

10th Hungarian Geographical Contest 2018/19

2nd Round

Written Test

Question and Answer Booklet

8 December, 2018

Password:

Date of Birth:



Modern
Geográfus
Alapítvány
Pécs 2004



EMBERI ERŐFORRÁSOK
MINISZTERIUMA

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, photos, tables) referred to in the Source Booklet (SB).
3. You can earn a maximum total of **150 points**. Each sections has different maximum value:

A	30
B	22
C	16
D	28
E	30
F	24

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. The backsides of the papers are available for notes and calculations, but not for answers.
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 - Get ready for Dakar [30 points]

A long time ago on the Northern Hemisphere far, far away in a deserted place a race was established to test man and machine. The aim was to survive extreme conditions of arid and dry lands. The race called Dakar after the target city of this crazy desert journey. In the last decade, organizers wanted a more specific and extreme geographical environment for car racers. Dakar conquered Southern Hemisphere and the mysterious, hidden world of azonal deserts. Explore the nature of deserts and get ready for the longest cross-country rallying.

A.1. Climate of deserts

Study Figure A.1 and Table A.2 in the Source Booklet.

A.1.2. Compare and analyse the chart of Aswan and table of Luderitz. Name the climate of Luderitz, Namibia and Aswan, Egypt. [2 points]

1.1.1. Luderitz

1.1.2. Aswan

1.2. Explain a climatic difference and a similarity between these two cities. [2 points]

1.2.1 Difference

1.2.2. Similarity

Did you know? Desert climate (often called arid climate) is a type of climate where precipitation is generally less than 250 millimetres (10 in) a year. Did you know? Half of the top ten driest place on Earth is located in azonal deserts.

A.1.3. List the four major factors (a–d) that lead to low rainfall. Provide a specific geographical location where these factors play a dominant role. Figure A4 in the SB may help to answer this problem. [4.5 points]

	Factors	Examples
1.3.1.		
1.3.2.		
1.3.3.		
1.3.4.		

1.4. Study figure A4 in SB, and name the cold currents that are labelled and shown with arrows on the map. [2.5 points]

1

2

3

4

5

A.2. Geography in the realm of aridity

A.2.1. Fill out the following test with the help of the pictures in the SB(A5-A8). [5 points]

2.1.1 The precipitation region known as the polar desert is noted for:

- a) extremely cold, dry air with high relative humidity
- b) extremely cold, dry air with high specific humidity
- c) extremely cold, wet air with high specific humidity
- d) extremely cold, dry air with low relative humidity

2.1.2. A _____ sand dune is one that has the outline of a crescent, and the points of the crescent are directed downwind.

- a) barchan
- b) transverse
- c) star
- d) parabolic

2.1.3. One distinctive type of sand dune, shown in the photograph, is a _____ dune.

- a) barchan
- b) transverse
- c) star
- d) parabolic

2.1.4. What features of this plant are adapted to its desert climate (a)? What term is used to describe plants that are adapted to drought conditions (b)?

a

b

A.3. Life under extreme conditions: azonal deserts

A.3.1. Use the correct word from the word bank to complete the text. Every words must be used once!

[9 points]

adaptations, closure, colder, coloration, deserts, effective, effectively, growth, maximize, maximum, minimize, orientation, radiation, relatively, removing, storage, suction, transpiration

Some species change their leaf _____ to _____ the surface area or the time to which they are exposed to _____ heat input. The light _____ of many desert plants also acts to _____ the reflection of light as does the surface growth of hairs and spines that absorb or reflect _____ and create a thin boundary layer of air to insulate the underlying surface. Cooling by _____ is probably most _____ in cacti and small-leaved shrubs owing to their _____ large surface area-to-volume ratio. In high-altitude or high-latitude _____, such as parts of central Asia or the Great Basin Desert, there may be no root or shoot _____ during the _____ months, even with abundant moisture from rain or snow. Many plants have xeromorphic _____ such as thick cuticles, sunken stomata, and surface hairs. Succulents (cacti and euphorbia) have well-developed _____ tissues, low cuticular transpiration, and rapid stomatal _____. The roots of some desert plants can exert a greater _____ pressure (over 100 bar) than others, _____ water from the soil more _____ than mesic plants.

[5 points]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

*Section B – The soil quiz**[22 points]*

Soil conservation: All terrestrial life ultimately depends on soil and water. So commonplace and seemingly abundant are these elements that we tend to treat them contemptuously. The very manner in which we use such terms as “dirty”, “soiled”, “muddled” and “watered down” perhaps betrays our disdain. However, ancient (and also recent) cultures have thrived and perished due to the availability or scarcity of these resources.

