A. Identify the three main economic activities. (1 point total)
(1 point for identifying all three)

Primary: Production of raw materials or natural resource extraction (e.g., agriculture, mining, energy, timber, fishing)

Secondary: Processing or refining of natural resources (e.g., manufacturing finished goods, industry, building construction, assembly, factory work, value-added, blue collar)

Tertiary: Provision of services (e.g., healthcare, technology, communications, financial, wholesale and retail trade, transportation, personal, professional, business services, white collar)

B. Changes as a result of development. (6 points total)

1. **Primary Sector Employment:** Employment in the primary sector decreases as countries develop. This is a result of TWO of the following categories:
2 points (1 point for explanation + 1 point for explanation)

a. **Technological improvements:** Reduced need for human labor as primary industries add mechanized equipment or processes.

b. **Industrialization:** Shift toward an increasing percentage of jobs in secondary and/or tertiary (also quaternary, quinary) sectors resulting from changes (e.g., increased demand for manufactured products, agribusiness, higher pay, greater profits, improved education).

c. **Off-shoring, outsourcing, or colonization:** Reduced employment opportunities as colonies or less-developed countries are utilized for primary resources, rise of multinational/transnational corporations, globalized trade and connectivity.

d. **Rural to urban migration:** Increased secondary and tertiary-sector employment opportunities in towns and cities draw people away from rural places of primary sector production.

e. **Environmental change:** Human causes (e.g., resource depletion and/or unsustainable practices, overfishing, deforestation); natural causes (e.g., land becomes less arable, desertification, flooding, extended drought); promotion of sustainability.

2. **Infant Mortality Rate:** Increased funding and access to services for mothers and children (under one years old) lead to a reduction in the IMR as a result of TWO of the following categories:
2 points (1 point for explanation + 1 point for explanation)

a. **Healthcare:** Improved access to (social and spatial) and/or quality of medical care for expectant mothers and/or their infants, vaccination.

b. **Social or cultural changes:** Improved health education, infant safety devices, laws that indirectly influence a reduction in IMR, fewer teenage pregnancies, reduced disparities in health care provision and education, improved maternity leave policies, longer spacing between births.

c. **Environmental factors:** Improved sanitation, clean water supplies, removal of toxic materials and hazardous wastes, infectious disease prevention, reduced air pollution

d. **Diet or nutrition:** Improved infant and/or maternal nutrition, encouraging breastfeeding, increased access to vitamin supplements (prenatal or for mother), increased access to food and/or food safety (e.g., regulations).

3. **Women's Social Status:** As a country develops, there is increased equity and access for women as a result of TWO of the following categories:
2 points (1 point for explanation + 1 point for explanation)

a. **Employment:** Increased employment opportunities in the paid labor force, increased opportunities for equal access to all levels of education leading to higher earning potential, improved maternity leave policies, greater self-sufficiency.
b. **Societal changes:** Greater gender equality/decline in patriarchal society, reduced gender favoritism of infants, increased social justice and human rights for women, global pressure from other cultures, improved social standing due to education.
c. **Healthcare:** Increased access to women's healthcare, contraception, family planning.
d. **Political:** Increased political participation, universal voting rights, increased candidacy by women and political leadership roles, law enforcement protections for women, government funding of women's programs.
e. **Demographic:** Increased average age of marriage and/or initial motherhood, fewer teenage pregnancies.
f. **Finance:** Increased access to capital (loans or microloans), decline in barriers for women to start new businesses, increased land tenure.

Part A (3 points total)

Identify and compare three differences between the stages of economic growth and the core-periphery model.

