, such as the Ruhr that can easily incorporate many of the content areas listed under 'Industry'. For example, the history of the Ruhr will yield traditional factors affecting the location of industry and this can be supported by Weber's model. A study of the area today will show the impact of change, particularly those brought about by new technologies and globalization.

7. Draw from the students' knowledge of the economic and social characteristics of the informal industrial sector. They may have personal knowledge of community members engaged in services, cottage industries and crafts. Compiling what they know about these people's lives can help to formulate categories, such as "social "and "economic".

8. Illustrate tourist arrivals and the growth of tourism by maps showing flow lines, proportional divided circles and bar graphs.

9. Collect information about island and mainland tourism through brochures from travel agencies, from the local tourist board, from Internet sites, advertisements in newspapers and magazines, and from cable television.

10. Use topographical maps to analyse the location of economic activities. For example, students can be asked to explain the distribution of different crops in an area.

Please note that many of these activities can be used in preparation for the School-Based assessment.

RESOURCES

Bale, J.	*The Location of Manufacturing Industry*, Essex: Oliver and Boyd, 1977.
Caribbean Examinations Council	*A Study Guide for Tourism, Unit 2, Module 2,* 2002.
Caribbean Examinations Council	*CAPE Internal Assessment for Geography, 2008.*
Lenon, Barnaby and Cleves, P.	*Fieldwork techniques and projects in Geography* (Landmark Geography), UK: Harper Collins, 1994.
Nagle, G.	*Tourism, Leisure, Recreation*, London: Nelson, 1999.
Potter, R. and Barker, D., et.al.	*The Contemporary Caribbean,* Harlow UK: Pearson/Prentice Hall, 2004.
Raw, M.	*Manufacturing Industry – The Impact of Change*, London: Collins, 2000.
Raw, M. and Atkins, P.	*Agriculture and Food,* London: Collins, 1995.
Richardson, D. and St. John, P.	*Methods of Presenting Fieldwork Data,* UK: The Geographical Association, 1997.
Waugh, D.	*Geography: An Integrated Approach*, London: Nelson, 2000.

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http//:www.vtourist.com/vt/
http//:www.fao.org http//:www.sztdb.asiansources.com/FACTS/TOURISM.HTML
http//:www.wfp.org/index.html http//:www.igc.org/wri/wri/wr-98-99/feeding.html
http//:www.geog.umd.edu/webspinner/bkearney/fall2002/economicdevelopment.html

UNIT 2
MODULE 3: DEVELOPMENT AND DISPARITIES IN DEVELOPMENT

GENERAL OBJECTIVES

On completion of this Module, students should:

1. understand the nature of development and disparities in development;
2. develop appropriate skills and techniques in Geography;
3. apply appropriate investigative and practical techniques.

SPECIFIC OBJECTIVES

Students should be able to:

1. explain the concept and nature of development, underdevelopment and *sustainable development;*
2. *measure disparities in development;*
3. *apply models of development;*
4. *analyse global disparities in development;*
5. *analyse regional disparities in development;*
6. *analyse local disparities in development;*
7. *evaluate measures to overcome disparities;*
8. *use topographic maps to analyse spatial disparities;*
9. *apply appropriate investigative and practical techniques.*

CONTENT

1. ***Development and Under-development***

   (i) *Definition of development, underdevelopment and sustainable development.*

   (ii) *Economic and non-economic indicators of development*

   (iii) *Strengths, weaknesses of economic and non-economic indicators of development.*

   (iv) *The representation of the data collected in the form of charts, graphs and maps.*

   (v) *Analysis of disparities from the data collected.*

2. ***Global Disparities in Development***

(i) *Definitions of poverty, life expectancy, gender.*

(ii) *Global disparities in income, poverty, life expectancy and education, including gender disparities.*

(iii) *Rostow's model, Colonialism, Dependency model and their utility in explaining disparities in development between Britain and the Caribbean.*

(iv) *The concept of Small Island Developing States (SIDS) (include, for example, the role of disasters, debt burden, technology and government policy) and its utility in explaining disparities in development between Britain and the Caribbean.*

(v) *The consequences of global disparities (economic, political, environmental and social consequences).*

3. ***Regional Disparities in Development***

(i) *Myrdal's cumulative causation model.*

(ii) *The application of Myrdal's cumulative causation model to an understanding of regional disparities in income, poverty or health in a specific country.*

(iii) *Apply Spearman's rank correlation coefficient to measure disparities.*

4. ***Local Disparities in Development***

(i) *Friedman's core-periphery model.*

(ii) *The application of Friedman's core-periphery model to an understanding of urban-rural disparities in levels of economic development within a specific country.*

(iii) *Apply Spearman's rank correlation coefficient to measure disparities.*

5. ***Measures to overcome Disparities***

(i) *Aid-forms or types, global patterns (donors, recipients), impact, effectiveness, conditionalities.*

(ii) *Debt relief.*

(iii) *Appropriate technology.*

Suggested Teaching and Learning Activities

To facilitate students' attainment of the objectives of this Module, teachers are advised to engage students in the teaching and learning activities listed below.

1. Provide students with opportunities for classroom discussions so that they are able to clearly understand and differentiate between concepts, for example, students should be able to define the concepts of absolute poverty and relative poverty and explain the difference between them.

2. Students should visit libraries, government statistical offices within their own country and collect data on such aspects as employment levels, mortality rates and make comparisons for different regions within their country. They could also prepare maps to reflect the spatial differences.

3. Students are advised to visit Websites and collect and share information on development theories, for example, Friedman, Myrdal, and also regional statistical information.

4. Students are advised to visit the libraries of various regional institutions, for example, Caribbean Community (CARICOM), Pan American Health Organization, (PAHO), World Health Organization (WHO), Economic Commission for Latin America and the Caribbean (ECLAC) and collect comparative data for Caribbean countries.

5. Teachers are advised to take students on field visits to different regions within their own countries and conduct interviews, take photographs so that comparisons could be made of socio-economic conditions. They could also be encouraged to describe programmes that are undertaken to combat disparities.

6. Students should collect data and compute the Spearman's Rank Correlation Coefficient from the data acquired.

7. Students should utilize the field information they collect for the development of models of regional development.

Please note that many of these activities can be used in preparation for the School-Based Assessment.

RESOURCES

Allen, T. and Thomas, A. (Eds.)	*Poverty & Development in the 21st Century,* New York: Oxford University Press, 2000.
Caribbean Examinations Council	*CAPE Internal Assessment for Geography, 2008.*
Chrispin, J. and Francis, J.	*Population, Resources and Development*, London: Collins, 2000.
Lenon, Barnaby and Cleves, P.	*Fieldwork techniques and projects in Geography* (Landmark Geography), UK: Harper Collins, 1994.
Morgan, J.	*Development, Globalisation and Sustainability*, London: Nelson Thornes, 2001.
Nagle, G.	*Advanced Geography*, New York: Oxford University Press, 2000.
Nagle, G.	*Development and Underdevelopment*, London: Nelson, 1998.
Potter, R. and Barker, D., et.al.	*The Contemporary Caribbean,* Harlow UK: Pearson/Prentice Hall, 2004.
Richardson, D. and St. John, P.	*Methods of Presenting Fieldwork Data,* UK: The Geographical Association, 1997.
Witherick, M.	*Environment and People,* Cheltenham: Stanley Thornes Publishers, 1995.

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http://www.itdg.org.pe/index.h
tml http://www.ch/

♦ OUTLINE OF ASSESSMENT

Each Unit of the syllabus is assessed separately. The assessment scheme is identical in each Unit; however, grades are awarded independently.

The Assessment will comprise two components, one external and one internal. Candidates must complete the School-Based Assessment for the first Unit that they write. Candidates may carry forward the School-Based Assessment mark from the first Unit written to the second Unit (irrespective of the mark earned), or may opt to complete the School-Based Assessment for the second Unit as well.

EXTERNAL ASSESSMENT FOR EACH UNIT **(80%)**

Written Papers – 4 hours 30 minutes

Paper 01 (1 hour 30 minutes)	The paper will consist of forty-five (45) compulsory multiple-choice items. There will be fifteen (15) items based on each Module.	30%
Paper 02 (3 hours)	Section A This section comprises one compulsory question, testing the application of practical skills from the three Modules. *Section B* This section will consist of *three* extended-response questions; *one question* based on each Module. Candidates will be required to answer *all questions.*	50%

SCHOOL – BASED ASSESSMENT FOR EACH UNIT **(20%)**

Paper 031

A research paper of 1500 words, based on any topic covered in any of the three (3) Modules of a Unit. Students are encouraged to work in small groups to complete the School-Based Assessment.

Candidates who, in the same year, register for both Units of CAPE Geography may opt to:

1. *submit a single School-Based Assessment assignment for both Units; or*
2. *submit a separate School-Based Assessment assignment for each Unit.*

Candidates who are doing two Units of CAPE Geography at the same sitting must indicate from which Unit the School-Based Assessment assignment was selected.

If a candidate is repeating a Unit, the moderated School-Based Assessment score obtained for that Unit may be used for both Units taken at the same time.

Paper 032

Private candidates are required to write an Alternative Paper - Paper 03/2. Details are on page 43.

MODERATION OF SCHOOL-BASED ASSESSMENT

All School-based Assessment Record Sheets and sample of projects must be submitted *electronically via the SBA data capture module on the Online Registration System (ORS) on the Council's Website* by May 31st of the year of the examination. A sample of projects will be requested by CXC for moderation purposes. These samples will be re-assessed by CXC examiners who moderate the School-Based Assessment. Teachers' marks may be adjusted as a result of moderation. The Examiner's comments will be sent to schools.

Copies of the students' projects that are not submitted must be retained by the school until three months after publication by CXC of the examination results.

ASSESSMENT DETAILS

External Assessment by Written Papers (80% of Total Assessment)

Paper 01 (1 hour 30 minutes - 30% of the Total Assessment)

1. ***Composition of Paper***

   (i) *This paper will consist of forty-five (45) multiple-choice items. There will be fifteen (15) items based on each Module.*

   (ii) *All items are compulsory.*

2. ***Syllabus Coverage***

   (i) Knowledge of the entire syllabus is required.

   (ii) The intention of this paper is to test candidates' knowledge across the breadth of the syllabus.

3. ***Question Type***

Questions may be presented using a combination of words and a variety of stimuli including photographs, maps and diagrams.

4. ***Mark Allocation***

   (i) One mark will be assigned for each *item*.

   (ii) The *maximum mark* available for this paper is 45 and will be weighted to 81.

(iii) This paper contributes 30% towards the final assessment.

(iv) *Marks will be awarded for knowledge, use of knowledge and practical skills.*

5. ***Use of Calculators***

Candidates are allowed to use non-programmable calculators in the examinations. Each candidate is responsible for providing his or her own calculator and *for ensuring* that it functions throughout the examination.

6. ***Use of Geometrical Instruments***

Candidates are allowed to use geometrical instruments in the examinations. Each candidate is responsible for providing his or her own instruments.

Paper 02 (3 hours - 50% of Total Assessment)

1. **Composition of Paper**

(i) Section A consists of one compulsory question, based on the three Modules and examines the application of practical and map-reading skills.

(ii) Section B consists of three pairs of free-response questions with each pair based on a different Module. Candidates are required to select and answer three questions, one question from each pair *(Module).*

2. ***Syllabus Coverage***

(i) Each question may focus *on* or develop a single theme or several unconnected themes.

(ii) Comprehensive knowledge of the syllabus is required.

3. ***Question Type***

(i) The question in Section A is *arranged* into several subtasks which examine the application of practical skills.

(ii) The questions in Section B are *of* a free-response form and will require extended *responses or essays*.

4. ***Mark Allocation***

(i) The paper is worth 135 marks.

(ii) Section A - *The maximum mark available for t*his section is 45 with 15 marks allocated to each Module.

(iii) Section B - The *maximum mark available for* this section is 90. Each

Module is allocated 30 marks. *In essays, marks will be awarded for the introduction and conclusion.*

(iv) *The marks will be awarded for Knowledge, Use of Knowledge and Practical Skills.*

5. ***Use of Calculators***

Candidates are allowed to use non-programmable calculators in the examinations. Each candidate is responsible for providing his or her own calculator and *for ensuring* that it functions throughout the examination.

6. ***Use of Geometrical Instruments***

Candidates are allowed to use geometrical instruments in the examinations. Each candidate is responsible for providing his or her own instruments.

SCHOOL-BASED ASSESSMENT (20 per cent of Total Assessment)

School-Based Assessment is an integral part of student assessment in the course covered by this syllabus. It is intended to assist students in acquiring certain knowledge, skills and attitudes that are associated with the subject. The activities for the School-Based Assessment are linked to the syllabus and should form part of the learning activities to enable the student to achieve the objectives of the syllabus. *Students are encouraged to work in groups.*

During the course of study for the subject, students obtain marks for the competence they develop and demonstrate in undertaking their School-Based Assessment assignment. These marks contribute to the final marks and grades that are awarded to students for their performance in the examination.

The guidelines provided in this syllabus for selecting appropriate tasks are intended to assist teachers and students in selecting assignments that are valid for the purpose of School-Based Assessment. The guidelines provided for the assessment of these assignments are intended to assist teachers in awarding marks that are reliable estimates of the achievement of students in the School-Based Assessment component of the course. In order to ensure that the scores awarded by teachers *at a centre* are not out of line with the CXC standards, the Council undertakes the moderation of a sample of the School-Based Assessment assignments marked *from* each *centre*.

School-Based Assessment provides an opportunity to individualise a part of the curriculum to meet the needs of students. It facilitates feedback to the student at various stages of the experience. This helps to build the self-confidence of students as they proceed with their studies. School-Based Assessment also facilitates the development of the critical skills and abilities emphasised by this CAPE subject and it enhances the validity of the examination on which candidate performance is reported. School-Based Assessment, therefore, makes a significant and unique contribution to both the development of relevant skills, and the testing and rewarding of students for the development of those skills.

Skills to be Assessed

The following practical skills will be assessed:

1. The use of scales for measurement;

2. The ability to read maps as well as a variety of stimulus material used in Geography;

3. The collection and collation of data used in geographic analysis;

4. The selection of techniques and methodologies appropriate to different contexts;

5. The drawing of maps, diagrams, sketches and graphs;

6. The appropriate use of quantitative techniques.

Paper 031 

School-Based Assessment will take the form of a research project. This research project will incorporate the skills outlined above and must emphasize the relevant areas outlined in Table 1 below. *Students are encouraged to work in small groups to complete the School-Based Assessment.*

The skills that should be selected for assessment from each Unit are presented in the table below.

Table 1

UNIT 1	UNIT 2
The project must involve the use and interpretation of one or more of the following: - Questionnaire - Dot maps, choropleths - Population pyramids - Proportional circles, flowlines - Maps - Stream velocity - Soil moisture, water budgets - Storm hydrograph - Photographs - Diagrams - Field sketches	The project must involve the use and interpretation of one or more of the following: - Questionnaire - Synoptic chart - Weather instruments - Vegetation sampling - Soil horizons - Graphs, flowlines - Choropleths - Isolines - Sampling techniques - Maps - Charts and statistic - *Spearman's rank correlation coefficient*

The topic selected for the research project can be drawn from the *practical areas of the* content listed in each Module, for example:

1. Analysis of the population structure of two Caribbean islands (Unit 1, Module 1);

2. *Measurement* of stream velocity (Unit 1, Module 2);

3. Community response to hazards (Unit 1, Module 3);

4. Variations in temperature with altitude (Unit 2, Module 1);

5. *An analysis* of informal commercial activity (Unit 2, Module 2);

6. *An analysis of* disparities in development within countries (parishes, *counties*), (Unit 2, Module 3).

The following steps are intended to provide further guidance in completing the research project:

1. Identify the skills that are to be used in the investigation.

2. The area(s) must be chosen from those listed for the relevant Unit as indicated in Table 1, for example, dot maps, choropleth, diagrams or field sketches. Please note that field sketches are done in the field and not sketched from photographs. Photographs should not be used in place of field sketches.

3. The project should focus on a specific geographical problem or an investigation. Examples of suitable topics are:

   (a) *For Unit 1,* ***"The purpose of this investigation is to use dot maps to analyse how the population distribution in Montserrat has changed over the last ten years."***

   (b) ***For Unit 2, "The aim of this investigation is to examine the effects of rock types on the development of soil profiles in two (2) areas."***

4. The skill to be used should be made clear in the statement of purpose or in the methodology.

5. If the project is based on a practical exercise in the field, there must be evidence that information was collected in the field and not from a secondary source.

6. For the example given in 3 (a) above, some important steps are:

   (a) Constructing dot maps to show population changes over the ten-year period;
   (b) Describing the changes shown on the maps;
   (c) Referring to the maps in the description and analysis in order to maximise credit for integration;
   (d) Integrating the maps into the body of the report – the maps should be neat, well labelled with title and key;
   (e) Focusing on the maps in the investigation and not using them as mere illustrations.

7. For the example given in 3 (b) above, some important steps are:

   (a) Conducting investigations in the field;

(b) Drawing detailed soil profiles for each site;
(c) Describing each soil profile;
(d) Accounting for any differences seen in the two profiles based on information collected in the field;
(e) Integrating the profiles into the body of the report - the profiles should be neat and well labelled;
(f) Focusing on the information shown in the profiles - information from the text may be used to support the analysis.

8. (a) For an investigation involving the use and interpretation of weather instruments, the data must be collected with the instruments and not from a secondary source.
(b) For an investigation involving the use of a quadrat in vegetation sampling, the results must be meaningful, for example, the sampling may be used to show *how* vegetation varies with soil type, altitude or some other variable.

9. Reminders:

(a) The report should not include information that is downloaded directly from the Internet.
(b) It is not expected that all the areas in the Unit will be included in any one investigation.
(c) The topic should be manageable.
(d) The word limit should be observed.

GUIDELINES FOR COMPILING AND ASSESSING THE RESEARCH PROJECT

1. The research project will involve at least one of the practical skills shown in Table 1 on page 37.

2. The maximum mark for the projects would be 54.

3. The project is to be marked by the teacher. CXC will require a sample of the projects.

4. The suggested format for the research project is as follows:

(a)	Cover page - with title, name, date, candidate number	2 marks
(b)	Statement(s) of purpose of investigation - with elaboration of aims	3 marks
(c)	Methodology	6 marks
(d)	Description of data with maps and diagrams, analysis and discussion	29 marks

This may be presented as one chapter, incorporating description of data, analysis of data and discussion of findings.
OR
As two (2) chapters, the first chapter, a description of the data, the second chapter, analysis of data and discussion of the findings.

In either case, maps and diagrams must be fully integrated within the text. Discussions must be related to previous studies and/or textbook information.

(e) Conclusion - Answers to the purpose; includes a summary of findings 4 marks

(f)	Recommendations, based on methods or on findings	2 marks
(g)	Bibliography	3 marks
(h)	Communication of Information	5 marks
(i)	Exceeding word limit (1500 words) by 200 words	- 5 marks

5. The teacher is required to mark the projects and marks are to be recorded out of 54. No fractional marks *should be awarded*.

6. The school must retain all projects for at least three months after publication of the results since additional projects may be requested by CXC for moderation purposes.

7. The reliability of the marks awarded is a significant factor in the School-Based Assessment and has far reaching implications for the candidate's final grade. Teachers are asked to note the following:

   (a) the relationship between the marks for the project and those submitted to CXC on the school-based assessment form should be clearly shown;

   (b) the teacher is required to allocate one-third of the total score for the School-Based Assessment to each Module. Fractional marks should not be awarded. In cases where the mark is not divisible by three, then:

      (i) when the remainder is 1 mark, the mark should be allocated to Module 3;

      (ii) when the remainder is 2, then a mark should be allocated to Module 3 and the other mark to Module 2.

      for example, 35 marks would be allocated as follows:

      35/3 = 11 remainder 2 so 11 marks to Module 1 and 12 marks to each of Modules 2 and 3.

   (c) the standard of marking should be consistent.

SCHOOL-BASED ASSESSMENT – GENERAL GUIDELINES FOR TEACHERS

1. For each Unit, School-Based Assessment marks must be submitted *electronically via the SBA data capture module on the Online Registration System (ORS) on the Council's Website* by May 31 of the Year of the examination.

2. **The research project should focus on at least one specific objective in the Unit.**

3. **Candidates who do not fulfil the requirements for the School-Based Assessment will be reported "Ungraded".**

CRITERIA FOR MARKING THE RESEARCH PROJECT

1.	**Cover Page - Title page, name, date**		(2)
	• Title clearly understood, concise, relates to project	2	
	• Title clearly understood and relates to project	1	
2.	***Statements of Purpose of Investigation***		(3)
	• Context and purpose very clearly stated and explained	3	
	• Context and purpose clearly stated and explained	2	
	• Context and purpose stated but unclear	1	
3.	***Methodology***		(6)
	• Methods of data collection, procedures very clearly stated and described	6	
	• Methods of data collection, procedures clearly stated and described	4 - 5 2 - 3	
	• Methods of data collection, procedures not clearly stated or described	1	
	• Methods of data collection, procedures unclear and description weak		
4.	**(a) Presentation**		(8)
	• Extremely neat *with* adequate number of diagrams *that are* relevant, accurate *and* well labelled	7 - 8	
	• Very neat *with* adequate number of diagrams *that are* relevant *and* labelled satisfactorily	5 - 6	
	• Neat *with* limited number of diagrams *that are* relevant but not well labelled	3 - 4	
	• Untidy Maps and/or diagrams attempted	1 - 2	
	(b) Use of maps, Diagrams with Text		(3)
	• Diagrams well integrated into text, appropriate reference made to each diagram	3	
	• Diagrams satisfactorily integrated into text, appropriate reference made to some diagrams	2	
	• Attempt to integrate diagrams into text	1	

CRITERIA FOR MARKING THE PROJECT (cont'd)

4.	**Analysis of Data**		(23)
	(a) Description of Findings (8)		
	• Very coherent organization of comprehensive and accurate data	7 - 8	
	• Fairly coherent organization of adequate and fairly accurate data	5 - 6	
	• Satisfactory organization of limited and fairly accurate data	3 - 4	
	• Organization of limited and fairly accurate data attempted	1 - 2	
	(b) Analysis and Discussion of Findings (10)		(3)
	• Logical and coherent organization of data, points well developed, supported and valid	9 - 10	
	• Data fairly well organised, points fairly well developed and supported	7 - 8	
	• Satisfactory arguments including some valid points supported by findings	5 - 6	
	• Satisfactory arguments including some points supported by findings	3 - 4	
	• Limited arguments with few points supported by findings	1 - 2	
	(c) Communication of information		(6)
	• Few grammatical errors or flaws and extensive use of appropriate geographical terms	5	
	• Few grammatical errors or flaws and good use of appropriate geographical terms	4	
	• Some grammatical errors or flaws and limited use of appropriate geographical terms	3	
	• Some grammatical errors or flaws and poor use of appropriate geographical terms	2	
	• Several grammatical errors or flaws and poor use of appropriate geographical terms	1	
5.	**Conclusion**		(4)
	• Conclusion clear, based on findings, valid and related to the purposes of the project	4	
	• Conclusion clear, based on findings, and related to the purposes of the project	3	
	• Conclusion relates to the purpose of the project	2	
	• Conclusion based on some findings	1	
6.	**Recommendations**		(2)
	• At least two recommendations fully derived from findings or methodology	2	
	• One recommendation based on findings and/or methodology	1	
7.	**Bibliography**		
	• Alphabetical order by author with title, publisher and date - for several relevant, up-to-date references	3 2	
	• Alphabetical order by author with title, publisher, and date - for a minimal number of relevant, up-to-date references	1	
	• References relevant and written in a consistent manner		
8.	Exceeding the word limit by more than 200 words		(-5)
	Total	**(54)**	

♦ REGULATIONS FOR PRIVATE CANDIDATES

Paper 032 (1 hour 30 minutes)

1. *Composition of Paper*

This Paper is based on case studies relating to the content of all three Modules of the Unit assessed. There will be three compulsory questions, one based on each Module. The three questions may be divided into parts. The Paper tests skills similar to those listed in the *section on the* School-Based Assessment (Paper 03/1).

