

AP[®] HUMAN GEOGRAPHY 2007 SCORING GUIDELINES

Question 1

PART A (1 Point)

Apply the underlying principles of von Thünen’s agricultural land-use model to predict the locations of the activities shown in X and Y relative to a large urban area.

Must identify the location of **BOTH** agricultural activities relative to the city.

- **X** is located closer to the city, or in the city, and **Y** is located farther from the city.

PART B (2 Points: 1 point for identifying a concept, and 1 point for explanation)

Choose either activity X or activity Y and apply the underlying principles of von Thünen’s agricultural land-use model to explain the location of the activity.

1 point: Must identify a concept that relates to the location of the agricultural activity at either X or Y.

- X—intensive agriculture, higher-value land, perishable goods, accessibility to market, where the farmer can maximize profit
- Y—extensive agriculture, lower-value land, fewer perishable goods, less accessibility to market, where the farmer can maximize profit

1 point: Explanation of why the concept caused this type of farming to locate at X or Y.

PART C (4 Points: 1 point for the identification of each of two factors, and 1 point for each of two discussions)

Discuss two factors that explain why agricultural land-use patterns today differ from those developed by von Thünen’s model in 1826.

1 point: Must identify and briefly explain a factor that results in agricultural land-use patterns different than those proposed in von Thünen’s model:

- refrigeration and food preservation
- improved transportation
- regional, global markets; corporate decision making
- government policy
- agricultural products used for purposes other than food (multiple use)
- forests no longer occupy a zone close to the market

1 point: The discussion must relate to today’s spatial pattern of agricultural land use compared to the pattern suggested by von Thünen’s model of 1826 (pattern-based discussion).

Write in the box the number of the question you are answering on this page as it is designated in the exam.

1. a.

In von Thunen's model, land use is based on criteria such as distance from the center of the city, transportation, perishability of products and costs. Activity X would be located very close to the center of the large urban area. ~~Activity Y~~ This could be explained with cost, transportation and distance from center. Activity Y is located on the outer edges of the large urban area due also to maximize profits, increase perishability time and transportation costs. Grains can last longer than produce without spoiling and be transported further.

1, b.

Write in the box the number of the question you are answering on this page as it is designated in the exam.

Activity X shows a lot of fresh produce such as fruits and vegetables. Under von Thunen's model, this activity would be located at or near the center of the large urban area due to many factors.

One factor is perishability. Fruits and vegetables are likely to spoil and must be accessible quickly before they go bad. Locating further from the center could jeopardize the product.

Another factor in determining X's location is transportation. The transport of a large amount of fresh produce would be very difficult. As opposed to cattle who can walk themselves, fresh produce must be collected and carried to trucks and shipped. This trip is made easier and does not run the risk of spoiling the produce if it is located near the center of the large urban area.

Cost is another factor is where Activity X is located. In addition to reducing transportation costs, locating near the center of a large urban area can allow greater access to a large market. Profits increase as market increases.

Finally, distance from the center of the large urban area can be a factor in determining X's location as the area generally around the center is devoted to dairy and fresh produce whereas other activities such as lumber and cattle are on the middle to outer regions. These activities are placed to maximize profit and decrease transportation costs.

Write in the box the number of the question you are answering on this page as it is designated in the exam.

1. C.

In today's agricultural land-use patterns there are some differences between it and the 1826 von Thunen model.

One of the differences is that the von Thunen 1826 model relied heavily on the fact that more perishable products such as dairy and fruits would locate near and stay near the center of a large urban area to quickly dispense products that would otherwise go bad. Today, modern technology allows us to use refrigeration, chemicals and other methods to keep foods fresher for a longer time. This means that an ~~area~~ activity once confined to that center region can now expand into the outlying areas. The hinterland grows and people no longer must depend on only one source for perishable items. They can get them from multiple areas.

Another factor that explains how the agricultural land-use patterns today differ from the 1826 model is that products that were once used a certain way are no longer used in the same manner. For example, lumber was located relatively close to middle region from a large urban area because lumber was used as a source of energy to keep homes warm and do other activities. Lumber is no longer needed at that distance because we depend on other sources of energy such as coal now. The usage of products helps to differ the modern and 1826 land use patterns.

Write in the box the number of the question you are answering on this page as it is designated in the exam.

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A. The underlying principles of von Thünen's model include the factor of cost of transportation depending on the distance the agricultural activity is located from the market center. In Figure X, truck farming is shown in which specialty crops ~~are~~ such as fruit are being sold. ~~This~~ This activity in Figure X would most likely be located nearby ^(and surround) the large urban area. In Figure Y, commercial farming of grain crops are shown in a wide open area. This activity would most likely be located ~~be~~ far away in comparison to the activity shown in Y from ~~the~~ a large urban area.

