National Junior College
SH2 Preliminary Examination 2015

GEOGRAPHY **9730/01**

Paper 1 Physical Geography 3 hours
Higher 2 28 August 2015

Additional Materials : 1 Insert
World Outline Map

READ THESE INSTRUCTIONS FIRST

Answer **all** questions from Section A.
Answer **two** questions from Section B.

You are advised to spend not more than one hour 30 minutes on Section A.
All the Figures and Photographs referred to in the questions are contained in the Insert.
You should make reference to appropriate examples studied in the field or classroom, even where such examples are not specifically requested by the question.
Sketch maps should be drawn whenever they serve to illustrate an answer.

At the end of the examination, fasten all your answer scripts securely together. The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of 6 printed pages.

Section A

Answer **four** questions from 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 landform that has resulted from weathering of granite in the tropics.

(a) With the aid of an annotated diagram, briefly describe the landform shown. [4]

(b) Explain **two** factors that have combined with weathering to affect the development of the granite landform shown in the photograph. . [8]

Atmospheric Processes, Hazards and Management

2 Figs. 1A and 1B show incoming and reflected solar radiation and albedo of different surfaces.

(a) **(i)** Using Fig. 1A, describe what happens to the incoming solar radiation. [3]

(ii) Using Fig. 1B, describe and explain how albedo might influence the local energy budget. [5]

(b) Describe and explain how urbanization can alter the local energy budgets. [4]

Hydrologic Process, Hazards and Management

3 Fig. 2 shows a model of how river channel characteristics change downstream.

(a) Describe the channel morphology at the upstream end of the model shown in Fig. 2. [4]

(b) Explain why average velocity increases downstream. [4]

(c) Describe and explain the precautions you need to take when making accurate measurements of the discharge of a river. [4]

Lithospheric, Atmospheric and Hydrologic Processes, Hazards and Management

4 Fig. 3 shows the natural hazards that occurred in Myanmar (Burma) between 2008-2012.

(a) **(i)** Describe the distribution of natural hazards in Myanmar as shown in Fig. 3. [4]

(ii) Suggest why Myanmar is ranked as the country in Asia 'most at risk' of natural hazards by the UN Risk Model. [5]

(b) Outline and explain the possible secondary hazards that may have occurred as a result of the events shown in Fig. 3. [5]

Section B

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

Lithospheric Processes, Hazards and Management

5 EITHER

(a) With reference to slides and flows, describe how the forces of shear stress and shear strength contribute to the processes of mass movement. [9]

(b) Evaluate how plate tectonics theory helps our understanding of the nature and distribution of seismic and volcanic events. [16]

5 OR

(a) With the aid of diagrams, explain the role of sea floor spreading in the formation of tectonic landforms. [9]

(b) To what extent can preparedness and disaster planning mitigate the effects of earthquake hazards? [16]

Atmospheric Processes, Hazards and Management

6 EITHER

(a) Explain how convectional and orographic uplift of air occur. Outline the effects of such uplift on rainfall. [9]

(b) To what extent do the position of Inter-tropical Convergence Zone (ITCZ) and the pattern of winds influence the seasonal variations in precipitation in tropical climates? [16]

6 OR

(a) 'Large cities ….. have their own climatic conditions.' (Andrew Goudie)
Describe and explain the nature of the urban climatic conditions. [9]

(b) 'Impacts from tropical cyclones are essentially the same wherever they occur.'
Discuss the validity of this statement. [16]

Hydrologic Processes, Hazards and Management

7 EITHER

(a) Explain the extent to which geology can influence the flows and stores in a drainage basin hydrological cycle. [9]

(b) To what extent do human factors contribute to the risks from flooding? [16]

7 OR

(a) Explain the usefulness of hydrographs in explaining the nature of flows within a catchment area. [9]

(b) 'The human activities which take place in transborder river basins result in a range of conflicts of interest.'
How far do you agree with this statement? [16]

