

X208/303

NATIONAL
QUALIFICATIONS
2010

MONDAY, 31 MAY
10.50 AM – 12.05 PM

GEOGRAPHY
HIGHER
Paper 2
Environmental
Interactions

Answer any **two** questions.

Write the numbers of the **two** questions you have attempted in the marks grid on the back cover of your answer booklet.

The value attached to each question is shown in the margin.

Credit will be given for appropriate maps and diagrams, and for reference to named examples.

Questions should be answered in sentences.

Note The reference maps and diagrams in this paper have been printed in black only: no other colours have been used.



Question 1 (Rural Land Resources)

- (a) With the aid of annotated diagrams, **describe** and **explain** the physical features associated with the formation of coastal landscapes. You should refer to both erosion **and** deposition features in your answer. **20**
- (b) For any named coastal area you have studied, **describe** how this landscape has provided a variety of socio-economic opportunities. **10**
- (c) Study Diagram Q1A and Map Q1B.
One example of a land use conflict is the proposed leisure/housing development at the Menie Estate in Aberdeenshire. Part of this development takes place on a protected sand dune area designated as an SSSI. (SSSI = Site of Special Scientific Interest.)
Discuss the advantages **and** disadvantages of developments such as this on the local people and the environment. **10**
- (d) For any named coastal **or** upland area you have studied, **describe** the measures taken to resolve environmental conflicts and **comment on** their effectiveness. **10**
- (50)**

Diagram Q1A: News Reports on the Proposals for the Menie Estate

“Business leaders have joined forces to urge the Scottish Government to give the go-ahead to US billionaire Donald Trump’s plans for a golf resort . . . Mr Trump hopes to build a resort featuring two championship golf courses, a five-star hotel, 950 holiday homes and 500 private houses at the Menie Estate in Aberdeenshire.”

(The Herald 11/8/08)

“The value of Menie Links as part of the Foveran Links SSSI cannot be understated. It is the most dynamic, most rapidly moving and largest area of bare sand in this area of Scotland. It is quite simply the jewel in the crown of the SSSI areas of bare sand in this area of Scotland and therefore the jewel in the crown of the UK resource.”

(Scottish Natural Heritage (SNH) expert—The Herald 19/6/08)

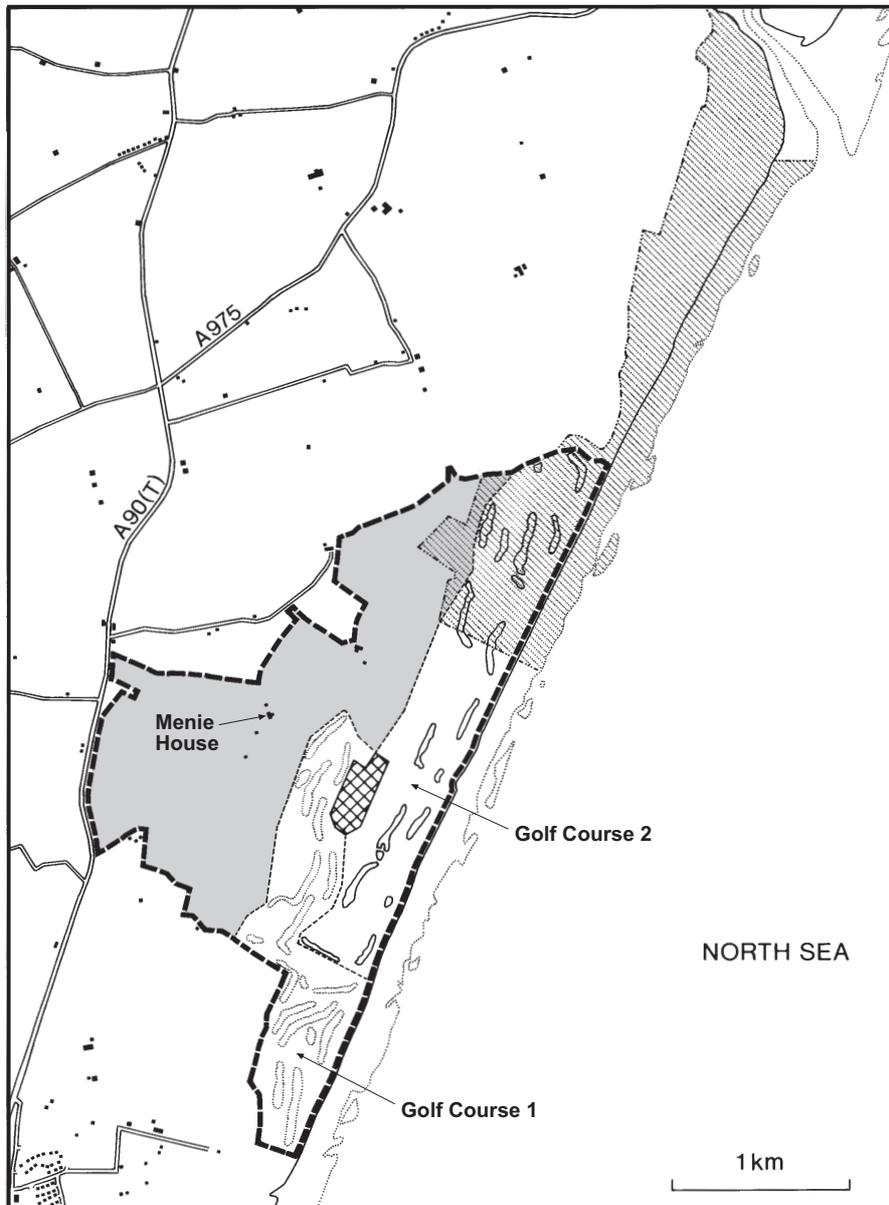
RSPB Scotland objected to the Trump International application because . . . the developer’s own Environmental Statement acknowledges that there will be very significant adverse effects on habitats and biodiversity—the mobile dunes, which form one of the main qualifying features of the Foveran Links SSSI, will be destroyed.

