

UNIT SEVEN: CITIES AND URBAN LAND USE

The natural landscape of the earth's surface has been transformed by human activities of all kinds, but perhaps none more profoundly than the building of great cities. The first cities were built in cradles of civilization thousands of years ago, and their numbers and locations have steadily grown, so that by the early 21st century they exist in almost all areas of the world. As the number of cities has grown, so has the number of people that live in them expanded, so that today about half of the world's population lives in cities or towns. The field of **urban geography** focuses on how cities function, their internal systems and structures, and the external influences on them. Two sub-fields of urban geography are:

- **The study of systems of cities** – This sub-field focuses on where cities are located and why they are there, including such topics as current and historical distribution of cities, the functions of cities, and reasons for differential growth among cities. This study takes an external view of how cities influence the landscape around them, how they connect to one another, and how they are distributed nationally and globally.
- **The study of internal cities** – This sub-field focuses on the internal workings and structures of cities, as well as the analysis of patterns of land use, racial and ethnic segregation, architectural styles, types of intracity transportation, and cycles of construction and development. This sub-field makes use of both quantitative data, such as that gathered by the U.S. Census Bureau, and qualitative data, such as narrative accounts and field studies.

DEFINING URBANISM

What is an **urban area**? Many definitions exist, and they come in many different types, structures, and sizes. Their common characteristics are that they are **nucleated**, with one or more clear core areas, and that people who live in them work in nonagricultural jobs. The words "**city**" and "**town**" describe nucleated settlements that perform multiple residential and nonresidential functions, and include a central business district and surrounding residences. Towns are smaller and less complex than cities, but they still have nuclear business concentrations. Cities are usually surrounded by **suburbs**, areas that are also nucleated, but use much land space for residences of people that work in or near cities. Suburbs are not self-sufficient; most would not exist except for their locations near cities. Even though they are economically dependent on cities, suburbs usually have their own separate governments, and are separated from the **central city** by political boundaries.

In many parts of the globe today cities and towns are located so close together that they form an **urbanized area** of continuously built-up landscapes of buildings and populations so that political boundaries are simply imaginary lines that separate them. The **physical city**, then, is a continuous development that contains a central city and many nearby cities, towns, and suburbs. Physical cities may be separated by less developed landscapes, but they may still be part of a larger **metropolitan area**, a large-scale functional entity that operates as an integrated economic whole. The U.S. Bureau of Statistics currently defines a **metropolitan statistical area** as a central county or counties with at least one urbanized area of at least 50,000 people, plus adjacent outlying counties with a large number of residents that commute in. A **micropolitan statistical area** is a similar but smaller version of a metropolis, with at least one urban cluster between 10,000 and 50,000 people plus outlying counties with considerable social and economic integration.

URBAN HIERARCHY

Clustered settlements range in size from hamlets to megalopolises, and they may be arranged in a hierarchy according to the complexity of their centralizing functions.

From smallest to largest the hierarchy includes:

- **Hamlet** – A hamlet is a small cluster of farmers' houses with perhaps a few basic services, such as a gas station, a general store, or a coffee shop.
- **Village** – This next smallest urban settlement is likely to offer several dozen services that are more specialized than those of a hamlet. Stores sell only certain goods (as opposed to "general stores") and gas stations may sell competing brands of gasoline.
- **Town** – A town is not only larger than a village, its structures have more specialized functions. It may have a bank, a post office, a hospital, schools, and a library. A town also has a **hinterland**, or a surrounding area of smaller villages and hamlets that are economically dependent on it. People that live in the hinterland depend on the town for these services, and may also work in town.
- **City** – A city has a larger population, more functional specialization, larger hinterlands, and greater centrality than a town. Whereas towns often have clustering of businesses as well as outskirts, cities have well-defined **central business districts (CBD)**, as well as suburbs that may also have their own commercial centers or shopping malls.
- **Megalopolis** – Multiple cities that have grown together form the highest level of the urban hierarchy – the megalopolis. For example, a megalopolis spreads on the east coast of the United States from Boston to beyond Washington, D.C., the so-called **Bosnywash** megalopolis.



Bosnywash. One big megalopolis spreads along the east coast of the United States. Although it includes many large, distinct cities, the area is economically integrated, and the hinterlands around each city overlap to create a single urban expanse that stretches from Boston to Washington D.C. and beyond.

SOCIAL CHARACTERISTICS OF URBAN AREAS

In the 1930s social scientist **Louis Wirth** defined a city as a permanent settlement that has three characteristics that create living experiences for urban residents that are different from residents in rural areas:

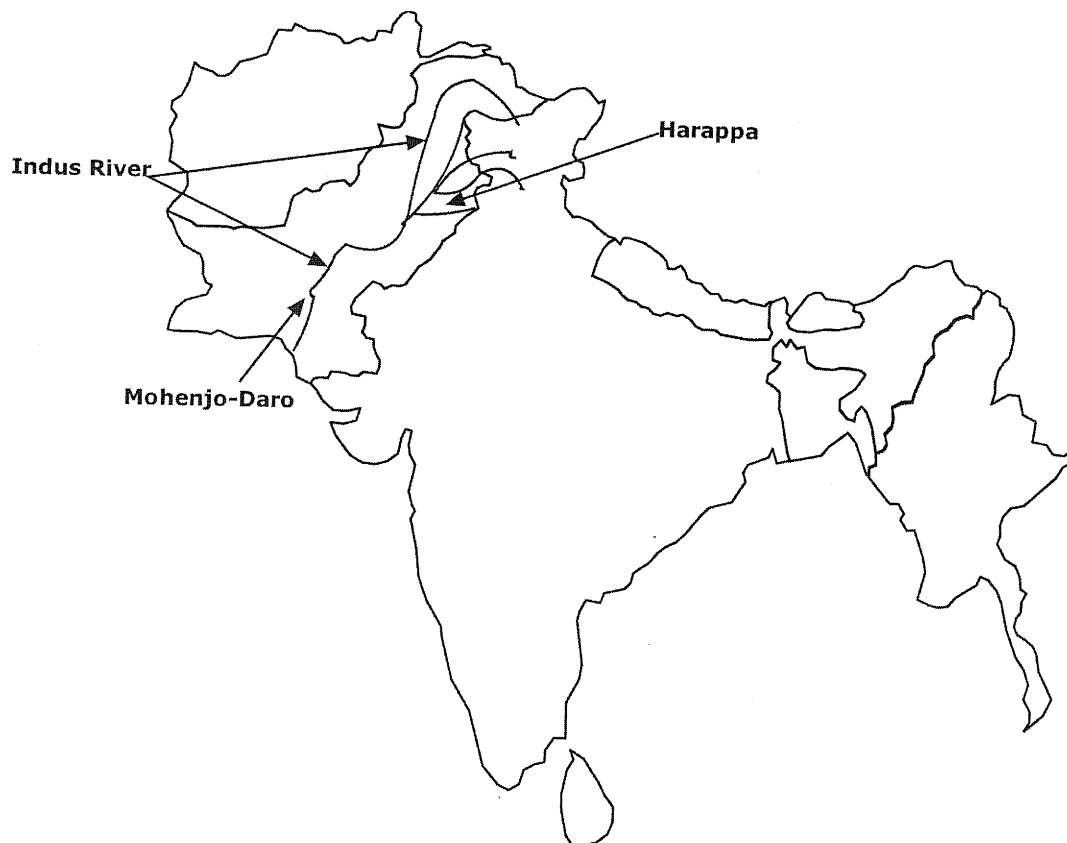
- **Large size** – Because cities are large, a resident can know only a small percentage of the other residents. Acquaintances are those that urban dwellers come into contact with through work, living arrangements, and daily routines. In contrast, people in rural areas know almost everyone that lives nearby, and they usually know a great deal about their neighbors. This basic difference means that social contacts are very different in urban areas, where one comes in contact with many people, but does not get to know most of them very well.
- **High density** – Wirth also notes that people in cities have highly specialized jobs, a characteristic that allows a large number of people to live in one place. Each person in a city plays a special role or performs a specific task that allows the urban system to function smoothly. At the same time, high density encourages people to compete for space, causing some social groups to dominate others. It also leads to higher prices for property and rents, further distinguishing between rich and poor.
- **Social heterogeneity** – By their very nature, large settlements include people with diverse backgrounds. Cities allow more anonymity, so people that are uncomfortable with their all-knowing neighbors in rural areas will flock to cities to live freer lives. Cities attract people with unusual occupations only available in urban areas, sexual orientations unacceptable in rural areas, or cultural interests that are fed by the city's museums, theaters, and libraries. Wirth notes that despite the freedom and independence that cities offer, a downside of urban living is that people may feel lonely and isolated, thinking that others around them are indifferent to their neighbors.

SYSTEMS OF CITIES

Cities appear on earth's surface in response to human needs and activities; and their locations are important in determining their growth. Political, economic, and cultural factors all play roles in determining which hamlets will grow into villages, villages into towns, and towns into cities. For example, a decision as to where to locate the political capital may cause one town to grow into a city with specialized businesses and employment opportunities, and another town to lose population, businesses, and employment. A settlement located on a good harbor may grow economically through trade, causing it to climb the urban hierarchy to a more complex, larger community. A town may also establish itself as a cultural center by fostering museums, theatres, libraries, and/or universities that encourage artists, scholars, actors, and literary figures to settle in the area. Many large cities combine these factors, so that political, economic, and cultural growth is complemented. Geography plays a key role in determining urban growth because location and topography influence where people settle, causing some cities to grow and others to stagnate.

ORIGIN AND EVOLUTION OF CITIES

Our modern world is so centered on urban life that it is hard to imagine the world without cities; however, cities first appeared on earth in relatively recent times. Assuming that human beings first appeared about 100,000 years ago, they formed no permanent settlements for about 90,000 years. Once the Neolithic (Agricultural) Revolution occurred about 10,000 years ago, people established permanent settlements, but the communities remained small and relatively simple. In Southwest Asia things began to change about 3000 B.C.E. as irrigation and larger-scale farming caused agricultural societies to become more complex. These practices allowed them to raise a surplus, or more crops than farmers needed to feed their own families. As a result, job specialization was possible because everyone did not have to be a farmer, and food supplies became more reliable. Their populations grew larger, and evidence of inequality appeared, with some houses and landholdings growing larger than others. Job specialization also began, with most people continuing as farmers, but others becoming craftsmen, priests, or government officials. Government buildings appeared, and the villages became more diversified.



