

# AP<sup>®</sup> HUMAN GEOGRAPHY 2008 SCORING GUIDELINES

## Question 1

Von Thünen’s model of land use and Burgess’ model of land use are similar in appearance but different in their geographic setting. Analyze and discuss the two models in terms of each of the following:

### **Part A** (1 point)

For each of these models, identify the type of land use the model addresses.

Acceptable answers (both are required)

- Von Thünen: agricultural, farming, or rural
- Burgess: urban, city, or a minimum of two descriptors

*Note:* Students may receive credit for this answer if reference is made elsewhere in part B or part C to Burgess, along with words descriptive of urban land use (e.g., “residential” or “housing” and “manufacturing” or “warehousing”). *But, students cannot use the same point twice.*

### **Part B** (2 points)

Identify two assumptions that are shared by both models.

Any two of the following

- Isotropic flat plain or uniform surface; featureless
- Importance of centrality (e.g., accessibility to market; CBD)
- Individuals maximize profit/minimize costs/maximize use—“highest and best use”
- Transportation costs are proportional to distance in all directions
- Single market or CBD (e.g., isolated state)

### **Part C** (4 points: 1 point for the identification of each of the models’ effects, and 1 point for each of the two explanations)

For each of these models, explain how relative location affects land-use patterns.

#### VON THÜNEN

Effect	Explanation
Intensive land-use near market	High profit(s) needed to pay rent
Wood and perishable/fragile products near market	High (frequent) transportation to nearby market
Extensive agriculture (grain crops/grazing) at the periphery	Low land rent or low transportation costs

#### BURGESS

Effect	Explanation
Intensive land use near CBD	High costs of land/accessibility
Intensity/density of residential land use decreases with distance away from CBD	Households and other land uses locate away from the CBD, as they can afford transportation
High socioeconomic class at edge of city	Households in this range can afford larger homes and acreage, as well as transportation

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

1 1A 1092

A. Von Thünen's model addresses agricultural land use, while Burgess's concentric zone model addresses patterns of land use in cities. Von Thünen's model analyzed how distance affected the location of certain types of agriculture, such as dairy farming, ranching, and forestry.

B. Both models assume that the terrain is flat, so there is an equal distance for each zone's borders (which forms a circle). Also, the models assume that transportation costs are the same, allowing for a level playing field and equal opportunities.

C. In von Thünen's model, each type of agriculture had to be in the relative location best suited to it. Dairy farming was situated closest to the central market, because its <sup>as well as other perishable items</sup> ~~would~~ products were perishable and needed to be transported quickly. Forestry was in the next zone, because although it was nonperishable, wood ~~is~~ <sup>was</sup> too heavy to be transported cheaply. A situation (relative location) close to the market reduced transportation costs. In the next zone, crops such as wheat were located, as they were light and ~~more~~ <sup>cheaper</sup> ~~easy~~ to transport. Even farther away were livestock farmers, because livestock

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could transport themselves to market. Relative location's effects on transportation costs were what affected land use patterns.

In the Burgess Model, relative location's effects on transportation costs were evident as well. A zone of transition filled with industrial manufacturers and poor housing was in the center. Poorer households could not afford the gas or bus fare to transport them to jobs in the CBD, so they lived in the innercity. As the zones go outward, the houses become more affluent because the people can afford higher transportation costs. ~~It~~ At the very outside zone are the commuters, who have houses in the suburbs and who commute to work. The ~~middle~~ working class lives in older homes around the zone of transition; the middle class around that.

1 A. Von Thunen's model of land use addresses where in relation to a city, agricultural products are produced. It shows how a farmer's decision to produce a product in a certain spot depends on two factors - cost of land and cost of transportation to market.

Burgess's concentric zone model describes urban land use and where things are in relation to the central business district.

B. Both models assume that the land is relatively flat and there are no physical features like rivers to divide the land. Both models also assume that there is only one city in the area and it has a good amount of land surrounding it.

C. In Von Thunen's model, where an agricultural product is produced depends on the cost of land and the cost of transportation to the market. The land closest to a city has the most

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expensive rent, but has the lowest transportation costs. Land farther away from a city therefore, has the lowest land rent, but the highest transportation costs. Products that are perishable such as dairy products or products that are expensive to transport are located close to the city. ~~Products that are~~ as ~~animals~~ Products that are relatively easy to transport such as wheat are located farther from the city.

Burgess's model shows how services and housing is grouped around the CBD. Lower end housing is located closer to the CBD while higher end housing is located in a ring farther away. Manufacturing is also located in a ring outside the city.

