

Questions

6th International Geography Olympiad

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Contents

	page
Instructions for the students	3
Section 1 Climate	4
Section 2 The dynamics of population: migration	6
Section 3 Volcano Merapi	8
Section 4 Economic activity, the business world and Global Shift	10
Section 5 Fresh water in the Middle East	14

Instructions for the students

1. This test consists of five sections.

1 Climate	18 marks
2 The dynamics of population: migration	19 marks
3 Volcano 'Merapi'	15 marks
4 Economic activity and the business world	18 marks
5 Fresh water in the Middle East	20 marks
2. The total of all marks is 90
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 on your answer sheets or worksheets.
Use a **new answer sheet for each sections (1 - 5)**.
5. **Write your name and country on each of the five answer sheets and the four worksheets.**
6. The Sources booklet contains the maps and figures referred to in the questions.
7. Time available: **150 minutes**.
Non-native speakers of English are allowed **an additional** 30 minutes.
8. Non-native speakers of English are allowed to use **dictionaries**: English - native language and native language - English.

Success!

Section 1 Climate

Weather in the world

Look at Source 1 which is **worksheet 1**.

Write your name and country on worksheet 1.

- 1a In what **time** of the year (month) was this satellite image taken? (1m)
1b Justify your choice by using information on this image. (2m)
- 2a Mark the **Inter Tropical Convergence Zone (ITCZ)** by drawing **two** (2) lines on the world map on worksheet 1. (1m)
2b How can this zone be identified on the map. (1m)
Write down the **three** (3) atmospheric processes that take place in this zone. (2m)
- 3a Draw a circle on the image on worksheet 1 to indicate
- **one** (1) low pressure area (with a L) (1m)
- **one** (1) high pressure area (with a H) (1m)
3b Justify your choice for the area of **high pressure**. (1m)

Pressure areas in the world

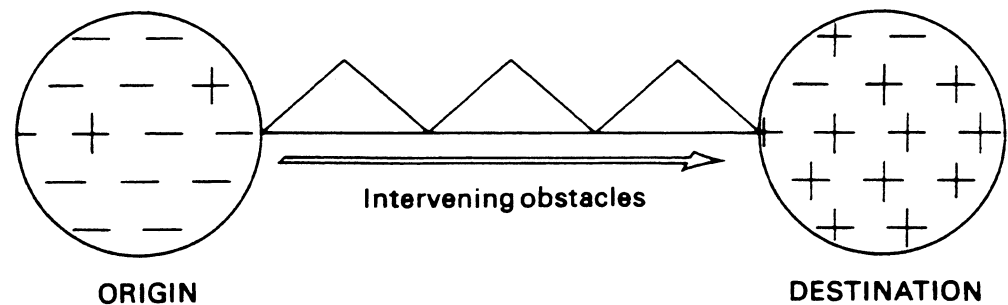
- 4 The **subtropical zone of high pressure** in the Southern Hemisphere is much more distinct than the same kind of zone in the Northern Hemisphere.
Explain why. (2m)

Climates and type of vegetation in Africa (sources 2 and 3 of Section 1)

There are four images (1 - 4) that show the natural vegetation of four African regions There are also two climate graphs (A and B) of two climate stations in Africa.

- 5 The climate graphs match **two** of the four vegetation images. What is the **type** of vegetation that is related to:
- climate station A? (1m)
- climate station B? (1m)
- 6 Justify your answer to the following.
- A and image ... : because ... (1m)
- B and image ... : because ... (1m)
- 7 Write your name and country on **worksheet 2**.
Clearly show the location of the climate stations by writing the letters A and B on the map of Africa. (2m)

Section 2 The dynamics of population: migration



The figure above is a schematic representation of Lee's model of *The Decision to Migrate* (1966).

- 1a What is the significance of the **plus** and **minus** signs in the circles symbolising regions of origin and destination of migrants? (2m)
- 1b Name **three** (3) factors that might be regarded as 'intervening obstacles'. (3m)
- 1c With reference to the model above, describe **two** (2) reasons why a person would choose NOT to migrate. (2m)
- 1d Using the terms used in the model, outline the major differences between **PUSH** and **PULL** migration. (4m)

Refer to the source in Section 2 of the booklet.

