



**11<sup>th</sup> International Geography Olympiad**

**Krakow, Poland**

**12–18 August 2014**

## **Written Response Test**

### **Resource Booklet**

**Do NOT open the Booklet before instructed to do so by a supervisor.**

**Your answers will NOT be marked if you write them in this Resource Booklet.**

## Section A: Geology and Coastal Landforms

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Figure A1: The rock cycle (rock formation).  
source: *Science Photo Library*

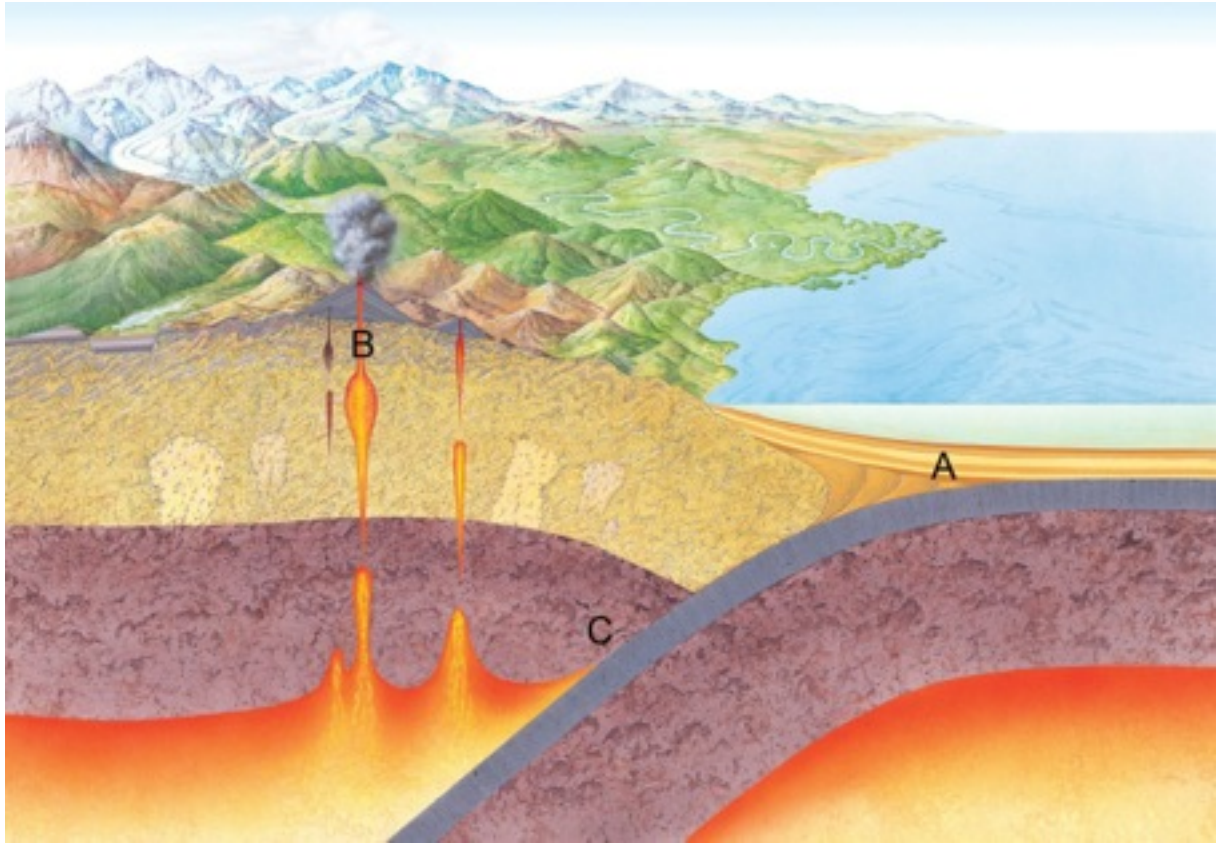


Figure A2: A rocky coast.  
source: *Dubravka Spevec*





## Section B: Forest Resources

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Figures B1: Three types of forest.  
source: <http://thehungergames.wikia.com/wiki/File...>