2. Question Type

Each question requires candidates to respond either in the form of an extended essay or a short paragraph.

3. Mark Allocation

The Paper is worth 54 marks (18 marks per question) and contributes 20% toward the final assessment.

4. Award of Marks

Marks are awarded for the cognitive abilities, *Knowledge, Use of Knowledge or Practical Skills that are* exhibited.

5. Use of Calculators

Candidates are allowed to use non-programmable calculators in the examinations. Each candidate is responsible for providing his or her own calculator and for *ensuring* that it functions throughout the examination.

6. ***Use of Geometrical Instruments***

Candidates are allowed to use geometrical instruments in the examinations. Each candidate is responsible for providing his or her own instruments.

♦ REGULATIONS FOR RESIT CANDIDATES

Resit candidates must complete Papers 01 and 02 of the examination for the year for which they re-register. CAPE® candidates may reuse any moderated SBA score within a two-year period. In order to assist candidates in making decisions about whether or not to reuse a moderated SBA score, the Council will continue to indicate on the preliminary results if a candidate's moderated SBA score is less than 50 per cent in a particular Unit. Candidates reusing SBA scores should register as "Resit candidates" and must provide the previous candidate number when registering.

For CAPE® Geography, candidates who enter for Unit 1 or Unit 2, in different sittings, may reuse a moderated SBA score obtained in a previous sitting of either Unit within the preceding two years. The SBA score may be reused in either Unit, or in both Units, irrespective of the Unit in which it

was first obtained. Candidates reusing SBA scores in this way must register as 'Transfer' candidates.

All resit candidates may enter through schools, recognised educational institutions, or the Local Registrar's Office.

♦ ASSESSMENT GRID

The Assessment Grid for each Unit contains marks assigned to papers and to Modules and the percentage contribution of each paper to the total score.

PAPERS	Module 1	Module 2	Module 3	Total		(%)
External Assessment Paper 01 *1 hour 30 minutes* Multiple-Choice *Items*	15 (raw) 27 (wtd)	15(raw) 27(wtd)	15 (raw) 27 (wtd)	45 (raw) 81 (wtd)		(30)
Paper 02 *3 hours* Section A (Practical Skills) Section B (Free Response)	15 30	15 30	15 30	45 90	135	(50)
School-Based Assessment Paper 03/1 Paper 03/2 *1 hour 30 minutes* (Private Candidates)	18	18	18	54		(20)
Total	**90**	**90**	**90**	**270**		*100*

♦ GLOSSARY

KEY TO ABBREVIATIONS

K - Knowledge; UK - Use of Knowledge; PS Practical Skills

WORD	DEFINITION	COGNITIVE LEVEL
Advise	Write an extended answer identifying the issue; Suggest solution or action to be taken.	UK
Analyse	Examine methodically and **in detail** the structure of an object or a process or a situation and then draw (a) conclusion(s).	UK
Annotate	Add a brief note to label.	K
Apply	Use knowledge and or principles to solve problems.	UK
Assess	Present reasons for the importance of particular structures, relationships or processes.	UK
Calculate	Arrive at a solution to a numerical problem. Steps should be shown and units included.	PS
Cite	Provide a quotation or a reference to the subject.	K
Classify	Divide into groups according to observable characteristics.	UK
Comment	State opinion or view with supporting reasons.	UK
Compare and contrast	Write an extended answer stating, describing and elaborating on the similarities and differences; and providing specific examples of these similarities and differences.	UK
Construct	Use a specific format to make or draw a graph, histogram, pie chart or other representation using numerical data or material provided or drawn from practical investigations, build (for example, a model), draw scale diagram. Such representations should bear a title, appropriate headings and legend where appropriate.	PS
Deduce	Make a logical connection between two or more pieces of information; use data to arrive at a conclusion.	UK

WORD	DEFINITION	COGNITIVE LEVEL
Define	Provide a precise statement giving the **nature** or the **scope** or the **meaning** of a term; or using the term in one or more sentences so that the meaning is clear and precise.	K
Demonstrate	Show how or direct attention to an area or object of focus.	PS
Derive	Deduce, determine or extract from data by a set of logical steps, some relationship, formula or result.	UK
Describe	Provide statements of the features or characteristics of a situation.	K
Determine	Calculate the value of a physical quantity.	PS
Develop	Elaborate on or expand an idea or argument with supporting reasons.	UK
Differentiate or Distinguish	State or explain briefly those differences between or among items or situations which can be used to define them or place them into separate categories.	K
Discuss	Write an extended answer defining key concepts, stating what is, exploring **related** concepts and principles, present reasoned arguments for and against, using detailed examples but **not** necessarily drawing a conclusion.	UK
Draw	Make a line representation of specimens, objects to show accurate relationship between the parts, to show location.	PS
Estimate	Make an approximate quantitative judgement	UK
Evaluate	Weigh evidence and make judgements based on given criteria. The use of logical supporting reasons for a particular point is more important than the view held; usually both sides of an argument should be considered.	UK
Explain	Provide statements on **what** happened, **how** it happened and **why** it happened.	K
Find	Locate a feature or obtain a solution (for example, from a graph).	PS

WORD	DEFINITION	COGNITIVE LEVEL
Formulate	Devise a hypothesis.	PS, AK
Give	Provide **short**, concise responses.	K
Identify	Name specific components or features. Point out, indicate without explanation or recognise and select.	K
Illustrate	Show clearly by using appropriate examples, diagrams or sketches.	PS
Interpret	Explain the meaning of.	K
Investigate	Use simple systematic procedures to observe, record data and draw logical conclusions.	PS, AK
Justify	Explain the correctness of.	UK
Label	Add names to identify structures or parts indicated by pointers.	K
List	Use headings only.	K
Measure	Take accurate quantitative readings using appropriate instruments.	PS
Name	Provide actual names (but no other details).	K
Note	Write observations.	PS
Observe	Pay attention to details which characterize a change, specimen, or reaction taking place; to examine and note.	PS
Outline	Give basic steps only. Provide main points, or features only without details.	K
Plan	Prepare to conduct an investigation.	UK, PS
Predict	Use information provided to arrive at a likely conclusion or suggest a possible outcome.	UK
Record	Write an accurate description of the full range of observations made during a given procedure. This includes the values for any variables being investigated. Where appropriate, data may be depicted in graphs, histograms or tables.	PS

WORD	DEFINITION	COGNITIVE LEVEL
Relate	Show connection between; explain how one set of facts or data depend on others or are determined by them.	UK
Sketch	Make a simple freehanddiagram showing relevant proportions and any important details.	PS
State	Provide factual information in concise terms; outlining explanations.	UK
Suggest	Offer an explanation deduced from information provided or previous knowledge and consistent with subject knowledge.	UK

Western Zone Office
May 2018

CARIBBEAN EXAMINATIONS COUNCIL

Caribbean Advanced Proficiency Examination®
CAPE®

GEOGRAPHY

Specimen Papers and Mark Schemes/Keys

Specimen Papers:
Unit 1 Paper 01
Unit 1 Paper 02
Unit 1 Paper 032
Unit 2 Paper 01
Unit 2 Paper 02
Unit 2 Paper 032

Mark Schemes and Keys:
Unit 1 Paper 01
Unit 1 Paper 02
Unit 1 Paper 032
Unit 2 Paper 01
Unit 2 Paper 02
Unit 2 Paper 032

TEST CODE **02125010**

SPEC 2016/02125010

C A R I B B E A N E X A M I N A T I O N S C O U N C I L

CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®

GEOGRAPHY

SPECIMEN PAPER

POPULATION GEOGRAPHY, GEOMORPHIC PROCESSES AND HAZARDS

Unit 1 – Paper 01

1 hours 30 minutes

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This specimen paper consists of 45 items. You will have one hour and 30 minutes to answer them.
2. In addition to this test booklet, you should have an answer sheet.
3. Each item in this test has four suggested answers lettered (A), (B), (C), (D). Read each item you are about to answer and decide which choice is best.
4. Find the number which corresponds to your item and shade the space having the same letter as the answer you have chosen. Look at the sample item below.

Sample Item

Alluvial fans are

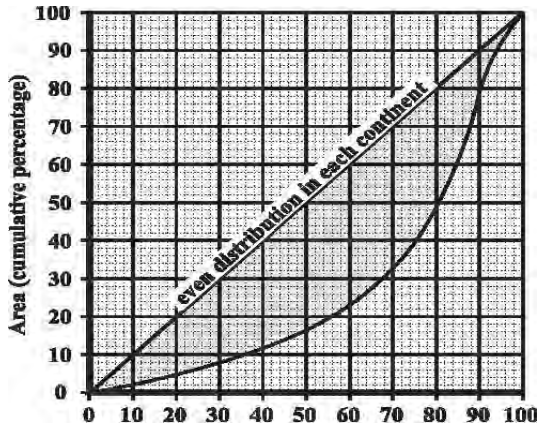
(A) depositional features in a body of standing water
(B) steps cut into thick deposits of alluvium or bedrock
(C) features formed when confined streams flow onto a plain
(D) thick accumulations of alluvium deposited on a flood plain

Sample Answer

The best answer to this item is "features formed when confined streams flow onto a plain", so (C) has been shaded.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

Items **1–2** refer to the following graph.



1. The graph shown above illustrates the

(A) trends in population growth
(B) inequalities in population distribution
(C) sequence of changes over a period of time
(D) period of time a person is expected to live

2. The diagram above is

(A) an input–output curve
(B) a population pyramid
(C) a Venn diagram
(D) the Lorenz curve

3. The number of live births per 1000 women aged 15–49 years in a given year is termed

(A) annual growth
(B) natural increase
(C) fertility rate
(D) birth rate

4. Burgess' transition zone corresponds to today's

(A) CDB
(B) inner city
(C) suburbs
(D) squatter camps

Item **5** refers to the following formula.

$$\frac{65\ and\ over}{15-64} \times 100$$

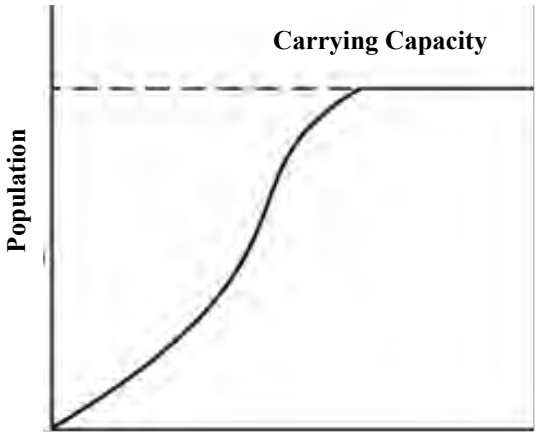
5. The formula is used for measuring

(A) the dependency ratio
(B) the male–female ratio
(C) old–age dependency
(D) youth dependency

6. The term 'gentrification' refers to

(A) inner−city renewal
(B) urban−rural migration
(C) increasing suburbanization
(D) rural−urban migration 65 and over

Items **7−8** refer to the following sketch map.



7. The model of population growth shown above is referred to as

(A) S-shaped
(B) J-shaped
(C) exponential
(D) cumulative

8. The model of population growth shown is likely to be found in populations with

(A) high births, low death rates
(B) high death rates, low fertility rates
(C) low fertility, high life expectancy
(D) high fertility, low life expectancy

Item **9** refers to the data in the following table which shows the population of the three largest towns in a country.

Town	Population (thousands)
Lynx	11 420
Mynx	2 520
Pynx	2 420

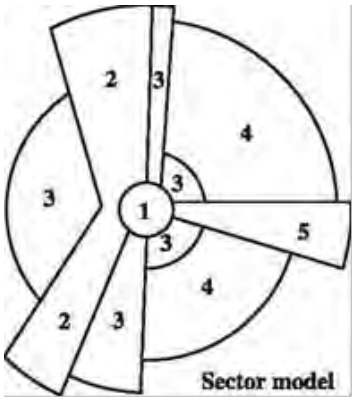
9. The term used to describe the situation reflected by the data above is

(A) urban agglomeration
(B) deindustrialization
(C) decentralization
(D) urban primacy

10. Which of the following is a likely consequence of emigration from a developing country?

(A) Lower death rate
(B) Higher life expectancy
(C) Lower infant mortality
(D) Higher dependency ratio

Items **11**–**12** refer to the following sector model.



Sector model

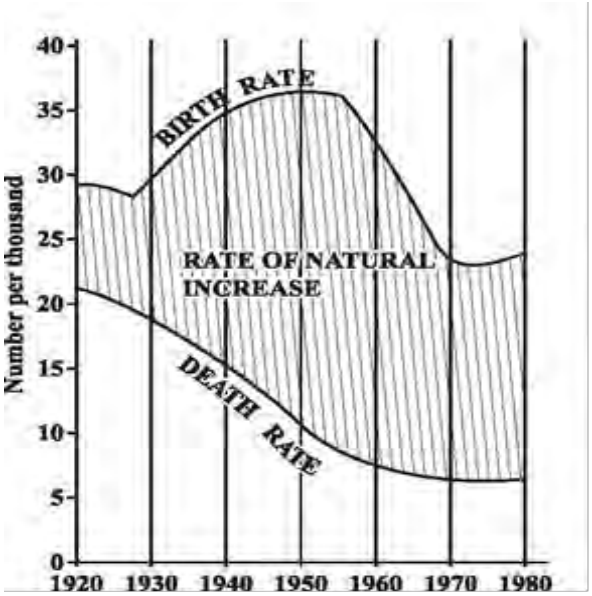
11. In which of the following zones would a high income family most likely settle?

(A) 2
(B) 3
(C 4
(D) 5

12. The zone where a clothing factory could be most likely located is

(A) 2
(B) 3
(C) 4
(D) 5

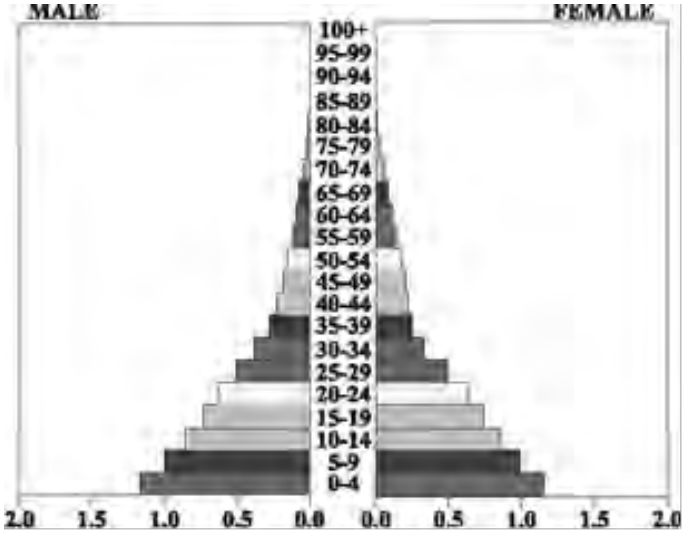
Item **13** refers to the following diagram of the birth rate, death rate and rate of natural increase for Country Z.



13. What stage of the demographic transition model would Country Z be passing through during the period 1930 to 1950?

(A) I
(B) II
(C) III
(D) IV

Item **14** refers to the following population pyramid.



14. The population pyramid above shows that there is a

(A) high death rate among the adult population
(B) low death rate among the infant population
(C) male−female imbalance
(D) high life expectancy

Item **15** refers to the population data presented in the following table.

Age Group	Population
0−14	14 345
15−64	41 616
65 and over	6 300

15. What PERCENTAGE of the population is considered youthful?

(A) 10
(B) 23
(C) 33
(D) 66

16. The capacity of a river is

(A) its solution load
(B) its suspended load
(C) its highest discharge
(D) the total load carried

17. Which of the following will have the LEAST effect on a river's capacity?

(A) Channel slope
(B) Channel shape
(C) Particle size
(D) River volume

18. Entrenched meanders are formed if

(A) uplift is slow
(B) sinuosity is low
(C) valley sides are resistant to erosion
(D) there is deposition on convex bends

19. River deposition occurs when

(A) load is decreased
(B) velocity is reduced
(C) water becomes deeper
(D) the river emerges from a lake

20. Which of the following is formed by the precipitation of calcium carbonate?

(A) Poljes
(B) Caverns
(C) Sink holes
(D) Stalagmites

21. Which of the following processes influences coastal erosion?

(A) Abrasion
(B) Saltation
(C) Infiltration
(D) Percolation

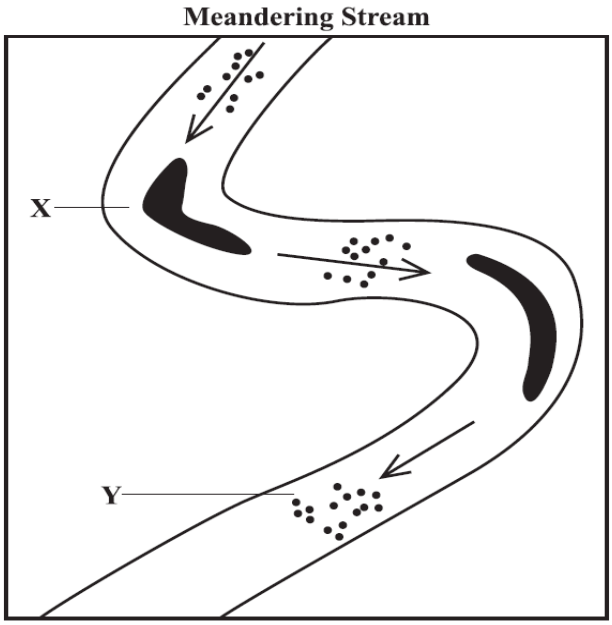
22. The Hjulstrom curve shows the relationship between water velocity and

(A) bed load
(B) capacity
(C) particle size
(D) dissolved load

23.] Which of the following describes one way in which sediment is transported along a coastal area?

(A) Hydraulic action
(B) Long−shore drift
(C) On−shore winds
(D) Prevailing winds

Item **24** refers to the following diagram.



24. A characteristic differentiating the feature labelled X from that labelled Y is that X experiences

(A) less deposition
(B) less turbulence
(C) more erosion
(D) more sinuosity

25. The most important effect on the rate of chemical weathering of limestone in the tropical rain forest is high levels of

(A) biological activity
(B) carbon dioxide absorption
(C) carbon dioxide depletion
(D) physical weathering

26. Which of the following characteristics promotes laminar flow?

(A) Boulder strewn channel
(B) Complex channel shape
(C) Irregular sloping channel
(D) Smooth straight channel

27. The rising limb of a storm hydrograph will be steep when

(A) rainfall is unreliable
(B) rocks are impermeable
(C) the drainage basin is elongated
(D) the slope of the land is gentle

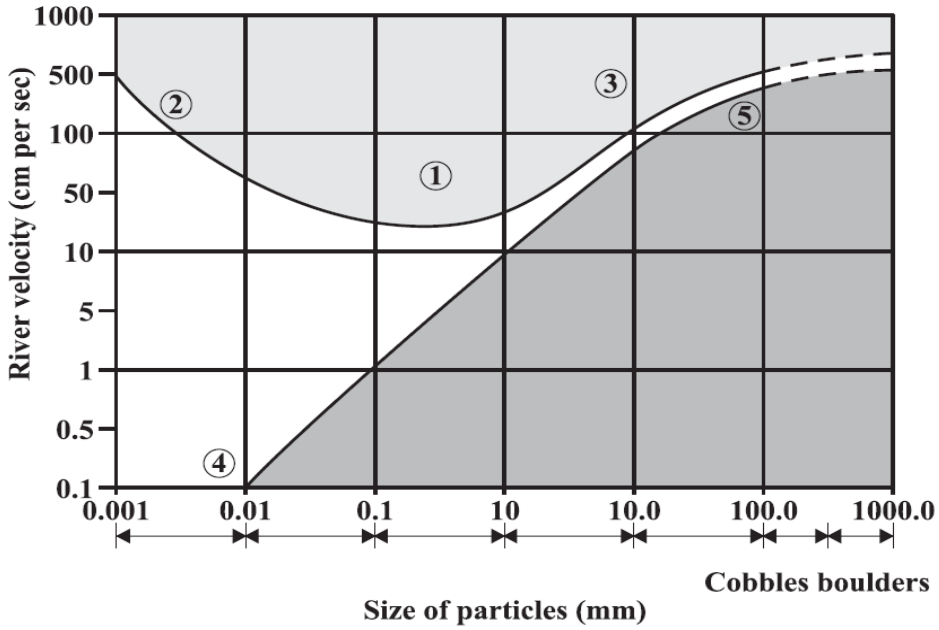
28. A river has a discharge of 0.32 cumecs and across sectional area of 1.6 m^2. What is the velocity of the river?

(A) 0.2 ms^{-1}
(B) 0.5 ms^{-1}
(C) 1.9 ms^{-1}
(D) 5.0 ms^{-1}

29. A particle of size 10 mm would be eroded at a velocity of

(A) 4 cms^{-1}
(B) 10 cms^{-1}
(C) 20 cms^{-1}
(D) 50 cms^{-1}

Item **30** refers to the following diagram.