This figure shows a population structure greatly influenced by migration. Some towns or regions within countries of the more economically developed world have this type of population structure.

- 2a Name **two** (2) factors other than age, that make migration a selective process. (2m)
- 2b Does this population structure belong to a town or region with a **positive** balance of migration or with a **negative** balance of migration? Explain your choice. (2m)
- 2c If the population structure shown in the source resulted from a positive balance of migration, name **two** (2) possible economic benefits for this town or region. (2m)
- 3 Name **two** (2) disadvantages that migrants might experience in their new country. (2m)

Section 3 Volcano Merapi

The inhabitants of the Indonesian island of Java were alarmed last May by an earthquake that caused considerable damage in the region around the city of Yogyakarta.

Not far away from Yogyakarta the volcano Merapi has been spewing gas and ashes for several weeks. Experts hold different views about the connection between the two geological phenomena.

Read the article from *The Jakarta Post* of May 30, 2006 (Section 3, source 1). Study the other sources in Section 3 and answer the following questions.

In source 3, letter 'A' indicates the place where the effects of the earthquake were strongest.

- 1a Which geographical **term** is used to describe place A? (1m)
1b Which geographical **term** is used to describe the underground seismic centre of the earthquake. (letter B in source 4)? (1m)

The earthquake was not extremely strong, yet the number of victims was relatively high.

- 2 Explain **two** (2) factors that contributed to the relatively high number of victims. (2m)

Write your name and country on **worksheet 3**.

Java is located on the edge of two geological plates. The cross section of source 4 shows only the **upper part** of the plates. This same cross section is shown on worksheet 3.

Complete the cross section by drawing the **lower parts** in the white space.

In your answer:

- 3a Draw the **path** of both plates in the underground. (1m)
3b Draw **two** (2) circles indicating the magma chambers mentioned in source 1. (1 m)
3c Write the following **terms** in the correct place in the cross section: (1m)
- continental plate
- oceanic plate
- Java Trench
3d Draw **two** (2) arrows indicating the direction in which both plates move. (1m)

Worksheet 3 'Volcano Merapi' contains a map of the island of Java and the surrounding sea.

- 4 Draw a **line** on this map (source 2) indicating the path of the boundary between the oceanic and the continental plates. (1m)

- 5 Explain why both volcanism and earthquakes occur on the island of Java. (2m)

The nature of volcanism on Java is quite different from volcanism on Iceland. On Java granitic magma is found whereas Iceland has basaltic magma.

- 6a Use the words '**high**' and '**low**' to complete the columns 'basaltic magma' and 'granitic magma' in the table on worksheet 3. (3m)
- 6b Based on the properties of the Merapi magma, would an eruption be **explosive** or **quiet**? (1m)

Section 4 Economic activity, the business world and Global Shift

There has been considerable economic growth in that area of the world known as the **Pacific Rim**. This growth is expected to continue.

- 1 Outline what the term Pacific Rim means in this context. (2m)

- 2 Refer to Section 4 source 1.
Use the information from the figure to show how there is expected to be an increase in the relative importance of the Pacific Rim within the world economy between 1970 and 2000. (2m)

- 3 With reference to East and South Asia, give **three** (3) reasons for their growing importance in industry and business. (3m)

- 4a For any country in the *developed* world, give **three** (3) reasons which help to explain the declining employment in manufacturing industry in the last forty years. (3m)

- 4b Name **three** (3) ways in which governments in the *developed* world have reacted to such a trend. (3m)

- 5a Give **one** (1) social, **one** (1) economical and **one** (1) political reason why some countries of *the North* supply foreign aid to some countries of *the South*. (3m)

- 5b Name **two** (2) benefits of foreign aid for the countries of *the South*. (2m)

Section 5 Fresh Water in the Middle East

Refer to the map 'Precipitation in the Middle East' - Section 5, source 1.

Precipitation in the northern part of the Middle East shows a distinct seasonal pattern.

