Centre Number						Candidate Number				
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For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
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6	
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8	
TOTAL	

General Certificate of Education
Advanced Subsidiary Examination
June 2015

Geography GEOG1

Unit 1 Physical and Human Geography

Tuesday 12 May 2015 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

A

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.

There are no questions printed on this page

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Section A

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

1 Rivers, Floods and Management

1 (a) (i) What is meant by a drainage basin?

[2 marks]

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1 (a) (ii) Outline how water is lost from a river channel in a drainage basin.

[3 marks]

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Question 1 continues on the next page

1 (b) **Figure 1** is a photograph of part of the River Skirfare, a tributary of the River Wharfe in North Yorkshire.

Figure 1

1 (b) (i) Describe the fluvial (river) landforms shown in **Figure 1**.

[4 marks]

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1 (b) (ii) With the help of a diagram(s), explain the formation of the meander shown in **Figure 1**.

[6 marks]

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Question 1 continues on the next page

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1 (c) Describe how and explain why river long profiles and valley cross profiles change downstream.

[15 marks]

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Turn over for the next question

2 Cold Environments

2 (a) **Figure 2** is a photograph of a glacial landscape in Vatnajökull, Iceland.

Figure 2

Describe the glacier shown in **Figure 2**.

[4 marks]

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2 (b) (i) Draw a labelled diagram to show the location of different types of moraine.

[4 marks]

Question 2 continues on the next page

2 (b) (ii) Explain the formation of different types of moraine.

[7 marks]

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2 (c) Describe **two** periglacial landforms (such as nivation hollows, ice wedges, patterned ground, pingos and solifluction lobes) and explain their formation.

[15 marks]

Question 2 continues on the next page

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3 Coastal Environments

3 (a) Draw a labelled diagram to describe the characteristics of **one** landform associated with a coastline of submergence (such as a fjord or ria).

[4 marks]

3 (b) (i) With reference to **one** case study, describe the cause(s) of coastal flooding.

[4 marks]

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Question 3 continues on the next page

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3 (b) (ii) **Figure 3** is an extract from a geographical publication about the Japanese tsunami in March 2011.

Figure 3

The tsunami was concentrated on a limited stretch of coastline around Sendai. Whole settlements on the coast were simply erased in a few moments, as water flowed 10 km inland. Sendai Airport became unusable within minutes, limiting future aid accessibility.

Within 10 days of the earthquake, an estimated 452,000 people were living in evacuation facilities, most of which were inadequate. This led to huge numbers suffering from hypothermia. Often damp from floodwater, people had to cope with the bitter cold with a few blankets if they were lucky. People were scavenging in the streets to try to find food for their families. They took waste food from the supermarkets even though there were health risks from thawed frozen and out of date products.

Japan's disaster in figures:

- 15 676 deaths, 5712 injured and 4832 missing
- victims aged 60 or older accounted for 65.2% of the deaths
- 45 700 buildings destroyed and 144 300 damaged
- around 1.5 million households without water supplies.

Comment on different consequences of coastal flooding identified in **Figure 3**.

[7 marks]

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Question 3 continues on the next page

3 (c) Explain how **two** hard engineering strategies (such as sea walls, revetments, rip rap, gabions, groynes and barrages) protect the coast and assess the effectiveness of each strategy.

[15 marks]

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Turn over for the next question

4 **Hot Desert Environments and their Margins**

4 (a) Describe the climate of hot desert environments.

[4 marks]

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Question 4 continues on the next page

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4 (b) **Figure 4** is a photograph of part of the Grand Canyon, Arizona, USA.

Figure 4

4 (b) (i) Draw a labelled sketch to describe the landforms shown in **Figure 4**.

[4 marks]

4 (b) (ii) Comment on the role of water in hot desert areas, such as that shown in **Figure 4**.

[7 marks]

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Question 4 continues on the next page

4 (c) 'Life in the Sahel need not be a struggle for survival; management strategies give hope for a better future'. To what extent do you agree with this statement?