<http://www.rspb.org.uk/ourwork/conservation/sites/scotland/menie.asp>

(RSPB = Royal Society for the Protection of Birds)

Question 1 – continued

Map Q1B: Proposed developments at the Menie Estate



-  Coastline at high tide and outer edge of beach at low tide
-  Roads and buildings
-  Foveran Links Site of Special Scientific Interest
-  Border of the Trump International Golf Links
-  Forbes land—not part of the development
-  Housing and hotel complex around Menie House

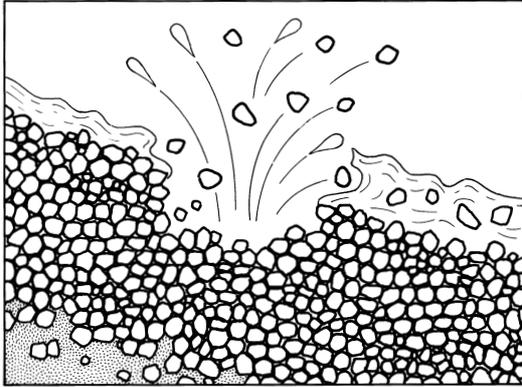
Question 2 (Rural Land Degradation)

(a) Study Diagram Q2A.

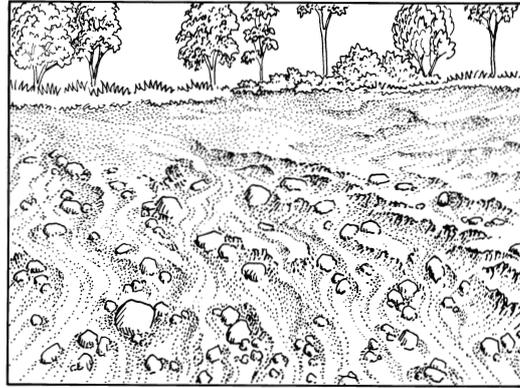
Describe and **explain** the processes of soil erosion by water.

8

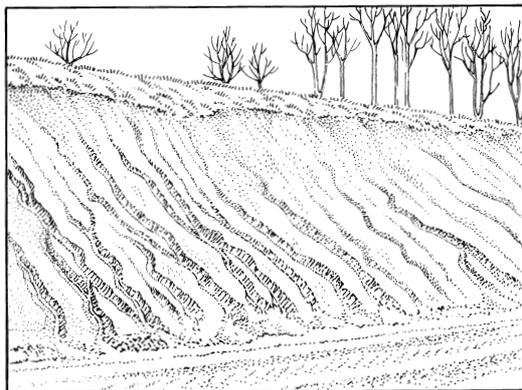
Diagram Q2A: Erosion by water



Rainsplash



Sheet Erosion



Rill Erosion



Gully Erosion

Question 2 – continued

(b) Study Table Q2B.

Describe and **explain** how human activities have caused land degradation in North America **and either** Africa north of the Equator **or** the Amazon Basin.

16

Table Q2B: Percentage of the agricultural land which has been degraded

Region	% degraded
North America	26
Africa	65
South America	45

(c) Referring to named locations in **either** Africa north of the Equator **or** the Amazon Basin, **describe** the impact of land degradation on the people and economy.

10

(d) Referring to named locations in North America you have studied:

(i) **describe** and **explain** the ways in which farmers have adjusted their farming methods to reduce the risk of soil erosion; and

(ii) **comment** on the effectiveness of these methods.

16

(50)

[Turn over

Question 3 (River Basin Management)

- (a) “The Myitsore hydro-electric project was started in 2008 to manage the flow of the Irrawaddy River in northern Myanmar (Burma).”

Study Map Q3A and Diagrams Q3A, Q3B and Q3C.