- 1a In what **season** is precipitation the lowest? (1m)
1b Explain your answer. (2m)

Refer to map 'Water between Turkey and the Gulf Region' - Section 5, source 2.

Approximately 20% of the irrigated land in Iraq is no longer suitable for agriculture as a result of inappropriate methods of irrigation.

- 2a Describe an **inappropriate** method of irrigation that has a negative impact on the soil. (2m)
2b Provide **two** (2) specific measures that could stop or reverse this process. (2m)

In several dry regions of the Middle East natural reservoirs of groundwater occur. The capacity of a groundwater reservoir depends on the nature of the rock formation

- 3a Which of the following rock formations has the highest **capacity**? (1m)
- shale
- sandstone
- granite
- limestone
3b Explain your answer. (1m)

- 4 Write your name on **worksheet 4** 'Fresh Water in the Middle East'. There are different principles that can be used in dividing river water rights between countries. The table in worksheet 4 lists a number of these principles.

Analyse the situation for the river Euphrates and the countries Turkey, Syria and Iraq.

For each principle indicate in column A which country would **benefit**, and in column B which country would be **disadvantaged**. (4m)

- 5a Compare principles 1 and 2. Both are geographical in nature. Mention **two** (2) reasons why principle 2 is to be preferred to principle 1. (2m)
5b Compare the principles 4 to 8. Mention **one** (1) of these principles that, in your opinion, should be included in negotiations over water rights between states. Justify your choice. (3m)

The Greater Anatolian Project consists of a number of dams and artificial lakes in the river Euphrates in the South East of Turkey. It stimulates large scale irrigated agriculture.

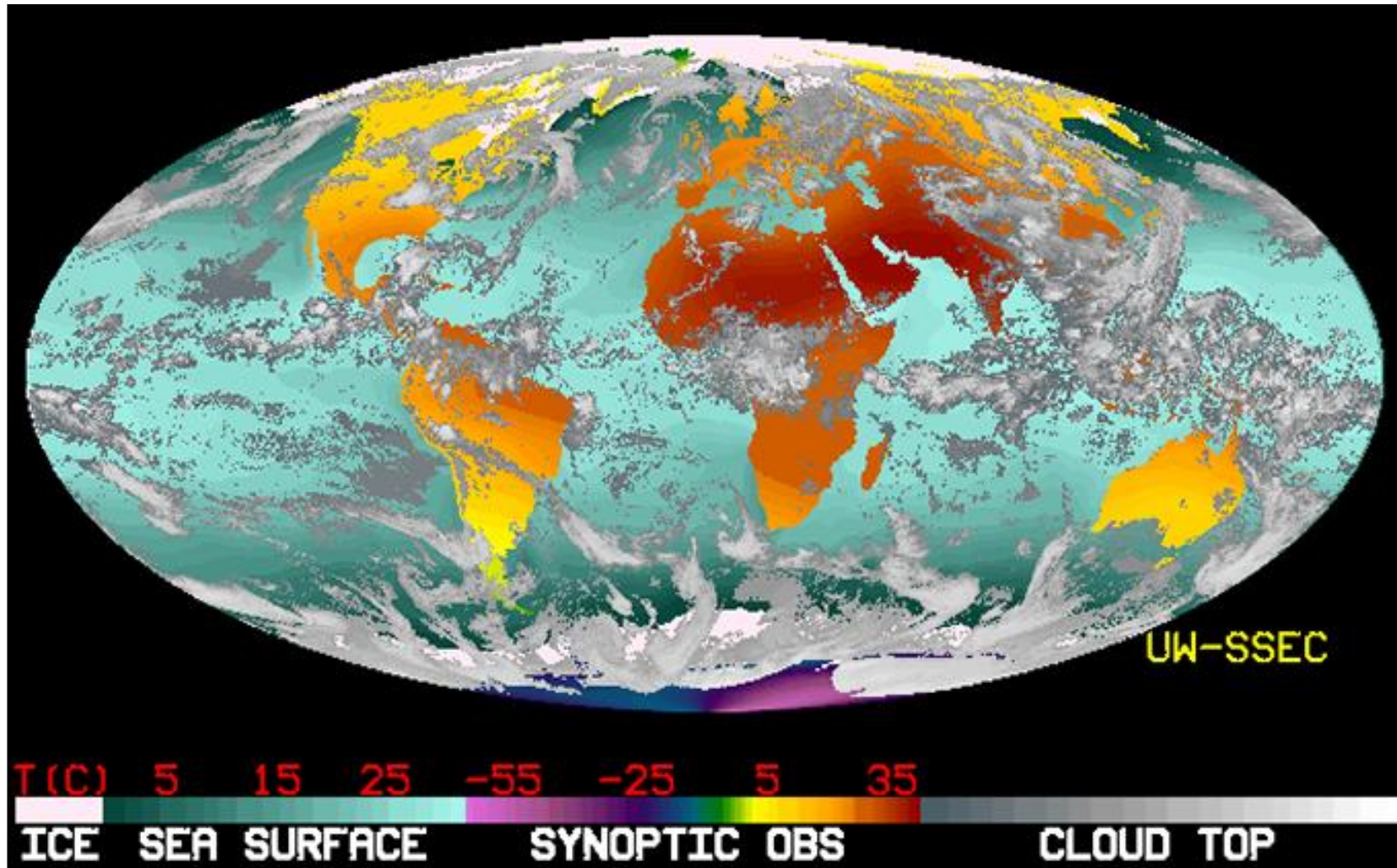
It is to be expected that both the quantity and the quality of the water downstream will be affected.