[15 marks]

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End of Section A

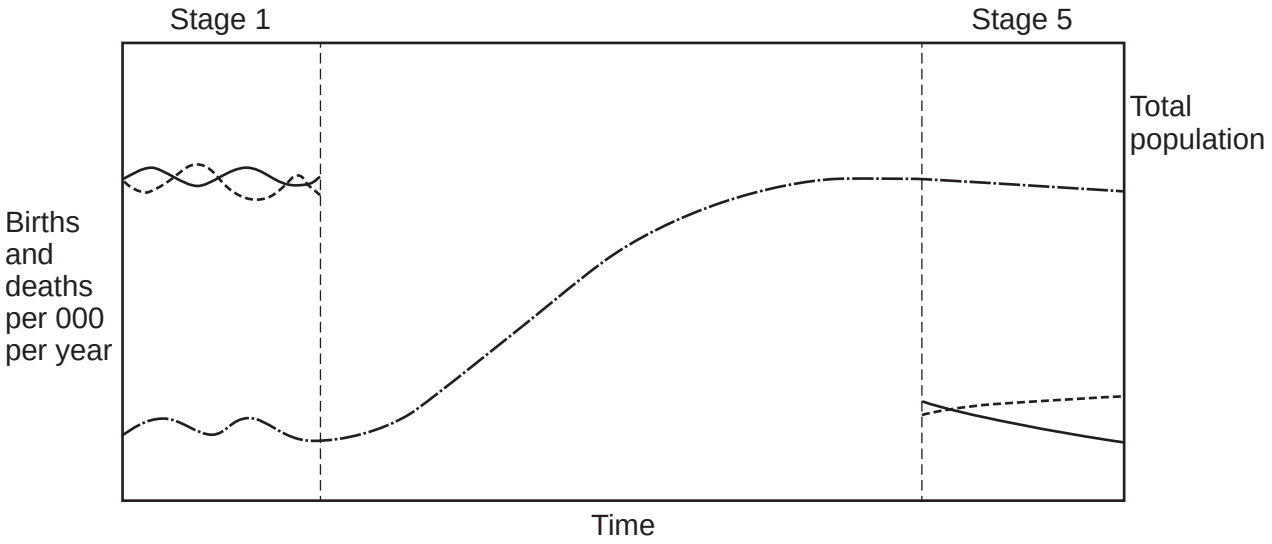
Section B

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

5 Population Change

5 (a) **Figure 5** is a partly completed diagram showing the demographic transition model.

Figure 5



5 (a) (i) Complete the birth rate and death rate for stages 2, 3 and 4 on **Figure 5**.

[3 marks]

5 (a) (ii) Add two vertical lines that identify the changes in the stages in **Figure 5**.

[2 marks]

Question 5 continues on the next page

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5 (b) **Figure 6** is a table of information showing selected population indicators and a development indicator.

Figure 6

Country	Birth rate 2004	Birth rate 2012	Death rate 2004	Death rate 2012	*GNI per capita 2010 (US$)
Burkina Faso	45	43	19	12	1250
India	25	22	8	7	3400
Brazil	20	16	7	6	11 000
Botswana	27	26	26	14	13 700
United Kingdom	12	13	10	9	35 840
Germany	9	8	10	10	38 100

*GNI (Gross National Income) is a measure of wealth.

5 (b) (i) What stage of the demographic transition model was Germany in between 2004 and 2012? Justify your choice.

[3 marks]

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5 (b) (ii) Comment on the extent to which the demographic transition model can be applied to countries at different levels of development shown in **Figure 6**.

[7 marks]

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Question 5 continues on the next page

5 (c) Discuss the impact of migration on national population structure and implications for the balance between population and resources.

[15 marks]