B.1. Answer the questions by marking the only correct answer!

[8 points]

B.1.1. What was the reason for the rise and fall of agriculture and crop production in ancient Mesopotamia?

- a) Soils were strongly leached and therefore acidified
- b) Soils got extreme salinity due to the over-irrigation of croplands and the high groundwater table elevations
- c) Erosion
- d) Soils were over-fertilized

B.1.2. What is the name of the layer of soil just under the vegetation?

- a) Topsoil
- b) Subsoil
- c) Bedrock
- d) Parent rock

B.1.3. After digging deeper and deeper, you would eventually hit solid (unweathered) rock, called _____.

- a) Humus
- b) Organic matter
- c) Subsoil
- d) Bedrock



B.1.4. Soil is made up of air, water, _____ and _____.

- a) Weathered material and organic matter
- b) Clay and sand
- c) Sticks and stones
- d) Cops and robbers

B.1.5. To avoid the rapid exploitation of soils, soils are commonly left fallow for a season or different crops are planted in each season in the same land. Planting different crops each year (e.g.: corn one year, beans the next) is called what?

- a) Terracing
- b) No till-farming
- c) Wind breakers
- d) Crop rotation

B.1.6. Why is topsoil so important to farming and gardening?

- a) It contains a lot of organic material, which contains nutrients (food) for the plants.
- b) It contains large pieces of gravel that helps hold plants in the ground.
- c) Topsoil is tasty in cereal bars.
- d) It contains a lot of acids, and gives the required pH value for plants.

B.1.7. The cat in this picture was made of a terra rossa soil. What is the dominant constituent, in respect of grain size, of this soil?

- a) Clay
- b) Silt
- c) Sand
- d) Gravel



B.1.8. Look at the picture B.1. at the SB! The “formation” in the picture was formed by during in

- a) Freeze-thaw actions, today, Hungary
- b) Freeze-thaw actions, the Pleistocene, Hungary
- c) River actions, the Pleistocene, Hungary
- d) River actions, the Pleistocene, Brazil

B.2. *Pedogeography*: Well, we assume you all know that soils are extremely diverse across the lands of our globe. Also, you must be aware that Xmas is getting close. Imagine, that Santa needs to fly from Rovaniemi in Finland (that is where he resides) to all the way to Kinshasa, Congo (poor reindeers, it gets hot and humid down there...). He peeks down to the ground surface in Rovaniemi, next to Debrecen, around Naples, Italy and in Congo (N-S route).

B.2.1. Around which city, do you think Santa Claus would find the following plant associations? Write the name of the geographical location next to the statement! [2 points]

2.1.1. Multistory forests with the highest biomass production on Earth

2.1.2. Grasslands

2.1.3. Secondary scrublands called macchia

2.1.4. Coniferous forests of Norway spruces and Scotch pines intermixed with birch trees

B.2.2. Now Santa flies from Fort William, Scotland to Astrakhan, Russia (W-E route). (see picture B.2. in SB also)

Match the following cities with the soils in the table below: Fort William (Scotland), Munich (Germany), Kiev (Ukraine) and Astrakhan (Russia) [2 points]

<i>Soil type</i>	<i>Corresponding city</i>
2.2.1. Chernozem soils	
2.2.2. Pale semidesert soils of low organic matter content	
2.2.3. Brown Forests soils	
2.2.4. Strongly leached light brown(ish) and gray(ish) forest soils	

B.2.3. Would the following climate data increase or decrease along this W-E route of Santa, i.e. from the coastline to the interior of Eurasia? Write either “increases” or “decreases” as an answer. [4 points]

2.3.1. Annual temperature fluctuation	
2.3.2. Annual precipitation total	
2.3.3. Annual evapotranspiration	
2.3.4. Ratio of annual precipitation to annual evapotranspiration	

B.2.4. Look at the pairs of photos at B.3. in SB! The pairs indicate soils and the corresponding soil environment. Two of the soil profile – soil environment pairs are right, but two of them are swapped. Use the numbers in the left column in the table below to answer the following two questions. [2 points]

2.4.1. Which are the two right pairs?	
2.4.2. Which ones have been swapped?	

2.5. Name the biomes/climatically-based name/dominant group of plant associations shown in the photos (B.3 in SB) of the right column in table above. [4 points]

2.5.1.	2.5.3.
2.5.2.	2.5.4.