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1C 1092

A. The Von Thunen model as well as the Burgess model use a concentric zonal model. Von Thunen's model addresses farming land use. Burgess' model addresses urban land uses.

B. Both models assume the same types of things. One assumption is that as distance from the central area decreases, the average value of land is less, but the transport costs are higher. This assumption can be seen in the Von Thunen model where crops that need the most land are far away from the center because the land is cheaper, but greater transport cost must be paid to move it. Another assumption is that areas near the center will be for more intensive use while, as distance increases, it becomes extensive. In other words, areas near the central place will have a higher concentration of items than a farther place will have.

C. Relative location affects both models in their land use patterns. In the Von Thunen model, relative location to transport lines is a key variable. Because the Von Thunen model deals with farming products, they had to be located next to transit lines so that they could be transported to the market quickly. Also, relative location to the market was important. More perishable and needed items were located closer to the central areas and less in demand or perishable items were

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located farther from the market. Relative location for the Burgess' model affects it the same way. Relative location in terms of transport is also important to it. The relative location of things in the Burgess' model compared to other urban uses also affects the use of the land in that area.

# AP<sup>®</sup> HUMAN GEOGRAPHY 2008 SCORING COMMENTARY

## Question 1

### Overview

This question focused on the comparison of two important land-use models (the von Thünen model and the Burgess model), their assumptions, and the concepts and processes underlying their spatial distributions. Part A asked students to identify the type of land use addressed by each model. Part B required students to identify two common assumptions of both models. Part C asked students to explain, for each of the models, the effect of relative location on the resulting land-use patterns.

The question tested knowledge of two sections of the *AP Human Geography Course Description*. The “Agricultural and Rural Land Use” section, in particular the “Rural land use and settlement patterns” portion of the Topic Outline, emphasizes the importance of the von Thünen model within the AP Human Geography curriculum. In the “Cities and Urban Land Use” section, the Burgess model, as well as the Hoyt and Harris–Ullman models, were named as important models of internal city structure. In addition, the “Goals” section of the Course Description discusses the importance to human geographers of relationships among spatial patterns and processes, and of interconnections between places; these concepts were especially relevant for answering part C.

### Sample: 1A

#### Score: 7

This essay demonstrates a fundamental understanding of land use for both the von Thünen and Burgess models and was awarded full credit. In part A the essay earned 1 point for correctly identifying that the von Thünen model is about “agricultural land use” and the Burgess model is about “land use in cities.” The essay received 2 points in part B for referencing two assumptions shared by both models: the isotropic flat plain and transportation costs proportional to distance in all directions. The essay earned all 4 points in part C. Two points were awarded on the von Thünen model for stating that perishable products will be situated closest to the market and explaining that these products need to be “transported quickly.” Two additional points were awarded on the Burgess model for identifying that a “zone of transition filled with manufacturers and poor housing was in the [city] center.” Also included is an explanation that “[p]oorer households could not afford” the transportation costs needed to live outside the area around the central business district. The student explains that the location of poorer people near the center of the city was a necessity, unlike those who lived in the commuter zones.

### Sample: 1B

#### Score: 5

This essay received full credit in parts A and B, and partial credit (2 points) in part C. In part A the student received 1 point for identifying that the von Thünen model describes “where . . . agricultural products are produced” and the Burgess model describes “urban land use . . . in relation to the central business district.” The essay received 2 points in part B for identifying two assumptions shared by both models: the isotropic flat plain and the single market or central business district by stating that “Both models assume [*sic*] that the land is relatively flat and there are no physical features like rivers to divide the land” and “there is only one city in the area.” Two points were awarded in part C for stating the effect that “The land closest to a city has the most expensive rent, but has the lowest transportation costs.” The student continues by explaining perishable products “are expensive to transport” and must be “located close to the city.”

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**Question 1 (continued)**

**Sample: 1C**

**Score: 3**

This essay received full credit in part A, no credit in part B, and partial credit (2 points) in part C. The point in part A was earned for recognizing that the von Thünen model addresses “farming land use” and the Burgess model addresses “urban land uses.” No points were awarded in part B, because the student does not address the basic assumptions of both models (e.g., a featureless plain or single market). The student gives general descriptions related to the von Thünen model, but assumptions shared by the two models are not provided. Two points were earned in part C for a discussion of the effect that relative location has on land-use patterns. The explanation includes the knowledge that perishable farm products had to be “located closer to the central areas” and transported quickly to the market.