Cities of the Indus River Valley Civilization. Archaeological excavations make it clear that an advanced urban civilization flourished in the major cities of Harappa and Mohenjo-Daro for hundreds of years, beginning about 3000 B.C.E. Both cities were carefully planned, with broad streets, large walled neighborhoods, and narrow lanes separating the rows of houses. Houses differed in size, with some reaching as high as three stories. Only a well-organized government could have maintained such carefully structured cities.

The Role of Government

Partly as a result of geographic features, by 3000 B.C.E. some villages were larger and more specialized than others. The period between about 4000 and 2000 B.C.E. is called the **formative era** for both the development of states and urbanization. The more complex the settlements grew, the need for central

authority increased, and so **states** (organized territories under governments) appeared along the Nile River in northern Africa (Egypt), the Tigris and Euphrates Rivers in Southwest Asia (Mesopotamia), and the Indus River in South Asia. Other early civilizations appeared along rivers in East Asia (early China), and eventually around the Aegean Sea (the forerunners of the Greeks). The rise of the earliest states is closely linked to the evolution of the first cities. All of these civilizations had major cities that increased in size and complexity as farming techniques improved and trade up and down the rivers (or across the sea) developed.

Function and Location of Ancient Cities

The ancient city was the organizational focus of the state. Agriculture had to be planned and controlled so as to guarantee a flow of food into the city, especially once irrigation systems developed. Governments collected taxes and tribute as civilizations expanded, and they also built fortified walls around cities to protect them from outside invaders. Cities were located near productive farmlands along rivers for availability of water for farming and transportation. Sites were also chosen for their defensibility, as well as their location along travel and trade routes. Less accessible, more isolated places were at a disadvantage.

Job specialization and social inequality grew along with the need to acquire, store, and distribute food. A group of **urban elite** (decision makers and organizers) controlled the resources, and sometimes the lives, of others. These leaders saw that the gods looked favorably upon the people and their food production, and they also developed a system of writing and record-keeping to help organize resources. Eventually some early civilizations codified laws to ensure that society functioned smoothly, and the urban elite organized the construction of public buildings, such as temples, government centers, and granaries for storing food. Functions of ancient cities included:

- **Centers of power** – Cities were often the headquarters for early heads of state.
- **Religious centers** – Priests, temples, and shrines were generally located in cities.
- **Economic centers** – Most cities had markets for trade, with wealthy merchants, land and livestock owners, and traders operating and living in urban areas.
- **Educational centers** – City residents included teachers and philosophers to educate new generations of the urban elite.

How large were the ancient cities? Many of the sites are still being excavated, but estimates indicate that the cities of Mesopotamia and the Nile Valley had between 10,000 and 15,000 inhabitants after nearly 2000 years of growth and development. Cities could not have grown much larger than this because the existing systems of food gathering, storing, and distribution would not have supported a larger population.

Early Urbanization Around The Mediterranean

Settlements were first established in the area around the eastern Mediterranean Sea about 2500 years ago by forerunners of the ancient Greek civilization. They were organized into **city-states**, self-governing communities that included the nearby countryside. The settlement provided the government, military protection, and other public services for the surrounding hinterland. The number of urban settlements grew rapidly during the 8th and 9th centuries B.C.E., and by the middle part of the first millennium

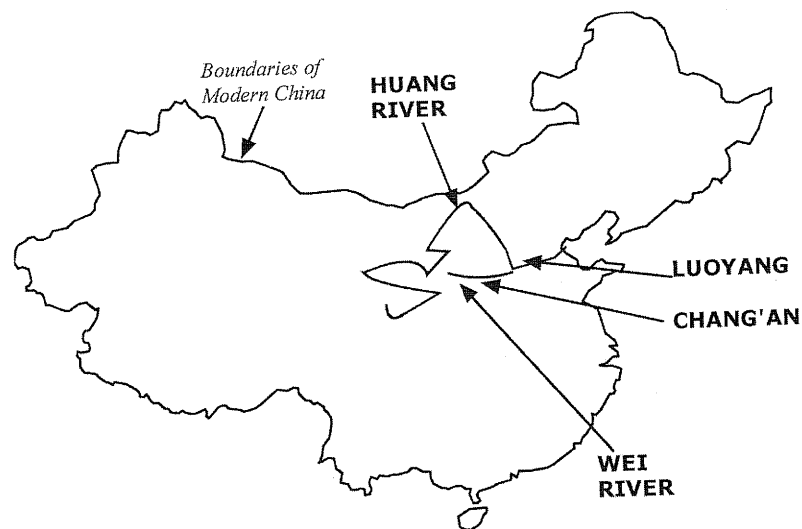


Ruins of a Roman City. Roman ruins in Vaison-la-Romaine in southern France reflect the widespread network of Roman cities connected by land and sea routes. Ruins such as these may be found in many parts of Europe and other areas that were controlled by Ancient Rome.

Greek settlements were as far west as present-day Spain. Meanwhile, the Phoenicians established communities on the southwest coastline in modern-day Africa. Athens was probably the first city to reach a population of 100,000, during the 5th and 4th centuries B.C.E. When the Romans succeeded the Greeks as rulers of the region, their **urban empire** incorporated not only the Mediterranean shores but also a large part of interior Europe, North Africa, and the former Mesopotamian lands. Although much of the empire was still rural farmlands, numerous cities dominated the hinterlands, with Rome reaching at least 250,000 inhabitants at its height in the second century C.E. The cities of the empire were connected by a network of land and sea routes, with Roman roads built so expertly that many still remain intact today.

Urban Growth In China

The earliest civilizations in East Asia grew from a central region around the Huang River and its tributaries. By the time of the Han Dynasty (202 B.C.E. to 221 C.E.), the city of Chang'an on the Wei River had become one of the great cities of the world, rivaling Rome in its size and complex organization. Chang'an and its successor capital Luoyang lay at the eastern end of the great Silk Road that stretched to the Mediterranean Sea, and the trade route brought much wealth and diversity to the Chinese cities. These cities became economic, governmental, cultural, and educational centers that were connected by an intricate system of roads, rivers, and canals. During the Tang era (618-907 C.E.), Chang'an was the hub of a vast trade network enhanced by the building of the 1100-mile Grand Canal that linked the Yellow and Yangzi Rivers as a key component to internal trade routes within the empire. Other urban areas grew along the trade routes, and urban life was quite diverse, with perhaps as many as 100,000 west Asians living in Chang'an by the early 10th century. By the 11th century, the greatest of the trading



Early Urban China. By the time of the Han Dynasty (202 B.C.E. – 221 C.E.) an urban empire had developed in China, with Chang'an serving as the political capital during the early years and Luoyang during the later dynastic rule. An urban elite controlled the political, economic, and cultural systems, and roads and canals connected the natural river waterways.

cities of the south was Hangzhou, which was home to merchants, craftsmen, and government officials. Its primary exports included silks, copper coins, and ceramics.

Medieval, Preindustrial, And Industrial World Cities

After the fall of the Western Roman Empire in 476 C.E., urban settlements declined across Europe and other areas around the western Mediterranean Sea. Once the city of Rome was sacked, the empire fragmented under hundreds of rulers, trade diminished, and large urban settlements shrank or were abandoned. Urban life began to revive during the 11th century, and was stimulated by the trade that developed between the Italian cities of Venice and Genoa and the Middle East as a result of the Crusades. The largest medieval European urban settlements served as centers for government, church, and markets, and roads connected them to smaller towns in the hinterlands. The tallest and most elaborate structures were usually churches that often took decades to build. Most medieval European cities were surrounded by walls, although by the 15th century, cannonballs could destroy them. Medieval cities were very different from today's cities. The streets were narrow and winding, and occupational groups such as bakers, carpenters, and metalworkers clustered together in distinct sections. Ethnicity also defined communities as residents sought to keep out people who differed from themselves. The term "ghetto" first described the segregation of Jews in Venice.

Many other parts of the world remained far more urbanized as Europe recovered from Rome's fall. Just before the first millennium ended (1000 C.E.), the largest cities were in Asia, not Europe, including Baghdad (in present day Iraq), Constantinople (later named Istanbul, in modern day Turkey), Kyoto (in Japan), and Chang'an and Hangchow (in China). Not until the early 1800s did a European city (London) become the most populous city in the world.

Cities in the preindustrial world often became urban centers for a whole cultural region. Geographer Mark Jefferson named these **primate cities**, larger than other cities in the area and representing a

national culture. For example, Kyoto became the primate city for old Japan; Paris reflected French culture; and London came to represent all that is English. Some scholars believe that world cities varied so significantly that it is a mistake to categorize them all together as “preindustrial.” For example, religious buildings dominated the landscapes in Muslim lands, Europe, and the Americas, but not in Africa or East Asia.

During the preindustrial era, long distance trade networks developed across the Sahara Desert, Sub-Saharan Africa, the Indian Ocean, the Silk Road, and the South China Sea. By the 16th century, significant trade routes connected the western and eastern hemisphere via the Atlantic and Pacific Oceans. These networks stimulated the growth of the **mercantile city** where trade became central to city design. No matter where the city was located, its central square was fronted by government and religious buildings, as well as housing for the rich. Streets leading to the central square were arteries of commerce, lined with shops that specialized in products brought in by the trade routes.

