



Rewarding Learning

ADVANCED SUBSIDIARY (AS)
General Certificate of Education
2014

Centre Number

71	
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Candidate Number

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Geography

Assessment Unit AS 1

assessing

Physical Geography

[AG111]



THURSDAY 5 JUNE, AFTERNOON

TIME

1 hour 30 minutes.

INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number in the spaces provided at the top of this page.

Section A: candidates must answer this section.

Section B: answer **all three** questions in this section.

You should write your answers for Section A and Section B in the spaces provided in this question paper.

Section C: answer any **two** questions from this section.

You should write your answers in the spaces provided in this question paper.

At the end of the examination your summary of fieldwork and table of data should be attached securely to this paper using the treasury tag supplied.

INFORMATION FOR CANDIDATES

The total mark for this paper is 90.

Quality of written communication will be assessed in **all** questions:

Figures in brackets printed down the right-hand side of the pages indicate the marks awarded to each question or part question.

For Examiner's use only

Question Number	Marks
1	
2	
3	
4	
5	
6	
7	

Total Marks

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Section A

Answer this section

Submitted summary of fieldwork and table of data

At the end of the examination these should be attached securely to this paper using the treasury tag supplied.

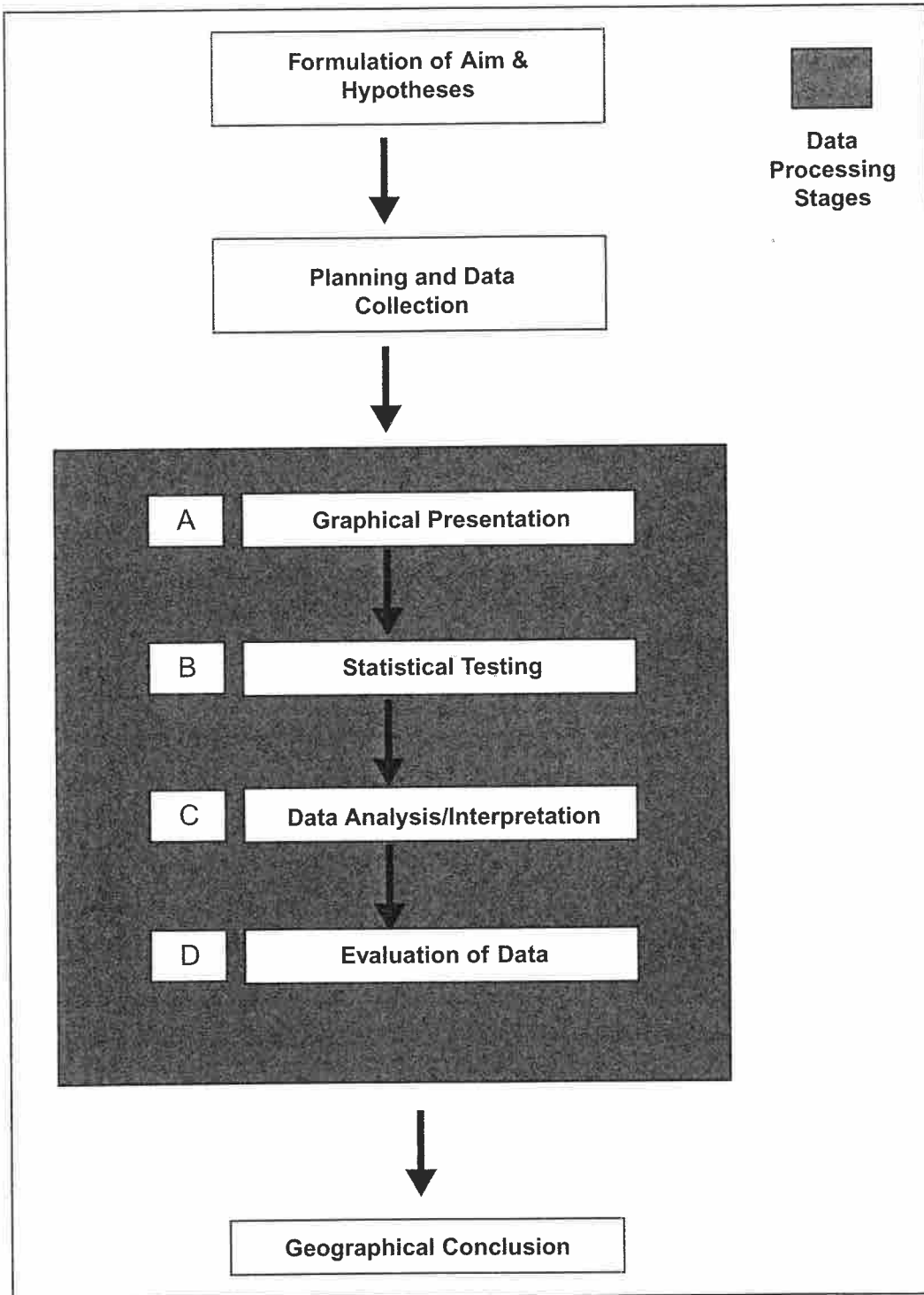
- 1 (a)** Outline **one** specific hazard associated with your fieldwork and comment on the effectiveness of the strategies which you adopted to avoid this risk.

[3]

Examiner Only	
Marks	Remark

(b) Study **Resource 1A** showing the stages involved in a fieldwork investigation.

