



ADVANCED
General Certificate of Education
2009

Geography
Assessment Unit A2 1
assessing
Module 4: Physical Processes and
Human Interactions
[A2G11]



WEDNESDAY 13 MAY, AFTERNOON

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.

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 **Resources 1A–1C** (pages 2–3 of the Resource Booklet), which illustrate river management at Newcastle, County Down. With reference to the resources:
- (i) explain why coastal defences are important to the town of Newcastle; [1]
 - (ii) describe and justify the coastal protection methods used in the redevelopment scheme. [8]
- (b) With reference to places for illustration, describe the ways in which river and valley zones are subject to a range of demands. [8]
- syn* (c) With reference to a **small-scale** river management study:
- (i) describe the engineering solutions used along the river; [5]
 - (ii) evaluate the effectiveness of the measures used in terms of the human and physical environments. [10]
- 2 (a) With reference to **Resource 2** (page 4 of the Resource Booklet), which refers to flood events in Boscastle, Cornwall:
- (i) describe the physical and human factors which contributed to the 2004 floods in Boscastle; [6]
 - (ii) explain how any **one** of the flood protection measures put in place since 2004 helped to reduce the flood threat in 2007; [4]
 - (iii) identify **one** additional strategy which could be used to reduce the threat of flooding in Boscastle, and briefly explain how it would operate. [4]
- (b) With reference to places for illustration, describe the ways in which coastal zones are subject to a range of demands. [6]
- syn* (c) “As a response to coastal erosion, hard engineering strategies offer only a partial solution.”
Discuss this statement with reference to your regional scale case study of coastal protection. [15]

Unit B: The Nature and Vulnerability of Tropical Ecosystems

- 3 (a) With the aid of an annotated diagram, illustrate and explain the characteristics of a tropical soil.
- (b) Study **Resource 3** (page 5 of the Resource Booklet), which describes the traditional slash and burn system of an indigenous group in the Amazon Basin of Ecuador.
- (i) Using **Resource 3 to help you**, explain why traditional slash and burn agriculture is environmentally sustainable in tropical forest ecosystems. [6]
- (ii) How can slash and burn become unsustainable both socially and environmentally? [5]
- syn* (c) Describe the problems of large scale deforestation and, with reference to a small-scale case study, explain how forest resources can be sustainably managed. [15]
- 4 (a) Study **Resource 4** (page 6 of the Resource Booklet), which shows the adaptation of the baobab tree to the semi-arid tropical ecosystem.
- (i) Explain how the baobab is adapted to its semi-arid environment. [4]
- (ii) Describe **two** other examples of plant adaptations in the semi-arid tropics **or** the tropical forest ecosystem. [4]
- (b) (i) Define salinisation and explain how irrigation can initiate or accelerate the salinisation process. [6]
- (ii) Describe possible solutions to the problem of salinisation. [6]
- syn* (c) With reference to a case study of a developing country, discuss how both traditional and modern irrigation methods have been used to develop its resources. [15]

Unit C: Pollution and its Management

- 5 (a) Outline **two** reasons to explain why there are conflicting attitudes towards the management of the threat of global warming.
- (b) Study **Resource 5** (page 7 of the Resource Booklet), which describes some of the expected consequences of global warming.
- (i) Using **Resource 5 to help you**, discuss why poor nations may have more to fear from the effects of global warming than rich nations. [9]
- (ii) What technique could be used to map global variation in temperature increases? Justify your answer. [3]
- syn* (c) With reference to a regional scale case study of river pollution:
- identify the sources of the river's pollution;
 - outline the collaborative strategies which have been used to manage the pollution and evaluate their success. [15]
- 6 (a) Study **Resource 6** (page 8 of the Resource Booklet), which shows a number of global pollution incidents.
- (i) With reference to **Resource 6**, explain why it is difficult to define pollution. [6]
- (ii) For any **one** of the incidents shown on **Resource 6**, explain the link between the pollution and potential subsequent ill-health of local people. [4]
- (iii) Briefly suggest why any **one** of the pollution incidents shown on **Resource 6** may have consequences beyond the country in which the incident occurred. [4]
- (b) **Resource 6** shows examples of rare pollution hazards. Identify **one** example of a **continuous** pollution hazard and briefly describe its impact upon the environment. [6]
- syn* (c) With reference to a regional scale case study of nuclear resource development, discuss the activities responsible for the contamination, and its impacts on **both** the physical **and** human environments. [15]

Unit D: Natural Hazards and Human Activity

- 7 (a) With the aid of a diagram, explain how the link between the processes of subduction and seafloor spreading is vital to the theory of plate tectonics.
- (b) Study **Resource 7** (page 9 of the Resource Booklet), which is an account of an earthquake in Pakistan.
- (i) Distinguish between primary and secondary earthquake effects, using examples from **Resource 7**. [5]
- (ii) What evidence is there that the management of this earthquake event was inadequate? [6]
- syn* (c) With reference to a national/regional scale case study:
- outline the negative social and economic impacts of the monsoon climate;
 - describe the attempts to reduce these effects. [15]
- 8 (a) With the aid of a diagram or map, explain the development of the Summer wet monsoon and its associated weather. [12]
- (b) Study **Resource 8** (page 10 of the Resource Booklet), which describes current research on the Indian monsoon.
- (i) Outline the reasoning behind the concept that the wet Summer monsoon in India might fail in future. [5]
- (ii) Why is accurate prediction of the Summer monsoon critical to this region? [3]
- syn* (c) With reference to a small-scale case study of efforts to predict **either** volcanic **or** earthquake activity, describe the methods that were used and evaluate their success. [15]

THIS IS THE END OF THE QUESTION PAPER