source: *Dubravka Spevec*

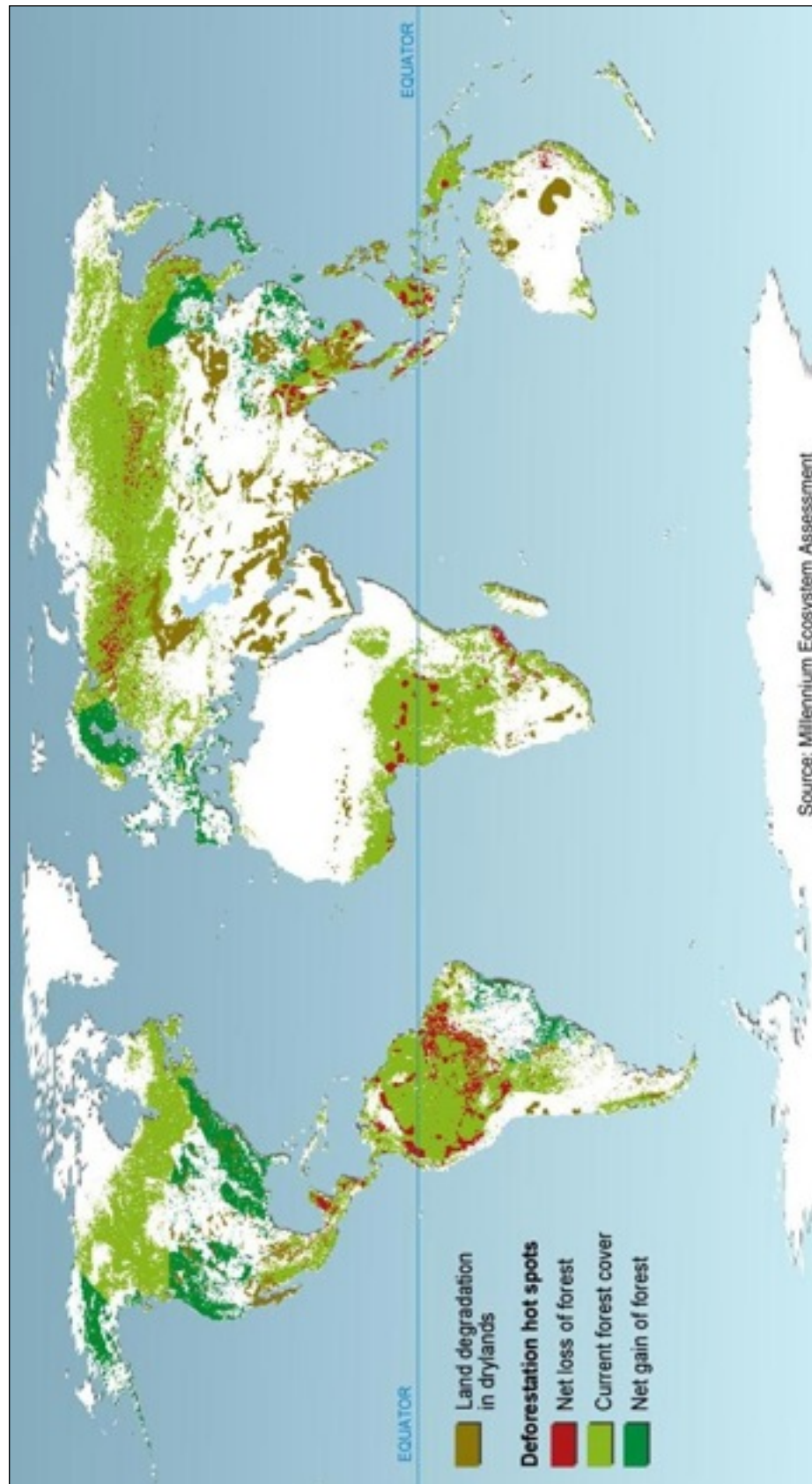


source: <http://wallchan.com/wallpaper/67417/download>





Figure B2: Global forest ecosystem change, 2005.  
source: UN – *The Millennium Ecosystem Assessment*



## Section C: Global Ecological Footprint

Figure C1: Ecological footprint by component, 1961–2007.  
source: *Living Planet Report 2010*: 34