	Stages of economic growth (Rostow)	Core-periphery model (Wallerstein)
A1	Accurately names/describes all five stages (traditional society, preconditions for take-off, take-off, drive to maturity, mass consumption)	Accurately names all three parts of the system (core, periphery, semi-periphery)
A2	National economies developing forward over time (not moving backward)	Countries are static or can move backward in development
A3	National-level analysis	International-level analysis
A4	Economic change that focuses on a single country	Economic change that focuses on spatial relationships between countries (e.g., trade, interdependence, interaction)
A5	Uneven global development can be lessened	Uneven global development is a basic characteristic
A6	Countries fund investment for economic growth internally	Peripheral countries are dependent on core countries to finance investment for economic growth
A7	International trade may help countries to grow economically	International trade strengthens development in core countries (e.g., exporting manufactured goods) and constrains development in peripheral countries (e.g., exporting resources)
A8	Does not emphasize the role of colonialism/imperialism or neocolonialism	Emphasizes the role of colonialism/imperialism or neocolonialism
A9	Western/capitalist or liberal viewpoint	Marxist/structuralist viewpoint

Notes:

One point is earned for each difference compared.

To earn one point for a difference, the response must make a corresponding comparison of both models.

Part B (2 points total)

Use one of the two models to explain the level of economic development in either Mexico or Brazil.

Country	Rostow	Wallerstein
Mexico or Brazil	**Take-off (or Stage 3)** Agriculture is mechanized and commercialized **OR** Manufacturing investment in export-based economy **OR** Shift from primary to secondary economic sector	**Semi-periphery (or between core and periphery)** [Newly] industrializing countries (NICs) **OR** Countries able to exploit peripheral countries (LDCs), but are themselves exploited by the core countries (MDCs)
	Transition from preconditions for take-off to take-off (or Stage 2 to Stage 3) At least one characteristic listed under take-off	
	Drive to maturity (or Stage 4) Economic output exceeds population growth rate **OR** Increased manufacturing specialization and integration into the global economy **OR** Increased incorporation of advanced technology	
	Transition from take-off to drive to maturity (or Stage 3 to Stage 4) At least one characteristic listed under drive to maturity	

Notes:

One point is earned for identifying a "stage" or "part." One point is earned for an explanation of the "stage" or "part."

Both identification and explanation must be from the same model.

One point may be earned for an explanation without identifying or correctly identifying a "stage" or "part."

Part C (2 points total)

Give two examples of how the core-periphery concept can be applied below the national scale.

Type	Core	Periphery
C1	Central Business District (CBD)	Zone of transition/residential zone/suburb
C2	City	Suburb/edge city or rural/hinterland
C3	Small town	Remote areas or rural/hinterland
C4	Political center	Less powerful center/area/region
C5	Large/primate city or metropolitan area	Small/medium city or nonmetropolitan area/region
C6	Populated area/region	Less populated area/region
C7	Productive area/region	Less developed/impoverished area/region
C8	Core state or province	Peripheral state or province

Notes:

One point is earned for each type of core-periphery example identified from the list in the table below.

Spatial or geographically-bounded terminology **must** be evident for both core and periphery examples.

Global-scale and country-scale examples earn no credit.

Question 1

According to Alfred Weber's theory of industrial location, three factors determine the location of a manufacturing plant: the location of raw materials, the location of the market, and transportation costs.

Part A (2 points)

Using an example of a specific industry other than the one portrayed on the map above, explain under what conditions an industry would locate near the market.

Examples of appropriate industries (1 point)	Explanation (1 point)
Soft-drink bottling Bread products	Weight/bulk are gained in processing/manufacturing; therefore the industry locates close to the market in order to minimize transportation costs.

Note: The industry identified must match the explanation.

Part B (2 points)

Using an example of a specific industry other than the one portrayed on the map above, explain under what conditions an industry would locate near raw materials.

Examples of appropriate industries (1 point)	Explanation (1 point)
Copper smelting Lumber products used for paper or furniture	Weight/bulk are lost in processing/manufacturing; therefore the industry locates close to the source of raw materials in order to minimize transportation costs.

Note: The industry identified must match the explanation.

Part C (2 points)

Using the map above and Weberian theory, explain the geography of ethanol plants in the United States.

