

Centre Number						Candidate Number				
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For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
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8	
TOTAL	



General Certificate of Education
Advanced Subsidiary Examination
June 2012

Geography

GEOG1

Unit 1 Physical and Human Geography

Thursday 24 May 2012 1.30 pm to 3.30 pm

For this paper you must have:

- a pencil
- a rubber
- a ruler.

You may use a calculator.

Time allowed

- 2 hours

Instructions

- Use black ink or black ball-point pen. Use pencil only for drawing.
- Fill in the boxes at the top of this page.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Answer Question 1 and **one other question** from **Section A** and Question 5 and **one other question** from **Section B**.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The maximum mark for this paper is 120.
- Each question is worth 30 marks.
- The marks for questions are shown in brackets.
- You are expected to use a calculator where appropriate.
- You will be marked on your ability to:
 - use good English
 - organise information clearly
 - use specialist vocabulary where appropriate.

Advice

- Where appropriate, sketch maps and diagrams should be used to illustrate answers and reference made to examples and case studies.
- You are advised to spend about 60 minutes on Section A and about 60 minutes on Section B.



J U N 1 2 G E O G 1 0 1

Section A

Answer **Question 1** and **one other question** from this section.

1 Rivers, Floods and Management

1 (a) Describe how a river erodes material from its bed and banks.

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(3 marks)

1 (b) (i) Outline the cause(s) of rejuvenation.

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(2 marks)



1 (b) (ii) Study **Figure 1** which is a map and a cross section of the valley of the River Wear near Durham.

Figure 1

Due to copyright restrictions we are unable to electronically publish the OS extract.

Describe the incised meander shown in **Figure 1** and explain the formation of this landform.

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1 (c) Study **Figure 2** which is an extract from a news website about the cause of floods in Pakistan in August 2010.

Figure 2

“What all the climate models predict is that the distribution of monsoon rains will become more uneven in the future”, Professor Rajiv Sinha, from the Indian Institute of Technology in Kanpur, told BBC News. “Total rainfall stays the same, but it comes in shorter, more intense bursts.” In August 2010, more than half of the normal monsoon rain fell in only one week. Typically it is spread over three months.

The Indus is choked with sediment eroding off the Himalayas. Building levees causes the river channel to silt up. This has the unexpected effect of making Pakistan’s rivers prone to even bigger floods when the levees eventually break. Deforestation has increased the amount of silt in the channel. Over the past half-century, more sediment has been flushed down the rivers as forests have been cut.



With the help of **Figure 2**, explain why floods occurred in Pakistan in August 2010.

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2 Cold Environments

2 (a) Define the term 'permafrost'.

