



# **Written Response Test**

## **Question and Answer Booklet**

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

**Taipei, Taiwan**

**July 29 - August 4 2010**

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

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



## Instructions for the students

---

- 1 This test consists of six sections.
- 2 The maximum total mark is 80.  
The mark for each question is given at the start of the question, eg. 3m = 3 marks.

I	Millennium Development Goals (MDGs)	12 marks
II	Flood	13 marks
III	Population geography	14 marks
IV	Landforms	13 marks
V	Agriculture and environment	13 marks
VI	Natural hazards	15 marks
- 3 Give only the required number of answers (reasons, examples, et cetera).  
For instance, if the question asks for two reasons and you give more than two, **only the first two reasons** will be marked.
- 4 Answer all questions in the spaces provided in the Question and Answer Booklet.
- 5 Check the backs of the pages as questions sometimes continue on the back of a page.
- 6 Fill in your name and team on the front page AND in the box on top of each page of the Question and Answer Booklet.
- 7 The Sources booklet contains the maps and figures referred to in the questions.
- 8 Time: 180 minutes for non-native English speakers  
150 minutes for native English speakers
- 9 Non-native English speakers are allowed to use bilingual dictionaries during the test.
- 10 You may use a calculator during the test.

**Good luck!**



## Section I - Millennium Development Goals (MDGs)

marks

*Read the article in the Source material booklet Section I.*

The United Nations Millennium Development Goals aim to reduce global poverty by the year 2015. This micro-loans project will help to achieve those goals.

3m **1** On the list below circle **three** targets of the MDGs that are targeted by this project.

- A global partnership for development
- Achieve universal primary education
- Combat HIV/AIDS, malaria and other diseases
- Ensure environmental sustainability
- Eradicate extreme poverty and hunger
- Improve maternal health
- Promote gender equality and empower women

2m **2** Why give **women** in Burkina Faso the opportunity to receive a micro-loan?

.....

.....

.....

.....

2m **3** Give **four** activities for which women might use micro-loans.

1:.....

2:.....

3:.....

4:.....

2m **4** Circle three countries where the use of micro-loans could be a way to achieve the Millennium Development Goals.

Bangladesh	Kuwait
Canada	Nicaragua
Germany	Sudan

3m **5** Which **three** countries from the table above have a lot of migrant workers?  
Give a **specific** reason for each of the chosen countries.

Country 1 and reason: .....

.....

Country 2 and reason: .....

.....

Country 3 and reason: .....

.....

## Section II - Flood

marks

Floods are the most devastating of all natural processes, and they affect more people than all other natural hazards combined. Using records of river discharge data, it is possible for hydrologists to statistically predict the recurrence of floods of a particular river. The prediction is done by constructing a flood-frequency curve from the annual peak discharges recorded at a gauging station. Firstly, hydrologists rank the annual peak discharges according to their size, assigning a rank (R) of 1 to the highest discharge, a rank of 2 to the second largest discharge, and so on. Then, they calculate the recurrence interval (T) for each peak discharge event, using the formula:

$$T = \frac{(N+1)}{R}$$

Where T = recurrence interval (in years)

N = the number of years for which discharge data are available

R = rank of the discharge event

- 3m 1 Look at the table in Source 1, and calculate the recurrence interval (T) of the peak discharge in years 1925, 1938 and 1944.

1925: .....

1938: .....