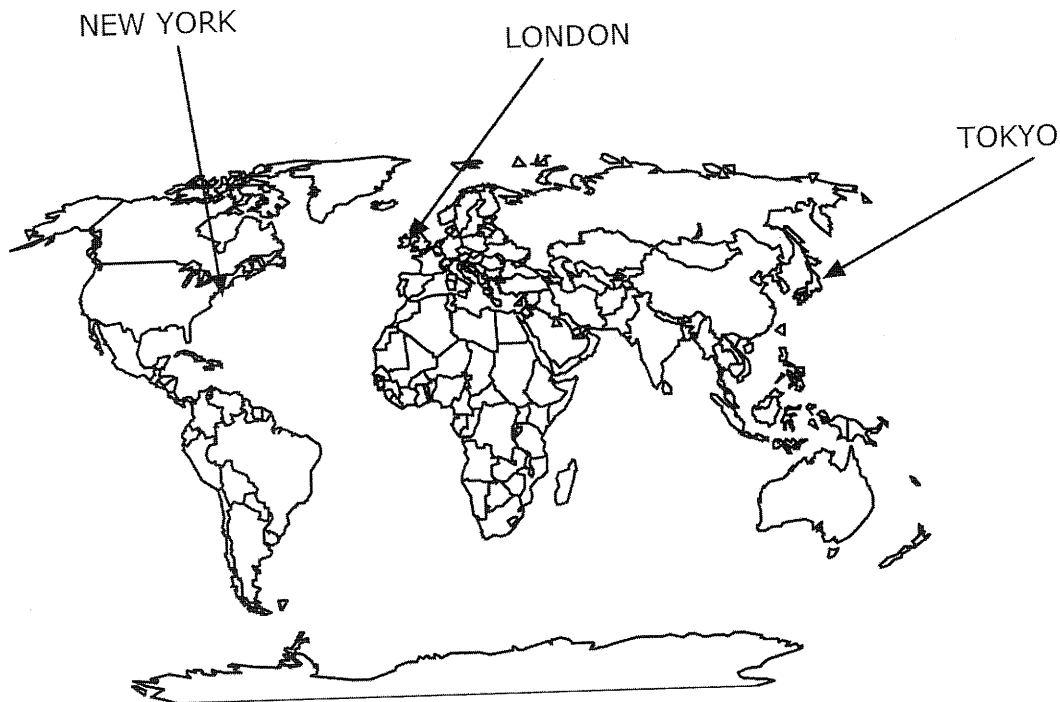
The Industrial Revolution created the **manufacturing city**, where factories attracted laborers from rural areas and other countries to tenements constructed to provide housing for factory workers. Older winding streets gave way to broad, straight boulevards to accommodate the flow of commercial traffic, and eventually, automobiles. Steam and electric trolleys crisscrossed the streets. Because land came to be seen as a commodity to be bought and sold, developers divided cities into regular-sized lots. Although some cities retained their historic town squares, others lost that organization, and most all of them suffered from problems of sanitation, overcrowding, pollution, and disarray. Unlike pre-industrial cities that were usually located near navigable waterways, manufacturing cities grew along railroad lines that connected them to their markets. Cities grew rapidly during the 19th and early 20th centuries, and the problems multiplied, although conditions improved as a result of government intervention, legislation, and the introduction of city planning and zoning.

RURAL-URBAN MIGRATION AND URBAN GROWTH

Urbanization accelerated in the 1800s in the countries of Europe and North America largely because of industrial development. For example, the percentage of people living in urban areas in the United States increased from 5% in 1800 to 50% in 1920. Today about three-fourths of people in developed countries live in urban areas.

In more recent years migration from rural to urban areas has rapidly increased in less developed countries in Africa, Asia, and Latin America. This migration has meant that the percentage of people in poor countries that live in cities has risen from 25% in 1950 to an estimated 50% by 2010. By 2000, 48 cities in the world had passed the 5 million population mark, and 32 of them were in less developed nations. Part of the reason for the growth of cities in poor countries is that longevity has increased, but much of it results from a migration from rural to urban areas by people looking for jobs, education, and conveniences, such as electricity and running water. As the countries begin to industrialize, opportunities shift from rural to urban areas, and the pull to the city stimulates migration.

The amount of urban growth differs from continent to continent and from region to region, but nearly all countries have two things in common: the proportion of their people living in cities is rising, and the cities themselves are large and growing. Whether or not the United Nations projection that world urban populations have now become the majority has actually come to be, the trend toward urbanization is still holding strong today.



WORLD CITIES AND MEGACITIES

During the second half of the 20th century, the manufacturing cities stopped growing, with many factories relocating outside the cities or closing their doors as economies adjusted to the post-industrial world. New transportation systems, such as railroads, automobiles, and subways allowed workers to live farther away from factories, so all could relocate to areas less expensive and more spacious than accommodations in the center city. In the place of the great manufacturing cities are modern world cities that have become centers of business, consumer, and public services.

World Cities

World cities exist all over the globe, but the three that serve as the largest regional centers are London, New York, and Tokyo. All three house important stock exchanges and contain major concentrations of business services. A second tier of world cities includes Chicago, Los Angeles, and Washington in the United States; Brussels, Frankfurt, Paris, and Zurich in Western Europe; São Paulo in Brazil; and Singapore in Southeast Asia. Only São Paulo and Singapore are in the less developed world, although a third tier of world cities includes Bangkok, Bombay, Hong Kong, Manila, Osaka, Seoul, and Taipei in Asia; Buenos Aires, Caracas, Mexico City, and Rio de Janeiro in Latin America; and Johannesburg in Africa. These “tiers” of world cities are based on the centrality of these services in each city:

- **Business services** – As factories relocated outside city centers, many business services that took up less space remained there. Corporate directors and support staff do much of their work in offices in world cities, as do people that provide the financial services of banks and insurance companies. Stock exchanges for corporations are also located in world cities, as are legal and accounting firms. Transportation services converge on world cities that lie at the junction of rail and highway networks, and also center on airports and busy harbors.

- **Consumer services** – Partly because business services are located in cities, a disproportionately large number of wealthy people live in cities. As a result, many retail businesses concentrate their organization and efforts in world cities. Entertainment and cultural offerings are also more varied and numerous in cities, where audiences are larger, more varied, and wealthier. As a result cities have concentrations of plays, concerts, operas, restaurants, museums, and libraries that are often lacking in smaller cities or towns.
- **Public services** – Most world cities are national or international seats of political power. Since governments are headquartered in these cities, ambassadors from other countries, as well as lobbyists from interest groups, also locate here, increasing the centralization of political power. New York is an exception among world cities because it is not the U.S. capital, but it does house the United Nations, and so it serves as an international center of political power. Brussels is the national capital of the small country of Belgium, but its rank as a world city is based on the fact that the European Union is headquartered there.

Megacities

By 2000 nineteen metropolises in the world had populations of more than 10 million, earning them the title, “**megacities**,” a term created by the United Nations in the 1970s. Today another six cities are estimated to have reached that mark, bringing the total to 25. In 1900, no cities were that large. Just how large they will grow in the future is debatable, but rapid expansion of many megacities seems to be slowing today.

Many of these megacities, especially those in less developed countries, house new arrivals in overpopulated apartment buildings, tenements, and slums. Shantytowns have grown up around many

Ten Largest Megacities in the World

Tokyo, Japan	34,000,000
Mexico City, Mexico	22,800,000
Seoul, South Korea	22,300,000
New York City, USA	21,900,000
São Paulo, Brazil	20,200,000
Mumbai (Bombay), India	19,800,000
Delhi, India	19,700,000
Shanghai, China	18,150,000
Los Angeles, USA	18,000,000
Osaka, Japan	16,800,000

The other megacities are Beijing, Buenos Aires, Cairo, Dhaka, Istanbul, Jakarta, Karachi, Kolkata (Calcutta), Lagos, London, Manila, Moscow, Rio de Janeiro, Shenzhen, and Tehran.

Source: Th. Brinkhoff: The Principal Agglomerations of the World, 2006-01-28

of them, where despite miserable living conditions, many new migrants continue to arrive. During the 1990s, Africa had the world's fastest growing cities, followed by those in South Asia, mainland East Asia, and South and Central America. In contrast, cities in North America, southern South America, and Australia were growing more slowly, and those of Western Europe were not growing at all. Megacities offer some stark contrasts in inequality. There the richest people in the world reside virtually next door to the poorest. Cities in poorer parts of the world generally lack enforceable zoning laws to ensure the space is used in ways beneficial to the community. Without zoning laws, many growing megacities are unable to control over expansion and haphazard development that seriously affect the quality of life within the urban area.

FUNCTIONS OF CITIES

Urban centers are functionally connected to other cities and to rural areas. Cities usually provide services for themselves, and for others outside their city limits. Some are **transportation centers** where major routes converge – roads, railroads, sea traffic, and air transportation. Others are **special-function cities** engaged in mining, manufacturing, or recreation. Most large cities are multi-functional, even if they began their growth because of one function that they originally served. A common property of all settlements is centrality, so that cities become **central places** that provide goods and services for the surrounding area. Cities also carry on activities that are necessary simply to support the city itself. These two levels of activities – those that connect to the outside and those that support the internal structure – make up the economic base of an urban sector.

THE ECONOMIC BASE OF A CITY

Some city workers produce goods or services for areas outside the city. These “**export activities**” result in money flowing into the city, and are collectively called the **basic sector** of the city's economy. Others produce goods or services for residents of the city itself, and their work collectively forms the **nonbasic**, or **service sector**, of the economy. Despite the name of the latter sector, these workers are crucial to the operation of the city's businesses, professional offices, city government, schools, and intracity transit systems. Many workers produce goods or services in both sectors, making it difficult to separate the two sectors. Some cities specialize in one sector or the other, but the larger the city, the more likely it is to be multi-functional, with workers from both sectors.

Economists and geographers often compare cities by function by creating a **base ratio**, or a ratio between workers employed in the basic sector and those employed in the nonbasic sector. Usually the larger a city grows, the larger its ratio of nonbasic workers, mainly because the city takes more workers to support its growth. Eventually a **multiplier effect** takes hold in which new basic sector employment is accompanied by a larger share of nonbasic workers, decreasing the ratio of basic sector workers to nonbasic. For example, if a new industry locates to a city that produced goods for people outside the city (like automobiles), the new workers need services from nonbasic workers, such as grocery clerks, gasoline station attendants, and medical doctors and nurses. As a result, more of the total number of new jobs created are in the nonbasic sector.

