



*9<sup>th</sup> Hungarian Geographical Contest 2017/18*

*2<sup>nd</sup> Round*

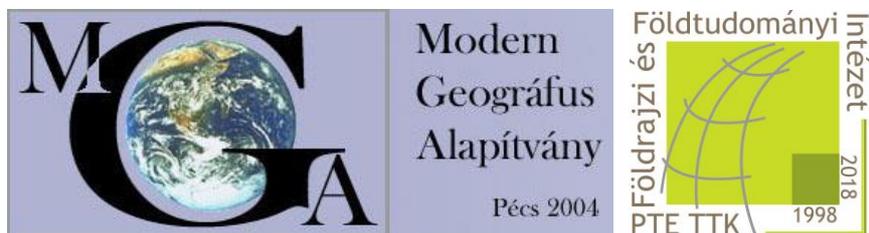
## **Written Test**

### **Question and Answer Booklet**

10 February, 2018

Password: .....

Date of Birth: .....



PASSWORD:

## Instructions for Students

1. Fill in your password and your date of birth on the front page of this Question and Answer Booklet (QAB) and also on the top of all pages.
2. The test consists of 6 sections, marked with letter A-F. You can find all the sources (maps, figures) referred to in the Source Booklet (SB).
3. You can earn a maximum total of 120 points. There is a maximum of 18 (Section: D; E; F) or 22 (A; B; C) points for each Section.
4. All questions should be answered in the spaces provided in this booklet. Only answers given in QAB will be accepted: any answers written in the (SB) will be ignored.
5. Only the required number of answers (reasons, examples etc.) will be accepted in the order they are written. For instance, if the question asks for 2 reasons and you give more than 2, only the first 2 reasons will be marked.
6. Where appropriate, please, write sentences or phrases, not single words.
7. You might need a calculator, ruler and pencils during the test.
8. You have 180 minutes available to answer all questions.

**Good luck!**

## Section A: Volcanic processes

Volcanic processes most likely occur at plate margins, and they are not only one of the most spectacular phenomena the Earth can provide, but also have significant impacts on human settlements.

**A. 1. Fill the empty cells of the following table by using pictures 1-5 of the source booklet in section A. 1! Do not write anything to cells crossed with a line!**

No. of pic.	Name and country	Type of volcanism	Connection to plate boundaries	Dominant rock type
	Holuhraun, Iceland	lava field		
2				
	Manua Kea, USA/Hawaii			
		stratovolcano	/	/
	*	maar volcano	/	/

\*Name a region, where these types of volcanoes are common.

[A1: 8 points]

**A. 2.** Volcanism is the phenomenon of eruption of molten rock (magma) onto the surface of the Earth (or other planet). If the magma does not reach the surface, we talk about magmatism. Magmatism creates specific forms of rock, which are likely revealed by the erosion of the surrounding, less resistant layers of sediments.

**The following list contains the names of specific forms of volcanism and magmatism. Study Figure 6. in the source booklet (section A. 2.)! Pair one of the numbers from the figure to each form in the following list. Each form should be used only once!**

Batholith:	Caldera:
Dike:	Laccolith:
Parasitic cone:	Volcanic neck or pipe:

[A2: 3 points]

**A. 3.** Study the small map in the source booklet (No. 7. in section A. 3.). The figure represents a map with a series of volcanoes. Volcano A is active today and volcano H is the oldest.

**3. 1. Name this type of volcanism!**

---

**3. 2. What is the tectonic reason for the “movement” of active volcanism on the map?**

---

---

---

**3. 3. Name a group of islands that has been created by volcanism this way!**

---

[A3: 3 points]

**A. 4.** Study Figure 8. at section A. 4. in the source booklet. It shows the potential damage on human settlements around a volcano, which is categorised as active according since it has had at least one eruption during the past 100 years. This might be the most dangerous volcano in the world because of the population of 3,000,000 living nearby and its tendency towards violent, explosive eruptions of the Plinian type.

**Name the volcano and the present-day city located right next to it (or partly on the volcano’s flanks)!**

4. 1. Name of the volcano:

---

4. 2. Name of the city:

---

**What kind of threats a volcano may pose on the surrounding human settlements and residential areas? Name three different sources of volcanic hazard!**

4. 3.

---

4. 4.

---

4. 5.

