

ANGLO-CHINESE JUNIOR COLLEGE

JC 2 Preliminary Examinations 2015

GEOGRAPHY

Higher 2

9730/01

Paper 1 Physical Geography

Time: 3 hours

21 August 2015

READ THESE INSTRUCTIONS FIRST

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

Section A

Answer **all** questions.

Section B

Answer **two** questions, each from a different topic.

Insert 1 contains all the Figures and Photographs referred to in the question paper.

Insert 2 is to be submitted together with the answers.

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.

At the end of the examination, fasten your answers to Section A separate from that of Section B.

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.

This document consists of 5 printed pages, including this cover page.
Insert 1 consists of 6 printed pages and Insert 2 consists of 2 printed pages.



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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 limestone landform near Malham, Yorkshire in England. Photograph B shows a granite landform in Mozambique.

- (a) Explain the role of geology and climate in influencing the development of the limestone landform in Photograph A. [4]
- (b) Identify the granite landform in Photograph B and draw a labelled diagram to show its principal features. Describe and explain the weathering and erosion processes which may have produced this landform. [5]
- (c) If you were studying a rock exposure in the field, suggest what rock characteristics you would examine to differentiate between igneous and sedimentary rocks. [3]

Atmospheric Processes, Hazards and Management

2. Fig. 1A shows the average location of the Inter-Tropical Convergence Zone (ITCZ) in January and July.
Fig. 1B shows the Walker Circulation, depicting the trade winds and strong equatorial currents in the Southern Hemisphere during a non-ENSO (El Niño Southern Oscillation) phase.

- (a) Account for the formation of the ITCZ and describe the weather conditions associated with ITCZ. [4]
- (b) Describe and account for the average location of the ITCZ in January and July in Fig. 1A. [4]
- (c) Explain the changes that will take place in the Walker Circulation in Fig. 1B when the ENSO (El Niño Southern Oscillation) condition sets in, and explain how this can lead to drought for selected locations. [4]

Hydrologic Processes, Hazards and Management

3. Fig. 2A shows the catchment area of the Chang Jiang (Yangtze River) where the Three Gorges Dam is located.
Fig. 2B shows the Storm Hydrograph A at a gauging station near Yichang before the construction of the Three Gorges Dam.
- (a) With reference to Fig. 2A, suggest the causes of river flooding in the Chang Jiang (Yangtze River) Catchment. [3]
- (b) Describe and account for the channel pattern of the Chang Jiang (Yangtze River) in the middle course in Fig. 2A. [5]
- (c) On **Insert 2**, sketch a storm hydrograph each (in relation to the Storm Hydrograph A in Fig. 2B) to reflect the following changes and explain the shape of each of the hydrograph sketched:
- (i) afforestation in the basin before the construction of the Three Gorges Dam
- (ii) after the construction of the Three Gorges Dam [4]

The completed Insert 2 should be handed in with your answers.

Atmospheric and Hydrologic Processes, Hazards and Management

4. Fig. 3 shows the climate at three locations in Africa.
- (a) Compare the climates of *In Salah* and *Abidjan* and account for the differences in the climates of these two cities in Fig. 3. [6]
- (b) Explain how the climates of *In Salah* and *Abidjan* might affect the flows in the hydrological cycles of the drainage basins in these areas. [4]
- (c) In Fig. 3, the regions north and south of the Sahara Desert are identified as “areas at risk from desertification”. Briefly explain why desertification occurs in these regions. [4]

Section B

Answer **two** questions, each from a different topic. Each question carries 25 marks.

Lithospheric Processes, Hazards and Management

5 EITHER

(a) With the aid of diagrams, explain the characteristics of earthquakes. How are earthquake magnitude and intensity measured? [9]

(b) With reference to specific examples, assess the extent to which the impacts of an earthquake on physical and human environments result from its magnitude. [16]

OR

(a) Using the concepts of **shear stress** and **shear strength**, explain how rockslide, mudflow and soil creep occur. [9]

(b) Explain the evidence that support the Plate Tectonics Theory. Using the key tenets of the Plate Tectonics Theory, account for the distribution and formation of volcanoes along the divergent and convergent plate boundaries. [16]

Atmospheric Processes, Hazards and Management

6 EITHER

(a) Describe the spatial distribution of tropical cyclones and explain the conditions required for their development. [9]

(b) Account for the variations in the negative impacts of the tropical cyclones experienced by the less developed countries (LDCs) and developed countries (DCs). [16]