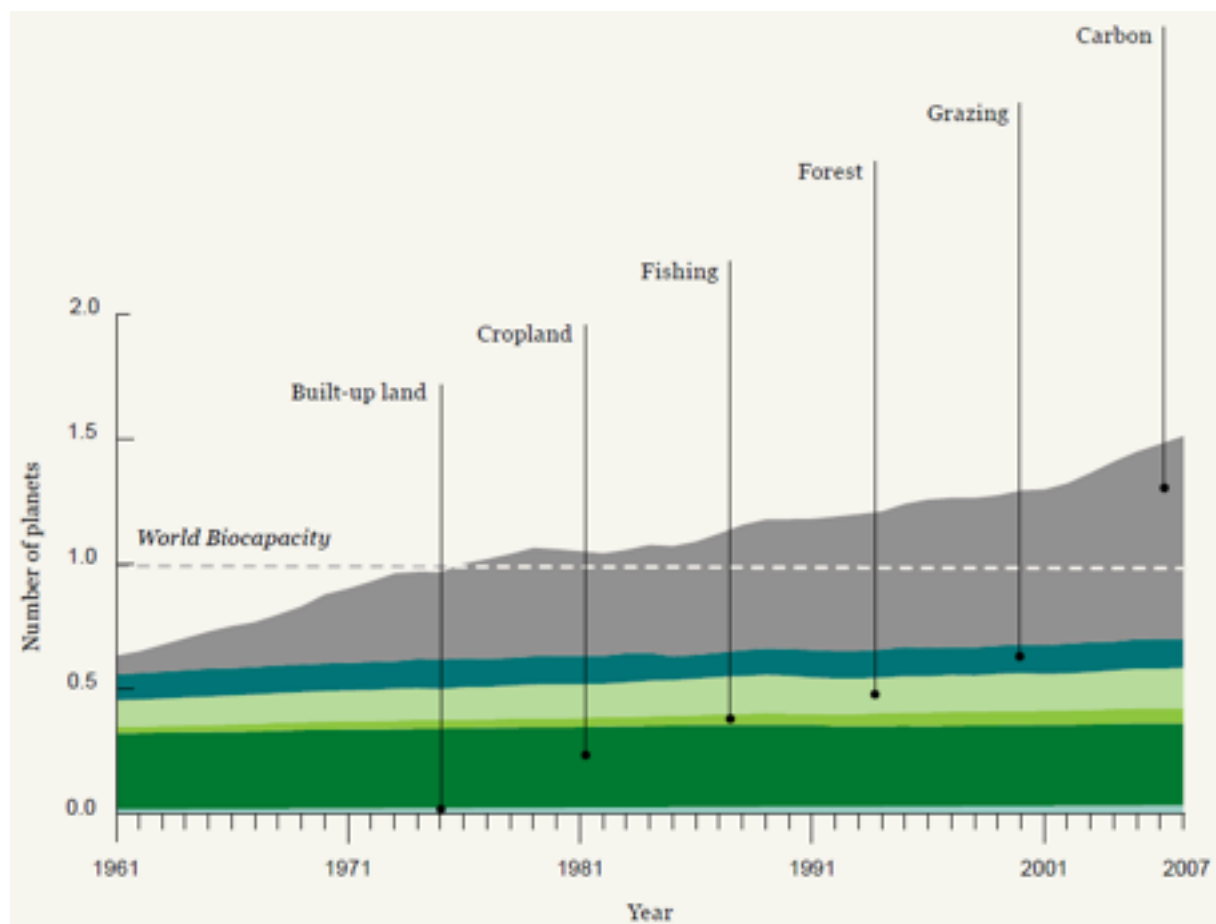


Figure C2: Composition of low, middle and high income countries' ecological footprint per capita, 1961–2007.

