

RIVER VALLEY HIGH SCHOOL
General Certificate of Education Advanced Level
Preliminary Examination II
Higher 2

GEOGRAPHY

Paper 1

9730/01

16 September 2015

3 hours

Additional Materials: Writing Paper
 1 Insert
 World outline map
 Cover Page

READ THESE INSTRUCTIONS FIRST

Write your name, admission number 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 staples, paper clips, highlighters, glue or correction fluid.

Section A

- Answer **all** questions

Section B

- Answer **two** questions, each from a different topic.

The Insert contains all the Figures and the 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 required by the question.
Diagrams and sketch maps should be drawn whenever they serve to illustrate an answer.
The World outline map may be annotated and handed in with relevant answers.
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 below the cover page securely together.
The number of marks is given in brackets [] at the end of each question or part question.

This document consists of 5 printed pages, 3 blank pages and 1 Insert.



[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 geochronology of the Hawaiian Ridge-Emperor Seamount chain. Fig. 1B shows the age of the ocean floor of the Pacific, Atlantic and a part of the Southern Oceans.
- (a) With reference to Fig. 1A, describe the spatial arrangement of the Hawaiian Ridge-Emperor Seamount chain. [2]
 - (b) With the aid of a diagram, account for the arrangement of the Hawaiian Ridge-Emperor Seamount chain. [5]
 - (c) With reference to Fig. 1B, explain how the area marked 'X' provides evidence for the plate tectonics theory. [5]

Atmospheric Processes, Hazards and Management

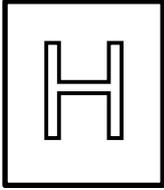
- 2 Fig. 2 shows the mean sea surface temperatures (SST) in the Tropical Pacific Ocean in December 1996 and December 1997.
- (a) With reference to Fig. 2, describe how the sea surface temperatures of December 1997 are anomalous to the conditions recorded in December 1996. [3]
 - (b) Identify and explain the atmospheric phenomenon that can account for the temperature anomalies experienced in 1997. [5]
 - (c) Outline some of the adverse effects resulting from the teleconnections between these anomalies and other parts of the world. [4]

Hydrologic Processes, Hazards and Management

- 3 Photograph A shows an upper course section of the Taku river in Alaska, USA.
- (a) With the aid of a well-annotated cross sectional diagram, outline the key features of the river along transect AB. [3]
 - (b) Citing evidence from Photograph A, explain and account for the channel morphology of this section of the Taku river. [5]
 - (c) Explain how the morphology and energy of this river will change as it flows downstream. [4]

Hydrologic and Lithospheric Processes, Hazards and Management

- 4 Fig. 3A shows the mean monthly variation in discharge at three gauging stations along River Zambezi in Africa. Fig. 3B shows a climate graph for the area.
- (a) Describe the main change(s) in discharge along River Zambezi. [2]
 - (b) Using evidence from Fig. 3A and Fig. 3B, suggest possible reasons for the variations in discharge at each of the sites X, Y and Z on River Zambezi. [6]
 - (c) Discuss how you would study the rocks in a local area to determine their types. [6]



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Figs. 1A and 1B for Question 1