In 1943 Chauncy Harris published an article in which he classified cities in the United States into three types according to their functions:

- manufacturing-dominated cities in the Northeast
- retail centers scattered across the country
- diversified cities with multiple functions

Today these categories are very much blurred because growing size has brought greater diversification. Specialization is still apparent. For example, Boston has a disproportionate number of universities, and Las Vegas is still a center for gambling. However, both cities have diversified considerably as they have grown.

URBAN INFLUENCE ZONES

Urban influence zones are the areas outside the city that are affected by it. As the distance away from the city increases, its influence on the surrounding countryside decreases. The larger the city is, the larger the sphere of influence outside its borders grows. A large city will usually encompass smaller cities with their own influence zones, so there is an overlapping hierarchical arrangement, so that individuals will often feel the pull of multiple zones. For example, a world city like New York influences people in suburban New Jersey by providing work places and cultural attractions for many people in outlying areas. However, residents of New Jersey are also in the influence zone of smaller cities like Newark or Trenton, where local newspapers cover “New Jersey” events and the state government makes decisions that affect their children’s educations. The urban hierarchy is almost always at work, as individuals may also be in the influence zone of a town or village.

THE CHANGING CITY

As cities grow older, they inevitably change, creating different mixes of employment opportunities and demographic characteristics. In 1967 John Borchert recognized four stages in the evolution of the American metropolis:

- 1) The Sail-Wagon Epoch, 1790-1830, when trade took place by ships across the sea or along coastlines, or by wagons overland. The technologies determined job opportunities of people that came to work in cities.
- 2) The Iron-Horse Epoch, 1830-1870, when railroad technology changed the nature of trade and employment.
- 3) The Steel-Rail Epoch, 1870-1920, when the steel industry transformed urban America and job opportunities of workers.
- 4) The Auto-Air-Amenity Epoch, 1920s-1960s, when the internal combustion engine came to dominate life styles, employment opportunities, and the economic base of cities.

Today many would add an epoch initiated by computer technology, another revolutionary innovation that changed people’s lives and employment opportunities. With these changes come demographic shifts, such as those that took place when the new industries of the late 19th century Industrial Revolution attracted immigrant groups from Europe and Asia. Enclaves based on nationality formed in coastal cities, so that Italian, Chinese, Polish, Greek, and Russian neighborhoods emerged. As technologies changed, or moved to new areas, and as new immigrants assimilated into the culture, so the neighborhoods changed as well.

MODELS OF URBAN SYSTEMS

Two theories of **settlement geography**, or the patterns of settlement on the earth's surface, are the **rank-size rule** and **Christaller's central place theory**.

Rank-Size Rule

The urban hierarchy identifies settlements of differing sizes and complexities from the hamlet to the megalopolis. For many large countries, the city-size hierarchy is summarized by the **rank-size rule**. It tells us that the n th largest city will be $1/n$ the size of the largest city. For example, the 2nd largest city will be $\frac{1}{2}$ the size of the first-ranked city, and the 5th largest city will be $1/5$ as large as the first-ranked city. The rank-size ordering often describes the pattern of urban area sizes in complex economies where urbanization is well-established, such as the United States. It does not usually describe areas where urbanization is more recent, as in many less developed countries. In some countries the **primate city** is so dominant that no other cities fit the rank-size rule; they are far smaller than the primate city. An example is South Korea, where Seoul is the primate city with all other cities being far smaller. Even in more developed countries of Europe, the rank-size rule does not apply – London dominates Britain, and Paris dominates France. Rank-size often reflects the distribution of wealth in a country. If an urban hierarchy exists according to the rank-size rule, it often means that economic goods and services are spread throughout the countryside, and inequalities between rural and urban living standards are lessened. In contrast, countries with primate cities often have a large gap between standards of living in the city and the countryside. It may mean that there is not enough wealth in the society to pay for a full variety of services.

Central Place Theory

Central place theory views urban settlements as centers for the distribution of economic goods and services to surrounding nonurban populations. The theory is based on the work of Walter Christaller in a 1933 book entitled *The Central Places in Southern Germany*. Christaller provided a model for settlement patterns that rested on several assumptions:

- No topographic barriers
- No difference in farm productivity
- An evenly dispersed farm population
- People with similar life styles and incomes
- Differing thresholds, or minimum number of consumers necessary to support different products (lower threshold for inexpensive items, higher threshold for expensive items)
- Purchase of goods and services at the nearest center

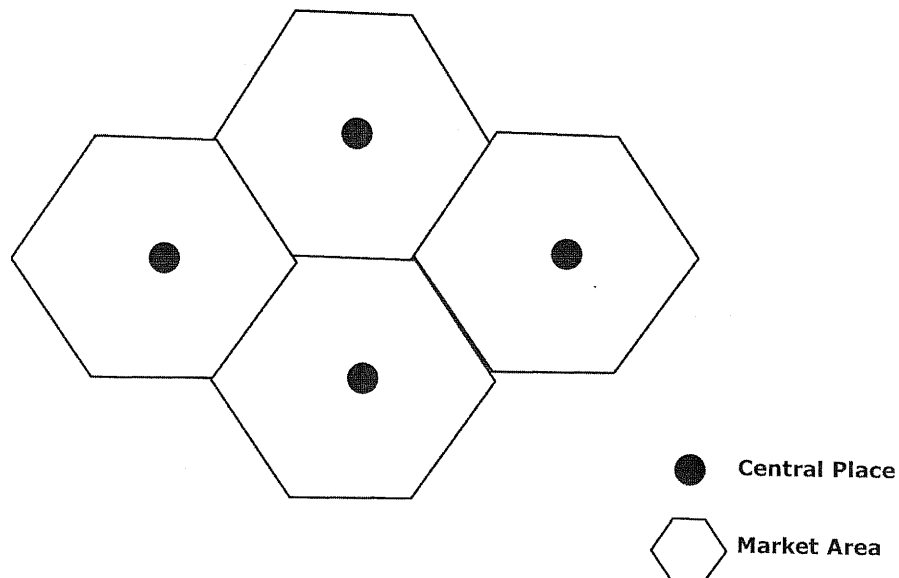
Christaller made these assumptions for the sake of developing a consistent model to explain settlement patterns, even though he knew that in reality these factors vary. His results have formed the basis of central place theory ever since:

- 1) The landscape is divided into noncompeting market areas – **complementary regions** – where each individual urban center and its merchants have a sales monopoly.

- 2) The market areas form a series of hexagons that cover the area, with no area unserved and no area with equal service from two centers.
- 3) The central place is at the center of each hexagon, and it will supply all the goods and services to consumers in that area.
- 4) The size of the market area of a central place is based on the number of goods and services offered; the larger the number of goods and services, the larger the market area.
- 5) Within each hexagon, or around its edges, lie smaller hexagons with central places that serve smaller areas. This nesting of small hexagons within larger ones creates a **hierarchy of central places**, with small centers providing lower-order services than the large centers do. The small centers may provide goods with low thresholds (like bread, milk, and other basic foodstuffs), and the larger centers provide more expensive items, like automobile or farm machinery.

Christaller came to two important conclusions regarding settlement patterns:

- 1) Towns of the same size are evenly spaced because they are in the center of like-sized market areas. Larger towns will be farther apart than smaller towns because their market areas are larger.
- 2) Towns are part of an interdependent system. If a central place is eliminated, the entire system readjusts, altering the spatial pattern to meet the needs and demands of the inhabitants. A smaller town might grow to be larger, or a new town might appear, but changing one hexagon will automatically alter the arrangement of all the others because customers will be willing to travel further distances for luxury items than for everyday necessities.



Complementary Regions. According to Christaller's central place theory, market areas form hexagons in order to cover all markets without overlap. Circles would create overlap and areas not served by the central place, so markets tend to form hexagons instead. Smaller hexagons form within the larger ones with smaller central places, forming a hierarchy of central places.

Christaller's conclusions apply to widely differing areas of the world. They describe agricultural areas particularly well. In areas where cities are multi-functional, the model is less applicable, but it does fairly accurately describe special-function cities as well as transportation-based cities.

INTERNAL CITIES

A second sub-field of urban geography is the study of internal cities. Whereas the rank-size rule and central place theory focus on systems of cities and how they are located, other geographers analyze the internal land space of cities and the varying uses that it serves. Cities are often arranged in similar ways, allowing geographers to develop models for urban land use. These models are influenced by several factors:

- 1) **Accessibility** – In order to operate effectively, the city requires that its functions be fulfilled in spaces accessible to its inhabitants. For example, in early industrial cities, factories had to be within walking distance of where workers lived. As a result, high-density housing built up around the factories in as compact a space as possible.
- 2) **High cost of accessible space** – Because city functions must be located in close proximity, the cost of land goes up because space is at a premium. With the advent of mass transportation (subways, automobiles), the amount of usable space grew, allowing workers to move farther away from the places where they worked. However, competition among inhabitants generally has remained keen for the best, most accessible places to live, so population density has pushed prices of land and other commodities higher.
- 3) **Transportation** – Since uses of land are determined by accessibility, lines of transportation often determine the growth of the city. When subway lines are built, houses and stores tend to be built within walking distance of those lines. Houses and stores also follow roads (and eventually highways) that lead to the center city, with accessibility again the key to the city's development. Land with the highest accessibility is the most desirable, and as a result, generally more expensive.
- 4) **Societal and cultural needs** – Economic competition is an important determinant of land use, but some highly desirable land is usually set aside to meet societal and cultural needs. Examples include schools, public libraries, and public parks.

MODELS OF URBAN LAND USE

Three models help explain different land uses within cities: the concentric zone, sector, and multiple nuclei models. The three models were all developed in Chicago, a city on flat land, with only Lake Michigan to the east to disrupt the physical landscape. All the models include a **central business district (CBD)** and residential areas by various income levels of inhabitants. The concentric zone model was developed first, and the sector and multiple nuclei models built on and altered the ideas presented by the concentric zone model.