source: *Ecological Footprint Atlas 2010*: 27

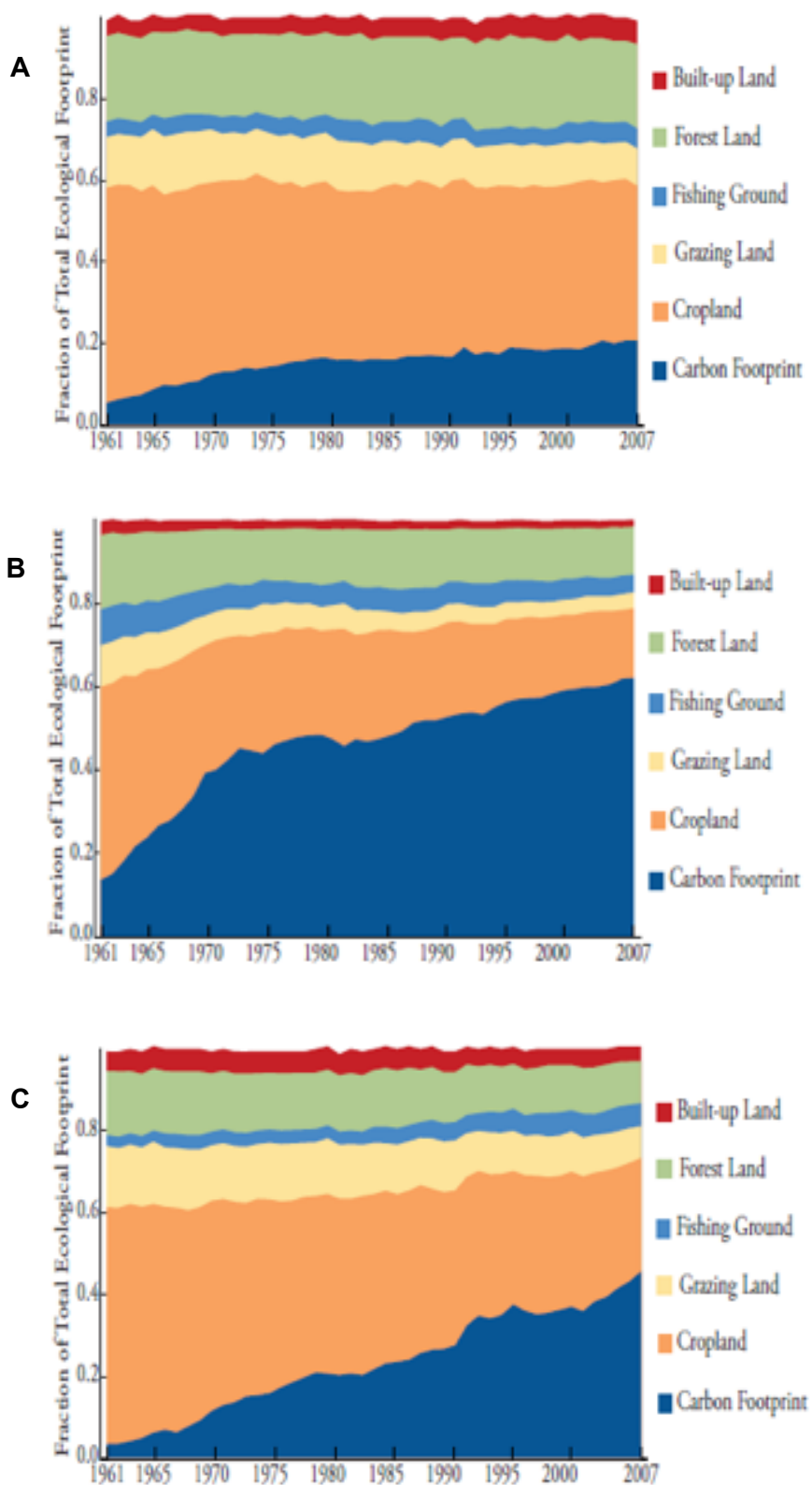
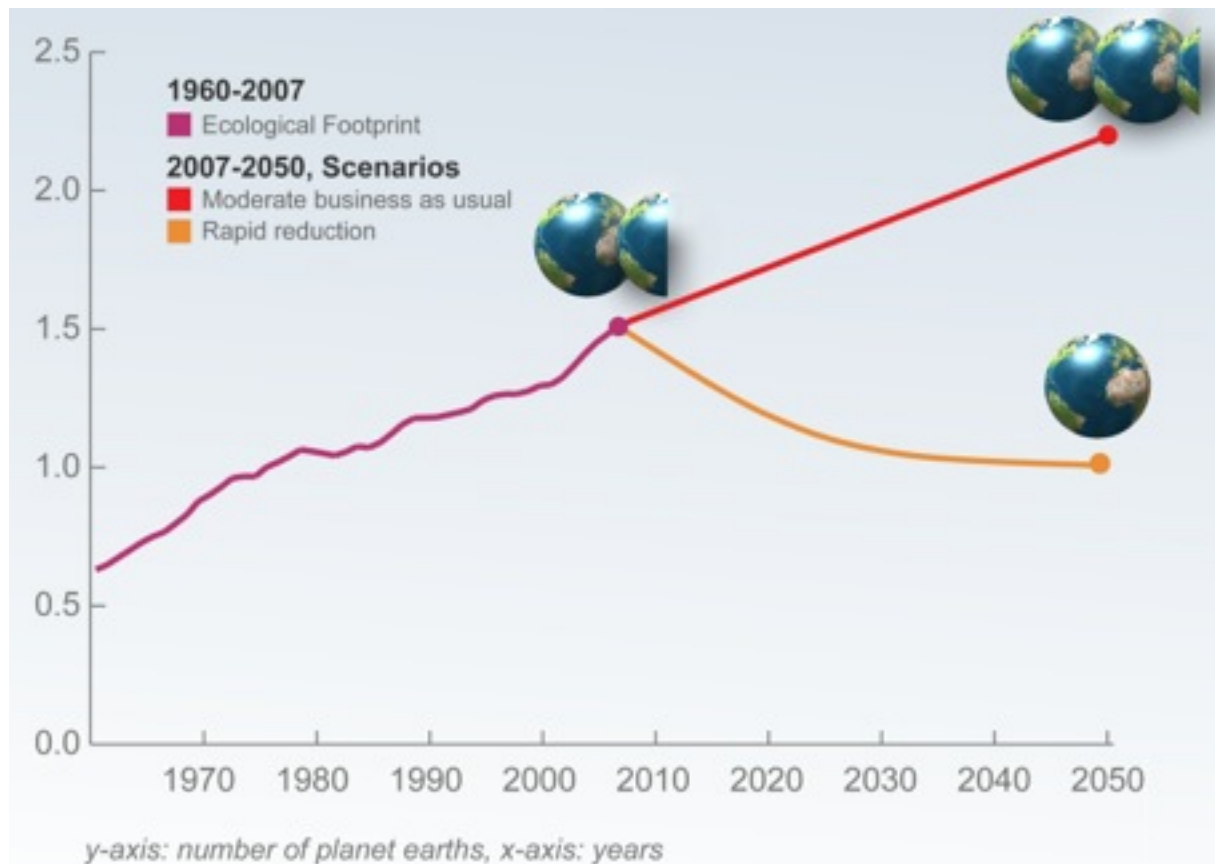