- (i) **Describe** and **account for** the pattern of river flow before the Myitsore Project started.
- (ii) **Describe** and **explain** the need for water management in the Irrawaddy River in Myanmar.
- (b) For the Myitsore Dam **or** any named dam you have studied in Africa **or** North America **or** Asia, **describe** and **explain** the physical factors which should be considered when selecting the site for the dam and its associated reservoir.
- (c) **Describe** and **account for** the social, economic and environmental benefits **and** adverse consequences of a named water management project in Africa **or** North America **or** Asia.

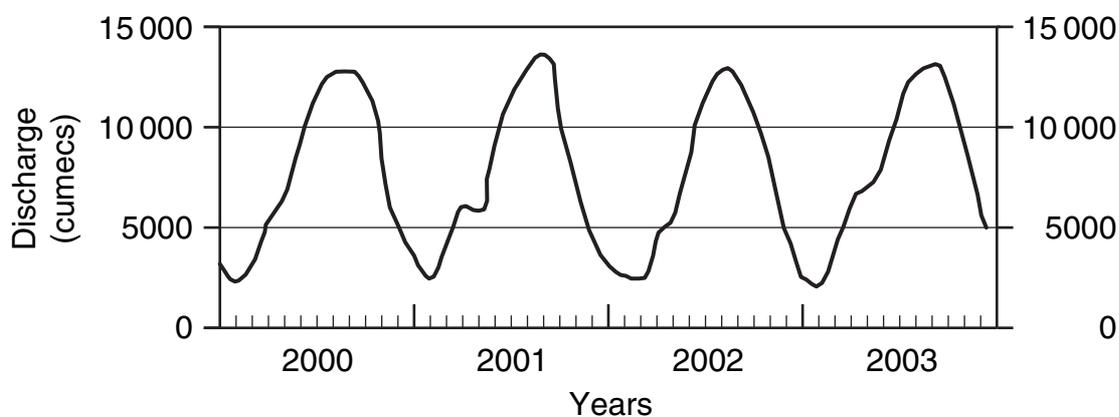
16

10

24

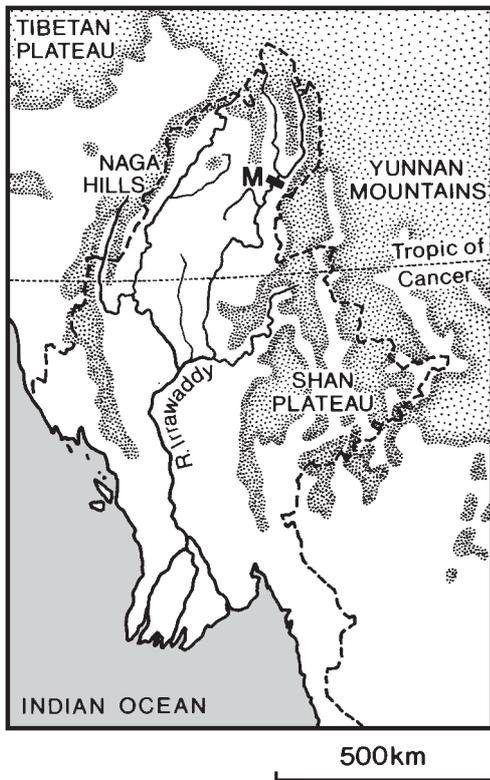
(50)

Diagram Q3A: Monthly discharge of the Irrawaddy River at Myitsore before the HEP scheme



