DEFINITION OF URBANIZATION:

- According to Oxford Dictionary of Geography, **Urbanization** refers to the migration of rural populations into towns and cities. An increasing proportion of the world’s population resides in towns (Mayhew, 1995).
- According to UNFPA, **Urbanization** means an increase in the proportion of population living in urban areas. UNFPA also described, in the 1980s, as the land area classified as urban increased by 83 percent between 1981 and 1991. Between 2001 and 2011, however, reclassification resulted in a decline in Bangladesh’s recorded urban population, because large areas, previously considered urban, were changed in status from urban to rural.

DEFINITION OF URBAN GEOGRAPHY:

1. According to G. Taylor, Urban Geography includes the site, evolution, pattern and classification of towns.
2. According to Dudley Stamp, Urban Geography is in fact the intensive study of towns and their development in all their geographical aspects.

SCOPES OF URBAN GEOGRAPHY:

1. Space and location
2. Historical background
3. Urban structure
4. Urban influence
5. Population distribution
6. Urban transportation
7. Urban economic base
8. Urban model
9. Urban hierarchy

SUBJECT MATTER OF URBAN GEOGRAPHY:

1. Urban population
2. Urban land use
3. Urban transport
4. Urban infrastructure
5. Urban functions
CONCEPTS OF URBAN GEOGRAPHY:

1. Concept of Region (Uniform, Nodal, Administrative)
2. Concept of Distance
3. Concept of Location

THEMES OF URBAN GEOGRAPHY:

1. Movement (Migration, Urbanization)
2. Region (Urban Region, Rural Urban Fringe, CBD)
3. Human
4. Environment
5. Location (Absolute, Relative)
6. Place (Physical and Human Characteristics)

TRADITIONS OF URBAN GEOGRAPHY:

The four traditions of geography were originally espoused by geographer William D. Pattison at the opening session of the annual convention of the National Council for Geographic Education, Columbus, Ohio, November 29, 1963. His four traditions attempted to define the discipline: 1) spatial tradition, 2) area studies tradition, 3) man-land tradition, and 4) earth science tradition. Below are the traditions along with some core concepts of each.

Spatial Tradition (also called Locational Tradition)

- Mapping
- Spatial analysis
- Boundaries and densities
- Movement and transportation
- Quantitative techniques and tools, such as computerized and Geographic Information Systems
- Central Place Theory
- Areal distribution
- Spatial patterns

Area Studies Tradition (also called Regional Tradition)
• Description of regions or areas
• World regional geography
• International trends and relationships
• How regions are different from one another
• The chorographic tradition (regions)

**Man-Land Tradition** (also called Human-Environmental, Human-Land, or Culture-Environment Tradition)

• Human impact on nature
• Impact of nature on humans
• Natural hazards
• Perception of environment
• Environmentalism
• Cultural, political, and population geography

**Earth Science Tradition**

• Physical geography
• The lithosphere, hydrosphere, atmosphere, and biosphere
• Earth-sun interaction
• Offshoots are geology, mineralogy, paleontology, glaciology, geomorphology, and meteorology
• The study of the earth as the home to humans

**DEFINITION AND CHARACTERISTICS OF URBAN:**

According to National Geographic Society, An **urban area** is a human settlement with high population density and infrastructure of built environment. Urban areas are created through urbanization and are categorized by urban morphology as cities, towns, conurbations or suburbs.

The **characteristics of urban** are- (How to identify urban places?)

1. Recreation
2. Sewerage
3. Vertical settlement
4. 5000 people concentration
5. Good transport
6. Municipal authority
7. Non-agricultural activity
8. Developed administration system  
9. Built environment  
10. High literacy rate  
11. Provide service to principal area
COMPONENT OF RURAL URBAN MIGRATION IN BANGLADESH

The rapid growth of urban population in Bangladesh has taken place during the last three decades because of three components, according to Banglapedia and UN-

1) High natural increase of native urban population
2) The territorial extension of existing urban areas or a change in definition of urban areas
3) Rural to urban migration.

Migration, of course, has been the most dominant component of urban population growth, which for the national urban population contributed 40% during 1974-81 periods. For large cities like Dhaka this share could be even higher, up to 70%.

Both rural 'push' and urban 'pull' factors caused large-scale migration from rural to urban areas. The larger metropolitan centers, more particularly Dhaka, have been the major attractions. Rural impoverishment and landlessness are the major reasons for rural out-migration. Natural calamities, particularly riverbank erosion, often act as triggering factors. The urban pull factors include real or perceived job opportunities and socio-cultural opportunities.

PROCESS OF URBANIZATION

- Concentration of population
- Centralization (e.g. CBD)
- De-concentration of population
- Decentralization (Moving away the central place)
- Segregation (Grouping of population)
- Invasion and Succession (Moving the population to an ultimate level)

URBANIZATION CHARACTERISTICS OF BANGLADESH

1) Level of urbanization (percentage of urban living people)=30%, Rate of urbanization (percentage of the change in the urban population) =5%
2) Spatial variation of urban=50% population in urban
3) Spacing of urban centers= Uniform
4) Employment: Limited employment opportunity
5) Employment productivity: Low productivity and poor management
6) Poverty: 44% urban population
7) Access to land and housing: Skewed pattern of ownership
8) Transport service: Poor quality
9) Health condition: 30-46% people suffering from diseases
10) Education: Dhaka based
11) Water, sanitation and garbage disposal
12) Gas and power crisis
13) Flooding and Sewage: Water logging
14) Urban pollution
15) Open space play ground: Decreasing
16) Status of women, children, aged and disabled: Low
17) Crime and violence: Increase
18) Democratic participation: Poor
19) Municipal finance and Human Resource: Poor
20) Globalization: Poor
21) Urban planning: RAJUK, CDA, KDA, RTDA

HISTORICAL BACKGROUND FOR URBAN FORM:

- Grouping of people
- Development and settlement and agriculture
- Advanced technology
- Storage f food
- Social Structure
- Food supply
- Transformation from village to city
- New settlement form
- Formation of city authority
- Migration
- Population increase

URBANIZATION CURVE:

Urbanization curve is a model of progression of urbanization developed by K. Davis (1969) based on the empirical observation evidence from Europe. It has 3 stages:

1. Initial Stage: Traditional society dispersed, high birth rate, high death rate, urbanization is below 20%, and urbanization rate is slow.
2. Acceleration Stage: 50-75% urbanization, accelerated urbanization rate, investment on transportation, industrialization, birth rate increase.
3. **Terminal Stage**: Declining rate of urbanization, developed countries reach there, technological advancement.

Some geographers believe that, with the aid of computers, modem and faxes, there may be a **fourth stage**, when urbanization actually decreases and called **counter-urbanizations** (Mayhew, 1995).

![Graph showing population trends](image)

**TRENDS AND LEVELS OF URBANIZATION:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Urban population ('000)</th>
<th>Av. Ann. Growth rate (%)</th>
<th>Level of Urbanization (%)</th>
<th>Rural population ('000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951</td>
<td>1,820</td>
<td>-</td>
<td>4.3</td>
<td>40,207</td>
</tr>
<tr>
<td>1961</td>
<td>2,641</td>
<td>3.7</td>
<td>5.2</td>
<td>48,240</td>
</tr>
<tr>
<td>1974</td>
<td>6,274</td>
<td>8.6</td>
<td>8.8</td>
<td>65,180</td>
</tr>
<tr>
<td>1981</td>
<td>13,536</td>
<td>7.5</td>
<td>15.5</td>
<td>73,568</td>
</tr>
<tr>
<td>1991</td>
<td>22,455</td>
<td>5.3</td>
<td>20.2</td>
<td>89,000</td>
</tr>
<tr>
<td>2001</td>
<td>31,078</td>
<td>3.3</td>
<td>23.8</td>
<td>99,444</td>
</tr>
<tr>
<td>2011</td>
<td>41,944</td>
<td>3.0</td>
<td>28.0</td>
<td>107,829</td>
</tr>
</tbody>
</table>

Rural urban fringe:

1. The fringe is the zone between the country and the city - R.R Mayer
2. The urban fringe is defined as the land surrounding the town which is not considered as a part of it but whose use is influenced directly by the town - Lewis Keeble.

Characteristics of Rural-Urban fringe:

- It is a transitional zone.
- It is an area of present and future development.
- Fringe withdraws the land from agricultural production.
- Land value of fringe area is more than rural less than urban area.
- It is a zone of fast changing ownership of the land.
- The expansion of residential houses took place fast.
- Hazardous growth is found
- Service oriented facilities such as – water supply; sewerage system, gas etc. are not good.
Rural urban fringe of Bangladesh:

The enhancement of forest carbon stocks market located at Sitakunda Upazila area (most pronouncing urban peripheral area of Chittagong) of the Buffer Zone (BZ) development and management strategies have been running from the year 2010. In the parallel manner, various Green BZ developments was proposed at CMA territory of DAP in the year 2009 by Chittagong Development Authority (CDA).

Moreover, North Forest Division also has taken many initiatives to protect forest resources incorporating with local communities. Instead of all these separate steps, urban fringe areas have faced massive threats on preservation attitude of peri-urban landscapes.

Urban planners and landscape ecologists do not work in the same areas. Many urban environmentalists have explored to find out the facts behind. In addition, the relationship between landscape and urban land-use is always exposed to conflicts.

Lack of sufficient and efficient indicators to assess between green buffering space protection and urban land-use planning, the city sustainability is increasingly being compromised. However, fewer investigations are found about the land-use planning constraints and prospects of landscape resources use within similar research edge.
Biyani's Think Tank

Concept based notes

Urban Geography

MA

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Preface

I am glad to present this book, especially designed to serve the needs of the students. The book has been written keeping in mind the general weakness in understanding the fundamental concepts of the topics. The book is self-explanatory and adopts the “Teach Yourself” style. It is based on question-answer pattern. The language of book is quite easy and understandable based on scientific approach.

Any further improvement in the contents of the book by making corrections, omission and inclusion is keen to be achieved based on suggestions from the readers for which the author shall be obliged.

I acknowledge special thanks to Mr. Rajeev Biyani, Chairman & Dr. Sanjay Biyani, Director (Acad.) Biyani Group of Colleges, who are the backbones and main concept provider and also have been constant source of motivation throughout this Endeavour. They played an active role in coordinating the various stages of this Endeavour and spearheaded the publishing work.

