ST ANDREW'S JUNIOR COLLEGE
Preliminary Examinations
Higher 2

Geography 9730/01

Paper 1 Physical Geography

31 August 2015

3 hrs

Additional Materials: Insert
World Outline Map

READ THESE INSTRUCTIONS FIRST

Write your name and class on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use a soft pencil for any diagrams, graphs or rough working.
Do not use paper clips, highlighters, glue or correction fluid.
Begin each question on a fresh page.

Section A
Answer **all** questions.

Section B
Answer **two** questions, each from a different topic.

You are advised not to spend more than one hour 30 minutes on Section A.
The Insert contains all the Figures and Photograph referred to in the questions.
You should make reference to appropriate examples studied in the field or the classroom, even where such examples are not specifically requested by the questions.
Diagrams and sketch maps should be drawn whenever they serve to illustrate an answer.
You are reminded of the need for good English and clear presentation in your answers.
The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **5** printed pages.

[Turn Over]

Section A (DRQ)

Answer **all** questions in this section.
Questions 1, 2 and 3 carry 12 marks and Question 4 carries 14 marks.
You should allocate your time accordingly.

Lithospheric Processes, Hazards and Management

1 Fig. 1 shows the processes of the rock cycle. P, Q and R represent the different rock types in the rock cycle.

(a) Identify P, Q and R. With the help of Fig. 1, describe how the rock cycle is completed. [4]

(b) With the help of examples, distinguish between extrusive and intrusive igneous rocks. [3]

(c) Imagine that you have been given a small number of metamorphic and sedimentary rock samples. Describe and explain how you would classify these rock samples according to rock types. [5]

Atmospheric Processes, Hazards and Management

2 Figs 2A and 2B show two different methods by which air is uplifted from the earth's surface.

(a) Identify the methods by which air is uplifted from the earth's surface as shown in Fig. 2A and in Fig. 2B. [2]

(b) Explain the processes that have brought about the uplift in each diagram. [6]

(c) Account for the type of weather that might result from the uplift shown in Fig. 2B. [4]

Hydrologic Processes, Hazards and Management

3 Fig. 3A shows an upland drainage basin in a temperate region. Fig. 3B shows storm hydrographs for Stations P and Q shown in Fig. 3A.

(a) With reference to Fig. 3B describe how the hydrograph for Station P differs from the hydrograph for Station Q. [3]

(b) Using Fig. 3A, account for the differences you have described in (a). [4]

(c) Briefly explain how **one** other factor not shown in Fig. 3A can influence the shape of hydrographs in Fig. 3B. [3]

(d) On Insert 2, draw the likely shape of the hydrograph for Station R as shown in Fig 3A. Hand in Insert 2 with your answer script. [2]

Lithospheric Processes, Hazards and Management & Hydrologic Processes, Hazards and Management

4 Photograph A shows a close-up of a limestone pavement and Photograph B shows a view of a river channel.

(a) (i) Name the feature C, shown in Photograph A, which forms part of the limestone pavement. [1]

(ii) Explain the role of weathering in the formation of the limestone pavement shown in Photograph A. [6]

(b) Name the process of fluvial erosion that is likely to be taking place at D in Photograph B. Explain how this process may operate within a river channel and describe its possible impacts on the channel. [7]

Section B (Essay)

Answer **two** questions, each from a different topic.
All questions carry 25 marks.

Lithospheric Processes, Hazards and Management

5 Either

(a) Define the term *basal surface of weathering* and explain how the development of tropical granite landforms is influenced by it. [9]

(b) How far do you agree that earthquake prediction is less successful in limiting hazardous impacts than the prediction of volcanic eruptions? [16]

5 Or

(a) Explain the role of water and **two** other factors that influence the occurrence of mass movement. [9]

(b) To what extent can plate tectonic theory be used to account for the global distribution and formation of fold mountains, rift valleys and volcanoes? [16]

Atmospheric Processes, Hazards and Management

6 Either

(a) Compare and contrast the characteristics of tropical savannah climate with that of tropical monsoon climate. [9]

(b) To what extent are the hazardous effects of a tropical cyclone different from those of a drought? [16]

6 Or

(a) Explain how urban heat island develops and how it influences the climatic condition in cities. [9]

(b) To what extent are global solutions to global warming more effective than local ones? [16]

Hydrologic Processes, Hazards and Management

7 Either

(a) Compare the conditions under which turbulent flow, laminar flow and helicoidal flow occur within river channels. [9]

(b) With reference to examples, discuss how river floods can be successfully mitigated. [16]

7 Or

(a) With the aid of diagrams, describe the differences between a meandering channel and a braided channel. [9]

(b) With reference to one or more examples, discuss the view that it is difficult to manage the use of water resources effectively in transborder river basins. [16]

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