Question 3 – continued

Map Q3A: Irrawaddy River in Myanmar



M Myitsore Dam
 Land over 1000metres

Diagram Q3B: Myitsore—Climate Graph

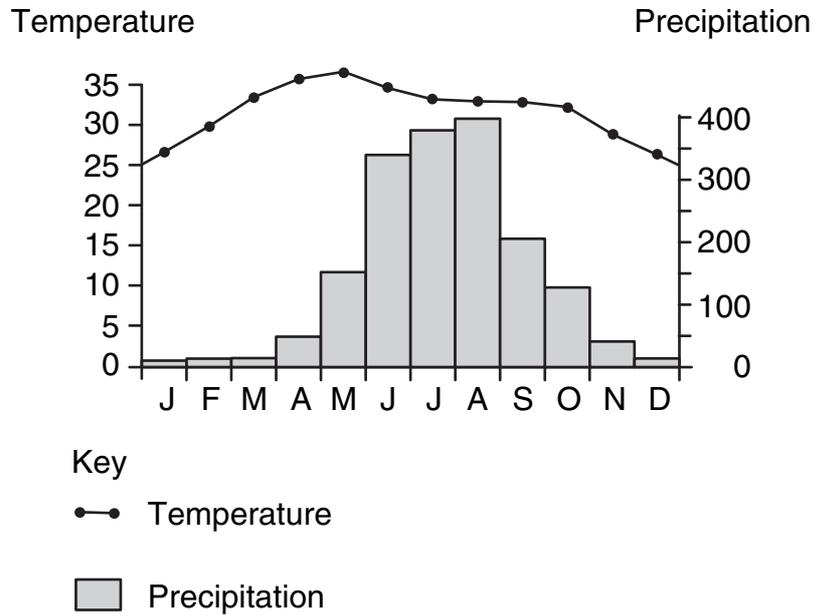
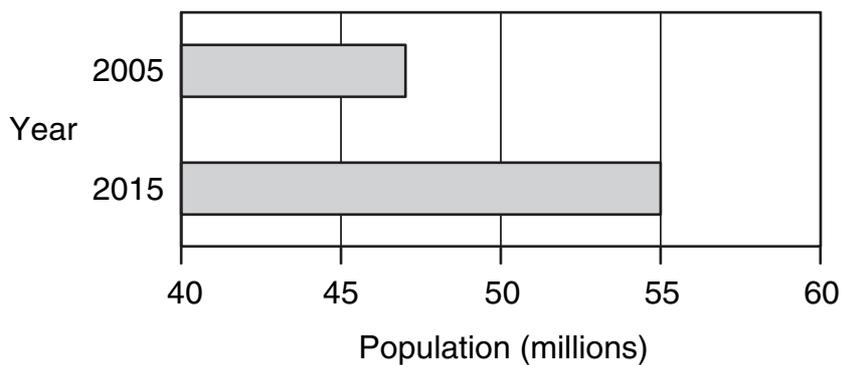


Diagram Q3C: Projected population change in Myanmar



[Turn over

Question 4 (Urban Change and its Management)

- (a) “A megacity is defined as a city with over 10 million people.”

Study Diagram Q4A (on *Page nine*).

Describe the changes in the number and world distribution of megacities from 1975 to 2015.

8

- (b) Study Diagrams Q4A and Q4B (on *Pages nine and ten*).

For Mexico City **or** any other named city which you have studied in a Developing Country:

- (i) **explain** the growth of your chosen city in terms of rural push/urban pull factors;

10

- (ii) **describe** the socio-economic and environmental problems which have resulted from this rapid growth.

12

- (c) Study Map Q4 (on *Page ten*).

“Urban sprawl has been seen as a problem since the 1930s and regions such as South-East England have come under increasing pressure.”

Referring to London **or** any other named city you have studied in a Developed Country:

- (i) **explain** the reasons for urban sprawl;

- (ii) **outline** the problems caused by this growth;

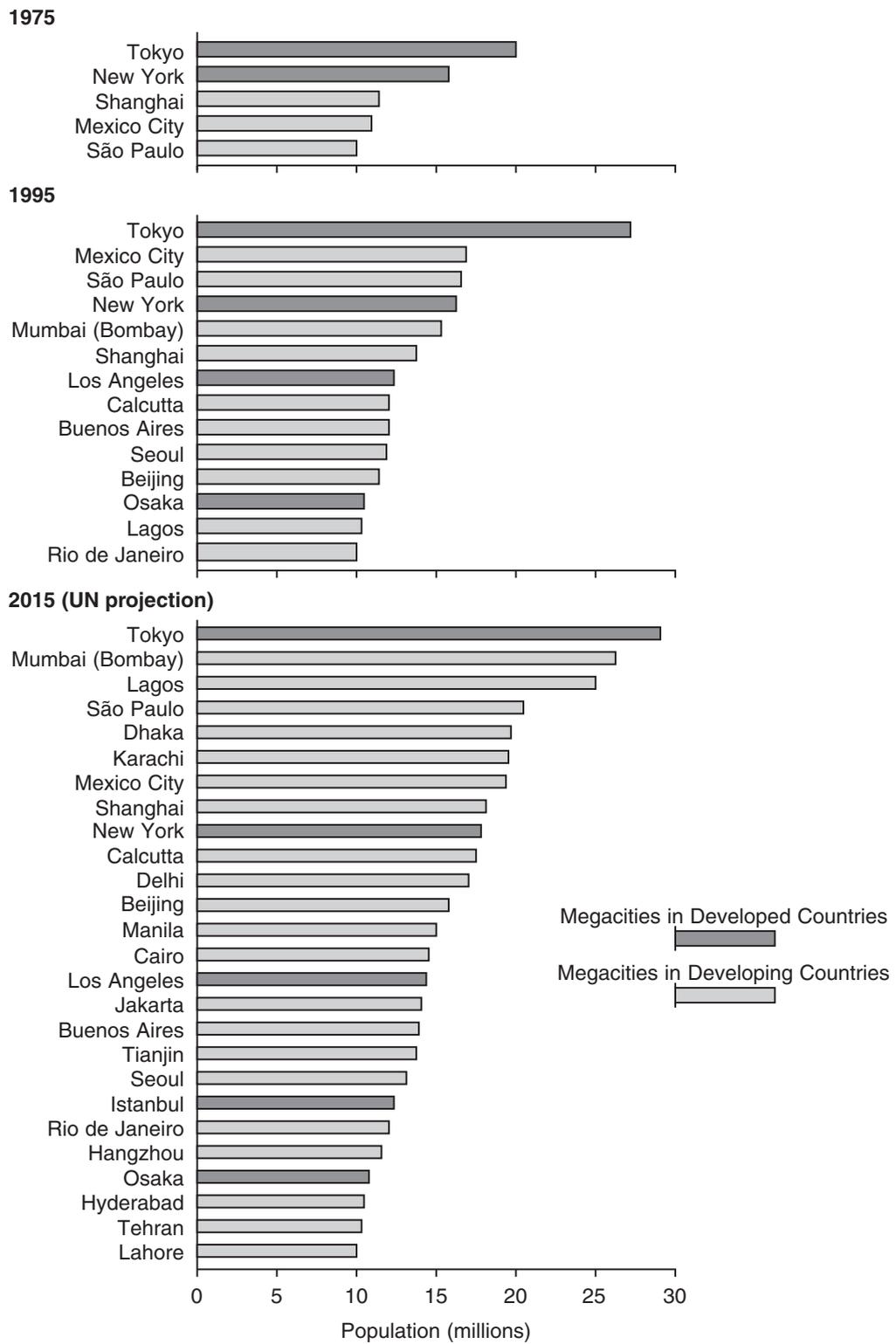
- (iii) select **one** problem identified in part (ii) above and **explain** the ways in which the city has tried to resolve this problem.

