ANGLO-CHINESE JUNIOR COLLEGE

JC2 Preliminary Examination

Higher 2

GEOGRAPHY

9173/02

Paper 2

16 September 2025

3 hours

Additional Materials: Insert
Cover Sheet
Answer Paper

READ THESE INSTRUCTIONS FIRST

You should follow the instructions on the cover sheet. If you need additional answer paper, ask the invigilator.
Write your index number and name on the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.

Answer Question 1 in **Section A.**
Answer Question 2 in **Section B**.
Answer **one** question in **Section C.**

Start your answer to each question on a fresh sheet of answer paper.

At the end of the examination, your answers should be separated and securely fastened into **2 bundles**. Attach a cover sheet on top of bundle 2.

- Bundle 1: Answers to Question 1. *Name and index number to be clearly indicated on the first page of the answers.*
- Bundle 2: Cover sheet and answers to Question 2 and Question 3 or 4.

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

This document consists of **5** printed pages and **1** blank page.

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Answer Questions 1 and 2 and
EITHER Question 3 **OR** Question 4

Section A

Cluster 4 Fieldwork

1 There are plans to turn the coastal mangrove area around the Sungai Mandai Besar River in northern Singapore into a nature park that will be named the Mandai Mangrove & Mudflat Nature Park. A group of five students wanted to assess the flood risk around the Sungai Mandai Besar River. The river is concretised into a canal for most of its course except for the short stretch at the river mouth.

The hypothesis the students chose:

'Fluvial flood risk is lower near the river mouth than around the canalised parts of the Sungai Mandai Besar River.'

To assess the flood risk of the areas surrounding the river, the students collected data on infiltration rates and selected river variables.

They collected data on a weekday in December from 10 am to 4 pm. At each site, two students worked on the infiltration test, while three worked on collecting data on selected river variables. All five of them worked at Site A first. They were only able to start work at Site B after the thunderstorm ended at 3 pm. They collected infiltration data around Site B, and only the river velocity data at Site B.

The equipment that the students used for their field investigation included:

- A single-ring infiltrometer made of white plastic tubing with a diameter of 10 cm and a height of 30 cm
- Two brightly marked half-filled plastic mineral water bottles as the velocity-floats
- Two stop watches
- A pail to fetch water from the river for the infiltration test

For the infiltration test, the students chose two locations at each site. At Site A, the infiltration test was taken at the grassy patch next to the river bank (indicated as A1 in Resource 1) and on forested land (indicated as A2). At Site B, two infiltration sites were chosen [indicated as B1 (concrete surface) and B2 (muddy river banks) in Resource 1].

Resource 1 is a land use map of the area adjacent to the Sungai Mandai Besar River, showing Sites A and B and the four infiltration sites A1, A2, B1 and B2. Resource 2 shows the photographs of Sites A and B. Resource 3 shows the infiltration rates at each of the four sites around the Sungai Mandai Besar River. Resource 4 shows the findings of the investigation at Sites A and B

(a) Explain whether the hypothesis chosen is suitable for their investigation of flood risk around the Sungai Mandai Besar River. [4]

(b) With reference to Resources 1 and 2, describe how the students could reduce the impacts of their investigation at the two sites A and B. [6]

(c) Explain how the students could overcome potential risks when they conduct their fieldwork investigation at the two sites A and B. [6]

(d) Explain how the reliability of the infiltration and river variable data shown in Resources 3 and 4 could be improved. [6]

(e) How useful is the method of data representation of infiltration rates shown in Resource 3 for the investigation of flood risk in the Sungai Mandai Besar area? [4]

(f) The students wanted to conduct a questionnaire survey of the people working and living around the Sungai Mandai Besar regarding their experience of flooding in the area. Describe a suitable sampling method that they could use for the survey. [4]

(g) With the aid of all the Resources, assess the validity of the students' conclusion that fluvial flood risk is lower near the river mouth than around the canalised parts of Sungai Mandai Besar River. [10]

Section B

Cluster 3 Sustainable Future and Climate Change

2 Resource 5 shows the annual growth rates for the urban core and suburbs in large metro areas from 2010-2022. Resource 6 shows the city liveability index in 2024. Resource 7 shows the four main themes the United Nations has identified to improve cities for women.

(a) Compare the changes in the annual growth rates between the urban core and suburbs seen in Resource 5. [4]

(b) Explain the impacts of urban population loss in the urban core as seen in Resource 5 on progress towards sustainable development. [6]

(c) Describe the global distribution of the most and least liveable cities as seen in Resource 6. [5]

(d) Describe two ways to measure urban liveability. [4]

(e) With reference to Resource 7, explain the issues that women living in the city face. [6]

(f) Using examples, explain the tension between sustainable urban development and liveability. [5]

Section C

Answer EITHER question 3 OR question 4.

3 Evaluate the success of strategies in improving the lives of slum dwellers. [20]

4 'Firms play the greatest role in responding to contemporary climate change.'

Evaluate this statement. [20]

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