Insert

Photograph A for Question 1

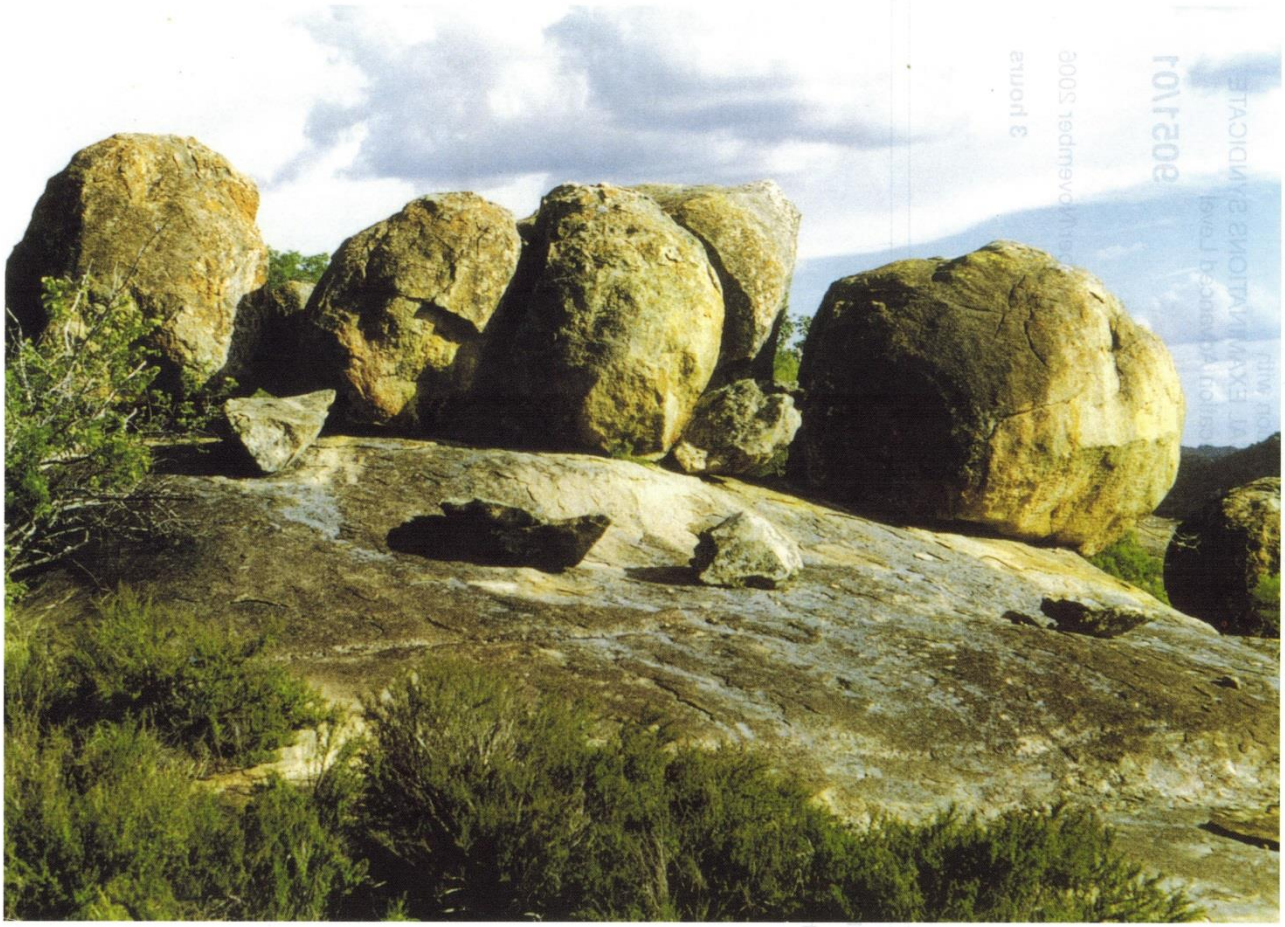


Figure 1A and 1B for Question 2

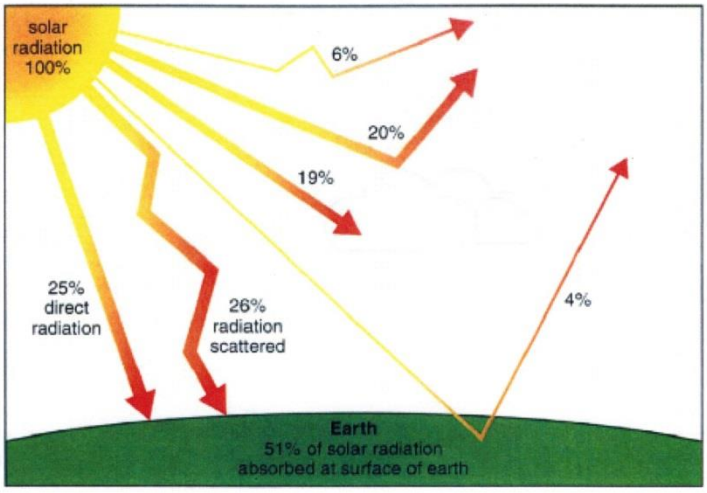
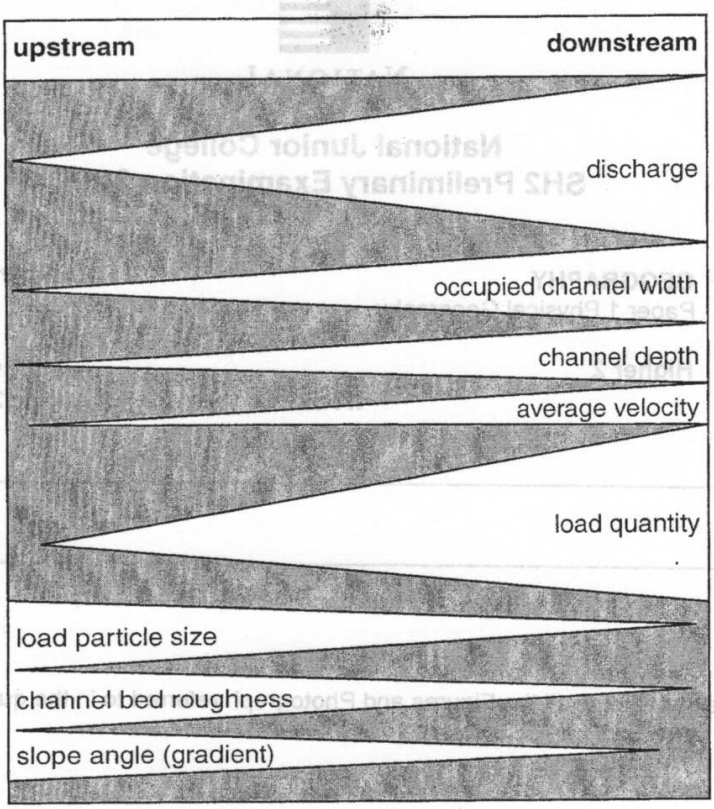


Fig. 2B Table of typical albedo values for different surfaces

Surface	Albedo
Cumulo-nimbus clouds	90%
Cirrus clouds	40%–50%
Fresh snow	80%–90%
Ice sheet	26%
Deciduous forest	15%–18%
Tropical rainforest	7%–15%
Grass	25%
Water bodies (lakes, rivers, seas)	6%–10%

Figure 2 for Question 3

Fig. 2 for Question 3



The occurrence of natural hazards in Myanmar 2008–2012

Myanmar is ranked as the country in Asia 'most at risk' from natural hazards in Asia, according to the UN Risk Model.