20

(50)

Question 4 – continued

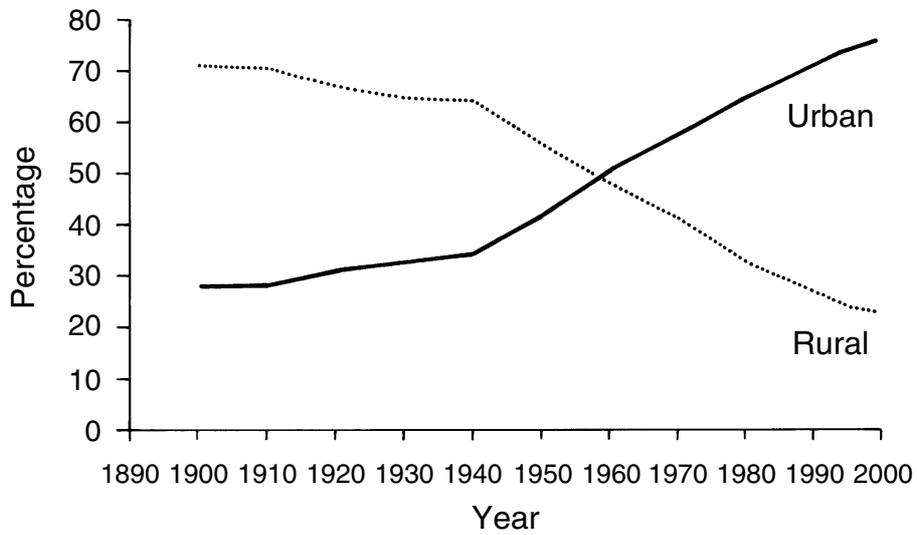
Diagram Q4A: The Growth of Megacities 1975–2015