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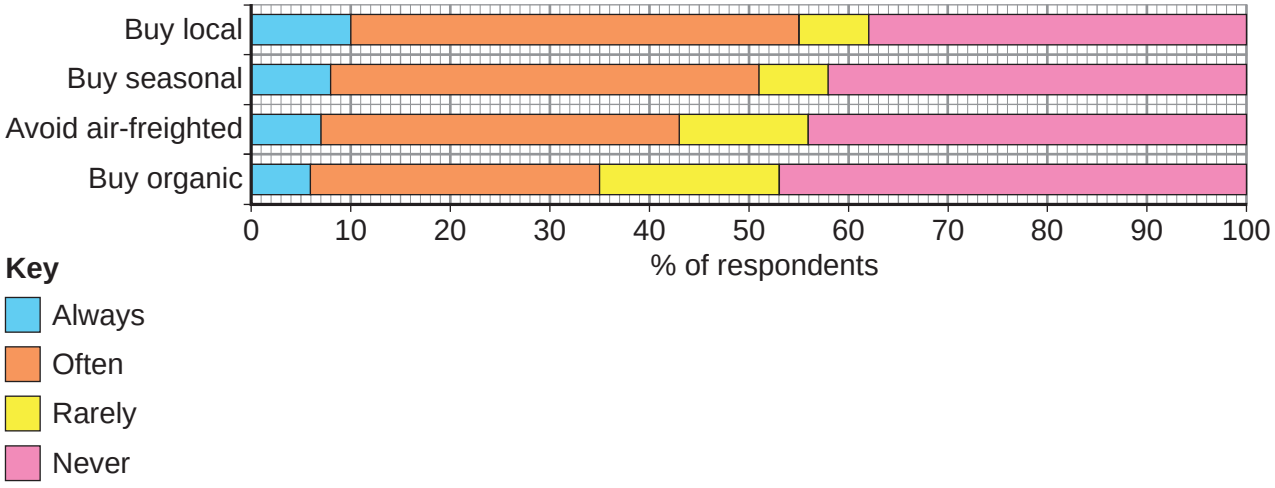
Turn over for the next question

6 Food Supply Issues

6 (a) A survey was conducted outside supermarkets and at farmers' markets in Oxfordshire in July 2007. In relation to concern about climate change, 400 people were asked how often this influenced their decision to buy local, seasonal, air-freighted or organic produce.

Figure 7 is a graph showing the results of the survey.

Figure 7



Summarise information shown in **Figure 7**.

[4 marks]

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6 (b) **Figure 8** is an extract from a geographical magazine about local food.

Figure 8

Eat local?

A small number of large companies dominate food sales in the UK and source their product ranges globally. Now, the UK's major food retailers are taking a growing interest in locally sourced food.

What is 'local food'?

The term 'local food' suggests that it is produced within a narrow geographical area, but in fact there is no agreed definition. Some organisations have tried to define 'local' in terms of the distance between producers and consumers. The National Association of Farmers' Markets, for example, suggests that a producer must be located within a 50 km radius of the market to be classed as local. London Farmers' Markets states that to be accredited as local, produce must be raised, grown, made, caught or baked within 160 km of the M25.

Wider and more qualitative definitions suggest that 'local food' is not just about the geographical distance between producers and consumers, but fulfils a number of conditions to do with environment, animal welfare, employment, fair trading, producer profitability and culture.

Outline the issue(s) about the definition of 'local' in **Figure 8**.

[5 marks]

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6 (c) Explain how subsidies and tariffs can be used to control the level and nature of food production in the EU.

[6 marks]

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6 (d) 'Transnational corporations make only a positive contribution to global food supply'. To what extent do you agree with this view?

[15 marks]

Question 6 continues on the next page

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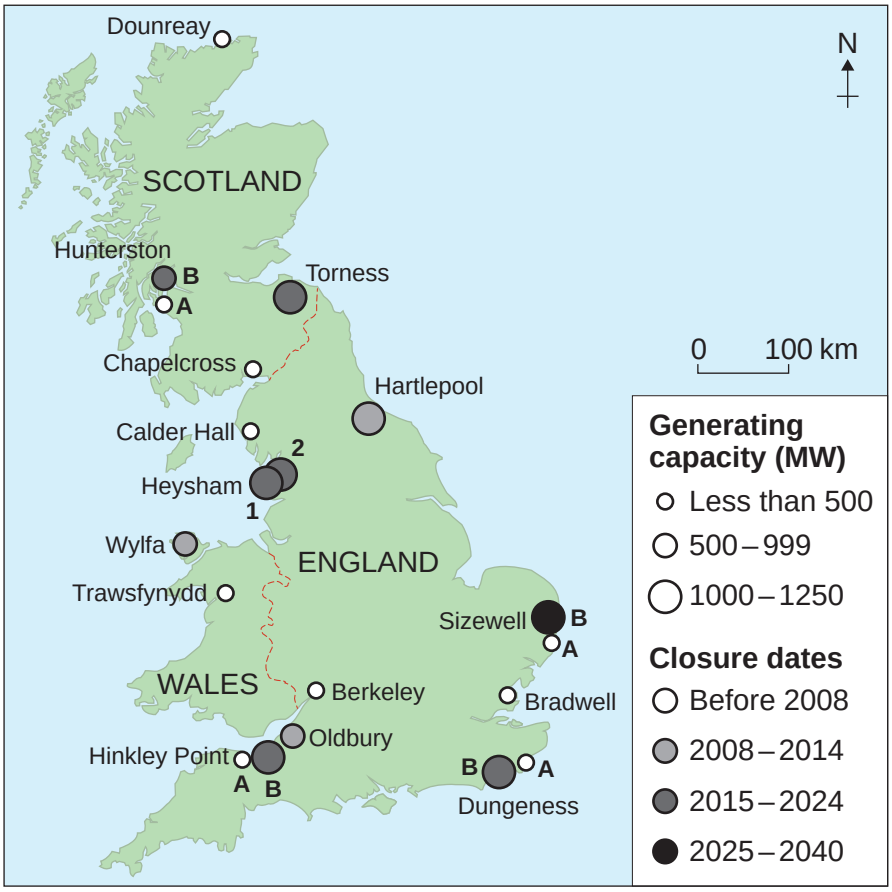
7 Energy Issues