Resource 1A

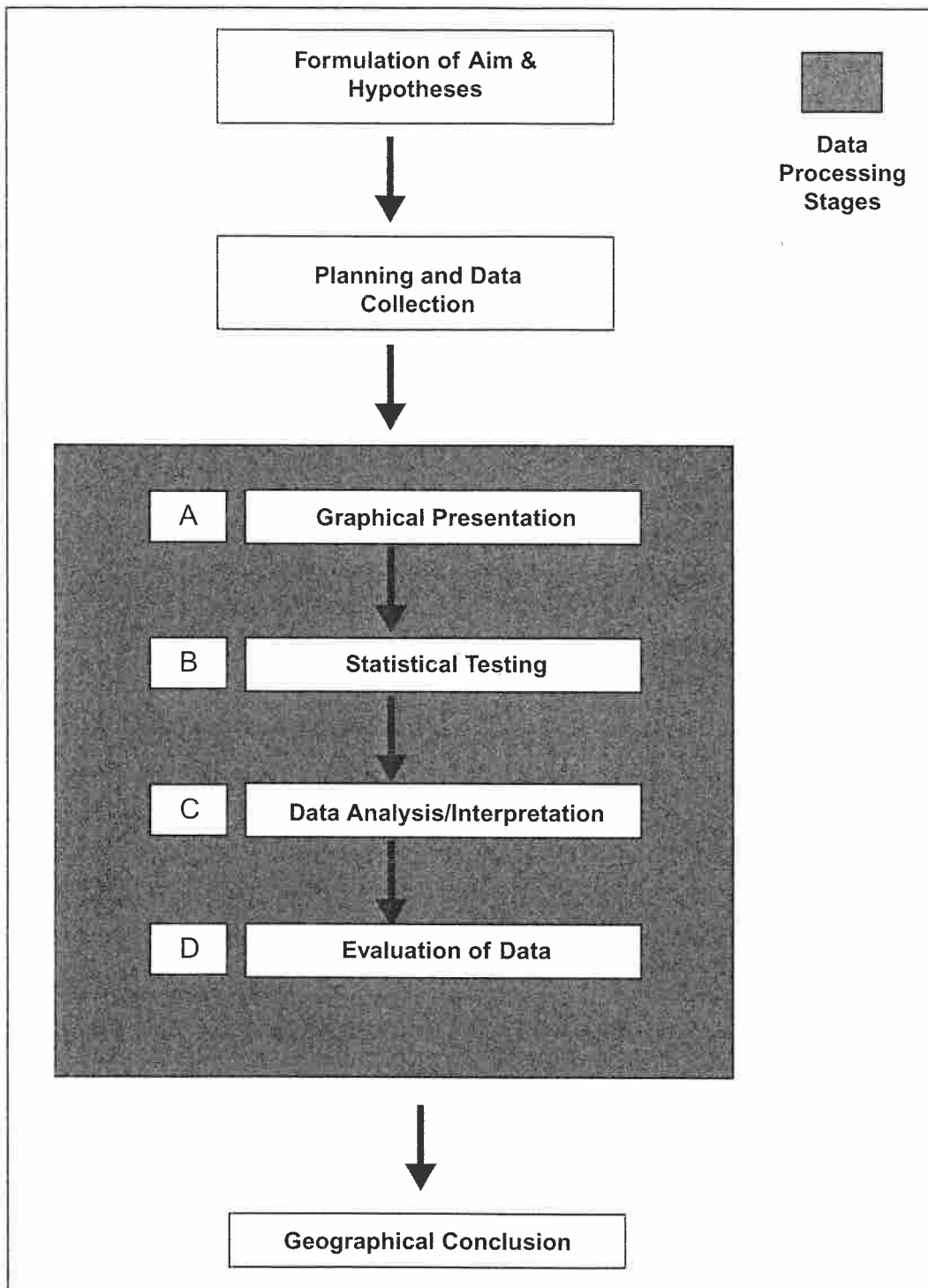


Source: Principal Examiner

Examiner Only	
Marks	Remark

(b) Study **Resource 1A** showing the stages involved in a fieldwork investigation.

Resource 1A



Source: Principal Examiner

Examiner Only	
Marks	Remark

Section A

Answer this section

Submitted summary of fieldwork and table of data

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- 1 (a) Outline **one** specific hazard associated with your fieldwork and comment on the effectiveness of the strategies which you adopted to avoid this risk.

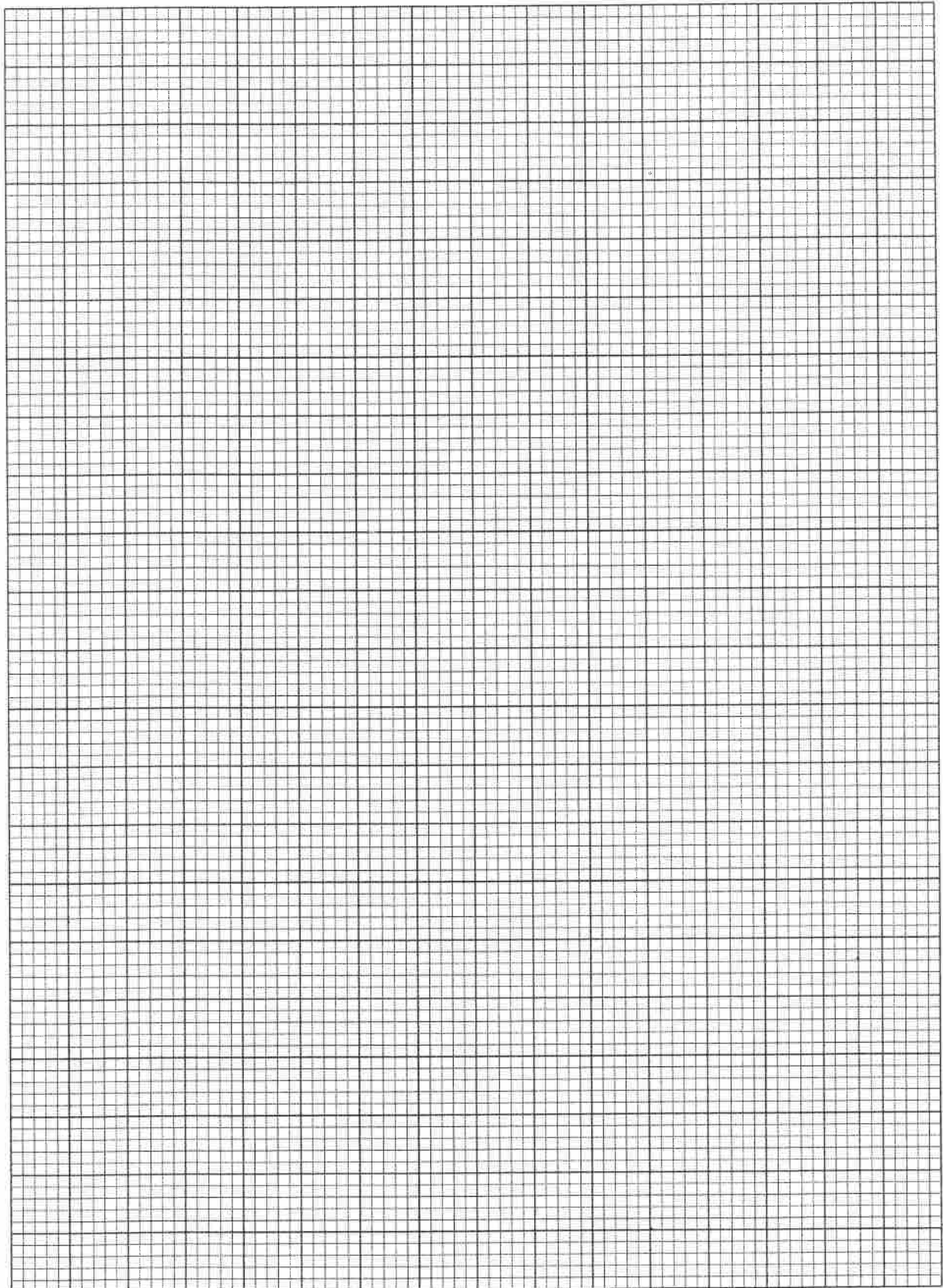
[3]