Figure C3: Number of planets scenarios, 2007.  
source: [http://www.footprintnetwork.org/en/index.php/GFN/page/world\\_footprint](http://www.footprintnetwork.org/en/index.php/GFN/page/world_footprint)



## Section D: Impacts of Global Warming

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Figure D1: The height of land above sea level in Bangladesh.  
*source: Pearson Education 2014*

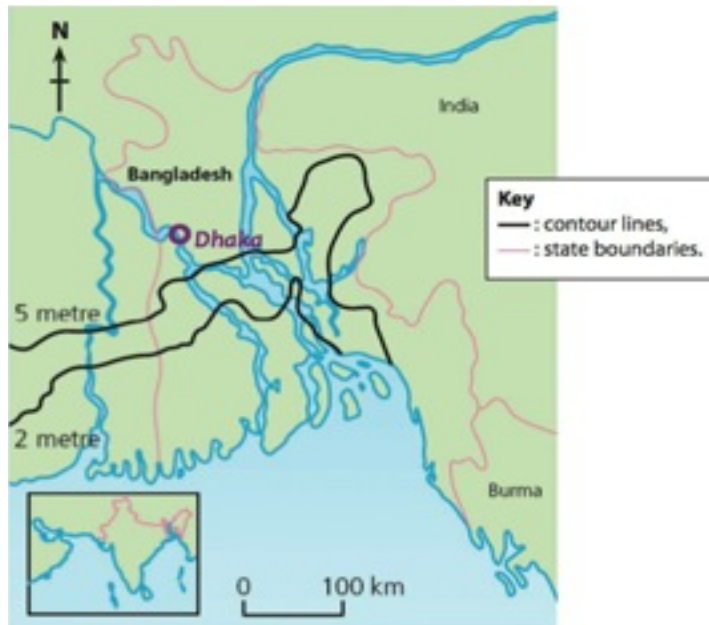


Figure D2: Solar-powered floating boat school in Bangladesh.  
*source: Pearson Education*

## Section E: Population and Health

Figure E1: Life expectancy in high and low income countries, 2004–2012.  
source: World Bank