Geochronology of the Hawaiian Ridge-Emperor Seamount Chain

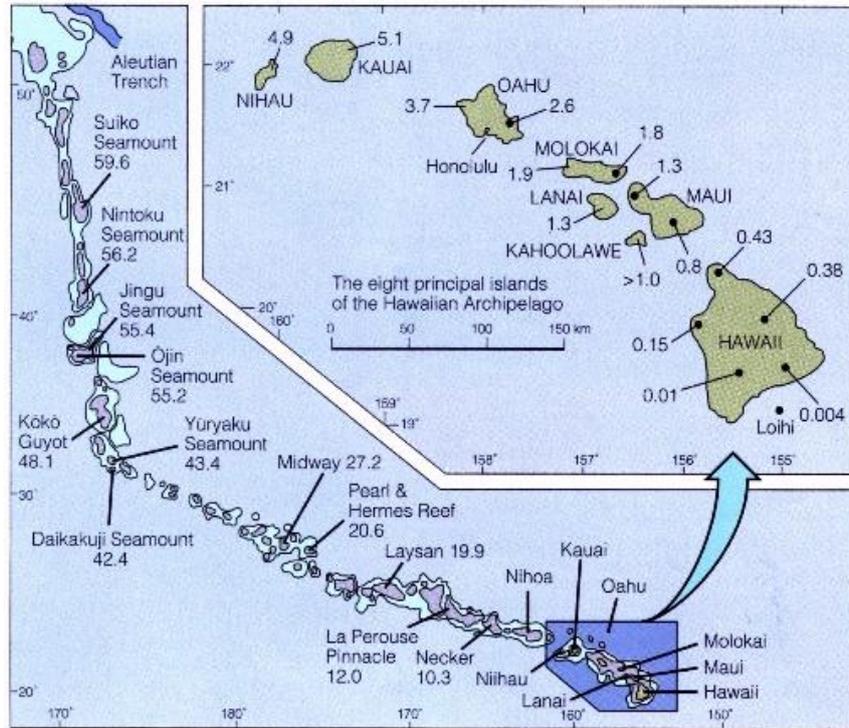


Fig. 1A

(Source: <http://www.uhh.hawaii.edu/~kenhon/geol205/chain/chnmap.jpg>)