I look forward to receiving valuable suggestions from professors of various educational institutions, other faculty members and students for improvement of the quality of the book. The reader may feel free to send in their comments and suggestions to the under mentioned address.

Author
Syllabus

Paper-VII-(a) Urban Geography:

3 Hrs. Duration Max. Marks 100

Section-'A'

Aims and scope of Urban Geography. Factors affecting the growth of town during Neolithic period, Greek and Roman period, dark Ages, medieval period, renaissance period, Industrial revolution and Modern times, Chief characteristics of the town of each period.

Trends of urbanisation in the world. Urbanisation in India since 1901 and its problems. Census of India, definitions of urban centres. Chief characteristics of modern town, City Conurbation Metropolis, and Megalopolis.

Special pattern and distribution of urban centres. Types of cities-Central places. Transport foci and Centres of specialised services.

Section-'B'

Classification of cities based on functions. urban Rank-Size relationship.
The Basic and Non-Basic concept of Urban economic functions and its application.

Urban hierarchy based on functions.
Urban morphology, Unplanned and planned growth of towns.

Urban plans, Morphology of Indian cities.

Functional structure of towns, Chief Characteristics of C.B.D. Residential area, and other functional areas, Theories and Models of urban structure.

Section-'C'

Centrifugal and Centripetal forces in Urban Geography.

Development of suburbs, rural urban fringe, satellite towns, ring towns, Sphere of urban influence (Umland) and its delimitation.

Principles of Town planning, preparation of a Master Plan, Study of Master Plan of Jaipur, Principles of Regional Planning.
Q.1 Give the meaning, scope and importance of Urban Geography?

Ans. The industrialization and urbanization is organized after industrial revolution. In present due to the increasing trends of population urbanization having several problems. The center of the human activity and time is located in the city, whose analytical and problematic study is essential which is done with the help of urban geography.

Position of Urban Geography in geography

Urban Geography is a new branch of geography which developed 20th century for the first time, Mr. Karl Massert had gives the outline of Urban Geography in 1907. In 1915 the study of Urban Geography is started in Chennai, In 1949, Griffith Taylor has written a book by the name of “Urban Geography” exactly, the starting of the study of Urban Geography is due to the work of R.L. Singh in 1955. After this the matter is included in the syllabus of University.
Meaning of Urban Geography - Urban Geography is a word derived from Latin language which is made up of Urbs + Urban which means town + town associated area. By this we can conclude that Urban Geography has 2 main aspects.

1. The study of town in individual settlement.
2. The study of town related with its surrounding region.

By this we can say that Urban Geography is geography of town and cities.

For the study of town, every aspects related to that town is taken under abjuration.

Definition of Urban geography -
1. Kohu- Urban Geography is in part merely a special phase of settlement study applied to various complex areas processing sharp internal differentiation.

2. Griffith Taylor - Urban Geography includes the site revolution pattern and classification of towns.

3. Dudley Stamp - Urban Geography is infecting the intensive study of town and their development in all their geographical aspects.

All these 3 geographers suggest the study of town in individual manner.

By the view of the importance of Urban Geography some geographer suggests that the study of town is related with its associated areas.

Scope of Urban Geography - Urban Geography is also called as urban settlement. This name is showing its scope geographers had tried to give the scope of Urban Geography Here se discuss the two geographers. - By W.K. Davis & R.E. Dickinson.

1. W.K. Davis- He tried to give scope of Urban Geography in the book “Approaches to Urban Geography are overview” in 1970.
<table>
<thead>
<tr>
<th>Element</th>
<th>Prospective</th>
<th>Adjacent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Environment</td>
<td>Static Process</td>
<td>Urbanization process with ref. to other town, town as a individual unit.</td>
</tr>
<tr>
<td>3. Working activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Urban structures</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Davis scope is in descriptive form Davis was interrelating his points of scope & masking $16 \times 16 = 256$ points. These points only shows the lengthiness of the given scope, which is out of the mind of any common people.

2. **R.E. & Dickinson**- The main aim of the Urban Geography is the study of Urban Geography The aim of Urban Geography is to study the site, situation, historical development and limits of effects. He had given 4 leaders for the scope of Urban Geography in his book “reading in Urban Geography”.

1. Site, situation, location, nobility.
2. Historical development
3. Structure
4. Delimitation of UN settlement.

1. **Sites, Situation, Location, Nodility**- Urban Geographer first study the site, situation location and nobility of the area.

   a. Site- Site is that area of earth surface on which town is established, originated & developed by the study of this, we find the relief, soil, climate, soil, climate, water sources and fertility of that area.
Types of sites-
1. Mountainous sites e.g.- Chittorgarh
2. **Plateau Site**- E.g. Mount Abu

![Plateau Site Diagram]

3. **Plain Site**- E.g. Delhi

![Plain Site Diagram]
4. **Situation**- Meaning of situation is concern with its surrounding areas, the rural areas around the town and it is surrounded with which big towns.

b. **Location**- Location is concern with the longitudes and latitudes of the town is situated at which position in globe. It also shows that the town is coming in which climatic zones. It shows that the town is situated in tropical or temperate region.

c. **Nodility**- Importance of the town attested by the roads of the town. How many roads are coming out from the town shows its nodility. The maximum number of roads coming out side are of which level and National Highway or state High way, Nodility are of 3 types.-
   1. Superior Nuclei
   2. Associate Nuclei-2 types
      a. Homogenous
      b. Heterogeneous
   3. Inferior Nuclei

2. **Historical Development**-
   We study the urban development stage in Historical Development. The main reason of its study is to find the development trend of any town. This help us in our future planning e.g.- Delhi and Jaipur due to their forming of capital.

   **Jamshedpur & Bokaro**- Due to their industrialization.

   **Ajmer & Triputi**- Due to holy places.

   It is also said that ‘geography is present history and history is past geography.

3. **Structure**-
   The study of town is under 2 aspects-
   a. Functional structure
b. Morphological structure.

Both these 2 types jointly form the town. The division of these points means the killing of town. This is type of dualism.

a. **Functional structure**- This is a dynamic structure. This shows the land utilization of town. It is decided on the basis of activities and work of town.

**Methods of functional classification**-
1. Empirical method.
2. Empirical cum-statistical method.
3. Pure statistical method.
4. Multiple analysis method.

**Types of functions**-
1. Commercial
2. Residential
3. Industrial
4. Educational
5. Hospitalization
6. Administration
7. Entertainment
8. Social and culture

b. **Morphological structure**- This is a static structure which shows the skeleton of the town this is of 3 types.
1. High sky line
2. Agglomeration of houses
3. Road width.

R.E. Dickinson shows the 3 geographical region of the town acc to morphological structure-
1. Heart land
2. Middle region
3. Outer region.

Three theories are given for the morphological structure-

a. Concentric zone theory by Bergius in 1923
b. Sector theory by Horner Heart in 1939
c. Multiple Nuclie theory by C.D Herris and E. Ullman in 1945. All the above points show the study of individual town. After this we can do the ranking of town and decides its hierarchy.

Till now we have completed the individual study of town. Now we discuss about the surrounding areas in 4th point.

4. **Delimitation of urban settlement**-
Town is not a dead unit. It is an active part of the society. Town started the 4 works of a man-

  a. Residence  
  b. Work  
  c. Entertainment  
  d. Transport  

These work effects the social, cultural and economic forms of the town. The development of the town is based on these 2 may or works are there of town.

1. It provides services to the surrounding area, e.g.- entertainment, transport, market. Employment and administrative service.

2. It provides the facilities to the people living in town.
   a. Raw material for industry.  
   b. Food.  

There are 3 types of geographical limits in the study of town.

1. **Urban tract**- It is continuous built up of an area.
2. **Urban Area** - It is surrounding area of urban tract which has economical and social relation with urban area. Peoples go in the town from here, for employment and selling and purchasing of goods. It is also called as Rural-Urban-Fringe.

3. **Urban Commercial Zone** - It is situated out ward from the above. It is affected by town. People living over here go into the town for their employment. It is also called city region, city influence area umland.

**Aim of Urban Geography**

For the explanation of urban study its importance and aims, man & places are interrelated and shown by Ray & Northern.

Town is a place of maximum collection of population. So two things are important in the study of Urban Geography i.e. man and place.

All the interrelation between man and place, shows the maximum use of place for man is the main-aim

**Thrust of study in urban geography**

![Diagram showing the interrelation between man and place.]

- A
- B
- C
- D
- E
Q.1 Define Rural-Urban Fringe.
Ans. Urban fringe as a mixture of land uses rural-rural and classified it into a series of better surrounding the city by the analysis of land use characteristics, such area is full of serious & complex problems & needs proper planning for solution.

Definitions-

G.S. Wehrwein- ‘The rural-urban fringe may be defined as the area of transition bet, well-recognized urban land uses & the area denoted to agriculture.’

R.R. Mayers- ‘They consider the urban fringes as the zone bet, the country & the city.”

R.B. Andrews-“Rural-urban fringes is that area adjoining the inner fringe outward from the economic city in which there is an intermingling of characteristically agriculture/& urban land uses.”

Lewis- “Rural-urban fringe is the rural land with urban phenomena’s. The rural land is forced into urban uses prematurely & is almost ‘frozen’ rarely being restored to agricultural uses”.

**Rural-Urban Fringe**

1. The nation of the fringe as a distinctive physical area or region of the city, primarily designated by characteristic land-use, associations.

2. The nation of the fringe as that area where urbanization impinges on reality & therefore, where the process envisaged by worth, can best be observed & indeed, should be in operation. The rural–urban continuous should most effectively be studied within the confines of this geographical area.

The 1st refers directly to the physical characteristics of area. The 2nd to the social characteristics of the occupants.

At the city margins, therefore, in the context of the fringe, a wide mix of land-uses is a characteristic ranging from the old, untouched rural villages to modern residential estates, from a variety of commercial developments, including out of town shopping centers of the city services& industries which are conveniently located at the margins.
Golledge-Presented 7 propositions-

1. There is a constantly changing pattern of land occupancy.
2. Forms are small.
3. Crop production is intensive.
4. The population is mobile & of law or moderate density.
5. Residential expansion is rapid.
6. The provision of services & public utilities is in couple.
7. Speculative building is common.

These conditions reflect the nature of the fringe as already outlined & represent the push into rural surrounds of young, mobile middle class populations and the attempts by speculative builders to provide for then at a rate which, in some cases, out reaches the input of services and utilities.