*Section C – A silk road made of steel?**[16 points]*

The Silk Road was an ancient network of trade routes that connected the East and West. It was central to cultural interaction between the regions for many centuries. (And no, this task is not about the infamous anonymous marketplace on the dark web with the same name.)

In the 21st century, China quickly regained its importance in the world economy, which it used to have prior the industrial revolution and the rise of the western civilisation. Emerging among the biggest role players of world economy, Chinese relations are more important than ever for both America and Europe. While the Pacific Ocean provides a natural “highway” between East-Asia and the West Coast, connections with Europe are trickier. Beyond the existing waterways (Suez Canal, around the Cape of Good Hope, in the future maybe through the Arctic Ocean), the possibilities in land connections are also in focus. The Chinese initiative of “One Belt, One Road” plans among other elements an improved railroad connection between the Far East and Western Europe.

C.1. Study the graphs C.1. and C.2. at the SB! Compare the graphs, describe three differences between the freight transport modes in the EU and China! Give a possible explanation to every described feature! [6 points]

Difference	Explanation
C.1.1.	C.1.4.
C.1.2.	C.1.5.
C.1.3.	C.1.5



C.2. In January 2017 a train from China arrived in London maybe the first time in history. There are other European railway hubs as well, which have connections to Chinese cities in a regular basis. Study table C.3. and figure C.4. in section C of SB! Mark the following statements as “true” or “false” on the basis of strictly these two sources! Mark the “cannot be decided”, if the sources give no proper information about the statement! [6 points]

No.	Statement	True	False	Cannot be decided
C.2.1.	The value of European export to China grew more than six times between 2002 and 2015.			
C.2.2.	China has a deficit (negative balance of trade) towards Russia.			
C.2.3.	EU has a deficit (negative balance of trade) towards China.			
C.2.4.	Between 2012 and 2015 the structure of the EU export to China changed, and now it contains more valuable products, than earlier.			
C.2.5.	Rail transport has a significant share from the EU-China trade.			
C.2.6.	The growth in the value of import from China to Europe after 2012 is caused by the emerging consumption of the households.			

C.3. The main element of the “One Belt, One Road” initiative is the New Eurasian Landbridge, creates connections via Kazakhstan. (C.5. in SB). Although this Central-Asian way is complicated, still, the Chinese plans do not emphasize the possibility of a South-Asian connection from Turkey via India and South-East Asia, even there are some new infrastructural elements (for example a railroad tunnel under the Bosphorus in Istanbul) could fit very good to such a concept. Give four reasons, why a “South Asian Land Corridor” seems to be less realistic plan! [4 points]

C.3.2.1.

C.3.2.2.

C.3.2.3.

C.3.2.4.

Section D. – Dammed Rivers

The construction of river dams used to be a symbol of modernisation from the USA through the Soviet Union to Africa. Although the importance of a zero-emission energy production and the irrigation has become more and more important due to the climate change, the long-term and the regional effects of large scale river dams are highly debated. While there are some projects in the USA, where dams planned to be destroyed to regain the natural conditions of rivers, a country builds its largest improvement ever....

D.1. This task is about the river Nile. Mark the correct answer!

[3 points]

D.1.1. The Nile...

- a. has the largest average discharge by the mouth.
- b. has the largest river basin (watershed) in the World.
- c. has “gifted” Egypt to the human civilisation.
- d. has “Black” and “White” branches.

D.1.2. Navigation on the Nile ...

