GEOGRAPHY

Written examination

Thursday 16 November 2017
Reading time: 3.00 pm to 3.15 pm (15 minutes)
Writing time: 3.15 pm to 5.15 pm (2 hours)

QUESTION AND ANSWER BOOK

Structure of book

<table>
<thead>
<tr>
<th>Number of questions</th>
<th>Number of questions to be answered</th>
<th>Number of marks</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>8</td>
<td>80</td>
</tr>
</tbody>
</table>

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers, sharpeners, rulers, coloured pencils, water-based pens and markers.
- Students are NOT permitted to bring into the examination room: blank sheets of paper and/or correction fluid/tape.
- No calculator is allowed in this examination.

Materials supplied
- Question and answer book of 12 pages
- Data book
- Additional space is available at the end of the book if you need extra paper to complete an answer.

Instructions
- Write your student number in the space provided above on this page.
- All written responses must be in English.

At the end of the examination
- You may keep the data book.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic devices into the examination room.
**Question 1** (7 marks)

a. For the area of fieldwork you selected to investigate land use change, state the location and the associated research question.

b. Identify and justify one primary fieldwork technique and one secondary source that were used to investigate the selected area of fieldwork.
Use Figures 1 and 2 on pages 2 and 3 of the data book when responding to Question 2.

**Question 2 (5 marks)**

a. Which category of land cover in map square A3 appears to have replaced large areas of dense forest?  
   
   
   
   1 mark

b. Shrub land in map square C1 has been extensively replaced by which two categories of land cover?  
   
   
   
   
   
   
   
   2 marks

c. Which category of land cover had the largest percentage increase between 1973 and 2000?  
   
   
   
   1 mark

d. Which category of land cover had the largest percentage decrease between 1973 and 2000?  
   
   
   
   1 mark
Question 3 (8 marks)
Describe one significant spatial technology and explain how it is used to assess or manage land cover change due to the process of desertification at one selected location that you have studied this year.
Question 4 (20 marks)
a. Using one selected location, discuss the role and interconnection of one natural process and one human activity in causing melting glaciers and ice sheets. 10 marks
b. Using an appropriate criterion, evaluate the success of one local response at a selected location to the impacts of the processes of melting glaciers and ice sheets. 10 marks
**Question 5 (8 marks)**

a. Explain **one** reason why some geographers believe that Malthus’s ideas on future population growth are still relevant today.  

b. Explain **one** reason why some geographers believe that Malthus’s ideas on future population growth are **not** relevant today.
Question 6 (12 marks)

a. Explain how an issue has arisen from a specific country’s transition to an ageing population. 6 marks

b. Explain how effective one strategy developed in response to this issue has been. 6 marks
Use Figure 3 on page 4 of the data book when responding to part a. of Question 7.

**Question 7** (11 marks)

a. Many demographers would classify Country X as being at Stage 3 of the Demographic Transition Model. Account for this viewpoint using quantified evidence from Figure 3.  

b. Outline one issue and subsequent challenge that a specific population at Stage 2 of the Demographic Transition Model presents for the future.
Use Figure 4 on page 5 of the data book when responding to part a. of Question 8.

**Question 8** (9 marks)

a. Identify and justify **one** numbered Malawi district that has a strong spatial association between population density and the distribution of health facilities.  

b. Discuss the effectiveness of **one** spatial technology, such as the Geographic Information Systems (GIS) data collected in Malawi, as a strategy in response to a population issue.
Extra space for responses

Clearly number all responses in this space.
An answer book is available from the supervisor if you need extra paper to complete an answer. Please ensure you write your student number in the space provided on the front cover of the answer book. At the end of the examination, place the answer book inside the front cover of this question and answer book.
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DATA BOOK

Instructions
A question and answer book is provided with this data book.
Refer to the data in this book for each question as indicated in the question and answer book.
The data contained in this book is drawn from current real-world case studies.

Students are NOT permitted to bring mobile phones and/or any other unauthorised electronic
devices into the examination room.
Figure 1a: Land cover, Harenna District, Ethiopia, 1973

Key to Figure 1a and Figure 1b
- dense forest
- open forest
- open woodland
- bare land
- agriculture
- shrub land
**Figure 1b: Land cover, Harenna District, Ethiopia, 2000**

<table>
<thead>
<tr>
<th>Land use land class types</th>
<th>Area in 1973</th>
<th></th>
<th>Area in 1986</th>
<th></th>
<th>Area in 2000</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ha</td>
<td>%</td>
<td>ha</td>
<td>%</td>
<td>ha</td>
<td>%</td>
</tr>
<tr>
<td>dense forest</td>
<td>65 577.7</td>
<td>28.0</td>
<td>35 767.5</td>
<td>15.0</td>
<td>13 008.3</td>
<td>6.0</td>
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<tr>
<td>open forest</td>
<td>82 773.9</td>
<td>35.0</td>
<td>113 403.8</td>
<td>48.0</td>
<td>131 150.3</td>
<td>56.0</td>
</tr>
<tr>
<td>open woodland</td>
<td>20 222.1</td>
<td>9.0</td>
<td>12 589.5</td>
<td>5.0</td>
<td>20 674.4</td>
<td>9.0</td>
</tr>
<tr>
<td>bare land</td>
<td>8 343.7</td>
<td>4.0</td>
<td>22 751.9</td>
<td>10.0</td>
<td>11 417.5</td>
<td>5.0</td>
</tr>
<tr>
<td>agriculture</td>
<td>33 967.9</td>
<td>14.0</td>
<td>22 542.3</td>
<td>10.0</td>
<td>50 522.3</td>
<td>21.0</td>
</tr>
<tr>
<td>shrub land</td>
<td>24 450.0</td>
<td>10.0</td>
<td>28 383.5</td>
<td>12.0</td>
<td>8 607.0</td>
<td>4.0</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>235 335.3</strong></td>
<td>100</td>
<td><strong>235 335.3</strong></td>
<td>100</td>
<td><strong>235 335.3</strong></td>
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</tbody>
</table>

**Figure 2: Changes to land cover, Harenna District, Ethiopia**

Source (Figures 1a, 1b and 2): Netsanet Deneke Morie, ‘Land use and land cover changes in Harenna forest and surrounding area, Bale Mountains National Park’, MSc thesis, Addis Ababa University, June 2007, pp. 41, 44 and 48
Figure 3: Population structure, Country X, 2017

Source: US Census Bureau, International Programs, International Data Base
Background information

Malawi is a small country in southern Africa, recognised by international organisations as one of the world’s poorest countries. Geographic Information Systems (GIS) data is now being collected, processed and interpreted to develop responses to issues and challenges faced by the population.

Figure 4a: Population density by district, Malawi

Figure 4b: Health facilities, Malawi

Source (Figures 4a and 4b): © OpenStreetMap contributors, masdap

END OF DATA BOOK