30. The diagram above indicates that as velocity increases

(A) finer particles are deposited
(B) finer particles become cohesive
(C) larger particles can be moved
(D) larger particles are deposited

31. Which of the following is NOT a technological hazard?

(A) Oil spills
(B) Flash floods
(C) Gas explosions
(D) Industrial accidents

32. Which of the following are climatic hazards?

(A) Blizzards, droughts, sleet, drizzle
(B) Tsunamis, hail, frost, anticyclones
(C) Hurricanes, hail, droughts, tsunamis
(D) Floods, tornadoes, heat waves, tropical cyclones

33. Which of the following waves can only travel through the outer part of the crust?

(A) L
(B) P
(C) S
(D) T

34. Which of the following does NOT provide evidence for the theory of plate tectonics?

(A) Mid-Atlantic Ridge
(B) Sea-level changes
(C) Rocks and fossils
(D) Paleomagnetism

35. The Richter scale of earthquake magnitude represents the

(A) shake of secondary waves
(B) strength of primary waves
(C) energy released at the focus
(D) energy released at the epicentre

36. Which of the following is NOT the result of plate movements in the Eastern Caribbean?

(A) Trenches
(B) Hot spots
(C) Earthquakes
(D) Volcanic eruptions

37. In which of the following places does sea-floor spreading occur?

(A) Eurasian Plate
(B) Marianes Trench
(C) Mid-Atlantic Ridge
(D) North American Plate

38. Which of the following is NOT a hazard?

(A) An earthquake in a city
(B) A tsunami in a tourist resort town
(C) A flooding event in a farming community
(D) A volcanic eruption on an uninhabited island

39. A storm surge is associated with

(A) the rapid movement of water along the coast
(B) the vertical movement of water along a cliff
(C) a rise in the level of the sea due to a rise in atmospheric pressure
(D) a rise in the level of the sea due to a fall in atmospheric pressure

40. Which of the following does NOT contribute to flash floods?

(A) Forest removal
(B) Intense rainfall
(C) Permeable rock
(D) Steep slopes

41. Earthquakes may result in the formation of

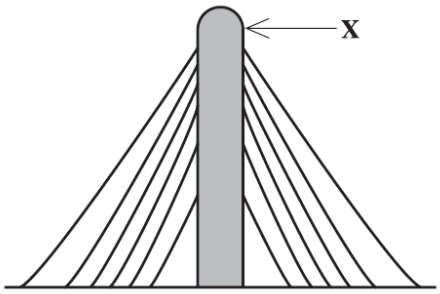
I scarps
II sinkholes
III landslides
IV tsunamis

(A) I and III only
(B) III and IV only
(C) I, II and IV only
(D) I, III and IV only

42. Hot spots are

(A) carried by plates
(B) caused by convection cells
(C) fixed in position
(D) more common in the Atlantic

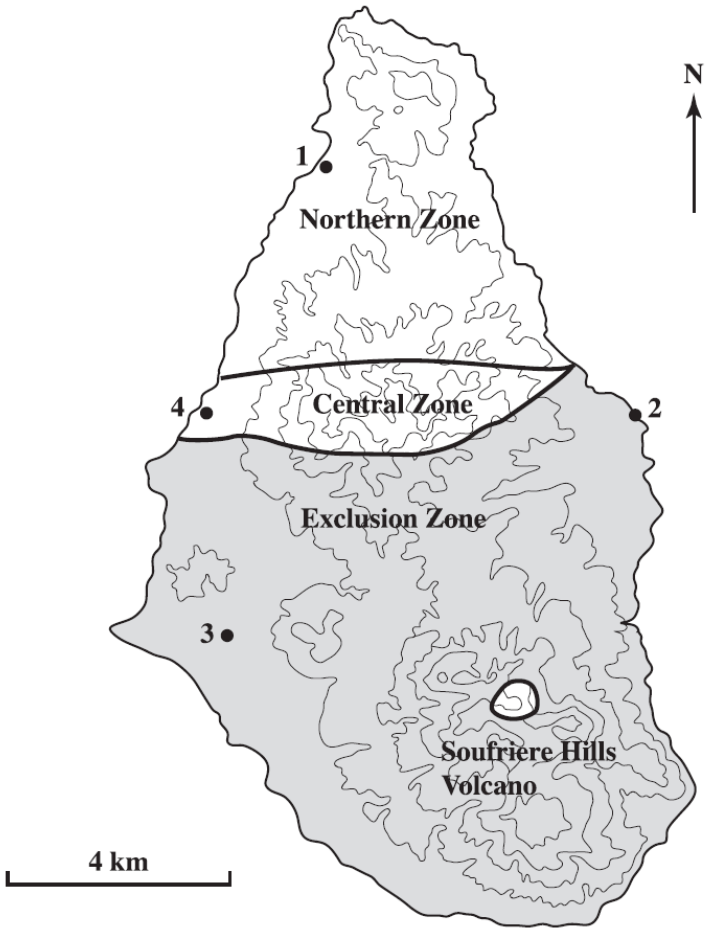
43. Item **43** refers to the following diagram.



The feature at X represents

(A) a sill
(B) a batholith
(C) a volcanic plug
(D) an explosive vent

Items **44**–**45** refer to the volcanic risk map below.



Exclusion Zone	**No admittance except for scientific monitoring and national security matters**
Central Zone	**Residential area only, all residents on state of alert** **All residents to have rapid means of exit 24 hours per day** **Hard hat area, all residents to have hard hats and dust masks**
Northern Zone	**No admittance except for scientific monitoring and national security matters**

44. Which is the BEST location for the site of a new capital?

(A) 1
(B) 2
(C) 3
(D) 4

45. At which location is there likely to be an increase in the land area of the island?

(A) 1
(B) 2
(C) 3
(D) 4

Caribbean Examinations Council
Master Data Sheet
Subject: CAPE Geography Unit: 1 Year: 2016 Specimen

Question #	Module/Syllabus Reference	Profile	Key	Question #	Module/Syllabus Reference	Profile	Key
1	1.2	KC	B	24	2.2	UK	C
2	1.2	KC	D	25	2.2	UK	A
3	1.3	KC	C	26	2.3	UK	D
4	1.10	KC	B	27	2.5	UK	B
5	1.3	KC	C	28	2.7	PS	A
6	1.11	KC	A	29	2.5	PS	D
7	1.7	KC	A	30	2.5	PS	C
8	1.7	UK	C	31	3.2	KC	B
9	1.3	UK	D	32	3.2	KC	D
10	1.5	UK	C	33	3.4	KC	A
11	1.10	UK	D	34	3.4	KC	D
12	1.10	UK	A	35	3.4	KC	A
13	1.3	PS	B	36	3.5	KC	B
14	1.4	PS	A	37	3.5	KC	C
15	1.4	PS	B	38	3.1	UK	D
16	2.1	KC	D	39	3.3	UK	D
17	2.1	KC	B	40	3.3	UK	C
18	2.2	KC	C	41	3.5	UK	D
19	2.3	KC	B	42	3.5	UK	B
20	2.3	KC	D	43	3.8	PS	C
21	2.3	KC	A	44	3.6	PS	A
22	2.5	KC	C	45	3.6	PS	B
23	2.2	UK	B				

TEST CODE **02125020**

SPEC 2016/02125020

C A R I B B E A N E X A M I N A T I O N S C O U N C I L

CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®

GEOGRAPHY

SPECIMEN PAPER

POPULATION GEOGRAPHY, GEOMORPHIC PROCESSES AND HAZARDS

Unit 1 – Paper 02

2 hours 30 minutes

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This paper consists of FOUR questions in TWO sections. Answer ALL questions.
2. Write your answers in the spaces provided in this booklet.
3. Do NOT write in the margins.
4. A map extract and a grid are provided for Question 1.
5. All diagrams must be well labelled.
6. You may use a silent, non-programmable calculator to answer questions.
7. You may use geometrical instruments.
8. If you need to rewrite any answer and there is not enough space to do so on the original page, you must use the extra lined page(s) provided at the back of this booklet. **Remember to draw a line through your original answer.**
9. **If you use the extra page(s) you MUST write the question number clearly in the box provided at the top of the extra page(s) and, where relevant, include the question part beside the answer.**

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

SECTION A

Answer ALL questions.

Write you answers in the spaces provided in this booklet.

1. Study the map extract of Malvern, Jamaica (provided as an insert) on a scale of 1:50 000 and answer the following questions.

(a) (i) List TWO types of settlement patterns shown on the map extract. For EACH pattern listed state the location.

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[4 marks]

(ii) The map extract shows 'mixed or scattered cultivation' in most of in the eastern section of the map. State THREE reasons to justify how population distribution relates to this activity.

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[3 marks]

(iii) How has the provision of Class B and Class C roads facilitated the distribution of settlements on the ENTIRE area? Cite FOUR observations using map evidence only.

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[8 marks]

(b) (i) Identify ONE difference between the coastline at Drodose Point (north–western section of the map) and the coastline at Boatsman Bay (southern section of the map).

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……

[2 marks]

(ii) Coral landforms take thousands of years to form. However, this feature is subject to destruction by man.

Study Figure 1 which illustrates a coral reef before and after destruction and answer the following question.

Figure 1. Coral reef before and after destruction

Source: http://coralreefsdestructionandbenefits.weebly.com/the-destruction-of-coral-reefs.html

Describe TWO possible ways by which the coral reef changed from State 1 (Before) to State 2 (After) within a period of four years.

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[4 marks]

(iii) What type of coral reef formation is illustrated on the Malvern map extract?

……

……

[1 mark]

(iv) Using the grid provided in Figure 2 on page 7, illustrate EACH of the following features in the area of Easting 65 to Easting 70, and Northing 36 to Northing 44.

- Coastline
- Rivers
- Main roads only
- An outline of the highland and the location of Roy's Run
- Label or Key

[8 marks]

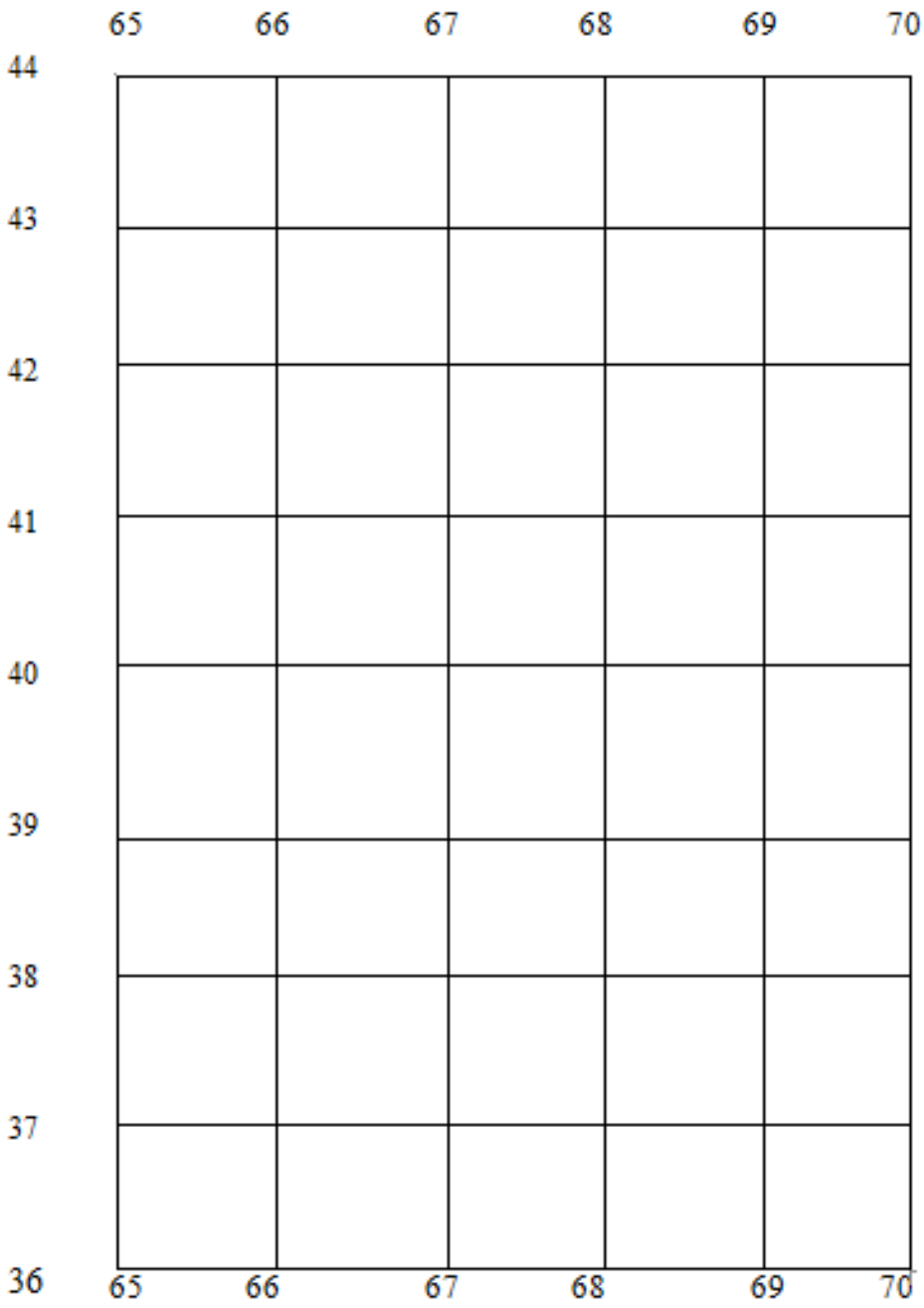

Figure 2. Sketch map showing a section of the west coast of Malvern

(c) A local tourism entity would like to develop Calabash Bay (near Great Pedro Pond) as a tourism resort. You are required to advise of possible hazards to the area before the development.

(i) Identify THREE possible hazards that could be experienced.

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[**3 marks**]

(ii) Describe TWO effects of ONE of the hazards identified in (c) (i).

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[4 marks]

(iii] Suggest FOUR strategies that can be recommended for hazard preparedness and mitigation in the area.

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[8 marks]

Total 45 marks

SECTION B

Answer ALL questions in this section.
Write your answers in the spaces provided in this booklet.

MODULE 1: POPULATION AND SETTLEMENT

2. (a) Study Figure 3, which shows the world's density of population, and answer the questions that follow.

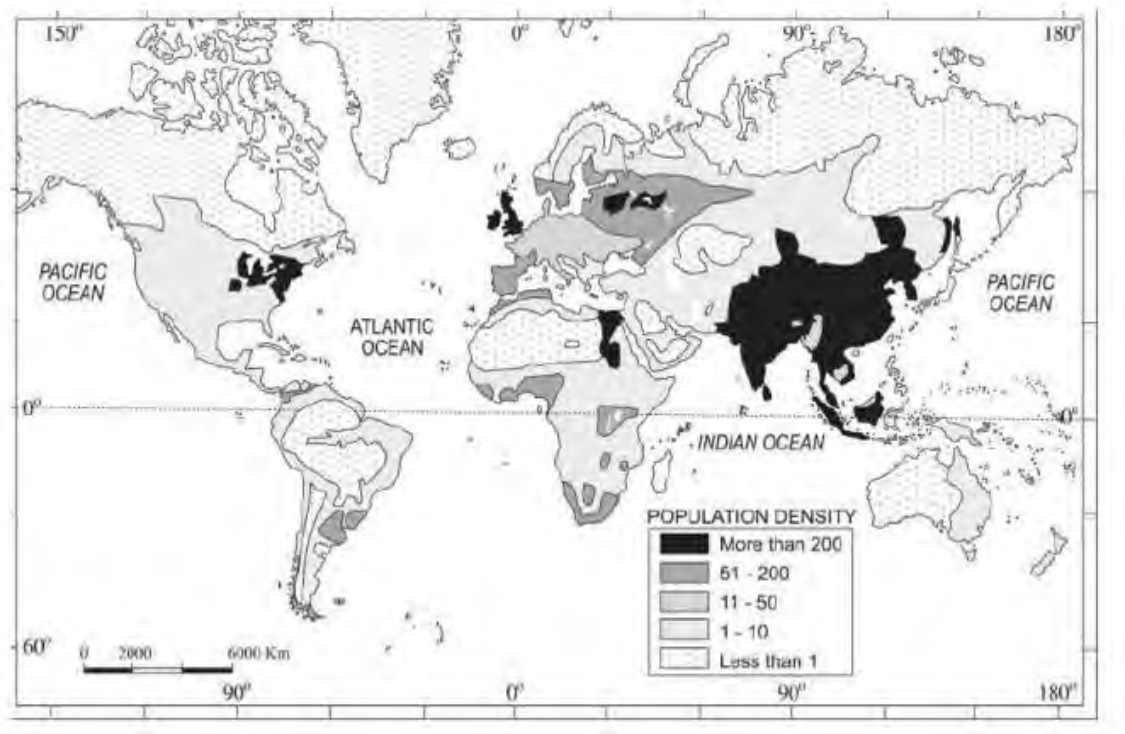

Figure 3. World density of population, 2001

Source: https://ncertnotess.wordpress.com/2010/01/11/fundamentals-of-human-geography-chapter-2-the-world-population-distribution-growth-density/

(i) Name FOUR regions in Figure 3 with a population density of more than 200 people per square kilometre.

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[2 marks]

(ii) State THREE conditions responsible for population densities of less than 1 person per square kilometre as illustrated in Figure 3.

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[3 marks]

(b) (i) Define the term 'counter-urbanization'?

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[3 marks]

(ii) State THREE 'push' and THREE 'pull' factors that may contribute to counter-urbanization.

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[6 marks]

(c) Economically less developed regions have been slower to adopt ageing as a major public policy concern, despite the fact that older populations in many developing countries are growing more rapidly than are those of industrialized nations.

Write an essay discussing THREE problems of ageing populations in the Caribbean region, suggesting THREE strategies that could be incorporated to address the issues.

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[14 marks]

Total 30 marks

MODULE 2: HYDROLOGICAL, FLUVIAL, COASTAL AND LIMESTONE FEATURES

3. Study Figure 4, which shows a major limestone surface feature, and answer the questions that follow.

Figure 4. Major limestone surface feature

Source: http://www.geograph.org.uk/photo/2997744

(a) (i) Name the limestone surface feature shown in Figure 4.

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[1 mark]

(ii) Explain how the feature illustrated in Figure 4 was formed.

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[3 marks]

(b) (i) Describe how limestone rocks are changed by weathering. Include an equation for this process.

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[3 marks]

(ii) A developer would like to construct an ecovillage comprising vacation homes and picnic campgrounds in limestone terrain. Discuss TWO factors which make this physical development on limestone landscape challenging.

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[6 marks]

(c) Write an essay explaining the hydrological cycle. Include a well-illustrated diagram.

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[14 marks]

Total 30 marks

4. (a) (i) Differentiate between a 'flash flood' and a 'storm surge flood'.

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[4 marks]

(b) (i) State FOUR factors that cause flooding.

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[**3 marks**]

(ii) Explain, using FOUR points, how vegetation functions in reducing the intensity of flooding.

[8 marks]

(c) Explain how the chemical composition of the lava and the type of eruption account for the shape of THREE types of volcanoes.

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[14 marks]

Total 30 marks

END OF TEST

EXTRA SPACE

If you use this extra page, you MUST write the question number clearly in the box provided.

Question No. ☐

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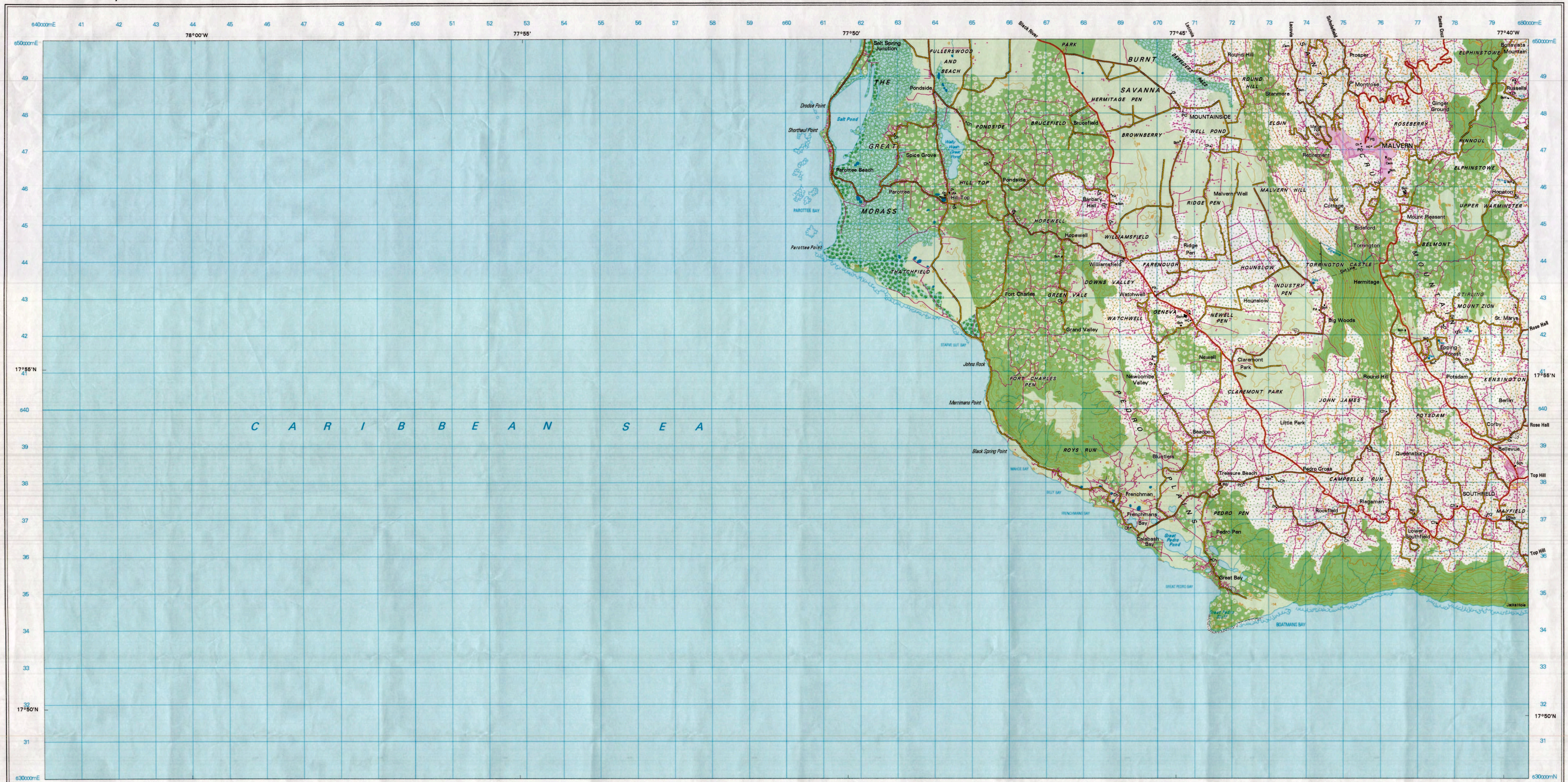
JAMAICA 1:50,000 (METRIC EDITION)

MALVERN



LEGEND

- Road - Class A, Dual Carriageway
- Road - Class B
- Road - Class C
- Road - Other
- Motorable Track or Footpath
- Built- up Area
- Named Building, Hotel, Other Building
- ST ANN'S BAY — Large Town
- RETREAT — Town
- CARRON HALL — Minor Town
- Chester — Village
- Railway
- Light Railway or Siding
- Railway tunnel
- Power Transmission Line
- Boundary - County
- Boundary - Parish
- Boundary - Forest Reserve
- Trigonometrical Station
- Photogrammetric Spot Height
- Contours 20m V.I up to 80m and 40m V.I. thereafter
- Depression
- Woodland
- Trees and Scrub
- Forest Plantation
- Sugar Cane Plantation
- Banana Plantation
- Citrus Plantation
- Coconut Plantation
- Tobacco Plantation
- Mixed or scattered Cultivation
- Pasture
- Watercourse, Waterfall, Rapids, Dam
- Alignment uncertain
- Pond, Lake
- Water Tank, Borehole
- Well, Spring
- Rice
- Mangrove
- Marsh or Swamp
- Coral
- Sand or Gravel
- Lighthouse, Chimney
- Point of Interest
- Transmitter
- Games Field/ Playground
- Flat Rock
- Cliff, Quarry

The delineation of boundaries must not be considered authoritative.

