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# SESSION 12:  URBAN SETTLEMENTS

## KEY CONCEPTS:

In this session, we will consider the following:

- Urbanisation, Urban Growth, Urban Expansion,
- Urban Profiles
- Street Patterns
- Factors Influencing the Location of Land Use Zones
- Gentrification, Filtering, Invasion & Succession
- Urban Models
- Urban Settlement Issues / Problems
- Governance of Urban Settlements
- Inner City Renewal, Planning & the Future

## X-PLANATION:

### URBAN SETTLEMENTS

**Urbanisation (%):**
The process in which an increasing proportion of the country's population is concentrated in urban areas. It is caused by rural urban migration.

**Urban Growth (Numbers):**
Refers to the increase in actual number of people living in cities due to urbanisation and natural increases. Thus, the increase of the number of people living in urban areas.

**Urban Expansion (Area):**

Is the increase of the actual physical size of an urban area. Urban sprawl is the unplanned spread of urban areas.

**Urban Profiles**

- The urban profile is a cross section of the city from the CBD to the periphery. It is a view of a city as seen from the side.  The differences in relief are ignored, while the height of the buildings is the important factor.  In a city in the developed world you might expect the following changes:
- Buildings get older towards the centre
- There will be many newer buildings in the CBD
- Building density increases towards the centre
- Buildings are taller towards the centre
- Roads and pavements are busier towards the centre
- There is less open space towards the centre
- Beyond the edge of the city is the rural urban fringe, an area being gradually 'urbanised' as villages are taken over by new housing for commuters

- Some towns have protected these areas with 'green belts' where development is restricted
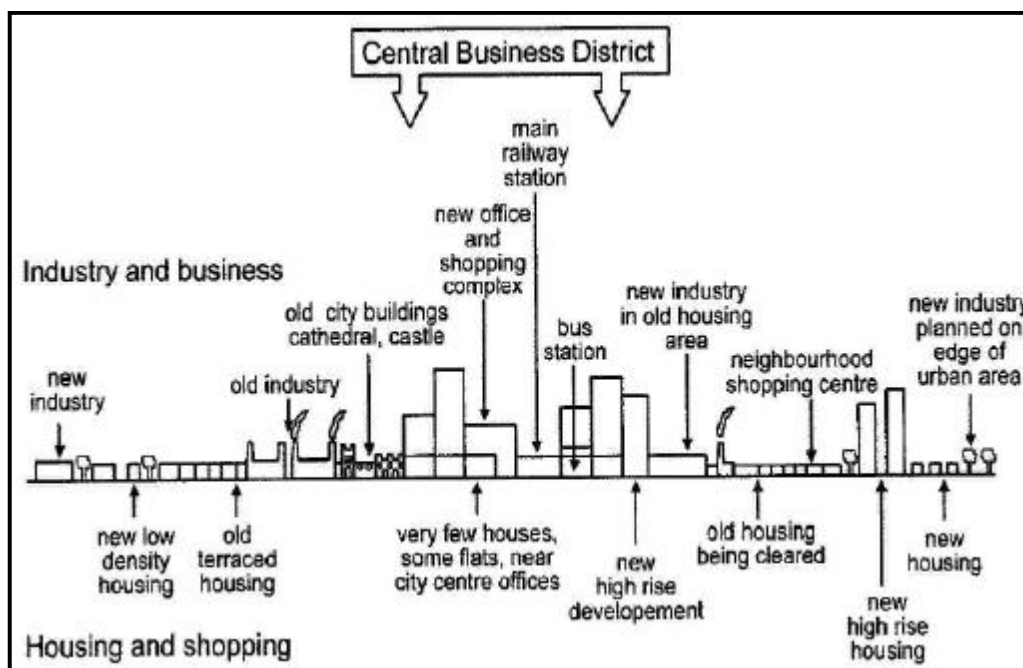


**Reasons:**

- The original site of the settlement has been replaced by the CBD
- Most transport routes meet here, making it the town's most accessible point.
- Shops and offices compete for space here, so land is expensive
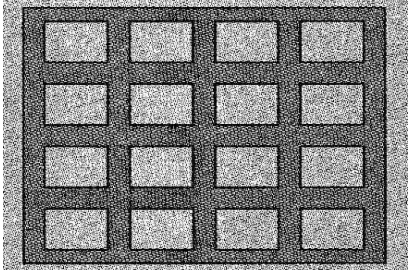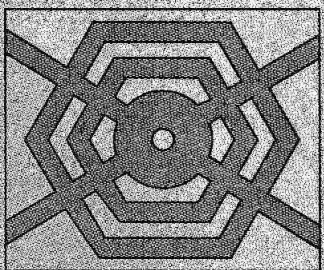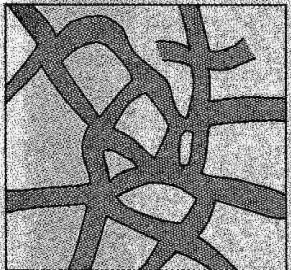- To make the most of the land, buildings are tall and close together