---



## Section B: The great meltdown war of 'Permafrost Kingdom'

*A long time ago on the Northern Hemisphere far, far away...*

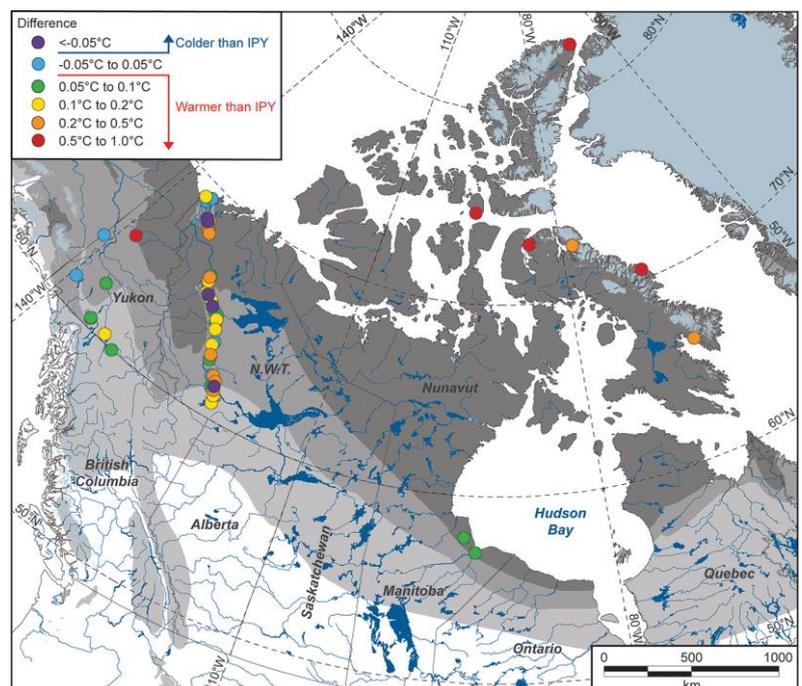
*a Kingdom emerged, a Janus-faced and hidden empire, the realm of frost. Thus, people called it as the Kingdom of Permafrost. Recently, a new, invisible and stronger power evolves. With the help of the Sun and the unwise *Homo sapiens* it tries to sweep away old Kingdom. The dreaded energy of heat inexorably devours everything around us... Thus, people call it Global Warming. Explore two last-standing bastions of Permafrost: Siberia and Canada...*

### B. 1. Climate of the permafrost zone

Study Figure 1-2 (chart and table) in section B. 1. in the source booklet.

#### B. 1. 1. Draw a simplified climate chart of Tuktoyaktuk!

**B. 1. 2. Locate** (with a dot and use nickname Tuk) **the city of Tuktoyaktuk on this map.** (Did you know? The borders of Alberta follow parallels and longitudes: N49 and N60, W110 and W120, respectively.)



**B. 1. 3. Compare the climate chart in the SB and in B. 1. 1 ! Name two differences between the climates of the cities!**

1.

2.

**B. 1. 4. Name the climate of Aldan and Tuktoyaktuk!**

Aldan:

Tuktoyaktuk:

**B. 1. 5. Name the types of permafrost you could observe in these regions (use Figures 3-4. in section B. 1. in SB)**

[B1: 10 points]

## **B. 2. Landforms in the realm of permafrost**

**Study Figure 5. (compare with maps in B. 1.) of section B. 2. in SB. to answer the following multiple choice test.**

**B. 2. 1.** A region in close proximity to active glaciers, ice sheets and typified by intense frost action is generally referred to as a(n) \_\_\_\_\_ environment.

- a. subarctic
- b. periglacial
- c. glacial
- d. arctic

**B. 2. 2.** In permafrost regions, \_\_\_\_\_ is commonly present in pore spaces or as free bodies or lenses in the ground.

- a. permafrost
- b. dirty ice
- c. ground ice
- d. tundra ice

**B. 2. 3.** The \_\_\_\_\_ layer of permafrost terrains is due to seasonal thaws.

- a. continuous permafrost
- b. active
- c. permafrost
- d. discontinuous permafrost

**B. 2. 4.** The \_\_\_\_\_ is the upper surface of the perennially frozen zone directly below the active layer.

- a. permafrost table
- b. continuous permafrost zone
- c. discontinuous permafrost zone
- d. permafrost zone

**B. 2. 5.** The removal of the natural surface cover in permafrost regions can lead to landscape subsidence and the subsequent formation of water-filled depressions called \_\_\_\_\_.

- a. thermokarst lakes
- b. pingos
- c. water lenses
- d. ice lenses

**B. 2. 6.** Ice wedge polygons are emblematic forms of continuous permafrost zone. Figure 6. in section B. 2. (SB) explains how they are created. Study Figure 7! More than 400 sites were explored in Poland with polygonal cropmarks in the last years. **When and how were these landscapes formed in Central Europe?**

When?

---

How?