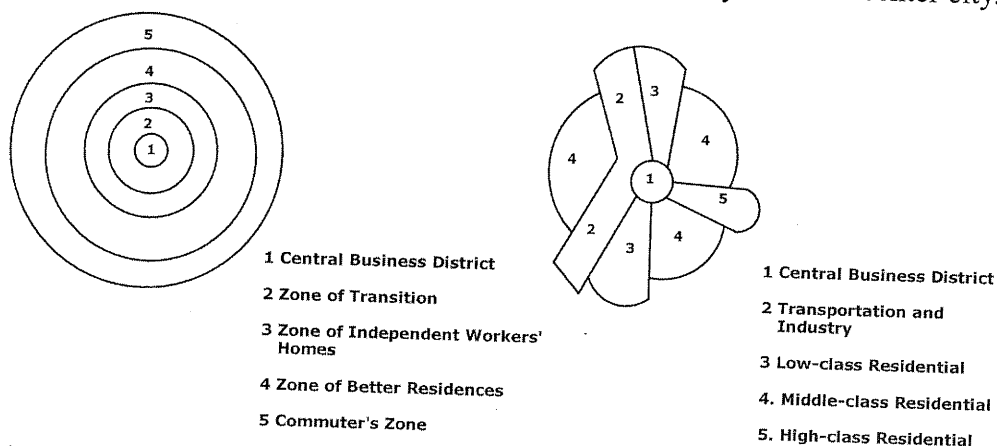
Concentric Zone Model

The **concentric zone model** was created in 1923 by sociologist **E.W. Burgess**, and it views cities as growing outward from a central area in a series of concentric rings, much like the growth rings of trees. The size and width of the rings vary from city to city, but Burgess believed that the model fit most cities of the time. The zones he identified are:

- **Zone One** – The innermost zone is the central business district, where nonresidential activities are concentrated. Very few residences exist in this ring, and property costs are quite high.

- **Zone Two** – The **zone in transition** contains light industry and housing for the poor, and serves as a transition zone between the businesses in the CBD and the more purely residential areas in the outer zones. Industries located in Zone Two may be too large to fit into the relatively small Zone One, or their owners may be seeking cheaper land. Houses may have been formerly occupied by the wealthy, who have moved farther out, leaving the homes to deteriorate.
- **Zone Three** – This zone contains working-class homes, modest older houses on small lots occupied by stable, working-class families. Housing here is less expensive than in the outer rings.
- **Zone Four** – As rings get further from the CBD, the homes get larger and more expensive. Zone Four consists of middle-class residences, either single-family homes or high-rent apartments occupied by those wealthy enough to choose location and afford the higher cost of transportation into the CBD.
- **Zone Five** – A commuter's zone is the final ring, the farthest away from the CBD. It is beyond the continuous built-up area of the city, and people live in small villages where they spend their leisure and sleep hours and commute into the CBD for work.

Burgess' model is dynamic and ever-changing, as inner rings grow larger, invading spaces of rings further out. He explains that neighborhoods change through a process of *invasion* and *succession*, with succeeding poorer inhabitants driving wealthier residents further away from the center city.



Concentric Zone and Sector Models of Land Use. On the left is Burgess' concentric zone model that explains that a city grows in a series of rings that surround the central business district. On the right is Hoyt's sector model that demonstrates that a city grows in a series of sectors, or wedges, out from the central business district.

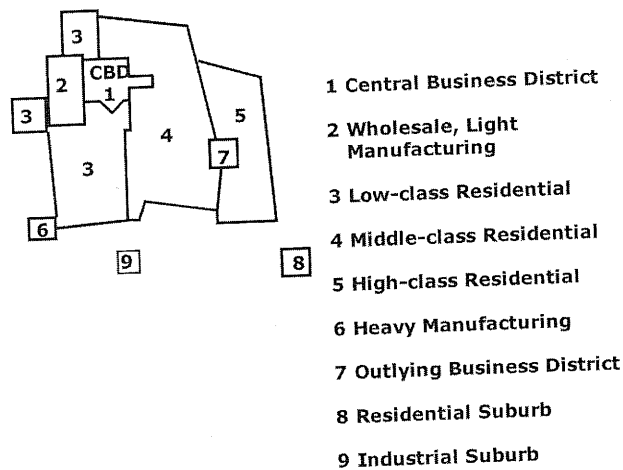
The Sector Model

Land economist **Homer Hoyt** developed the **sector model** in 1939 as a variant of the concentric zone theory. According to Hoyt, the city develops in a series of sectors, not rings, as Burgess described. The sectors may be determined by environmental factors (like hills or bodies of water), or they may simply develop by chance. As a city grows, particular activities expand outward in a wedge-like sector from the center. Once a district is established for industry, other industry will cluster around it, creating the wedge. Likewise, a district where wealthy people live will attract other wealthy people, so the sector becomes a concentration of their residences. Middle class residences are adjacent to the high-income areas, and low-income residents occupy the left over areas. Hoyt's sectors are similar to Burgess' circles, but the overall pattern of land use does not reflect unbroken circles around the central business district. Hoyt, like Burgess, notes that as the city grows, residential areas once occupied by

the wealthy “filter down” to the middle class, and eventually to the lower class, as property is sold (or rented) from one owner to another.

The Multiple-Nuclei Model

The concentric circle and sector models assume urban growth and development outward from a single central business district, which originally had been the site of first settlement. The **multiple-nuclei model**, developed in 1945 by geographers **C.D. Harris** and **E.L. Ullman**, counters that large cities develop by spreading from several nodes of growth, not just one. Individual nodes usually have special functions, like ports, neighborhood businesses, universities, airports, and different levels of residences. This model explains that incompatible land use activities do not cluster in the same locations, so the nodes influence the type of development that occurs around them. The clusters expand as the city grows, and when the clusters come into contact, incompatible land uses develop along the lines of juncture.



Multiple-nuclei Model of Land Use. According to this model, a city grows from multiple nodes, not just from one central business district. Different types of people and activities cluster around each node.

The three models help to explain not only land use in cities, but also the different social characteristics of people that live in particular areas of a city. The models may be used along with census information to describe individual neighborhoods. Urban areas in the United States are divided into **census tracts**, areas of approximately 5,000 people that correspond whenever possible to neighborhood boundaries. Every ten years the U.S. Bureau of the Census publishes reports on the demographic characteristics of each tract, including ethnicity, race, median income, and education levels of residents.

PATTERNS OF CLASS, AGE, GENDER, RACE, AND ETHNICITY

The distribution of social characteristics in a census tract may be plotted on a map by a computer that stores vast amounts of data about the inhabitants. This type of study is called a **social area analysis** that puts together information from the census tracts to create an overall picture of how various types of people are distributed within a broader area, like a city. Although the models for urban land use do not explain why particular people live in specific areas of a city, they all support the concept that most people prefer to live near others with similar characteristics. The larger and more economically and socially complex cities are, the stronger the tendency for residents to segregate themselves into groups based on social class, race, and ethnicity. Perhaps this pattern is a response to the anonymity of cities and the desire to be with people with familiar lifestyles, or it may be attributed to income restraints.

Many of these social-area groups are influenced by the size and the value of available housing. Land developers, especially in high-density areas, mass produce homes of similar price and quality in specific areas. Once social divisions are in place, they tend to carry over from one generation to the next. Even when change does occur, it tends to take place all over the area, so that “mixed” neighborhoods are often just in temporary transition to domination by another group.

- **Social class** – Social class is multi-dimensional, and is often measured by a combination of income, education, and occupation. People in higher social classes generally buy homes that are larger, in neighborhoods with people of similar status. One indicator of social class is the number of people that live per room in a house. A low number of people per room tends to indicate high status. Of the three models of urban land use, Hoyt’s sector model is most reflective of clustering patterns by social status. If people from a lower social status move into an area, the higher status residents tend to move away from the central city along a corridor connecting them with their old neighborhoods, creating the sectors that Hoyt describes.
- **Age and marital status** – Younger families tend to live farther from the city center because they are seeking space for child rearing. They tend to cluster according to social status as well, and so child-friendly businesses tend to locate near or in these neighborhoods. Houses are larger with green space around for children’s play. In contrast, groups that need less living space often live closer to city center. Older families who may have lived on the city’s outskirts when they were younger now may relocate to retirement communities or suburbs, or move toward city center to access the cultural and business life of the city. Young professionals, unmarried or without children, are also more likely to live close to the city center.
- **Gender** – A growing phenomenon in American society is the increase in the number of one-parent families. According to the 2000 census, 28% of U.S. families with children under eighteen have only one parent in the household, and 78% of all one-parent families are headed by women. Because of a combination of lower-paying jobs for women and the limitation of only one income in the family, these families are generally poorer than two-parent families. As a result, they are less likely to be able to afford large houses in the outer areas of the city, and so a disproportionate number of one-parent families live in low-income neighborhoods. This trend is called the **feminization of poverty**, or the increasing proportion of the poor who are women. Because their incomes are lower, women rely more heavily upon public transportation than do men, so they tend to be concentrated in or near central cities.
- **Race and ethnicity** – The multiple-nuclei model of urban land use best explains the tendency for ethnic and racial groups to cluster together in particular areas. Once a group moves into an area, that “node” tends to attract others, so that growth takes place around multiple nodes, each with a different ethnic or racial base. Examples are “Little Italies” or “Chinatowns” that attracted the groups as they immigrated into cities on the East and West Coasts of the United States. In many American cities, black Americans and Latinos are segregated into nuclear communities that are frequently among the most undesirable neighborhoods (called **ghettos**), with dilapidated housing, high crime rates, and inadequate schools. Social and economic barriers to movement outside the area have always been high. Because schools and social services are often neighborhood-based, this racial and ethnic segregation tends to create a vicious cycle of poverty that is hard to break. Segregation patterns in cities show a great resistance to change, so

that today, the average black city dweller lives in a census tract that is more than 75% minority. Contrary to popular stereotypes, black-white separation is highest in metropolitan areas in the Northeast and Midwest, and lowest in metropolitan areas of the South and West.