**Bid-Rent Theory:**

The concept of bid-rent is the value of land for different purposes, such as commercial, manufacturing and residential purposes. Land at the centre of a city is most expensive (it is the most accessible land to public transport, there is only a small amount of land available)
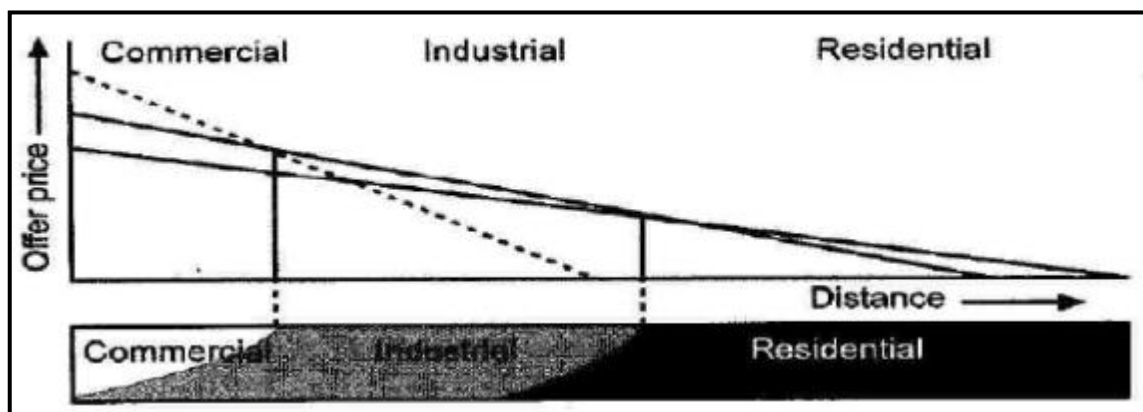
**Street Patterns:**

Urban street patterns are determined by the physical relief, urban planning of specific urban areas and changing needs of inhabitants.

| Street pattern | Grid or gridiron | Radial (concentric) or cobweb | Irregular pattern |
|---|---|---|---|
| Description | • A regular, planned street pattern<br>• Streets at right angles to each other, forming blocks<br>• Often found in linear settlements | • Planned street pattern<br>• Streets radiate out from a central point (physical feature or building or other landmark) | • Can be planned or unplanned<br>• Streets often planned around physical features (river, lake, mountain or coastline)<br>• Visually older cities that developed haphazardly<br>• Street blocks different sizes and shapes |
| Advantages | • Plots can be easily subdivided<br>• Easy to plan and lay out<br>• Easy to find your way round (easy access for pedestrians)<br>• Shorter distances to travel (save time and fuel)<br>• No wastage of land (maximum use for construction) | • Easier flow of traffic<br>• Equal access to centre of town | • Easier flow of traffic<br>• Not monotonous |
| Disadvantages | • Traffic congestion as traffic stops at every intersection<br>• Monotonous (regularity)<br>• More accidents (intersections) | • Can be congested in centre<br>• Wasted space (irregular plots) | • Easy to get lost<br>• Direction can be difficult to find |
| Example |  |  |  |

**Factors influencing the location of the land use zones:**

Centripetal forces, centrifugal forces, land values

*Centripetal Forces*

These forces tend to keep certain functions in the city centre and attract others to it.
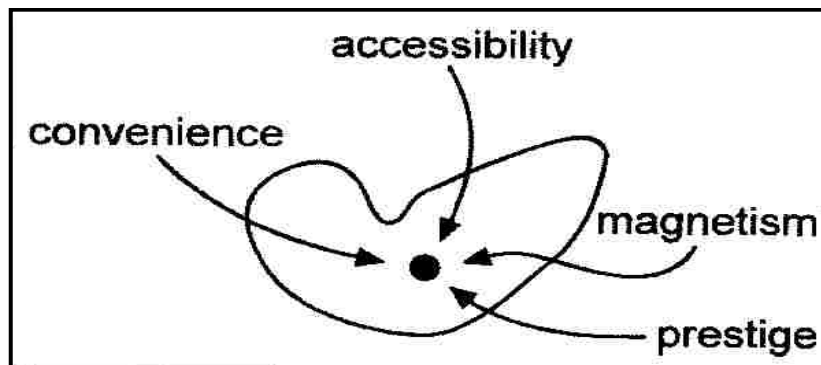