Examiner Only	
Marks	Remark

- (c) (i) Select an appropriate graphical technique to present data relevant to your aim/hypothesis. You must use data submitted in your table and the graph paper below. [7]

Examiner Only	
Marks	Remark

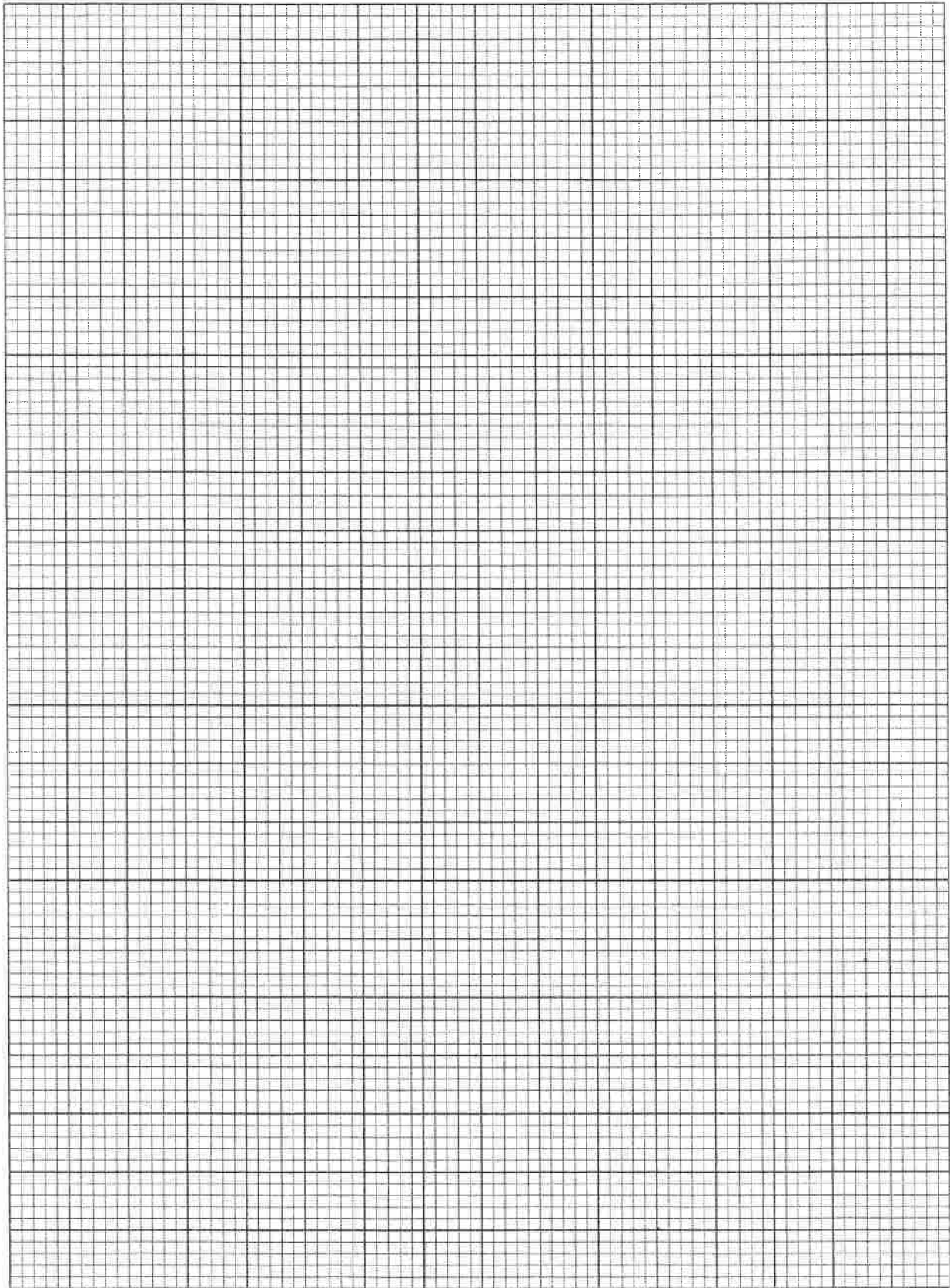
Title of Graph: _____



(c) (i) Select an appropriate graphical technique to present data relevant to your aim/hypothesis. You must use data submitted in your table and the graph paper below. [7]