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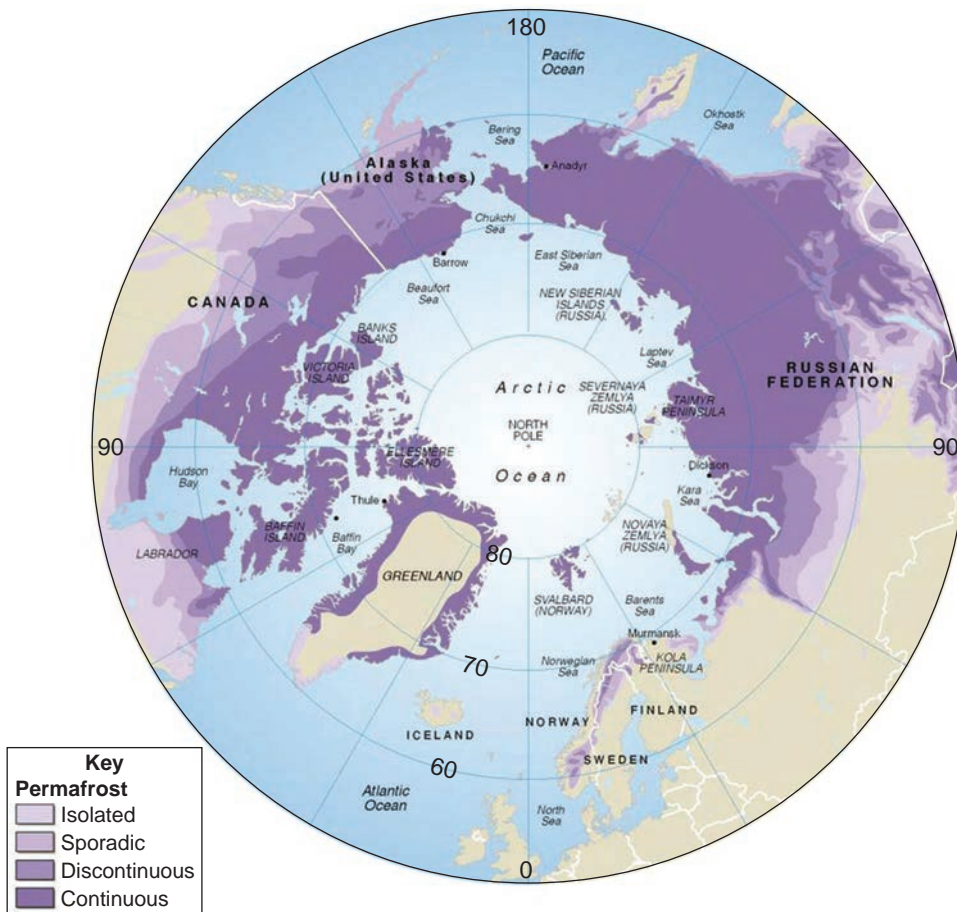
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(2 marks)

2 (b) Study Figure 3 which shows the distribution of permafrost in the northern hemisphere.

Figure 3



Describe the distribution of permafrost shown in **Figure 3**.

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2 (c) Study **Figure 4** which is an advertisement for a holiday in Antarctica.

Figure 4

10 Days Antarctica Discovery



Discover the last untouched continent!

Join us for a voyage on the MS Fram which can carry 400 passengers. Our journey will take us across the Drake Passage, escorted by albatross and petrels, to the magnificent scenery of the Antarctic Peninsula and its abundant summer wildlife of seals, penguins and whales.

To enrich our experience, MS Fram's expert team of expedition staff and lecturers will offer presentations on the history, biology and geology of Antarctica along the way.

Come ashore with our team in sturdy Polar Cirkel boats for a close-up look at penguin colonies, modern research facilities and historic sites. Marvel at the mountainous scenery and icebergs floating by from the comfort of our unique Passenger Bridge.

2 (c) (i) Suggest reasons for the development of tourism in cold environments such as Alaska and Antarctica.

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(3 marks)



2 (c) (ii) With the help of **Figure 4**, outline issues regarding the conservation of Antarctica.

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3 Coastal Environments

3 (a) Define the term 'hard engineering'.

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(2 marks)

3 (b) Study **Figure 5** which shows hard engineering at Walton-on-the-Naze, Essex.

Figure 5



Describe how the hard engineering shown in **Figure 5** protects the coast.

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3 (c) (i) Outline reasons why some areas of coastline are protected.