*Centrifugal Forces*

These factors cause functions to move from the city centre to the urban periphery
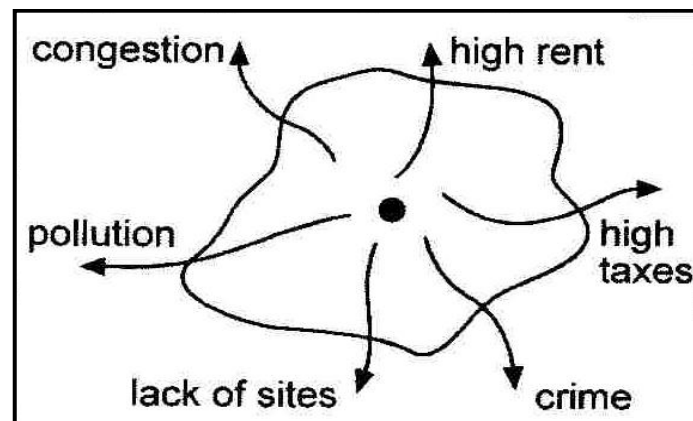


*Land Values (Cost of Land)*

- Big retail outlets (e.g. Woolworths) will pay high prices because they want accessibility
- Heavy industries cannot afford high land values because they need lots of space

**Compatibility**
- Some functions are able to benefit each other (which makes them compatible)
- Compatible functions – retail outlets, financial institutions
- Incompatible functions – industry and high income residential areas

**Accessibility**
- For retail outlets, accessibility to customers is the most important factor influencing location
- Customers must be able to get to shops easily
- Remember – the CBD should be the most accessible part of the city as all the main transport routes converge here.

**Gentrification, Filtering, Invasion and Succession**
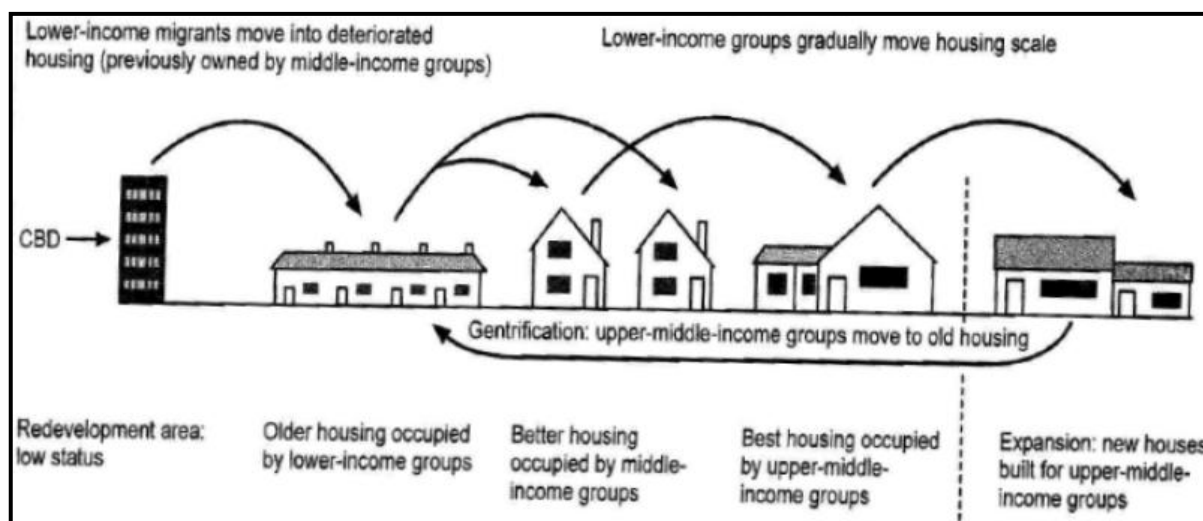
**Gentrification** occurs as housing deteriorates and its move downwards through the social groups.



**Filtering** reverses the process of gentrification as middle-income groups upgrade older city properties by renovating them.
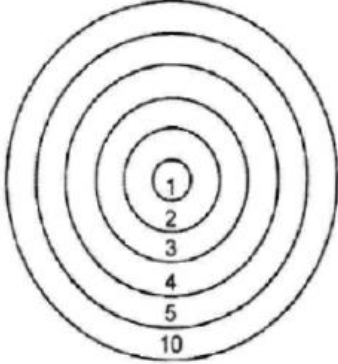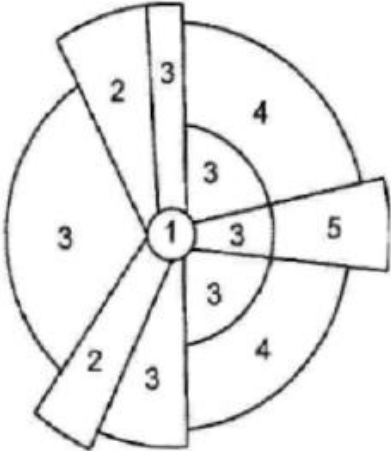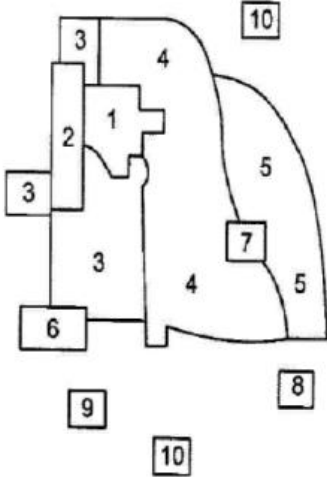
**Invasion and succession**
As the city grows and spreads out, the urban functions will invade and take over the rural functions.

