



NANYANG JUNIOR COLLEGE

Year 2 Preliminary Examination

H2 GEOGRAPHY

9730/01

Physical Geography

14 Sept 2015
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 the Photograph and 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 a landform in tropical Africa.

- (a) Identify the rock type typical of landforms shown in Photograph A. [1]
- (b) Briefly explain the role of climate and structure in the formation of the landform. [5]
- (c) Identify the steps you would undertake to determine the type of rocks in a small area. [6]

Atmospheric Processes, Hazards and Management

2 Fig. 1 shows warm and cool ocean currents in the Atlantic Ocean and the mean monthly temperatures of the warmest and coolest months of some coastal locations.

- (a) Describe and explain the pattern of ocean currents shown in Fig. 1. [4]
- (b) With reference to Fig. 1, explain how warm and cool ocean currents can affect temperatures and precipitation for coastal areas. [6]
- (c) Describe another factor that can affect the climatic conditions of these locations. [2]

Hydrologic Processes, Hazards and Management

3 Photograph B shows a stream in Scotland.

Fig. 2A shows a field sketch of this photograph.

Fig. 2B shows a cross-section of the stream at S-T on the field sketch.

- (a) Showing your working clearly, calculate
 (i) the hydraulic radius for the cross-section [2]
 (ii) the discharge (Q) at S-T if the velocity is 11 metres per second. [2]
- (b) Describe and account for the type of flow of the water at S-T. [3]
- (c) Identify the features X and Y shown on the field sketch and briefly describe both of them. [5]

Atmospheric, Hydrologic and Lithospheric Processes, Hazards and Management

4 Fig. 3A and Fig. 3B show the climographs of two areas.

- (a) Compare the climatic characteristics of the two climographs. [4]
- (b) Explain the type of weathering and mass movements that will occur in the two areas. [6]
- (c) How would climates in Fig. 3A and Fig. 3B affect the nature and the amount of load in the rivers of these two areas? [4]

Section B

Answer **two** questions from this section.

Lithospheric Processes, Hazards and Management

5 EITHER

- (a) Explain why some types of mass movements are more hazardous than others. [9]
- (b) With reference to examples, discuss the extent to which the impacts of volcanic activity are directly related to the level of economic development of the country affected. [16]

OR

- (a) Compare and contrast the characteristics of limestone and granite. [9]
- (b) Comment on the view that the distribution of weathering types over the Earth's surface is determined by climate. [16]

Atmospheric Processes, Hazards and Management**6 EITHER**

- (a) With an aid of a diagram, explain what is meant by the energy heat budget. [9]
- (b) Discuss the roles of trade winds and monsoon winds in influencing seasonal variations in precipitation in tropical climates. [16]

OR

- (a) Describe and explain the climatic characteristics commonly associated with tropical cyclones. [9]
- (b) To what extent can prediction reduce the impacts of tropical cyclones? [16]

Hydrologic Processes, Hazards and Management**7 EITHER**

- (a) With reference to a region or country which you have studied, describe and explain the main changes occurring in the hydrological cycle throughout the year. [9]
- (b) To what extent can human activities increase the occurrence and effects of river floods? [16]

OR

- (a) Explain the terms *drainage density*, *stream ordering* and *bifurcation ratio*. [9]
- (b) With reference to one or more river basins, examine the cost and benefits of river basin management schemes. [16]