ANDERSON JUNIOR COLLEGE

JC2 H2 Geography Preliminary Examination (2013)

H2 GEOGRAPHY **9730/01**

Paper 1 **Physical Geography**

Wednesday 18 September 2013 1.00 pm – 4.00 pm 3 hours

Additional Materials: 1 Insert
World outline map

READ THESE INSTRUCTIONS FIRST

1. Write your name and class in the spaces provided below.
2. Write in dark blue or black pen.
3. You may use a soft pencil for any diagrams, graphs or rough working.
4. If you use more than one sheet of paper, fasten the sheets securely.
5. **Hand in Section A (Data Response Questions) and Section B (Structured Essay Questions) separately.**
6. Do not use staples, paper clips, highlighters, glue or correction fluid.

Section A
Answer **all** questions.

Section B
Answer **two** questions, each from a different topic. Please write the respective question number in the spaces provided.

INFORMATION TO CANDIDATES

1. The Insert contains all the Figures and Photographs referred to in the questions.
2. Diagrams and sketch maps should be drawn whenever they serve to illustrate an answer.
3. The world outline map may be annotated and handed in with relevant answers.
4. You are reminded of the need for good English and clear presentation in your answers.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

Name: _____

PDG: _____

Question Attempted	Marks
Section A:	
1	**/12**
2	**/12**
3	**/12**
4	**/14**
Section B:	
_____	**/25**
_____	**/25**
Percentage	**100**

This question paper consists of 3 printed pages.

[Turn Over

Section A

Answer **all** the 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. 1A shows the volcanic explosivity index (VEI). Fig. 1B shows volcanic hazards associated with a volcanic eruption.

(a) With reference to Fig. 1A, briefly describe the relationship among the VEI, volume of pyroclastics ejected and frequency of volcanic eruptions. [3]

(b) Briefly describe and explain **two** volcanic hazards shown in Fig. 1B. [4]

(c) Suggest why some volcanic eruptions have a greater impact on human life and property than others. [5]

Atmospheric Processes, Hazards and Management

2 Fig. 2 shows the development of Cyclone Nargis between April 27 and May 4, 2008, based on data from the Tropical Rainfall Measuring Mission (TRMM) satellite.

(a) With reference to Fig. 2, describe the path and intensity of the storm between April 27 and May 4. [4]

(b) Explain how tropical cyclones develop high wind speeds and intense rainfall. [6]

(c) Provide any **two** reasons why it is difficult to make accurate weather predictions about cyclones. [2]

Hydrologic Processes, Hazards and Management

3 Photograph A shows a braided channel.

(a) Draw a labeled sketch to identify the main features of the channel in Photograph A. [4]

(b) Explain the formation of the river channel features. [8]

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

4 Study Photographs B and C, which show slopes in contrasting climatic areas (in an arid and a humid temperate environments respectively).

(a) Describe and explain the nature of the surface runoff that might be expected in each of the two areas shown in the photographs. [6]

(b) For **each** photograph, identify **one** type of mass movement that might be operating there. [2]

(c) Briefly explain how you may conduct a field study to investigate the rate of soil movement on the slope in **Photograph C.** [6]

Section B

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

Lithospheric Processes, Hazards and Management

5 EITHER **(a)** Describe and explain the nature of the tectonic activity and the resultant landforms associated with a convergent plate margin. [9]

(b) Describe the nature of mass movement that makes it become hazardous. Discuss how their effects may be effectively mitigated. [16]

5 OR **(a)** Explain how the nature of weathering varies across different climatic regions. [9]

(b) "*The weathering of granite and removal of weathered materials produce distinctive landforms.*"

With the aid of diagrams, describe and explain the formation of granite landforms. [16]

Atmospheric Processes, Hazards and Management

6 EITHER **(a)** With the aid of a diagram, show how the tri-cellular model explains the global surface winds. [9]

(b) To what extent is latitude the major factor in influencing global patterns of solar radiation? [16]

6 OR **(a)** Describe and explain the characteristics of the urban microclimate. [9]

(b) *"Looking back, I underestimated the risks. The planet and the atmosphere seem to be absorbing less carbon than we expected, and emissions are rising pretty strongly. Some of the effects are coming through more quickly than we thought then." – Nicholas Stern, 2013*

Describe the effects of global warming. To what extent are strategies suggested to reduce global warming successful? [16]

Hydrologic Processes, Hazards and Management

7 EITHER **(a)** With the aid of a diagram, describe and explain the relationships between velocity, sediment size and the channel processes of a river. [9]

(b) Explain the causes of river floods. Using examples, evaluate the effectiveness of mitigation methods that can be employed to manage river floods. [16]

7 OR **(a)** With the aid of diagrams, explain how drainage basin characteristics can influence the shape of the storm hydrograph. [9]

(b) Using examples, explain how conflicts of interests can occur in the management of water resources in trans-border river basins. [16]

**********END OF PAPER**********