



# ANGLO-CHINESE JUNIOR COLLEGE

## JC 2 Preliminary Examinations 2017

### GEOGRAPHY Higher 2

9751/02

### Paper 2 Data Response Questions

Time: 3 hours

22 August 2017  
(Tuesday)

#### READ THESE INSTRUCTIONS FIRST

Write your Centre number, index number and name on all the work you hand in.

Start every question on a fresh piece of writing paper

Write in dark blue or black pen.

You may use a soft pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer **four** questions. **One** from each section.

You should make reference to appropriate examples studied in the field or the classroom, even where such examples are not specifically requested 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.

The number of the marks is given in brackets [ ] at the end of each question or part question.

On the **cover sheet** provided, include:

- Your name and index no.
- The question numbers of the question you have attempted in the boxes provided, and place the cover sheet as the top page over your answers to Section A.

Start each question on a fresh piece of paper. At the end of the examination, ***fasten your answers to each question separately***, with the cover page fastened as the top page for Question 1. Submit your answers to each section separately; with **four** bundles submitted.

This Question Paper consists of **5** printed pages, including this cover page.  
The Insert consists of **13** printed pages.



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## Section A – Geographical Investigation

- 1 A group of 25 students from Serenity Junior College in the eastern part of Singapore were tasked to undertake a primary fieldwork on investigating infiltration on different landuse. The team selected a study area in East Coast Park. The students were deciding on possible areas of investigation and after some discussion, the following hypothesis was selected for investigation.

**Hypothesis:** Infiltration rates are higher on sandy beaches compared to that of the vegetated areas.

They carried out the primary investigation at Sites X and Y in the study area in Resource 1 on 14 August 2016.

Resource 2 shows the equipment used by the students to measure infiltration. Resource 3 shows the consolidated data collected by the team.

- (a) With reference to Resource 1, evaluate the suitability of the given hypothesis. [4]
- (b) Explain how this team can minimise the risks in carrying out their primary investigation at Sites X and Y as shown in Resource 1. [4]
- (c) With reference to Resources 1 and 2, explain how the students might have carried out their primary fieldwork on investigating infiltration on different landuse. [8]
- (d) Sketch the consolidated results in Resource 3 using a suitable method of data representation. [3]
- (e) Suggest reasons for the variations shown in Resource 3. [6]

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## Section B

### Theme 1: Tropical Environments

#### Climate and Geomorphic Processes in Tropical Australia

- 2** Resource 4 shows the distribution of average annual rainfall in Australia, three climographs of selected cities of Australia, and the location of two rivers, the Vule River and the Burdekin River. Resource 5 shows the generalised relief map of Australia, the location of the intertropical convergence zone in January, and the wind directions for January and July. Resource 6 shows a slope in New South Wales, Australia. Resource 7 shows a section of the Vule River in the state of Western Australia, and a section of the Burdekin River in the state of Queensland, Australia
- (a) With reference to Resource 4, describe the pattern of average annual rainfall of Australia, and the pattern of rainfall in the three selected cities. [4]
- (b) With reference to Resources 4 and 5, and your own knowledge, account for the pattern of rainfall in the tropical parts of Australia shown in Resource 4. [7]
- (c) Using evidence from Resource 6, outline **two** erosional processes and explain how they may have produced the features shown. [6]
- (d) With the aid of Resource 4 and your own knowledge, account for the differences in fluvial features of Vule River and Burdekin River shown in Resource 7. [8]

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## **Theme 2: Development, Economy and Environment**

### **Diamonds in Africa and the Rest of the World**

- 3** Resource 8 highlights the volume of diamonds produced by the top producer countries in the world from 2009 to 2016. Resources 9 and 10 show some of the consequences of producing diamonds on two of these countries; South Africa and Canada respectively. Resource 9 looks at impact on employment in South Africa. Resource 10 shows locations of the various diamond mines within Canada and the impacts for these locations and for Canada as a whole.
- (a)** Using evidence from Resource 8, compare the diamond production between countries at high and low levels of development. **[4]**
  - (b)** Suggest reasons for the trends in diamond production for Russia and Botswana shown in Resource 8. **[4]**
  - (c)** Describe the trends in employment from South Africa's diamond mines with reference to Resource 9. **[4]**
  - (d)** Suggest **two** reasons why De Beers retains its regional office within Canada as shown in Resource 10. **[4]**
  - (e)** With reference to Resource 10, discuss the view that impacts of diamond extraction by transnational corporations are identical across all host economies. **[9]**

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### **Theme 3: Sustainable Development**

#### **Causes and Impacts of Climate Change**

- 4** Resource 11 shows Earth's carbon dioxide (CO<sub>2</sub>) concentration and temperature anomaly over the past 400,000 years, and sunspot numbers over the last 165 years. Resource 12 shows variations in the Earth's orbit over 200,000 according to Milankovitch and its resultant impact on northern hemisphere summer insolation. Resource 13 shows primary energy world consumption between 1990 and 2015, and 2016 primary energy regional consumption by fuel type. Resource 14 shows the top CO<sub>2</sub> emitters and their per capita emissions in 2013, and the 2013 global map of vulnerability to impacts of climate change.
- (a) Explain how anthropogenic addition of CO<sub>2</sub> into the atmosphere may have been responsible for the temperature anomalies of the past 165 years shown in Resource 11. **[4]**
- (b) Using evidence from Resource 12, show how a natural driver of radiative forcing can explain climate changes between 11,000 and 130,000 years ago shown in Resource 11. **[5]**
- (c) With reference to Resource 13, and your own knowledge, account for the pattern of primary energy consumption of fossil fuel versus alternative energy. **[7]**
- (d) Using evidence from Resource 14, and your own knowledge, suggest why there is little environmental justice. **[9]**

**End]**