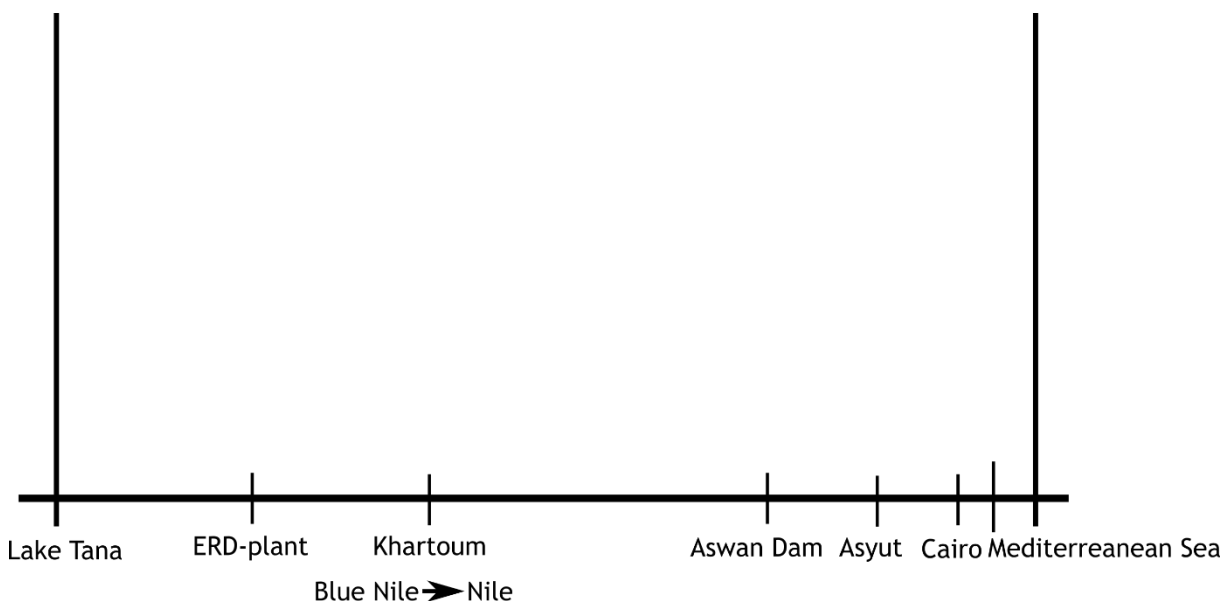
- a. is very important for the landlocked state of Ethiopia.
- b. creates a crucial connection between Sudan and Egypt.
- c. is possible from the Delta to the Lake Victoria.
- d. is difficult because of the cataracts and the extreme changes in water level.

D.1.3. Which of these factors is dominant in the formation of the Nile’s delta?

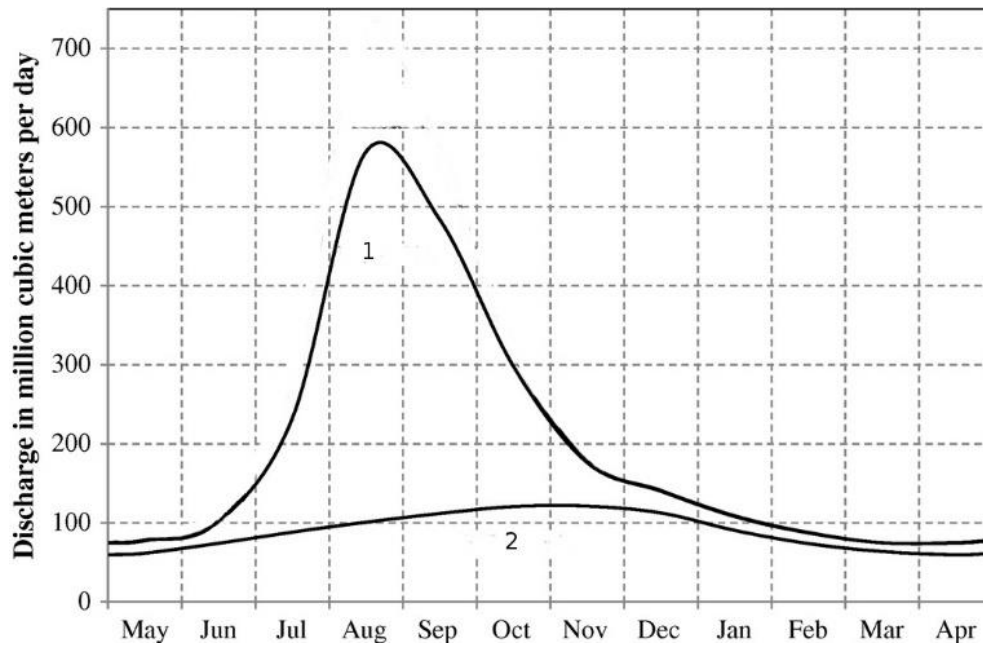
- a. The sea level of the Mediterranean Sea is continuously growing.
- b. The precipitation is very low along the lower sections of the river.
- c. The river carries large quantity of sediments; the tide level is low in the Mediterranean Sea.
- d. Since the ancient civilisation in Egypt, people have constructed canals to irrigate fields here.