Another process which is changing the character of residential areas in South Africa is **golf estates and security living.**

Residential facilities of this type have become very popular.  This is mainly an offshoot of the current crime situation in South Africa.  Most of the security villages and golf estate focus on **secure environment** linked to **specific lifestyle**. People buy into a specific lifestyle.

## Urban models

| | |
|---|---|
|  | **The Concentric Model:**<br>• This model was based upon studies of American cities (particularly on Chicago) in the 1920s by E.W. Burgess.<br>• It has the Central Business District (CBD) at its centre.<br>• This zone is mainly made up of shops and offices.<br>• Around the CBD is the zone of transition or twilight zone or inner city. |
|  | **The Sector Model:**<br>• In 1939 Homer Hoyt improved on the concentric model.<br>• Each sector reflects a distinct type of land use radiating from the centre.<br>• Once established, a sector maintains its character.<br>• Land use zones develop along the main transport routes.<br>• Industry and lower cost housing developed along the line of the main roads or railways and are found in the least desirable areas.<br>• Sequence occupance occurs within this sector. |
|  | **The Multiple Nuclei Model:**<br>• This model was formulated in 1945 by the American geographers, Harris and Ullman.<br>• It explains the growth of modern conurbations.<br>• Activities are located in particular areas to meet specialised needs. Shopping centres are located at points of maximum accessibility.<br>• As urban areas continued to expand, they absorbed smaller existing settlements.<br>• The patchwork result fitted neither the concentric nor the sector model.<br>• Instead there were a number of different sized centres, including the original CBD, joined together by a transport system. |