According to R.E. Pahl, the characteristics of the fringes & his 4 main headings-

1. Segregation- The ability to pay for the new housing of the fringe results in a pattern of segregation appearing- In 1970, GIGGS, in a study of Nottingham showed that not only are there basic different bet the north and west which was built up & dust realized in the 19th century & is sub urban rather than fringe and the south and east, which is still underdeveloped & can be considered part of the fringe, but that within the south & east clear differences can be identified. The using 15 variables, representing population growth, age structure, housing characteristics, socio-economic status, employment, work-place & mode of travel, mobility & dependency.

Four sets were identified-

Set-1 modern mining settlements
Set-2 large residential suburbs
Set-3 small residential
Set-4 small villages i.e. unmodified villages.

He concludes, “the major residential tracts of the suburbs old villages, private housing, and council estates & mines estates are all clearly segregated , with the private estates generally located closest to the old village cores. Large planned tracts are given to commercial, educational & institutional uses.

2. Selective immigration- The rural-urban fringe will attract in particular mobile, middle class commuters who tend to live & work in distinct & separate social & economic words from the established populations. Those
who come to live in the fringe constitute a small section of the whole urban community & they tend to retain their orientation towards the city. The urban migrants to the fringe returned to the city, even to the areas of previous residence for social activities.

3. **Commuting** - This follows from the previous point & needs little comment except to note that it is not confined to the move weakly but the availability & cost of transport necessarily confine the less well-off.

4. **The collapse of geographical & social hierarchies** - In it the population partly directed towards other parts of the city for certain services, and then the service content of fringe settlements becomes modified. They do not need to carry an array of goods and services commensurate with the population they serve but can become specialized in particular directions. It is possible that conventional central place ideas would not apply in direct fashion & that something akin to the dispersed city is appearing in the fringe.

**Q.2** What do you mean by city conurbation?

**Ans.** City Conurbation - conurbation is a different type of geographical region in the structure of urban settlement it holds very important place in present days. In present days urbanization increases due to the high development of industries & technology with the shape & size city show its high density pop. In some place cities are collided with each other & exist as a ‘dense settled belt’.

Meaning of Conurbation - The word conurbation is derived by 2 words. The first word ‘urban’ which means ‘continues expansion of urban region’. In the other sense, the continues urban development takes place in a definite region is called ‘conurbation.’

This word is firstly used by **Prof. Petric Geddes** in 1915 According to him, this word explained the continues expansion of two high density attached cities. Both these cities having different administration units.
Development of Conurbation

According to R.L. Dwivedi- con means continues urban development considerable area.

A conurbation is an area occupied by a continuous series of dwellings, factories & other building harbors & docks, urban parks & playing fields etc, which are not separated from each other from rural land, through in many cases in this country such an area in clouds enclosures of rural land which is still in agricultural occupation.

This region is called much homes-urban agglomeration, urbanized area, urban aggregate or complex, metropolitan area & Aggregates of local authority area. But city conurbation is the best suitable word.

Development of city conurbation-

1. With the expansion of city only it birth takes place. For eg- London conurbation

2. With the development of 2 diff. cities in different period if collided each other than also can takes place and it also shows the development of both the cities e.g. Sikandarabad, Hyderabad.

3. With the expansion of more than 2 cities conurbation takes place these cities collided to each other & exchange their culture.
Caused for the development of Conurbation:

1. **Development of Industries**
   The development of con development of industries having very important place in reality the establishment, dual and expansion of industry only give girth to con with establishment of difference industry only industrial cities are development. In olden cities where the industries are developed these day those region gaining population & area both generally all the con of the world are situated in industrial region E.g. - Calcutta conurbation.

2. **The fast and better means of transportation**
   These factors also play an important role for the development of con. New road and automobiles make cities to expend in outer areas. Development of Greater Mumbai is due to the development in railways and roadways.

3. **Increasing problems of cities**
   With the development of increasing in shape and size the problems are also increasing. Lack of residential land, Noise problems, traffic problems, lack of open place and environmental problems etc Due to these problems the people wants to relax themselves for that they settled towards outer areas of cities.

4. **Availability of suitable land**
   For the increasing growth of a city, plain and suitable land is necessary.

Characteristics of conurbation:

1. **Geographical similarity**- All con are similar in geographical view, whereas it also keep similarity in biotic view these con are in continuously expansion in belt form. Acc to fasite, “conurbation is real expansion of urban region
not of expansion fully developed region. Here we can find rural in which agriculture task takes place. They collided in such manner that there is a deep relation between 2 different cities in functional view.

2. **Population trend**- Central place of con. attract population towards themselves due to which population decreases in central places & increases towards con on this bases also many scholars delimits the con.

3. **Functional similarity**- Every con is attached with its neighboring central places in Eco, social, cultural and financial views E.g. Calcutta. These factors Bering two cities near to each other.
Section – C

Q1. Define the term Satellite Towns:

Ans: Satellite Towers- According to geographical encyclopedia the small towns far from large towers which have deep relation with them, and which depend upon big tower for facilities and service are called satellite tower.

Characteristics-

1. People reside here came here to get facilities.
2. Central cities provide them many functions.
3. In holidays the city person came here for entertainment.
4. These are little bit far from the main city.
5. Satellite towers have different nucleic and provide employment to them.
6. These are very much attached to the central city with the view of political social and economic.
7. These settlement are of 2 types
   i. Consumer settlement
   ii. Producer settlement.

And they depend upon metropolitan cities and give employment to its citizens.

1. Causes of Development- To lessen the population of metropolitan cities (after II world ware satellite towers developed).
2. Development of settlement surrounding the industries
3. Evolution of satellite towers with the practice of government.
4. There is very less urban settlement which should be constructed; they generally developed in the surrounding areas of industries.
5. It follows the guidelines of metropolitan cities, but they have their own life style and provide employment to their citizens.
6. Following the groups when the number of settlements are found around a settlement and promote it as a city, in that manner also satellite formed.
Q2: Define the term Ring Town?
Ans: Ring Town-
These are those towns whose economic conditions are very much strong around the metropolitan cities. The main part of the master plan is to develop the small and medium village which is situated near metropolitan cities and their study is done in a form of units, with the development point of view the ring towns of city surrounding areas the impetrate is given to the industries and regional functions.

These are those areas which lessened the load of metropolitan cities. The populations are attracted towards them.

Ring town become supplement to the main town. According to function the several of cities develop various type of ring town.

For e.g. – Industry town commercial town, sports town, tourist town, for e.g. The Delhi, Noida in Faridabad town of Haryana Bahadurgarh, Vallabhgarh, Gurgaon.

Q3 What do you mean by Modern Town?
Ans: Modern Town- In world industrialization & urbanization originally takes place after industrial revolution & after that slowly slowly town development started.

Since the city developed till today to give definition of it is very difficult task. Every country has its different view to define it. Acc. to 1961 census in India the definition town is the 75% of population is more than 5000 and the socialist defined with the lease of density of population according to willkanse the area which have 1000 person/sq. mile population density is the town.

Gist & Hilbert- The area which has 1000 to 50000 population make a town.

Causes for the development of modern town-
1. Due to industrial revolution urbanization starts.
2. Transport routes & facilities increases & origin of suburbs.
3. Agricultural and commercial farms developed in the surrounding areas of the town due to high technology and scientific method.
4. Mining areas.
5. Administrative facilities
6. Educational institutions.
7. Towns and developed for refuges.
8. New irrigation & electric projects.
10. Development of military towns for military activity.
11. Effect of commercial activity & town centre origin.

Characteristics-
1. 75% of population engaged in non-agricultural task.
2. Exceeding population density.
3. Exceeding population.
4. Development of commercial activities.
5. Modernization.
8. Lack of residence and high house rent.
9. Lack of urban facilities.
10. Lack of medical facilities.
11. Lack of daily use products.
12. Lack of administrative facilities.
15. Sanitation problems.

Q4: Write short note on Metropolis?
Ans Metropolis- This word developed from Greek word which means mother town. In Greek the town developed with this base only. Presently 10 Lakh and above population made metropolis (by census of India). In the metropolis along with increase in population regional activities also centralized, there business and commercial activities developed more. The Production is distributed to surrounding area and raw-material come from surrounding area. It keeps more population then surrounding cities and towns. Here different types of industry and whole sale business developed. It is the centre of economic, culture and regional activities.

The metropolis developed in 19th century. In 1980 the number of metropolis is 236.5 Lakh made base to define metropolis at world level.
For the development by evolution of metropolis, transport facilities is very much essential with the agglomeration of surrounding towers the metropolis is prepared with the increase in size, problems is also increasing, presently, the conditions is that the problem is new become the characteristic of metropolis cities.

Times to time suggestion are given to remove these problems but due to administrative reasons it is not possible.

Q5: **Write short note on Megalopolis?**

**Ans:** Megalopolis- Firstly in 20th century the association of metropolis, megalopolis was originated. It is a Greek word which means “a very large town”.

*Mumford says* - It the last stage of the development of town. It is the 4th stage of urban development and last stage of urban increasing after these the town degradation starts.

*According to garnier* - Megalopolis is a form of large conurbation.

**Main 6 Megalopolis in world:**

1. Atlantic sea board (U.S.A.), New York Philadelphia, Boston, & Baltimog. Here population is 8 crore.
2. Lower Great Lakes- U.S.A. and Canada, Chicago, Buffalo, Toronto here population is 6 crore.
3. Krihin (Japan) Tokyo and Yakohama here population is 3 crore.
4. Midland (England) Mevachesten, Liverpool, loads, Bedford, Birmingham-population is 2 crore
5. Central Japan-Osaka-Cape, Kyote- 2 crore population
6. Southern California-Los Angeles and sandiyago population 1.5 Crore.

The main development, takes place of megalopolis in America. It has two reasons-

1. Multi Centre Development
2. North-East Coastal Towns.

It is agglomeration of parts, business centers and industrial areas. Here maximum population and national property is centralized. Megalopolis is the result of extension and agglomeration but regional extension is the essential and main base.
1. Large extension in 1000’s km areas.
2. Fallow lands remain between towns.
3. High level urbanization takes place.
4. Centralization of Political and economic Activities.
5. Irregular shape and uncontrolled extension.
7. In the centre of cities the density of population is high where as at the far sight the density of population is low.
8. Commercial centers of international importance
9. High sky lands.
10. Exceeding mechanism.
11. Its uncontrolled extension is taking it to the point of degradation.

