

OXFORD CAMBRIDGE AND RSA EXAMINATIONS
Advanced Subsidiary GCE

GEOGRAPHY A

2680

The Physical Environment

Friday **27 MAY 2005** Afternoon 1 hour 15 minutes

Candidates answer on the question paper.
 An insert is enclosed with this question paper.
 No additional materials are required.

Candidate Name	Centre Number	Candidate Number												
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TIME 1 hour 15 minutes

INSTRUCTIONS TO CANDIDATES

- Write your name in the space above.
- Write your Centre number and candidate number in the boxes above.
- Answer **all** the questions.
- Write your answers, in blue or black ink, in the spaces on the question paper.
- Read each question carefully and make sure you know what you have to do before starting your answer.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The Insert contains maps and diagrams for use with questions.
- The total number of marks for this paper is 100.
- You will be awarded marks for the quality of written communication where an answer requires a piece of extended writing.
- Even where not specifically asked for, credit will be given for sketch maps and diagrams.

FOR EXAMINER'S USE	
1	
2	
3	
4	
TOTAL	

This question paper consists of 9 printed pages, 3 blank pages and an insert.

Hydrology

1 Study Fig. 1 (insert) which shows mean monthly precipitation and evapotranspiration for Ottawa, Canada (45° 27' N, 75° 42' W).

(a) (i) What is meant by evapotranspiration?

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.....[2]

(ii) Suggest why there is so little evapotranspiration between December and March.

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.....[2]

(iii) With reference to Fig. 1, explain why surface runoff is likely to be lowest from June to August.

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(b) Explain why groundwater flow accounts for a larger proportion of a river's discharge in the summer than it does in the winter in the UK.

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Ecosystems

2 Study Fig. 2 (insert), a sand dune transect showing changes in vegetation cover and soil.

(a) (i) What is meant by the term plant succession?

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(ii) Explain the differences in pH and soil organic content on the grey dunes and on the heathland areas as shown on Fig. 2.

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(b) Describe and explain how vegetation adapts to the physical environment of sand dunes.

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(c) Suggest reasons why a plant succession might **not** reach its climatic climax stage.

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[Total : 24 marks]

Atmosphere

3 What is meant by the terms:

(a) (i) Albedo?

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.....[2]

(ii) Longwave radiation?

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.....[2]

Study Fig. 3 (insert) which shows the balance of incoming and outgoing radiation.

(b) State and explain **two** reasons why only 51% of incoming solar radiation reaches the Earth's surface.

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(c) One outcome of the local energy budget is the formation of fog. Under what circumstances is fog most likely to form?

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Lithosphere

4 Study Fig. 4 (insert) which shows the major tectonic plates and distribution of earthquakes.

(a) (i) What is meant by the term tectonic plate?

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(ii) Describe the distribution of earthquake activity shown in Fig. 4.

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(iii) Explain the distribution of earthquake activity shown in Fig. 4.

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(b) Explain why volcanic activity occurs at location Y.

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