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KEY
1   Central business district        6   Heavy manufacturing
2   Wholesale light manufacturing    7   Outlying business district
3   Low-cost residential             8   Residential suburb
4   Medium-cost residential          9   Industrial suburb
5   High-cost residential            10  Commuter's zone
```

Every city performs certain functions to provide for the needs of its inhabitants. Each activity needs its own specialist type of land use such as:

- **Administration:** town hall, courts of justice, government offices, police headquarters
- **Industry:** factories and workshops, industrial estates
- **Commerce:** shops, warehouses, banks, building societies, insurance offices, general offices
- **Transport:** bus, rail, taxi and air termini, roads, pavements, car parks, etc.
- **Residential:** housing, hotels, nursing homes
- **Recreation:** space for leisure centres, parks, playing fields, theatres, cinemas, clubs
- **Social services:** schools, hospitals, health centres, fire stations, water and sewage treatment works.

As towns grow, the different functions that they perform tend to separate out into different areas. For example, industries may group together along a riverside or railway to form an industrial zone. As a result it is possible to recognise **functional zones** within every town, which are characterised by distinctive types of land use.

To simplify and explain the complex pattern of land use in settlements a number of models have been developed. The three main models are the **concentric model, sector** and the **multiple nuclei.**

**Urban Settlement Issues / Problems**

Urban problems are becoming more challenging and demanding for urban planners. With the rapid increase in population and expanding of land-use zones, urban areas experience greater demands for infrastructure, basic needs and employment. Urban problems are on the increase because of rapid urbanisation - CBD heat island and urban decay.

### 1. Overcrowding and informal settlements

Overcrowding is a major problem for most urban areas. Cities cannot keep up with the demand for housing and infrastructure, and so informal settlements are erected to accommodate people from the rural areas and immigrants from the bordering states of South Africa.

## 2.  Lack of basic services and poverty

The increasing demand for services and infrastructure is greatest informal settlements and the transition zone, and this is where poverty is also the greatest problem.
Basic services include housing, healthcare facilities, educational facilities, sanitation, clean drinking water and electricity.  These are basic services because they are required for human wellbeing.
Infrastructure includes roads, power lines and communication networks.  People need infrastructure to access the services and function offered by the city.

## 3.  CBD heat island (refer to Climatology notes)

Urban decay:  When the city, or parts of it, fall into a state of disrepair.  Some of the characteristics of urban decay are:
-        Slums
-        Increasing crime
-        Pollution
-        Environmental degradation
-        Inner city buildings being abandoned

## 4.  Centralisation and urban sprawl

-        Centralisation is the high concentration of functions and people in a specific area.
-        Urban sprawl usually occurs on the fringe of the urban area.  S.A. cities are charaterised by low-density urban sprawl.
-        Some of the major consequences of urban sprawl are: valuable agricultural land is used for urbanisation, People are increasingly located far away from places of employment and the services and functions offered in the city, traffic congestion increases because the more spread out a city becomes, the less viable public transport becomes so the more people use cars.