Q.5 Discuss Rank size Rule.
Ans. Meaning- A rule describing the distribution of town or city sizes in area. It states that if a set of towns in areas ranked in descending

Rank Size Rule- In a region, we can see difference in size among difference cities that is the characteristic of theirs urbanization.

Rank size Rule presents the correct image of distribution of settlement acc to their size.

There is a definite relationship between size and rank.

In this regard suitable steps were taken in 1913 by F. Auerback.

Meaning-
Rank size rule is hypothesis. It is a theoretical model. It shows the settlements size and its relation with quantitative aspects.

This rule present the image of urban system of urban settlement acc to this, cities have relation acc to their size. This is in systematic form.

So between the shape and rank of cities have definite relation.

Rank size rule by George K. Jipt- He is the first scholar to give the Rank size rule. Acc to him the cities of a region arranged in decreasing order, acc. to their population like0 the population of II city will be half of I city and III city will have 1/3 population of I city in this way IV have ¼ population.
Rank size rule = \( P_n = P_1 \left( n^{-1} \right) \)

\( P_n = \) Rank of town

\( P_1 = \) Population of the biggest town.

Eg. – If the population of the biggest town is 2000, the population of the II & X rank towns.

\[ II \quad P_2 = 20000 \left( 2^{-1} \right) \]

\[ P_2 = \frac{20000}{2} = 10000 \]

\[ X \quad P_{10} = 20000 \left( 10^{-1} \right) \]

\[ P_{10} = \frac{20000}{10} = 2000 \]

Q6: Different stages of urban development according to Mumford and Taylor?

Ans: The development & evolution of the city is in the circular form in urban geography. Its explanation is given by many scholars mainly are Petri Geddis, Mumford and Taylor. Taylor assumed, “City is a biotic element”. And describe the life cycle and said “every city represents the cultural conditions and civilization of a specific age.

**Griffith Taylor gives 7 stages of a city:**

1. **Sub-infantile stage**- It is the first stage of the town the important places evolved in this stage are bus stand, railway station and religions places etc shops and houses aside roads and shops in some houses is also constructed.

2. **Infantile stage**-
   There is development of settlement, roads and streets are desired.

3. **Juvenile stage**- From the main road, streets is developed in planning form and the criteria of designing of the streets are to facilitate the convenience of the people.

4. **Adolescent stage**- The settlement developed in a form of town and C.B.D. makes its area specifically.

5. **Mature stage**- In this stage there is clearly isolation of functional areas e.g.- Residential, Industrial, commercial, medical and entertainment and in this stage stories of houses increases.

6. **Late Mature stage**- It is the II last stage of development. In this urban development takes place with master plan and industrial development is also with full planning e.g.- Delhi, Mumbai and Agra.

7. **Semile stage**- It is the last stage of a town. The towns become degrade. People migrate to different places. The colonies become man less and
remaining few peoples resides along road side e.g.-Kannoj, Farukhabad and Chittor.

**According to Munford**-
With the view of keeping social site of the society he gave 6 stagers of a town.

1. **Eopoli**- It is the first stage of a town. Main function- cattle farming, agriculture. The culture of this stage is Neolithic type due to this development of centralized village, development of education and culture is also slowly developed.

2. **Polis**- Polis means town. The big village converted into town. Where markets are settled, educational entertainment center are developed. Crews port communication has been started between town and village roads and streets are also constructed in the residential areas.

3. **Metropolis**- In this stage the town become big in comparison to surrounding towns, area transport, communication and other facilities become centralized, specific industries are developed. From the surrounding region grant and raw material come into the town, in this stage large scale industries, educational institution, and commercial industries business institution are developed. Due to economic competition there is struggle between ‘Labour and industrialist’.

4. **Megalopolis**- It is the last stage of development. Due to business the businessmen become rich and here number of houses increases day by day. Evolution power worship, capitalization and moral degradation started, Beuacrocray is also started.

5. **Tyranopolis**- The main characteristic of this is social dependence started in this stage. Satanism starts in the area of business and commerce. And town is surrounded by many problems.

6. **Nekropolis**- Degradation of town starts and there is reason of degradation i.e. war, drought, diseases.
   Whether this classification is different from each other but these are supplementary.

Q.7  **Discuss the Residential area of town and as a functional structure of town?**

**Ans.** Town is a multi functional. In c various elements are included-classifying functional e.g. C.D. Harris had taken the area of various buildings which are
engaged in various activities, Dickinson had taken functional area and land use in use.
A.E. Smells had taken geography structure, location and series of building along which functional areas for this theory base. On the basis of these areas, these functions areas are described.
In the planned town or cities there are various functional areas covering various works, whereas in unplanned city, the classification of areas are based in the social and economic factors. In the town where one functional is the main function or head, then it is functional zone.

**Means of functional zone**- Any prominent region of town which is used in specific function called as functional zone

On the basis of functions and characteristic of land use, generally functional zones are divided in 7 types.

1. C.B.D.
2. Residential area
3. Industrial area
4. Administrative area
5. Educational area
6. Cultural area
7. Gardens and open areas.

Each type of functional zones basis a specific characteristics-

**Residential area**- In carry town there is residence for the every citizen. Residential area helps in the availability of place of living and facilities.

In planned city the residential area are away from C.B.D. and industrial region.

Residential land use covers the maximum part of urban areas. In this the 30-40% of land use is necessary for use.

U.S.A., there is 36% of residential area while India has 47% of Residential area. In small cities residential land use is more.

From the productivity point of view its importance is minimum.

Residential land use the biggest and importance land use of any town but from the functional importance point of view it comes after C.B.D.
It is not necessary that all the land use types are available in that entire town but residential area is a very necessary factor.

Instead of having so much importance of residential area geographer had not considered then more efficiently because its productive importance is less.

**Location, Distribution, Pattern & Development of residential areas**
For the development of residential area heart had firstly given his theory.

“It’s on non-productive use of land”. In any 2 towns, the residential distribution, density, physical and morphological characteristic are not same. The main cause for this different is may be the history of urban structure evolution.

In selecting the residential area there points had great important.

1. Facilities provided in urban areas and on the basis of characteristics. Its residential status—some people wants to line near, to their C.B.D. and working place.
2. **On the basis of residential characteristics**—
   When there is less house rent people wants to line away from crowded place.
   The development of residential area is due to the transport and urban growth.

**E.g.** - In U.S.A. 20% population shifts from one place to another.

Every person wants to line in a beautiful residence acc to their income. The follow places rest after the migration of people to better place will mostly remain empty or on rent.

The last stage of development of residential area is slums. The development of residential areas of the town is nearby C.B.D. Thus the residential area become compact along with the development of town due to the decentralization of activities the residential areas are shifted towards outside the town.

On the basis of Residential patterns and types, there are two big residential zones—

1. **Inner Residential Zone**—
   a. High density of population and buildings
   b. Ancient settlement.
c. Instead of land lord, tenants are more

d. slums are evaluated

e. Low house rent

f. There are better residential areas for less than 1 Lakh population.

2. **Outer Residential Zones**

   a. Due to the decentralization of town, the areas which shifted outside are the planned and open areas.

   b. Here high & middle group person resident.

   c. Here roads are broad.

   d. Here population & building density is less.

   “Residential” areas bears own characteristics describe. The residential structure changes due to planning and revaluation.

**Residential area & house types.**

Both of these has good relation. The famous method on the basis of classification number of families-

i. **Independent resident**-

   a. Mono families

   b. In outer parts of town

   c. High over group

ii. **Multi families residence**-

   a. More than one family

   b. Around C.B.C.

   c. Low income group

On the basis of income group social, economic structure-

1. Residence of rich people

2. High and middle class

3. Average middle class

4. low middle class

5. low income class

On the basis of house structure and wealth-
1. Residence of Bungalow types
2. Multi Stories
3. One story building
4. Resident made by Tin
5. Muts or Tamboo

The classification of residential area and house types has similarities because their bases are same.

**Slums**- This is the famous word in urban it take birth near C.B.D. this is the degraded stage after development of town. The functional social, economic and physical conditions of houses are destroyed or damages. Its productivity usefulness and needs are ended.

Acc to Murphy “Slums are those area where there is bad and dirty settlement and there the security medical facilities and moral level vanished.

**Reconstructions of towns**- This is to stop slums and to remove slums. In this the regional degradation conditions are analysis and are reconstructed. The ideal land use is not able to construct due to the economic and structural problems, i.e. why slums clearance is originates.

Tri linear diagram of shows the functional classification of town.
Q.1 Define Umland? Discuss the various method of delimitation of Umland.

Ans. Town is the central point of various functions like-
1. Administration,
2. Commercial trade,
3. Entertainment,
4. Manufacturing and transport

The facilities are not only used by the town population but also by the people living in surrounding the town. Daily usable thing like milk & vegetables and industrial raw material are collected by the town from its surrounding areas. Due to this some relations is formed between the towns & its surrounding area. If the surrounding area of any town is maximum then that town will developed soon some scholars called the surrounding area as “city mother area”.

**Acc to Jefferson**- “Towns does not grow themselves but its surrounding area helps it to grow develop or not only to the development of town but its existence also depend upon the surrounding areas”.

**Meaning**- Firstly the world umland is used by Andre Alice in 1914. This word is originated from, the German word ‘umland’, which means city surrounding area.

**Definition**- According to Griffith Taylor- umland is that surrounding area of any towns which has cultural relation with that town.

**Acc to R.L. Singh**- That area has political, economical and cultural relation is called as umland.

Umland is also called as with different names such as city-
1. Region,
2. Urban field
3. Linter land
4. Zone of influence
5. Urban catchment area
6. Sphere of influence
7. Tributary area
8. Nodal region
9. Trade area

**Delimitation of umland** - To find the limits of umland is very tough because the relation between the city and its surrounding area frequently changeable, so for this uncertainty the influence limits be easily calculated.

For the calculation of umland limits various geographers had given different method.

