

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



General Certificate of Education
Advanced Subsidiary Examination
January 2012

Geography

GEOG1

Unit 1 Physical and Human Geography

Wednesday 18 January 2012 9.00 am to 11.00 am

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 A N 1 2 G E O G 1 0 1

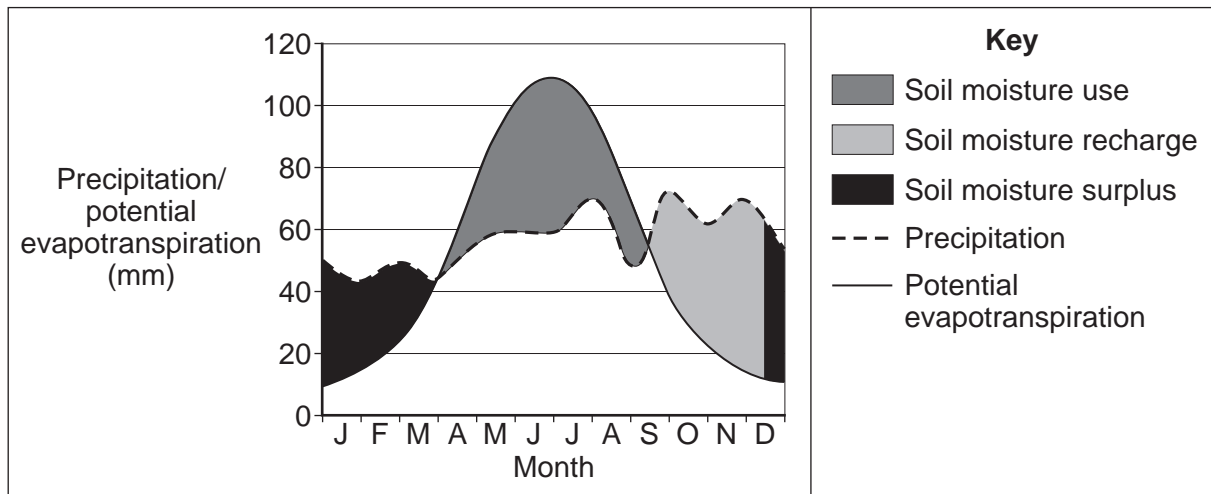
Section A

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

1 Rivers, Floods and Management

1 (a) Study **Figure 1** which shows the water balance for Birmingham, England.

Figure 1



Use **Figure 1** to complete the Fact File below.

Fact File.

Name the months when there is a soil moisture surplus.

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State one of the months when potential evapotranspiration exceeds precipitation the most and by what amount.

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Give the meaning of soil moisture recharge.

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Question 1 continues on the next page

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1 (b) Study **Figure 2**, a satellite image of the Mississippi delta.

Figure 2



1 (b) (i) Draw a labelled sketch plan to show the characteristics of the Mississippi delta.



(4 marks)

Question 1 continues on the next page

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1 (b) (ii) Explain the formation of deltas.

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1 (c) Assess the relative importance of physical and human causes of river flooding.

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2 Cold Environments

2 (a) Study **Figure 3** which shows net mass balances for the Gulkana glacier in Alaska and the Greenland ice sheet.

Figure 3

Gulkana glacier, Alaska		Greenland ice sheet	
Year	Net mass balance (metres of water equivalent per year)	Year	Net mass balance (km ³ of ice)
1974	-1.09	1996	-90
1984	-0.31	2000	-150
1994	-0.59	2005	-220
2004	-2.29		

Describe the trends shown in **Figure 3**.