- 6 Explain in what way(s) irrigation in South East Turkey can **negatively** influence the quality of the river water of the Euphrates. (2m)

Worksheet 1: Satellite image

Name:

Country:



Worksheet 2: Africa

Name:

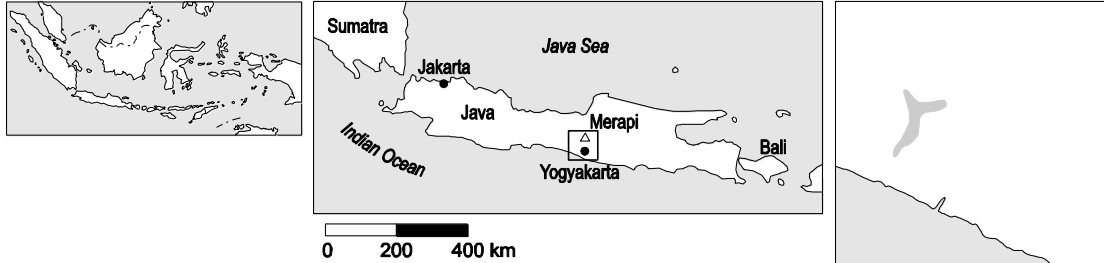
Country:



Worksheet 3: Volcano Merapi

Name:

Country:



Variations in properties among magmas of differing compositions		
Property	Basaltic Magma	Granitic Magma
Silica content		
Viscosity		
Tendency to form lavas		
Tendency to form pyroclastics		
Melting temperature		

Source: Lutgens & Tarbuck, *Foundations of Earth Science*, 1999

Worksheet 4: Fresh Water in the Middle East

Name:

Country:

Principle	Beneficiary country (A)	Disadvantaged country (B)
1. If a larger part of the drainage basin is located in country A, then country A has more rights to the water than country B.		
2. If a greater part of the water discharge originates from country A, then country A has more rights to the water than country B.		
3. If it rains less in country A, then country A has more rights to the water than country B.		
4. If country A has used more river water in the past, then country A has more rights to the water than country B. (historic rights)		
5. If country A suffers more economic damage when it gets less water, then country A has more rights to the water than country B. (economic rights)		
6. If the social needs in country A are stronger (higher), then country A has more rights to the water than country B. (humanitarian rights)		
7. If country A has fewer alternative ways to meet its water demands, then country A has more rights to the water than country B. (dependency)		
8. If country A uses its water in a less efficient way, then country A has less rights to the water than country B. (efficiency)		