Age of the ocean floor of the Pacific, Atlantic and part of the Southern Oceans

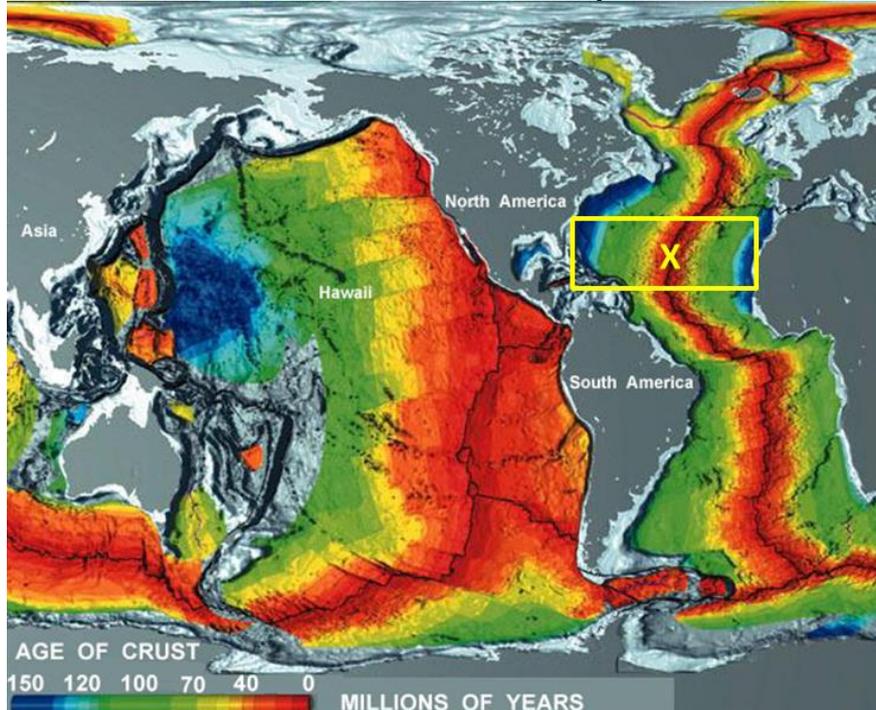
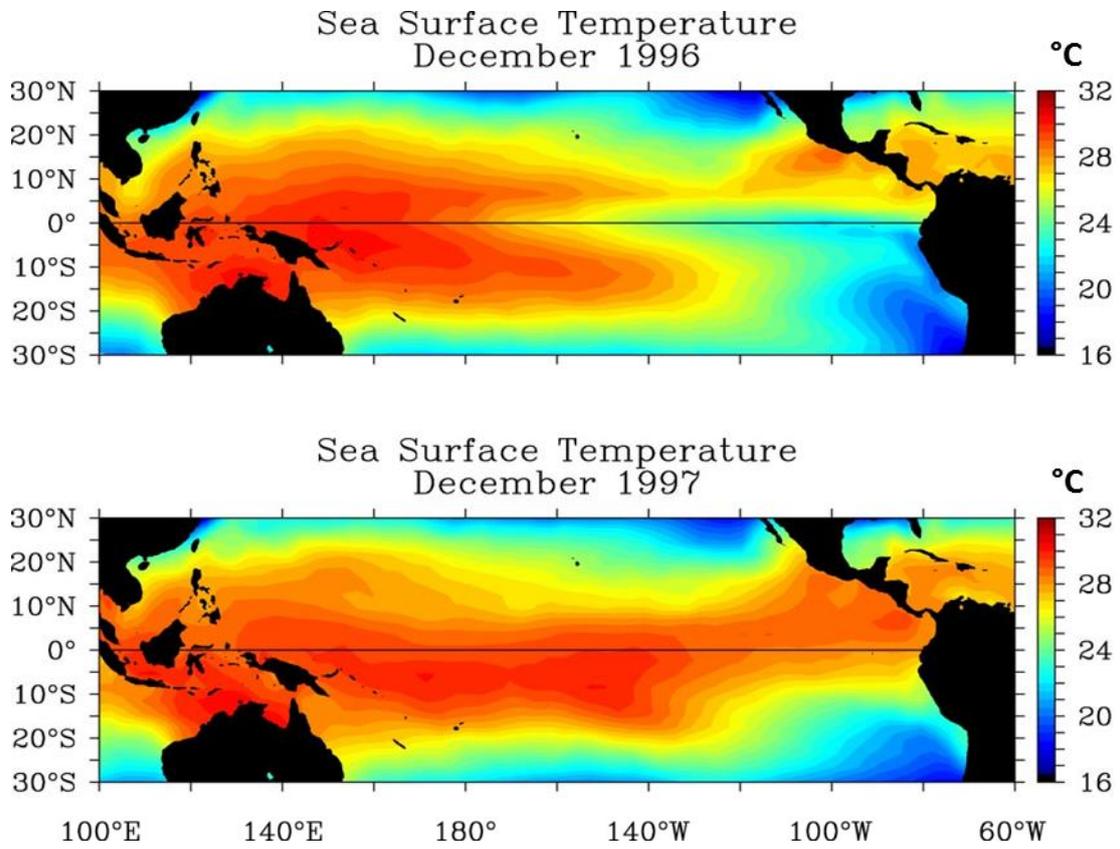


Fig. 1B

(Source: <http://www.uhh.hawaii.edu/~kenhon/geol205/chain/chnmap.jpg>)

Fig. 2 for Question 2

Mean Sea Surface Temperatures in the Tropical Pacific Ocean



(Source: <http://www.pmel.noaa.gov/pubs/outstand/mcph2029/images/fig03.jpg>)

Photograph A for Question 3

Section of the Taku River in Alaska, USA



(Source: http://riverswithoutborders.org/wp-content/uploads/2014/12/Taku_aerial-best.jpg)

Figs. 3A and 3B for Question 4

Mean monthly variation in discharge at three gauging stations along River Zambezi

