VICTORIA JUNIOR COLLEGE
PRELIMINARY EXAMINATION

GEOGRAPHY Higher 2 9730/01

Tuesday 17th September 2013
3 hours

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READ THESE INSTRUCTIONS FIRST

Write your name and class on all answer sheets that 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 staples, paper clips, highlighters, glue or correction fluid.

Section A
Answer **all** questions.

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

Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.
The number of marks is given in brackets [ ] at the end of each question or part question.

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.

Section A

Answer **all** questions.
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 world's major tectonic boundaries.

   (a) With reference to Fig. **1**, identify and describe the landforms that are found at plate boundaries **A** and **B**. [4]

   (b) Distinguish between plate boundaries **C** and **D** in Fig. **1**. [4]

   (c) Describe how earthquakes are formed at plate boundaries **A** and **C** as seen in Fig. **1**. [4]

Hydrologic Processes, Hazards and Management

2. The Southern High Plains, a semi-arid area with an average annual rainfall of 440mm, is underlain by the Ogallala Aquifer, stretching across South Dakota, Nebraska, Wyoming, Colorado, Kansas, Oklahoma, New Mexico and Texas, USA.

   Fig. **2** shows groundwater decline in the Ogallala Aquifer from 1935 to 1995.

   (a) With reference to Fig. **2**, describe the decline in groundwater in the Ogallala Aquifer. [3]

   (b) Suggest reasons for the decline described in (a). [3]

   (c) In May 2013, USGS released a study showing Ogallala's levels dropping more in Texas than any other state. Examine how conflicts of interest may arise in relation to ground water usage in the Southern High Plains. [6]

Atmospheric Processes, Hazards and Management

3. Fig. **3** shows the generation of electricity by energy source for selected European countries.

(a) **(i)** Name the country which has the greatest dependency on coal, petroleum and natural gas. [1]

(ii) State the percentage range of electrical power generated from renewable sources among the countries shown in Fig. 3. [1]

(b) Explain how the adoption of renewable energy can help to reduce climate change. [4]

(c) Explain **two** other strategies that can be adopted to manage climate change. [6]

Atmospheric and Hydrologic Processes, Hazards and Management

4. Fig.**4** shows a climograph for Darwin, Australia.
Fig.**5** shows changes in discharge levels in the Howard River, Darwin, Australia.

(a) Describe and account for the climate characteristics of Darwin, Australia. [8]

(b) With reference to Fig. **5**, describe how variations in precipitation influence the flows and stores within the Howard River drainage basin. [2]

(c) Explain how variations in discharge affect channel efficiency. [4]

Section B

Answer two questions, each from a different topic.

All questions carry 25 marks.

Lithospheric Processes, Hazards and Management

5 EITHER

a) Describe the evidence that supports the theory of plate tectonics. [9]

b) Human activities are the main factors causing slope failure. Discuss. [16]

5 OR

a) Compare **ONE** of the following: tors and inselbergs **OR** cockpit karst and tower karst [9]

b) Describe the characteristics of an earthquake. To what extent do earthquakes always have devastating impacts? [16]

Atmospheric Processes, Hazards and Management

6 EITHER

a) Describe and explain the urban heat island effect. [9]

b) Droughts are only a short-term hazard. Discuss. [16]

6 OR

a) Explain how human activities can contribute to desertification. [9]

b) Tropical cyclones are a manageable hazard. Discuss. [16]

Hydrologic Processes, Hazards and Management

7 EITHER

a) Describe and explain the characteristics and formation of **EITHER** meandering **OR** braided channels. [9]

b) Magnitude and frequency are the most important factors in determining the impacts of floods. How far do you agree? [16]

7 OR

a) Explain how human activities may affect the form of a hydrograph. [9]

c) Describe the differences between meandering and braided channels. How are conditions contributing to their formation different? [16]