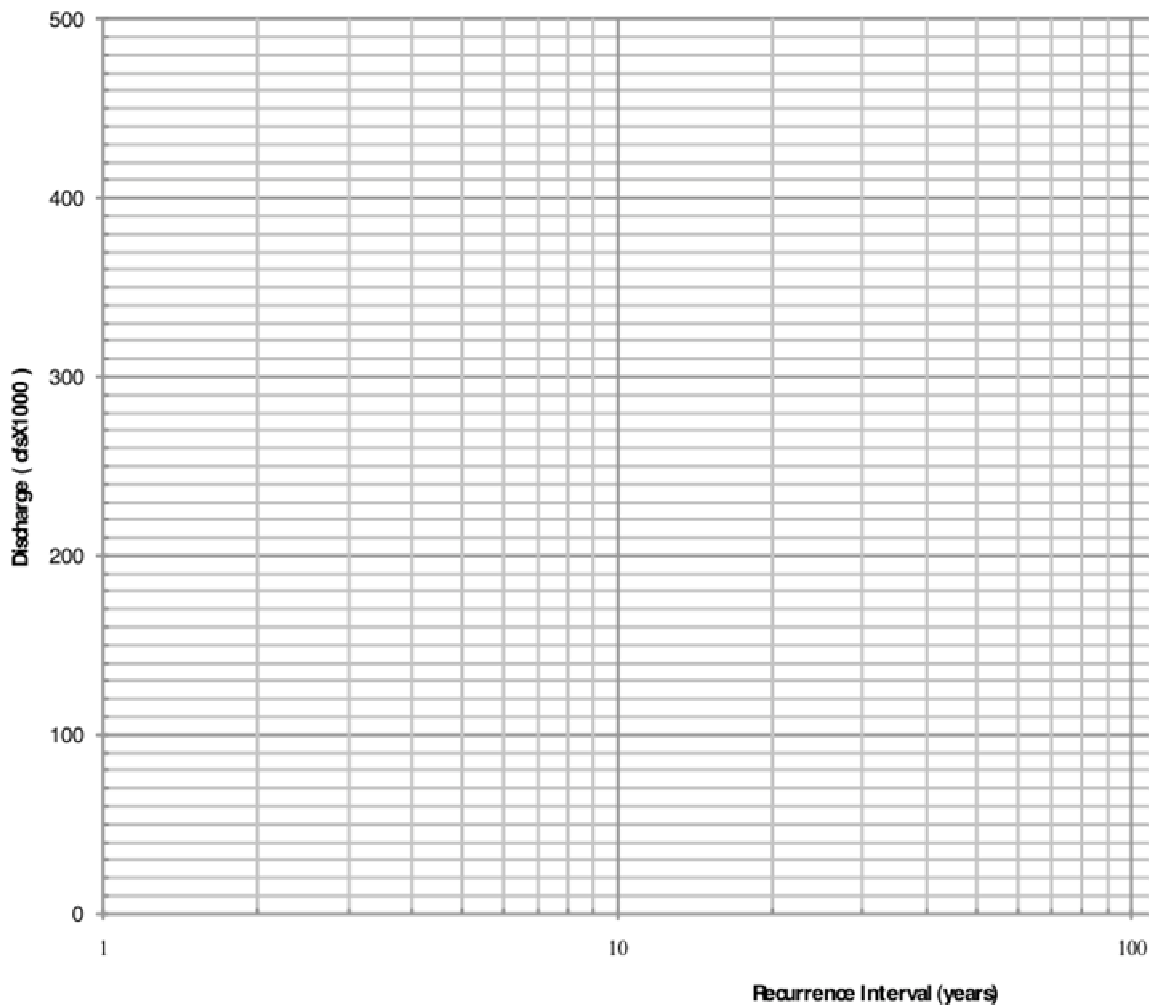
1944: .....

*Plotting a semi-log graph*

On semi-log graph paper, one axis has a log scale and the other axis has a linear scale. The idea here is we use semi-log paper so that we can more easily see details for small values as well as large values.

- 4m 2 Plot the data points on the semi-log graph paper below with  
x-axis = Recurrence interval (T) (year), and y-axis = discharge (cfs x 1000).  
Then, draw a best-fit (not point-to-point) smooth curve to fit the data points. This is the flood-frequency curve for the given river at the specified location.

Semi-log graph paper for flood-frequency curve





marks

2m

**3** With reference to the flood-frequency curve you have just constructed, answer the following questions.

a What is the expected discharge during a ten-year flood (or flood of a ten-year recurrence interval)?

.....

b What is the recurrence interval for a flood with a discharge of 200,000 cfs?

.....

*Take a close look at Source 1.*

1m

**4a** Compare the ranks of the peak discharge (R) with the years in which they occur. What do you notice about the two sets of figures?

.....

.....

3m

**4b** Give **three** possible reasons why the pattern you have observed may have occurred.

1: .....