7 (a) **Figure 9** is a map showing nuclear power stations in Great Britain in 2011.

Figure 9



Describe the pattern shown in **Figure 9**.

[4 marks]

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7 (b) **Figure 10** is an extract from a geographical magazine about the Fukushima Daiichi nuclear plant in Japan, March 2011.

Figure 10

The Fukushima Daiichi nuclear plant, 240 km north-east of Tokyo, is one of the 15 largest nuclear power stations in the world. Following the earthquake and tsunami, partial nuclear meltdown and a number of explosions occurred in its three operational boiling water reactors.

The magnitude 9.0 earthquake caused the Fukushima reactors to shut down automatically when their motion sensors felt tremors but the multiple cooling systems required to remove residual heat from the core failed. The station was designed in 1971 and lacked up-to-date technology that might have kept water flowing.

The tsunami that followed the earthquake then knocked out the back-up diesel generators. These were designed as a last measure to keep cool water pumping. The failure of the cooling systems meant that the uranium heat elements over-heated, with disastrous effects. The explosions led to extensive air, ground and water pollution. A 20 km exclusion zone was imposed, resulting in the forced migration of 70 000 people.

Comment on the issue(s) associated with nuclear power raised in **Figure 10**.

[5 marks]

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7 (c) Explain why fossil fuels may become exhausted.

[6 marks]

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7 (d) 'Transnational corporations have a key role in world energy production and distribution'. To what extent do you agree with this view?

[15 marks]

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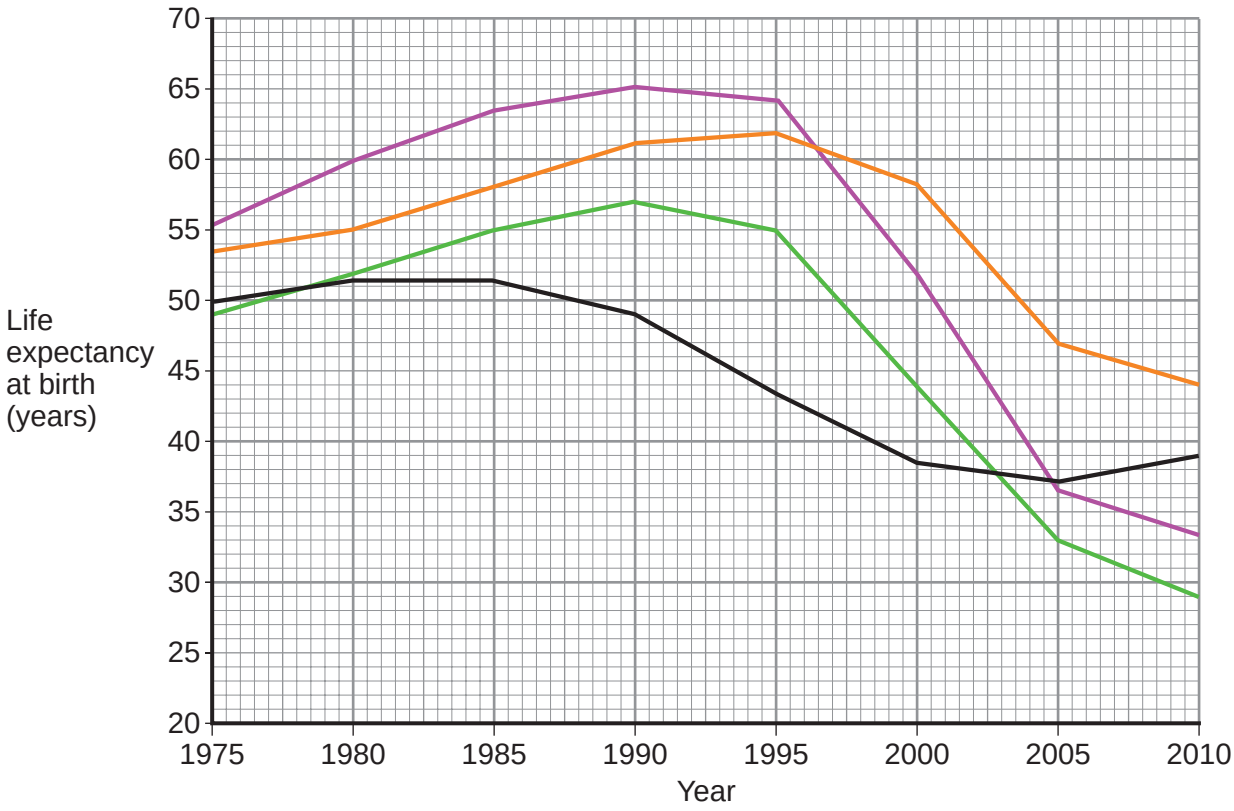
Turn over for the next question

