



Rewarding Learning

ADVANCED
General Certificate of Education
2010

Geography

Assessment Unit A2 2
assessing
Physical Geography and
Decision Making

[AG221]



TUESDAY 25 MAY, AFTERNOON

TIME

2 hours 30 minutes.

INSTRUCTIONS TO CANDIDATES

Section A: Answer **two** questions, one from each of the two optional units you have studied. You must use the Section A answer booklet (colour **Blue**).

Section B: Answer **all** this section. You must use the Section B answer booklet (colour **Purple**).

INFORMATION FOR CANDIDATES

The total mark for this paper is 110.

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

You are strongly recommended to spend **one** hour answering Section A of this assessment unit.

Section B is a decision making exercise. You should spend at least **30 minutes reading** the questions and selecting appropriate information before attempting to write your answers.

You are provided with a Resource Booklet and an OS map for use with this paper.

Section A

Answer **two** questions, one from each of the two optional units you have studied. You must use the Section A answer booklet (colour **Blue**).

Option A: Fluvial and Coastal Environments

- 1 (a) With reference to places for illustration, discuss reasons why domestic/residential demands upon coastal areas are increasing. [5]
- (b) Study **Resource 1** (page 3 of the Resource Booklet) concerning changes to the beach at Dawlish Warren, South Devon.
- (i) Identify and explain the coastal process responsible for the problems experienced at Dawlish Warren. [4]
- (ii) In your opinion, should hard engineering coastal protection strategies be implemented at Dawlish Warren? Justify your answer with reference to the Resources. [6]
- (c) With reference to a regional scale case study of a river basin:
- outline the aims of the management scheme; and
 - describe and evaluate the strategies used to achieve these aims. [15]
- 2 (a) With reference to places for illustration, discuss why the demands of leisure activities upon rivers and their valley zones are increasing. [5]
- (b) Study **Resources 2A–2E** (pages 4 and 5 of the Resource Booklet) concerning flooding along the Water of Leith, Edinburgh.
- (i) With reference to the Resources, outline the reasons why flood prevention plans have been proposed. [4]
- (ii) In your opinion, are the proposed strategies for the Water of Leith environmentally sensitive? Briefly justify your answer with reference to the Resources. [6]
- (c) With reference to a regional case study of coastal protection:
- describe the hard and soft engineering strategies which have been implemented along the coastline; and
 - evaluate their effectiveness. [15]

Option B: The Nature and Sustainability of Tropical Ecosystems

- 3 (a) Study **Resource 3** (page 6 of the Resource Booklet) which shows a cross-section of low-latitude atmospheric circulation.

Identify any **one** of the three major tropical biomes, A, B or C and describe and explain the nature of its annual climate with reference to the Hadley Cell. [7]

- (b) With the aid of a diagram, describe the nature of stores and flows in nutrient cycling in the tropical rain forest ecosystem. [8]

- (c) With reference to a small scale case study, describe and evaluate the attempts to achieve sustainable development in the tropical forest ecosystem. [15]

- 4 (a) Study **Resource 4A** (page 7 of the Resource Booklet) which concerns the impact of palm oil production.

(i) Outline the environmental issues linked to the growth in demand for palm oil. [4]

(ii) To what extent do you think RSPO is effective at promoting sustainable management of palm oil production? [4]

- (b) Study **Resource 4B** (page 8 of the Resource Booklet) which shows the profile of an oxisol, the zonal soil of the tropical rain forest.

Explain how the characteristics of an oxisol are linked to the nature of the climate in tropical rain forests. [7]

- (c) With reference to a regional scale case study concerning the problem of salinisation:

- describe the causes of the problem in the region; and
- discuss the impact of salinisation on both the people and the environment. [15]

Option C: The Dynamic Earth

- 5 (a) Study **Resource 5** (page 9 of the Resource Booklet) which shows the geology of the ocean floor of the South Atlantic.
- (i) Describe and explain the pattern of the age of rocks in the area. [5]
- (ii) Briefly discuss **one** other type of evidence that is used to support the theory of plate tectonics. [4]
- (b) Explain the tectonic processes involved in the formation of any **one** of the following landforms:
- fold mountains deep sea trenches island arcs** [6]
- (c) With reference to one small scale case study of volcanic activity:
- describe the efforts made to predict the volcanic activity; and
 - evaluate the success of prediction in this case. [15]
- 6 (a) Study **Resource 6** (page 10 of the Resource Booklet) which concerns an earthquake in China in May 2008.
- (i) How did poor management and bad practice contribute to the scale of this disaster? [6]
- (ii) Using the Resource **to help you**, describe the limitations of earthquake predictions for the management of such events. [9]
- (b) With reference to one small scale case study of earthquake activity in **either** a MEDC **or** LEDC, discuss how the management of its effects reflects the knowledge, perception and stage of development of the country. [15]

Section B

Answer **all** this section. You must use the Section B answer booklet (colour **Purple**).

You are recommended to spend 30 minutes reading the section and 60 minutes writing your answers.

Decision Making Paper

7 Background to the Report

Aberdeen, a city in North East Scotland, has several major roads converging on it, including the A90 and A96 Trunk Roads (see **Resource 7B**). As a result, much traffic travelling across Aberdeen has to go through the city centre, producing traffic congestion and disruption for local people. The traffic problems have an impact on public transport and even short journeys can be difficult and time-consuming. In addition, the increased traffic has a negative impact on the environment.