Examiner Only	
Marks	Remark

Title of Graph: _____

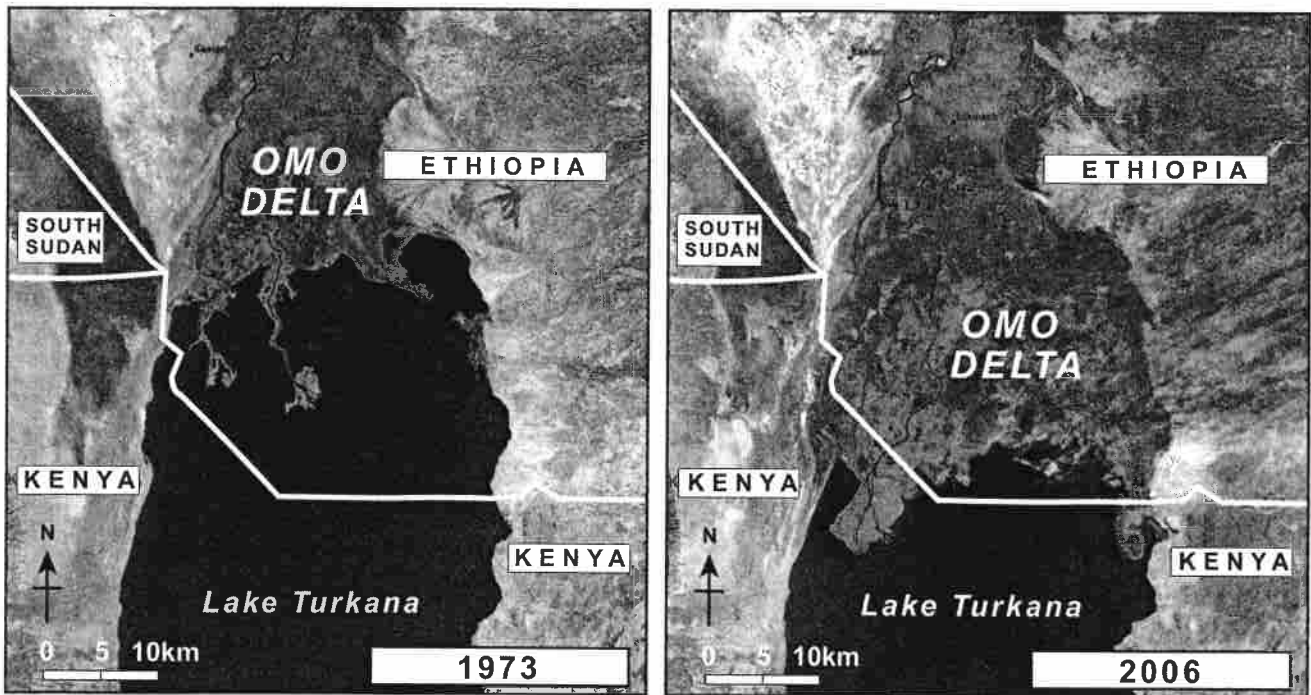


Resource 2A

The River Omo flows through Ethiopia into Lake Turkana, Africa's fourth largest lake. In this semi-arid environment the river contributes approximately 90% of the lake's water. In the last 40 years, the Omo drainage basin area in Ethiopia has experienced a four-fold increase in population. The expansion of farming activities and habitat destruction has resulted in rapid soil erosion within the drainage basin.

Source: Principal Examiner

Resource 2B



Resource 2C

Vegetation cover of the Omo Delta (hectares)		
	1973	2008
Grassland	7 516	18 497
Bare Ground	551	443

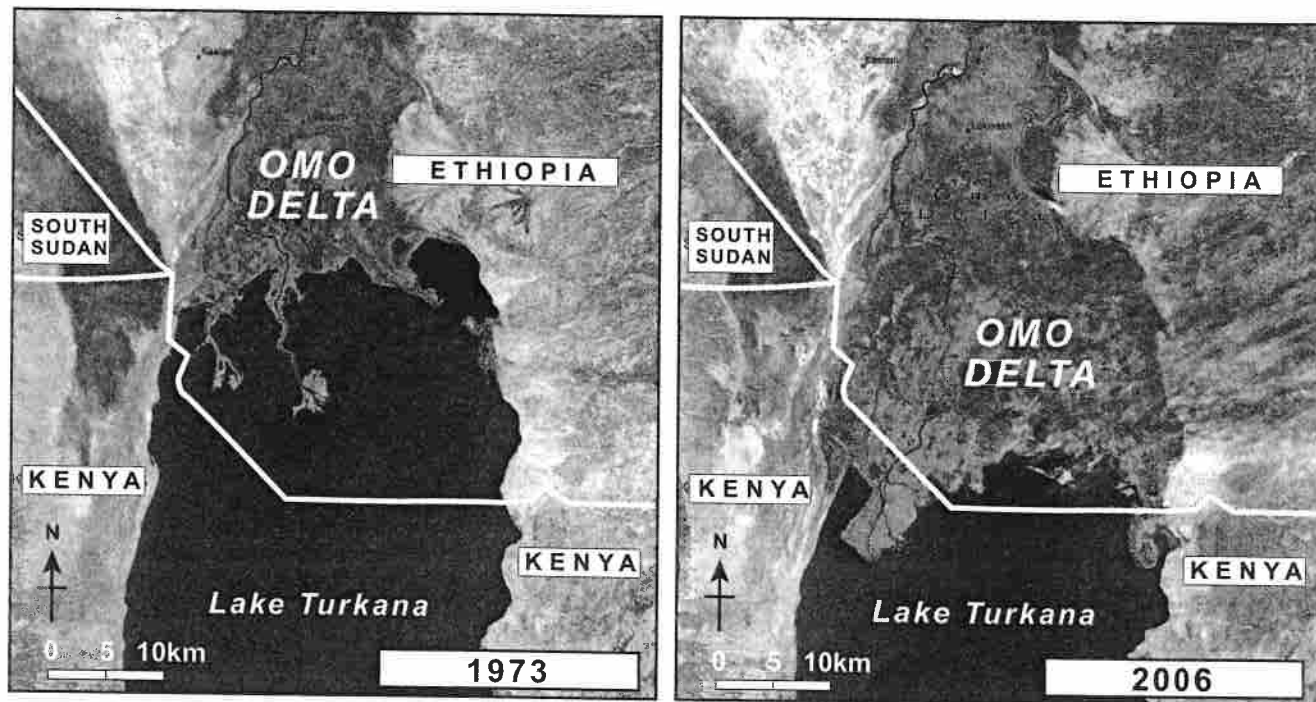
Source: Adapted from United Nations Environment Programme (UNEP). From Africa Water Atlas (2010); Division of Early Warning and Assessment (DEWA), UNEP and Review/REPORT NOV 2010 S AVERY TURKANA

Resource 2A

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Source: Principal Examiner

Resource 2B



Resource 2C

Vegetation cover of the Omo Delta (hectares)		
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Grassland	7 516	18 497
Bare Ground	551	443

Source: Adapted from United Nations Environment Programme (UNEP). From Africa Water Atlas (2010); Division of Early Warning and Assessment (DEWA), UNEP and Review/REPORT NOV 2010 S AVERY TURKANA

Section B

Answer **all three** questions in this section.

Examiner Only

Marks Remark

- 2 (a) With reference to river processes, define the terms **attrition** and **suspension**.

[2]

- (b) Study **Resources 2A–2C** on page 11, which provide information on the River Omo in Ethiopia, the development of the Omo Delta on the Northern shore of Lake Turkana, and its changing vegetation cover.