The representation on this map of a road, track or footpath is no evidence of a right of way.

The accuracy of contours cannot be guaranteed in areas of high vegetation.

Under water features should not be relied on for the purposes of navigation.

ABBREVIATIONS

Cem	Cemetery
Ch	Church
Com C	Community Centre
Ct Ho	Court House
Dis	Distillery
Fcty	Factory
FS	Fire Station
F	Ford
HC	Health Centre
Hosp	Hospital
HEP	Hydro Electric Plant
LC	Level Crossing
Lib	Library
Mkt	Market
NT	National Trust Commission Monument
PS	Police Station
PO	Post Office
PA	Postal Agency
Pwr S	Power Station
Res	Reservoir
Rn	Ruin
Sch	School
Tk	Tank
TEx	Telephone Exchange
UC	Under Construction
WCa	Water Catchment

CONVERSION TABLE

Metres	Feet
1000	3000
950	2850
900	2700
850	2550
800	2400
750	2250
700	2100
650	1950
600	1800
550	1650
500	1500
450	1350
400	1200
350	1050
300	900
250	750
200	600
150	450
100	300
50	150
0	0

Series 1
Sheet 15
Edition 2-SMD/NLA 2010

Published by the National Land Agency, Jamaica Government.

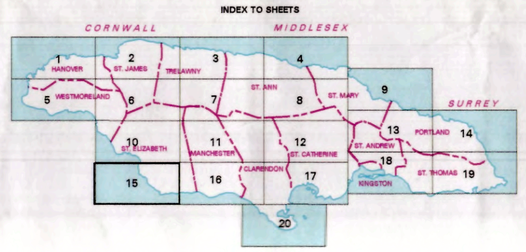
SHEET HISTORY

This edition has been prepared by the Surveys and Mapping Division of the National Land Agency, 23 ½ Charles Street Kingston Jamaica W.I. Compiled in 2010 from imagery captured by Space Imaging 2001 and Digital Globe In 2007. Field work completion done in 2010 by the Surveys and Mapping Division.Primary updated feature for this revised edition is the road network.

Series 1
Sheet 15
Edition 2-SMD/NLA 2010

THIS SERIES WAS PREPARED BY THE GOVERNMENT OF JAMAICA (NATIONAL LAND AGENCY).

INDEX TO SHEETS



SCALE 1: 50,000

METRES 1000 500 0 1 2 3 4 5 6 7 8 9 10 KILOMETRES
YARDS 1000 500 0 ½ ½ ½ 1 2 3 4 5 6 MILES

HEIGHTS IN METRES

Users noting amendments are asked to mark them on the map and send it to:-

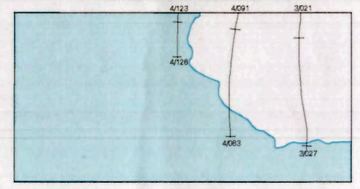
Director Surveys & Mapping
National Land Agency
Surveys & Mapping Division
23 1/2 Charles Street
Kingston
Jamaica

The map will be replaced

Copies of this map can be obtained from:-

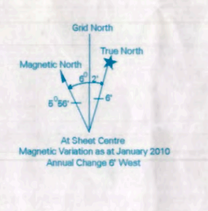
National Land Agency
Surveys And Mapping Division
23 1/2 Charles Street
Kingston
Jamaica

AIR PHOTOGRAPHY - FLIGHT LINES



Flown 1979-80 prefixed by 182/JA unless otherwise stated

Grid:-	Jamaica Metric Grid
Projection:-	Lambert Conformal Conic with One Standard Parallel (18°N)
Ellipsoid:-	WGS84
Unit of Measurement:-	Metre
Meridian of Origin:-	77°West of Greenwich
Latitude of Origin:-	18°North
Scale Factor at Origin:-	1.000
False Co - ords of Origin:-	760,000m Easting
	980,000m Northing
Plan Datum:	Port Charles Flagstaff
Height Datum	Mean Sea Level



JAMAICA METRIC GRID

TO GIVE A GRID REFERENCE ON THIS SHEET
Prefix 1: 50,000 Sheet number e.g. 15ATMAT

POINT Malvern

Easting	Northing
Take West Edge of square in which Point lies, and read the figure Printed adjacent to the line on North or South margin. Estimate tenths Eastwards	Take West Edge of square in which Point lies, and read the figure Printed adjacent to the line on East or South margin. Estimate tenths Northwards
East 476	North 647

REFERENCE 15ATMAT — to nearest 100 metres

C A R I B B E A N E X A M I N A T I O N S C O U N C I L

CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®

GEOGRAPHY

UNIT 1 – PAPER 02

KEY AND MARK SCHEME

SPECIMEN

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

Question **1**

Specific Objectives: **Module 1: 9, 13, 14**

Module 2: 4, 7

Module 3: 2, 6, 8, 9

Content: **Module 1: 6(i), 6(ii)**

Module 2: 3(iii), 3(iv), 3(v)

Module 3: 1(i), 1(ii), 5(iii)

(a) (i) Types of settlement patterns shown on the map extract:

Nucleated/compact (**1**): Mainly at Malvern (**1**) and Bellevue in Southfield 7938 (**1**)

Linear/ribbon (**1**): Primarily along roads, (**1**) a dominant pattern over the map section, e.g. along the Exeter main road, Geneva main road, Hopewell (**1**) coastal e.g. at the NW section of the map, Drodse Point (NW) near Parottee Beach; (**1**) and Great Bay (7135) (**1**)

Dispersed (**1**): Small settlements e.g. Grand Valley (6742) and Treasure Beach (7138); (**1**) in the central and eastern sections e.g. Hounslow, Industry Pen (7243) and Hopeton (7949); (**1**) and coastal (**1**)

Isolated: (**1**) Western section of the map e.g. Fullers Wood and Beach (6449) and Grand Valley (6741) Hill Top, Pondside (**1**)

Indicates the type of settlement and gives one location each (2 marks)
Settlement pattern without a location should not be awarded a mark

(2 x 2) [4 marks]

(ii) Reasons include:

- Steep hillside terrain which generally characterize populations engaged in small farming activity (**1**)
- Small farming communities show that the population depends on small scale agriculture as a main livelihood. (**1**)
- The map key indicates numerous 'motorable tracks or footpaths' in steep terrain near cultivation (**1**) some sections steep and only accessed by the persons from the communities.
- The absence of administrative functions and other functions e.g. hospitals, police stations, post office, etc. (**1**) or few functions e.g. schools, health centres, postal agencies, etc. (**1**) indicate small rural communities dependent on agriculture (**1**).

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

Question **1**(ii) cont'd

- Cultivation in close proximity to 'woodland' also 'trees and scrub' which suggest areas were cleared for cash crops (**1**).
- Numerous settlements/small villages or central places to support a small farming community (**1**).

Stating any three reasons x 1 mark [**3 marks]**

(iii) Observations on the role of transport network in population distribution:

Transport networks –

Extensive road networks - Class B, C as well as 'other roads' is a main feature of the map extract (**1**).

Major road - Class B trend NW to SW linking several villages (**1**).

Main road to Malvern, the main settlement in the area (**1**).

Transportation is available for movement of farm produce and people, given that agriculture is a main economic activity for resident population (**1**).

Existing nucleated settlements have been established where main roads converge, e.g. Malvern and Bellevue (**1**).

Main roads link settlements in the highlands to the lowlands (**1**) coastal roads to the south remain undeveloped (**1**) 'motorable tracks or footpaths' allow access to isolated districts which connect to Class B and C road networks.

Any eight points – 8 x 1 mark **[8 marks]**

(b) (i)

- The coastline at Drodose Point is bounded by a marsh or swamp (The Great Morass) (**1**), whereas the coastline at Boatsman Bay is fringed by mostly hills including the Great Pedro Bluff, and small beach (**1**).

- The Drodose Point coastline is low – at sea level (**1**). The coastline at Boatsman Bay comprise mostly cliffs and hills (**1**).

- The Drodose Point coastline marked by a road from Salt Spring Junction to Parottee Bay(**1**); the high coastal terrain at Boatsman Bay impedes road access (**1**).

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

Question **1** (b) (i) cont'd

- The coastline at Drodose Point is marked by a coastal pond (Salt Pond). At Boatsman Bay rivers enter the sea via narrow steep valleys from the coastal highlands (**1**).

- The Drodose Point coast is also marked by a linear settlement(1); there is an absence of settlements at Boatsman Bay (1).

Any one difference described 1 mark **[2 marks]**

(ii) Destruction of reef caused by:

- Destructive fishing methods (**1**) e.g. dynamite fishing, and other explosives (**1**).

- Overfishing (**1**) that has led to increase in number of predators that eat corals (**1**).

- Unmanaged/uncontrolled pollution (**1**), from domestic and industrial wastes, fertilizers, and pesticides, oil spills (**1**), untreated or improperly treated sewage are serious threats to the delicate reefs (**1**).

- Unmanaged consistent coral harvesting by tourists and locals (**1**).

- Another way that divers catch coral reef fish is with cyanide. (**1**) Cyanide is a poison. (**1**) The divers pour this poison on the reef, which stuns the fish and kills the coral. (**1**) Then they rip open the reef with crowbars (**1**) and catch the fish while they are too sick from the poison to swim away. This poison kills 90% of the fish that live in the reef (**1**).

Any two ways x 2 marks each **[4 marks]**

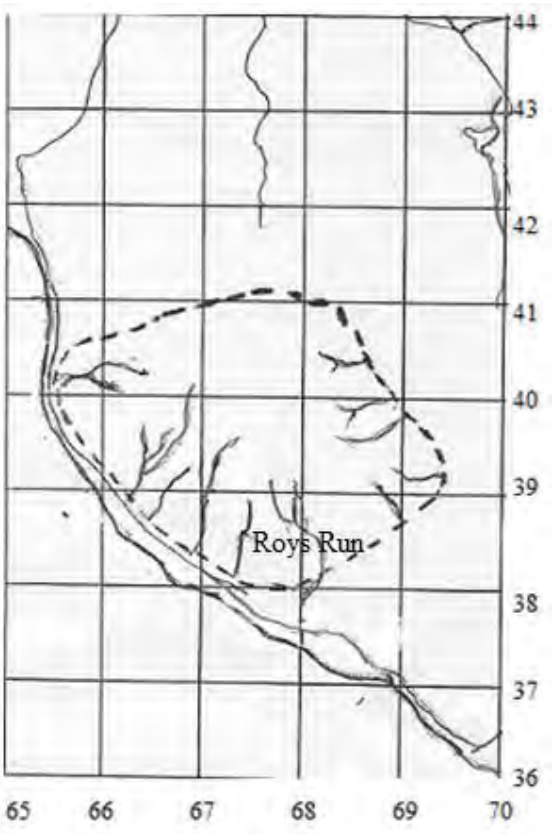
(Way identified – 1 mark Description - 1 mark)

(iii) A fringing reef **[1 mark]**

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

(iv)

Figure 2. Sketch map showing a section of the west coast of Malvern



Key

Rivers

Highlands

Roads

- Coastline (**1 mark**)
- Rivers (1 mark if 1 major river missing) (**2 marks**)
- Main Roads (1 mark if 1 omitted) (**2 marks**)
- Outline the highland (1) and locate Roy's Run (1) **(2 marks**)
- **Label or Key** (**1 mark**)

[8 marks]

(c) (i) Three potential hazards include:

- Storm surge flooding from the sea as the area is low lying (**1**)
- Flooding from the ponds due to a rise in the water table (**1**)

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

- Tsunami, triggered by earthquake (**1**)
- Wave erosion/destructive waves(**1**)
- Health hazards e.g. from mosquitos(**1**)
- Poor drainage and waterlogging of soil(**1**)

Any three hazards – 3 x 1 mark [**3 marks**]

(ii) Effects of hazards:

- Wave erosion/destructive waves, tsunami and storm surge – destruction to low lying coastal areas (**1**) damage to housing and other infrastructure as well as existing vegetation (**1**). Coastal areas may become inundated (**1**). Loss of life (**1**).
- Flooding from neighbouring rivers and perennial ponds (**1**) excessive water damage (**1**), infrastructure (utilities, roads) and housing are likely to be damaged (**1**).
- Poor drainage leading to subsidence (**1**), high coastal water table (**1**), reduced drainage (**1**).
- Intensified health and environmental problems (**1**), malaria, dysentery and other waterborne diseases (**1**).

Two marks for each of the 2 effects of hazards (2 x 2) [**4 marks**]

(iii) Strategies in the preparation and mitigation of hazards:

- **Environmental Research (1):** Conduct the necessary research and surveys to gather information on the environment (**1**) and soil to determine feasibility for construction (**1**).
- **Evacuation (1):** Establish procedures for evacuation (**1**).
- **Building Codes (1):**Establish and enforce rigid building codes (**1**), to reduce vulnerability to development of resort infrastructure (**1**).
- **Zoning and site selection for construction (1):** Set back construction from the foreshore so the development is less vulnerable to above normal waves (**1**). Set backs of construction from ponds which may flood in periods of high rainfall(**1**).
- Inform and educate residents (1)of the various hazards and the best recourse for them and the community (**1**).
- **Disaster preparedness Management** (**1**): Establish links with community, national and regional disaster management organizations so as to ensure they are readily forthcoming (**1**).

Any four strategies x 2 marks each expansion [**8 marks**]

(Strategy identified – 1 mark, expansion – 1 mark)

TOTAL 45 MARKS

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

MODULE 1

Question **2**

Specific Objectives: Module 1: 1, 3, 12

Content: Module 1: 1(i), 4(v), 6(v)

(a) (i) North Eastern USA (**1**); The British Isles (England) (**1**); North Eastern Africa (**1**); West Central Europe (**1**) and Asia (Bangladesh, India, Japan, China) (**1**).

Any four areas **[4 marks]**

(ii) These are generally difficult places to live. These include areas with:

- **Extreme climate** (very hot or very cold) (**1**) e.g. the Sahara Desert (**1**), the tundra in the North Pole/Arctic regions (**1**).
- **Very high mountains** or highland areas, e.g. the highlands of Tibet (**1**); the Urals; The Andes Mountains and Ethiopian Highlands etc. (**1**) above areas of altitude 1,500 m (4921 ft.) above sea level (**1**)
- **Dense vegetation**, e.g. the Amazon Rainforest (**1**)
- **Politically unstable countries**, population densities decrease as people migrate e.g. Afghanistan (**1**).

Any three points x 1 mark **[3 marks]**

(b) (i) Definition **counter-urbanization**

Counter-urbanization is the movement of a population (**1**) and economic activity away from urban areas (**1**) into surrounding rural areas or countryside, new town, new estate, a commuter town or village. (**1**)

[3 marks]

(i) Push and pull factors of counter-urbanization which may be considered:

- Push factors relevant to counter-urbanization include high land values, (**1**) high local taxes (**1**), traffic problems (**1**), high living pace and lifestyle (**1**), high living costs (**1**) fear of crime (**1**) and pollutions(1). However, for different cities, there may be some specific reason (**1**).

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

- Pull factors include the rural dream (the idea of the 'rural idyll') (**1**), pleasant surroundings (**1**), quiet etc.(**1**) large space(**1**). Real estate Agents, housing developers etc, all encourage outward movement through new developments(**1**)/building more houses and marketing these areas(**1**). In addition, with the advent of more sustainable public transport, people no longer have to live close to their work, and so can easily commute each day(**1**).

  Any three push factors stated x 1 mark (3 marks)

  Any three pull factors stated x 1 mark (3 marks) **[6 marks]**

(c) (i)

Any acceptable introduction, e.g.

Worldwide, life expectancy of older people continues to rise. By 2020, for the first time in history, the number of people aged 60 years and older will outnumber children younger than 5 years. By 2050, the world's population aged 60 years and older is expected to total 2 billion, up from 841 million today. Eighty per cent of these older people will be living in low-income and middle-income countries.

Issues related to an ageing population (6 marks)

- Increase in the dependency ratio. If the retirement age remains fixed, and the life expectancy increases, there will be relatively more people claiming pension benefits and less people working and paying income taxes. The fear is that it will require high tax rates on the current, shrinking workforce.

- Increased government spending on health care and pensions. Also, those in retirement tend to pay lower income taxes because they are not working. This combination of higher spending commitments and lower tax revenue is a source of concern for Western governments – especially those with existing debt issues and unfunded pension schemes.

- Those in work may have to pay higher taxes. This could create disincentives to work and disincentives for firms to invest therefore there could be a fall in productivity and growth.

- Shortage of workers. An ageing population could lead to a shortage of workers and hence push up wages causing wage inflation. Alternatively, firms may have to respond by encouraging more people to enter the workforce, through offering flexible working practices.

- Changing sectors within the economy. An increase in the numbers of retired people will create a bigger market for goods and services linked to older people (e.g. retirement homes).

- Higher savings for pensions may reduce capital investment. If society is putting a higher percentage of income into pension funds, it could reduce the amount of savings available for more productive investment, leading to lower rates of economic growth.

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

Strategies:

- **Deep and fundamental reforms of health and social care systems** will be required. Although people are living longer, they are not necessarily healthier than before – nearly a quarter (23%) of the overall global burden of death and illness is in people aged over 60, and much of this burden is attributable to long-term illness caused by diseases such as cancer, chronic respiratory diseases, heart disease, musculoskeletal diseases (such as arthritis and osteoporosis), and mental and neurological disorders.

- **Strategies are needed that better prevent and manage chronic conditions** by extending affordable health care to all older adults and take into consideration the physical and social environment.

- **Reform of Labour laws:** Examples include changing policies to encourage older adults to remain part of the workforce for longer (e.g., removing tax disincentives to work past retirement age).

- **People are encouraged to save for their retirement** in a special pool to facilitate savings in old age.

- **Facilities such as nursing homes** and care workers will be needed, perhaps in preference to schools and nurseries, as the population gets older.

- A further option is the **immigration of skilled labour**, which can help boost the labour market in general or specific types of skilled labour.

Any acceptable conclusion

Introduction = 1 mark
Any three issues stated (1) developed (1) = 6 marks
Any three strategies stated (1) developed (1) = 6 marks
Conclusion = 1 mark

[14 marks]

TOTAL 30 MARKS

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

MODULE 2

Question **3**

Specific Objectives: 1, 3

Content: 1(i), 4(ii, iv)

(a) (i) Swallow Hole [**1 mark]**

(ii) A swallow hole is formed in limestone where persistent weathering of a major joint (crack) occurred. (**1**) This could have happened because a stream flows down the joint(**1**) and made it wider by chemical weathering (**1**) (corrosion) (**1**). Constant chemical attack by water (**1**) or the chemical dissolution of carbonate rocks(**1**).
[**4 marks]**

(b) (i) Carbonic acid is especially effective at dissolving limestone. It reacts with the calcium carbonate ($CaCO_3$) in the limestone (**1**). This forms calcium bicarbonate ($Ca(HCO_3)_2$,(**1**)which is soluble in water (**1**). This solution percolates through rocks. (**1**) It removes the calcium carbonate.(**1**) When the carbonic acid seeps through limestone underground, it can open up huge cracks or hollow out vast networks of caves (1). The chemical equation for this process is $CaCO_3 + H_2CO_3 = Ca(HCO_3)_2$ (**1**).
i.e., Limestone + Carbonic acid (rainwater) = Calcium Bicarbonate (soluble limestone) (**1**).

Complete description – 3 marks
Satisfactory description – 2 marks
Weak description – 1 mark **[3 marks]**

(ii) Discuss TWO factors that affect development in limestone areas.

