NANYANG JUNIOR COLLEGE
Year 2 Preliminary Examination

H2 GEOGRAPHY 9751/02

Paper 2 Data Response Questions 20 September 2018

3 hours

Additional Materials: Answer Paper
1 Insert
World outline map

READ THESE INSTRUCTIONS FIRST

Write your Centre number, 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.

Candidates answer **all** questions.

The Insert contains all the Resources referred to in the questions.
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

Theme 4 – Geographical Investigation

1. A group of geography students went to study the Stung Chrey Bak Stream in Cambodia as part of their overseas geographical investigation project. The stream is a tributary which feeds the Tonle Sap River. The team wanted to investigate the impact of landuse changes on flood risk and liveability of the area.

Data collection on stream velocity, depth, wetted perimeter and cross-sectional area was done over two days in December during the dry season. The team first measured a segment of the upstream before repeating the same process for a segment downstream. Due to time constraints, only one measurement (at 10am for both days) was taken for each stream segment.

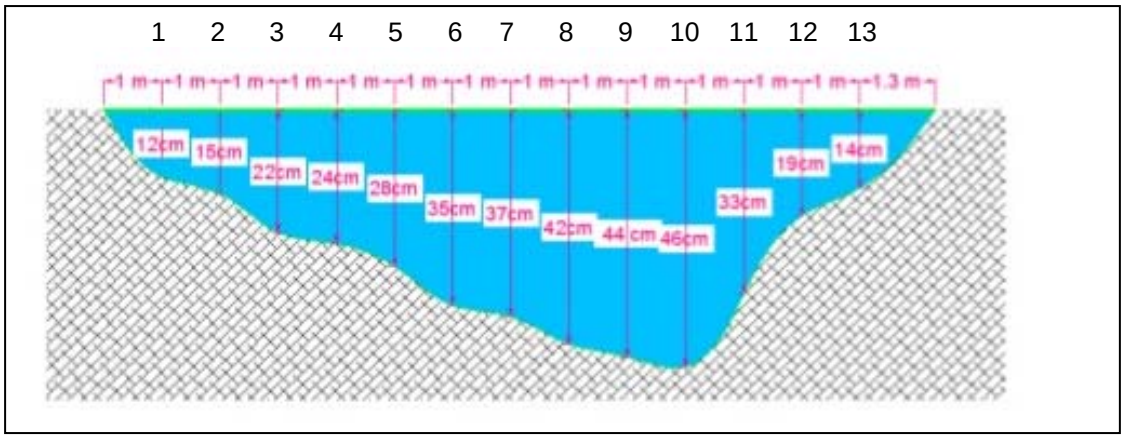
Equipment used:

- ball of twine
- meter ruler
- measuring tape
- portable flow meter to measure stream velocity

The team measured the river velocity at regular intervals using a portable flow meter at depths of 0.2% and 0.8% from the water surface.

Flow meter used to measure velocity
http://www.cleo.net.uk/consultants_resources/geography/source2sea/Sor2Sea/CURRENT.HTM

After measuring velocity, the team then laid an unweighted measuring tape along the river bed to measure the wetted perimeter. There were some boulders on the channel bed for the upper segment of the stream. Depth measurements were also taken at equal distances across the river. The data is used to plot the stream's wetted perimeter and to calculate the cross sectional area.



Cross-sectional area of the upstream segment of Stung Chrey Bak Stream
Sopheak, C., Wales, N and Frewer, T. An Investigation of Land Cover and Land Use Change in Stung Chrey Bak Catchment, Cambodia CDRI Working Paper Series No. 53

Discharge is then calculated by multiplying the cross sectional area of the channel by the mean velocity of the water.

Resource 1 shows the catchment area of Stung Chrey Bak Stream in Cambodia. Resource 2 shows a segment of the upstream of Stung Chrey Bak Stream. Resource 3 shows data collected from the upstream segment of Stung Chrey Bak Stream.

(a) With reference to Resources 1 and 2, suggest a suitable hypothesis for the group's investigation. [1]

(b) What safety precautions should the team take when conducting the stream investigation? [5]

(c) Calculate the mean velocity of the channel in Resource 3 and sketch one line graph to represent the cross-sectional velocity of the upstream segment of Stung Chrey Bak Stream. [4]

(d) The team concluded that some of the data collected may not have been completely reliable and/or accurate. What improvements can be made in the planning and data collection process for this stream investigation? [6]

(e) Evaluate the usefulness of the river velocity data shown in Resource 3 in ascertaining the flood risk of Stung Chrey Bak Stream. [9]

Section B

Theme 1: Tropical Environments

Mass movement hazards in Tropical Africa

2. Resource 4 and 5 show mass movement hazards in Sierra Leone and Egypt in Africa. Resource 6 shows the locations and climographs of Sierra Leone and Egypt.

(a) Identify the type of mass movement hazards as shown in Resources 4 and 5. [2]

(b) With reference to Resources 4 and 5 compare the physical effects of the mass movement hazards. [3]

(c) Suggest possible causes that could have led to the mass movement hazards in Resources 4 and 5. [5]

(d) With reference to Resource 6, account for the rainfall pattern for Sierra Leone and Egypt. [7]

(e) Using Resource 6, explain the role of climate in influencing the type of mass movement as shown in Resources 4 and 5. [8]

Theme 2: Development, Economy and Environment

Development Gap in Asia

3. Resource 7 shows employment structures and economic development of selected countries. Resource 8 shows the comparison between Internet penetration and mobile penetration of selected Asian countries and Australia. Resource 9 shows the internet user profile for Southeast Asian countries in 2013.

(a) With reference to Resource 7, describe the employment structures for both the richer and poorer countries. [4]

(b) Name the mapping technique used in Resource 7 and state **one** strength and **one** limitation in representing the employment structures of the richer and poorer countries. [3]

(c) With reference to Resource 8, compare the internet penetration and mobile penetration of Asian countries. [5]

(d) Using Resources 7 and 8 and your own knowledge, explain the possible existence of a development gap amongst Asian countries. [6]

(e) With reference to Resources 8 and 9, explain the socio-economic opportunities and challenges which developing countries like Vietnam may experience with the growth of internet penetration. [7]

Theme 3: Sustainable Development

Waste Management in Asian Cities

4. Resource 10 shows the type of waste composition in Phnom Penh, Cambodia. Resource 11 is an infographic showing the plastic situation in Cambodia. Resource 12 shows a typical street scene in Phnom Penh. Resource 13 shows the typical characteristics of waste management in Asian cities by level of development. Resource 14 shows a news article about plastic bag fee implementation in Phnom Penh.

(a) Describe the composition of waste in Phnom Penh as shown in Resource 10. [2]

(b) With reference to Resource 11, account for the percentage of plastic waste in Phnom Penh as shown in Resource 10. [5]

(c) With reference to Resource 12, explain how waste affects the liveability of Phnom Penh. [4]

(d) With reference to Resource 13, compare the solid waste management characteristics among Asian cities by level of development. [5]

(e) Using all resources and your own knowledge, assess the challenges faced in managing plastic bag consumption in less developed cities. [9]