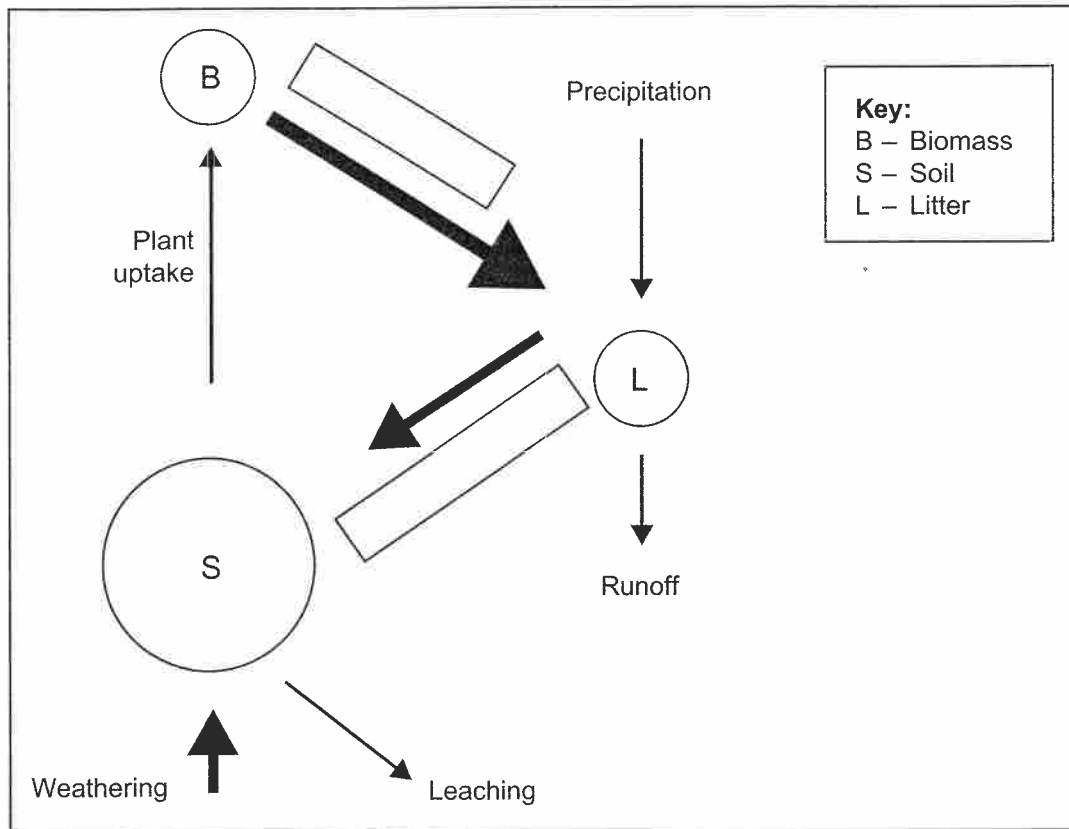
- (i) Describe the extent of delta growth between 1973 and 2006 using the information from **Resource 2B**.

[3]

- 3 (a) Study **Resource 3A** which shows a partially completed nutrient cycling model for a mid-latitude grassland ecosystem.

Examiner Only	
Marks	Remark

Resource 3A



Source: Adapted from Geo Factsheet Number 125

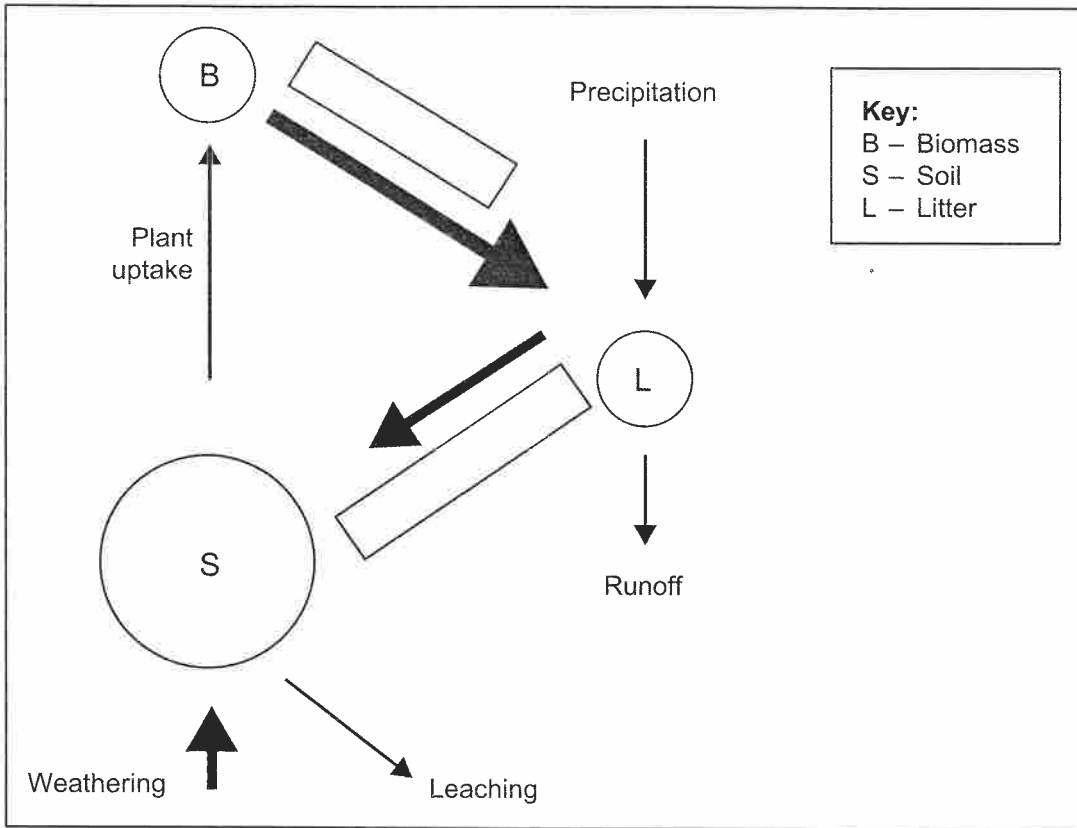
- (i) Complete **Resource 3A** by labelling the remaining nutrient transfers in the boxes provided. [2]

- (ii) Explain why the soil is the largest nutrient store in this ecosystem.

[4]

- 3 (a) Study **Resource 3A** which shows a partially completed nutrient cycling model for a mid-latitude grassland ecosystem.