OR

(a) Describe and explain the types of surface wind belts related to the global atmospheric circulation system. [9]

(b) How are drought hazards predicted? To what extent is the international disaster aid important in reducing the impacts of drought hazards? [16]

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

- (a) Assess the effectiveness of flood prediction methods. **[9]**
- (b) Examine the effects of river flooding on both the physical and the human environments. **[16]**

OR

- (a) With the use of a well-labelled diagram, explain how the particles of different sizes are eroded, transported and deposited. **[9]**
- (b) "Economic strategies are most effective in resolving the conflicts of interest arising from the trans-border river basin management."
How far do you agree with this statement? **[16]**

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Insert 1

This insert contains all the Figures and Photographs referred to in the question paper.

Sources:

- Photograph A:* <https://commons.wikimedia.org/wiki>
Photograph B: <http://airworld.com.my/places/98-vietnam/236-halong-bay>
Fig. 1A: Geofile, 662, April 2012
Fig. 1B: Geofile, 569, April 2008
Fig. 2A: Geo Factsheet, Number 114
Fig. 3: UCLES, 2217/01, June 2005

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Photograph A for Question 1



Photograph B for Question 1



Fig. 1A for Question 2

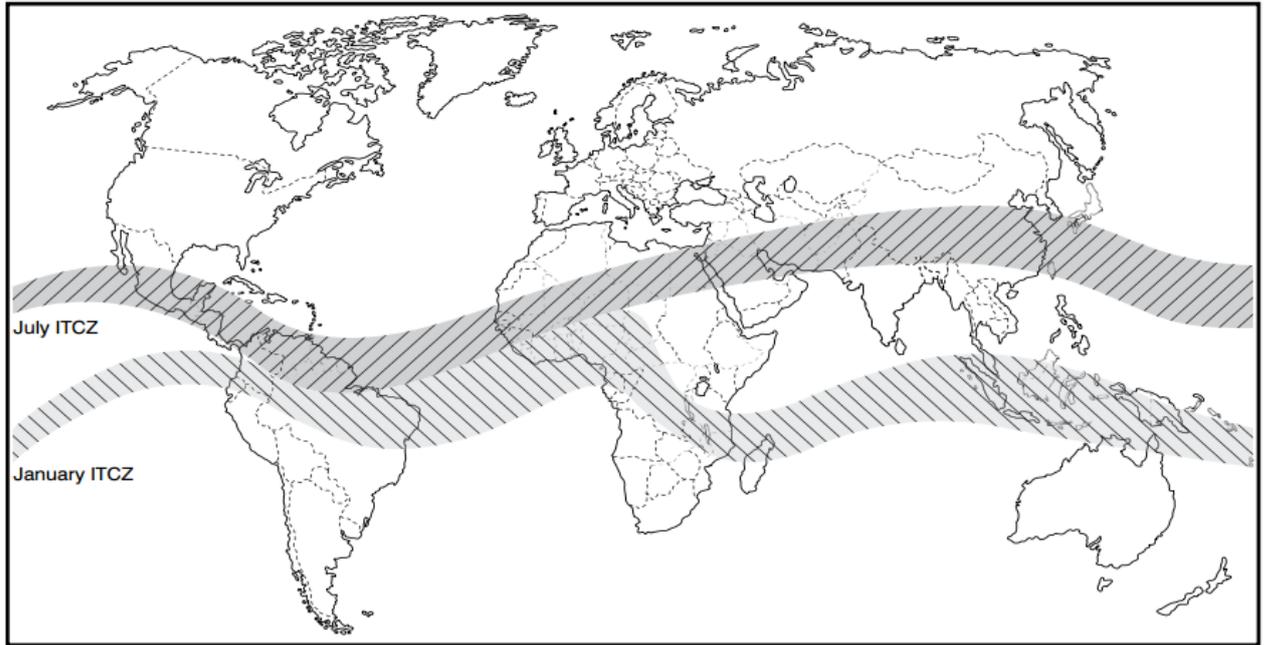


Fig. 1B for Question 2

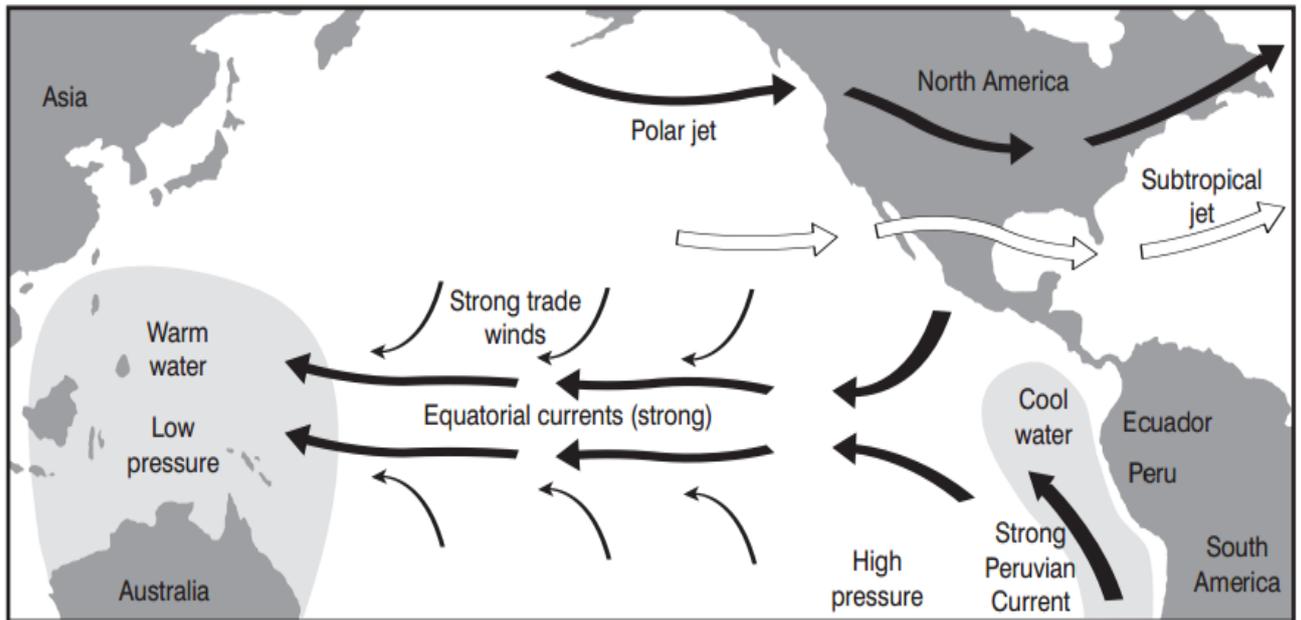


Fig. 2B for Question 3

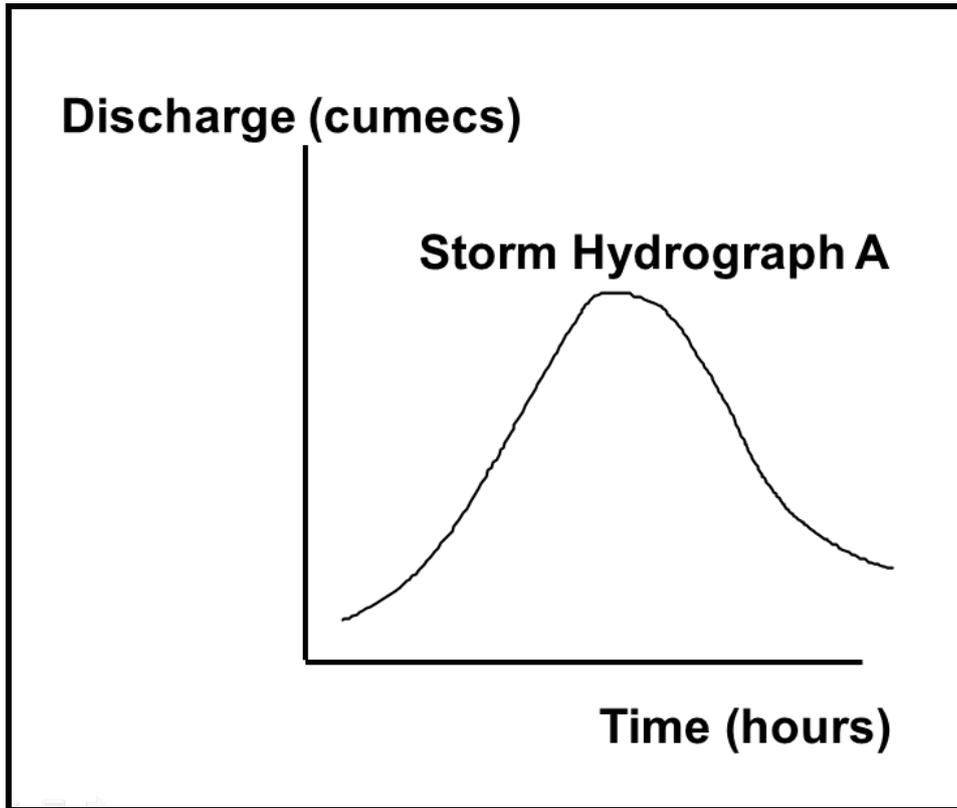
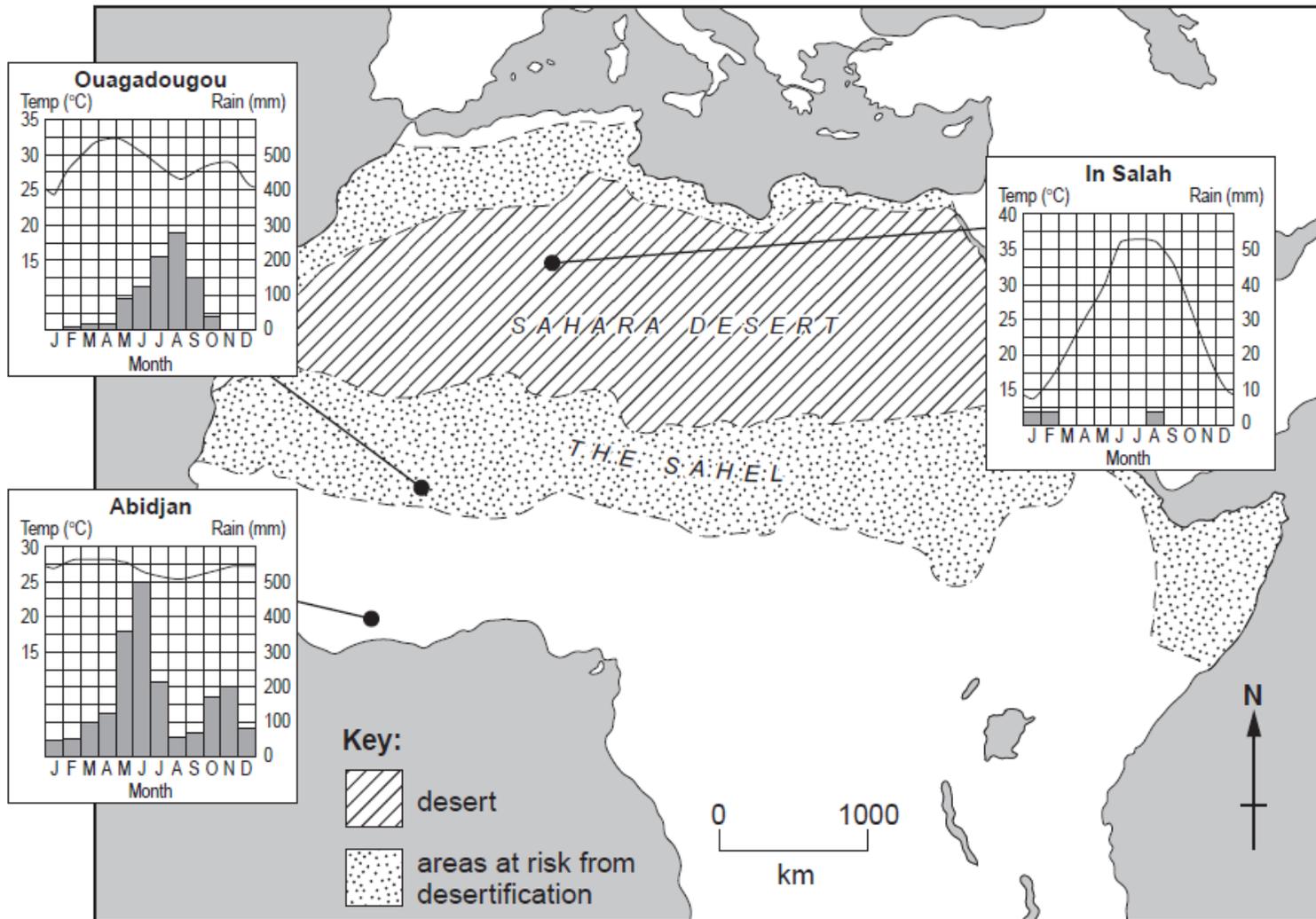