- Chemistry of the rock foundation (**1**)- susceptible to chemical weathering (**1**)- threat of swallow holes (**1**)- burst pipes could increase dissolving of imestone foundation - cause property damage(**1**)
- Structure of the rock (**1**)- underground features - coral limestone - threat of sinkholes (**1**)- expense of surveying the subsurface (**1**)- important to ensure that there are no cavities below the property to cause sinkholes - expensive to fill these sinkholes(**1**)
- High porosity (**1**)- flash floods hazard(1)- if roads or houses built in depressions - dolines , poljes, near swallow holes (**1**)- after rains a resurgent stream could spring out from under rock formations or if the swallow holes are blocked by debris, there would be temporary floods, (**1**)
- Irregular surface terrain – e.g. clints and grikes (**1**)- could cause injury while hiking (**1**)- challenging to get injured help - may be a great distance to health care facilities(**1**);
- Irregular surface terrain(**1**) - expense of filling depressions for roads and laying, for example, overhead electricity lines,

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

telephone lines and water pipelines(**1**) - limited access and expensive final cost to consumer (**1**)

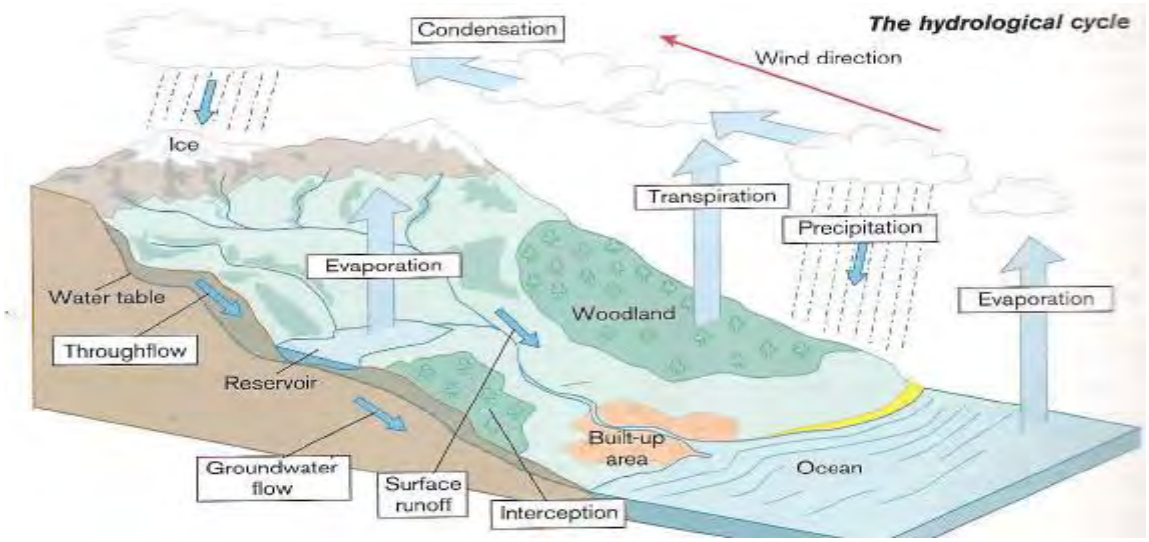
- Carrying capacity(**1**) - may encourage more people in the region than it can support - exceeding carrying capacity(**1**)- some deterioration of water quality and availability(**1**), obstructed views blocks the scenery and footpath erosion(**1**)

Factor identified (1)
Fully discussed (2)/partially discussed (1) [6 marks]

(c) **Appropriate introduction e.g.**

The hydrologic cycle is a conceptual model that describes the storage and movement of water (**1**) between the biosphere, atmosphere, lithosphere, and the hydrosphere (**1**). It is the continuous movement of water between the land, the sea and the air(**1**).

The Hydrological Cycle



Source:http://www.sln.org.uk/geography/schools/blythebridge/GCSERiversRevisionHC.htm

An appropriate diagram + precipitation, evaporation, transpiration, condensation, & at least one ground level water source = 4 marks.]
Any one missing – 3 marks
Any two missing – 2 marks
Any three missing – 1 mark

[4 marks]

GEOGRAPHY
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KEY AND MARK SCHEME

Question **3**(c)

Water on our planet can be stored in any one of the following major reservoirs: atmosphere, oceans, lakes, rivers, soils, glaciers, snowfields, and groundwater. (**1**) Water moves from one reservoir to another by way of processes like evaporation, (**1**) condensation (**1**), precipitation (**1**), deposition (**1**), runoff (**1**), infiltration, sublimation, transpiration (**1**), melting, and groundwater flow (**1**).

The oceans supply most of the evaporated water found in the atmosphere.(**1**) Of this evaporated water, only 91% of it is returned to the ocean basins by way of precipitation.(**1**) The remaining 9% is transported to areas over landmasses where climatological factors induce the formation of precipitation.(**1**) The resulting imbalance between rates of evaporation and precipitation over land and ocean is corrected by runoff and groundwater flow to the oceans.(**1**)

Water is more or less constantly moving and changing from one state to another (solid, liquid, or vapor/gas) while interacting with the physical processes present in the atmosphere (**1**), lithosphere, and biosphere. These changes and movements of water are linked together in the hydrologic cycle (1). Components of the hydrologic cycle include water vapour and clouds in the atmosphere, but also include liquid surface waters (oceans, lakes and streams) on continents as well as groundwater (**1**).

Other important components of the hydrologic cycle include glacial ice held on continents, and water contained in biomass (**1**). Plants and animals are about 70% water, by volume (**1**). Water evaporates in enormous quantities from the oceans and then falls as precipitation either on land or in the ocean. That portion which falls on land evaporates, is transpired by plants, runs off, or infiltrates by some measure. (**1**)Between the various stages of the hydrologic cycle, water moves between temporary storage areas often called reservoirs. These movements are controlled by climatic conditions, which include rain, snow, wind, and other meteorological processes. Eventually, all water ends up back in the ocean(**1**).

Three points developed x 3 marks each

Any three points relevant to storage, precipitation & the atmosphere x 3 marks = 9 marks

Introduction = 1 mark
Illustration = 4 marks

[14 marks]

TOTAL 30 MARKS

GEOGRAPHY
UNIT 1 – PAPER 02
KEY AND MARK SCHEME

MODULE 3

Question **4**

Specific Objectives: 3, 5

Content: 2(ii), 3(v)

(a) (i) Points to note in the differences between a flash flood and a storm surge flood

Flash floods occur with little or no warning (**1**). Flash floods can be deadly due to the rapid rise in water levels and the high flow-velocities of the water (**1**). There are factors which contribute to the occurrence of flash floods: rainfall intensity, duration, surface condition and topography (**1**). Urban areas are more susceptible to flash floods due to the lack of natural drainage systems (**1**) and the high amounts of impervious surfaces (concrete, tarmac) (**1**). These tend to increase the rate of run off into water systems (**1**).

On the other hand, **storm surges** inundate coastal margins (**1**) due to severe onshore winds (**1**), often accompanied by low atmospheric pressure and sometimes high tides (**1**). Friction between moving air and the water creates drag. Depending on the distance over which this process occurs (fetch) and the velocity of the wind, water can pile up to depths of over 7 metres (**1**). Intense, low-pressure systems and hurricanes (tropical cyclones) often cause storm surges (**1**). Nine out of ten tropical cyclone fatalities are caused by the storm surge flooding associated with the storm (**1**).

Any four points (2 flash flood + 2 storm surge) x 1 mark [4 marks]

(b)(i) Factors which may contribute to flooding include:

- Volume, spatial distribution, intensity and duration of rainfall over a catchment(**1**)
- The capacity of the watercourse or stream network to convey runoff (**1**)
- Catchment and weather conditions prior to a rainfall event (**1**)
- The removal of ground cover (**1**)
- Topography (**1**) and
- Tidal influences(**1**)
- Mans impact on the removal of vegetation/deforestation/especially on slopes, etc. (**1**)

Any four factors x 1 mark [4 marks]

GEOGRAPHY
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KEY AND MARK SCHEME

Question **4** cont'd

(ii) Vegetation reduces the possibility of flooding in a number of ways:

- Increase interception, reduces runoff.
- Precipitation caught on the leaves is evaporated, (**1**) so that much water may not even reach the ground (**1**).
- The roots of the trees/plants themselves will absorb some water, (**1**) and reduce flooding(**1**).
- The roots also increase lag time to storm water reaching a river as it is an obstacle that the precipitation has to get around(**1**)
- Tree roots bind the soil (**1**), deforestation (removal of vegetation) can Increase flooding (**1**) – swollen streams cut deep channels and carry away valuable top soil.

Mention four points x 2 marks each = 8 marks

Point mentioned (1) + described (1) **[8 marks]**

Appropriate Introduction e.g.

(c) Volcanoes are vents in the earth's crust through which lava, rock fragments, hot vapour and gases are ejected (**1**). And while they are all natural events in the life of earth, there are different types of volcanoes. (**1**) The types of volcanoes are differentiated based on their size, composition and explosive style. (**1**)

[1 mark]

The composition of the lava and the type of eruption of volcanoes

Composite cone volcanoes

Type of Lava:

Composite cone volcanoes are steep-sided volcanoes which erupt in an explosive manner. In fact, Mount Vesuvius is a composite volcano that is most famous for burying the ancient Roman city of Pompeii in up to 20 feet of volcanic ash in 79 AD. The explosiveness of their eruptions is due to the thick, highly viscous lava that is produced by composite cone volcanoes. 'Composite volcanoes,' are cone-shaped volcanoes composed of layers of lava, ash and rock debris. Composite cone volcanoes are grand sites and can grow to heights of 8,000 feet or more. Mount St. Helens and Mount Rainier, which are both found in Washington State, are impressive examples of composite volcanoes.

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Question **4** (c) cont'd

Type of Eruption:

The viscous lava of composite cone volcanoes has a lot to do with why they are shaped the way they are. The thick lava cannot travel far down the slope of the volcano before it cools. This makes the sides of the composite volcano steep. These explosive volcanoes also spew out eruptions of small rock and ash, which gets deposited on the sides of the volcano. Therefore, we see that composite volcanoes are composed of alternating layers of hardened lava, volcanic ash and rock fragments, which is why they are called 'composite'. Eruption type - Strombolian

Shield volcanoes

Type of Lava:

Shield volcanoes can cover large areas but never grow very tall. The reason these volcanoes tend to flatten out is due to the composition of the lava that flows from them, which is very fluid, basalt flow. This more fluid lava spreads out in all directions but cannot pile up in steep mounds. These are broad, dome-shaped volcanoes with long, gently sloped sides. From overhead, it would resemble a warrior's shield, hence the name.

Type of Eruption:

Shield volcano eruptions are less explosive than composite volcanoes, as the lava tends to pour out of the volcano's vent, creating the low-profile layers of lava that are characteristic of these volcanoes. The Hawaiian Islands are actually the tops of gigantic shield volcanoes rising from the ocean basin. Eruption type - Hawaiian

Cinder cone volcanoes

Type of Lava:

Cinder cone volcanoes are steep, cone-shaped volcanoes built from lava fragments called 'cinders'. These volcanic cinders, also known as scoria, are glassy volcanic fragments.

Type of Eruption:

Volcanic fragments that explode from cinder cone volcanoes cool quickly. Therefore, they do not fall far from the vent of the volcano, and this builds the steep sides of the cinder cone volcanoes fairly quickly.

Appropriate Conclusion [1 mark]

Introduction = 1 mark
Name of three volcanos x 1 mark = 3 marks
Any three points relevant to each (lava and the type of eruption) x 3 marks = 9 marks
Conclusion = 1 mark

[14 marks]
[TOTAL 30 mark]

TEST CODE **02125032**

SPEC 2016/02125032

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GEOGRAPHY

SPECIMEN PAPER

POPULATION GEOGRAPHY, GEOMORPHIC PROCESSES AND HAZARDS

Unit 1 – Paper 032

1 hour 30 minutes

READ THE FOLLOWING IINSTRUCTIONS CAREFULLY.

1. This paper consists of THREE questions. Answer ALL questions.
2. Write your answers in the spaces provided in this booklet.
3. Do NOT write in the margins.
4. You may use a silent, non-programmable calculator to answer questions.
5. You may use geometrical instruments.
6. If you need to rewrite any answer and there is not enough space to do so on the original page, you must use the extra lined page(s) provided at the back of this booklet. **Remember to draw a line through your original answer.**
7. **If you use the extra page(s) you MUST write the question number clearly in the box provided at the top of the extra page(s) and, where relevant, include the question part beside the answer**.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

Answer ALL questions.

MODULE 1

1. Figure 1 shows the location of various activities in a small town centre. Refer to Figure 1 and answer the question on page 3.

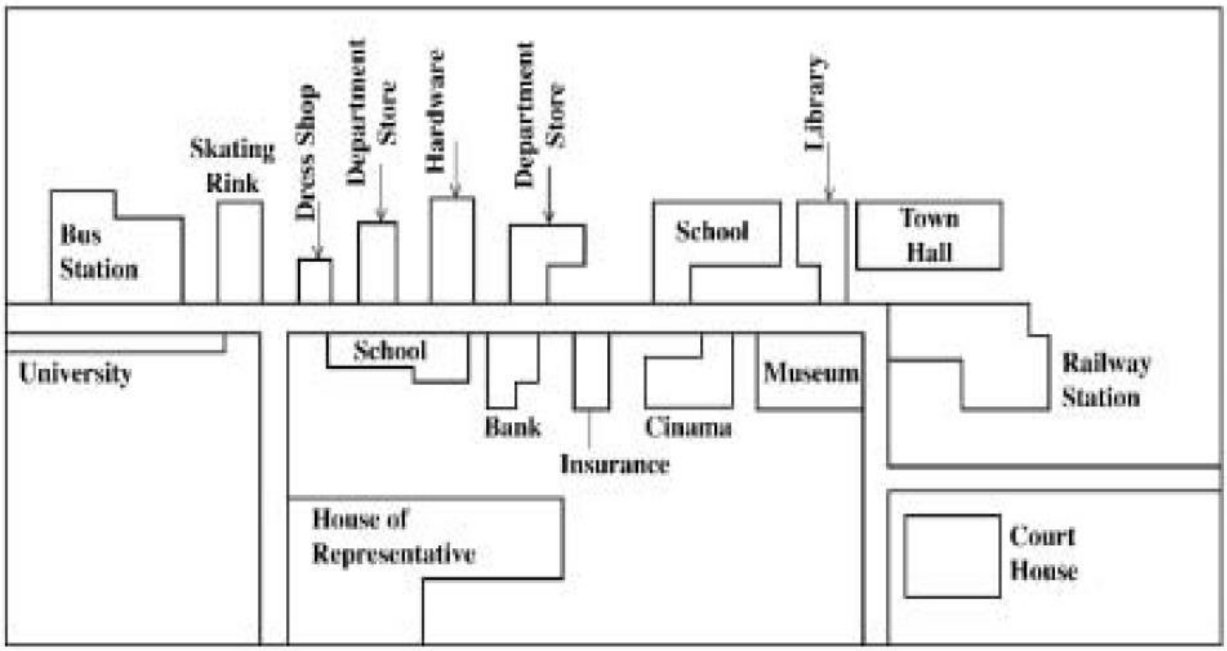

Figure 1. Town centre

(a) Complete Table 1 by grouping all the activities shown in Figure 1 on page 2 into six major urban functions.

TABLE 1: URBAN FUNCTIONS

Urban Functions	**Activities in Town Centre**
1.	
2.	
3.	
4.	
5.	
6.	

[12 marks]

(b) Table 2 shows a population (in millions) by age groups.

TABLE 2: POPULATION (IN MILLIONS) BY AGE GROUPS

Age Group	Population (m)
0 – 4	3.9
5 – 9	4.1
10 – 14	3.7
15 – 19	3.35
20 – 24	3.65
25 – 29	3.2
30 – 34	2.9
35 – 39	2.8
40 – 44	2.9
45 – 49	3.1
50 – 54	2.9
55 – 59	2.95
60 – 64	2.85
65 – 69	2.5
70 – 74	1.85
75 – 79	1.25
80+	1.25

Calculate, using the data provided in Table 2,

(i) the youth dependency ratio

[3 marks]

(ii) the dependency ratio.

[3 marks]

MODULE 2

2. (a) Figure 2 shows a drainage basin. Four streams are labelled A, B, C and D. Answer the question below.

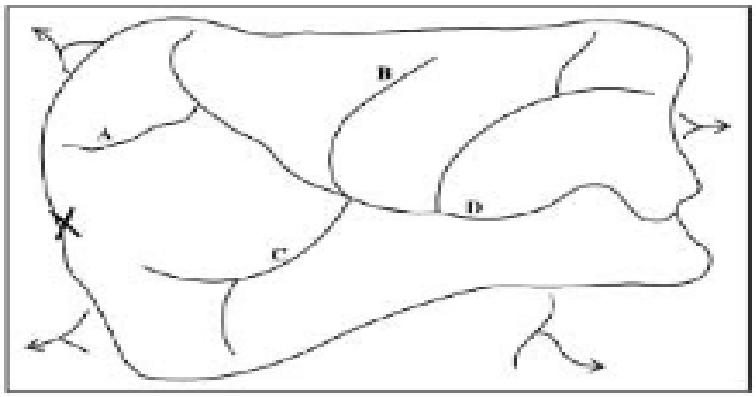

Figure 2. Drainage basin

(i) Name the stream order of A, B, C and D.

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[4 marks]

(ii) To what order does the drainage basin shown in Figure 2 belong?

……

[1 mark]

(b) (i) State the formula for measuring drainage density.

……

……

[2 marks]

(ii) Calculate the bifurcation ratio of the basin shown in Figure 2.

[4 marks]

(c) Imagine that you are observing the processes at work along the extensive stretch of coastline represented in Figure 3. A pebble is being moved along the coast by longshore drift.

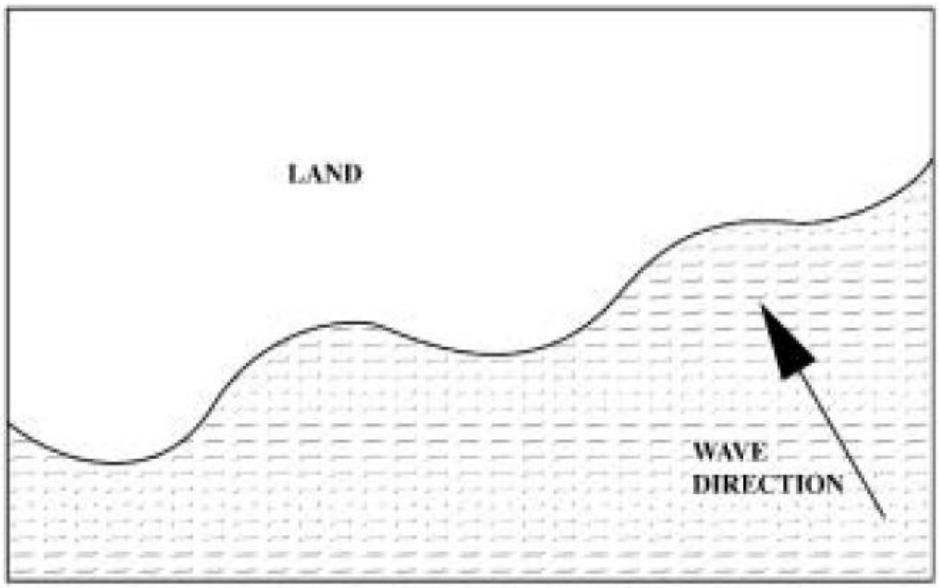

Figure 3. Coastline

(i) Complete Figure 3 by inserting suitable arrows and labels to show

(a) the movement of the pebble

……

[1 mark]

(b) the direction of the swash and the backwash

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[2 marks]

(c) the terms ‘swash’ and ‘backwash’ in the appropriate places.

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[2 marks]

(ii) What change do you notice in the pebble as it moves along?

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[2 marks]

Total 18 Marks

MODULE 3

3. Figure 4 is a photograph of a squatter settlement.

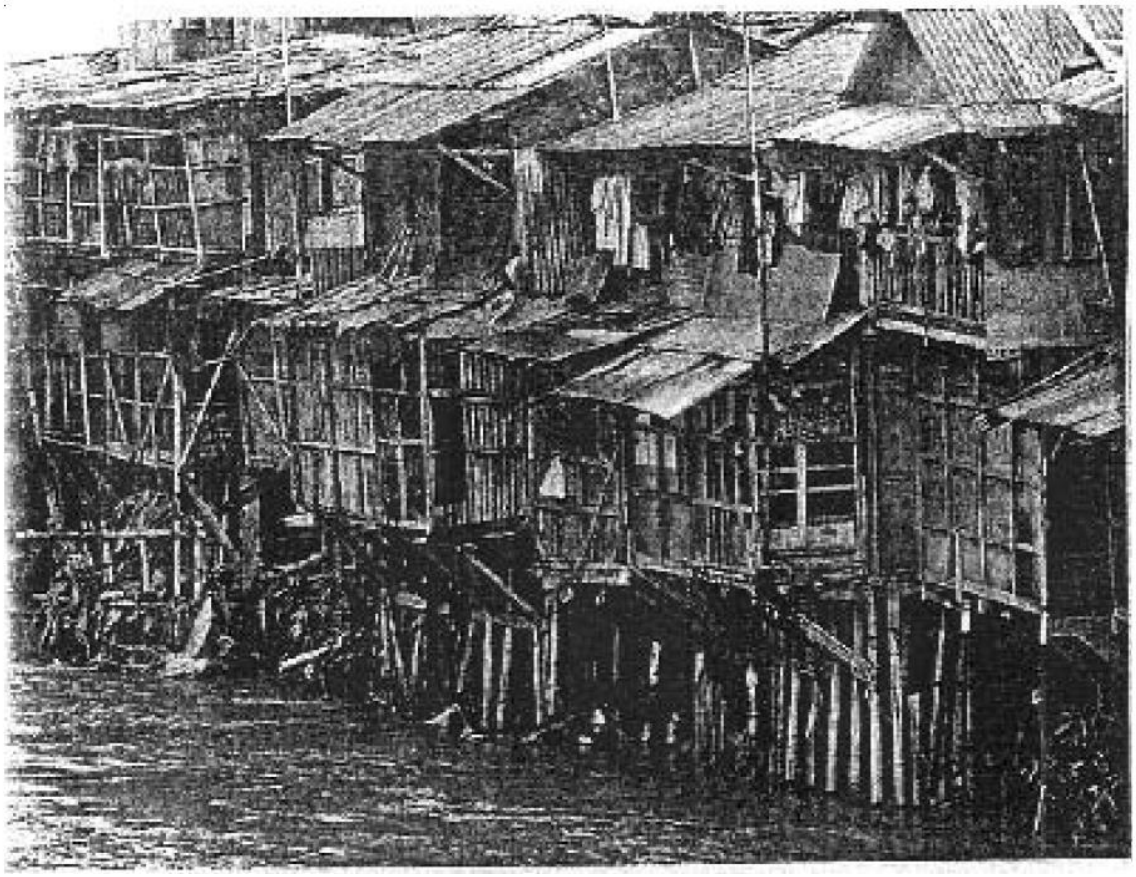

Figure 4. Squatter settlement
Source: Digby Bob et al (2001). Global Challenges, p. 153, Heinemann Publishers, Oxford, UK.

(a) Identify THREE hazardous conditions faced by the settlement depicted in Figure 4.

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[3 marks]

(b) Explain why you consider EACH condition identified in (a) on page 8 a hazard.

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[9 marks]

(c) With reference to Figure 4, suggest THREE reasons why this area is attractive to squatters.

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[6 marks]

TOTAL 18 marks

END OF EXAMINATION

EXTRA SPACE

If you use this extra page, you MUST write the question number clearly in the box provided.