2: .....

3: .....

<b>Name student</b> <b>Name team</b>
---

### Section III - Population geography

marks

*Look at the three population pyramids for South Korea (Source 1) and the two tables (Sources 2 and 3).*

*Support your answers with data from the source material.*

3m **1** Give **three** characteristics of South Korea's changing population structure.

1: .....

.....

2: .....

.....

3: .....

.....

2m **2** Describe South Korea's transition from an 'aging' to a 'super-aged' society.

.....

.....

.....

.....

3m **3** Compare South Korea's transition with that of the other countries for which data is supplied.

.....

.....

.....

.....

.....

marks

Nowadays, economically developed countries suffer mainly from civilization illnesses, while economically less developed countries suffer from parasite and infectious diseases.

2m **4a** Give **two** examples of civilization illnesses in economically developed countries:

1: .....

2: .....

Give **two** main causes of these diseases:

1: .....

2: .....

2m **4b** Give **two** examples of parasite and infectious diseases in economically less developed countries:

1: .....

2: .....

Give **two** main causes of these diseases:

1: .....

2: .....

Global epidemics, such as SARS, bird flu, swine flu etc., are more likely to happen nowadays than they used to.

2m **5** Give **two** reasons for this:

1: .....

.....

2: .....

.....

## Section IV - Landforms

marks

In Source I there is a set of photos with different types of landforms and landscapes, created on different rocks and in different climatic conditions.

1m **1** Identify **two** photos which represent a landscape developed in arid climates?

.....

1m **2** Identify **two** landscapes (in photos **A – F**) where volcanic activity has partly contributed to their formation.

.....

1m **3** Circle the name of the feature that photo **D** represents.

- a dyke
- b sill
- c laccolith
- d batholith

1m **4** Circle the name of the feature that photo **E** represents.

- a hamada
- b wadi
- c dry canyon
- d playa

1m **5a** What is the specific name of the features represented in photo **F**?

.....

2m **5b** How are these landforms created?

.....

.....

.....

1m **6** Name **two** regions of the world where a landscape like that in photo **A** can develop.

Region 1: .....

Region 2: .....

marks

2m 7 The rock on which the landscape in photo **C** was created is (please circle your answers) ...

- a granite
- b basalt
- c andesite
- d rhyolite

... and it belongs to the ...

- a sedimentary group
- b metamorphic group
- c igneous group

3m 8 What is the specific name of the feature represented in photo **B**?

.....

Briefly explain why this feature occurs.

.....

.....

.....

.....

## Section V - Agriculture and environment

marks

Take a close look at the two photos in Source 1 and study the two tables below.

**Table 1 - Size of holdings in Indian agriculture (2001 / 2002)**

Size group (ha)	Number of holdings	Operated area	Number of parcels
below 1.0	65,285.85	27,380.47	121,493.03
1.0 – 1.99	21,498.80	30,503.72	58,586.02
2.0 – 3.99	13,349.71	36,242.07	46,051.96
4.0 – 9.99	6,374.39	36,617.62	28,654.27
10 and above	1,197.46	18,649.03	7,139.32
all groups	107,760.46	149,392.91	261,924.59

Source: <http://agcensus.nic.in/document.html>

**Table 2 - Average size of a holding in Indian agriculture (hectares)  
1953/1954 – 2000/2001**

1953/1954	1960/1961	1970/1971	1980/1981	1990/1991	2000/2001
3.0	2.7	2.3	1.8	1.6	1.3

Source: Worksheet 6 of FWU movie 46 02563 "Indien – Der ländliche Raum" (2008)

3m **1** Describe briefly the main characteristics of the structure of Indian agriculture.

.....

.....

.....

.....

.....

3m **2** Construct a vicious circle about the causes and consequences of the structure of Indian agriculture. Make sure your circle consists of at least **five** components. Start your vicious circle with **Poverty**.

marks

Again take a close look at the two photos in Source 1.

- 1m 3 What problems might the farmers in the photos have when they try to irrigate their land?

.....  
.....