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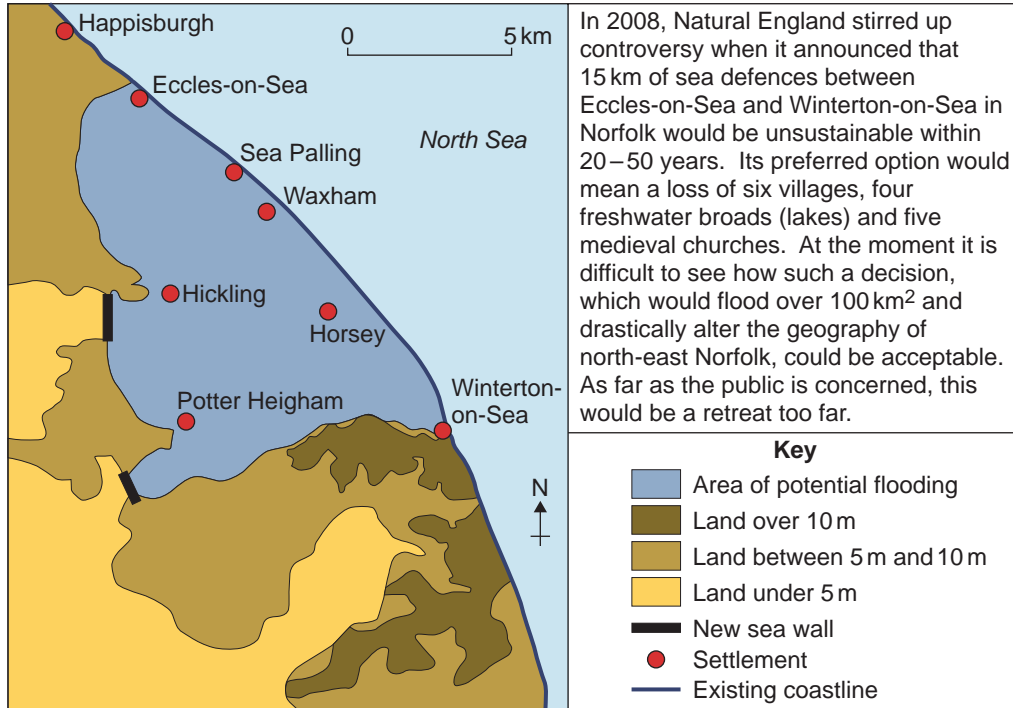
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3 (c) (ii) Study **Figure 6** which shows the possible impact of a proposed coastal management plan for Norfolk.

Figure 6



With the help of **Figure 6**, describe issues likely to result from these proposals.

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4 Hot Desert Environments and their Margins

4 (a) (i) Define the term 'mechanical weathering'.

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(2 marks)

4 (a) (ii) Study **Figure 7** which shows the result of mechanical weathering in Death Valley, California.

Figure 7



Describe evidence of mechanical weathering shown in **Figure 7** and explain the processes involved.

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4 (b) Explain how continentality is a cause of aridity.

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4 (c) Study **Figure 8** which describes attempts to improve the Badia, an area of hot desert in Jordan.

Figure 8

Much of the open undulating desert land around As Safawi is described as 'rangeland'. It is an area traditionally grazed by the nomadic Bedouin who herded their goats, sheep and camels across the area in search of shrubs to graze on. In recent years, and particularly after the Gulf War in 1991, the area became over-grazed and began to suffer from desertification.

In 2002, in an attempt to resolve the problem, the Tal Rimah Rangeland Rehabilitation Project was initiated. The aim of the project was to work with local communities to identify a sustainable future for grazing in the rangelands. The project involved the following stages:

- The problem was first discussed with local people.
- Over 100 local people built a series of low stone walls.
- Various shrubs were planted in order to identify which ones would be most successful in this extreme environment.
- Horizontal ditches were dug along the contours. This provided the newly planted shrubs with maximum available water to help them to become established.
- Sheep have now been re-introduced to see how the plants respond to grazing. Their manure adds fertility to the soil and they help to disperse the seeds over a larger area.

With the help of **Figure 8**, comment on the potential for sustainability in a desert environment.

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Section B

Answer **Question 5** and **one other question** from this section.

5 Population Change

5 (a) Distinguish between natural and migration population change.

