

**2019 United States Geography Olympiad - Map Examination  
Question Packet**

**General instructions -**

Respond to each of the following questions on the answer document provided. Only answers written in the appropriate space on the answer document will be marked. Where appropriate, you should write sentences or phrases instead of single words. If a question or section asks for a specific number of reasons or answers, give only the required number of answers specified. The examination consists of eight sections, and each section will be worth the specified number of marks. You have one hour to complete this section of the examination and the accompanying multiple choice questions.

**Section 1 [20 marks]**

Please refer to the maps in Section 1 of the Resource Booklet.

1. To the nearest percent, what percentage of the population of the United States was foreign born in the last census? By how many percentage points has that number increased since 1990? To the nearest million, what was the foreign-born population of the United States in the last census? What country ranks second to the United States in the number of foreign-born residents?
2. Identify and explain three reasons why the percentage of native-born population has declined in the area of Middle America shown on the map.
3. Define the term chain migration. How might chain migration account for some of the trends shown in Middle America on these maps? Make reference to specific locations and immigrant groups in your answer.
4. Define the term friction of distance. How does friction of distance account for the immigration trend shown on these maps in the area of southwestern Texas?

**Section 2 [30 marks]**

Please refer to the map in Section 2 of the Resource Booklet.

1. Based on the information in the map, describe in detail the spatial pattern of each of the following: a) road networks in the Southern Hemisphere; b) airline routes in the Northern Hemisphere; c) shipping lanes on a global scale
2. Identify and explain three specific environmental impacts resulting from airline travel. Identify and explain two ways that aircraft manufacturers could mitigate these environmental impacts. Identify and explain two policies that could be enacted by governments to reduce the environmental impacts of air travel.
3. Define the term e-commerce. Identify and explain two positive impacts of e-commerce on the environment and two negative impacts of e-commerce on the environment. Be as specific as possible in the space provided.

**Section 3 [15 marks]**

Please refer to the map in Section 3 of the Resource Booklet.

1. On what minor tectonic plate is this area located? What geologic process causes frequent earthquakes at the boundary between this plate and the Indo-Australian Plate?
2. What type of volcanoes, commonly formed at this type of plate boundary, are nearly all of those shown on the map? Identify two typical physical characteristics of this type of volcano.
3. The area of Malang on this map is characterized by a series of maars. Define the term maar.
4. Given the frequency of earthquakes and tsunamis in this region, identify and explain four things that the Indonesian government could do to mitigate the effects of these disasters.

**Section 4 [20 marks]**

Please refer to the map in Section 4 of the Resource Booklet. This map shows the boundaries of the Second Congressional District in the area of Houston, Texas currently represented by Rep. Dan Crenshaw, a Republican.

1. Define the term gerrymandering.
2. Define the term compactness as it relates to a legislative district. Explain how this district is or is not a compact district.
3. Define the terms cracking and packing as they relate to legislative districts. Given that greater Houston (the area enclosed by Sam Houston Parkway – the larger of the two loop highways) is largely Democratic with some areas of affluent, conservative voters, and that the Houston suburbs are predominantly Republican, how might this district be considered to crack Democratic voters in greater Houston?
4. How can geographic information systems (GIS) data be used to draw legislative districts that are more 'fair'? What criteria might be considered to measure fairness in congressional districts? Be as specific as possible in the space provided.
5. Explain the relationship between the census and redistricting. Be as specific as possible in the space provided.

**Section 5 [15 marks]**

Please refer to the map in Section 5 of the Resource Booklet.

1. Given the information on the map, what two nations have the largest number of citizens at risk from particulate air pollution?
2. According to the WHO, people in low- to middle-income countries experience a disproportionate burden from health effects of particulate air pollution. Identify and explain two reasons why this is likely to be true.
3. Despite their wealth, cities such as Jeddah and Riyadh consistently rank among the most polluted in the world. Identify and explain one natural cause that would result in high levels of particulate pollution in these cities. Identify three other reasons these cities are likely to experience very high pollution levels.