## 5.  Pollution and traffic congestion

## 6.  Crime and healthcare
Increase in crime and a drop in life expectancy

**Governance of Urban Settlements (Sustainable Strategies for Urban Development)**

| Problem | Strategy |
|---|---|
| **Overcrowding in CBD** | Encourage decentralisation, improve public transport, improve low-income areas, demolish old buildings, build more parks |
| **Pollution (noise, air, water)** | Filters and silencers for vehicle exhausts; improve public transport, provide parking |

| | facilities on edge of CBD, reduce pollution from industry; provide basic services to informal settlements |
|---|---|
| **Poverty** | Create more jobs, provide housing and basic infrastructure; upgrade urban areas with projects and programmes |
| **Urban sprawl** | Protect green belt areas; provide education about nature conservation |
| **Traffic congestion** | Improve public transport; provide parking facilities on edge of CBD |
| **Informal settlements** | Provide basic services (housing, water, electricity, etc.); provide employment, develop rural areas; encourage self-building and low-income rentals |

**Inner City Renewal, Planning and the Future**

**Urban and inner city renewal programmes**

1. **Urban renewal programmes aim to:**
- Speed up service delivery
- Upgrade infrastructure (such as roads)
- Develop skills and create jobs
- Fight crime and urban decay

2. **Inner city renewal means rezoning to fight urban decay.**
   Disadvantages are:
- The area changes from a low-income to a middle-income or high income area.
- Although the area is renewed, the current residents have to move away to less expensive areas, with possibly even worse social problems.
- Businesses that catered for the original low-income residents can suffer.

**Planning urban settlements for the future:**

1. A garden city is an urban area that is planned and for which there are strict rules about development and maintaining the environment.
2. Planned urban areas should take into account people's basic needs, access to services, employment, safety and security, social and recreational needs, green belt areas, such as parks, transport and future urban expansion.

**X-AMPLE QUESTIONS:**

**Question 1:** *(Source: DoE March 2008)*

1.1 An urban area has different land-use zones and functions. The land value differs in each of these land-use zones. Complete the following description by using the terms provided in the list below. Write only the terms next to the question number (1.1.1 - 1–1.5). Refer to the figure on the following page to assist you.

**Central Business District (CBD); transition zone (zone of decay); rural-urban fringe; residential**
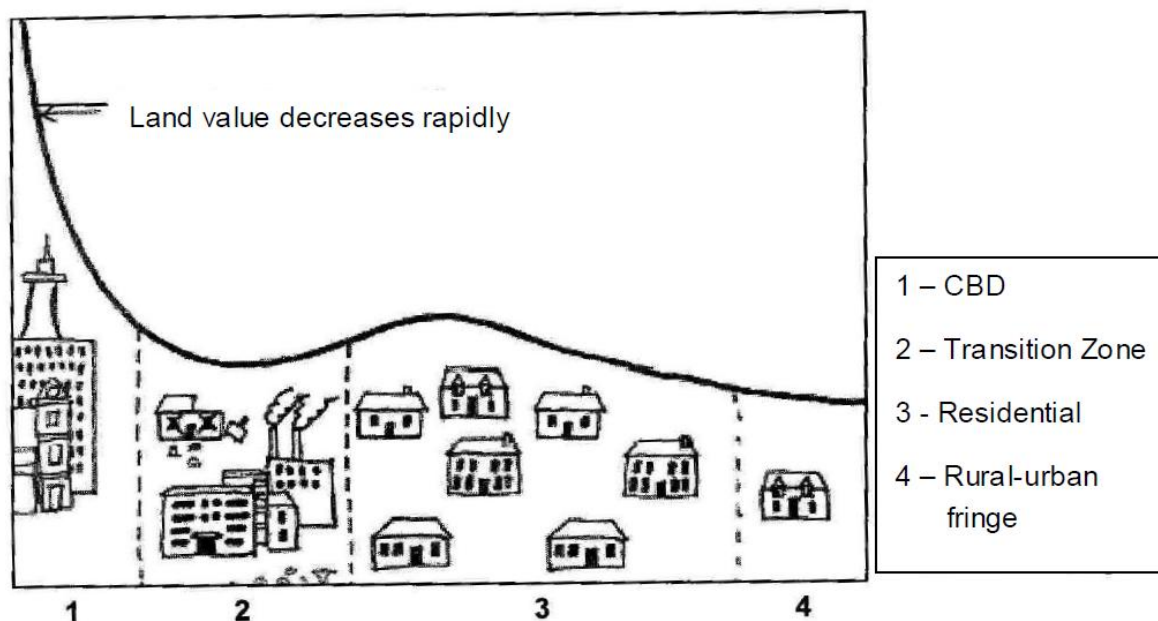


The same term may be used for more than one answer

| 1.1.1 | Has a mixture of functions such as commercial, residential, hotels, entertainment |
|---|---|
| 1.1.2 | Commercial zone characterised by high-order functions |
| 1.1.3 | Land-use zones that covers the largest area in an urban settlement |
| 1.1.4 | Land-use zone with the highest land value |
| 1.1.5 | Dilapidated zone around the CBS |

(5 x 2) [10]

**Question 2:**

The photograph shows a building in the CBD of Johannesburg. Answer the questions that follow:



2.1 The street pattern in the CBD of Johannesburg is in the form of a grid. Provide a suitable term to describe this type of pattern and briefly explain the effect of this street pattern on the buildings in the CBD. (3x1) (3)