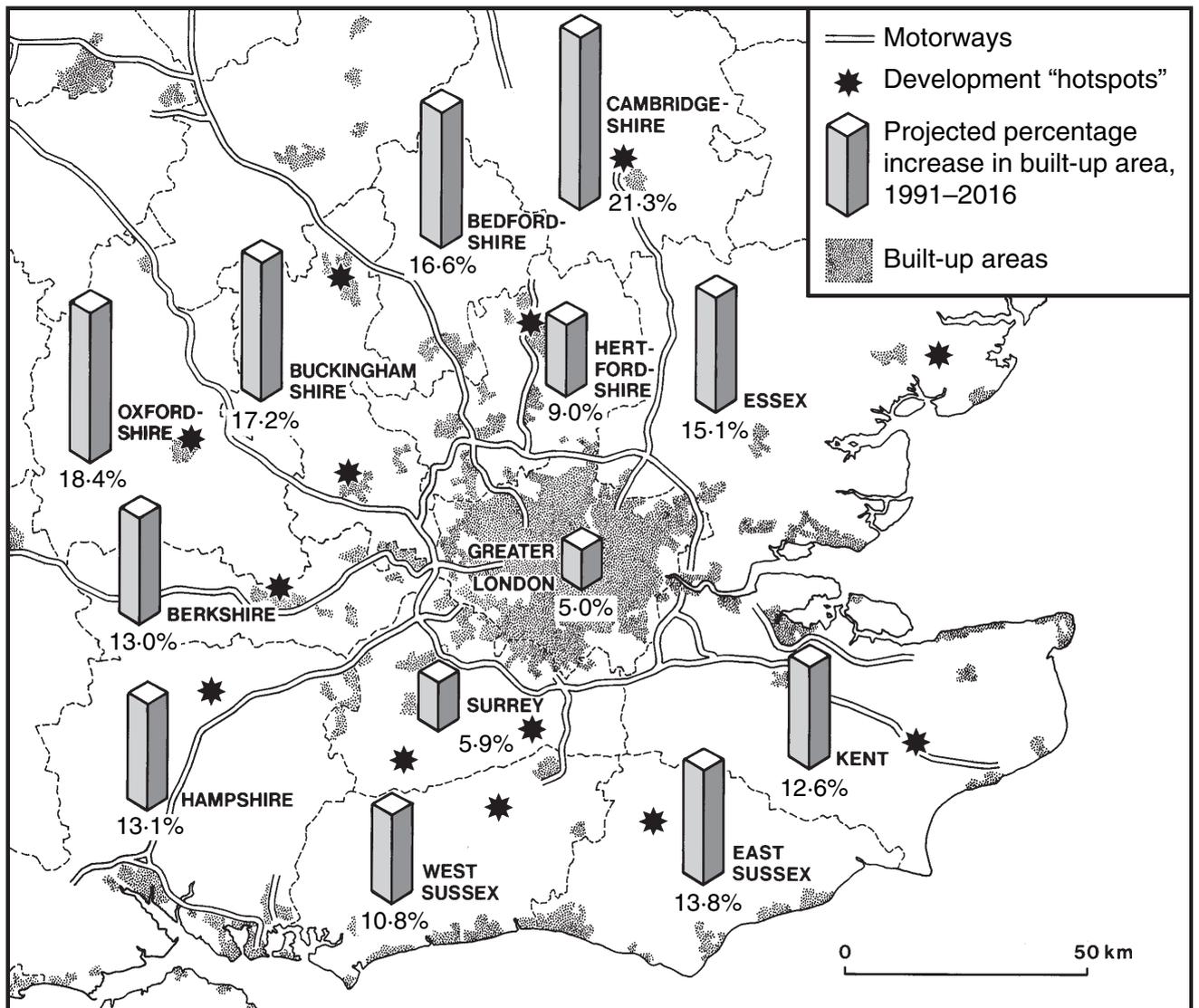
[Turn over

Question 4 – continued

Diagram Q4B: Changes in balance of urban/rural population in Mexico



Map Q4: Urban Sprawl in South-East England



[Turn over for Question 5 on *Page twelve*

Question 5 (European Regional Inequalities)

(a) Study Map Q5A.

“Convergence Regions are areas designated as requiring most financial assistance across the European Union (EU).”

(i) **Describe** the distribution of the Convergence Regions. 8

(ii) In 2008, the EU budget for promoting growth across the least developed regions was 47 billion Euros. **Discuss** ways in which less prosperous regions can receive help from the EU. 10

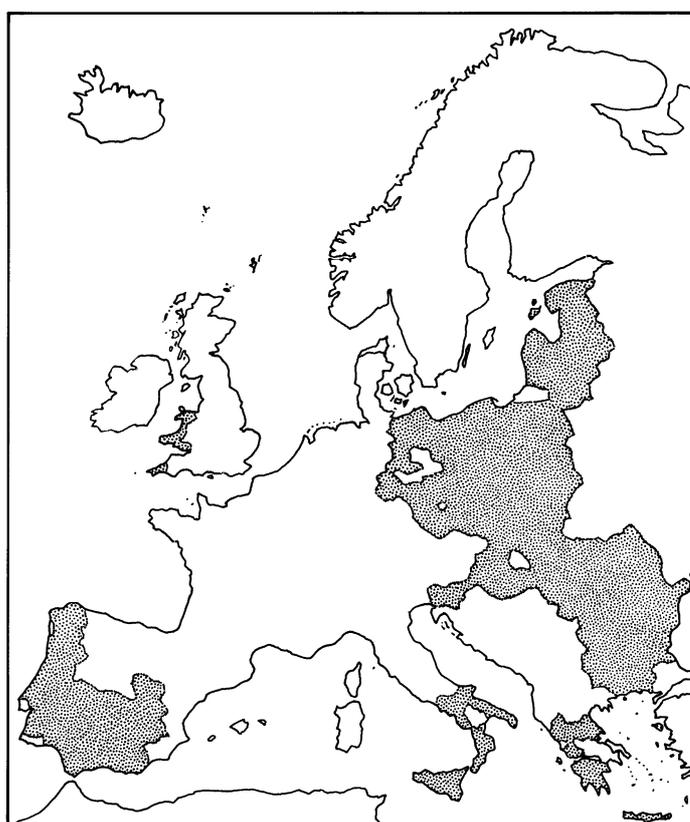
(b) *“The **North-South divide** refers to the economic and cultural differences between southern England and the rest of the United Kingdom.”*

Study Map Q5B and Table Q5.