GHETTOIZATION

The changing pattern of ethnic clustering within metropolitan areas is determined partly by residential choice and partly by discrimination. Growing ethnic groups that voluntarily live in the same area frequently expand the area where they live by growing outward from the core of the city in a radial pattern. Where forced segregation limits residential choices, ethnic or racial minorities may be confined to the older, low-cost housing areas typically close to the city center, a process called **ghettoization**. Patterns of ghettoization of African Americans historically have differed by region:

- **Early southern ghetto** – In pre-Civil War cities such as Charleston and New Orleans, African Americans were confined to small houses in alleys and back streets, but nearby the white communities where they worked as house and garden slaves.
- **Classic southern ghetto** – After slavery was banished, newly-free blacks lived in small houses of poor quality on undesirable land, such as swampland or areas adjacent to industry or railroad tracks. The ghettos were far enough from white neighborhoods to maintain full spatial and social segregation.
- **Early northern ghetto** – As African Americans migrated to northern cities in the early 20th century, they competed with other groups for living space. They often ended up in high-density, deteriorating housing on the margins of the central business district.
- **Classic northern ghetto** – From their early centers, the black ghettos grew, often surrounding the CBD and penetrating nearby areas with low-rent housing. Their growth was shaped by white neighborhoods or suburbs that strongly resisted blacks moving into their areas. The resistance tended to make the ghettos overcrowded, further contributing to the deterioration of the housing.

Until the 1960s there were few legal regulations to curb racial discrimination that reinforced racial ghettos. Banks that loaned housebuyers money clearly identified “risky” neighborhoods by **redlining** them and refusing to give out loans for houses there. This technique kept property values down in these ghettos and restricted the necessary flow of money for repairs and upkeep in the redlined neighborhoods. Another practice that insured racial segregation was **blockbusting**, when real estate agents would seek to sell a house in a white neighborhood to an African American for a very low price, and then use scare tactics to try to get white neighbors to sell. Real estate agents earned commissions, and neighborhoods rapidly transitioned to ghettos. Blockbusting became illegal in the 1960s, but was replaced by **racial steering**, an attempt to change ghetto boundaries by showing houses to blacks in white neighborhoods and to whites in black neighborhoods. All of these practices have eased with greater political oversight, but city neighborhoods still remain highly segregated.

TRANSPORTATION AND INFRASTRUCTURE

Infrastructure refers to all the facilities that support basic economic activities to such a degree that a city cannot function without them. Structures that specialize in support activities include banks, post offices, hotels, cable networks, television and radio stations, and other communications companies. A city’s infrastructure includes its transportation systems, such as airports, roads, docks, railways, taxis,

and intracity transit systems. In modern urban areas people are dependent on transportation systems for access to work, shopping, and leisure activities. More than half of the trips that people make are work related – commuting between work and home, business travel, or delivery services. Historically cities were forced into compact shapes until new forms of transportation were invented and built. The shapes of cities changed dramatically once streetcars, railroads, automobiles, subways, and airplanes made it possible for people to live further distances away from their places of work.

Some modern forms of transportation that impact the demographic layout and functions of cities include:

- **Motor vehicles** – People in the suburbs usually rely more on motor vehicles than railroads, especially in the United States. In the 19th century rail and trolley lines restricted housing development to areas within walking distance of the stations, but cars have permitted people to live in less restricted spaces. For people living outside cities in the United States, cars are a near necessity because public transportation facilities are often very limited. The U.S. government – national, state, and local levels – has encouraged car ownership by funding road building so that driving a car is usually the most efficient way to get from one place to another. Cities must allow for the large number of cars that go in and out, and the average city allocates about ¼ of its land to roads and parking lots. Multi-lane freeways cut huge swaths through the heart of cities, and elaborate interchanges consume even more space.
- **Public transportation** – In the United States public transportation systems other than roads for automobiles are much more common in cities than in suburban and rural areas. A large percentage of population movement in and out of and within cities takes place during **rush hours**, or the two-hour period in the morning when people are going to work and the two-hour period in the afternoon when they are coming home. In large cities, public transportation is more efficient than personal automobiles for moving people around because each traveler takes up far less space. Public transportation includes buses, trains, and subways. Despite the fact that most Americans still prefer to commute by car, public transportation is cheaper, less polluting, and more energy-efficient than the automobile. Buses have a declining number of passengers, but in recent years more U.S. cities have been adding heavy rail (subways) or fixed light rail (streetcars) to their infrastructure. Established systems, such as those in Boston, New York, and Chicago, have been expanding subway lines and improving service. New systems have been built in recent years in Atlanta, Washington, D.C., Baltimore, and Denver. In contrast to the United States, public transit is much more developed and funded by government in most European countries and Japan.

POLITICAL ORGANIZATION AND URBAN PLANNING

Over the past century, and particularly since World War II, governments have become more active in controlling land-use arrangements and growth patterns of most U.S. cities. National, state, and local governments have passed laws to restrict ways that property and city areas can be developed and used. In U.S. cities, emphasis has been on land-use planning, zoning ordinances, and building, health, and safety codes.

Zoning

Zoning ordinances, first developed in Europe and North America in the early 20th century, encourage spatial separation by preventing mixing of land uses within the same district. Usually they separate

single-family houses, apartments, industry, and commerce into different areas because locating one activity near another is considered unhealthy and inefficient. One effect has been to make it difficult for poor residents to escape their neighborhoods, and some critics believe that zoning has reinforced class, racial, and ethnic lines in these countries. Bitter court battles have been waged, with mixed results, over zoning practices that restrict access to exclusive neighborhoods or business areas. Government actions are also criticized by business interests because they interfere with the market allocation of urban land.

In most of Asia there is no zoning, and it is quite common to have mixed neighborhoods, both by economic level and business vs. residential use. Often homes serve as businesses as well, with no interference by the government. In Europe and Japan, neighborhoods often contain a wide variety of building types from many different eras, all in close proximity. In the United States and Canada, such mixing is not nearly as common.

Local Government Fragmentation

Urban problems usually don't end with political borders, but tend to characterize the entire urban sprawl. Yet local governments are fragmented, with a city's local government operating separately from those of each of its suburbs. Even city governments are broken up, as is reflected in the fact that New York City has five mayors, one for each of its five boroughs. Chicago has 1,100 different local governments within its urban area. This fragmentation makes it very difficult to solve regional problems, such as traffic, solid waste disposal, and provisions of social services.

In recent years more metropolitan areas are calling for cooperation among local governments, with many forming **councils of government**, cooperative agencies consisting of representatives from local governments in the region. One example is the federation system formed in Toronto, Ontario, where local government has two layers. On the first layer, each of the six local governments is responsible for police and fire services and for tax collection. On the second layer is the Metropolitan Council, a regional government that sets the tax rate for the region as a whole, assesses property values, and manages money for new projects. Other services, such as transportation, parks, water, and sewage, are shared responsibilities. Another example is a consolidated metropolitan government, so that city and county boundaries match. Indianapolis has such consolidated governments, so that no differences exist between city and county governments.

Planning For Growth

On the state level in the United States, steps to curb sprawl, limit traffic congestion, and reverse inner-city decline have led to a movement called **smart growth**. The goal is to produce a pattern of controlled development, while protecting rural lands for agriculture, wildlife, and recreation. Smart growth legislation and regulations have been enacted in Maryland, Oregon, Tennessee, New Jersey, Rhode Island, and Washington. Some provisions have limited highway funding, and others have defined growth boundaries for new development and designated "urban growth areas."

Urban Renewal And Gentrification

Many cities have targeted blighted inner-city neighborhoods through **urban renewal** plans that allow the government to buy properties from the owners, relocate residents and businesses, clear the sites, and

build new roads and utilities. The land is then turned over to private developers or to public agencies to construct new buildings and services. The national government has helped cities pay for urban renewal through federal grants. Often **public housing** – reserved for low-income households – has been built, funded by the federal government, but managed by a local government authority. In the United States the percentage of people that live in public housing is far less than in Britain, where more than one-third of all housing is publicly owned. In other countries in Western Europe, governments do not own the housing, but instead subsidize construction cost and rent for many privately built housing units.

Today many public-housing projects built in the United States and Europe during the 1950s and early 1960s are rapidly deteriorating. Because of poor living conditions, public-housing authorities have demolished high-rise public-housing projects, and have begun experimenting with construction of smaller buildings and/or dispersal of low-rent housing throughout the city. By 1980 the U.S. government had stopped funding construction of new public housing, although some federal money remained in place for renovation of public buildings and rent subsidy. The demolition of housing projects has sometimes been criticized because African Americans were most often the people displaced.

An alternative to demolishing deteriorated inner-city houses is to renovate them. Once housing in an area has been renovated, the neighborhood often begins to attract middle-class residents, a process called **gentrification**. Middle-class people are often drawn to these areas because they are conveniently located close to downtown where job opportunities, restaurants, and cultural opportunities abound. Others are attracted by older, substantially-built homes with architectural features and individual detail not available in newer houses in the suburbs. Cities often encourage gentrification by providing low-cost loans and tax breaks. These public expenditures are sometimes criticized as subsidies for the middle class at the expense of poor people, who are forced to move out because rents increase once gentrification begins. By law, cities must reimburse families forced to move both for moving expenses and for rent increases over a four-year period.

Suburbanization And Edge Cities

For many years cities expanded their borders as they grew by annexing nearby land. Suburbs in the United States began expanding before World War II as more people bought cars made more affordable by mass assembly-line production. Suburbs expanded rapidly in the post-World War II era, as demand for new homes grew, the interstate highway system improved, and the GI Bill of Rights provided government-sponsored loans for veterans to buy houses. The suburbs were linked to center cities by highway transportation, and few cities provided public transportation to their rapidly growing suburbs. As more people moved to the suburbs, businesses followed, with retailing increasingly concentrated in planned suburban shopping malls with plenty of space around them to build parking lots for cars. Chain stores, which had developed as early as the 1920s, filled these malls with shopping experiences and store architecture that were similar no matter where the malls were located. The availability and low cost of land in the suburbs eventually led to the construction of **megastores**, huge stores with a wide variety of products designed for one-stop shopping. Megastores organized as giant chains that usually first spread across the United States and eventually throughout the world.

