HUMAN GEOGRAPHY

SECTION II

Time—1 hour and 15 minutes

3 Questions

Directions: You have 1 hour and 15 minutes to answer all three of the following questions. It is recommended that you spend approximately one-third of your time (25 minutes) on each question. It is suggested that you take up to 5 minutes of this time to plan and outline each answer. You may plan your answers in this orange booklet, but no credit will be given for anything written in this booklet. **You will only earn credit for what you write in the separate Free Response booklet.**

Question 1

1. Dairy farming is a type of intensive agriculture. In recent decades, dairy farming and the ways in which dairy products are made have changed significantly.

   A. Define intensive agriculture.

   B. Describe the change over time in the numbers and sizes of family-run dairy farms.

   C. Explain how economies of scale are used to maximize profitability in dairy farming.

   D. Explain a recent trend in the location of dairy farms with respect to consumer locations.

   E. Explain ONE way in which a complex commodity chain connects large-scale dairies to consumers.

   F. Explain ONE way in which small-scale dairy farms can specialize to compete with large-scale dairies.

   G. Explain an environmental sustainability problem that results from the production of dairy on large-scale farms.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

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Question 2

WORLD CITIES, RANKED IN THE GLOBAL CITIES INDEX, 2017

Rank	Score	City
1	63.2	New York City
2	62.9	London
3	53.2	Paris
4	47.4	Tokyo
5	44.7	Hong Kong
6	39.1	Singapore
7	38.3	Chicago
8	38.1	Los Angeles
9	37.0	Beijing
10	34.4	Washington, D.C.

Score Breakdown	Percent of Score
Business activity	30%
Human capital	30%
Information exchange	15%
Cultural experience	15%
Political engagement	10%

Source: A.T. Kearney

2. The data table shows the relative rankings of 10 world cities, as reported in the global cities index. The global cities index is scored using the criteria shown, where each category is weighted as to its importance to the overall score.

   A. Describe the world city concept in the context of globalization.

   B. Explain the importance of world cities as nodes in the hierarchical diffusion of a globalized culture.

   C. Explain ONE way the Internet may interrupt the hierarchical diffusion of a globalized culture.

   D. Explain ONE difference between world cities and metacities.

   E. Using the data in the table, explain ONE limitation of the world city classification system in reflecting current patterns of global urban development.

   F. Using the data in the table and the scoring criteria, explain ONE reason for the difference in scores between London and Washington, D.C.

   G. Explain ONE way economic linkages among world cities may create risks during global financial crises.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

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Question 1: No Stimulus — 7 points

(A) Define intensive agriculture. **1 point**

Accept one of the following:

- A1. Agriculture that requires large quantities of inputs (e.g., labor, capital, agricultural products) per unit of land.
- A2. Agriculture that attempts to maximize yield (e.g., double-cropping, terracing) on relatively smaller amounts of land.

(B) Describe the change over time in the numbers and sizes of family-run dairy farms. **1 point**

Accept one of the following:

- B1. Every year, there are fewer family-run dairy farms as small farms go out of business or become part of larger conglomerates. At the same time, the average size of dairy farms is increasing.
- B2. Family-run dairy farms decreased by 94,000 between 1992 and 2018 (e.g., a decrease of 93% since 1970, decreasing by 3% per year), but remaining farms increased in size to reduce production costs that consistently run more than milk prices.
- B3. Family-run dairy farms decreased in number as more dairy products are being produced by large corporate farms (e.g., agribusinesses) instead of family-run farms.

(C) Explain how economies of scale are used to maximize profitability in dairy farming. **1 point**

Accept one of the following:

- C1. Dairy farms can reduce per unit costs by manufacturing larger volumes of milk or dairy products using mechanization, transportation, or computerized production processes that reduce the amount of labor or energy needed to produce each unit of food.
- C2. Large dairy farms can often finance the costs of production or the price of farmland with larger loans or lower interest rates than what is available to small family farmers.
- C3. Dairy farms have engaged in vertical integration to control multiple steps in the production process as a means of increasing profitability.

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(G)	Explain an environmental sustainability problem that results from the production of dairy on large-scale farms. Accept one of the following: • G1. Concentrations of animal waste can result in water contamination such as of groundwater, surface water (e.g., streams, ponds, bays), or drinking water harming natural ecosystems or posing human health risks to communities downstream from the source of pollution. • G2. Nitrous oxide or methane produced by cows are major contributors to global warming. • G3. Degradation of ecosystems (e.g., deforestation, overgrazing) has occurred in order to increase the size of or production levels on dairy farms. • G4. Large-scale farms may consume large amounts of fossil fuels (e.g., for the transportation, production, refrigeration, or cleaning of dairy products or to provide care for dairy cows) which contributes to pollution. • G5. Antibiotics and concentrated feed containing artificial chemical supplements can contaminate the environment through animal waste. • G6. Waste lagoons can be destroyed by natural disasters (e.g., floods, hurricanes) and contaminate aquifers, surface water, and drinking water. • G7. Bank erosion causes stream sedimentation and biodiversity loss and/or aquatic ecosystem damage downstream. • G8. Dairy farms are water intensive and can cause depletion of groundwater aquifers. • G9. Dust containing ammonia contaminates the air in locations near large-scale dairy farms.	**1 point**
	Total for question 1	**7 points**

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