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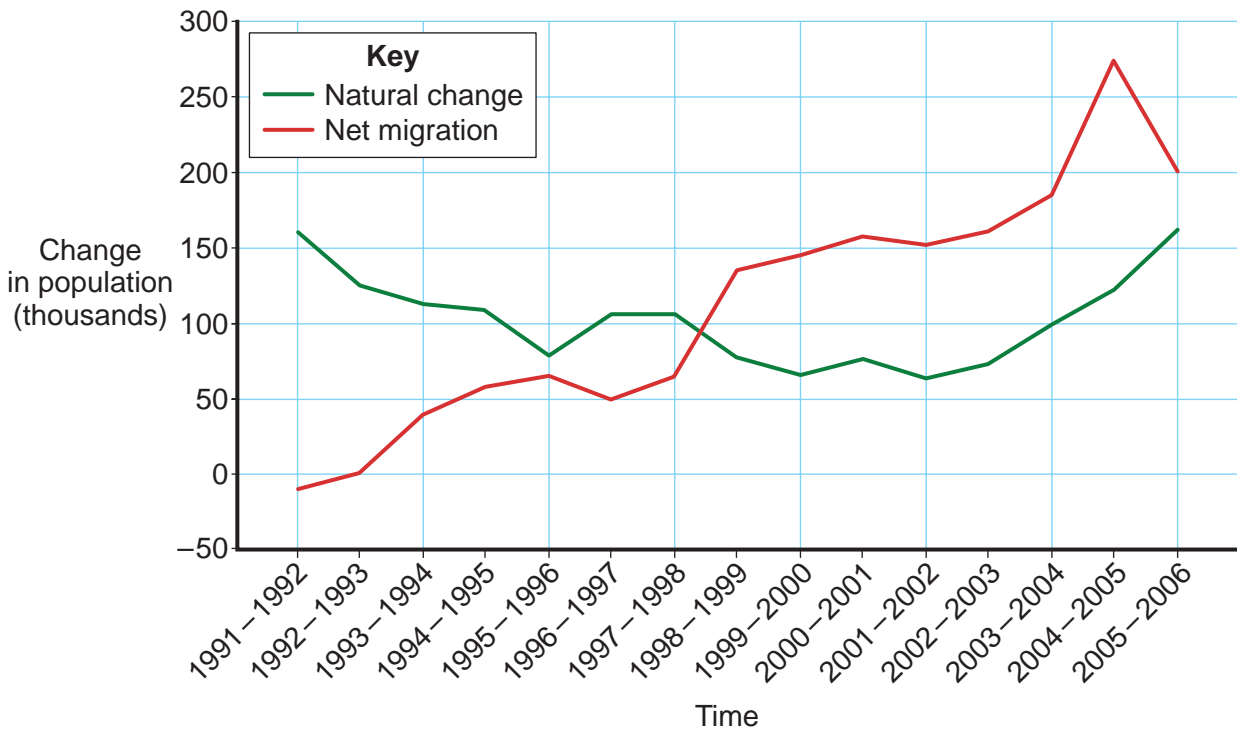
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5 (b) **Figure 9** shows natural population change and net migration in the UK population between 1991 and 2006.

Figure 9



Describe and comment on trends shown in **Figure 9**.