2.2 The building identified by the label A is a residential block of flats that also includes certain floors reserved for office space and retail outlets within the CBD. Arrange the following from the lowest to the highest rent and give a reason in each case:
Top floor
Middle floor
Ground floor (3x1) (3)

2.3 Explain why it was necessary for the owner of building A to build such a tall building. (3x1) (3)

2.4 As the CBD becomes increasingly overcrowded and congested, many businesses will move to cheaper more attractive locations in the suburbs. What effect will this have on the rents charged for office space in building A? Explain your answer. (3x2) (6)

**Question 3:**

The aerial photograph below shows the extent of informal housing in a section of Cape Town.  Answer the questions that follow.
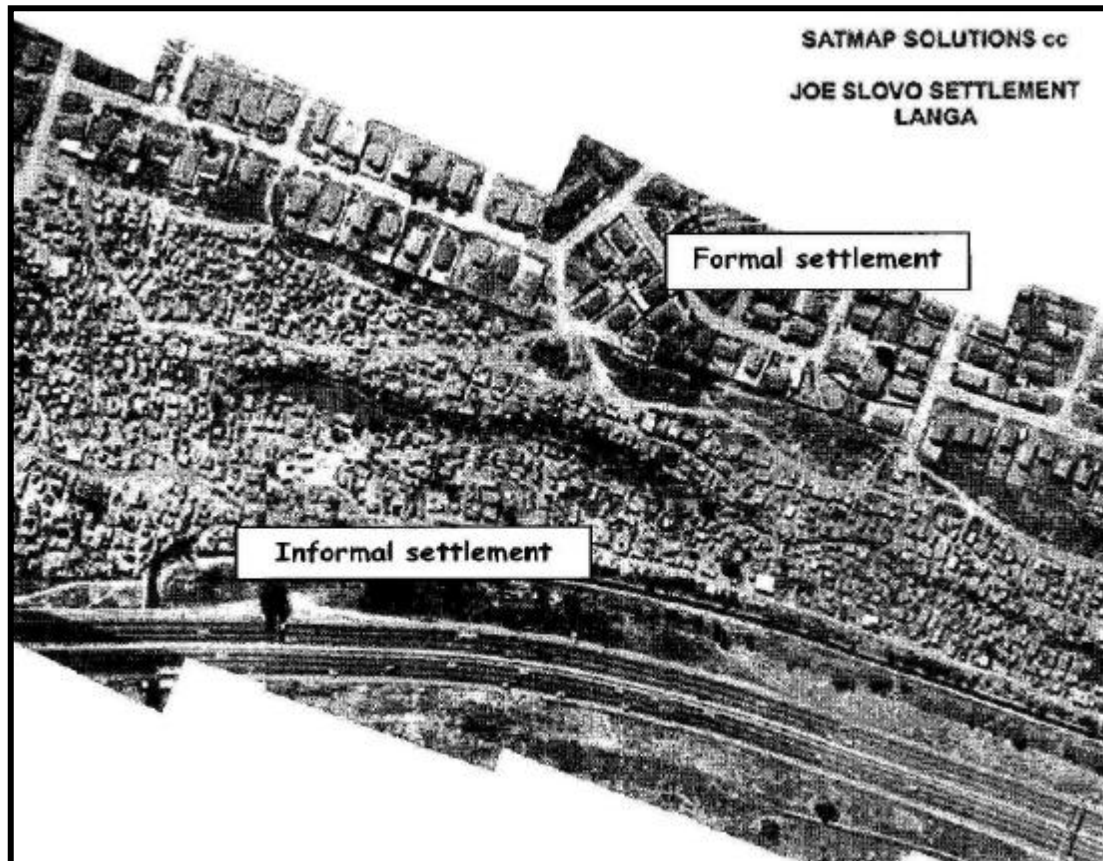


3.1.1   Describe the push factors, which have led to the rural urban movement
       in this case?                                                      (3 x 2) (6)
3.1.2   Name FIVE socio-economic problems that the inhabitants of the informal
       settlement shown in the photograph experiences?                   (5 x 1) (5)
3.1.3   An informal settlement of this size is a serious problem for any city. Explain
       why it is necessary for the local municipality to spend large sums of money
       upgrading the informal settlement.                                (4 x 2) (8)
3.1.4   Name FOUR basic municipal services which should be supplied to the
       informal area as a priority.                                      (4 x 1) (4)
3.1.5   Make a list of the basic needs which need to be satisfied in this community
       before social upliftment  projects, such as the provision of playgrounds and
       centers for skills training, can be successful.                   (6 x 1) (6)
                                                                              [29]

**Question 4:**

4.1 Study the photograph of the CBD of Johannesburg printed below.  Describe and account for the following:



4.1.1 Why are the tallest buildings found in the CBD?                    (2 x 2) (4)

4.1.2 Why are there so few residential buildings in the CBD?                    (2 x 2) (4)

4.1.3 (a)    Retail occurs on a large scale in the CBD.  What is meant
            by the term 'retailing'?                    (1 x 2) (2)

        (b)    Give a reason why most of the retail shops occur on the ground
            and first floors of buildings.                    (1 x 2) (2)

4.2 The following graph indicates the land use values of land use zones.
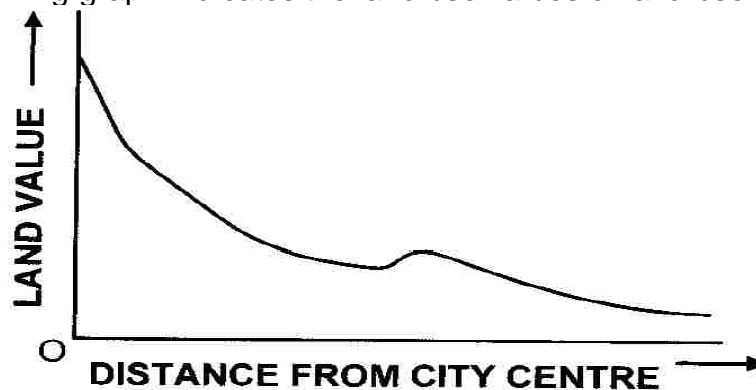


4.2.1 Copy the graph and indicate the location of the following on it:
      The CBD (A)
      The inner city (B)
      The neighbourhood shopping centre (C)
      The outer suburbs (D)
      Heavy industries (HI)                    (5 x 2) (10)

4.2.2 Give reasons for your choice of the location of heavy industries
      in 4.2.1.                    (4 x 2) (8)

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# X-ERCISE QUESTION

**Question 1:** *(Source: DoE March 2008)*

Refer to Figure 1 that follows, which shows an urban settlement – Senzinani – and the land-use zones typical of an urban settlement.
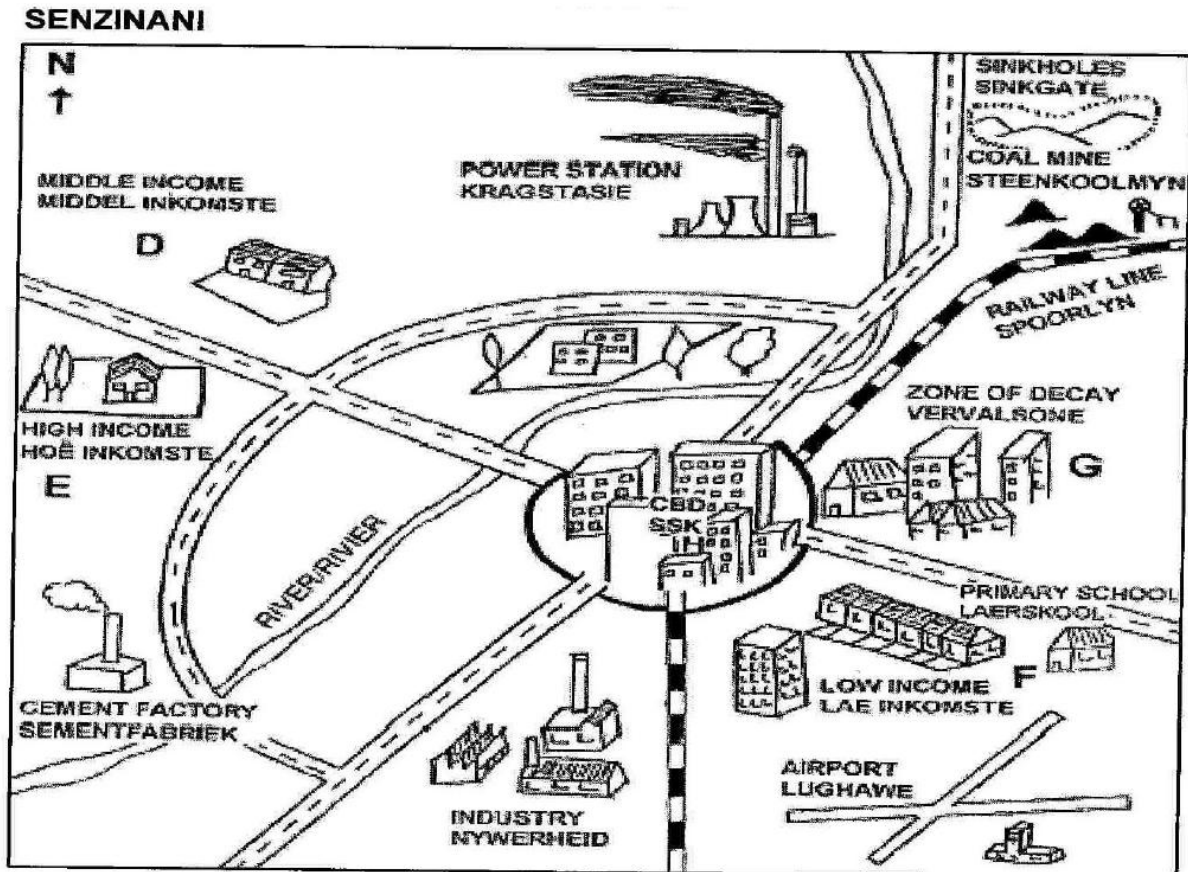


**Figure 1**

1.1 Residential areas are classified according to income. Read the following advertisements that appeared in a major newspaper. The names of the residential suburbs were changed and do not refer to any specific residential suburb in South Africa.

| SHONA: | ROSA: | VIOLET: |
|---|---|---|