May 2008 (Cyclone Nargis): Cyclone Nargis left some 140 000 people dead and missing in the Ayeyarwady region. An estimated 2.4 million people lost their homes and livelihoods.

June 2010 (floods in northern Rakhine State): The floods killed 68 people and affected 29 000 families.

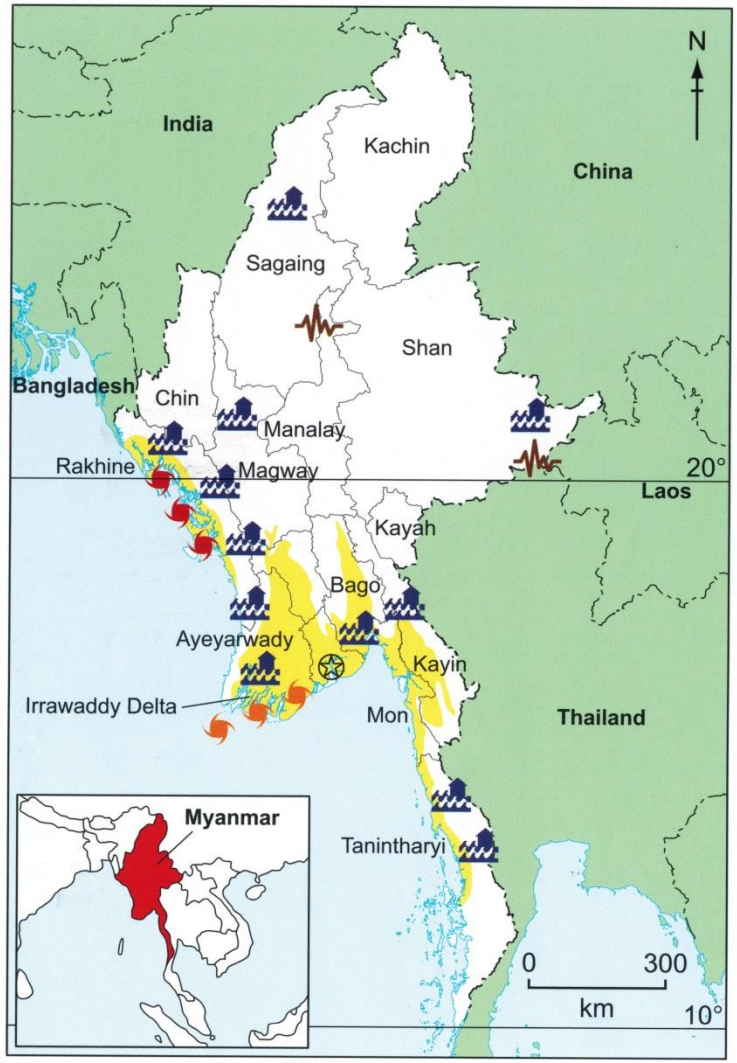
October 2010 (Cyclone Giri): At least 45 people were killed, 100 000 people became homeless and some 260 000 people were affected.

March 2011 (earthquake of magnitude 6.8 on the Richter scale in Shan State): Over 18 000 people were affected. At least 74 people were killed and 125 injured. Over 3000 people became homeless.

October 2011 (floods in Magway Region): Nearly 30 000 people were affected. Over 3500 houses were destroyed.

August 2012 (floods across Myanmar): The floods in different states and regions displaced some 86 000 people and affected over 287 000 people.

November 2012 (6.8 magnitude earthquake in northern Myanmar): At least 16 people were killed and 52 injured.



Key

- Cyclone Nargis 2008
- Cyclone Giri 2010
- 6.8 magnitude earthquake
- floods
- land below 20 metres
- Yangon – population 4.3 m (2010)
- international border
- state border

2008–2012

Two cyclones affected over 2.6 million people.

Floods affected over 500 000 people.

Two major earthquakes affected over 20 000 people.

Figure 3 for Question 4