We divide the methods of umland limitation in 2 parts-

1. Theoretical and quantitative method.
2. Empirical and qualitative method.

1. **Theoretical and quantitative method** - This method is developed on logical and analytical method. The base of this method is urban population linear distribution between two cities and distance of towns from village.

   a. **Karry’s gravity theory** - (1958) - He had used the gravitational method of Newton. It’s formula is-

   \[
   I = \frac{P_1 P_2}{d} \text{ Relative, inter relation Between two places}
   \]

   (d) Distance \( P_1 = \text{Population of big city.} \)
   \( P_2 = \text{Population of small city.} \)
I (A, B) = \frac{40000 \times 20000}{20} = 40

I (A, C) = \frac{40000 \times 5000}{20} = 13.3

I (B, C) = \frac{20000 \times 5000}{10} = 10

Acc to Karry the affective area of any town is acc to its population and its distance.

b. Relley’s Retail Gravity method- (1931)- From any region the quantity from retail business is collected. In this retail business is equal to the ratio of population and square off in verse ratio between distance

\[ \frac{S_1}{S_2} = \left[ \frac{P_1}{P_2} \right] \left[ \frac{D_1}{D_2} \right]^2 \]

Where:
\( S_1 \) = Purchase of town from village
\( S_2 \) = Purchase of town from village
\( P_1 \) = Population of 2 town
\( P_2 \) = Population of 2 town
\( D_1 \) = Distance
\( D_2 \) = Distance

\[ \frac{S_1}{S_2} = \left[ \frac{100000}{50000} \right] \times \left[ \frac{25}{15} \right]^2 = 5.56 \]

\[ d = \frac{d}{1 + \frac{P_1}{\sqrt{P_2}}} \]

B = Breaking point between 2 towns

B = Breaking point between 2 towns

\( d \) = District

P_1, P_2 = Population of 2 towns.

30 Km

A
\( P = 60,000 \)

B
\( P = 30,000 \)

Breaking Point

Conver’s Breaking point method- (1949)-

Meaning of breaking point is, it is that middle point of two city till which the city come for their services.
\[ B = \frac{30}{1 + \frac{60000}{\sqrt{30000}}} \] 12.45 (B towns)

All these models are restatement of gravity model. Human settlement is explained by any fixed physical law. In all these method the function of town has been not considered which has great importance then population and distance. Actually the functions affect the umland of urban areas, other than this the relief structure and transports facility decreases the importance of transport.

2. **Empirical & qualitative method**- In this method instead of population and distance the functions of towns are taken as base. This method was firstly used by Dickinson in 1930 on the leads and Bread ford city. He had given 3 types of region.
   a. A central zone C is to be continuous built up area.
   b. Daily relation of the town with centre.
   c. conurbation of commuters

Green had also done on important job in this method. He had given much importance to bus service.

In India for last 20 years various geographers had given various methods on the basis of functions in this respect. They had taken various functions as their base. The functions are changeable from place to place and this is done on the basis of its local importance. Same functions are important in one town but not necessarily in the other town.

For the delimitation of umland functions are divided into 2 parts.
   i. Functions which are done for the umland by the town.
   ii. Those functions which are done by umland for the town.

For the delimitation of umland, there are same index.

   a. Milk supplying area
   b. Vegetable supply area
   c. Food supply area
   d. Bus service
   e. Educational service
   f. Medical service
g. Business service  
h. Commuters area  
i. Distributing area of newspaper  
j. Reconstructing service  
k. Communication service (telephone)  
l. Cart service  
m. Cycle service  
n. Trade area of Non agriculture product.

These points do not have much importance in the delimitation of umland because all these factors are changeable according to time and from place to place.

Classification of umland:

Dr. Ujagar Singh in 1961- He had taken 5 indexes for delimitation of umland of Allahabad city and along with this he also showed the administrative boundaries.

1. Vegetable  
2. Milk and Paneer  
3. Inter college  
4. Food supply  
5. Business area

He had divided umland in 2 parts:

1. Primary umland (comes daily)  
2. Secondary umland (2 parts)  
   a. Secondary inner (comes weakly)  
   b. Secondary outer (comes monthly)

Dr. Manjur Adam in 1965- He describe the umland of Hyderabad and Syeandarabad. Acc to him, hinterland is that area which is jointed with town from cultural, economical and social.

Base-

1. Those function direct contact with town (food, supply transport)  
2. Central functions (Wholesale business, newspaper & universe).

He said that along with the increase in distance the influence area decreases.

1. The area of dominance  
2. The area of prominence  
3. The area of association.
Conclusion-
1. City and its surrounding areas are related to each other. In this fail of any one effect the other region.
2. According to Jacoo Spate-
   I/we have to fulfill the target of town planning then we have to believe that city and its surrounding areas are a single unit.

Q.2 What changes have been taken place in Indian urbanization trends after independent, explain?
Ans. Urbanization in India- Urbanization is an index of the structure of a country & its trends.

Urbanization- It is not meaning the increase in the number of cities but the relations between urban growth and urbanization.

“The ratio between the total population of region and the population of a Concentra regions and the growth in this process is called as urbanization.

According to Moust- Urbanization process is the flow of agriculture community towards industrial community.

The technical development of human being is the father of industrialization. It encourages the agricultural production due to which urbanization is also increase.

Urbanization in India- It can be divided into 2 periods-

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (Million)</th>
<th>Urban Population</th>
<th>% of Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901</td>
<td>23.60</td>
<td>26</td>
<td>10.01</td>
</tr>
<tr>
<td>1911</td>
<td>25.20</td>
<td>27</td>
<td>10.60</td>
</tr>
<tr>
<td>1921</td>
<td>25.10</td>
<td>29</td>
<td>11.40</td>
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<td>1931</td>
<td>27.90</td>
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<td>12.10</td>
</tr>
<tr>
<td>1941</td>
<td>31.90</td>
<td>44</td>
<td>13.90</td>
</tr>
</tbody>
</table>
1. **Before Independence the development of urbanization** -

Urbanization in India is from ancient period then too, the development of urbanization is only 10%. Between 1901-21 due to drought, diseases, and the population-decreases and with this urban growth become less.
Between 1921-1951, the economic development took place but the development process is very slow and industrialization also in very slow process and at that time the urbanization was of medium level.

The urbanization which was 10% in 1901 is increasing to 7% up to 1951 (then 17.3%).

2. **Post independence**

   In this period population increases many times due to which urbanization also increase (1951-1991) in these 40 years the population of India increases 2½ times and the urbanization increases 4 times.

**Comparison**

1. **Before independence** - Due to diseases drought & initial stage of industries and slow growth of population, urbanization takes place slowly.

2. **Post Independence** - Urbanization was in very fast process, main reasons are-
   
i. Increasing population
   ii. Industrialization & business
   iii. Attraction towards urban area
   iv. Coaligion of surrounding village with in the central city.
   v. Evolution of new city.
   vi. Development in size of cities.
   vii. Other reasons are educational, medical, administrative and military

**Characteristic of urbanization in India**

1. 75% of population engaged in non-agriculture task.
2. Exceed population
3. Exceed population density.
4. Development of commercial activities
5. Modernization
6. Development of specifications
   
   **E.g.**- Chawni town, capital towns, medical, educational, industrial and port town, tourist town etc.

7. High sky line building
8. Lack of residence and high house rent.
9. Lack of urban facilities e.g. – electricity and water
10. Lack of daily use products
11. Lack of medical facilities
12. Lack of administration facilities
14. Rough roads
15. Sanitation problems.

**Urbanization regions in India**

According to the census of 1991, the first order of the cities in India are 296 in which 42 are in U.P.

In 1991, the distribution takes place into 4 parts where there is population of above one lakh with the point urban population concerned & urban areas concerned.

(a) North-West plain,  
(b) Southern India,  
(c) Ganga-delta & Chotto Nagpur region, and  
(d) South-West urban areas.

**Section E**

**Q. 3 Trends of Indian Urbanization**

**Ans.**

1. In 20th century the total increasing urban population was 8.5%
2. Except 1911-1931 the urban population always increased with time.
3. In the starting of 20th century ¼ part of the urban population resides in the first order of cities but in 1991 2/3rd parts reside in first order of cities.
   In the first order of cities, there is an increase of 12%
4. The increase in urban population is not seen because the rural population is also increasing day by day.
5. Migration takes place very fast.
6. **According to Pitch** - The planners of India wanted industrialization without urbanization but exactly urbanization without industrialization takes place, it is also called a false urbanization.
7. After the development of urbanization is no change in business structure after that there is a negative reason of urbanization.
8. There is change in sex ratio as the youth moves towards urban areas.
9. The region is based on caste, religion and language concentration.
10. The urbanization is affected by the metropolitan cities of India.
11. The regional imbalance is clearly seen over urbanization.

**Conclusion** - The urbanization in India is the result of regional imbalance. In place of urbanization of big cities, we need contact towns, heavy industries, small
industries and cottage are needed due to which regional development takes place.

**Q. 4** Discuss the basic and non-basic functions of urban economic functions and application?

**Ans.** The main element of urban definition was its functions due to which town comes in existence. All the works in town are non-primary, e.g. – manufacturing, trade, transport communication and other services with these non-primary activities we can make the difference between urban areas and rural areas.

Towns are not surviving because of the slums while they also give services to the surrounding areas. This concept was explained at the time of reneuetion of Hiroshima and Naga Saki.

We describe the functional activity of the town on the basis of economy,

1. **Basic functions.**
2. **Centrifugal**

   On the basis of centralization these two functions are affected by 2 different powers.

   1. **Centripetal**
   2. **Centrifugal**

   These functions help in the base and existence of the towns i.e. why these functions are studied in urban geography. The economic activities are can be in the form of industrial production, trade, commercial activities, banking facilities and insurance facilities. The result of these activities is commercial production and the result of production is distribution. In distribution, transport has a great importance. Which can be on the base of local and regional?

   Towns are in the form of nuclei or centrality, due to which town development an umland around its surrounding areas. This production of commodity not only fulfill the requirements of towns but also helps in fulfilling the needs of surrounding areas, due to this, the economic and non-basic and basic concept are important in the study of Urban Geography from the study point of view.

1. **Basic Activities**- The activities which help in the important of towns are its basic activity or the basic activities or those activities in C town produces
the commodities and are not only used by the interior population of the town but also used by the surrounding population on the commodities are being exported. The activities due to which the economic activity of the town get base and the town develops are called as basic activities.

Red Kliff- had said that these activities are constructing activities of the town. e.g- educational activities, medical activities, economic, commercial, administrative, transport, communication, manufacturing etc.

Some other scholars said these basic activities as primary activities, urban growth, external activities, and supporting activities.

2. **Non-Basic activities**- These includes those activities by which there is no increase in the importance of town, but they are useful in daily routines or these works are useful only for the people living in towns. Towns do not get any economic base from these activities. Due to these activities the income rotates from one hand to other within the town or not goes outside, e.g.- barber, cobbler, washer man, retailers etc.