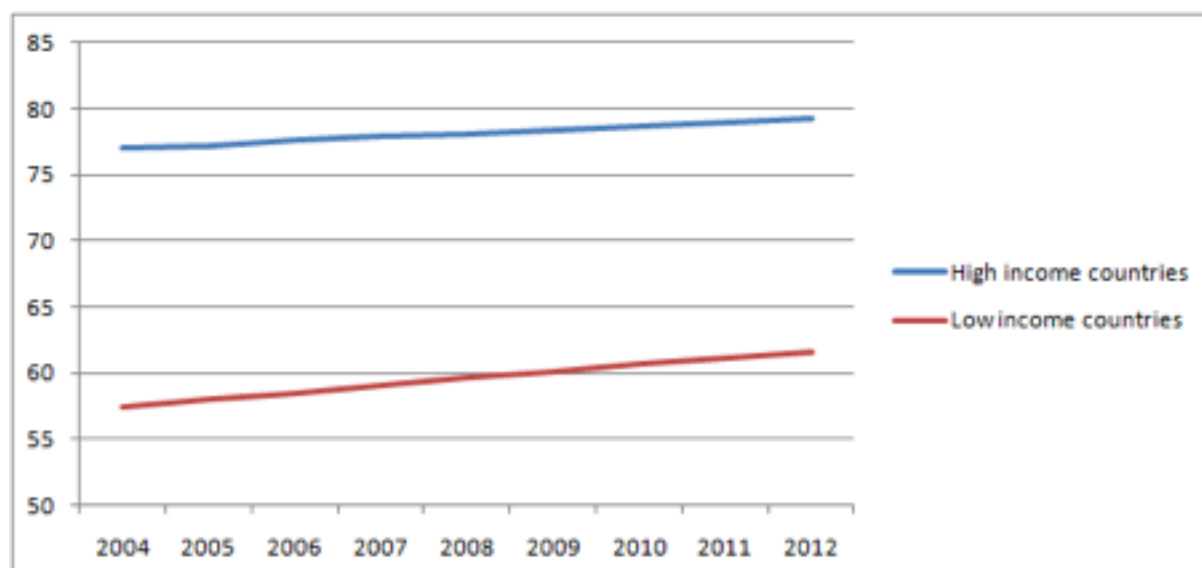


Figure E2: Cancer incidence in Asia, 2008.  
source: Cancer Research UK

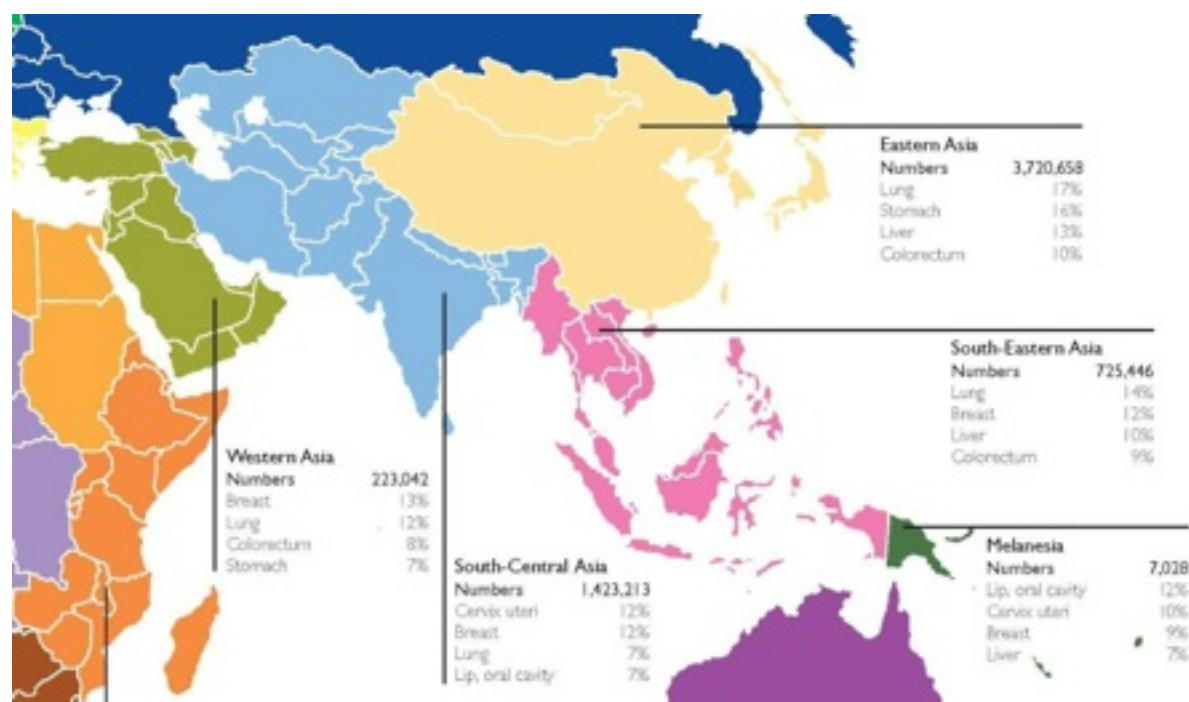




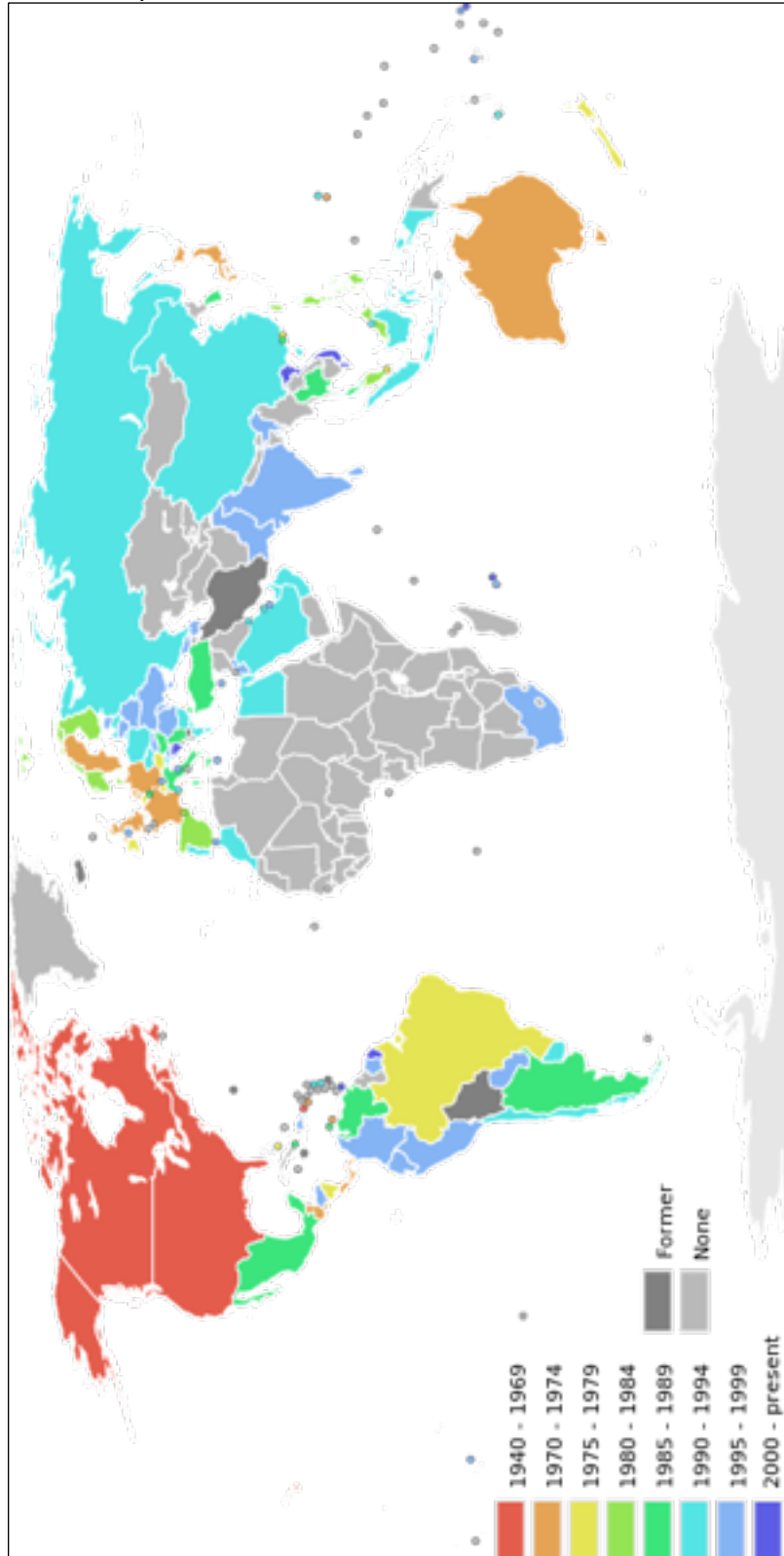
Figure E3: Malaria incidence.

This map is unavailable for display on a public website.

## Section F: Globalisation and Transnational Corporations (TNCs)

Figure F1: Distribution of McDonald's Restaurants, 1940–2007.

source: <http://www.i-nomad.net/2011/02/40-countries-which-are-safe-to-visit.html>





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## **Written Response Test**

### **Question and Answer Booklet**

**Do NOT open the Booklet before instructed to do so by a supervisor.**

**Name:** ..... **Team:** .....

**Student number:** .....





## Instructions for the Students

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1. Fill in your name, team and iGeo student number on the front page of this Question and Answer Booklet.
2. Fill in your iGeo student number in the boxes on top of the pages in this Booklet.
3. This test consists of 6 Sections.
4. The maximum total mark is 90.  
The mark for each question is given in the margin at the beginning of the question.  
There are a maximum of 15 marks for each Section.
5. Answer all questions in the spaces provided in this Booklet.
6. Check the backs of pages as questions are printed on both sides of a page.
7. Give only the required number of answers (reasons, examples, etc.).  
For instance, if the question asks for 2 reasons and you give more than 2, only the first 2 reasons will be marked.
8. The Resource Booklet contains Sources referred to in this Booklet.
9. You may use a calculator during the test.
10. Time: 180 minutes for students not educated in English,  
150 minutes for students educated in English.
11. Students not educated in English are allowed to use bilingual dictionaries during the test.