Resource 3A



Source: Adapted from Geo Factsheet Number 125

- (i) Complete **Resource 3A** by labelling the remaining nutrient transfers in the boxes provided. [2]

- (ii) Explain why the soil is the largest nutrient store in this ecosystem.

[4]

Examiner Only	
Marks	Remark

(ii) Using **Resources 2A–2C** to help you, explain the processes which have contributed to the growth of this delta.

[5]

(c) Explain **one** beneficial effect of flooding, apart from the creation of new land.

[2]

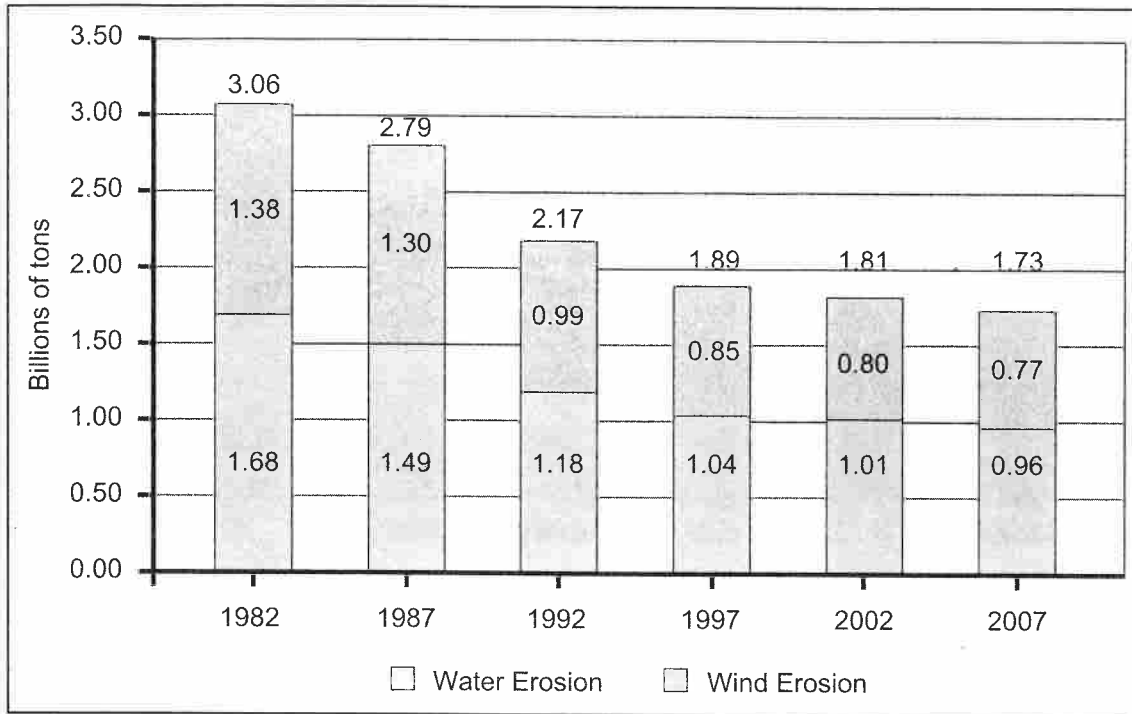
Examiner Only

Marks

Remark

(b) Study **Resource 3B** which shows the rate of soil erosion on cropland in the North American prairies between 1982 and 2007.

Resource 3B



Source: adapted from www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/nri/?cid=stelprdb1041887

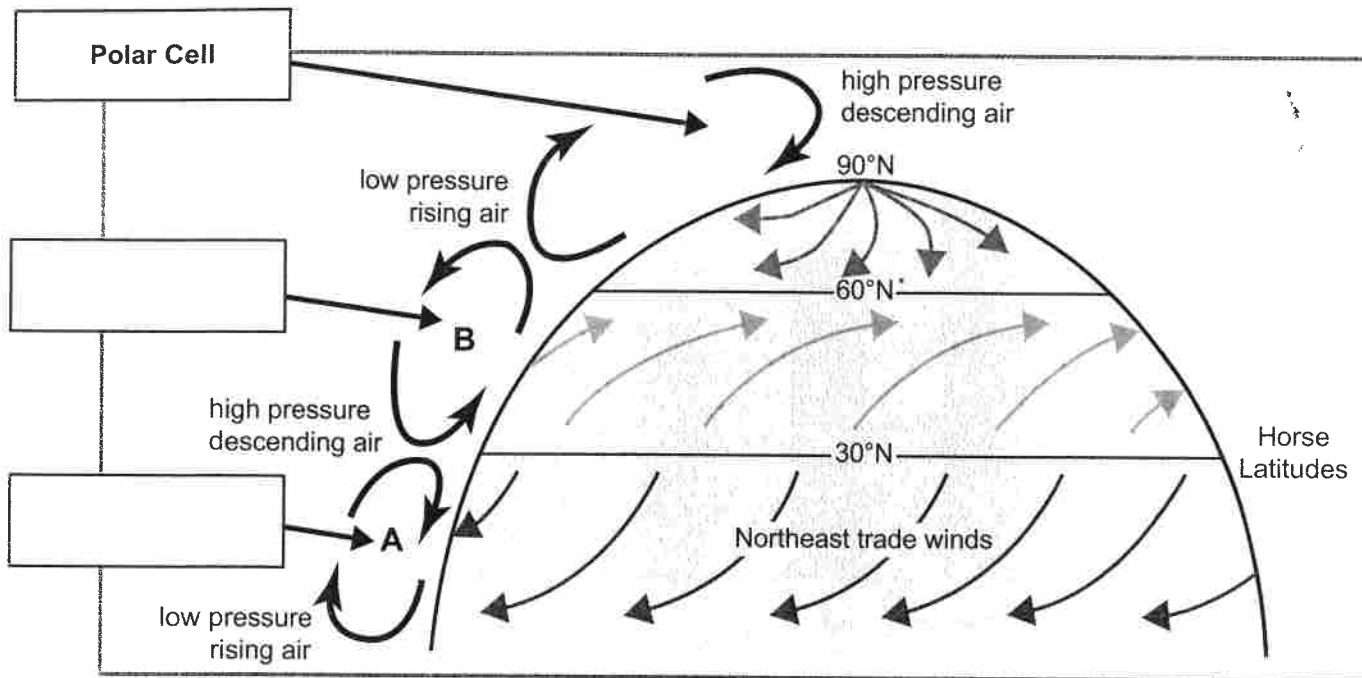
Using **Resource 3B**, describe the changes in soil erosion between 1982 and 2007 and explain **two** management methods which may have contributed to this trend.