---

---

---

[B2: 8 points]

PASSWORD:

### **B. 3. Engineering works under extreme conditions**

**B. 3. 1.** Study Figure 8-9. in Section B. 3. in SB! What happened with these buildings and with this highway? **Explain challenges of engineering works in permafrost-susceptible environment.**

---

---

---

---

---

---

---

---

---

---

[B3: 4 points]

## Section C: Global fishing industry

Fishing industry is not only a highly important global business, which produces a major part of the world's protein consumption, but also a highly debated activity, a permanent source of tension between ecological and economic approaches.

**C. 1. Match the following terms to the correct pictures! Give one positive and one negative factor (advantage/disadvantage) for each form!**

*traditional fishing, fish-farm/aquaculture, industrial fishing*



1:

2:

3:

+			
-			

[C1: 4 points]

**C. 2. Look at the Figure 1. and 2. at section C. 2. in source booklet! Answer the following questions!**

**C. 2. 1. How has the market price of the fish meat been changed between 2002 and 2014?**

**C. 2. 2. Give three factors, which could influence the market price of fish!**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

**C. 2. 3. Fish production peaked in 1990s after decades of dynamic growth. What could be the main factors behind this change? Name two factors!**

1. \_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_

[C2: 4 points]

**C. 3. Study source 3. in C. 2. in the SB! Answer the questions!**

C. 3. 1. Which country (from this list) has the highest per capita fish production?

\_\_\_\_\_

C. 3. 2. Which country suffered the biggest relative drop in fish production in 2013?

\_\_\_\_\_

Space for calculations (could be continued on the backside of this paper)

**C. 3. 3.** Look at the countries with a decreasing production! **Give two possible reasons, why production had dropped in these countries!**

1.

---

---

2.

---

---

**C. 3. 4.** Select the country from the list below, where fisheries have the greatest economic significance! Use the table in SB C. 3 and Figure 1. of C. 2 in SB to calculate your answer! Give a brief justification of your choice! Please note, that the economic output of the fishing industry could approximately define with the market value of the fish been caught.

Answer:

---

Justification:

---

---

---

---

Space for calculations (could be continued on the backside of the paper)

[C3: 6 points]



## Section D: The Land of the Rising Elderly? Ageing and shrinking in Japan

Japan experiences one of the largest net population losses in the world. No surprise, it also belongs to the group of the most ageing countries. The following questions concentrate on the issues of Japanese cities facing with high rates of depopulation and ageing.

**D. 1. Study** Figure 1. in section D. 1. of the source booklet **Which of the following population pyramids belong to Japan? Give two arguments to explain your choice.**

**D. 1. 1. Letter of population pyramid:**

---

**D. 1. 2. Arguments:**

1.

---



---

2.

---



---

**D. 1. 3.** With a crude birth rate of 7.8‰ Japan is among the countries with greatest annual population decline rate. This rate is significantly worse compared to other highly developed countries; even with the ones that also experience the problem of ageing, like Germany (8.3‰) or Italy (8.7‰). **Name one potential demographic factor, which could be an important distinction between Japan and any other developed country!**

---



---

**D. 1. 4.** Study Figure 2. in section D. 1. in the source booklet. **Describe the geographical pattern of the population change in Japan! Give four valid statements, which could be justified by the maps.**

1.

---



---

2.

---



---

3.

---



---

4.

---



---

[D1: 8 points]

**D. 2.** According to statistics, one-third of Japanese cities over 100,000 residents are facing the so called second demographic transition. In this phase, the number of births is permanently and significantly lower, than the number of deaths. Despite the high life expectancy, natural decrease and intensive ageing determine a sort of social and economic factors. These cities are often called shrinking cities, although demographic transition (natural decrease) is not the only potential factor behind the shrinkage.

**D. 2. 1.** One of the shrinking Japanese cities has lost approximately 90% of its residents in 50 years. The name of this city is Yubari, placed on Hokkaido Island. **Study the pictures of Yubari in the source booklet (Section D. 2. Pictures 5-8.). Which could be the main cause of the city' shrinkage?**

**Main reason of extreme shrinkage:**

---



---

**D. 2. 2. Name three other possible reasons that could cause significant and/or permanent population loss of a city!**

1.

---

2.

---

3.