Factor for plant location (1 point)	Explanation (1 point)
Plants are located close to the key raw material of corn <u>in order to minimize transportation costs</u>.	Ethanol is a weight-/bulk-losing industry. Corn is bulky; thus plants are built close to the supply of raw material in order to minimize transportation costs and maximize profit.

Note: "Explain" in this case should mean "tell why." The explanation should be linked to Weber's theory and discuss the weight-loss situation, or the second point is not awarded.

AP® HUMAN GEOGRAPHY
2010 SCORING COMMENTARY

Question 1

Overview

This question was designed to enable students to show the degree to which they understood and were able to apply Weber's theory of industrial location. The question prompted them with the name of the theory's creator so answers did not depend on the student's remembering a specific individual's name. In addition to applying the theory to industries they knew something about, students were asked to apply the theory to the location of ethanol plants in the United States.

Sample: B
Score: 6

The essay demonstrates a comprehensive understanding of Weber's theory of industrial location and earned full credit. The response received 1 point in part A for correctly identifying the automobile industry as one that would locate near the market. An additional point was awarded for explaining that automobile production is a bulk-gaining industry that needs to reduce transportation costs by locating close to where its products are sold. The essay received 1 point in part B for correctly identifying the paper industry as one that should be located near raw materials. It gained an additional point for explaining that paper manufacturing is a bulk-reducing industry that loses considerable weight and volume in production and thus should be located near the source of raw materials. In part C the essay received 1 point for indicating that "ethanol is more cheaply transported than the corn used to make it." One additional point was awarded for explaining that ethanol is a bulk-losing industry that is profitable when located near the source of corn.

Sample: A
Score: 4

The essay received full credit in part A (2 points), full credit in part B (2 points) and no credit in part C. In part A it earned 1 point for correctly identifying the soft-drink industry as one that would locate near the market and 1 point for explaining that soda bottling is "a bulk gaining industry" that needs to be located near its point of sale in order to reduce transportation costs. In part B the essay was awarded 1 point for correctly identifying an "iron ore mill" as an enterprise that should locate near its raw materials and 1 point for explaining that iron ore extraction is "a bulk-reducing industry" in which the final product weighs much less than "the impure substance" and thus should be located near its natural resources in order to take advantage of the lowest possible transportation costs. The response received no credit in part C because the student never directly links corn with ethanol, nor is there a correct explanation of Weberian location principles.

Sample: C
Score: 3

The essay received no credit in part A, full credit in part B (2 points) and partial credit in part C (1 point). No points were awarded in part A because the discussion centers on the location and processing of primary agricultural products and not Weberian secondary industries. In part B the response earned 1 point for correctly identifying iron ore and steel producers as industries that would locate near their raw materials and 1 point for explaining that steel production reduces bulk and therefore processing should occur near the source of these materials in order to minimize the costs of transporting them. The essay received 1 point in part C for indicating that ethanol plants are located near the raw material (corn) in order to "cut down on their transportation costs." No additional point was awarded in this part, as the response does not correctly link its explanation of the plants' locations to Weber's theory (i.e., by mentioning the bulkiness of the raw material).

① 1 of 2

A. 1 of 2

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

A) An example ~~that~~ of an industry that would locate near the market is a soda bottling industry. The empty bottle / can is imported in, as well as ingredients such as water, syrup, etc. As the product is made, with the ingredients mixed together and then ~~filled~~ poured into the bottles, the overall good weighs more than it originally did as an import. Because of the weight, transportation becomes more expensive, since it has gained weight from all the imports. This would be known as a bulk gaining industry. Bulk gaining industries prefer to ~~have~~ locate near markets so that the time it takes to deliver a product is reduced, meaning transportation costs go down / decrease as well.