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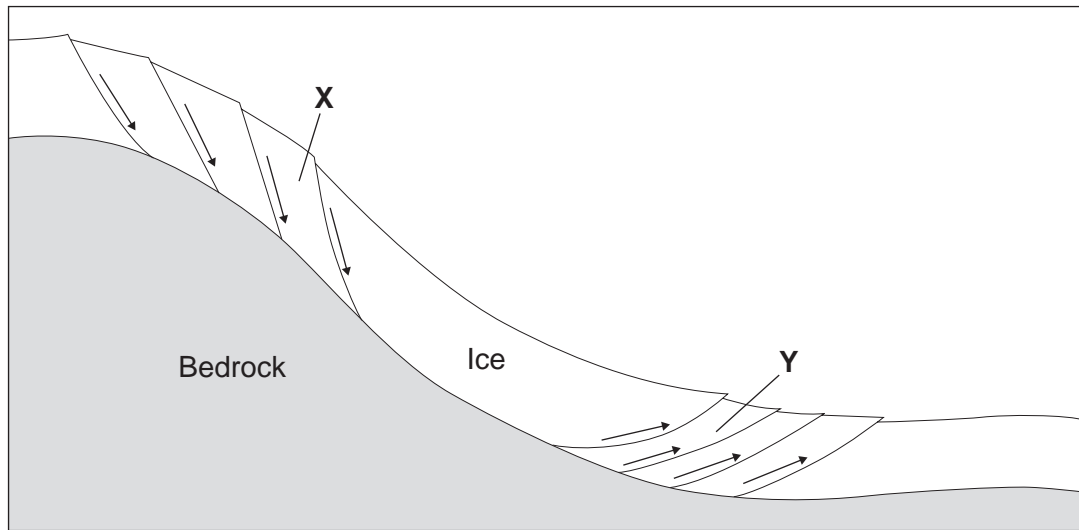
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2 (b) Study **Figure 4** which shows **two** types of ice movement.

Figure 4



2 (b) (i) Identify the types of movement shown at **X** and **Y**.

X

Y

(2 marks)

2 (b) (ii) Define the term 'internal deformation'.

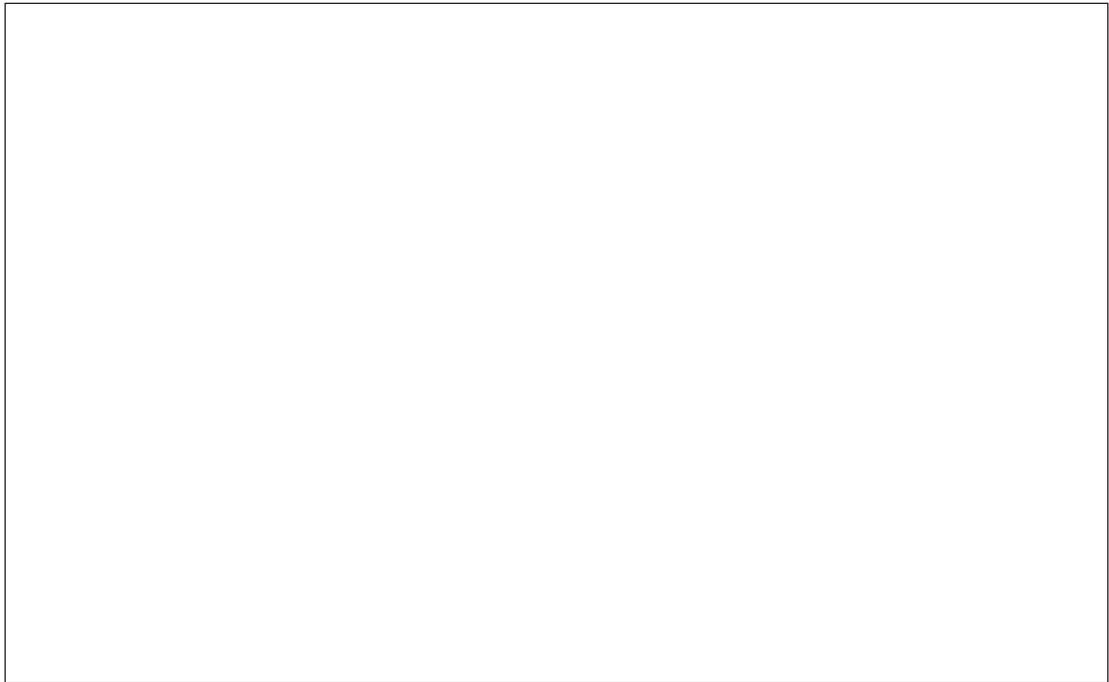
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2 (c)

Draw a labelled sketch to show characteristics of a pingo and suggest an explanation for its formation.