Question No. ☐

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C A R I B B E A N E X A M I N A T I O N S C O U N C I L

CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®

GEOGRAPHY

UNIT 1 – PAPER 032

KEY AND MARK SCHEME

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GEOGRAPHY
UNIT 1 – PAPER 032
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SPECIMEN

Module 1

Question **1**

Specific Objective(s): 4, 11 Content: 4(iv), 6(vi)

(a)

Table 1: Urban Functions

Urban Functions	Activities
1. Education	University, schools, library, museum
2. Public transport	Railway station, bus station
3. Entertainment, leisure	Cinema, skating rink
4. Retail	Dress shop, department store, hardware
5. Financial	Bank, insurance
6. Legal/administrative	Town hall, court house, House of Representatives

(12 marks)

(b)(i) Youth dependency ratio = $\frac{11.7}{37.45} \times 100 = 31\,\%$

(ii) Dependency ratio using 0—14 and 60+ = $\frac{21.4}{27.75} \times 100 = 77\,\%$

OR

Dependency ratio using 0—14 and 65+ = $\frac{18.55}{30.6} \times 100 = 61\,\%$

(6 marks)

Total 18 marks

In each case:

Correct formula seen/implied (1)
Correct numerator/denominator (1)
Correct answer (1)

GEOGRAPHY
UNIT 1 – PAPER 032
KEY AND MARK SCHEME
SPECIMEN

Module 2

Question **2**

Specific Objective(s): 3, 5 Content: 2(v), 3(ii)

(a) (i) A – Stream order 1
B – 1
C – 2
D – 3

(4 marks)

(ii) Third order **(1 mark)**

(b) (i) $\frac{L}{A}$ (total length of all streams)
(Area)

(2 marks)

(ii) Bifurcation ratio $\frac{7}{3} = 2.3 : \frac{3}{1} = 3 : \frac{5.3}{2} = 2.65$

(4 marks)

(c) (i)

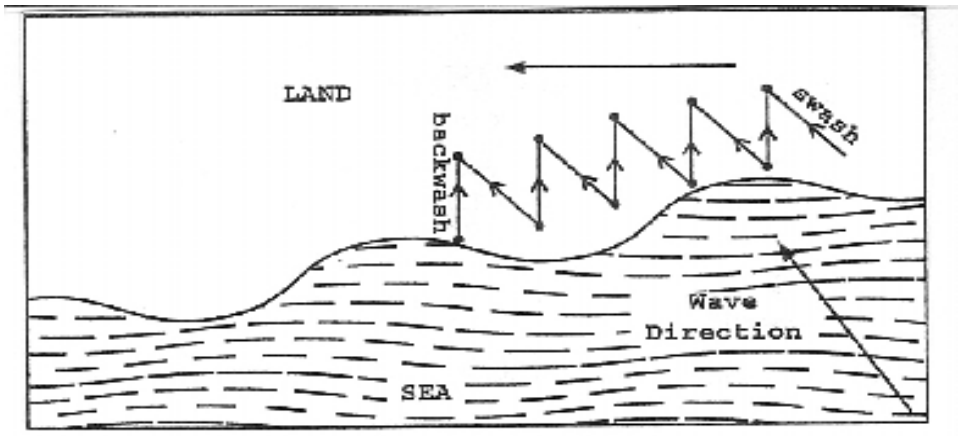

Figure 3. Coastline

(5 marks)

(ii) The pebble becomes smaller smoother, flatter after being carried over a long distance.

(2 marks)

Total 18 marks

GEOGRAPHY
UNIT 1 – PAPER 032
KEY AND MARK SCHEME
SPECIMEN

Module 3

Question **3**

Specific Objective(s): 2, 3, 9 Content: 1 (ii), 4(iv), 2(ii)

(a) Flooding, fire, disease, hurricane

Any three – 3 x 1 mark

(3 marks)

(b) Conditions and reason for hazard – **(1) + (2) marks**

Flooding
- Settlements are located at the edge of the river and in the river itself
  + reason for hazard

Fire
- Houses are closely packed.
- Houses and materials are highly flammable.
  + reason for hazard

Diseases
- Poorly ventilated and closely packed buildings.
  + reason for hazard

Hurricane
- Exposed and fragile nature of the settlement allow easy destruction by high winds.
  + reason for hazard

Any three conditions – 3 x 3 marks

(9 marks)

(c) Three reasons from Figure 4: **Evidence (1) + Reason (1)**

- Presence of boats suggests that fishing is a major source of livelihood and hence the need to locate close to the river.

- Presence of boats also suggests that the river is a major medium for transportation

- Poverty is evident and thus the need to acquire land where no major investment cost is required.

- The river provides a ready supply of water for domestic and other purposes.

Any three reasons – 3 x 2 marks

(6 marks)

SPEC 2016/02225010

TEST CODE **02225010**

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GEOGRAPHY

SPECIMEN PAPER

CLIMATE, ECONOMIC ACTIVITY AND DEVELOPMENT

Unit 2 – Paper 01

1 hours 30 minutes

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This specimen paper consists of 45 items. You will have one hour and 30 minutes to answer them.
2. In addition to this test booklet, you should have an answer sheet.
3. Each item in this test has four suggested answers lettered (A), (B), (C), (D). Read each item you are about to answer and decide which choice is best.
4. Find the number which corresponds to your item and shade the space having the same letter as the answer you have chosen. Look at the sample item below.

Sample Item

Which of the following terms describe the spatial patterns of high technology industries?

I. Near research centres
II. In semi-rural peripheries
III. In highly specialised areas

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

Sample Answer

The best answer to this item is "I, II and III", so (D) has been shaded.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

1. The ratio between incoming solar radiation and reflected solar radiation is called

(A) albedo
(B) scattering
(C) diffused radiation
(D) infrared radiation

2. Jet streams are

(A) light winds which blow out of North America
(B) meandering rivers of air blowing from land to sea
(C) strong winds which blow in the upper atmosphere
(D) air flows which are felt when an aeroplane takes off from the runway

3. Which of the following is NOT a feature of anticyclones?

(A) The pressure at the centre is usually above 1020 mb.
(B) The pressure at the centre is usually below 1000 mb.
(C) The circulation is clockwise in the north.
(D) There is a slow descent of air.

4. Which feature deflects moving air as a result of the earth's rotation?

(A) Jet stream
(B) Coriolis force
(C) Pressure gradient
(D) Geostrophic force

Item **5** refers to the following statement.

"It is formed under clear skies at night when the air in contact with the ground is cooled by conduction."

5. The type of fog described is termed

(A) conductive
(B) advection
(C) radiation
(D) frontal

6. Hygroscopic water is soil water that

(A) cannot be seen
(B) moves by gravity
(C) is used in hydroponics
(D) cannot be removed by plants

7. A soil textural triangle can be used to show the proportion of

(A) humus, sand, silt and clay
(B) humus, loam, silt and clay
(C) sand, silt and clay
(D) sand and clay

8. Which of the following statements about atmospheric motion is INCORRECT?

(A) Winds are deflected to the right in the Northern Hemisphere.
(B) The deflection of winds increases towards the poles.
(C) Air moves from high to low pressure.
(D) Wind speed is increased by friction.

9. A temperature inversion in the atmosphere is a good example of

(A) absolute stability
(B) absolute instability
(C) conditional stability
(D) conditional instability

10. Global warming is of great concern as it may

I. cause sea levels to rise
II. raise the earth's temperatures significantly
III. increase storm activity

(A) I and II only
(B) II and III only
(C) I, II and III only
(D) I, II, III, and IV

11. The effects of replacing vegetation with urban structures are higher

I. ground temperatures
II. transpiration
III. relative humidity
IV. wind speed

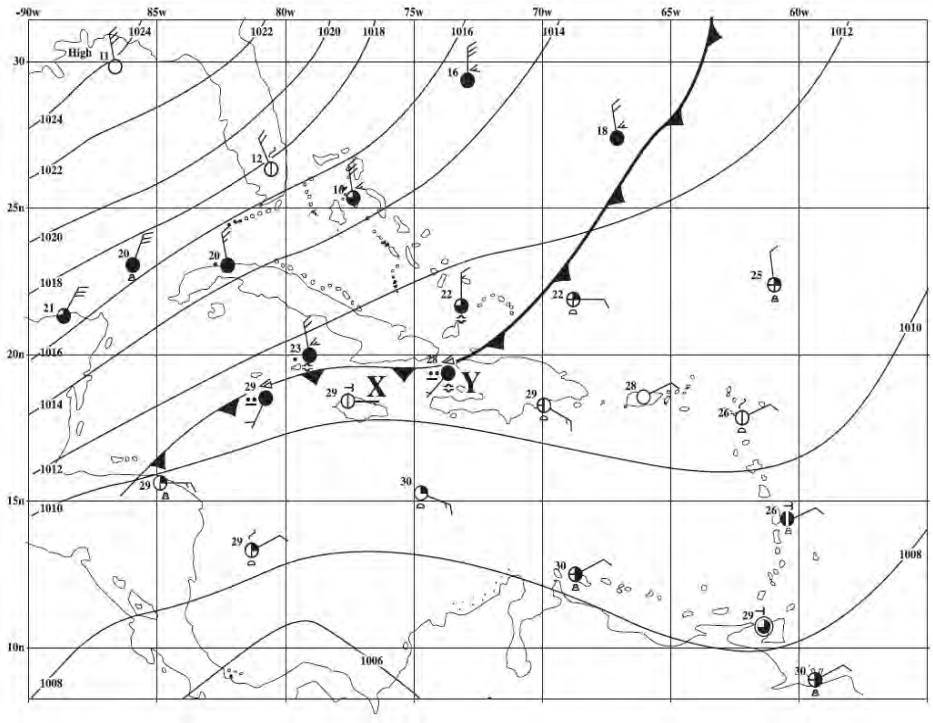
(A) I only
(B) I and II only
(C) II and III only
(D) I, II and III

12. Which of the following are characteristics of soils which develop under the tropical rainforest?

I. They are formed as a result of excessive leaching.
II. Their red colour comes from the presence of iron oxide.
III. They have a thin humus layer.

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II, and III

Items **13–14** refer to the following diagram.



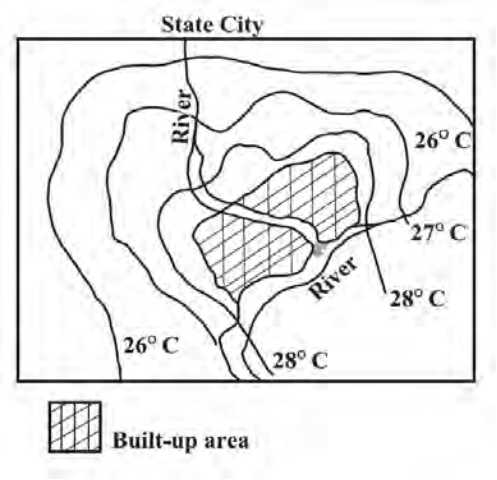
13. The front shown in the diagram above is travelling

(A) south east
(B) south west
(C) north east
(D) north west

14. The rainfall at Station Y can be described as

(A) light and continuous
(B) light and intermittent
(C) heavy and continuous
(D) heavy and intermittent

Item **15** refers to the following diagram.



15. The name given to the urban phenomenon illustrated in the diagram above is

(A) heat budget
(B) heat island
(C) microclimate
(D) radiosonde

16. The term 'footloose industries' refers to

(A) light industries that produce footwear
(B) hi-tech industries located near a shoe factory
(C) light industries that have few constraints on their location
(D) hi-tech industries with a lot of constraints on their location

17. The location of hi-tech industries is influenced by access to

(A) raw materials
(B) affluent markets
(C) good communication
(D) cheap energy sources

18. Which of the following is NOT a characteristic of ecotourism?

(A) A type of urban tourism
(B) Not harmful to the environment
(C) Intended to support conservation
(D) Related to ecological capacity

19. ONE of the characteristics of transnational corporations is their ability to

(A) avoid competition in the global market
(B) delegate decision making to LEDCs
(C) retain profits in markets in LEDCs
(D) reduce operational costs

20. Which of the following factors have stimulated the growth of world tourism since 1960?

I. More leisure time
II. More income
III. Cheaper transportation
IV. Longer holidays

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II, and III

21. Which of the following is NOT associated with deindustrialization?

(A) Increase in costs
(B) Urban congestion
(C) Overseas competition
(D) Exhaustion of resources

22. Agricultural intensification results in increased

I. agricultural pollution
II. food output
III. size of the agricultural labour force

(A) I and II only
(B) I and II only
(C) II and III only
(D) I, II, and III

23. Which of the following are challenges to industrial development in the Caribbean region?

I. Small size of the domestic market
II. Shortage of skilled labour
III. Levels of literacy
IV. Shortage of local capital

(A) II and III only
(B) II and IV only
(C) I, II and IV only
(D) I, II, III and IV

24. All of the following are associated with cruise ship tourism EXCEPT an increase in

(A) hotel accommodation
(B) craft industries
(C) local transport
(D) tour guides

25. Which of the following factors greatly assisted transnational corporations in their global operations?

I. Cheap labour force
II. Government support
III. Large local market
IV. Container ships

(A) I only
(B) I and II only
(C) I, II and IV only
(D) II, III and IV only

26. Which of the following is NOT associated with the growth of the service sector?

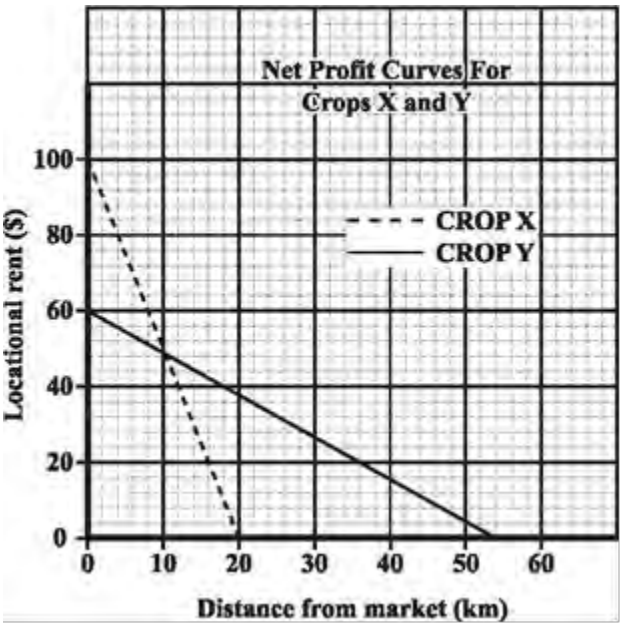
(A) Agglomeration
(B) Rationalization
(C) Globalization
(D) Outsourcing

27. Which of the following BEST describes an informal sector activity?

I. Capital intensive
II. Family enterprise
III. Labour intensive

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II, and III

Items **28–29** refer to the following graph.



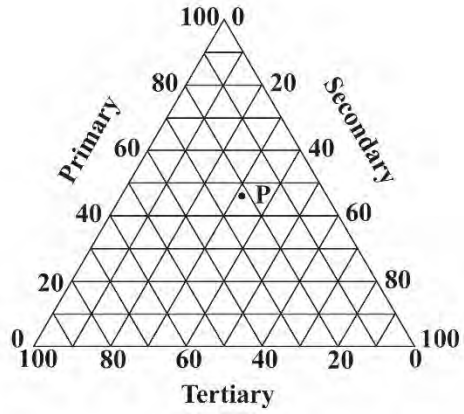
28. Based on the data presented in the graph, which of the following is true about Crop Y?

(A) It is more bulky than Crop X.
(B) It has higher transport costs than Crop X.
(C) It is more profitable than Crop X at the market.
(D) It has a wider margin of cultivation than Crop X.

29. What is the margin of transference for Crop X?

(A) 10 km
(B) 20 km
(C) 32 km
(D) 54 km

Item **30** refers to the following diagram.

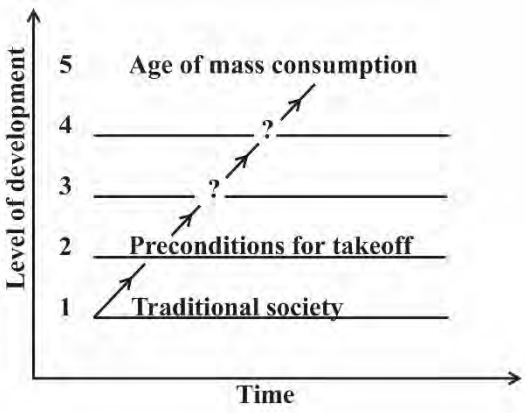


30. Which of the distributions, I, II, III or IV below, represents the structure of P's economy?

	I	II	III	IV
Primary	23	52	46	78
Secondary	46	21	31	21
Tertiary	31	27	23	23

(A) I
(B) II
(C) III
(D) IV

Items **31–32** refer to the following development model.



31. The name of the model of development shown above is

(A) cumulative–causation
(B) core–periphery
(C) Friedman's
(D) Rostow's

32. The stage indicated by the number 4 is

(A) a drive to maturity
(B) industrial economy
(C) postindustrial
(D) takeoff

33. Which of the following models discusses the concept of trickle-down effects?

(A) Butler's
(B) Myrdal's
(C) Rostow's
(D) Von Thunen's

34. Which of the following is based on the cost of a standard food basket?

(A) Poverty line
(B) Absolute poverty
(C) Purchasing power parity
(D) Human Development Index

35. The measurement of gross national product (GNP) include(s)

I. gross domestic product (GDP)
II. purchasing power parity (PPP)
III. income to residents of a country from abroad

(A) I only
(B) I and II only
(C) I and III only
(D) I, II and III

36. Which of the following indices is NOT used in the calculation of the Human Development Index?

(A) Literacy rate
(B) Life expectancy
(C) Infant mortality rate
(D) Purchasing power parity

37. Which of the following is NOT a useful measure of development in a country?

(A) Crude death rate
(B) Level of literacy in the society
(C) Total value of goods produced
(D) Life expectancy of the population

38. Why is the infant mortality rate (IMR) an important measure of development?

I. Infants are the most vulnerable.
II. It is an indicator of health and nutrition status.
III. It is typical of developing countries.

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

39. Which of the following are constraints on sustainable development in Caribbean small island developing states (SIDS)?

I. Limited land area
II. Limited natural resources
III. Small populations

(A) I and II only
(B) I and III only
(C) II and III only
(D) I, II and III

40. Compared to the core, which of the following is NOT always true of the periphery?

(A) Fewer jobs
(B) Smaller cities
(C) Less investment
(D) Fewer services

41. Bilateral aid flows from

(A) one government to another
(B) one country to several countries
(C) several countries to one country
(D) a nongovernmental organization (NGO) to a receiving country

42. Multilateral aid is channelled through

I. the World Bank
II. Save the Children
III. Doctors without Borders

(A) I only
(B) I and II only
(C) II and III only
(D) I, II and III

Items **43–44** refer to the following table which shows the percentage of the population with access to safe drinking water in four countries.

Country	Type of Household	1970	1980	1990	2000
Colombia	Urban	88	93	87	98
	Rural	28	73	82	73
Dominican Republic	Urban	72	85	82	83
	Rural	14	34	45	70
El Salvador	Urban	71	67	87	88
	Rural	20	40	15	61
Honduras	Urban	99	93	85	97
	Rural	10	40	48	82

43. In which year was the disparity between urban and rural households in El Salvador GREATEST?

(A) 1970
(B) 1980
(C) 1990
(D) 2000

44. In 1980, in which country was the disparity between households in urban and rural areas SMALLEST?

(A) Colombia
(B) Honduras
(C) El Salvador
(D) Dominican Republic

45. Using Spearman's rank correlation coefficient, a perfect positive correlation should have a value of

(A) – 1.0
(B) 0
(C) 1.0
(D) 1.5

Caribbean Examinations Council
Master Data Sheet
Subject: CAPE Geography Unit: 2 Year: 2016 Specimen

Question #	Module/Syllabus Reference	Profile	Key	Question #	Module/Syllabus Reference	Profile	Key
1	1.1	KC	A	24	2.3	UK	A
2	1.2	KC	C	25	2.3	UK	C
3	1.4	KC	B	26	2.1	UK	A
4	1.2	KC	B	27	2.2	UK	C
5	1.6	KC	C	28	2.2	PS	A
6	1.8	KC	D	29	2.3	PS	A
7	1.11	KC	C	30	2.7	PS	C
8	1.2	UK	D	31	3.6	PS	C
9	1.2	UK	A	32	3.3	KC	D
10	1.5	UK	D	33	3.3	KC	A
11	1.6	UK	C	34	3.3	KC	A
12	1.8	UK	D	35	3.2	KC	A
13	1.4	PS	A	36	3.2	KC	C
14	1.4	PS	A	37	3.2	KC	B
15	1.6	PS	B	38	3.2	KC	A
16	2.3	KC	C	39	3.9	UK	D
17	2.3	KC	C	40	3.7	UK	C
18	2.4	KC	A	41	3.2	KC	D
19	2.6	KC	D	42	3.7	KC	A
20	2.8	UK	D	43	3.6	PS	C
21	2.6	KC	B	44	3.8	PS	A
22	2.6	KC	B	45	3.8	PS	C
23	2.3	UK	C				

TEST CODE **02225020**

SPEC 2016/02225020

C A R I B B E A N E X A M I N A T I O N S C O U N C I L

CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®

GEOGRAPHY

SPECIMEN PAPER

CLIMATE, ECONOMIC ACTIVITY AND CARIBBEAN DEVELOPMENT

Unit 2 – Paper 02

2 hours 30 minutes

READ THE FOLLOWING INSTRUCTIONS CAREFULLY.

1. This paper consists of FOUR questions in TWO sections. Answer ALL questions.
2. Write your answers in the spaces provided in this booklet.
3. Do NOT write in the margins.
4. A map extract is provided for Question 1.
5. All diagrams must be well labelled.
6. You may use a silent, non-programmable calculator to answer questions.
7. You may use geometrical instruments.
8. If you need to rewrite any answer and there is not enough space to do so on the original page, you must use the extra lined page(s) provided at the back of this booklet. **Remember to draw a line through your original answer.**
9. **If you use the extra page(s) you MUST write the question number clearly in the box provided at the top of the extra page(s) and, where relevant, include the question part beside the answer.**

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

SECTION A

Answer ALL Questions

Write you answers in the spaces provided in this booklet.

1. Study the map extract of Spanish Town – May Pen, Jamaica, (provided as an insert), which is on a scale of 1 : 50 000 and answer the following questions.

(a) (i) In the area between Eastings 37 and 60, identify THREE different types of vegetation.

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[3 marks]

(ii) Describe the distribution of the THREE types of vegetation between Eastings 37 and 60.

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[6 marks]

(iii) Explain how ONE physical and ONE human factor have influenced the nature of the vegetation in the area between Eastings 37 and 60.