B) An example of an industry that would locate near the location of raw materials is an iron ore mill / factory. This would be classified as a bulk-reducing industry because the weight after the final product weighs less than the imports. Iron ore has to be mined from the ground as unpure iron. After it's mined, it has to be transported to the mill / factory to be smelted, cleaned, & purified to become pure iron. Because the weight of the unpure substance is quite high, it would be unreasonable for a company to have it imported

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

A 2 of 2

① 2 of 2

to the factory at such a heavy weight because of the high transportation cost. So, if the industry was located closer to raw materials, it could be processed and then transported to the location of the market at a ~~lower~~ lower price; also, this means a higher profitability rate, because the iron would weigh less to be transported, so it would be cheaper.

c. The geography of ethanol plants shown on the map shows that they are ~~locate~~ densely populated where the acres of corn in a country is abundant. There are a few ethanol plants sparsely populated along the west coast, such as Washington and California, and the east coast, in New York, because of the access to major markets and seaports. The majority is located in the Mid West where the eastern side of North & south Dakota are located to the western side of Indiana. This is because Illinois is located in the mid west, which is home to Chicago, the largest industrial center. Its within close proximity to raw materials and the market, therefore reducing transportation costs theorized by Alfred Weber.

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

B 1 of 2
1

A. An industry would be near the market in bulk-increasing products, or industries whose final output is heavier and more expensive to transport. An example of this kind of industry would be many automobile industries. Parts that make up a car are fairly crude and require relatively less care, and a good deal lighter than the final product. Cars, however, are heavier and more delicate, and especially if overseas, is considerably more costly to transport. It would therefore be less costly to be located nearer to the market place.

B. An industry would be near the raw materials in bulk-reducing products, or industries whose final product weigh less and does not require much special consideration to transport. An example of this kind of industry is the paper industry. The raw material; most typically wood, is heavy and considerably more costly to transport than paper, which is light and resilient. It would therefore be cost-effective for paper industries to be located nearer to forests than the market.

C. The industries, as the map suggests, are largely located near the corn fields, with the exception of a few outlier firms in places with little fields. The Weberian theory states that the relative distance of the industry from raw material to market place is the most ideal balance

between cost of transportation of raw material and final product. This would suggest that ethanol is a bulk reducing product, as it is much more profitable to be located near the major corn fields surrounding the great lakes. This also suggests, however, that the cost of ethanol is likely to be higher outside of this zone. The distribution of corn fields can be explained by the readily available humidity and irrigation afforded by the lakes. This than The Weberian model demonstrates that ethanol is more cheaply transported than the corn used to make it.

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

C 1 of 2

1

1. (A) Industries in which their goods are perishable locate near the market so that they can deliver the best quality good to the consumers. The dairy industry is an excellent example of an industry that must locate near its market. Milk is very perishable and must be refridgerated in order to stay fresh, because of this dairy farms are located very near to the market in which their goods will be sold. Transportation costs are also diminished with dairies so close to their markets. Since cows today produce more milk than they did in the past, this increases the supply of milk that can be sold to the market and other industries that use milk as an input for other products, such as cheese.

(B) Bulk-reducing industries locate near their sites of raw materials. Iron ore, is a primary input in steel, therefore steel industries locate near the source of iron ore in order to keep their transportation costs much lower. Since steel production is a bulk-reducing industry, the companies save a large sum of money locating near their raw material source, as iron ore is melted down to make steel and the final product is much more efficient to transport than the raw materials that weigh much more then the final product itself.

(C) Ethanol plants in the US, according to the map, are primarily located in the Mid West of the US. In states such as Nebraska, Minnesota, Iowa, Illinois and Wisconsin, corn is one of the primary crops produced. Since corn is one of the main

1

inputs used to make ethanol, ethanol plants are logically located near their source of raw materials. By locating the plants in the areas where, corn is a dominant crop, the plants cut down on their transportation costs as corn can be driven much easier from one county to another rather than from one side of the country to the other. According the weberian theory, ethanol plant location in the Mid West is the closest the plants can get to their markets without being being away from their raw materials. Locating in the Mid West makes it easier to distribute ethanol to both the east and west coasts with the least transportation costs as possible.