Today U.S. cities have stopped their spatial growth because residents in outlying areas organize their own services rather than pay city taxes for them. These legally independent suburban areas may grow to become **edge cities**, defined by their own CBDs and other concentrations of office and commercial buildings that provide jobs for residents within their boundaries. Edge cities now exist in all regions of urbanized Anglo America. Chauncy Harris – creator of the multiple nuclei model – describes

the formation of edge cities through his **peripheral model**, an urban area consisting of an inner city surrounded by large suburban residential and business areas. The parts of the city are often connected by a beltway or ring road. As the distance increases from the center of the city, the density of residents and houses decreases, a change called the **density gradient**.

The progressive development of landscape in the suburban areas (called **sprawl**) allows people to have larger houses and more land, but it also brings problems. The cost of new roads and utilities often leads to higher taxes and home prices. Sprawl is criticized for wasting agricultural land as well as energy, since automobiles must burn fuel for transporting residents to their jobs long distances away from their homes. In Europe, the supply of land for construction of new housing is more restricted than in the U.S., so many cities surround themselves with **greenbelts**, or rings of open space where houses may not be built. Despite the fact that greenbelts preserve land, they tend to drive house prices up in the cities that they protect.

COMPARATIVE URBANIZATION

As megacities have multiplied all around the world, hundreds of cities now number their inhabitants in the millions. As a result, the North American and European models for urban patterns are today often difficult to apply to cities in Africa, Asia, and Latin America. In many areas that were once colonized, Western styles and layouts are still apparent, but in today's postcolonial megacities, the patterns have been altered by modernization and immigration, so that they have been transformed. In response to these changes, geographers have developed regional models that more accurately reflect the spatial arrangements of urban areas.

European Cities

As in the United States, the upper-class residential areas cluster around a sector that extends out from the CBD. In many cases these clusters date back many centuries, as in Paris, where the rich moved to the southwestern hills to be near the king's palace. European cities are different from U.S. cities because wealthy Europeans are more likely to live close to center city, not just in the suburbs. Here they live in elegant, older residences that are carefully and expensively restored to their former splendor. Because they don't have large private yards, Europeans frequent public parks that also have deep historical roots. Many wealthy Europeans have weekend homes in rural areas out from the cities, causing an exodus from the cities on Fridays, with all returning on Sunday nights.

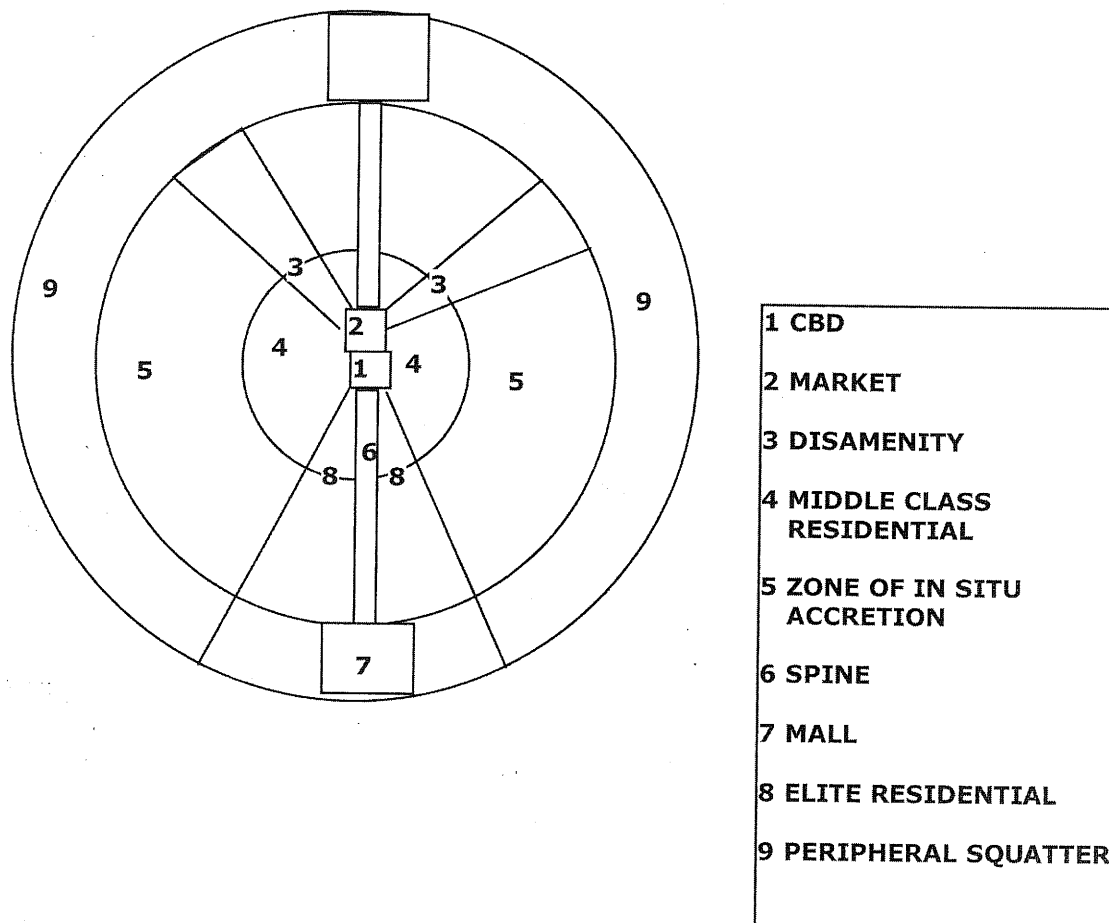
In the past, poor people also lived in the central European city. As cities expanded with the Industrial Revolution, housing for workers was constructed in areas near the factories and away from the rich. Now most poor people live on the outskirts of the cities. Many live in high-rise apartment buildings and have long commutes by public transportation to reach jobs and other attractions in the center city. Many European suburbs are centers for crime, violence, and drug dealing, and the residents are often recent immigrants from Africa or Asia who face discrimination and prejudice in the larger society.

Latin American Cities

Latin American cities are growing faster than those in most other areas of the world. Ernst Griffin and Larry Ford have devised a model that blends traditional elements of Latin American culture with forces of modernization that are changing them rapidly. The central business district is the main focus of

business, employment, and entertainment, just as it is in the North American models, but it is divided into a market sector, where old-fashioned markets are set up; and a high rise sector, where more modern businesses are headquartered. From this area, a commercial spine radiates away from the city, and is surrounded by the elite residential sector. This corridor includes upper-end restaurants, theaters, parks, and golf course, and it leads to a mall, or an edge city.

The remaining concentric zones are residential areas for the poor and the middle class. Socioeconomic levels and housing quality decrease as distance from the center city increases. Closer in are the middle classes, who form a "zone of maturity" where they generally maintain their homes well enough to keep them from deteriorating. They are ringed by a zone "*in situ accretion*" that contains much more modest housing and transitions to the outer-ring poverty. The **disamenity sector** is a relatively stable slum area that radiates from the central market to the outermost zone of peripheral squatter settlements consists of high-density shantytowns.



A Model of Latin American City Structure. This model combines the concentric zone and sector models, but it differs from the North American models partly because the outermost ring consists of a ring of low-income people living in shantytowns. Middle class residents are close to the center city, whereas in North American cities, they live in the suburbs.

The African City

Cities in Africa are shaped by the fact that many are located in the periphery of the world system, as described by Wallerstein (p. 166). Many of the cities are huge, and they are characterized by squatter settlements on their outskirts. However, Africa is a diverse continent with many different geographical and historical influences, so it is difficult to formulate a model of African cities. Cities in the north

are influenced heavily by Islamic traditions, with a mosque at the center, with a nearby marketplace or bazaar, which serves as the commercial core. Government buildings and the homes of wealthy families surround the commercial core. Narrow streets lead from the core to neighborhoods of the less wealthy located farther from the core. Cities in South Africa are essentially Western, since they were colonized and built by Europeans. The largest city in Africa is Lagos, Nigeria, which is rapidly growing into a world-class megacity. Lagos presently is a confused landscape of shanty developments with no running water or sewers that coexist with areas of modern high-rise buildings, paved streets, and modern facilities. Near its harbor are older, lower buildings, mixed with government facilities and residences.

One model of Sub-Saharan cities indicates that the central city often consists of three CBDs: the remains of the colonial CBD, an informal open-air market zone, and a transitional business center where business is conducted in less transitory, but somewhat makeshift, buildings, stalls, or storefronts. Residential zones based on ethnicity ring the CBDs, and, like Latin American cities, the outermost ring tends to be squatter settlements.

Asian Cities

Many large cities of Asia were founded and developed by Europeans, so they often follow the European model, but the spatial arrangements vary by region. The large Southeast Asian city is centered on a port, usually developed by European colonialists. Around the port is a Western-style central business district with European shops, hotels, and restaurants, and one or more “alien commercial zones” where merchants from other areas (such as China or India) have established themselves. Out from this center is a widespread zone of mixed residences, businesses, and light industries, with central slums and peripheral squatter zones housing the majority of the city’s population. Market gardening and recent industrial development mark the outer metropolitan limits. The South Asian city may take two forms: colonial based with clearly segregated neighborhoods and businesses for natives and for Europeans, or the traditional city centered on a bazaar or marketplace from pre-colonial times.

Many parts of Asia are still on the periphery of the world system, but others – such as Hong Kong, Singapore, and Shanghai – are quite central to world trade. Asia’s urban growth is explosive, with millions of people migrating from rural areas to the cities every year. China has nearly tripled its urban population since the late 1970s, and the government has adopted policies encouraging the growth of intermediate-sized cities to disperse urbanization. Today many of those secondary cities have populations in the millions.

Urbanization is a global phenomenon that presents challenges to modern citizens and governments. Although cities have been part of human geography for thousands of years, only in the past century have they become the home of the majority of people in the industrialized world. Today the developing world is also rapidly urbanizing, with cities generally struggling to keep up with demands for jobs, housing, safe water, sanitation, and other services and facilities.