D.2.1. Study the maps D.1. D.2. and D.3 in the SB! With the help of these maps, complete the figure by creating a long profile of the river and indicating the approximate elevation above the sea level and the annual average precipitation! Section must contain the Blue Nile from the origin to the confluence in Khartoum and the Nile from the confluence to the mouth. Elevation and precipitation must be depicted in different scales.

[6 points]



D.2.2. Study this figure and compare it with the map of D.2 in the SB! The graph indicates the discharge of the two major branches of the river Nile. [3 points]



D.2.2.1. Name the two branches (1; 2)

1:

2:

D.2.2.2. Justify your choice shortly.

D.3. The Grand Ethiopian Renaissance Dam.

Study map D.4. and read the source in D.5.!

D.3.1. Name two goals that Ethiopia might set with the implication of these project! [2 points]

1.

2.

D.3.2. What are the concerns and fears of Egypt about this project? Name two!

[2 points]

1.

2.

D.3.3. While Sudan has several smaller dams and Egypt realised the Aswan-project (High Dam) between 1960 and 1970, South-Sudan has no facility to exploit the river's energy. Give two factors that can explain why are no dams there!

[2 points]

1.

2.

D.3.4. Rivers are often objects of international conflicts and tensions. Give two examples from different countries, where the water can be an issue!

[2 points]

River	Country 1	Country 2	Form of tension

D.4. The countries along the Nile have quite different social and economic conditions. Complete the following tables! Use the assorted facts & data collected under the table, where available! In one case [6] you need to use SB to find the answers!

[8 points]

No.		Egypt	Sudan	Ethiopia	Uganda
1	Capital city	Cairo	Khartoum		Kampala
2	Population		40 millions		
3	Population density (people per km ²)			101	
4	The country was the colony of...	Great Britain		Italy (for a shorter while)	
5	GDP per capita, USD, 2017		4,580		
6	Foreign economy				

[2] ca. 103 millions; 89 millions; 37 millions;

[5] 13,000; 2,352; 2,100;

[3] 161, 98, 22

[6] figures D.6.1., 6.2., 6.3., 6.4.

Section E. Italy – the Eurozone’s third largest economy in trouble *30 points*

In recent months, there is a loud quarrelling between the European Union and the Italian government. The reason is the planned Italian budget for 2019, in which the government tries to expand governmental expenses, allowing a higher deficit, while EU warns of the consequences in the light of the extremely high Italian state debt. This may become a new front between Rome and Brussels, but the structural problems of the Italian economy root deeply in the geography of the country.

E.1. The graphs at E.1-2. in SB compare the Italian economic performance with some other countries. Study the graphs and answer the following questions!

E.1.1. According to the recent GDP-growth, Italy reached the level of its 2008 output in the year of 2016 once again. Name a country, with an even slower recovery! [0.5 points]

E.1.2. According to the graph E.2., which countries’ economic growth has been accelerated and which ones are slowing down? Classify represented countries in three classes! [3 points]

1.2.1. Accelerating growth

1.2.2. Stabile growth

1.2.2. Decreasing growth

E.2. Study table in SB at E.3. The table shows main macroeconomic indicators of Italy between 1990 and 2017. The table is divided into five-year periods (the last three-years stage counts as a 5-year period). Use the backside of the paper for calculations, if needed.

E.2.1. Which five-year period shows the highest accumulated GDP-growth? [0.5 points]

E.2.2. In which five-year period(es) was the accumulated growth of state government debt higher than the accumulated growth of GDP (in percentage)? [2 points]

PW:

E.2.3. Create a graph, which represents the following indicators in every five-year period! The indicators are: [11 points]

- average GDP growth
- average rate of inflation
- average rate of unemployment

Try to figure out which possible representation method will suit the best for the task!

E.2.3.1. According to your own graph, which was the best period of the Italian economy? [1 point]

E.3. Italy has long been a divided country not only by economic performance, but also by the history and some cultural elements. Using the sources of E4-6 and your own knowledge, describe the spatial structure of the Italian economy, and highlight some of the factors of the divergent development!

[12 points]

--

[illegible]

Section F – An English world

The „how“ is a question of historian narratives, but anyhow Great Britain had become the first global power ever. Many elements of the British culture have spread worldwide, but the most permanent heritage is the global dominance of English language.

F.1. Study the map at F1 in SB! It shows the English-speaking world, or, at least, in countries, where English plays an important (official) role.

F.1.1. Pair the categories of the map's legend (1-7) with the categories listed here under A-G.