**Good luck!**





## Section A: Geology and Coastal Landforms

6m

1. Study Resource Booklet Figure A1: The rock cycle (rock formation).

Fill in the table:

- a) Describe the processes occurring at stages A, B and C of the rock cycle;  
b) Name the rock type formed at each stage and give an example.

| Stage | Process | Rock type and example      |
|-------|---------|----------------------------|
| A     |         | Rock type:<br><br>Example: |
| B     |         | Rock type:<br><br>Example: |
| C     |         | Rock type:<br><br>Example: |

5m

2. Study Resource Booklet Figure A2: A rocky coast.

Choose 2 features of the coastline and explain in detail how natural processes are shaping them.

Feature 1: .....

Natural processes: .....

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Feature 2: .....

Natural processes: .....

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4m

3. Draw an annotated diagram or set of diagrams to show how a delta is formed.

## Section B: Forest Resources

2m

1. Explain how people can benefit from forests (other than wood as a raw material).

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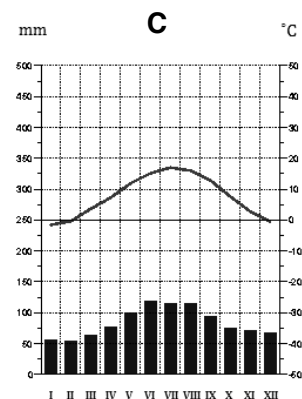
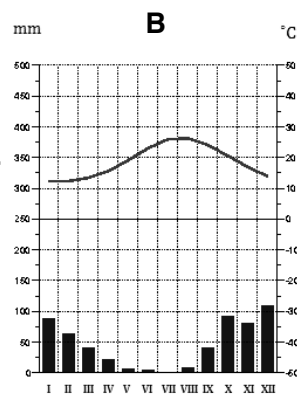
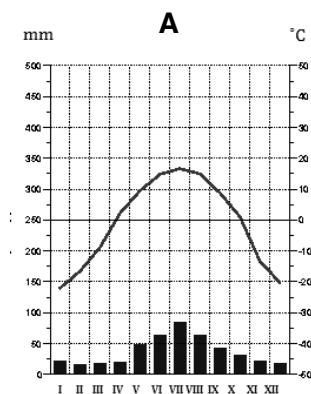
3m

2. Study Resource Booklet Figures B1: Three types of forest.

Fill in the table:

- a) Name the types of forest;
- b) Match each type of forest to the climate graph (A, B and C).

|                |  |   |  |
|----------------|--|---|--|
|                |  |  |  |
| Type of forest |  |   |  |
| Climate graph  |  |   |  |



Climate graphs of 3 locations

source: <http://www.klimadiagramme.de>

2m

3. Study Resource Booklet Figure B2: Global forest ecosystem change, 2005.  
Name the 2 main types of forest in which there is a net loss.

Type 1: .....

Type 2: .....

3m

4. Give 3 reasons for the loss of forest worldwide.

Reason 1: .....

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Reason 2: .....

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Reason 3: .....

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This Section continues on the next page.

5m

5. Study Table B1 below: World forest cover in 2010 by geographical regions (source: FAO, 2013).

| Geographical region              | % of world forests | Forest structure (%) |                       |            |
|----------------------------------|--------------------|----------------------|-----------------------|------------|
|                                  |                    | natural              | naturally regenerated | planted    |
| Africa                           | 16.7               | 9.6                  | 87.4                  | 3          |
| Latin America                    | 23.7               | 73.1                 | 24.9                  | 2          |
| Angloamerica                     | 15.2               | 39.2                 | 55.2                  | 5.6        |
| Asia                             | 14.7               | 18.6                 | 60.7                  | 20.7       |
| Europe (with Russian Federation) | 24.9               | 26.2                 | 66.9                  | 6.9        |
| Australia and Oceania            | 4.7                | 18.6                 | 79.3                  | 2.1        |
| <b>WORLD</b>                     | <b>100.0</b>       | <b>35.7</b>          | <b>57.3</b>           | <b>6.9</b> |

- a) Which geographical region has the largest percentage of forest that has been reforested?

Outline 2 reasons for your choice.

Region: .....

Reason 1: .....

.....

.....

Reason 2: .....

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- b) Which geographical region has the smallest percentage of forest that has been reforested?

Outline 2 reasons for your choice.

Region: .....

Reason 1: .....

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Reason 2: .....

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## Section C: Global Ecological Footprint

1m

1. Study Resource Booklet Figure C1: Ecological footprint by component, 1961–2007.  
In which year was world biocapacity exceeded?

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2m

2. Outline the trends of the global ecological footprint as shown in Figure C1.

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3m

3. Study Resource Booklet Figure C2: Composition of low, middle and high income countries' ecological footprint per capita, 1961–2007.  
Identify which of the graphs A, B or C represents high income countries.  
Justify your choice with 2 reasons.

High income countries are represented by graph: .....

Reason 1: .....

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Reason 2: .....

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3m

4. Explain how the economic recession that started in 2007 could have affected the ecological footprint of the 3 different income economies.

Low income countries: .....

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Middle income countries: .....

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High income countries: .....

