



Rewarding Learning

ADVANCED  
General Certificate of Education  
January 2010

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## Geography

Assessment Unit A2 1

*assessing*

Module 4: Physical Processes and  
Human Interactions

[A2G11]



A2G11

FRIDAY 22 JANUARY, AFTERNOON

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### TIME

1 hour 30 minutes.

### INSTRUCTIONS TO CANDIDATES

Write your Centre Number and Candidate Number on the Answer Booklet provided.

Answer **two** questions.

Answer **one** question from each of the **two** optional units you have studied.

### INFORMATION FOR CANDIDATES

The total mark for this paper is 70.

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

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

You are strongly recommended to read through and consider the questions before choosing those you are going to answer.

This paper is accompanied by a Resource Booklet and a OS Map insert.

### SYNOPTIC ASSESSMENT

*The synoptic element of each question is indicated by **syn**. These synoptic elements require you to demonstrate an understanding of the connections between physical and human geography.*

## Unit A: Managing Fluvial and Coastal Environments

- 1 (a) Study **Resource 1A**, which is the OS Map insert sheet, and **Resources 1B** and **1C** (page 2 of the Resource Booklet) which illustrate human use of the River Corrib valley in County Galway.
- (i) Using evidence from the Resources, describe the varied demands upon, and uses of, this river and valley zone. [9]
  - (ii) For any **one** of these demands, briefly discuss how exploitation of the natural environment may provide benefits for the people of Galway. [4]
  - (iii) For any **one** of these demands, briefly discuss how exploitation of the natural environment may impact negatively upon the habitats of the River Corrib and its valley. [4]
- syn* (b) With reference to a small-scale case study of a coastal sand dune ecosystem:
- (i) describe the ways in which the fragile natural balance of the ecosystem may be upset by human intervention; and [6]
  - (ii) describe and evaluate the management strategies which have been used to reduce the impact of human pressure on the environment. [12]
- 2 (a) With reference to locational examples, distinguish between hard and soft engineering strategies for coastal protection. [8]
- (b) Study **Resources 2A** and **2B** (page 3 of the Resource Booklet) which show landforms created within dynamic coastal environments.
- With the help of an annotated diagram or diagrams, explain the processes leading to the formation of **one** of these landforms. [9]
- syn* (c) With reference to a regional scale case study of river basin management:
- (i) describe the management strategies used; and [6]
  - (ii) discuss the extent to which beneficial outcomes of the scheme have compensated for the conflicts which it created. [12]

## Unit B: The Nature and Vulnerability of Tropical Ecosystems

- 3 (a) Study **Resource 3** (page 4 in the Resource Booklet) which shows the impacts of large-scale deforestation on tropical forest ecosystems. Describe how **any two** of the following outcomes may be caused by deforestation of tropical forests:
- Reduced plant diversity
  - Local climate change
  - Increased risk of flooding
  - Changes to soil. [8]
- syn* (b) With reference to places for illustration, describe and explain how a traditional slash and burn agricultural system maintains the nutrient cycle in tropical forests. [12]
- (c) For a regional scale case study of a tropical semi-arid ecosystem, describe its characteristics with reference to biomass, productivity, trophic structure and nutrient cycling. [15]
- 4 (a) Study **Resource 4** (page 5 in the Resource Booklet) which is a table showing the changes in vegetation and soil characteristics following abandonment of a slash and burn plot in tropical forest compared to uncleared forest.
- (i) To what extent has the nature of the vegetation been restored ten years after abandonment? [4]
- (ii) Describe and explain the changes to the soil characteristics over the ten years. [5]
- (b) Describe the main characteristics of an aridisol (desert soil) and explain how these are influenced by the climate in semi-arid tropical regions. [10]
- syn* (c) With reference to a small-scale case study of tropical forest:
- (i) describe the large-scale deforestation that has taken place; and [6]
- (ii) discuss how management strategies attempt to use the forest resources in a sustainable way. [10]

## Unit C: Pollution and its Management

- 5 (a) With reference to places for illustration, describe how pollution incidents may be classified according to their frequency of occurrence.
- (b) Study **Resource 5** (page 6 of the Resource Booklet) which illustrates the contribution of a range of atmospheric pollutants to environmental outcomes. With the aid of the Resource:
- (i) describe the human activities which contribute to the Greenhouse Effect; and [8]
- (ii) describe the potential impacts of any one of the environmental outcomes, other than the Greenhouse Effect, upon the physical and human environment. [7]
- syn* (c) With reference to a regional scale case study of river pollution:
- identify the causes of the pollution; and
  - evaluate the effectiveness of the pollution management strategies implemented. [15]
- 6 (a) What are the problems associated with attempting to define pollution? [5]
- (b) Outline **two** reasons why waste management is an increasing issue for MEDCs. [6]
- (c) Study **Resource 6** (page 7 of the Resource Booklet) which shows three key policies and actions associated with the Northern Ireland Waste Management Strategy 2006–2020. Discuss how **each** of the three key policies shown may contribute to a sustainable solution for modern waste management. [9]
- syn* (d) With reference to a regional scale case study of nuclear resource development:
- outline the potential benefits of nuclear resource development for the region; and
  - describe how the impact of radiation pollution can limit this potential. [15]

**Unit D: Natural Hazards and Human Activity**

- 7 (a) Study **Resource 7** (page 8 of the Resource Booklet) which shows features and associated with a plate boundary in Indonesia.
- (i) State the type of plate boundary shown. [1]
  - (ii) With the aid of a diagram based on the cross section line A–B on the map, illustrate and explain the features resulting from tectonic activity. [10]
- (b) With general reference to places for illustration, describe the economic hazards and benefits of volcanic activity. [9]
- syn* (c) With reference to a case study of **either** a **MEDC** or a **LEDC**, discuss how its stage of development influenced the management of the primary and secondary impacts of earthquake activity. [15]
- 8 (a) Study **Resource 8** (page 9 of the Resource Booklet) which is a newspaper article concerning the 2007 summer monsoon flooding in India. With reference to the Resource, describe the impact on India's rural communities of the variable summer monsoon. [9]
- (b) With the aid of a diagram, describe the airflows and weather associated with a summer monsoon. [10]
- syn* (c) With reference to a case study of an extreme meteorological event in the mid-latitudes:
- (i) describe its causes; and [6]
  - (ii) discuss the human responses to it. [10]

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**THIS IS THE END OF THE QUESTION PAPER**

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RESOURCE 1A

PART OF THE RIVER CORRIB, GALWAY, COUNTY GALWAY



### LEGEND

	NATIONAL PRIMARY ROAD		CHURCH OF NOTE
	NATIONAL SECONDARY ROAD		CINEMA
	REGIONAL ROAD		SHOPPING COMPLEX
	MAIN ROADS/STREETS		GAELIC GROUND
	OTHER ROADS/STREETS		SOCCER GROUND
	NARROW/STREET PRIVATE ROADS		TENNIS GROUND
	RAILWAY		BUILDING OF NOTE
	BUILT UP AREA		MUSEUM
	PUBLIC/GREEN PARK/AREA		LIBRARY
	WOODED AREA		THEATRE
	PUBLIC BUILDING		TOURIST OFFICE
	BUS/RAIL STATION		EMERGENCY HOSPITAL
	BUILDING OF NOTE		POST OFFICE
	HOSPITAL		PARKING
	WATER		GARDA
	MARSH		INDEPENDENT HOSTEL
			FIRE STATION
			ANTIQUITY
			ONE WAY TRAFFIC SYSTEM

SCALE 1:12 000 (1cm = 120 metres)

● Location of photograph in Resource 1B

● Location of photograph in Resource 1C