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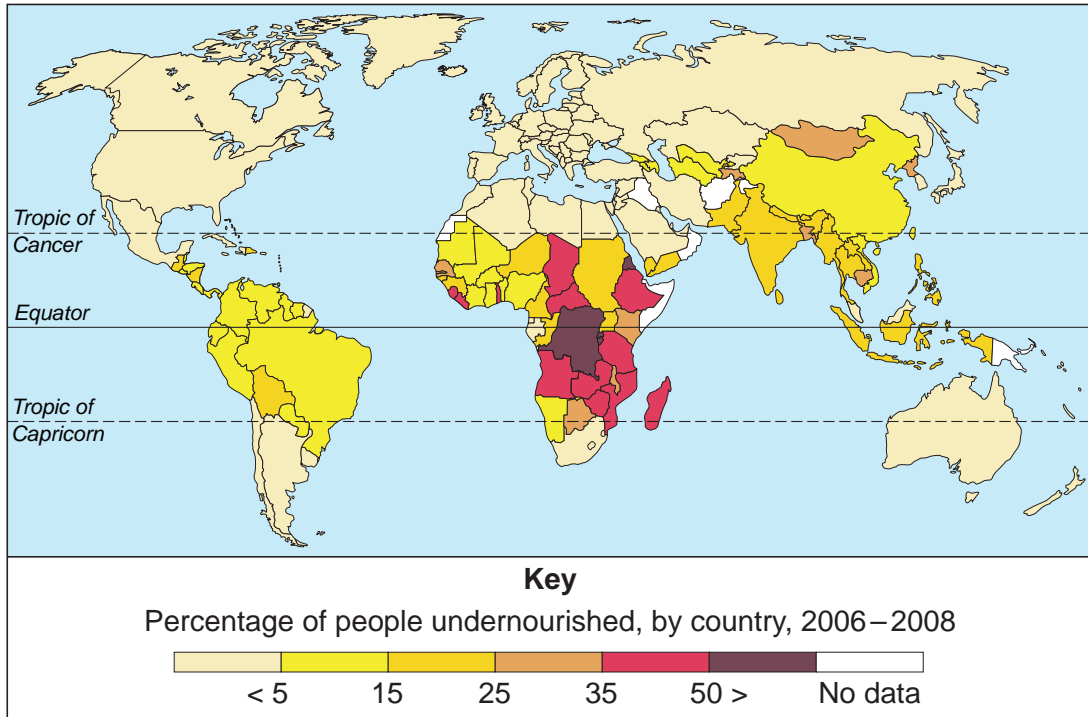
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6 Food Supply Issues

6 (a) Study **Figure 10** which shows the percentage of people undernourished, by country, 2006–2008.

Figure 10



Describe the pattern shown in **Figure 10**.

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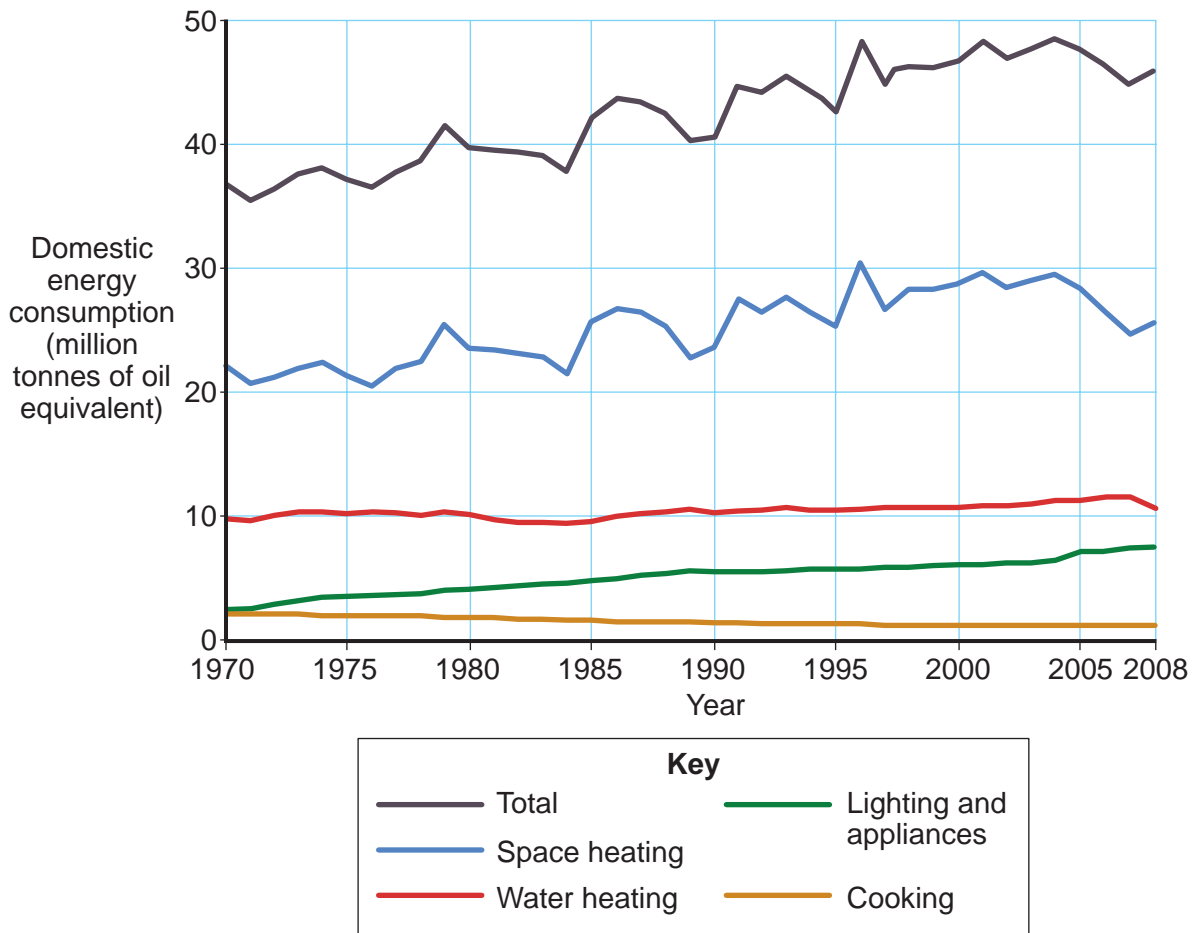
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7 Energy Issues