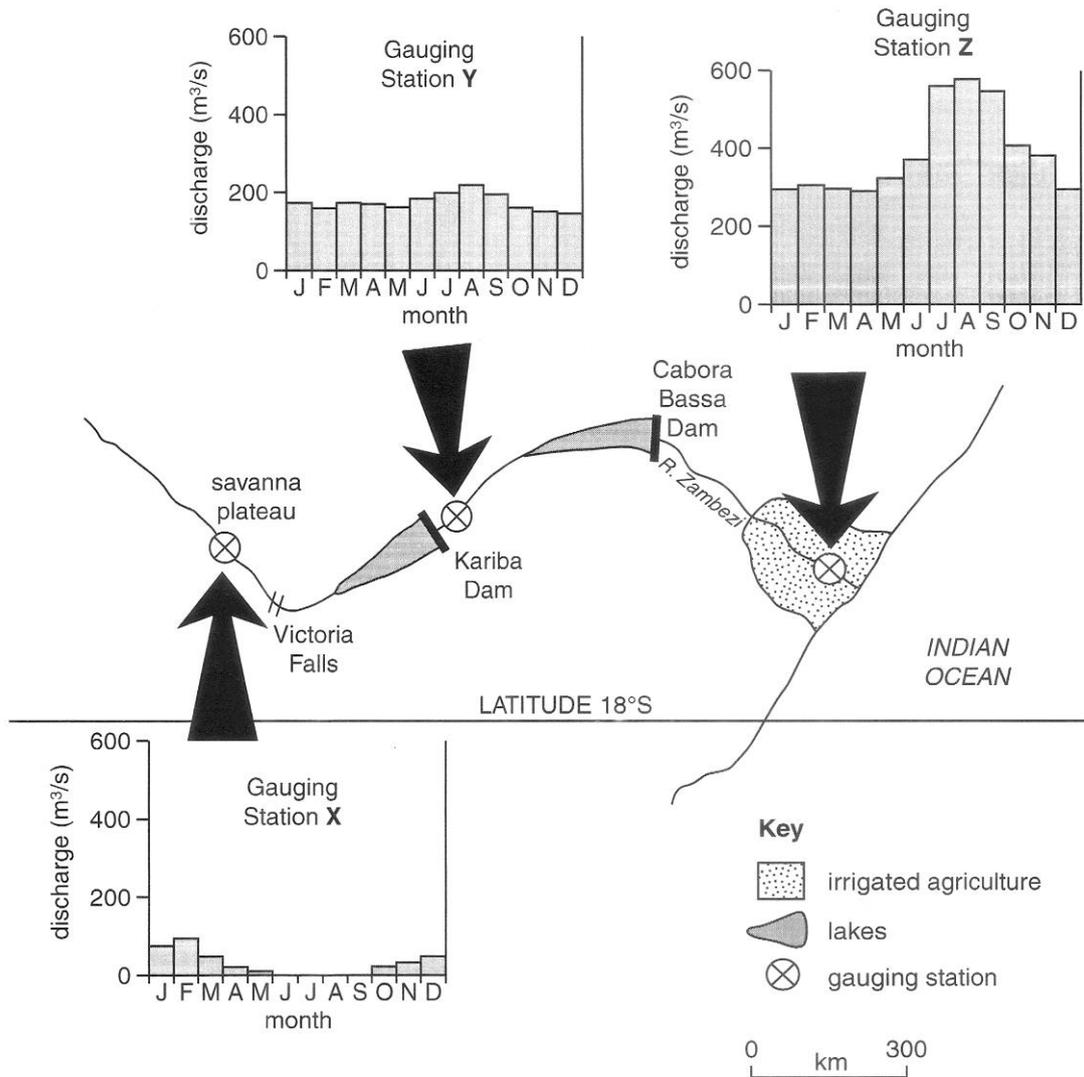


Fig. 3A

Climate graph for the area

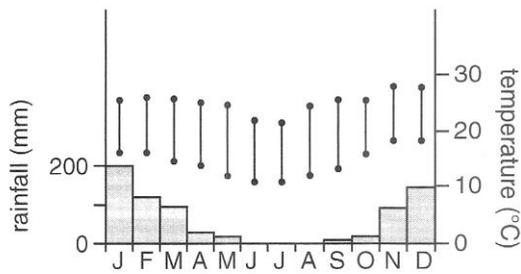


Fig. 3B