Non-basic activities are also called as secondary or internal activities or service.

This is the fact that all the activities are having both basic and non-basic activities. It depends on the person, place and condition, e.g. - if cobbler makes the good and smart quality of shoes then he will be able to supply it in the surrounding areas of the town along with in the town are so these non-basic activity changes in the basic activities.

The ratios between the basic and non-basic activities are also called as \( \frac{B}{N} \) ratio. e.g. - If the income of town is coming from the \( \frac{1}{4} \) of basic a & \( \frac{3}{4} \) of non-basic of then as \( \frac{B}{N} \) ratio to \( \frac{1}{4} \times \frac{4}{3} = \frac{1}{3} \).

**Methods of determining the economic activities**-
1. Empirical method
2. Pure statistical method.
3. Multiple Analysis Method.
4. Empirical cum statistical method.

**Utility of basic and Non-Basic concept**-
These concepts are having great importance from the study point of view. The basic and non-basic concept has an importance from the study point of view to describe main urban developing factors and urban existence.
The basic and non-basic concept has an importance from the applied point of view as this $\frac{B}{N}$ ratio explore the future needs.

According to Alexander, these concepts has great importance -
1. Analysis of the economic relations between towns and other areas.
2. On the basis of regional functions more satisfactory classification.
3. Division in the types of towns with the help of $\frac{B}{N}$ ration as well as we can divide the individual activities.
4. These concepts have importance in the comparative study of the town.

**Problems**-
1. It is tough to cal cute the $\frac{B}{N}$ ratio. It is observed from the data of persons which is not the actual index of income. While our aim is to calcute the income getting from outside. In some town the quantity of tip is so high that we cannot calcute of that how much tip we got.
2. The complexity comes while differentiating the basic and non-basic concepts.
3. To delimit the urban area is a hard task.
4. $\frac{B}{N}$ Ratio is for the total towns.

Due to the increase in the development of town or decrease in the development of towns the basic act changes in the non-basic activities and vice versa.

**Q.5** Write the theories of urban morphology?

**Ans.** Morphology is a Greek word which is made up of 2 words Mohph + Logos. This means to describe the forms of towns. Morphology comes in the third heading in the scope of Dickinson (structure).

**Dickinson**- Structure in 2 parts.
1. Morphological structure
2. Functional structure

Morphological structure shows the physical futures of the town. Acc to geographical encyclopedia the definition of Morphological structure is the systematic study of pattern of town shape and planning.

**Theories of structural development**- These theories study that which type of theoretical structure is there in town. For the internal structure and development there are 3 generalization and theories are given very earlier.
We study that which concept presents the correct structure of the town.

**Concentric Zone theory** - This is the I theory of structural generalization which is given by Chicago geographer in 1920. And it is published in 1923. In 1925 his I Book (Bergis) “The city” and II book “The growth of city” is having this theory. In 1929 he again published in book “urban areas.”

The main box of his book is agriculture concerned theory given by Vonthencen in 1926. His theory is applicable in the surrounding areas of the town. While of Bergis theory is applicable on the town only.

Acc to Bergis if ine and + ine aspects remain salient then the urban development will be in the form of concentric ring. Acc to him the urban development is in radial form. As the radial development takes places there zone shifts towards outsides.

The internal structure of town is developed in 5 concentric zones.

1. **C.B.D.-** Central Business District, Bergis has shown 2 parts of C.B.D.
   a. Core region or down town or retail business district.
   b. Outer part or wholesale business district.
   c. It is also called as loop in Chicago.

2. **Zone of Transition** - This is the area of residential degradation slums are found here. This is area of vice. Here characteristics of two zones are connected.

3. **Zones of Independent working men Houses** - The pupils of second zones shifted from their place to 3rd zones. These are the residence of those people who are the labourers so that they can easily go to their working place and so that there is no more expenditure spend in conveyance. In the two stories building the House owners and land lords resides upwards and the resides down wards.

4. **Zones of better Residence** - Middle class people lines here; single familiar mostly resides in these areas. All the persons doing middle work resides here. Conventional shops are developed in this zone. This is also called the ‘sub-commercial center’.

5. **The commuter’s Zones** - This is the high class residences in the outer part of the city. Industrialist lived in their areas.

Highly administrative persons lived here. These people tolerate the expenditure of conveyance due to healthy environment and open area.
These colony develop in the outer town in the form of suburban and satellite zones.

These are called as commuters because they cover a large distance to reach C.B.D. and again come from there to sleep.

**Characteristics**-
1. This is the trial of Bergis to give the structural development theory.
2. Generally it can be applied on all the towns.

**Criticism**-
1. Main criticizer is M.R. Dev who had made the land use map of New Heaven city. He studies the distribution pattern of social class. Acc to theory is neither applicable on new Heaven nor it is applicable at other places.
2. This theory had not considered the historical development of the town.
3. Main criticism is due to their hypothesis.
4. C.B.D. is in irregular shape instead of circular.
5. C.B.D. can be established at the main social sides and highways.
6. Industries are also established near H2O ways and railways.
7. Low class residence is found in industrial and transport areas.
8. First and second class residence is found in all type of residential area.
9. He had not considered the heavy industrialization.
10. Ideal radial pattern is not found.

**Conclusion**-
1. Generally there is not important of the criticism of geographers as they take it word to word.
2. He had given the theory at that time positive and negative factors silent.
3. The theories have important because it has 5 pioneers step.
Case Study

1. “Chandigarh is the best example of town planning in India” evaluate this statement.
2. Migration is biggest factor of urbanization. Today every big city is influenced by it. Evaluate this statement in reference to India.
Multiple types questions

Choose the right answer from the four alternatives given below.

(1) The Tropic of Cancer does not pass through
(a) Rajasthan
(b) Orissa
(c) Chhattisgarh
(d) Tripura
Answer: Orissa

(2) The easternmost longitude of India is
(a) 97° 25' E
(b) 68° 7' E
(c) 77° 6' E
(d) 82° 32' E
Answer: (a) 97° 25' E

(3) Uttaranchal, Uttar Pradesh, Bihar, West Bengal and Sikkim have common frontiers with
(a) China
(b) Bhutan
(c) Nepal
(d) Myanmar
Answer: (a) China

(4) If you intend to visit Kavarati during your summer vacations, which one of the following Union Territories of India you will be going to
(a) Pondicherry
(b) Lakshadweep
(c) Andaman and Nicobar
(d) Diu and Daman
Answer: (b) Lakshadweep

(5) My friend hails from a country which does not share land boundary with India. Identify the country.
(a) Bhutan
(b) Tajikistan
(c) Bangladesh
(d) Nepal
Answer: (b) Tajikistan
(6) Which one of the following is the southernmost Latitude of India?
(a) 8° 4' North
(b) 8° 4' South
(c) 6° 4' South
(d) 6° 4' North
Answer: (d) 6° 4' North

(7) Palk Strait separates India from which country?
(a) Mynmar
(b) Maldives
(c) Sri Lanka
(d) Lakshdweep
Answer: (c) Sri Lanka

(8) Which one of the following water bodies separate Sri Lanka from India?
(a) Palk strait and Gulf of Khambhat
(b) Palk Strait and Gulf of Mannar
(c) Gulf of Mannar and 10° Channel
(d) 10° Channel and Gulf of Khambhat
Answer: (b) Palk Strait and Gulf of Mannar

(9) Which of the following neighboring countries share the longest land boundary with India?
(a) Pakistan
(b) Nepal
(c) China
(d) Bangladesh
Answer: (d) Bangladesh (4096 km)

(10) Which is the largest state in India in terms of area?
(a) Uttar Pradesh
(b) Rajasthan
(c) Maharashtra
(d) Madhya Pradesh
Answer: (b) Rajasthan

(11) In terms of area, which is the smallest state in India?
(a) Sikkim
(b) Arunachal Pradesh
(c) Goa  
(d) Nagaland  
**Answer**: (c) Goa

(12) Tropic of Cancer passes through which of these states  
(a) Orissa  
(b) Tripura  
(c) Bihar  
(d) Punjab  
**Answer**: (b) Tripura

(13) Which country among the India’s neighbors is the smallest?  
(a) Nepal  
(b) Bhutan  
(c) Sri Lanka  
(d) Bangladesh  
**Answer**: (b) Bhutan

(14) The easternmost longitude of India is  
(a) 97° 25′ E  
(b) 77° 6′ E  
(c) 68° 7′ E  
(d) 82° 32′ E  
**Answer**: (a) 97° 25′ E

(15) What is the position of India in the world in respect of area?  
(a) 8th position  
(b) 7th position  
(c) 6th position  
(d) 2nd position  
**Answer**: (b) 7th position

(16) which country among the India’s neighbors is the smallest?  
(a) Nepal  
(b) Bhutan  
(c) Sri Lanka  
(d) Bangladesh  
**Answer**: (b) Bhutan
Key Terms

1. C.B.D- central business district
2. Urban fringe – a mixture of land use.
3. Conurbation- different types of geographical region.
4. Satellite town – the small town far from the large town.
5. Ring town – those towns whose economic condition are very much strong around the metropolitan city.
7. Metropolis – town having population more than 10 lakhs.
8. Megalopolis – a very large town.
9. Eopolis – it is the first stage of a town.
12. Umland – city surrounding areas.
13. Site – area of earth surface on which town is established.
15. Location- longitude and latitude area of town.
17. Geography- study of earth surface.
18. Rank size rule – present image of town.
20. Rural – remote area from town.
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URBAN ECONOMIC BASE:

Urban economic base technique is oldest, simplest and most widely used bases technique for regional economic base (Klosterman). It consists all activities of export and import points to the outside of the community and goes to the market. The concept was developed by W. Sombart in 1902.

Example: Western Mariner, EPZ, Garments Industries… etc.

Analyzing techniques are: assumption technique, location quotient and minimum requirement.

It can be 2 types-

1. Basic: Money comes from outside. Example: trade, commerce.

It has following elements-

1. Locational Activities (Ctg)
2. Economic condition of the region
3. Urban retailing business (Tooth brush, pen etc)
4. Size of urban population (5 million)
5. Structure of urban population

Basic sector includes city for mining r export. Activities include farming activity, tourism etc.

Non basic activity includes city local service.

BN ratio (Basic-nonbasic ratio): It's a comparison or ratio between basic and non basic activities. For example- 60% output goes to local consumer and 40% goes to non local consumer.