TERMS AND CONCEPTS

base ratio

basic, nonbasic sectors

Burgess, E.W.

Bosnywash

census tract

central business district (CBD)
center city
central place theory
Christaller, Walter
city
city-state
complementary regions
concentric zone model
councils of government
disamenity sector
edge cities
export activities
feminization of poverty
formative era
gentrification
ghettos, ghettoization
greenbelts
hamlet
Harris and Ullman
hierarchy of central places
Hoyt, Homer
Infrastructure
in situ accretion
manufacturing city
megacity
megalopolis
megastores
mercantile city
metropolitan area
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multiple-nuclei model
multiplier effect
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peripheral model
physical city
primate cities
public housing
rank-size rule
rush hours
sector model
settlement geography
smart growth
social area analysis
special-function cities
sprawl
states
suburbs
town
transportation centers
urban area
urban elite
urban empire
urban geography
urban hierarchy
urban influence zone
urban renewal
Wirth, Louis
world city
zone in transition
zone of maturity
zoning ordinances

MULTIPLE-CHOICE QUESTIONS

UNIT SEVEN

1. Which of the following is NOT an accurate statement about edge cities?

- (A) Shopping malls are often located in edge cities.
- (B) Megastores are often located in edge cities.
- (C) Edge cities are usually economically independent from center cities.
- (D) Edge cities are defined as legally independent suburban areas.
- (E) Edge cities often provide jobs for residents within their boundaries.

2. "The central city often consists of three CBDs: the remains of the colonial CBD, an informal open-air market zone, and a transitional business center where business is conducted in less transitory, but somewhat makeshift buildings, stalls or storefronts. Residential zones based on ethnicity ring the CBD."

The statements above most accurately describe cities in

- (A) Sub-Saharan Africa
- (B) Latin America
- (C) Asia
- (D) Europe
- (E) North America

3. A city that is disproportionately large in relation to other cities in a country is called a(n)

- (A) city-state
- (B) primate city
- (C) world city
- (D) settlement city
- (E) megacity

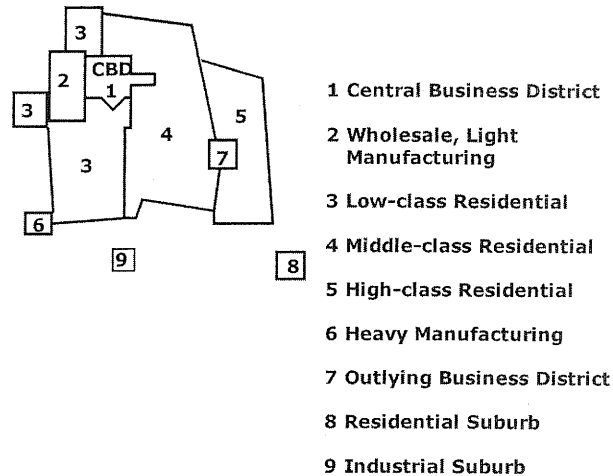
4. All of the following were common characteristics of the earliest cities EXCEPT:

- (A) job specialization
- (B) temples for monotheistic worship
- (C) agricultural surpluses
- (D) government buildings
- (E) social inequality



5. The map above shows “Bosnywash,” an area best described as
- (A) a megacity
 - (B) a series of edge cities
 - (C) suburban sprawl
 - (D) megalopolis
 - (E) metropolitan statistical area
6. Suburban growth in the United States in the mid-20th century was spurred most directly by the
- (A) expansion of public transportation systems
 - (B) demand for smaller, more efficient houses
 - (C) growing reliability and popular pricing of automobiles
 - (D) growing difficulty for merchants in central cities to provide goods to people in the hinterlands
 - (E) deterioration of the major intercontinental railroad lines
7. World cities of the first “tier” are
- (A) Chicago, New York, and Tokyo
 - (B) Tokyo, Mexico City, and London
 - (C) Singapore, Tokyo, and London
 - (D) Hong Kong, Mexico City, and New York
 - (E) New York, London, and Tokyo

8. One impact of the Industrial Revolution on 19th century North America was to
- (A) stimulate the growth of seaports in the southern United States
 - (B) promote a general migration of people from the cities to the suburbs
 - (C) stimulate the growth of cities at railroad hubs
 - (D) shift economic power from cities on the east coast to cities on the west coast
 - (E) push most small farmers out of business by the end of the century
9. Redlining, blockbusting, and steering were all practices that have impacted living patterns in U.S. cities by
- (A) encouraging the wealthy to move closer to city center
 - (B) reinforcing racial segregation patterns
 - (C) separating business and manufacturing areas from residential areas
 - (D) encouraging businesses to move from city center to the suburbs
 - (E) integrating neighborhoods that had previously been segregated
10. According to the rank-size rule, if the 3rd largest city in a country has a population of 1 million, the largest city will have a population of
- (A) 1.5 million
 - (B) 2 million
 - (C) 3 million
 - (D) 5 million
 - (E) 6 million
11. According to Burgess' concentric zone model, the "zone in transition" is a transition zone between
- (A) poor and middle-class neighborhoods
 - (B) middle-class and wealthy neighborhoods
 - (C) urban and suburban areas
 - (D) suburban and rural areas
 - (E) businesses in the CBD and more purely residential areas in the outer zones
12. Which of the following individuals is MOST likely to live in center city in the United States?
- (A) a young married white man
 - (B) children in a two-parent family
 - (C) professional married woman with children
 - (D) a single mother with a low income
 - (E) a middle-class black man with children



13. The model of urban land use in the diagram above differs from Hoyt's sector model in that it
- (A) deemphasizes the importance of concentric zones
 - (B) shows high-class residential areas to be further from the city center
 - (C) shows cities developing from several nodes of growth, not just one
 - (D) accounts for the growth of edge cities
 - (E) puts more emphasis on separation of residential areas by social class
14. In modern day the most common mode of transportation from the suburbs to center cities is
- (A) trolley car
 - (B) bus
 - (C) train
 - (D) automobile
 - (E) subway
15. Which of the following countries has the most stringent zoning ordinances?
- (A) China
 - (B) Japan
 - (C) France
 - (D) Britain
 - (E) the United States
16. Local government fragmentation often makes it difficult for political leaders to
- (A) provide police services
 - (B) solve regional problems, such as traffic flow
 - (C) collect taxes
 - (D) stay in touch with all citizens
 - (E) set speed limits on local streets

17. When a deteriorating inner-city neighborhood is “gentrified,” a common consequence is that
- (A) middle-class people begin moving in
 - (B) longtime residents are better able to afford their homes
 - (C) city governments force longtime residents to leave the neighborhood
 - (D) city governments usually raise property taxes substantially
 - (E) older houses are torn down and replaced with new ones
18. In contrast to urban land use patterns in the United States, the poor in many cities in other parts of the world live in
- (A) segregated neighborhoods in or near city center
 - (B) mixed neighborhoods in or near city center
 - (C) the outermost zones around city center
 - (D) zones “*in situ accretion*”
 - (E) zones of maturity
19. The smallest clustered settlement on the urban hierarchy is called a
- (A) village
 - (B) micropolitan statistical area
 - (C) suburb
 - (D) hamlet
 - (E) census tract
20. According to Louis Wirth, a city is a permanent settlement with three defining characteristics of
- (A) large size, high density, social heterogeneity
 - (B) large size, developed transportation systems, a substantial hinterland
 - (C) centralized business services, centralized consumer services, and centralized public services,
 - (D) high density, concentric zones, and a central business district
 - (E) a substantial hinterland, high density, and centralized political functions
21. By the middle of the medieval period (about 1000 C.E.) , which of the following was NOT among the largest cities in the world?
- (A) Kyoto, Japan
 - (B) London, England
 - (C) Constantinople (in modern day Turkey)
 - (D) Chang’an, China
 - (E) Baghdad (in modern day Iraq)

22. The basic sector of a city's economy consists of
- (A) goods and services produced for residents of the city itself
 - (B) the total goods and services produced within the city's boundaries
 - (C) goods and services produced for areas outside the city
 - (D) the base ratio between goods produced and services produced
 - (E) all goods and services produced in the city's retail centers
23. According to Christaller's central place theory, the landscape is divided into
- (A) cities and towns that compete with one another for markets
 - (B) unevenly spaced market centers that serve the market area unevenly
 - (C) independent market areas that have little impact on adjacent markets
 - (D) complementary, but overlapping market areas
 - (E) complementary regions where each urban center has a sales monopoly
24. The major models for urban land use all assume that land is most expensive in the
- (A) central business district
 - (B) zone of high-class residential
 - (C) zone of maturity
 - (D) zone of transition
 - (E) commuter's zone
25. The urban land use model that focuses most carefully on the development of edge cities is
- (A) Burgess' concentric zone model
 - (B) Christaller's central place theory
 - (C) Hoyt's sector model
 - (D) Harris and Ullman's multiple nuclei model
 - (E) Harris' peripheral model

UNIT SEVEN FREE-RESPONSE QUESTION

Ten Largest Megacities in the World

Tokyo, Japan	34,000,000
Mexico City, Mexico	22,800,000
Seoul, South Korea	22,300,000
New York City, USA	21,900,000
São Paulo, Brazil	20,200,000
Mumbai (Bombay), India	19,800,000
Delhi, India	19,700,000
Shanghai, China	18,150,000
Los Angeles, USA	18,000,000
Osaka, Japan	16,800,000

The other megacities are Beijing, Buenos Aires, Cairo, Dhaka, Istanbul, Jakarta, Karachi, Kolkata (Calcutta), Lagos, London, Manila, Moscow, Rio de Janeiro, Shenzhen, and Tehran.

Source: Th. Brinkhoff: The Principal Agglomerations of the World, 2006-01-28

Of the ten largest megacities listed on the chart above, only Tokyo and New York City are considered to be world cities of the first tier.

- A. Describe the defining characteristic of a megacity. Describe one defining characteristic of a world city. Contrast these two characteristics.
- B. Explain one reason why Tokyo is considered to be a world city.
- C. Explain one reason why New York City is considered to be a world city.