8 **Health Issues**

8 (a) **Figure 11** is a graph showing life expectancy in four African countries affected by HIV.

Figure 11



Summarise trends shown in **Figure 11**.

[4 marks]

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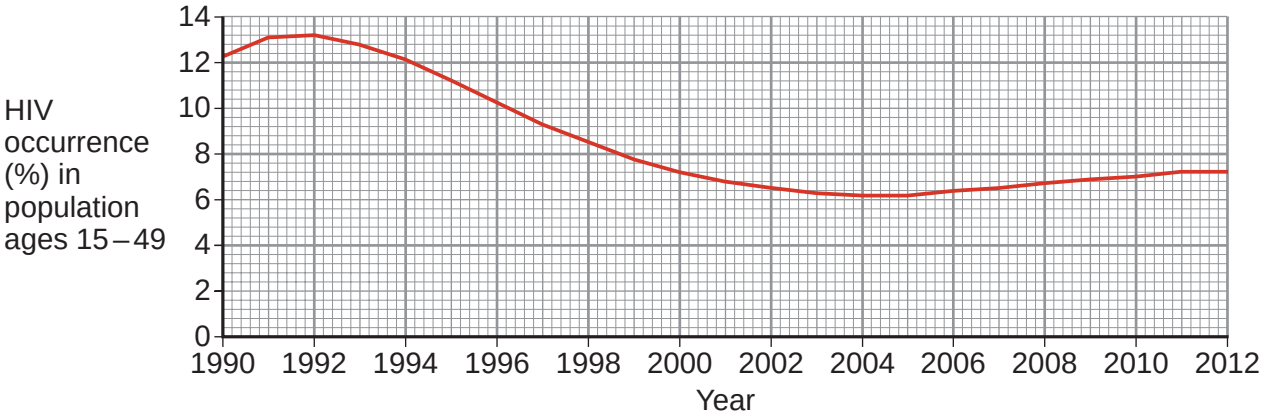
8 (b) **Figure 12** is a graph showing the occurrence of HIV in Uganda, Africa.

Figure 12



Comment on the occurrence of HIV in Uganda shown in **Figure 12**.

[5 marks]

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8 (c) Explain why there are regional variations in health in the UK.

[6 marks]

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8 (d) 'Tobacco transnationals have a positive as well as negative role to play in health matters in a globalising world economy.' Discuss this view.

[15 marks]

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END OF QUESTIONS

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Figure 6: World Population Data Sheets 2004 and 2012, Population Reference Bureau: www.prb.org

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Figure 11: Reproduced by permission of Philip Allan (for Hodder Education), Figure 4: The impact of HIV/AIDS on life expectancy of five African countries, 1970-2010, Geography Review, November 2011.

Figure 12: Reproduced by permission of The World Bank, World Development Indicators, September 2014.