Classification of cities on the basis of BN ratio:

1. B (Basic) category (75-100% B)
2. Bn (Basic Nonbasic) category (50-75%=B, 25%+=B)
3. Nb (Nonbasic Basic) Category (25-50% B, 50-25% N)
4. N (Non basic) Category (75% N)
Importance of UEB is knowing urban population characteristics, making companies among cities, implement of tax policy, future economic structure etc.

Centrifugal and centripetal force: Chronologically, forces that move away people from urban area and forces that attract on the contrary.

Factors are of two types-

1. Push
2. Pull

1. Push:

1. High land orice
2. Crowded area
3. Lack of available land
4. Industrial waste treatment plant
5. Strict maintenance of law
6. Lack of appropriate location

2. Pull:

1. Spatial force (Huge vacant area)
2. Site force (Fresh air, tourism facilities)
3. Situation force (Well transportation)

Attractive factors for centripetal force:

1. Site attraction (Water site)
2. Functional convenience (transport)
3. Functional prestige (Bata, KFC)
4. Functional mechanism (Garments, factory)
5. Human equation (Job facilities, distance)
URBAN ENVIRONMENT

Urban environment consists with physical and human environment and their continuous interactions. It has 3 major components:

a) Urban physician environment  
b) Urban neighborhood environment  
c) Urban social environment

da. Urban physical environment:

1. **Within area**: number of gardens, good water bodies, land, inside-outside noise, taste and physical appearance.  
2. **Temperature**: Summer and winter.  
3. **Road and transport**: Street condition, transport service, transport rent, transport availability, traffic congestions.  
4. **Disaster**: Earthquake, cyclone, hill cutting, climate change, water logging.  
5. **Visual quality**: Shopping mall, scenic beauty etc.  
6. **Urban Infrastructure**: Energy, telecommunications, transportation, water, waste management, food distribution, housing.

b. Urban neighborhood environment:

1. Water supply  
2. Electricity  
3. Gas supply  
4. Mobil  
5. Sewerage system  
6. Drainage system  
7. Sanitation  
8. Cleaning maintenance  
9. Soil waste management  
10. Recreational facility  
11. Medical service  
12. Educational facility  
13. Housing condition  
14. Slum-squatter  
15. Post office  
16. Cyber café  
17. Shopping centers  
18. Parking facilities  
19. Religious facilities  
20. Graveyard facilities  
21. Banking facilities  
22. Employment facilities  
23. Local security  
24. Law and order  
25. Business facilities

c. Urban social environment:

1. Social sense of people  
2. Privacy  
3. Community feeling  
4. Community activities  
5. Crimes  
6. Prostitutions  
7. Religious conflicts
Urban Issues:

1. Air quality (Agrabad: 500 microgram pqm)
2. Vegetation coverage (Ctg: 9.97%)
3. Urban noise (Indoor-outdoor, average: 85 dB)
4. Rainfall
5. Drainage hierarchy (open channel, primary drain, secondary drain, tertiary drain, plot drain, 140 km Khal; 8 khals in ctg)
6. Flooding in ctg (Tidal, seasonal and local flood)
7. Water logging (cause: lack of drainage, unplanned construction, population etc)
8. Road system (Ctg road network: 8% of land, 500 km)
9. Transport system (road based)
10. Traffic problem
11. Transportation rent
12. Open space (High rent, high demand, high growth of population)
13. Cyclone (Natural disaster: 1.1 M people affected in 1991, Manmade: Building collapse, deforestation, hill cutting)
14. Visual quality

Urban Centre: Urban center is a large and densely populated urban area; may include several independent administrative districts.

City: If population reaches more than 100000 (1 lakh), than its called city.
FUNCTIONAL CLASSIFICATION OF CITY:

Chauncy D. Harris classified the US cities in 1930. He was able to identify qualitatively dominant function out of Multifunctional character of cities. He used employment and occupational data reduced to percentages to indicate cut off points for urban activities ranging in importance. His classification is based on the fact that some activity groups employ many more persons than other do.

Functional Classification of Cities of USA – by Harris

1. Manufacturing Cities – Manufacturing Sub types
   a. Employment in manufacturing equal to 74% of total employment in manufacturing combined with retailing and wholesaling.
   b. Manufacturing and mechanical industry contain atleast 45 % of gainful workers (Occupation) example: - Detroit, New York, North California.

2. Manufacturing Cities – Manufacturing Sub types
   a. Atleast 60% of the total employment in manufacturing, retailing and wholesaling, together.
   b. Manufacturing and mechanical industry contain between 30% and 45% of gainful workers. Example: - Buffalo, Philedelhia, Rochester.

3. Retail Centres
   a. Atleast 50% of the total employment in manufacturing, retailing and wholesaling, together.
   b. Atleast 2.2 times of wholesaling alone. Example: Tulsa, Wichita, Shreveport.

4. Diversified Cities
   a. Employment in manufacturing, wholesaling and retailing is less than 60%, 20% and 50% respectively, of the total employment in these activities.
   b. Manufacturing and mechanical industry contain between 25% and 35% of gainful workers. Example: - Boston, Kansas city, Los Angeles.

5. Wholesale Centre
a. Employment in wholesale is at least 20% of total employment in manufacturing, retailing and wholesaling, together.

b. At least as much as 45% is in retailing alone. Example:- California, Denver.

6. Transport Centres

a. Transport and Communication is at least 11% of gainful workers and workers in transport and communication equal at least 1/3 the number in manufacturing and mechanical.

b. At least 2/3 the number in trade. Example :- New Orleans

7. **Mining Towns**: Extraction of minerals account for more than 15% of gainful workers (for cities of population more than 25,000) Example:- Minnesota, Michigan.

8. **University Towns**: Enrolment in colleges (University, Technical Institutions, Liberal arts colleges and Teacher’s Colleges). At least 25% of population of the city. Example:- Florida, Manhattan, Utah.

URBAN LAND USE:

Land: Land is the solid surface of the earth; an area or ground. Though land and soil are same in general sense, but geographically and geologically there’s a difference, and that is- land includes both plant growing and non-growing surface of the earth, where soil includes only plant growing portion of the earth’s surface,

Land Use: Land use or utilization is the satisfaction, which the farm population derives from the type of agriculture developed, the provision for future production and the contribution to national needs. (Buck, 1951)

It also has been defined as "the arrangements, activities and inputs people undertake in a certain land cover type to produce, change or maintain it." (FAO,1997)

Categories of Land Use:

Harland Bartholomew published this category in 1955.

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>Single family home</td>
</tr>
<tr>
<td></td>
<td>Two family home</td>
</tr>
<tr>
<td></td>
<td>Multiple dwellings (apartments)</td>
</tr>
<tr>
<td>Commercial</td>
<td>Light industry</td>
</tr>
<tr>
<td>Industrial</td>
<td>Heavy industry</td>
</tr>
<tr>
<td>Public &amp; semi public</td>
<td>Schools, churches, hospitals, institutions, golf courses etc.</td>
</tr>
<tr>
<td>Public parks</td>
<td></td>
</tr>
<tr>
<td>Rail roads</td>
<td></td>
</tr>
<tr>
<td>Streets</td>
<td></td>
</tr>
<tr>
<td>Vacant land</td>
<td>Undeveloped or agricultural</td>
</tr>
</tbody>
</table>

LAND USE SURVEY METHODS:

Procedure of conducting land use survey:

- A team of two persons should be provided with a clipboard, a map sheet, field survey note sheet, colour pencils, black pencils, and eraser.
• On reaching field the stretch of road along the survey route should be numbered for reference on the map.
• The details in the first part of the survey note sheet to be filled and the reference numbers are noted.
• New buildings and user should be marked in the map with proper color and notation and note should be kept in the survey field sheet as per the reference number.
• Drawing a diagonal line on the plan of the building should indicate any demolition of building.

**Types of land use survey:**

1. Density survey of city (Residential area, infrastructure etc)
2. Density survey of population

**Technique of land use survey:**

1. Conventional technique (Sample survey, ratio, map interpretation)
2. Modern technique (GPS, aerial photography)

**Methods of land use survey:**

Land use surveys may be conducted either by:

(i) Proximate sensing technique, or
(ii) Remote sensing technique.

i. **Proximate Sensing Technique:** In the proximate sensing technique, the maps, diagrams and sketches are drawn by measuring the land with the help of survey equipment’s. Preparation of layout plans and topographical maps may be cited as some of the examples of proximate survey technique.

The main advantage of the proximate land use survey is that it brings the surveyor in close contact with the ground reality, i.e., the earth surface. The changes, if any, may also be recorded on the spot.

The topographical maps, however, provide very little information about the use of land. Moreover, such survey can be done only with the help of skilled and trained persons. It is a time consuming technique for which a lot of funds should be available.
ii. Remote Sensing Technique:

Remote sensing is a technique developed in recent years for the preparation of land use maps. It is a kind of technique which gives quick results and reduces unnecessary fieldwork. The most popularly used remote sensing technique to prepare land use maps is the aerial photography survey.

In recent years, the satellites or spacecraft fitted with various remote sensing appliances like electro optical and non-photographic sensors have added a new dimension to these techniques.

The satellite imageries are prepared with the help of remote sensing techniques. These imageries enable researchers to prepare inventories of the natural resources and to classify land use data more accurately and rapidly than is possible by using aerial photographs. The satellite imageries are of great help in making agricultural land use maps which serve as the basic tools for regional planning and development.
Christaller's Central Place Theory

Introduction

Central Place Theory (CPT) is an attempt to explain the spatial arrangement, size, and number of settlements. The theory was originally published in 1933 by a German geographer Walter Christaller who studied the settlement patterns in southern Germany. In the flat landscape of southern Germany Christaller noticed that towns of a certain size were roughly equidistant. By examining and defining the functions of the settlement structure and the size of the hinterland he found it possible to model the pattern of settlement locations using geometric shapes.

Assumptions:
Christaller made a number of assumptions such as:

- an isotropic (all flat) surface
- an evenly distributed population
- evenly distributed resources
- similar purchasing power of all consumers and consumers will patronize nearest market
- transportation costs equal in all directions and proportional to distance
- no excess profits (Perfect competition)

Explanation of some terms: Central Place, low order, high order, sphere of influence

- A Central Place is a settlement which provides one or more services for the population living around it.
- Simple basic services (e.g. grocery stores) are said to be of low order while specialized services (e.g. universities) are said to be of high order.
- Having a high order service implies there are low order services around it, but not vice versa.
- Settlements which provide low order services are said to be low order settlements. Settlements that provide high order services are said to be high order settlements.
- The sphere of influence is the area under influence of the Central Place.