---

PASSWORD:

**D. 2. 3.** Of course, shrinking is not a problem by itself, but it is interconnected a sort of local social, economic and political issues. With the help of the pictures in SB, your task is **to name one social, one economical and one political problem according to shrinkage, and shortly explain it.**

Social issue:

---

---

---

---

---

---

---

Economic issue:

---

---

---

---

---

---

---

Political issue:

---

---

---

---

---

---

---

[D2: 10 points]

## Section E: Ecotourism

**E. 1.** Ecotourism has become popular over recent years. **Try to create a short definition about this term!**

---



---



---



---

[E1: 3 points]

**E. 2.** The following pictures show popular ecotourism destinations. **Where were the photos taken?** (Every pair of photos belongs to one single location)



**E. 2. 1. location (islands and country):**



**E. 2. 2. location (country or region):**



**E. 2. 3. location (country):**



**E. 2. 4. location (country):**

[E2: 5 points]

**E. 3.** Ecotourism is often described as a ‘win-win’ activity, however, it can have negative impacts as well. While certain actors might benefit from it, ecotourism can be problematic for others. Geographers often question stereotypical understanding of such activities to give a more nuanced and comprehensive view. Using your own knowledge and the **following quotes (in section E. 3. in source booklet)** in which people talk about the Bwindi Impenetrable National Park, **identify the negative and positive aspects of ecotourism. Summarise your arguments in a brief essay and detailing 5 negative and 5 positive impacts of ecotourism,** trying to reach your own conclusion about ecotourism. (You can generalise in your arguments, they do not have to be connected specifically to Bwindi case, which is of course only used here as an example.)

---



---



---



---



---



## Section F: Geopolitics of Northern Europe

The Baltics and the Baltic Sea is traditionally part of the Russian sphere of interest. As the Russian Federation continues its offensive geopolitical strategy, the security of this region is highly questionable. The European Union and the NATO have to take actions against the emerging threat.

**F. 1.** In this table you can see some Baltic countries and three international organisations. **You have to decide which country is member of the listed organisations. Mark with „x” in the right field. You can mark more than one for one country.**

	NATO	European Union	EFTA
Denmark			
Estonia			
Finland			
Iceland			
Lithuania			
Norway			
Sweden			

[F1: 7 points]

**F. 2.** Even Sir Halford John Mackinder, one of the founders of the geopolitics, acknowledged the strategic importance of the Baltic Sea and its islands in his extended concept of the Heartland area.

In this task, you have to **identify** (with the help of Map 1. in the source booklet, section F. 2.) some strategically important geographical places in Northern Europe.

**F. 2. 1.** „Those islands hung over Stockholm as much as Sevastopol hung over Constantinople.” It is a famous quote by a British admiral, Sir Charles Wood. These important geostrategic islands greatly impact Baltic security, therefore after the results of numerous peace treaties, they have to be always demilitarised.

**Name of the islands:**

---

**F. 2. 2.** This island is located in the mouth of the Baltic Sea. In the end of the Second World War, it was occupied by the Soviets but they returned it to a later NATO member state in 1946. Holding this island ensures access to the North Sea for the Russian Baltic fleet.

**Name of the island:**

---

**F. 2. 3.** This island is a big unsinkable aircraft carrier in the middle of the Baltic Sea. It is very weakly defended and after a successful attack, the here deployed missiles can easily reach Sweden and the Baltic countries. The Russians want to use the port of Slite in the construction of the Nord Stream 2 gas pipeline, which could cause a major security problem.

**Name of the island:**

---

**F. 2. 4.** This major city is often called as the next Crimea, because more than 80% of its population is Russian. The city's famous castle was founded by the Danish Kingdom but the Swedes also ruled this city for a long time. The first battle of the Great Northern War occurred here.

**Name of the city:**

---

**F. 2. 5.** This region is home to nearly 25,000 Russian soldiers and the Baltic fleet. Russia has deployed long-range Iskander missiles here and there are rumours about nuclear weapons, too. The only problem is the resupplying via land since it does not share a border with mainland Russia.

**Name of the region:**

---

**F. 2. 6.** These two straits are part of the main Russian trade route, connecting the North Sea and Baltic Sea. Ruling these could easily strangle the Russian fleet and keep them in the Baltic Sea.

**Name of the straits:**

---

[F2: 6 points]

**F. 3.** After the emerging Russian threat, the NATO increased its armed forces in the region, and they held a big military exercise in Sweden under the codename Aurora 17. In recent years, there are emerging number of warnings from experts and journalist, which all concludes that the NATO should have serious difficulties to defend the three Baltic states and the entire region against a hostile Russian invasion.

**Study the Figures 2-6.** in the source booklet (section F. 3.) and **formulate five concerns** about the security and the defensibility of the Baltic Sea Region, including factors like transport, energy, ethnical issues and location.

1.

---

PASSWORD:

---

2.

---

---

---

3.

---

---

---

---

4.

---

---

---

---

5.

---

---

---

[F3: 5 points]