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1m

5. Study Table C1 below: Ecological footprint and biocapacity, 2007 (source: National Footprint Accounts 2010 edition).

Fill in the blank highlighted spaces in Table C1.

| Countries                | Population<br>(million) | Ecological footprint<br>(global hectares<br>per capita) | Biocapacity<br>(global hectares<br>per capita) | Ecological deficit or<br>reserve |
|--------------------------|-------------------------|---|--|----------------------------------|
| South Africa             | 49.173                  | 2.3   | 1.1  | -1.2                             |
| Tunisia                  | 10.069                  | 1.9   | 1  | -0.9                             |
| Zambia                   | 12.314                  | 0.9   | 2.3  | 1.3                              |
| China                    | 1,336.551               | 2.2   | 1  | -1.2                             |
| India                    | 1,164.67                | 0.9   | 0.5  | -0.4                             |
| Japan                    | 127.396                 | 4.7   | 0.6  | -4.1                             |
| Mongolia                 | 2.611                   | 5.5   | 15.1   |                                  |
| Saudi Arabia             | 24.68                   | 5.1   | 0.8  | -4.3                             |
| United Arab Emirates     | 6.248                   | 10.7  | 0.8  |                                  |
| Germany                  | 82.343                  | 5.1   | 1.9  | -3.2                             |
| Netherlands              | 16.46                   | 6.2   | 1  | -5.2                             |
| Russian Federation       | 141.941                 | 4.4   | 5.7  | 1.3                              |
| United Kingdom           | 61.129                  | 4.9   | 1.3  | -3.6                             |
| Argentina                | 39.49                   | 2.6   | 7.5  | 4.9                              |
| Brazil                   | 190.12                  | 2.9   | 9  |                                  |
| Mexico                   | 107.487                 | 3   | 1.5  | -1.5                             |
| United States of America | 308.674                 | 8   | 3.9  | -4.1                             |
| Australia                | 20.854                  | 6.8   | 14.7   | 7.9                              |
| New Zealand              | 4.193                   | 4.9   | 10.8   | 5.9                              |
| <b>WORLD</b>             | <b>6,671.557</b>        | <b>2.7</b>  | <b>1.8</b>                                     | <b>-0.9</b>                      |

1m

6. How many planet Earths would be needed if the world's ecological footprint was the same as that of South Africa, based on Table C1?

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2m

7. Comment on the differences between the ecological deficits or reserves of countries in:  
a) Africa and  
b) Oceania (Australasia),  
based on Table C1.

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2m

8. Study Resource Booklet Figure C3: Number of planets scenarios, 2007.  
Suggest some of the ways in which  
a) individuals,  
b) industries and businesses  
could reduce the ecological footprint overshoot and achieve the rapid reduction scenario?

Individuals: .....

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Industries and businesses: .....

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Section D: Impacts of Global Warming

3m

1. Suggest how global warming could affect food supplies in Africa.

3m

2. Suggest how global warming might affect the El Niño Southern Oscillation (ENSO) in the southern Pacific.

1m

3. Study Resource Booklet Figure D1: The height of land above sea level in Bangladesh.  
How high would sea level have to rise to flood Dhaka?  
Mark the correct box.

|  |       |
|--|-------|
|  | < 2 m |
|  | 2–5 m |
|  | > 5 m |

3m

4. Study Resource Booklet Figure D2: Solar-powered floating boat school in Bangladesh. Explain how the climate and physical environment of Bangladesh mean that this type of school may become more common.

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5m

5. Give 2 different circumstances (other than flooding) in which people might become 'environmental refugees'. For each, explain how different impacts lead to people losing their homes.

Circumstance 1: .....

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Circumstance 2: .....

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## Section E: Population and Health

3m

1. Study Resource Booklet Figure E1: Life expectancy in high and low income countries, 2004–2012.

Suggest 3 reasons for the differences in life expectancy between high and low income countries.

Reason 1: .....

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Reason 2: .....

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Reason 3: .....

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3m

2. Study Resource Booklet Figure E2: Cancer incidence in Asia, 2008.

Describe 3 significant differences in cancer incidence between South-Eastern Asia and Eastern Asia.

Difference 1: .....

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Difference 2: .....

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Difference 3: .....

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5m

3. Study Resource Booklet Figure E3: Malaria incidence, 2000–2012.  
Describe and explain the pattern and trend of malaria incidence.

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4m

4. Explain briefly 4 possible measures to reduce the spread of infectious diseases as global tourism and travel increase.

Measure 1: .....

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Measure 2: .....

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Measure 3: .....

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Measure 4: .....

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## Section F: Globalisation and Transnational Corporations (TNCs)

1m

1. What is globalisation?

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3m

2. Give 3 factors that have influenced the process of globalisation.

Factor 1: .....

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Factor 2: .....

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Factor 3: .....

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4m

3. Study Table F1 below: Examples of adaptations by Transnational Corporations (TNCs).

| Entertainment industry  | Food industry  |
|---|--|
| <ul style="list-style-type: none"> <li>Mickey Mouse is dressed in traditional Japanese clothes in the Disney theme park located there.</li> <li>MTV has created a range of music Internet stations for different countries all over the world.</li> </ul> | <ul style="list-style-type: none"> <li>Unilever has designed a range of Wall's ice creams for Indonesia that uses more coconut.</li> <li>McDonald's opened a 100% vegetarian restaurant in Amritsar, India, home of a sacred Sikh temple.</li> </ul> |

Explain, giving 2 reasons why transnational corporations (TNCs) adapt their products for different markets.

Reason 1: .....

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Reason 2: .....

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3m

4. Study Resource Booklet Figure F1: Distribution of the McDonald’s Restaurants, 1940–2007. Describe and suggest reasons for the global spread of McDonald’s Restaurants since 1940.

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4m

5. Describe and explain why some groups of people gain from the growth of TNCs in the host countries while others lose out.

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