Details of the theory

The theory consists of two basic concepts:

- threshold
  -- the minimum population that is required to bring about the provision of certain good or services
- **range of good or services**
  -- the average **maximum distance** people will travel to purchase goods and services

From these two concepts the lower and upper limits of goods or services can be found. With the upper and the lower limits, it is possible to see how the central places are arranged in an imaginary area.

**Arrangement of the Central places/ settlements:**

As transport is equally easy in all direction, each central place will have a circular market area as shown in C in the following diagram:
However, circular shape of the market areas results in either un-served areas or over-served areas. To solve this problem, Christaller suggested the hexagonal shape of the markets as shown in D in the above diagram. Within a given area there will be fewer high order cities and towns in relation to the lower order villages and hamlets. For any given order, theoretically the settlements will be equidistance from each other. The higher order settlements will be further apart than the lower order ones.

**The three principles in the arrangement of the central places:**
Christaller noted three different arrangements of central places according to the following principles:

1. The marketing principle (K=3 system);
2. The transportation principle (K=4 system);
3. The administrative principle (K=7 system).

1. The marketing principle

The following diagram shows the arrangement of the central places according to the marketing principle. There are ________ orders of central places. (note: There can be many orders of settlement.)

(a) First order service center providing first order services
(b) Second order service center providing second order services
(c) Third order service center providing third order services

The different orders of settlements arrange themselves in a hierarchy. Generally speaking lower is the order, larger is the number of settlements and higher the order, greater is the area served.
If the arrangement of the settlements is according to the principle \( k=3 \), the theoretical **number of settlements** will progressively divides the previous order by 3 as shown in the following table:

<table>
<thead>
<tr>
<th>Order</th>
<th>Cumulative total</th>
<th>Actual number</th>
</tr>
</thead>
<tbody>
<tr>
<td>7th</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6th</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>5th</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>4th</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One high order **central place** is serving three (including itself) of the next lower order central places. The relationship of the **market area** between a lower order center and the centers of the higher level can also be indicated by the value 3.

2. The transportation principle

Christaller pointed out that the marketing principle is an awkward arrangement in terms of connecting different levels of the hierarchy. As an alternate arrangement, Christaller suggested that central places could be organized according to what he called the transport principle.

The traffic principles states that the distribution of central places is most favourable when as many important places as possible lie on one traffic route between two important towns, the route being established as straightly and as cheap as possible. The more unimportant places may be left aside. According to the transport principle, the central places would thus be lined up on straight traffic routes which fan out from the central point.

When Central places are arranged according to the traffic principle, the lower order centers are located at the midpoint of each side of the hexagon rather than at the corner. Thus the transport principle produces a hierarchy organized in a \( k=4 \) arrangement in which central places are nested according to the rule of four.
The following table shows how the k=4 principle can be interpreted:

<table>
<thead>
<tr>
<th>Level of hierarchy</th>
<th>Equivalent number of central places dominated by higher order center</th>
<th>Equivalent number of marker areas dominated by higher order center</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Metropolis</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2. City</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. Town</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>4. Village</td>
<td>48</td>
<td>64</td>
</tr>
<tr>
<td>5. Hamlet</td>
<td>192</td>
<td>256</td>
</tr>
</tbody>
</table>

3. The administrative principle

Christaller’s other suggested organizing principle was based upon the realization that from a political or administrative viewpoint centers it was unrealistic for centers to be ‘shared’. Any pattern of control which cuts through functional units is potentially problematic. Christaller suggested that an arrangement whereby lower order centers were entirely within the hexagon of the higher order center would obviate such problems. Such a pattern is shown in the following diagram. All the six lower order centers are fully subordinate to the higher order center which, therefore, dominates the equivalent of seven market areas at the next lowest level.

**Evaluation of Central-Place Theory**

The following passages are some of the evaluation of Christaller’s central place theory. Can you summarize the ideas?

The pattern of cities predicted by central place theory may not hold because of the failure to meet initial assumptions.

1. Production costs may vary not only because of economies of scale but also by natural resource endowments (i.e. not a homogeneous plain)
2. Transportation costs are not equal in all directions
3. Rural markets (initially households) are not evenly distributed
4. Non economic factors (culture, politics, leadership) may be important but not evenly distributed
5. Competitive practices may lead to freight absorption and phantom freight (other forms of imperfect competition)
What are the advantages of central place theory?

The theory does a reasonably good job of describing the spatial pattern of urbanization. No other economic theory explains why there is a hierarchy of urban centers.

Heilbrun wrote: "A hierarchy is by definition a systematic arrangement of the classes of an object." In this case the object is economic centers, large and small. The central place hierarchy provides a description of the relationship between a central place--higher order place--and its tributary areas--lower order places. Once this hierarchy is pointed out, anyone can see it. (An aside: There is a hierarchy of towns in North Dakota--and make no mistake about it, the four cities top that hierarchy. Hierarchy has become a dirty word in some academic circles, but with central place theory, hierarchy is as natural as the ecological spread of vegetation. The question is--will there be a stable long lasting relationship, or a 'dysfunctional' one? In biology, if one species dominates too much, it ends up killing itself off. The cities need the 'export dollars' provided by people in small towns, and the small towns need the specialized services provided by the cities. A strategy which helps both of them develop--in which state level development resources are shared--seems to be reasonable and wise.)

Central place theory does a good job of describing the location of trade and service activity. (It also does a good job of describing consumer market oriented manufacturing.) Trade and service activity has an increasing relevance as the U.S. economy shifts from manufacturing to services over time. Small-town community economic developers can secure quite specific, relevant information about what kind of trade or service enterprise will likely work, and what kind of enterprise will not likely work in a given small community.

Christaller's model will never be found in the real world because:

- Large areas of flat land are rare, with the presence of relief barriers channelling transport in certain directions - Government intervention can dictate the location of industry - Perfect competition is unreal with some firms making more money than others.
- People vary their shopping trends, not always going to the nearest centre q People or resources are never perfectly distributed q Christaller envisaged each centre with a particular function whereas they have many which change over time

Application to Economic Development
Applying the central place theory, many studies have been done regarding to establishments and retail viability.

For instance, in his article, Shonkwiler (1996) summarized important knowledge already established by other researches.

1) Average transportation costs per purchase are lowered by multipurpose shopping trips.

2) The consumer might find it desirable to shop at multiple locations on a single trip.

3) Not only population but demographic characteristics, socioeconomic structure, potential expenditures, and shopping behavior are the most important factors to explain spatial clustering.

4) Although a major tenet of central place theory was that producers tend to locate as far as possible from competitors, firms may recognize the advantages of agglomeration and the benefit of centrality that result from adjacent location.

5) The development of central places depends on factors such as transport costs, expenditure shares for relevant goods and the cost characteristics of stores.

6) Planning commissions continue their efforts on industrial recruitment while the pursuit of other development strategies such as retail-sector expansion may be overlooked.

Moreover, in his statistical analysis of rural retail business, Shonkwiler (1996) concludes, “retail business interdependencies exist and minimum demand threshold values for various retail sectors are sensitive to the presence or absence of other type of retail firms.”

Additionally, in his regression analysis to rural communities, Mushinski (2002) concludes “incorporating explicit geographic interdependence between establishments in a place and sources of supply and demand in neighboring areas” exists, and is “particularly significant on the supply side.” Moreover, “outlying establishments tend to reduce the number of establishments in a place, which underlines the importance of spatial competition in retail development.”

Central Place Theory in Australia

Walter Christaller Central Place Theory” states that the central place (Melbourne) provides the hinterland with goods and services that are of high cost where as low cost necessities would be
supplied by local markets in the hinterland. High cost goods would be sold in larger cities because the thresholds for these goods would be high enough to sustain a store. Low cost necessity goods like bread and milk would be sold at small markets in the small towns surrounding the central place. In light of this theory we can see that population distribution would decrease as you made your way out of the central place and then begin the rise again as one became closer to the next central city. At the midway point between the two central cities you would find the least expensive land. This land was often used for purposes such as farming and grazing.

Christaller’s theory, however, does not hold in Victoria for several reasons. To begin, there were only few supporting cities located around Melbourne like Bendigo, Ballarat and Geelong (all to the west). There were no other central cities either, the nearest would be Sydney which is over 900 kilometers from Melbourne. There were however, a multitude of small cities caused by the gold rushes of the mid and late 1800s. This caused Melbourne’s hinterland population to fall dramatically as it reached the outback. This would lead us to believe that Melbourne could be sketched as a central city with several concentric circles, each one holding less and less population. This concentric circle concept is altered by the fact that Melbourne is sitting on the rather large Port Phillip Bay.

The largest factor contributing to the non-conformation with the Central Place Theory is the actions of government officials in Melbourne. After the initial railroad entrepreneurs fell into bankruptcy the government was forced to buy them out and make a go of it themselves. However, these government officials found they could use the railroad to line their own pockets. The scheme went as follows; First, the officials would trek out into the bushland and purchase cheap grazing land. Then, they would build a railroad line out to their once inexpensive land. This caused land prices to soar. The more wealthy middle and upper-class citizens would purchase the now subdivided land and build their own houses. Public transportation made it possible for these citizens to reach the outer suburbs. Reasons for this were threefold: transport time in and out of the city was now very small. Train transport was much faster than omnibuses and trams; they provided exact schedules which made it possible for passengers to rely on them for everyday transport; the price of a ticket was within the budget of its upper and middle-class passengers.

This caused a ring of unused land between the central station (Flinders Station) in Melbourne and the final termini of the railroads. The unused land stayed unused because the lower-class workers still had to be within walking distance of their work and the mid and upper-class preferred to either be in close, upper-class, suburbs like St. Kilda, Windsor, Brighton and Kew or in the far out suburbs of Frankston, Pakenham and Whittlesea.

This situation, however, fixed itself over time. Lower-class workers became more wealthy due to government intervention in the case of workers rights and to the rise of unions. This new found wealth allowed them move out of walking distance and into the previously uninhabited band of land between the outer and inner suburbs. Another factor leading to the settlement of the inner area was that the railroad made an allowance for special worker trains that cost less and where directed right to the factory areas.