B. Activity X would be located close by to the city because of several reasons related to the model. One reason is that the produce ~~grown~~ grown spoils quickly ^{and is easily damaged} so it must be located nearby ^{to} customers. Also, it is cheaper to transport the food when the farming is located close by. Also, specialty crops are not usually extensively grown so not as much land needs to be bought and cultivated. Therefore, it is cheaper ^{to} locate nearby the urban center.

C. One factor of agricultural land use patterns that is different today is that we have more access to transportation networks that makes it easier ^{and cheaper} to send produce to many places. Also, refrigeration and better packing make it possible to send produce farther distances.

Write in the box the number of the question you are answering on this page as it is designated in the exam.

1

A. According to Von Thünen's model, X would most likely be located in the market area of the city. Y, however, would be located most likely in the periphery of the large urban area.

B. In Y, the location is most influenced by proximity to the hinterland, it would not be extremely far away assuming the product is perishable. If the product is perishable, time required to transport it must be completely minimal. If the farm were located too far away from the hinterland, the product would not last the trip. If, on the other hand, the product were not very perishable, the proximity of it to the hinterland would be much farther away.

C. The urban centers in 1826 were much different than modern-day hinterlands. Due to counterurbanization and ~~urban diffusion~~ urban sprawl, the cities are placed differently.

Another difference would be the advances in technology used for agriculture. It is slightly easier for goods to be transported from rural to urban areas.

AP[®] HUMAN GEOGRAPHY

2007 SCORING COMMENTARY

Question 1

Overview

Question 1 focused on the basic elements of von Thünen’s agricultural land-use model, the principles underlying this model, and the application of this model to current spatial patterns of agricultural land use. Thus, this question linked an abstract geographic model, the hypothetical spatial pattern predicted by this model, the principles and spatial processes generating this pattern, and the real-world application and evaluation of the model outside its theoretical and historical context.

The question contained two drawings as stimulus. The first (drawing X) depicted a man with boxes of fresh produce. The second (drawing Y) depicted a combine being driven in a field. The stem of the question stated that the diagrams reflected agricultural activities in the hinterland, as opposed to the center or market of a large urban area. In part A students were assessed on their basic knowledge of the spatial patterns predicted by the von Thünen model. Specifically, they were asked to predict the locations of the activities shown in X and Y within the hinterland, relative to a large urban area. In part B students were prompted to explain the location of either X or Y to show their understanding of the underlying principles generating the predicted spatial pattern. Part C then asked them to consider contemporary agricultural land-use patterns and discuss why they are different from those of the von Thünen model.

This question tested knowledge of the “Agricultural and Rural Land Use” section of the *AP Human Geography Course Description*, in particular the “Rural land use and settlement patterns” section of the Topic Outline in which the von Thünen model is cited as a model of agricultural land use. In addition, an important goal of the course is for students to learn the importance to human geographers of understanding spatial patterns as well as the spatial processes underlying these patterns.

Sample: 1A

Score: 7

Full credit was awarded to this essay that shows a fundamental understanding of the von Thünen model. The student correctly locates activity X “very close to the center of the large urban area” and activity Y “on the outer edges of the large urban area,” receiving 1 point. The essay received 2 points in part B for identifying and explaining the location of activity X. Fresh, perishable produce must be close to markets and shipped quickly before it spoils. Additionally, the student mentions the challenges of transporting perishable products to maximize profits. The essay received 4 points in part C. Two points were given for identifying and explaining how refrigeration and other technologies allow produce to be grown in multiple outlying areas much farther away from markets. Two additional points were earned for stating and explaining that lumber is no longer used as a source of energy as it was in 1826. The student notes that “we depend on other sources of energy such as coal now,” and the land-use patterns today differ greatly from the 1826 model.

Sample: 1B

Score: 5

This essay received full credit in parts A and B, earning 3 points, and partial credit, or 2 points, in part C. In part A the student correctly locates activity X near “the large urban area” and activity Y “far away” from the city. The student chooses to discuss activity X in part B, indicating that produce located near to and sold at point X “spoils quickly and is easily damaged so it must be located nearby to customers.” The student also correctly indicates that “it is cheaper to transport the food when the farming is located closeby [*sic*],” and that it does not take as much land to grow specialty crops. In part C the points were

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Question 1 (continued)

awarded for identifying easier and cheaper agricultural transportation methods and explaining the use of “refrigeration and better packing [methods]” that enable produce to be sent greater distances.

Sample: 1C

Score: 3

The essay received 1 point in part A for placing activity X “in the market area of the city” and activity Y on “the periphery of the large urban area.” The student received 2 points in part B for explaining how perishable products must be shipped quickly to reduce spoilage; if they are not located close to the market, these items would not last the trip. The student indicates that activity Y is most influenced by “proximity . . . to the hinterland” and notes that the activity “would be much farther away” if the product was “not very perishable.” The essay received no points in part C because it never appropriately relates any factors altering the agricultural land-use pattern proposed by von Thünen. The placement of cities and counterurbanization do not apply to the model.