



NANYANG JUNIOR COLLEGE

Year 2 Preliminary Examination

H2 GEOGRAPHY

9730/01

Physical Geography

15 Sep 2016

3 hours

Additional Materials: Answer Paper
 Insert
 World Outline Map

READ THESE INSTRUCTIONS FIRST

Write your class, index number and name 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 referred to in the question paper.
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.
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 securely together.
The number of marks is given in brackets [] at the end of each question or part question.

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 Photograph A shows Spitzkoppe, a granitic landform in Namibia, Africa.
- (a) Draw an annotated sketch diagram to show the main features of the landform shown in Photograph A. [3]
 - (b) With evidence from Photograph A, show how the landform could have been formed. [5]
 - (c) Account for a mass movement process that could possibly take place in the vicinity of the landform in Photograph A. [4]

Atmospheric Processes Hazards and Management

- 2 Fig. 1 shows the Earth's energy balance in watts per square meter.
- (a) With reference to Fig. 1, compare the amount of incoming solar radiation with the amount of outgoing solar radiation. [2]
 - (b) Explain **two** factors which could have caused the differences as described in (a). [4]
 - (c) Explain the latent heat exchange as shown in Fig. 1 and how it can be affected by albedo. [6]

Hydrologic Processes Hazards and Management

- 3 Fig. 2 shows land use changes and its impact on permeability.
- (a) Draw annotated hydrograph(s) to represent the discharge for areas A and B shown in Fig. 2. [2]
 - (b) Give reasons why the hydrographs for areas A and B are different. [4]
 - (c) Suggest measures which area B can undertake to help reduce the risks of hydrological hazards. [6]

Lithospheric and Hydrologic Processes Hazards and Management

- 4 Photograph B shows a slope failure at Washington State over the Stillaguamish River.
- (a) Identify the type of slope failure and provide evidences from Photograph B. [4]
 - (b) Explain **two** factors that may have resulted in the slope failure shown in Photograph B. [4]
 - (c) With reference to Photograph B, explain the impact on channel processes and morphology when sediments are transported into the nearby river. [6]

Section B

Answer **two** questions from this section.

Lithospheric Processes Hazards and Management

5 EITHER

- (a) Explain the usefulness and limitations of using Strakhov's diagram in explaining the weathering of granite in the tropics. [9]
- (b) "Tropical karst landforms are solely the result of chemical weathering processes." Evaluate the validity of this statement. [16]

OR

- (a) With the aid of diagrams, compare the landforms and seismic activities at convergent and divergent boundaries. [9]
- (b) "Volcanic hazards are easier to manage than earthquake hazards." Discuss. [16]

Atmospheric Processes Hazards and Management

6 EITHER

- (a) Compare the climatic characteristics of the Tropical Rainforest with that of the Tropical Savanna. [9]
- (b) "The management of droughts depends very much on the economic state of the country." How far do you agree with this statement? [16]

OR

- (a) What is meant by the term '*urban heat island*'? What impacts do they have on the local climate? [9]
- (b) "Strategies to mitigate the effects of global warming are but a futile attempt to resolve the problem." Evaluate the validity of this statement. [16]

Hydrologic Processes Hazards and Management

7 EITHER

- (a) Outline the factors that affect flows and stores within a drainage basin. [9]
- (b) "Floods are the result of anthropogenic factors and thus can be resolved by human means." Evaluate the validity of this statement. [16]

OR

- (a) Explain the differences between *Hortonian overland flow* and *Saturation overland flow* within a drainage basin. [9]
- (b) "Meandering channels are very different from braided streams in their characteristics, processes and formation." Discuss. [16]

End of Paper