

Question 3: Two Stimuli**7 points**

(A) Identify ONE city on the map that is both a metacity and a world city.**1 point**

Accept one of the following:

- A1. Beijing, Shanghai, or Tokyo

(B) Describe the spatial pattern of world cities shown on the map.**1 point**

Accept one of the following:

- B1. World cities are located in North America, Europe, and/or Asia.
- B2. Most world cities are located in the Northern Hemisphere or the Eastern Hemisphere.
- B3. Many world cities are located on or near a coastline.
- B4. World cities are most densely clustered in Europe.
- B5. World cities are located in more economically developed areas.
- B6. There are no world cities in Africa, South America, northern Asia, and/or Australia.

(C) Compare the concept of a metacity with the concept of a world city. (Response must include both concepts in the comparison.)**1 point**

Accept one of the following:

- C1. Metacities are determined by population size (over 20 million people), whereas world cities are determined by their importance (e.g., economic, cultural).
 - C2. Most metacities are located in less developed countries, whereas most world cities are located in more developed countries.
 - C3. Metacities have attained their status through rapid rural-to-urban migration and/or rapid urban growth, whereas world cities have attained status through their position as major centers in the global economy.
 - C4. World cities function at the top of the world's urban hierarchy and/or drive globalization, whereas metacities primarily have national economic and/or cultural importance.
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(D) Explain ONE reason why the cities shown on the table have higher city GDP per capita than the country GDP per capita. 1 point

Accept one of the following:

- D1. These cities are more economically productive than other parts of the country because they offer greater opportunities and/or more goods or services.
- D2. These cities function as centers of the service economy (e.g., tertiary, quaternary, quinary, technology) that generate more economic value or output.
- D3. Higher-income residents often cluster in these cities due to the services available and/or the increased variety of social opportunities (e.g., entertainment, sports, charitable organizations).
- D4. People in these cities are less likely to work in primary sector activities (e.g., agriculture, resource extraction) than people outside of cities.

(E) Explain ONE way population growth in a metacity may challenge environmental sustainability. 1 point

Accept one of the following:

- E1. By consuming natural resources (e.g., water, energy, forests) faster than they can be replaced, creating a larger ecological footprint, larger energy footprint, or larger carbon footprint.
 - E2. By generating large amounts of waste and/or pollution (e.g., air pollution, water pollution, solid waste, sanitation waste), causing environmental degradation or contamination.
 - E3. Population growth may cause local biodiversity loss, habitat loss, and/or pollution through land use change.
 - E4. By increasing carbon emissions (e.g., through energy use, vehicular use, construction) and/or contributing to climate change, affecting local, regional, and/or global ecosystems.
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(F) Explain ONE reason why migrants to metacities may have difficulty obtaining housing. 1 point

Accept one of the following:

- F1. Migrants may encounter high housing costs or may not be able to find vacancies due to high population densities.
- F2. Migrants may encounter high housing costs or may not be able to find vacancies due to a large or growing urban population.
- F3. Available land for new housing may be on the urban periphery, far from employment locations, schools, transit, and/or service centers.
- F4. Access to housing may be tightly controlled by a small number of owners or agents who set prices and/or discriminate against migrants.
- F5. Available land for new housing may be located in potentially hazardous areas, zones of disamenity, and/or inaccessible places.

(G) Using the data from the table, explain the relationship between a city's level of economic development and the city's percent population growth over time. 1 point

Accept one of the following:

- G1. Lower city GDP per capita (e.g., Cairo, Dhaka) corresponds with, or has an inverse relationship with, higher percentage population growth.
- G2. Higher city GDP per capita (e.g., New York City, Paris) corresponds with, or has an inverse relationship with, lower percentage population growth.
- G3. Lower city GDP per capita (e.g., Cairo, Dhaka) corresponds with a city that is in the early stages of the demographic transition model, when population growth is high.
- G4. Higher city GDP per capita (e.g., New York City, Paris) corresponds with a city that is in the later stages of the demographic transition model, when population growth is low or negative.
- G5. Cairo and/or Dhaka are metacities where higher population growth corresponds with, or has an inverse relationship with, lower city GDP per capita.
- G6. New York City and/or Paris are world cities where lower population growth corresponds with, or has an inverse relationship with, higher city GDP per capita.
- G7. For cities in the table, economic productivity may encourage population growth due to pull factors (e.g., employment opportunities, business opportunities, or investment opportunities).

Total for question 3: 7 points