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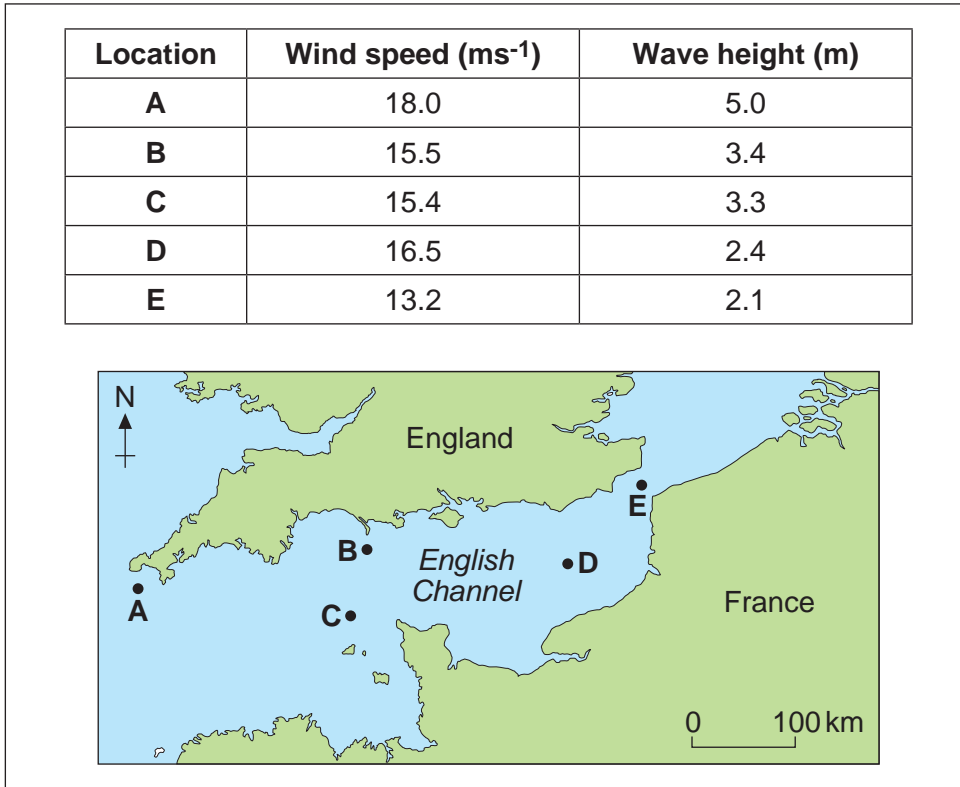
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3 Coastal Environments

3 (a) Study **Figure 5** which shows wind speed and wave height data for five sites in the English Channel.

Figure 5



Describe the relationships shown in **Figure 5**.

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3 (b) Study **Figures 6a** and **6b** which show the factors affecting tides.

Figure 6a

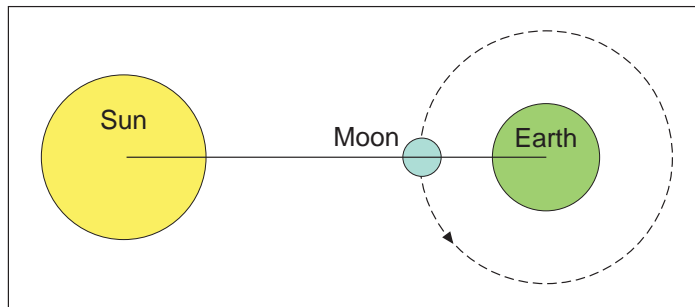
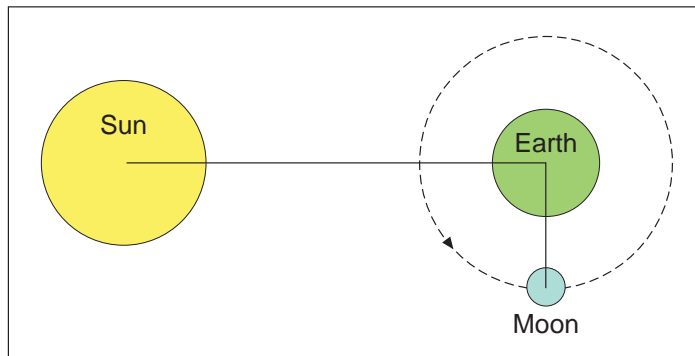


Figure 6b



3 (b) (i) Identify the types of tide associated with **Figures 6a** and **6b**.

Type of tide in **Figure 6a**

Type of tide in **Figure 6b**

(2 marks)

3 (b) (ii) Explain the contrast in the tidal ranges associated with **Figures 6a** and **6b**.