[6]

Examiner Only	
Marks	Remark

- 4 (a) Study **Resource 4A** which shows the atmospheric tri-cellular circulation model for the Northern Hemisphere.

Resource 4A



Source: Adapted from www.eoearth.org/article/Energy_balance_of_Earth

- (i) In the boxes provided in **Resource 4A**, name the atmospheric circulation cells labelled **A** and **B**. [2]

- (ii) Explain the direction of the Northeast trade winds as shown on **Resource 4A**.

_____ [3]

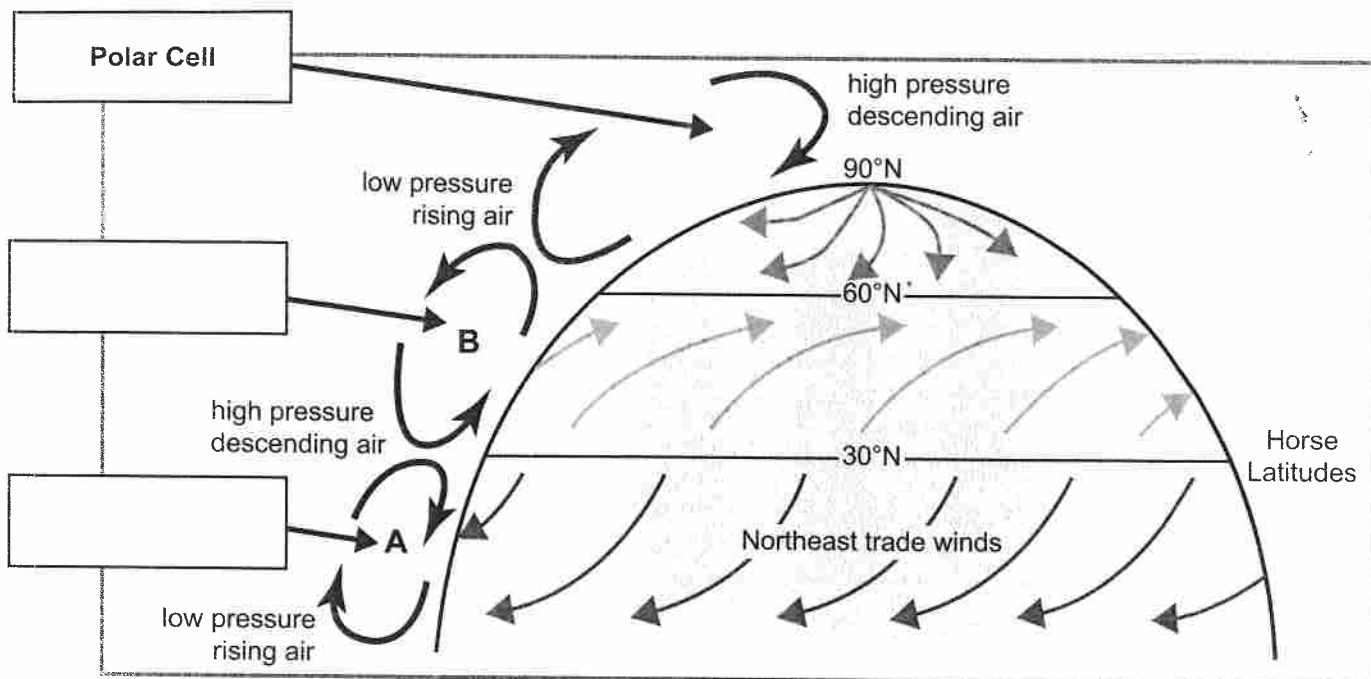
- (iii) Apart from global winds, name **one** additional form of horizontal heat transfer.

_____ [1]

Examiner Only	
Marks	Remark

- 4 (a) Study **Resource 4A** which shows the atmospheric tri-cellular circulation model for the Northern Hemisphere.

Resource 4A



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- (i) In the boxes provided in **Resource 4A**, name the atmospheric circulation cells labelled **A** and **B**. [2]

- (ii) Explain the direction of the Northeast trade winds as shown on **Resource 4A**.

[3]

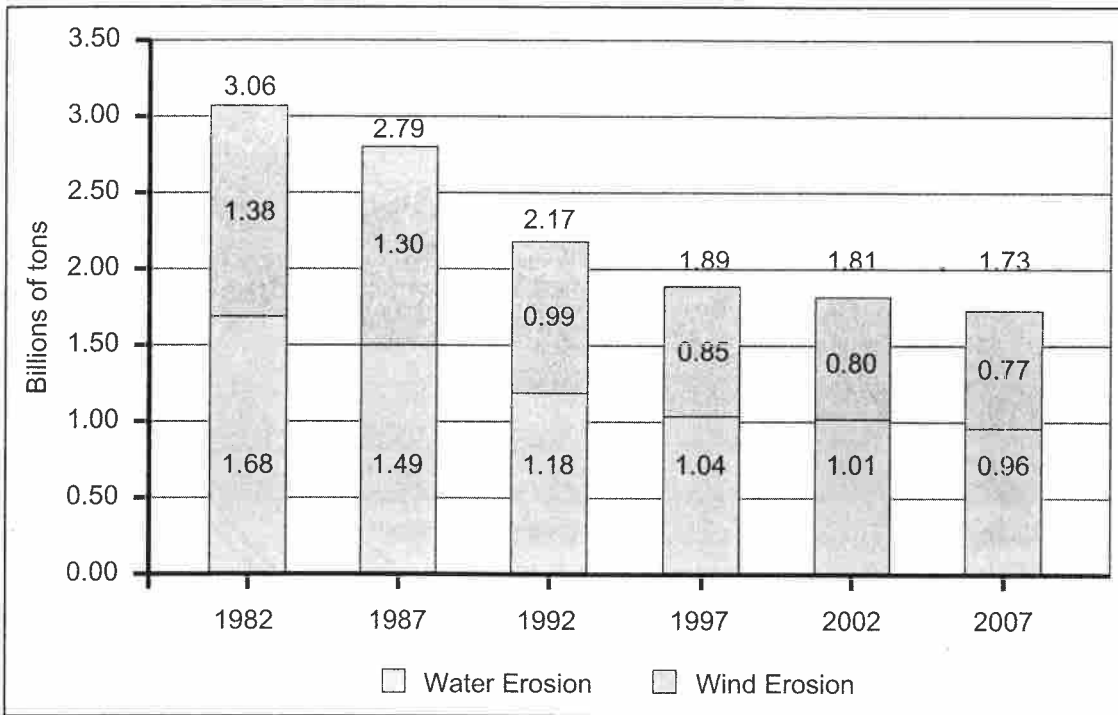
- (iii) Apart from global winds, name **one** additional form of horizontal heat transfer.