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[6 marks]

(b) Suggest THREE reasons why sugar cane cultivation is the dominant agricultural activity in the area between Eastings 20 and 27.

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[6 marks]

(c) (i) Identify THREE types of economic activity in the area west of Easting 41.

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[3 marks]

(ii) Give reasons to explain the location of the types of economic activity identified.

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[6 marks]

(d) Table 1 shows selected indicators of development for some countries in the Caribbean and Latin America. Study Table 1 and answer the questions that follow.

TABLE 1: SELECTED INDICES OF DEVELOPMENT

Country	Population Growth (%)	Per capita GNP (US $)	Purchasing Power Parity
Costa Rica	1.89	4 300	9 140
Brazil	1.20	2 720	7 510
Dominican Republic	2.10	2 130	6 310
El Salvador	2.00	2 340	4 910
Jamaica	1.50	2 980	3 790
United Kingdom	0.24	28 320	27 690
Trinidad and Tobago	0.70	7 790	10 390
Venezuela	1.71	3 490	4 750
Haiti	1.90	400	1 730
Honduras	2.50	970	2 590

You are asked to test whether there is a significant relationship between population growth and per capita GNP as shown in Table 1.

(i) State the null hypothesis.

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[1 mark]

(ii) Using the formula for the Spearman's rank correlation coefficient,

$$r_s = 1 - \frac{6 \acute{Y} d^2}{n^3 - n},$$

calculate the value of r_s. (Show all steps in your calculation.)

[8 marks]

(iii) State the nature of the relationship between population growth and per capita GNP.

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[2 marks]

(iv) What additional step is needed to confirm whether the relationship is significant?

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[2 marks]

(e) What is meant by 'purchasing power parity (PPP)'?

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[2 marks]

Total 45 marks

SECTION B

Answer ALL questions in this section.
Write your answers in the spaces provided in this booklet.

MODULE 1: CLIMATE, VEGETATION AND SOILS

2. (a) Distinguish between 'absolute humidity' and 'relative humidity'.

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[6 marks]

(b) Describe TWO of the planetary wind systems resulting from the formation of the Hadley cell.

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[4 marks]

(c) Name THREE weather conditions associated with hurricanes.

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[3 marks]

(d) State THREE characteristics of the vegetation in tropical rainforests that are related to the high annual rainfall.

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[3 marks]

(e) Write an essay evaluating the success of a **named** tropical rainforest conservation project.

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[14 marks]

Total 30 Marks

MODULE 2: ECONOMIC ACTIVITY

3. (a) Define the term 'secondary industry'.

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[3 marks]

(b) Write an essay discussing whether or not improvements in transport technologies have caused von Thunen's model of agricultural land use to be considered useless. A discussion of THREE points is expected.

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[14 marks]

(c) Outline THREE of the challenges facing Caribbean countries in the development of their manufacturing sector.

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[6 marks]

(d) State THREE ways in which Caribbean-owned chain hotels have benefited the region.

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[3 marks]

(e) State FOUR positive impacts of tourism on the environment in the Caribbean.

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[4 marks]

Total 30 marks

MODULE 3: DEVELOPMENT AND DISPARITIES IN DEVELOPMENT

4. (a) In a given year the GDP of a country was US$166 billion while its GNP was US$122 billion. What could account for this difference?

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[3 marks]

(b) Distinguish between 'relative poverty' and 'absolute poverty'.

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[6 marks]

(c) With reference to stages of Friedman's core–periphery model, write an essay explaining rural-urban disparities in economic development within a large LDC that you have studied.

[14 marks]

(d) Explain, giving THREE reasons, why LDCs should develop and use appropriate technology.

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[9 marks]

Total 30 marks

END OF TEST

EXTRA SPACE

If you use this extra page, you MUST write the question number clearly in the box provided.

Question No. ☐

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JAMAICA 1:50,000 (METRIC EDITION)

SPANISH TOWN - MAY PEN

Series 1
Sheet 17
Edition 1-JSD/DOS 1983

LEGEND

- Road - Class A, Dual Carriageway
- Road - Class B (Bridge)
- Road - Class C
- Road - Other
- Motorable Track or Footpath
- Built-up Area
- Named Building, Hotel, Other Building
- ST ANN'S BAY — Large Town
- RETREAT — Town
- CARRON HALL — Minor Town
- Chester — Village
- Railway (Station, Halt, Cutting, LC, Embankment)
- Light Railway or Siding
- Railway tunnel
- Power Transmission Line
- Boundary - County
- Boundary - Parish
- Boundary - Forest Reserve
- Trigonometrical Station
- Photogrammetric Spot Height
- Contours 20m V.I. up to 80m and 40m V.I. thereafter
- Depression
- Woodland
- Trees and Scrub
- Forest Plantation
- Sugar Cane Plantation
- Banana Plantation
- Citrus Plantation
- Coconut Plantation
- Tobacco Plantation
- Mixed or scattered Cultivation
- Pasture
- Watercourse, Waterfall, Rapids, Dam
- Watercourse, Alignment uncertain
- Pond, Lake
- Water Tank, Borehole
- Well, Spring
- Rice
- Mangrove
- Marsh or Swamp
- Coral
- Sand or Gravel
- Lighthouse, Chimney
- Point of Interest
- Transmitter
- Games Field / Playground
- Flat Rock
- Cliff, Quarry

The delineation of boundaries must not be considered authoritative

The representation on this map of a road, track or footpath is no evidence of a right of way

The accuracy of contours cannot be guaranteed in areas of high vegetation

Underwater features should not be relied on for the purposes of navigation

ABBREVIATIONS

Cem	Cemetery
Ch	Church
Com C	Community Centre
Ct Ho	Court House
Dis	Distillery
Fcty	Factory
FS	Fire Station
F	Ford
HC	Health Centre
Hosp	Hospital
HEP	Hydro Electric Plant
LC	Level Crossing
Lib	Library
Mkt	Market
NT	National Trust Commission Monument
PS	Police Station
PO	Post Office
PA	Postal Agency
PWD	Public Works Department
Res	Reservoir
Rn	Ruin
Sch	School
Tk	Tank
TEx	Telephone Exchange
UC	Under Construction
WCa	Water Catchment

CONVERSION TABLE (Metres / Feet)

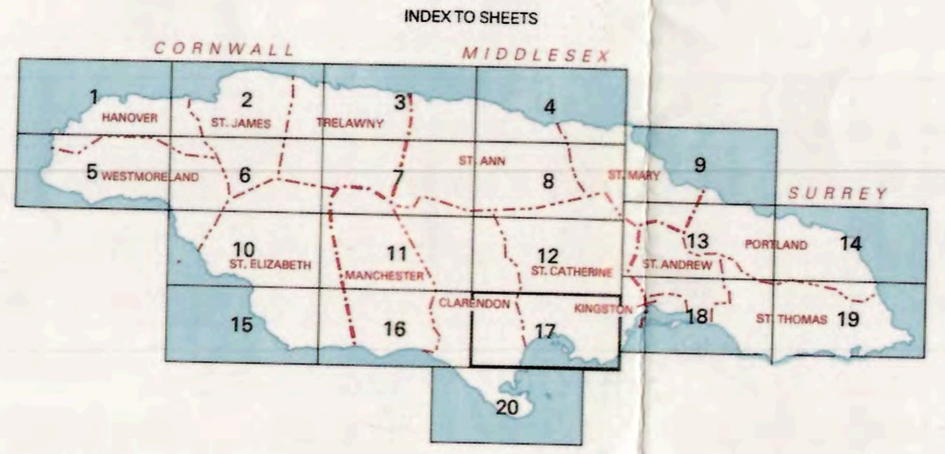
Published by the Government of the United Kingdom (Directorate of Overseas Surveys) for the Government of Jamaica (Survey Department).

SHEET HISTORY

Edition 1 prepared by the Directorate of Overseas Surveys
Control taken from results of aerial triangulation for Jamaica 1:12500 series Ja 200
Air photography by BKS Surveys Ltd Dec 1979-Feb 1980
Field completion by Survey Department Jamaica April 1982

THIS SERIES WAS PREPARED JOINTLY BY THE GOVERNMENT OF JAMAICA (SURVEY DEPARTMENT) AND THE GOVERNMENT OF THE UNITED KINGDOM (DIRECTORATE OF OVERSEAS SURVEYS)

INDEX TO SHEETS



SCALE 1:50,000

METRES 1000 500 0 1 2 3 4 5 6 7 8 9 10 KILOMETRES
YARDS 1000 500 0 ¼ ½ ¾ 1 2 3 4 5 6 MILES

HEIGHTS IN METRES

Users noting amendments are asked to mark them on the map and send it to:-
Director of Surveys
Survey Department
23½ Charles Street
P O Box 493
Kingston
Jamaica

The map will be replaced

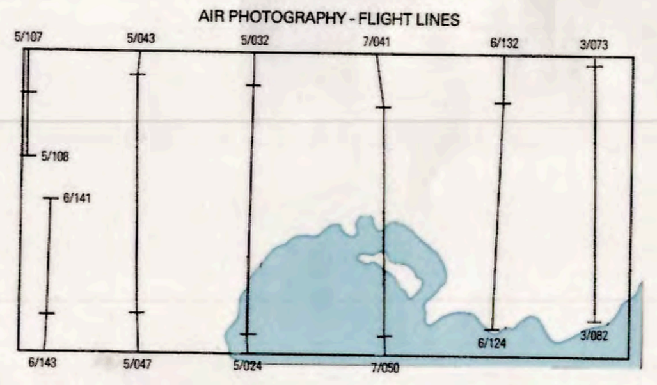
Copies of this map can be obtained from either of the following:-

Survey Department
23½ Charles Street
P O Box 493
Kingston
Jamaica

Edward Stanford Ltd
12/14 Long Acre
London
WC2E 9LP

Price Code 2

AIR PHOTOGRAPHY - FLIGHT LINES



Flown 1979-80, prefixed by 182/JA unless otherwise stated

Grid:-	Jamaica Metre Grid
Projection:-	Lambert Conical Orthomorphic with One Standard Parallel (18°N)
Spheroid:-	Clarke 1866
Unit of Measurement:-	Metre
Meridian of Origin:-	77° West of Greenwich
Latitude of Origin:-	18° North
Scale Factor at Origin:-	1·000
False Co-ords of Origin:-	250,000m Easting 150,000m Northing
Plan Datum:-	Fort Charles Flagstaff
Height Datum:-	Mean Sea Level

At Sheet Centre
Magnetic Variation as at January 1980
Annual Change 9' West

JAMAICA METRE GRID

TO GIVE A GRID REFERENCE ON THIS SHEET
Prefix 1:50,000 Sheet number e.g. 17/339419

POINT △ Old Harbour Hill

Easting		Northing	
Take West edge of square in which point lies, and read the figure printed opposite this line on North or South margin. Estimate tenths Eastwards.	33 9	Take South edge of square in which point lies, and read the figure printed opposite this line on East or West margin. Estimate tenths Northwards.	41 9
East	339	North	419

REFERENCE 17/339419 to nearest 100 metres

Printed for the Directorate of Overseas Surveys by the Ordnance Survey
83/831268 S

Series 1
Sheet 17
Edition 1-JSD/DOS 1983

02225020/CAPE/MS 2016 SPEC

CARIBBEAN EXAMINATIONS COUNCIL

CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®

GEOGRAPHY

UNIT 2 – PAPER 02

KEY AND MARK SCHEME

SPECIMEN

GEOGRAPHY
UNIT 2 - PAPER 02
KEY AND MARK SCHEME

MODULE 1

Question **1**

Specific Objective(s):	**Mod 1 - 6,9,10** **Mod 2 - 3,7,8;** **Mod 3 - 6,8**	**Content:**	**Mod 1-2** **Mod 2-1** **Mod 3-4**

(a) (i) Three different types of vegetation are

- Woodland
- Trees and Shrubs
- Mangroves
- Pasture
- Marsh or Swamp

Any three - 3 x 1 mark **[3 marks]**

(ii) Types of vegetation:

- Woodland
  Located in three main areas, southeast between eastings 47 and 60, forming the largest cluster of woodland; offshore on Great Goat Island and Little Goat Island between eastings 42 and 45 and in the north-west between eastings 37 and 45.

- Trees and Shrubs
  Found in isolated patches of land at the north western, northern and eastern edges of the large area of woodland. These occur between eastings 43 and 49, 51 and 53 and 59 and 60 respectively.

- Mangroves, Marsh and Swamp
  These vegetation types occur extensively along the coast, broken only at the western end where developmental activities occur. The mangrove vegetation is located largely on the seaward side of the coast and the swamp or marsh between the mangrove forests and the land. Both types of vegetation are within the lowland areas where the many rivers and streams enter the bay.

- Pasture
  Except for small isolated pockets in the northern portion of the study area, this type of vegetation forms one continuous belt stretching roughly from north-east to south-west between eastings 37 and 48. At the western end, it is broken by the Harbour Bay settlement, two main roads and a few patches of trees and scrub and sugar cultivation. It is hemmed in by a continuous band of settlement on the north, sugar cane cultivation to the east and the bay to the South.

Any three vegetation types - 3 x 2 marks [6 marks]

GEOGRAPHY
UNIT 2 - PAPER 02
KEY AND MARK SCHEME

Question **1** **cont'd**

(iii) Influence of Physical and Human Factors on the Nature of the Vegetation.

- In the high and rugged landscape areas, woodland is the dominant vegetation. **(1)**
  There is virtually no evidence of human activity, except along the southern and eastern edges. **(1)**
- Mangroves and marshes or swamps are found in the estuary of a number of water courses such as Black River and Salt Water Creek.**(1)**
  These rivers deposit their materials brought down from the upland areas and mangroves help to stabilize the land upon which the vegetation grows. **(1)**
- At the western end of the area, there is evidence of human influence on the vegetation. **(1)**
- Mangroves and marsh or vegetation have been removed to facilitate developmental activities such as the building of a power station, **(1)** settlements and sugar cane cultivation.
- At the eastern end of the area, the topography and relative isolation of the area seem to have restricted human interference with the **(1)** vegetation.
- Some areas of trees and shrubs have experienced major human interference. **(1)**
  These are areas inland from the coast on flat land. **(1)**
  They are dissected by road and rail networks that facilitate intrusion into the areas. **(1)**
- The close proximity of settlements such as Old Harbour Bay, Old Harbour, Tamarind Tree and Church Pen as well as farms within the pasture is indicative of the influence of human activities on the nature of the vegetation of the area. **(1)**
- These activities appear to have influence on the landscape. The presence of pasture and shrubs within the sugar cane cultivation area also **(1)** points to the fact that woodland had extended into the area but was cleared to allow for sugar cane cultivation.

Three points for each factor - 3 x 1 mark

Two factors - (1 physical / 1 human) - 2 x 3 marks

[6 marks]

GEOGRAPHY
UNIT 2 - PAPER 02
KEY AND MARK SCHEME

Question **1** **cont'd**

(b) Three reasons why sugar cane cultivation is the dominant agricultural activity;

- The presence of large areas of flat land such as those located in the valley of the Rio Minho and its tributaries that allow for the cultivation and easy use of machinery.
- The availability of supply of fresh water from the Rio Minho and its tributaries to facilitate the irrigation of sugar cane crops, especially in the dry season.
- The presence of a large supply of labour in the nearby settlements of May Pen and Hayes, for example, to facilitate the planting and harvesting of the sugar crop.
- The extensive and elaborate road and rail network with direct links to the large settlements of May Pen, Spanish Town and Old Harbour and old Harbour Bay to facilitate the movement of goods, machinery and people to support the activities associated with the sugar industry.

Any three reasons elaborated 3 x 2 marks **[6 marks]**

(c) Reasons for the level of economic activity west of eastings 41:

- Transport and Communication **(1)**

  This is a critical element **(1)**in the development of the area. The extensive network of roads and railway **(1)** allow for the movement of goods and people to and from the area **(1)**. This contributes to other related economic activities that promote the development of the area. **(1)**

Any three points - 3 marks

- Energy Supply **(1)**

  The presence of the power station **(1)** on the Bay between eastings 38 and 39 and northings 38 and 39 with transmission lines **(1)**linking the large settlements of May Pen, Spanish Town and Old Harbour**(1)**, for example, has served to support the development of economic activities in the settlements as well as the bauxite and aluminium works**(1)**located between eastings 24 and 25 and northings 38 and 39 and eastings 35 and 36 and northings 37 and 38 respectively.

Any three points - 3 marks

GEOGRAPHY
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KEY AND MARK SCHEME

Question **1** (c) **cont'd**

- Port Facilities **(1)**
  The area also has facilities for the export and import of goods **(1).** These are located within the Bay. They facilitate the delivery of raw materials **(1)** for production and export of finished goods **(1).**

  Any three points - 3 marks

- Large Concentrations of Population **(1)**

  The presence of large centres of population within the area is also a contributory factor to the economic development of the area**(1).** These centres support the development by having a readily available supply of labour for the industries **(1)** and providing a suitable demand for the products in the area. **(1)**

  Any three points - 3 marks

- Sizeable Areas of Flat Land **(1)**

  The sections of flat land especially in the extreme west of the area **(1)** has facilitated the development of the sugar industry (**1**) and also the construction of road network **(1)** and settlements which provide the support for the sugar industry **(1).** In the northern areas and in the west, the flat land has supported the continuous band of settlement **(1)** from May Pen south eastwards towards the Bay area linking other economic activities. **(1)**

  Any three points - 3 marks
  Three reasons - 3 x 3 marks

[9 marks]

GEOGRAPHY
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KEY AND MARK SCHEME

Question **1** **cont'd**

(d) (i) Null hypothesis: There is no relationship between population growth and per capita GDP. **[1 mark]**

(ii)

Country	Pop Growth	Per Capita GDP	d	d^2
Costa Rica	6	3	3	9
Brazil	3	6	-3	9
Dominican Republic	9	8	1	1
El Salvador	8	7	1	1
Jamaica	4	5	-1	1
United Kingdom	1	1	0	0
Trinidad and Tobago	2	2	0	0
Venezuela	5	4	1	1
Haiti	7	10	-3	9
Honduras	10	9	1	1
	(1)	**(1)**	**(1)**	$\Sigma d^2 = 32$ **(2)**

[5 marks]

$$R_s = 1 - \frac{6 \times 32}{1000 - 10} = \frac{192}{990} \quad \textbf{(1)}$$

$$= 1 - 0.194 \quad \textbf{(1)}$$

$$= 0.806 \quad \textbf{(1)}$$ **[3 marks]**

(iii) There is a strong **(1)** positive **(1)** relationship between population growth and per capita GDP. **[2 marks]**

(iv) Compare the computed R_s value **(1)** with the critical values in the significance table **(1)** **[2 marks]**

(e) PPP - the per capita GNP **(1)** adjusted for the cost of living in different countries **(1)**. **[2 marks]**

Total 45 marks

GEOGRAPHY
UNIT 2 - PAPER 02
KEY AND MARK SCHEME

MODULE 1

Specific Objectives: 2, 3, 4, 8, 9

CONTENT: 1 (ii), (iv), (viii), 2(ii), (iii)

2. (a) Distinguish between absolute humidity and relative humidity.

Absolute humidity (expressed as grams of water vapour per cubic metre volume of air **(1)** is a measure of the actual amount of water vapour (moisture) in the air **(1)**, regardless of the air's temperature. The higher the amount of water vapour, the higher the absolute humidity **(1)**.

Relative humidity (RH) (expressed as a percentage) **(1)** also measures water vapoUr, but RELATIVE to the temperature of the air **(1)**. It is a measure of the actual amount of water vapour in the air compared with the total amount of vapour that can exist in the air at its current temperature **(1)**.

Warm air can hold more water vapour (moisture) than cold air **(1)**, so with the same absolute humidity, air will have a HIGHER relative humidity if the air is cooler **(1)**, and a LOWER relative humidity if the air is warmer **(1)**.

Defines only one term – maximum 2 marks
Defines absolute and relative humidity – 4 marks
Defines and includes comparison of both terms – 6 marks
(6 marks)

(b) Describe TWO of the planetary wind systems present in the Hadley cell.

Surface winds (1) – the north-east **or** south-east trade winds **(1)**. These winds blow from about 30 degrees north **or** south latitude towards the equator **(1)**. They are deflected to their right in the northern hemisphere and the left in the southern hemisphere because of the Coriolis effect **(1)**. They blow constantly from the sub-tropical high to the equatorial low pressure **(1)**. They are prevailing winds but they can be reversed in Southeast Asia during the monsoon season in June to August **(1)**.

Upper level winds (1) – the sub-tropical jet streams or anti-trades blow in the westerly direction, opposite to the surface winds **(1)**. They are stronger in the winter season blowing at a speed of 200 mph **(1)** because there is no friction in the upper atmosphere to slow them **(1)**.

2 x 2 marks (4 marks)

GEOGRAPHY
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(c) THREE weather conditions associated with hurricanes.

High winds in excess of 75 miles per hour **(1)**
Reversal of wind direction ahead and behind the storm **(1)**
Intense rainfall from the feeder bands **(1)**
Cloudy skies except for inside the eye of the storm **(1)**
Intense, low atmospheric pressure of less than 1000 mb **(1)**
3 x 1 mark **(3 marks)**

(d) THREE characteristics of the vegetation in tropical rainforests that are related to the high annual rainfall.
Drip tip leaves to drain off excess water **(1)** Shallow roots to capture minerals before they are leached **(1)**
Evergreen - Continuous growth because of high rainfall and temperature **(1)**
Varied vegetation types because rainfall is not a limiting factor **(1)**
Growth of epiphytes because of the humid conditions **(1)**
3 x 1 mark (3 marks)

(e) Write an essay evaluating the success of a named tropical rainforest conservation project.

Suitable introduction – Name the project (1)
E.g. Iwokrama in Guyana – conservation of over 1 million acres of forest.