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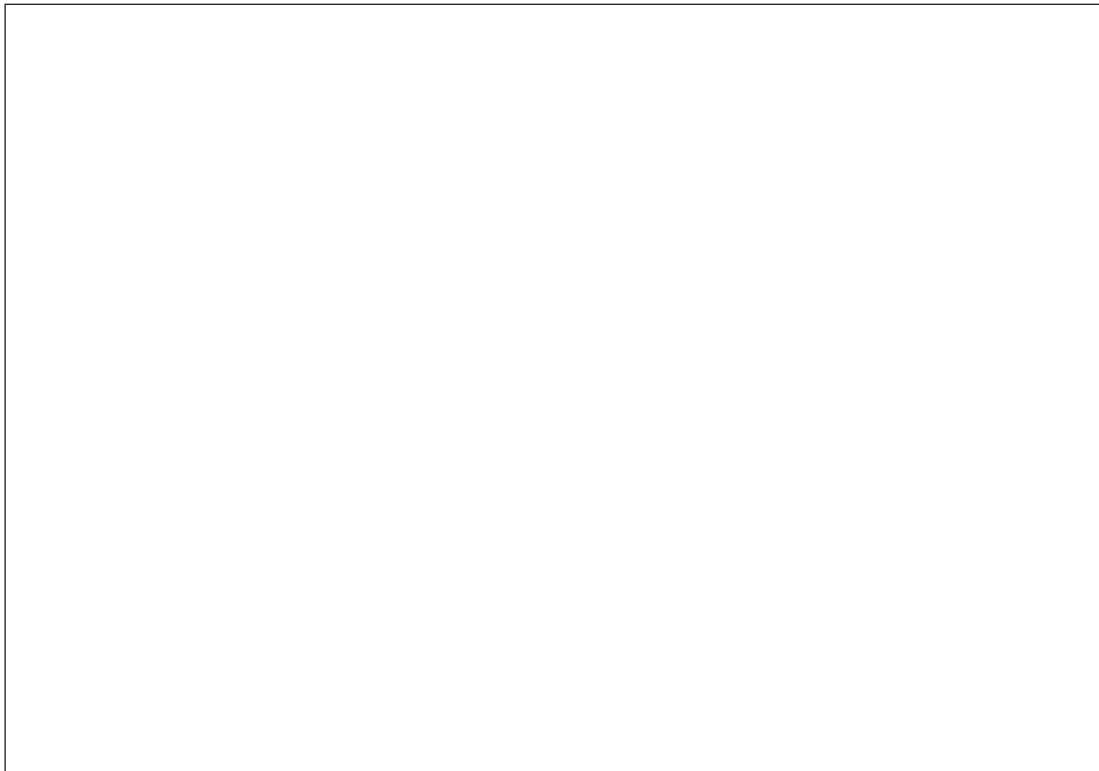
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3 (c)

Draw a labelled sketch to show characteristics of a wave-cut platform and explain its formation.



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3 (d) Discuss the impact(s) of rising sea levels on coastal environments.

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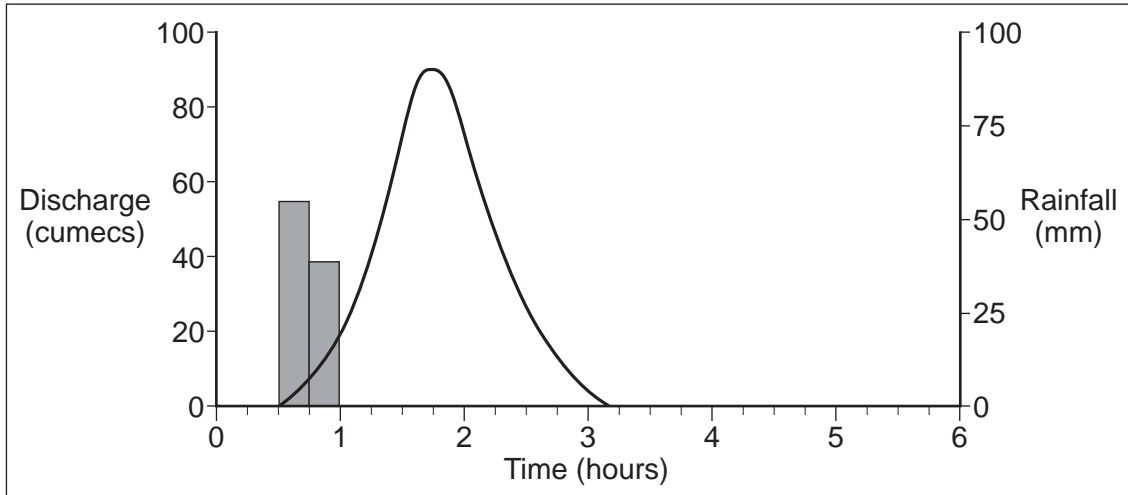
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4 Hot Desert Environments and their Margins

4 (a) Figure 7 shows a storm hydrograph in a wadi after a period of rain.