The satellite image in Source 2a is taken at the border of Haiti and the Dominican Republic, countries that share the island of Hispaniola in the Greater Antilles. Though the two countries had quite similar natural environments when the Spaniards arrived in these territories in the 16<sup>th</sup> century, Haiti (roughly the left part of the image) has changed this environment quite drastically in the last decades.

*Using the information provided by the Sources 2a, 2b and 2c, answer the following questions.*

- 1m 4 Identify **the main environmental problem** Haiti is facing in this area.

.....

- 2m 5 Explain the **causes** of this environmental problem.

.....  
.....  
.....  
.....

- 3m 6 The impact of this environmental problem on the people of Haiti is immense, but it also has an impact on the physical environment.  
Name **three different physical impacts** arising from this environmental problem.

1: .....  
2: .....  
3: .....



## Section VI - Natural hazards

marks

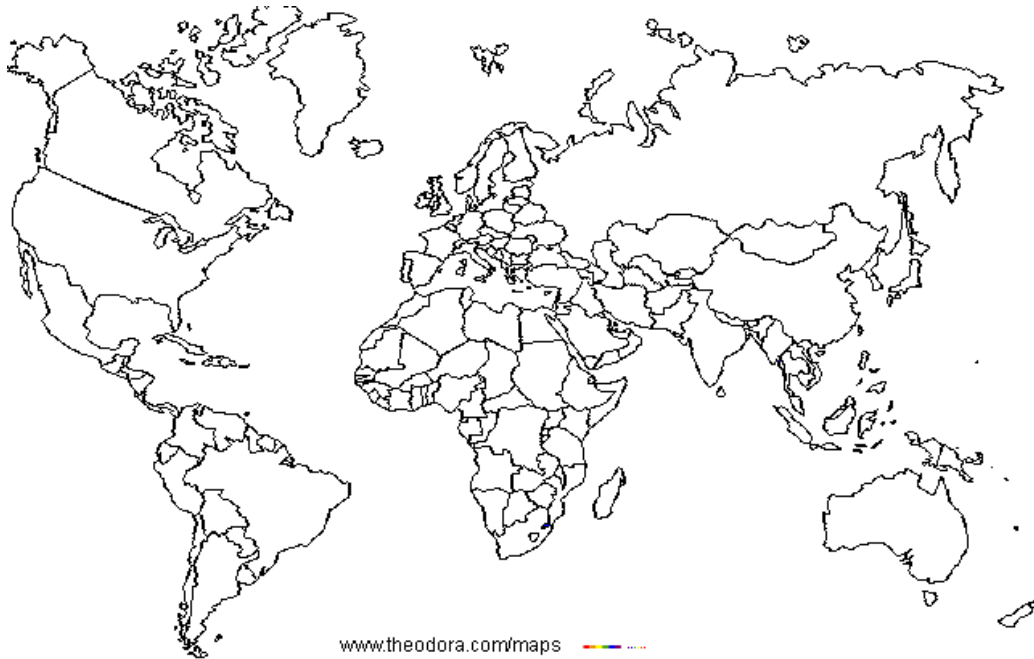
### Disasters of the 21<sup>st</sup> century

- 3m 1 Look at the photos and hints.  
Name the **country** and the **type** of natural disaster that occurred.

Hints for ...	Country and type of disaster
<b>photo A</b> Earth's axis shifted 8 cm; the day is now 1.26 microseconds shorter.	
<b>photo B</b> Over 230,000 deceased, air traffic congestion.	
<b>photo C</b> "Instead of cash, they sent us ash."	
<b>photo D</b> Duration of around 10 minutes; rupture of over 1300 km.	
<b>photo E</b> Costliest disaster in the country left 3 million people without electricity.	
<b>photo F</b> 11 missing workers; affected area approximately 100,000 km <sup>2</sup> .	

marks

3m 2 Locate these disasters (A – F) on the map.



3m 3 Which of the natural disasters listed in question 1 on average causes the most human casualties?

.....

Give **four** reasons.

1: .....

2: .....

3: .....

4: .....

marks

6m 4 Choose **two** different types of disaster you have identified. **For each one**, name **two** effects on the local population, environment and economy.

Disaster	Effects on local ...		
	population	environment	economy
1			
2			