A: ~~Not official with majority~~; B: Co-official with majority, C: Official with majority, D: Unofficial, E: Co-official but minority, F: Anglosphere; G: Official, but minority [3 points]

Categories indicated in legend

1:
2:
3:
4:
5:
6:
7: A: Not official with majority

F.1.2. Look at the map once again! We formed some statements, which describe one state among the coloured ones (only colours marked with numbers are in the legend). Answer with the name of one single country! [5 points]

1.2.1. The country is in Africa, but its flag represents the colours of USA, and its capital is named after a former US-president. The country recently is led by a former football-star.

1.2.2. This country is famous for its tea plantations, has an official name in local language and another common name given by former colonists. It has a strategic location in South-Asia.

1.2.3. Great Britain has nothing to do historically with this country: the local use of the language originates from an almost 50-years period of close relation to another English-speaking country. Majority of the population follow the Roman Catholic religion.

1.2.4. This country together with its two "sisters" are "foreign bodies" in a macroregion, where English is rather an exception. Its capital is named after King George (no matter, which one). If you leave this capital and travel eastwards to one of its neighbour, you will need some Dutch to talk with locals. Further travel (still on land) will bring you to the territory of the European Union.

1.2.5. Although this island gave its name of a specific cross, its flag contains another one: the George Cross was awarded to the local community because of their heroic persistence during world war two. On the crossroad of two continents it's a popular touristic destination too.

F.2. Study the table about the cities with highest global index value in F.2. in SB!

F.2.1. Give the number of cities, which used to be part of the British Empire for at least a certain stage in their history (including London, but excluding short-term occupations)! [1 point]

F.2.2. Global cities could be classified in many ways – most simply, there are European ones, Asians and so on. Your task is to create four categories, which allow to assign all the cities listed. Some of them can have common segments, but not necessarily. Category “D” is for “all others”, but it should not contain more than three elements! [8 points]

Give the name of the categories, and assign the cities (by using the numbers in the first column).

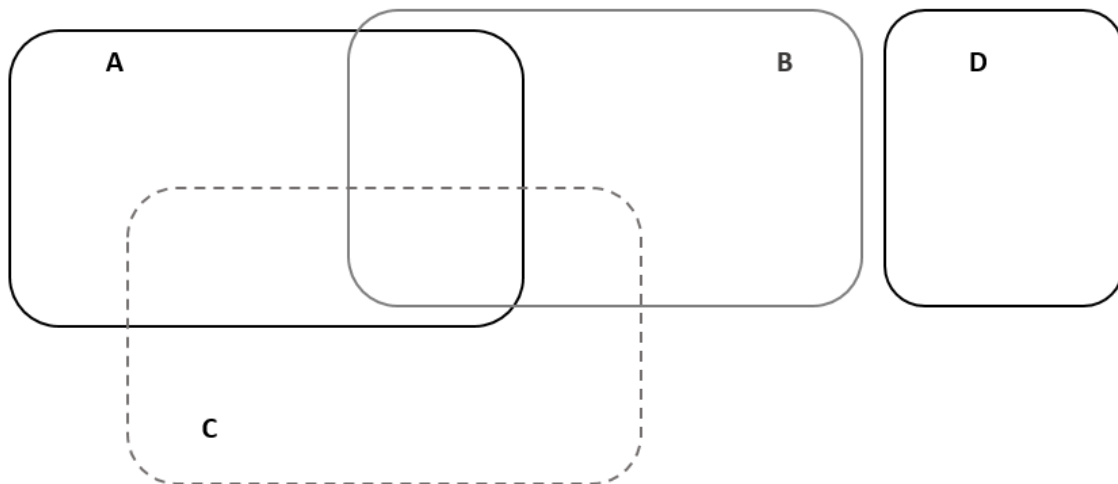
A:

B:

C:

D:

Classify the cities by using numbers of “2017 rank” column (SB F1).



PW:

F.3. Among the English-speaking global cities Singapore is one of the most dynamic ones, and represents a unique composite of English, Malayan and Chinese traditions and culture.

F.3.1. Although it lacks natural resources, this tiny state is among the wealthiest nations of the world according to their GDP/capita. Name three items, which are possible factors of the success of the city! [3 points]

3.1.1

3.1.2

3.1.3

F.3.2. Study the structural map and the pictures in F3-6 in the SB! What kind of structural and environmental challenges this city is to face with according to its constrained land area and rapidly growing population? Give four possible challenges, which can characterise Singapore! [4 points]

3.2.1

3.2.2

3.2.3

3.2.4

The End 😊