Alternatively - Rio Macho Forest Reserve in Costa Rica, Rio Bravo conservation and Management Area in Belize
Main points – 3 x 4 marks - 12 marks

Goals for conservation and integrated sustainable use of the forest (1) – protected habitats and sanctuary for endangered species **(1)** – ecotourism values species in native habitat over captured or contrived settings **(1).** Website developed and research papers published **(1)** so the centre is known internationally **(1).**

Iwokrama is the site for continuing research projects. **(1)** The three largest projects comprise the Forest Research Network funded by the European Commission; the Guiana Shield Initiative sponsored by several international agencies; and a programme focused on capacity building to support national initiatives in reducing deforestation and degradation in Guyana sponsored by the Gordon and Betty Moore Foundation **(1).** These three projects together provide information on all aspects of the ecosystem services that forests provide **(1).** The project must establish an overall research framework for future use of the forests **(1)** and report the information learnt to other forest managers around the world **(1).**

GEOGRAPHY
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Engage the indigenous people to help with observing and reporting breaches (1) – employment **(1)** for indigenous people **(1)** that allows them to maintain much of their way of life **(1)** - but difficulty policing a park of this size **(1)** – some encroachment and illegal poaching occurs **(1).**

Still heavily subsidized by government 20 years after start (1)– financial downturn – lower tourism revenue than expected **(1)** – increased need to commercialize sale of trees **(1)** – employment not as much as projected **(1).** Annual report for the centre in 2013 revealed that income dropped 40per cent after 2006 financial crisis and has not yet rebounded **(1).** Financial support from international sources have dwindled **(1).** Ecotourism and sustainable harvesting of timber have not provided the planned revenue **(1).**

Point made (1) + elaboration (3) = 4 marks
Any three points explained – 3 x 4 marks

Conclusion e.g. Lofty plans but difficulty in policing.

Introduction – 1
Conclusion – 1
Main points - 3 x 4 marks (14 marks)

GEOGRAPHY
UNIT 2 - PAPER 02
KEY AND MARK SCHEME

MODULE 2

Specific Objectives: 1, 3, 4, 7, 8

CONTENT: 1(i), 2(v), 3(iv), 4(v), (vi)

3. (a) Define the term secondary industry.

The industrial sector **(1)** that is dominated by the manufacture of finished consumer products **(1).** A secondary industry converts the raw materials from primary industry **(1)** to finished products for the consumer **(1).** These industries include the manufacture of cars, household items and equipment for further production **(1).**

(3 marks)

(b) Von Thunen's model of agricultural land use. Have improvements in transport technologies caused this model to be considered useless?

Suitable Introduction e.g.

Statement on von Thunen's theory – concentric arrangement of agricultural land use **(1)** related to the economic rent of each crop **(1).** The highest economic rent will determine the type of agricultural land use closest to the market **(1).**

Credit accurately drawn and labelled diagram (3)

Types of transport available (1) – development of planes, trains and refrigerated trucks for instance have revolutionized transport **(1).** Some of the economic goods that von Thunen had originally identified as earning a higher economic rent are now fetching a lower economic rent **(1)** and are located far from the market **(1)** – e.g. the transport of milk in refrigerated trucks under pressurized containers so dairy farming is done further from the city **(1).**

Time taken (1) – high speed transport links **(1)** has resulted in connections with other towns and regions such that even market gardening can be done further afield rather than at the market **(1).** Some regions have changed land use out of agriculture to manufacturing and service type functions because of the higher economic rent **(1)** that the land use can supply. The agricultural produce can be transported to the market in a good condition without spoilage **(1).**

GEOGRAPHY
UNIT 2 - PAPER 02
KEY AND MARK SCHEME

Transport corridors (1) – often the concentric pattern of rings is distorted to a linear arrangement along major transport lines **(1).** This is seen along major rivers, railways and highways **(1).** Even von Thunen recognized that this would happen when he revised his pattern to reflect the influence of a navigable river **(1).** The new developments in transport have caused preferential arrangement of land use along major transport routes **(1)** and less investments away from the major route.

Costs (**1**) - the cost of transport varies and it is not directly proportional to distance **(1).** After an initial fee the successive miles are just a fraction of the cost **(1).** Therefore it is possible that the cost of transport for goods within a country for instance may vary by such a small amount **(1)** so as to be the least consideration in agricultural land use **(1).**

Economic rent (1) – the concept of economic rent however remains fundamental **(1)** and while distance and time have been altered by developments in transport which have reduced costs, there are other considerations **(1)** that influence the economic rent of each type of land use. This aspect of von Thunen's model continues to be useful in understanding agricultural land use.

Main points – 3 x 3 marks

Conclusion
E.g. Von Thunen model still has relevance in local regions where transport is limited **(1).** The locational rent concept is still relevant **(1).** However, developments in transport have forced changes in the economic rent of many types of land use **(1).**

Introduction – 4 marks
Main points - 3 x 3 marks
Conclusion – 1 mark **(14 marks)**

(c) THREE of the challenges facing Caribbean countries in the development of the industrial sector.

- Small size - limited saving through economies of scale
- Do not own technology – dependent on investment from abroad
- Limited natural resources – insufficient support for production of industrial quantities to satisfy demand
- Limited water supply for cooling and cleaning processes – expensive rates for desalinated water
- Lack of adequate facilities for treatment and storage of waste
- Unreliability of supporting infrastructure – electricity, transport, ports
- Lack of adequate support for industrial development – bureaucratic arrangements that slow permits and processes

- Lack of long-term strategic planning for the sector – changes with five year electoral politics

Any three points and elaboration - 3 x 2 marks (6 marks)

(d) THREE ways in which Caribbean-owned chain hotels have benefited the region.

- Earning foreign exchange
- Creating employment
- Using indigenous materials and crafts
- Conserving heritage sites for tourism purposes
- Developing local cuisine in their restaurants

Any three points - 3 x 1 mark (3 marks)

(e) FOUR positive impacts of tourism on the environment in the Caribbean.

- Preservation and maintenance of scenic areas in nature reserves
- Development of recreational areas such as boardwalks
- Preservation of habits of endangered species such as birds
- Improvement of sanitation in the surrounding environment
- Eco-lodges have reduced/prevented the destruction of natural habitat instead of developments for settlement, agriculture or industry

Any four points - 4 x 1 mark (4 marks)

GEOGRAPHY
UNIT 2 - PAPER 02
KEY AND MARK SCHEME

MODULE 3

Specific Objectives: 2, 6, 7

CONTENT 1(ii), 2(i), 4(ii), 5(iii)

4. (a) Account for how the GDP of a country was US$166 billion while its GNP was US$122 billion.

GDP measures the nation's economic performance. It is determined by the market value of all final goods and services made within the borders of the nation **(1).**
GNP is basically the GDP of the country plus income earned from overseas investments by residents, minus income earned within the domestic economy by overseas residents **(1).** GNP is focused on who owns the production regardless of where the production takes place **(1).** GNP calculates the value of output produced by the people (nationals) of the region **(1).**
Therefore in the statement this country may have a high level of economic activity to create $166 billion but $44 billion of the income is owned by foreign investors **(1)** such as multinational corporations **(1).**

Any three points - 3 x 1 mark (3 marks)

(b) Distinguish between relative poverty and absolute poverty.

Absolute poverty measures the number of people living below an identified income threshold or poverty line **(1).** It is the number of households unable to afford certain basic goods and services **(1)** and who face imminent threats to health and wellbeing **(1).** The United Nations usually defines absolute poverty as persons living on less than US$2 per day but the exact line varies within countries **(1).** Sometimes the term extreme poverty is used **(1).**

Relative poverty examines the poorest 10 per cent of the population who have less financial means to purchase goods and services compared to others in the population **(1).**
However these people may not be as poor as the poorest 10 per cent of the population in another country **(1).**

While absolute poverty classifies individuals or families as 'poor' by comparing them to a fixed poverty line **(1),** relative poverty is determined by comparing individuals and families to others in the population under study **(1),** regardless of how much is their actual income or ability to buy goods and services **(1).**

Defines absolute or relative poverty – 2 marks
Defines absolute and relative poverty – 4 marks
Defines absolute and relative poverty and compares the two – 6 marks
(6 marks)

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KEY AND MARK SCHEME

(c) Stages of Friedman's core—periphery model used in explaining rural—urban disparities in economic development within a large LDC that you have studied.

Introduction – 1 mark – select a developing country e.g. Mexico, Brazil

Body – 4 x 3 marks

Stage 1 – Pre-industrial (pre-colonial) **(1)** – there are a number of villages each serving its local area **(1).** No disparities exist **(1).**

Stage 2 – Transitional (colonial) **(1)**– A strong core emerges as a colonial power develops production centres and ports to collect and export commodities **(1).** The urbanized core region develops more services such as the industrialized Brazilian south east compared to the agricultural north east. It distributes finished products to the interior region resulting in limited development in the countryside **(1).** This is the backwash effect **(1).** It is the stage with the most disparities between rural and urban regions **(1).**

Stage 3 – Industrial – multinuclear – **(1)** as transport and the decentralization of services and economic activity takes place other urban centres develop **(1).** A hierarchy of fewer larger and many smaller centres develop **(1).** More spread effects are occurring and the disparities are declining **(1).**

Stage 4 – Post industrial – **(1)** an interdependent system of urban centres emerges as a region of continuous growth most often seen in conurbations **(1).** The disparities have been reduced sometimes by direct government intervention **(1)** to provide the necessary regional centres to supply the services evenly across the country **(1).**

Introduction – 1 mark
Main points - 4 x 3 marks
Conclusion – 1 mark **(14 marks)**

d) Explain THREE reasons why LDCs should develop and use appropriate technology.

Appropriate technology require fewer resources, and use low cost or readily available materials **(1).** The population must be able to use and repair the technology as required **(1).** E.g. The Nigerian Pot Refrigeration that uses two clay pots and wet sand **(1).** Persons can easily place one pot inside of the other and keep the sand between them moist. This solves the problem of storage of vegetables and other perishables **(1)** without the use of electricity and expensive imported manufactured refrigerators **(1).** It is a technology that the poorest people can afford **(1).**

GEOGRAPHY
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KEY AND MARK SCHEME

Appropriate technology uses tools and techniques which utilize the skills of local people **(1).** The local materials used are in harmony with the environment and will be utilized in everyday life **(1).** The Oxfam bucket for instance is a plastic bucket that has a lid and a dispenser tap **(1).** It keeps water clean and has reduced waterborne disease in poor countries **(1).** There are no motors or technical parts that would require support by a trained technician **(1).**

Typical appropriate technology inventions are more labour intensive **(1)** – many people are already unemployed or underemployed so the introduction of developed world technologies that are labour saving would create further problems **(1).** Appropriate technology would cause greater employment and dignity for the intended population **(1).**

Technology that would preserve the environment such as new cooking stoves **(1).** Utilizing recycled scrap metals **(1)** and energy efficient designs **(1)** with few replaceable parts **(1).** The new stoves reduce smoke which improves the health of the women preparing the meals **(1)** and reduce the amount of charcoal and firewood as it burns more efficiently **(1).** The reduced need for fuel would preserve the trees and shrubs in the surrounding environment **(1).**

2 + 2 + 3 marks **(7 marks)**

TEST CODE **02225032**

SPEC 2016/02225032

C A R I B B E A N E X A M I N A T I O N S C O U N C I L

CARIBBEAN ADVANCED PROFICIENCY EXAMINATION®

GEOGRAPHY

SPECIMEN PAPER

CLIMATE, ECONOMIC ACTIVITY AND CARIBBEAN DEVELOPMENT

Unit 2 – Paper 032

1 hour 30 minutes

READ THE FOLLOWING IINSTRUCTIONS CAREFULLY.

1. This paper consists of THREE questions. Answer ALL questions.
2. Write your answers in the spaces provided in this booklet.
3. Do NOT write in the margins.
4. You may use a silent, non-programmable calculator to answer questions.
5. You may use geometrical instruments.
6. If you need to rewrite any answer and there is not enough space to do so on the original page, you must use the extra lined page(s) provided at the back of this booklet. **Remember to draw a line through your original answer.**
7. **If you use the extra page(s) you MUST write the question number clearly in the box provided at the top of the extra page(s) and, where relevant, include the question part beside the answer**.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

Answer ALL questions.

MODULE 1

1. (a) You have collected a sample of soil in the field. Describe how you would carry out a test to measure soil texture

(i) in the field

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[4 marks]

(ii) in the school laboratory.

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[4 marks]

(b) You have been asked to investigate and record changes in vegetation and soil along a slope. Explain how you would carry out the investigation.

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[10 marks]

Total 18 marks

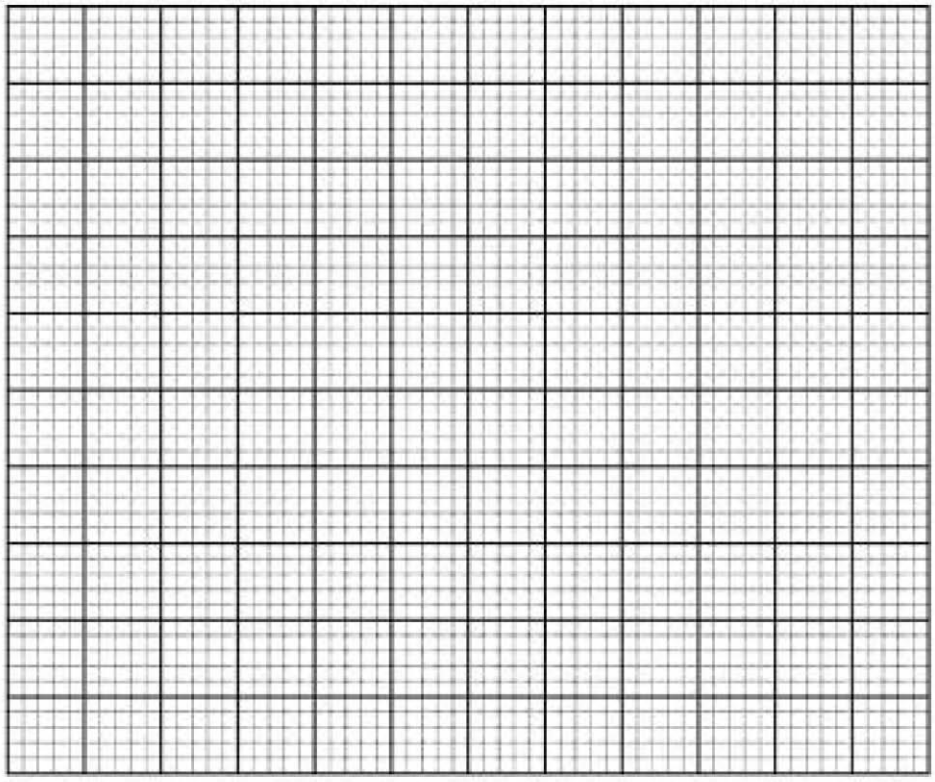
MODULE 2

2. (a) Table 1 presents data on employment in an industry from 1840 to 2000.

TABLE 1: EMPLOYMENT IN A INDUSTRY (% Employed)

Year	Primary	Secondary	Quaternary
1840	48	29	-
1860	50	36	-
1880	52	38	-
1900	47	37	-
1920	42	46	-
1940	48	45	-
1960	45	55	-
1980	33	62	5
2000	25	66	9

Use the data presented in TABLE 1 to draw line graphs on the grid provide below, to represent employment in industry from 1840 to 2000.



[12 marks]

(b) Table 2 shows tourist arrivals in several Caribbean countries in 2004.

TABLE 2: TOURIST ARRIVALS, 2004

Country	Tourist Arrivals
The Bahamas	1 405 043
Jamaica	1 414 786
Puerto Rico	1 288 502
Sint Maarten	475 031

Draw a pie chart in the frame below to represent the data given in Table 2.
Show ALL relevant calculations.

[6 marks]

Total 18 marks

MODULE 3

3. Table 3 presents data on the per capita gross national product (GNP) and energy consumption of selected countries.

TABLE 3: GNP AND ENERGY CONSUMPTION

Countries	GNP per capita (US $)	Energy Consumption per capita (kg oil)
Norway	40 080	3 622
Switzerland	34 380	5 284
Japan	32 380	4 058
USA	29 340	8 051
Germany	21 400	4 267
UK	8 970	3 992
Argentina	4 570	1 653
Brazil	3 600	1 012
Malaysia	2 600	1 950
Egypt	1 290	638

(a) Identify an appropriate statistical technique which can be used to show the relationship between GNP and energy consumption referred to in Table 3.

……

……

……

[2 marks]

(b) Organize the data presented in Table 3 in an appropriate format to carry out the statistical technique identified in (a) on page 6.

[12 marks]

(c) (i) By performing an appropriate calculation, determine the relationship between the GNP per capita and energy consumption per capita indicated in Table 3.

$$\left[\text{Note:} \quad r_S = 1 - \frac{6\sum d^2}{n^3 - n} \right]$$

[2 marks]

(ii) State the null hypothesis.

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[2 marks]

Total 18 marks

END OF EXAMINATION

EXTRA SPACE

If you use this extra page, you MUST write the question number clearly in the box provided.

Question No. ☐

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UNIT 2 – PAPER 032

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UNIT 2 – PAPER 032
KEY AND MARK SCHEME
SPECIMEN

MODULE 1

Question **1**

Specific Objective(s): 8, 11

Content: 3(i), 2(iv), 2(v)

(a) Measurement of soil texture

(i) In the field:

- Remove all particles.
- Moisten a sample of soil. (**1**)
- Roll the sample.
- Attempt to form a ring with the rolled soil. (**1**)
- A soil sample with a high sand content will not roll. (**1**)
- A soil sample with a high silt content will roll but cannot be moulded into a ring. (**1**)
- A soil with a high clay content will both roll and mold.

At least four points - 4 x 1 = (4 marks)

EITHER (ii) In the laboratory:

- Remove all particles. (**1**)
- Put the sample of soil in a glass container. (**1**)
- Shake well and allow to settle. (**1**)
- The soil will settle according to weight - sand at the bottom, silt and clay. (**1**)
- Measure the relative height of each layer. (**1**)

At least four points - 4 x 1 = (4 marks)

OR

- Remove all particles. (**1**)
- Use three sieves of different sizes. (**1**)
- Place the sample in the sieve capable of removing the smallest grain size - clay.
  Weigh the clay. (**1**)
- Place the residue in a sieve capable of removing the silt.
  Weigh the silt. (**1**)
- Place the rest in a sieve capable of removing sand.
  Weigh the sand.

(4 marks)

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SPECIMEN

Question **1** (cont'd)

(b) A transect is the most appropriate technique for measuring changes.

- Prepare recording sheets. (**1**)
- Select the site for the transect running down the slope. (**1**)
- Take measuring tape and measure equal intervals along the slope to mark points to be sampled. They may be 1 m apart. (**1**)
- Place stakes to mark the sampling points. (**1**)
- Beginning at Station 1, note characteristics of the vegetation, for example, small trees, diameter at breast height, height of lowest limb. (**1**)
- Record results on recording sheets. (**1**)
- Dig a soil pit, ensuring that the sides are straight. (**1**)
- Measure the depth of each horizon/colour/texture/presence of living organism/depth of C horizon. (**1**)
- Record results on recording sheets. (**1**)
- Move to Station 2 and subsequent stations and carry out the same measures. (**1**)

(10 marks)

Maximum of 10 marks

Total 18 marks

GEOGRAPHY
UNIT 2 – PAPER 032
KEY AND MARK SCHEME
SPECIMEN

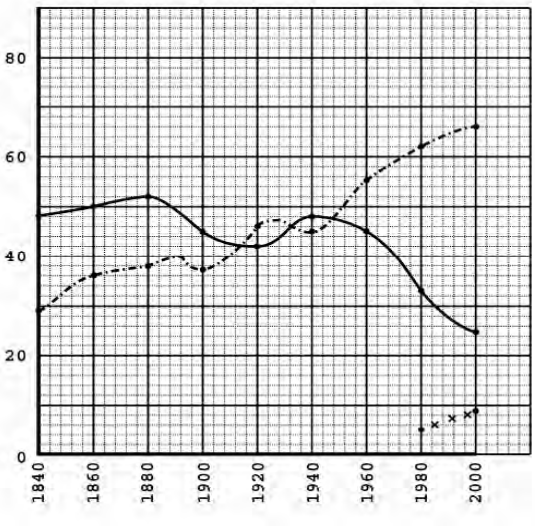
MODULE 2

Question **2**

Specific Objective(s): 1, 10

Content: 1(i); 4(ii)

(a)



_____ (1) **Primary** Title

-·-·-·-· **Secondary** Key (1)

x x x x Quaternary

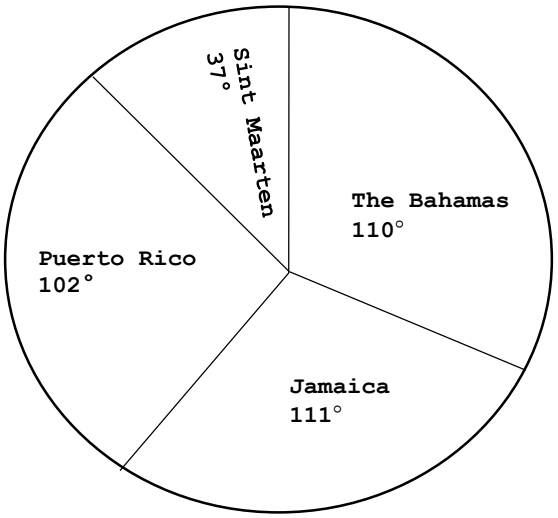
Suitable Scale (**1**)

Labelled (**1**) Axes

Each correct line

3 + 3 + 2
(12 marks)

(b) Tourist Arrivals 2004



(4 marks)

Total 4 583 362

	%	°
The Bahamas	30.7	110
Jamaica	30.9	111
Puerto Rico	28.1	102
Sint Maarten	10.4	37

All 4 correct – **2 marks**
2 – 3 correct – **1 mark only**

Total 18 marks

GEOGRAPHY
UNIT 2 – PAPER 032
KEY AND MARK SCHEME
SPECIMEN

MODULE 3

Question **3**

Specific Objective(s): 2, 9

Content: 3(iii)

(a) Spearman rank correlation coefficient

Name in full (2)
Partial (1) **(2 marks)**

(b)

Countries	GNP	Energy Consumption	R_1	R_2	d	d^2
Norway	40 080	3 622	1	6	-5	25
Switzerland	34 380	5 284	2	2	0	0
Japan	32 380	4 058	3	4	1	1
USA	29 340	8 051	4	1	-3	9
Germany	21 400	4 267	5	3	-2	4
UK	8 970	3 992	6	5	-1	1
Argentina	4 570	1 653	7	8	1	1
Brazil	3 600	1 012	8	9	1	1
Malaysia	2 600	19 950	9	7	-2	4
Egypt	1 290	638	11	12	1	1
			(2)	**(2)**	**(3)**	**(3)**

(10 marks)

$$r_s = 1 - \frac{6\sum d^2}{n^3 - n}$$

(c)(i) Calculation: $r = 1 - \frac{6 \times 47}{1000 - 10}$

$$= 1 - \frac{282}{990}$$

$$= 1 - 0.28$$

$$= 0.72$$

Substituting in his/her $\sum d^2$ - (**1**)

Correct answer - (**1**) **(2 marks)**

(c) There is a strong positive correlation between GNP per capita and energy consumption per capita.

(2 marks)
Total 18 marks

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