| Spacious 2½ bedroom flat, excellent condition, lovely kitchen, intercom/security system, under-cover parking. Prime position, close to primary school. Private sale. R150 000 or nearest offer. | 3 bedrooms, lounge/dining room, 1½ bathroom, kitchen, outside buildings and large stand. R300 000, negotiable. | House for sale: R950 000 not negotiable. 4 bedrooms, 2 lounges, sunroom, TV room, study, 2 toilets, guest toilet, 2 full bathrooms, dining room, kitchen, scullery. Large grounds. |

Match each of the advertisements with one of the places.
(D, E, F or G) in Figure 1. (3 x 2) (6)
(a) Give a reason for each of the choices you made in question 1.1.
(3 x 2) (6)
(b) Explain the difference in building density, visible in Figure 1, which
exists between low- and high-income residential areas. (2 x 2) (4)

1.2 Refer to the CBD located in the centre of the settlement illustrated in Figure 1.
The following headline (loosely translated) appeared in the *Beeld*:

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**SHARP INCREASE IN NUMBER OF EMPTY OFFICES IN CBD**

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(a) What process is being referred to in the headline? (1 x 2) (2)
(b) State TWO factors responsible for this process. (2 x 2) (4)
(c) Discuss TWO factors that would attract office workers to work in offices
away from the CBD. (2 x 2) (4)
(d) State ONE location to which many new offices would migrate. (1 x 2) (2)
(e) With reference to urban renewal projects, describe what can be done to
reverse the process identified in Question 5.2 (a). (2 x 2) (4)

# SOLUTIONS TO X-ERCISE QUESTION

**Question 1:**

1.1 (a)      Shona – F/D/G√√      Rosa- D√√   Violet - E√√    (3 x 2) (6)

    (b) Shona: In high-rise flat/high density – F
           Lowest cost – F
           Close to primary school – F
           Close to CBD – F
           Close to employment – F
           Good condition of apartment – D
           Urban renewal results in upgrading of buildings - G√√

       Rosa:   Medium-sized house
             House has basic amenities
             Intermediate –cost house√√

       Violet:  Large house
             Large plot / ground
             House has many luxury amenities
             Highest cost house √√  one reason for each choice)   (3 x 2) (6)

(c)    Low density – high income as people can afford large stands√√
      High density – low income as people can only afford small stands or afford
      housing in high-rise flats√√           (2 x 2) (4)

1.2 (a) Commercial / functional decentralisation√√        (1 x 2) (2)
    (b) Traffic congestion in CBD√√ inaccessibility√√, high level of pollution in CBD,
      High crime rate in CBD, Office space expensive in CBD, lack of open spaces,
      poor state of buildings, lack of parking for customers
      (Any TWO)                     (2 x 2) (4)
    (c) Less traffic/accessibility √√, more peaceful environment √√, less pollution √√,
      Modern buildings, less crime, aesthetic appeal/beauty.
      (Any TWO)                     (2 x 2) (4)
    (d) Suburbs on outskirts √√/ rural-urban fringe, outlying /regional shopping
      centres √√, Outlying malls/ walkways, office parks
      (Any ONE)                     (1 x 2) (2)
    (e) Modernise/upgrade buildings to meet needs of occupants√√
      Facadism- retaining the front of the building and build behind√√
      Gentrification – modernise old houses close to the CBD
      Develop obsolete spaces into loft apartments
      Develop entertainment opportunities in the CBD
      Demolish buildings to reduce high density
      Provide open spaces to CBD
      Develop walkways in the CBD
      Slum clearance
      (Any TWO)                     (2 x 2) (4)
                                             **[32]**