(i) To what extent does the data provide evidence of regional inequalities within the UK? 10

(ii) **Describe** and **explain** the physical and human factors that have led to the regional inequalities within the UK. 14

(iii) **Describe** the steps taken by the UK government agencies to reduce regional inequalities. 8

(50)**Map Q5A: EU Convergence Regions**

 Convergence Regions receiving most financial aid

Question 5 – continued

Map Q5B: UK statistical regions



Table Q5: UK average values

	Population change 1996–2006 %	Average house prices (Nov 2008) £1000	Gross disposable household income (2006) (UK average =100)	Working age population with no qualifications (%) (2006)
UK average	4.3	203	100	13
Scotland	0.0	160	95	13
Northern Ireland	5.1	226	87	22
Wales	2.4	158	89	17
NW England	0.0	158	92	15
NE England	-1.1	148	86	14
West Midlands	2.3	176	91	17
Yorks & Humber	2.7	157	93	15
East Midlands	5.5	166	95	13
East England	6.6	204	107	12
SE England	6.7	271	113	9
London	7.4	382	120	12
SW England	6.9	229	100	9

Question 6 (Development and Health)

(a) **Suggest reasons** for the wide variations in development which exist **between** Developing Countries. You should refer to named countries you have studied. **12**

(b) Study Table Q6A, and Maps Q6A, Q6B, Q6C and Q6D.

“Life expectancy in Chad is only 47 years.”

Suggest the physical **and** human factors which may have led to this low life expectancy. **12**

(c) Study Map Q6C.

Chad and many other developing countries have been affected by water-related diseases including malaria, cholera and bilharzia/schistosomiasis.

Select **one** of the above diseases.

(i) **Describe** the physical **and** human factors which put people at risk of contracting the disease. **8**

(ii) **Describe** and **explain** the measures that can be taken to combat the disease. **14**

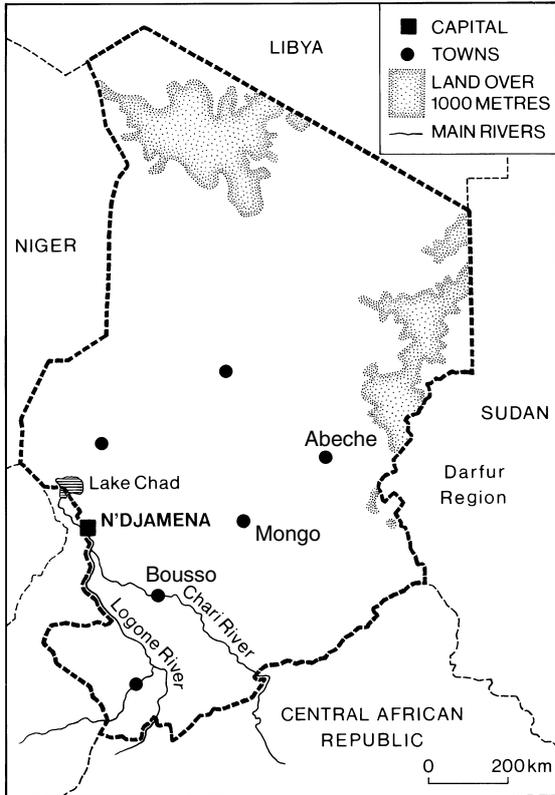
(iii) **Explain** the benefits to a Developing Country of controlling the disease. **4**
(50)

Table Q6A: Selected development indicators for Chad

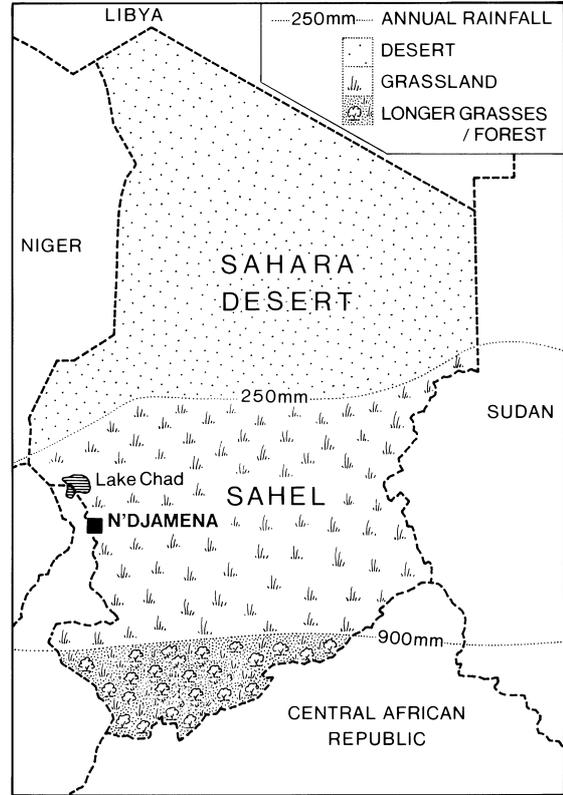
Indicator	
GDP per capita (\$US)	1500
Birth rate per 1000	42
Infant mortality per 1000 live births	100
% land surface for arable farming	3
Adult literacy rate (%)	25
% population with HIV/AIDS	4.8