Figure 7



4 (a) (i) State the peak discharge and the lag time shown in **Figure 7**.

Peak discharge

Lag time

(2 marks)

4 (a) (ii) Suggest reason(s) for the flashy hydrograph shown in **Figure 7**.

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4 (b) Draw a labelled sketch to show characteristics of a wadi and explain its formation.



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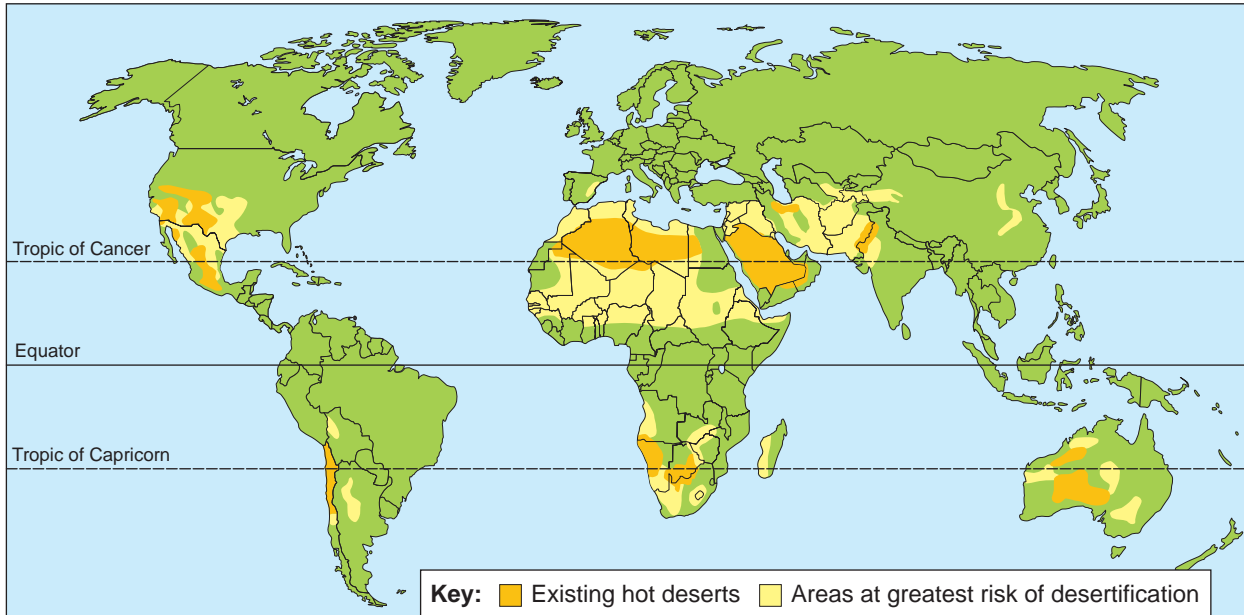
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4 (c) Study **Figure 8** which shows the distribution of the areas at greatest risk from desertification.

Figure 8



Describe the distribution of areas at greatest risk from desertification shown in **Figure 8**.

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End of Section A
Turn over for Section B

Turn over ►



Section B

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

5 Population Change

5 (a) Study **Figures 9a–9d** which show photographs of four different settlement areas.

Figure 9a
Inner city



Figure 9b
Suburban area



Figure 9c
Rural-urban fringe area



Figure 9d
Rural settlement



5 (a) (i) Choose **two** areas shown in **Figures 9a–9d**. Using only the photographs, contrast the characteristics of the **two** settlement areas chosen.

Areas chosen and

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5 (a) (ii) Suggest reasons for the contrasts described in (a)(i).

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5 (b) (i) Define 'infant mortality rate'.

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5 (b) (ii) Study **Figure 10** which shows selected population indicators for countries at different stages of development.