Fig. 3 for Question 4



Insert 2

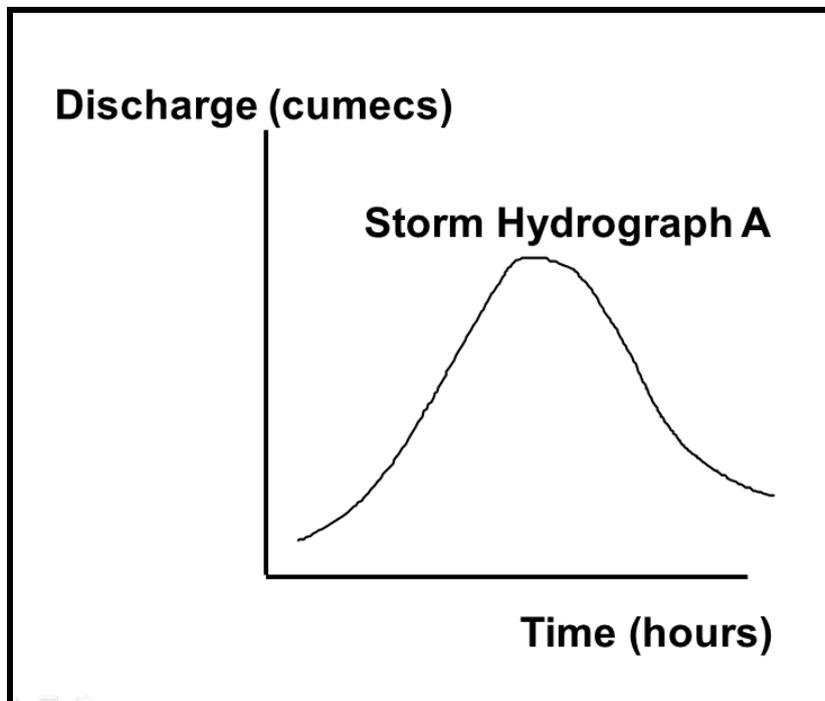
Name: _____

Index Number: _____

For Question 3

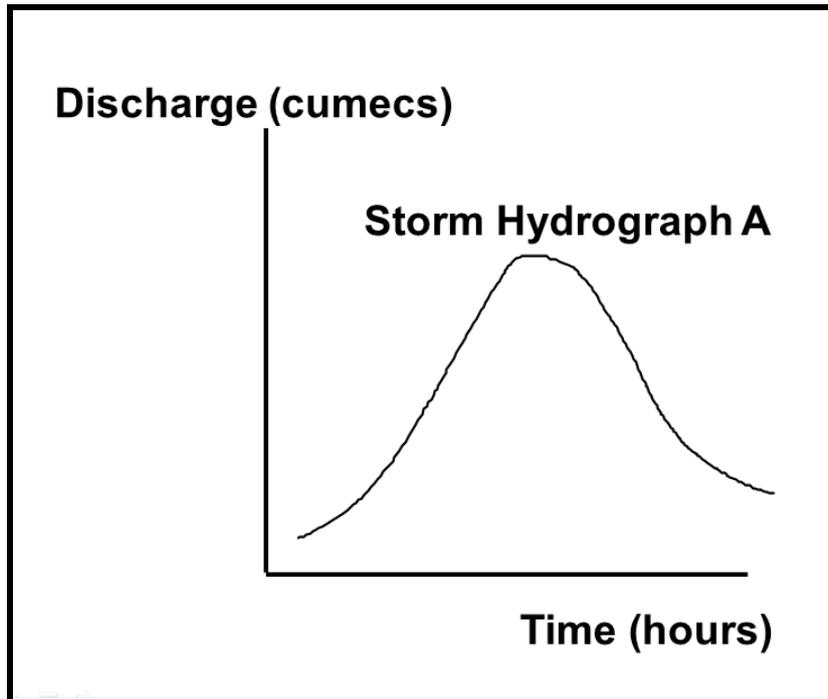
Sketch a storm hydrograph (in relation to the Storm Hydrograph A) to reflect the following changes and explain the shape and size of each of the hydrograph sketched:

(c) (i) afforestation in the basin before the construction of the Three Gorges Dam



Explanation:

(c) (ii) after the construction of the Three Gorges Dam



Explanation:

A large empty rectangular box provided for the student to write their explanation.