[1]

Examiner Only	
Marks	Remark

(b) Study **Resource 3B** which shows the rate of soil erosion on cropland in the North American prairies between 1982 and 2007.

Resource 3B



Source: adapted from www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/nri/?&cid=stelprdb1041887

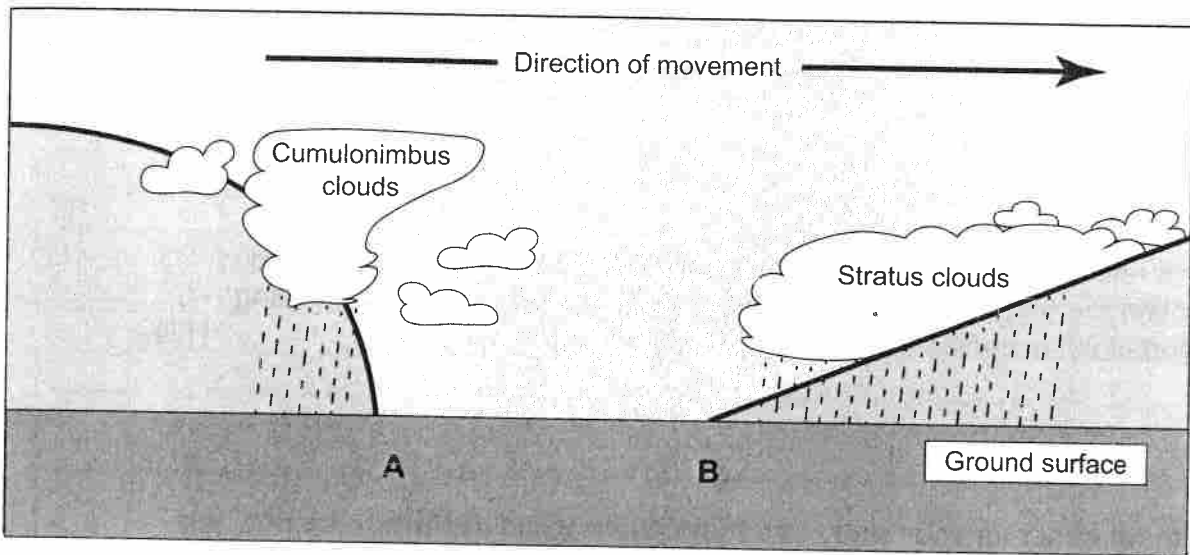
Using **Resource 3B**, describe the changes in soil erosion between 1982 and 2007 and explain **two** management methods which may have contributed to this trend.

[6]

Examiner Only	
Marks	Remark

(b) Study **Resource 4B**, which shows a cross section through a depression.

Resource 4B



Source: Adapted from www.physicalgeography.net/fundamentals/7s.html

- (i) Add labels to **Resource 4B** to indicate the positions of:
- The warm **and** cold fronts
 - The warm **and** cold sectors.

[2]

- (ii) Explain the cause and processes of precipitation formation at **either** position A **or** B on **Resource 4B**.

[4]

Examiner Only	
Marks	Remark

[Turn over

Section C

Answer **any two** questions in this section.

- 5 Explain fully how any three characteristics of a drainage basin can influence river discharge and the storm hydrograph. [12]
- 6 With reference to your small/regional scale case study, describe and explain the progressive biotic and abiotic changes which occur during vegetation succession. [12]
- 7 With reference to your study of a hurricane/tropical cyclone, describe and evaluate the protective measures used to reduce loss of life and damage to property. [12]

Examiner Only	
Marks	Remark

Section C

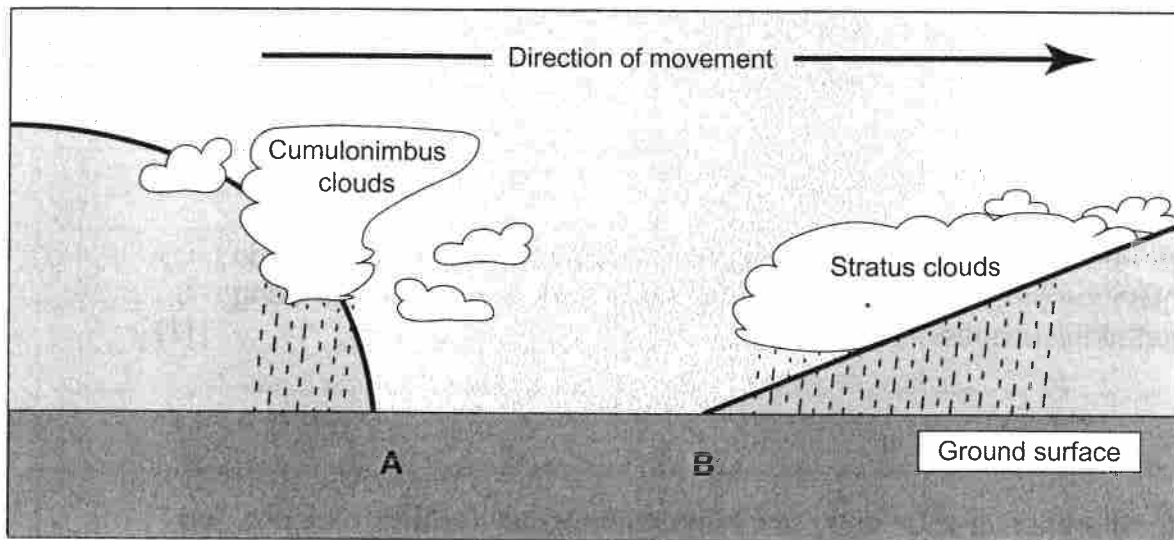
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Examiner Only	
Marks	Remark

(b) Study **Resource 4B**, which shows a cross section through a depression.

Resource 4B



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(i) Add labels to **Resource 4B** to indicate the positions of:

- The warm and cold fronts
- The warm and cold sectors.

[2]

(ii) Explain the cause and processes of precipitation formation at **either** position A or B on **Resource 4B**.

[4]

Examiner Only	
Marks	Remark