

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL
General Certificate of Education Advanced Level

GEOGRAPHY
PAPER 1

9156/1

Wednesday 10 NOVEMBER 2004

Morning

3 hours

1 : 50 000 Survey map is enclosed with this question paper

Additional materials:
Answer paper

TIME 3 hours

INSTRUCTIONS TO CANDIDATES

Write your name, Centre number and candidate number in the spaces provided on the answer paper/answer booklet.

Answer **four** questions.

Answer **one** question from Section A, **two** questions from Section B and **one** question from Section C.

Write your answers on the separate answer paper provided.

If you use more than one sheet of paper, fasten the sheets together.

INFORMATION FOR CANDIDATES

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

Sketch maps and diagrams should be drawn wherever they serve to illustrate an answer.

You are advised to spend no longer than 45 minutes on Section A.

You are reminded of the need for good English and clear presentation in your answers.

This question paper consists of 8 printed pages.

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Section A (Practicals)

Answer **one** question from this section.

Do not spend more than 45 minutes on this question.

- 1 (a) With reference to the map provided (1 : 50 000 Muchirakuenda, Zimbabwe), draw two sketch maps to show in simplified form, the relief and drainage features of the areas A and B as defined below:

Area	Vertical grid limits	Horizontal grid limits
A	88 – 95	11 – 19
B	03 – 10	07 – 15

[13]

- (b) Suggest possible reasons for the differences in landforms and drainage between the two areas outlined in (a) above.

[12]

- 2 You are required to make a study of rainfall distribution and reliability in area of approximately 1 000 km². Records of rainfall for each month are available for the past 30 years at 20 weather stations scattered across the area. A detailed topographical map of the area is also available.

- (a) How would you use the available data to show the seasonal occurrence of rainfall at individual weather stations?

[6]

- (b) (i) Describe how you would use the rainfall data and the topographical map to construct a map showing the distribution of annual rainfall in the area.

[10]

- (ii) Briefly discuss the advantages and limitations of the mapping technique you illustrated in b(i) above.

[5]

- (iii) Explain how rainfall dispersion graphs can be used to show rainfall reliability.

[4]

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Section B (Physical Core)

Answer **two** questions from this section.

- 3 (a) Briefly explain the terms *greenhouse effect* and *global warming*. [6]
- (b) With reference to examples, explain how urban heat islands develop. [12]
- (c) With reference to examples of air masses, describe and explain the development of weather at the Inter-Tropical Convergence Zone (ITCZ) in Africa. [7]

- 4 (a) Define the terms *dew*, *rain* and *hail*. [6]
- (b) Fig. 1 shows the mean annual frequency of thunderstorm days over Africa.

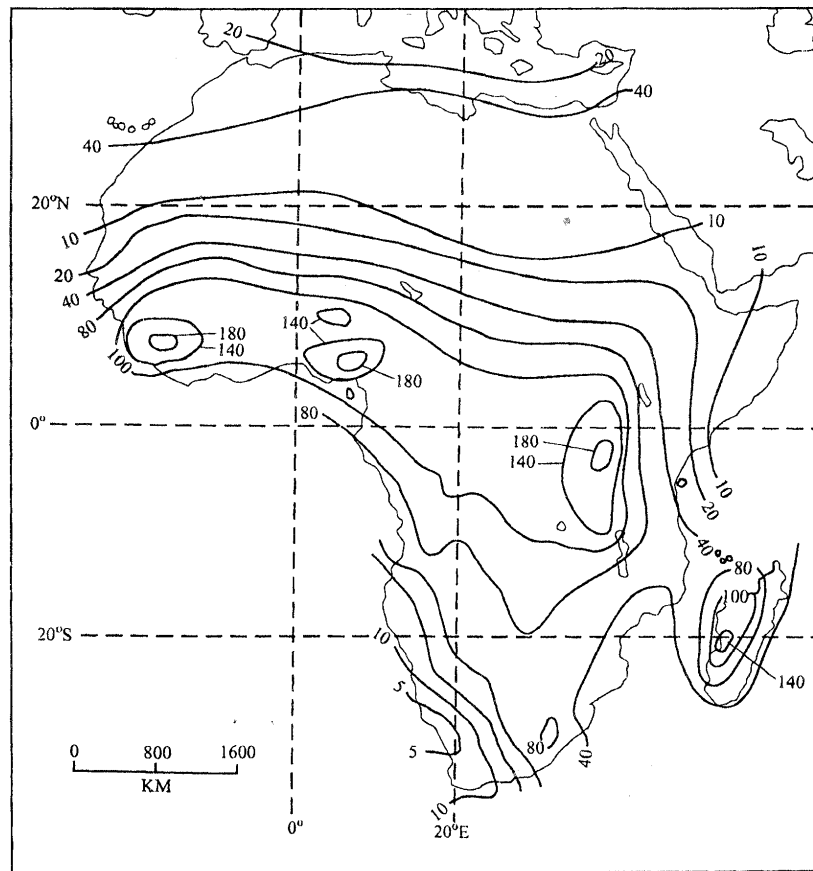


Fig. 1

- Describe and explain the patterns shown in Fig. 1. [12]
- (c) How may the amount of rainfall be influenced by human activity? [7]

- 5 (a) With the aid of a diagram, describe and explain how the velocity of a river varies across the channel. [6]
- (b) Using examples, explain the main causes of variations in the discharge of rivers over
- (i) short time periods, and
- (ii) a whole year. [12]
- (c) To what extent is the risk of flooding increased by human activity? [7]
- 6 (a) Briefly explain the causes and nature of overland flow that occurs on slopes. [6]
- (b) With reference to Fig. 2, explain the importance of overland flow and mass wasting in the development of slope forms. [12]

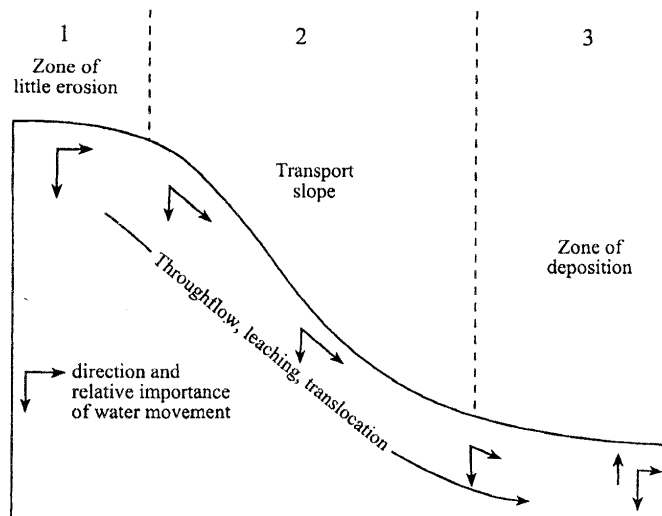


Fig. 2

- (c) To what extent can human activities modify processes operating on slopes? [7]

- 7 (a) Explain the differences between *block disintegration* and *granular disintegration*. [6]
- (b) (i) With the aid of diagrams, describe the nature of deep weathered layers in tropical regions.
- (ii) Explain the conditions which favour their development. [12]
- (c) How has the stripping of regoliths contributed to the development of landforms in the tropics? [7]
- 8 (a) Draw a labelled diagram to show the linkages that exist in tropical grassland ecosystems. [6]
- (b) With reference to areas you have studied, explain the physical and human causes of soil erosion in tropical grasslands. [12]
- (c) Assess the effectiveness of measures used to reduce the negative impact of human activities on tropical grassland ecosystems. [7]

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