



**HWA CHONG INSTITUTION**  
**JC2 Preliminary Examinations**  
**Higher 2**

**CANDIDATE  
NAME**

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**CT GROUP**

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**CENTRE  
NUMBER**

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**INDEX  
NUMBER**

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**GEOGRAPHY**

**9730/01**

Paper 1 Physical Geography

**31 August 2015**

**3 hours**

Additional Materials: Answer Paper  
1 Insert  
World outline map

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**READ THESE INSTRUCTIONS FIRST**

Write your name and CT class clearly 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.  
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.  
Start each answer to the main questions on a fresh sheet of paper.

At the end of the exam, fasten your answers in the following sections:

**Set 1 : Section A DRQ**

**Set 2 : Section B Essays**

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 Fig. 1A shows the locations of the 2010-2011 earthquakes in Christchurch, New Zealand. Fig. 1B shows the plate boundary. Fig. 1C shows earthquake risks in New Zealand.
  - (a) With reference to Fig. 1A and 1B, describe and explain the location of the 2010-2011 earthquakes. [4]
  - (b) Suggest reasons for the differing casualty rate between the 2010 and 2011 events. [4]
  - (c) With reference to 1C, explain briefly how a hazard map reflecting earthquake risk can be constructed. [4]

### Atmospheric Processes, Hazards and Management

- 2 Fig. 2 shows the variations in temperature and insolation levels in one day.
  - (a) Define the term 'insolation'. [2]
  - (b) Explain the warmest and coolest time of the day shown in Fig. 2. [4]
  - (c) Suggest the latitudinal location of the area shown in Fig. 2 and explain why the surplus amount of absorbed radiation may vary globally. [6]

### Hydrologic Processes, Hazards and Management

- 3 Fig 3A shows the relationship between channel slope and bankfull discharge. Fig. 3B shows the relationship between sediment load and slope.
  - (a) Describe the relationship between channel slope and bankfull discharge in Fig. 3A. [4]
  - (b) Explain the nature of meandering and braided channels in Fig. 3A and 3B. [8]

### Lithospheric and Hydrologic Processes, Hazards and Management

- 4 Fig. 4 shows a heavily silted river in Sabah, East Malaysia.
  - (a) Describe the nature of mudflows. [2]
  - (b) With reference to Fig. 4 and information provided, explain how the mudflows in Sabah may have been formed. [4]
  - (c) Explain the how the mudflows may be associated with flash floods. [2]
  - (d) Examine the social and environmental impacts of such an event. [6]

### Section B

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

#### Lithospheric Processes, Hazards and Management

- 5 EITHER** (a) Using Peltier's model, explain how climate affects weathering processes. [9]  
 (b) Examine the role of mineral composition and rock structure in the development of granite landforms. [16]
- 5 OR** (a) Explain the relationship between seafloor spreading and the Plate Tectonic theory. [9]  
 (b) To what extent are landforms found along plate boundaries volcanic in nature? [16]

#### Atmospheric Processes, Hazards and Management

- 6 EITHER** (a) Explain the 'poleward heat transfer'. [9]  
 (b) Compare and contrast the characteristics of a tropical monsoon climate with those of a tropical savanna climate and assess the factors influencing them. [16]
- 6 OR** (a) Explain the occurrence of low pressure zones globally and their influence on climate. [9]  
 (b) Discuss the extent to which level of development is a key factor in the management of the impacts of tropical cyclones. [16]

#### Hydrologic Processes, Hazards and Management

- 7 EITHER** (a) Explain the relationship between channel velocity and fluvial erosion and transportation. [9]  
 (b) Floodplains naturally act as temporary storages of floodwaters and flooding in these areas should not be controlled. Discuss. [16]
- 7 OR** (a) Explain how 'infiltration', 'throughflow' and 'percolation' differ and how they may be related. [9]  
 (b) Discuss the extent to which conflicts of interest in catchment areas can be fully resolved. [16]

~~ End of paper ~~