Question 6 – continued

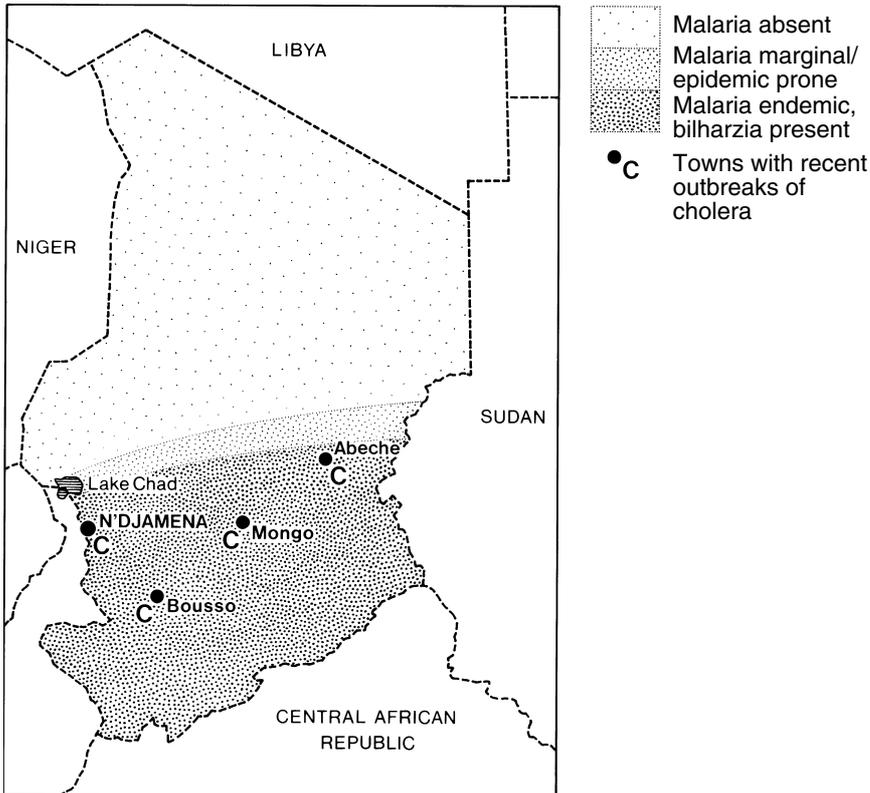
Map Q6A: Map of Chad



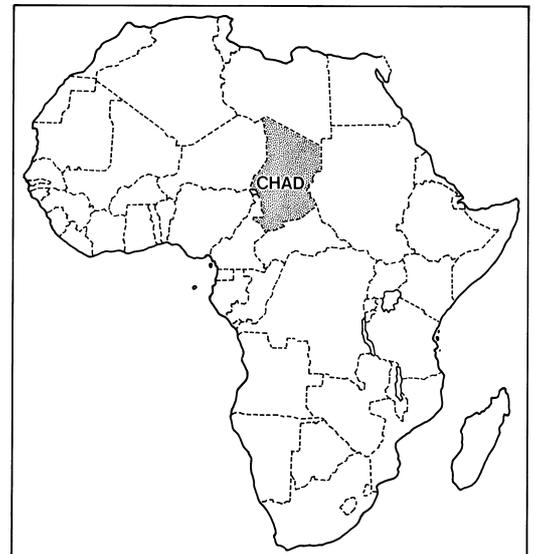
Map Q6B: Bio-climatic zones of Chad



Map Q6C: Disease in Chad



Map Q6D: Location of Chad within Africa



[END OF QUESTION PAPER]

ACKNOWLEDGEMENTS

Diagram Q1A—Report is adapted from www.rspb.org.uk/ourwork/conservation/sites/scotland/menie.asp. Reproduced by kind permission of RSPB.

Diagram Q1A—Extract is adapted from “Business heads unite to demand Trump golf plan go-ahead” by Alison Chiesa, taken from *The Herald*, 11 August 2008. Permission is being sought from The Herald.

Diagram Q1A—Extract is adapted from “Trump golf resort would destroy jewel in crown of bare dunes” by Graeme Smith, taken from *The Herald*, 19 June 2008. Permission is being sought from The Herald.