Figure 10

Country	Birth rate	Death rate	Natural change	Infant mortality rate
UK	13	9	0.4	4.6
Russia	12	15	-0.3	9.0
Brazil	17	6	1.1	24.0
China	12	7	0.5	21.0
India	23	7	1.6	55.0
Nigeria	41	15	2.6	75.0

Comment on the varying rates of natural change shown in **Figure 10**.

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6 Food Supply Issues

6 (a) Distinguish between intensive arable farming and extensive pastoral farming.

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6 (b) Study **Figure 11** which describes how appropriate technology is used to increase food production in the village of Oulata in south-east Mauritania (West Africa).

Figure 11

In south-eastern Mauritania, the village of Oulata managed to increase its population whilst surrounding areas were suffering huge levels of out-migration to the towns and cities. The installation of a series of solar panels has provided the power to pump rainwater-fed irrigation water to the village’s market garden. The garden has been divided into 60 plots for the poorest families to grow crops including tomatoes, watermelons, sugar beet and lettuce. The surplus is sold by a cooperative and the profits used to buy seeds and machinery. The garden has proved a lifeline for many families, enabling them to be self-sufficient in food production, halting the exodus to the urban centres and encouraging emigrants to move back home.



Using **Figure 11** and your own knowledge, summarise advantages of appropriate technology in increasing food production.

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6 (c) Comment on the success of genetic modification in increasing food production.

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6 (d)

Discuss environmental impacts of the global trade in foodstuffs.

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7 Energy Issues

7 (a) Distinguish between primary and secondary energy.

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7 (b) Comment on the primary energy mix of a named country.

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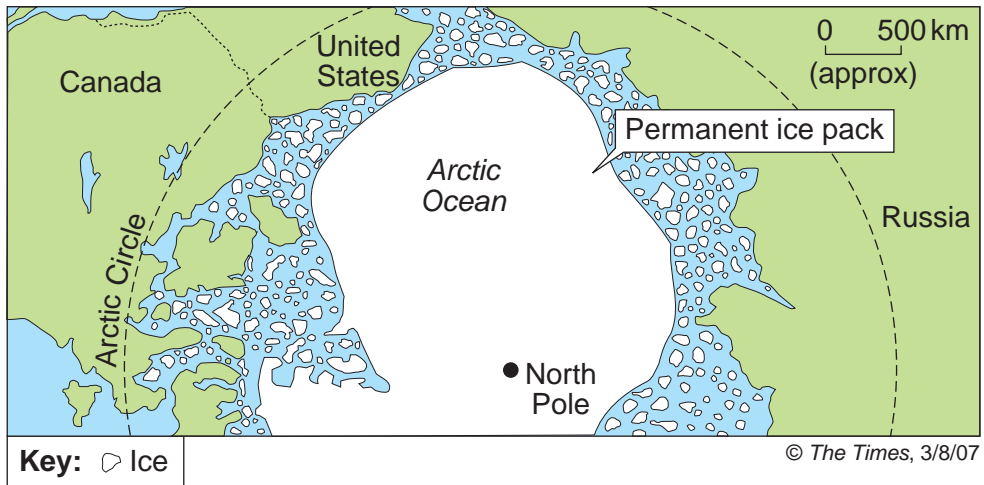
7 (c) Study **Figure 12** which is a newspaper extract about oil exploration in the Arctic.

Figure 12

Mineral war begins as Russians plant flag 4 km beneath Pole

Russia planted a rust-proof titanium flag on the seabed beneath the North Pole yesterday, marking the start of a new global struggle to claim the vast mineral wealth of the Arctic Ocean.

Estimates suggest that the area to which Russia is laying claim contains billions of tonnes of oil and gas reserves as well as other minerals.



Describe how **Figure 12** illustrates conflict in world energy affairs.

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8 Health Issues

8 (a) Distinguish between mortality and morbidity.

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8 (b) Study **Figure 13** which shows the ten best and ten worst parliamentary constituencies for an index of limiting long-term illness for people under the age of 65. The UK average is 63.3.

Figure 13

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Comment on the data shown in **Figure 13**.

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8 (c) Summarise the impact of **one** non-communicable disease on the health and lifestyle of the people affected.

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8 (d) Discuss causes and consequences of periodic famine.

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END OF QUESTIONS

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Greenland Ice Sheet: 'What's happening to the Greenland ice sheet?' Geography Review, Vol 23, No.1, Sep 2009, Philip Allan Updates. Reproduced by permission of Philip Allan Updates
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- Figure 13: Bristol University

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