7 (a) Study **Figure 12** which shows domestic energy consumption in the UK from 1970 to 2008.

Figure 12



Describe the trends shown in **Figure 12**.

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7 (b) Explain how attempts have been made to reduce energy consumption in workplaces.

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7 (c) Study **Figure 13** which is an extract from a newspaper about an oil spill in the Gulf of Mexico in 2010.

Figure 13

<p>Was it the world’s worst pollution disaster? You can make a pretty good case that it was. Now BP’s Deepwater Horizon oil spill appears to have been finally shut down after 87 days of pouring Louisiana crude into the waters of the Gulf of Mexico in an unremitting torrent.</p>	<p>less than first feared, especially on oiled seabirds. The total number of oiled birds picked up over the three months, alive and dead, was 1997.</p>
<p>Drilling at a depth of about 1500 m, Deepwater Horizon, depending on the estimate, has released more than 2.2 million barrels, and possibly as much as 5.3 million.</p>	<p>There are several possible reasons for the comparatively low number of affected birds. Much of the slick is still offshore, many more oiled birds may have died out at sea and not been collected, and rescuers are reluctant to chase oiled birds into breeding colonies.</p>
<p>Environmentally the fears are enormous, but the effects are hard to judge accurately. The ruptured well began gushing on 20 April, which was in the early stages of the breeding season for Gulf wildlife, and there was instant concern for a range of creatures, ranging from bluefin tuna and green turtles to the brown pelican, the state bird of Louisiana.</p>	<p>But it may also be the case that the gigantic BP funded clean-up operation has protected them and much of the Gulf coast. The scale of this is quite staggering and appears to exceed any previous environmental control venture. Nearly 7000 ships and boats and 119 aircraft are involved, almost 2000 miles of protective booms have been deployed and there are 44 000 personnel on active duty.</p>
<p>Three months on the effects are</p>	



8 Health Issues

8 (a) Study **Figure 14** which shows information on health provision in the UK and the USA.

Figure 14

Indicator	UK	USA
Gross national income per capita (\$)	33 650	44 070
Government expenditure on health as percentage of total expenditure on health	87.4%	45.8%
Government expenditure on health as percentage of total government expenditure	16.5%	19.1%
Per capita government expenditure on health (\$)	2434	3074
Per capita total expenditure on health (\$)	2784	6714
Doctors per 10 000 population	23	26

Describe contrasts between the UK and the USA shown in **Figure 14**.

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8 (b) For **one** country you have studied, describe its approach to healthcare.

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