A road improvement scheme to address some of these issues has been proposed. It is called the Aberdeen Western Peripheral Route (AWPR).

Time line:

1990	Preliminary studies
2002–2003	“Modern Transport System” established
2004	Route options examined
2005	Provisional decision on route
2006	Environmental impact studies started
2008	Local enquiry established
2012	Proposed opening of road

You must adopt the role of the Chair of the local enquiry (termed a Reporter in Scotland) who is to consider the proposal and to decide whether or not to proceed with it.

Note that you do not have to decide on an alternative – only whether you approve or reject the project described here.

You should base your answer solely on information contained in this examination paper and Resource Booklet and not on any decision that may have been made in relation to this issue.

You must adopt the role of Reporter (Chair) of the local enquiry who is to consider the Aberdeen Western Peripheral Route and to decide whether or not to proceed with it.

		MARKS
Format	Each of the three sections must be clearly set out using the headings and sub-headings provided.	2
Role	You must adopt and maintain the stated role.	2
Graph	Draw a graph using data from Table 1 (found in Resource 7H) and incorporate it into the report at an appropriate place.	8

THE REPORT MUST BE STRUCTURED AS BELOW			MARKS		GUIDANCE TO CANDIDATES
Heading	Sub-heading	Sub-section	Section		
A. Introduction		8	8		A. Discuss the need for the proposed road in the region and briefly describe the proposed development.
B. The likely impact	(i) People and economy	12	20		B. (i) Discuss the possible beneficial effects on people and the economy and the counterarguments. (ii) Discuss the environmental impact of the proposed development and the counterarguments.
	(ii) The environment	8			
C. Decision		10	10		C. State clearly your decision and justify it on the basis of the greater overall benefits.

THIS IS THE END OF THE QUESTION PAPER

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Four colours should appear above; if not then please return to the invigilator.
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ROADS AND PATHS

Not necessarily rights of way

- Service area
- Junction number
- Elevated
- M1
- Unfenced
- A 470
- Dual carriageway
- A 493
- B 4518
- A 855
- Bridge
- B 885
- Footbridge
- Primary Route (recommended through route)
- Main road
- Main road under construction
- Secondary road
- Narrow road with passing places
- Road generally more than 4m wide
- Road generally less than 4m wide
- Path / Other road, drive or track
- Gradient: steeper than 20% (1 in 5), 14% to 20% (1 in 7 to 1 in 5)
- Gates / Road tunnel
- Ferry P
- Ferry V
- Ferry (passenger) / Ferry (vehicle)

RAILWAYS

- Track multiple or single
- Track under construction
- Siding
- Tunnel, cuttings
- Light rapid transit system, narrow gauge or tramway
- Bridges / Footbridge
- Level crossing
- Viaduct, embankment
- Station, (a) principal
- Light rapid transit system station

WATER FEATURES

- Marsh or salting
- Towpath
- Lock
- Canal
- Ford
- Beach
- Flat rock
- Lighthouse (in use)
- Shingle
- Dunes
- Mud
- High water mark
- Canal (dry)

HEIGHTS 1 metre = 3-2808 feet

- Contours are at 10 metres vertical interval
- Heights are to the nearest metre above mean sea level

Where two heights are shown the first height is to the base of the triangulation pillar and the second (in brackets) to the highest natural point of the hill

PUBLIC RIGHTS OF WAY

Not shown on maps of Scotland

- Footpath
- Bridleway
- Restricted byway
- Byway open to all traffic

The symbols show the defined route so far as the scale of mapping will allow.

The representation on this map of any other road, track or path is no evidence of the existence of a right of way

Danger Area Firing and Test Ranges in the area. Danger! Observe warning notices.

BOUNDARIES

- National
- District
- County, Unitary Authority, Metropolitan District or London Borough
- National Park

TOURIST INFORMATION

- Camp site / caravan site
- Garden
- Golf course or links
- Information centre (all year / seasonal)
- Nature reserve
- Parking, Park and ride (all year / seasonal)
- Picnic site
- Recreation / leisure / sports centre
- Selected places of tourist interest
- Telephone, public / roadside assistance
- Viewpoint
- Visitor centre
- Walks / Trails
- World Heritage site or area
- Youth hostel

LAND FEATURES

- Electricity transmission line (pylons shown at standard spacing)
- Pipe line (arrow indicates direction of flow)
- Buildings
- Important building (selected)
- Bus or coach station
- Current or former place of worship (with tower or spire, minaret or dome)
- Place of worship
- Chimney or tower
- Glass structure
- Helipoint
- Triangulation pillar
- Mast
- Wind pump / wind turbine
- Windmill with or without sails
- Graticule intersection at 5' intervals
- Cutting / embankment
- Landfill site or slag/spoil heap
- Coniferous wood
- Non-coniferous wood
- Mixed wood
- Orchard
- Park or ornamental ground
- Forestry Commission access land
- National Trust (always open / limited access, observe local signs)
- National Trust for Scotland (always open / limited access, observe local signs)

ABBREVIATIONS

CG Cattle grid	P Post office
CH Clubhouse	PC Public convenience (in rural areas)
MP Milepost	PH Public house
MS Milestone	TH Town Hall, Guildhall or equivalent

Scale 1: 50 000

