SESSION 10: PROCESSES & SPATIAL PATTERNS

KEY CONCEPTS:

In this session, we will consider the following:

- Aspects of settlement:
  - Site and situation
  - Dispersed and nucleated settlements
  - Wet-point settlements
  - Dry-point settlements
  - Function of settlements
  - Characteristics of settlements
  - The relationship between population and dwelling

X-PLANATION:

PROCESSES & SPATIAL PATTERNS

Settlement: is a place where a group of people live together and function together as a group.

Settlements can be classified as urban or rural according to their size and the kinds of activities that take place there.

Rural settlements are usually quite small; most people living there are involved in primary activities such as farming, fishing, forestry or mining. Rural settlements are, therefore, unifunction (one function) and have primary activities.

It is important to know the difference between SITE and SITUATION of a settlement.

SITE: actual piece of land settled on – the physical characteristics of the piece of land.

Factors influencing the choice of site:
- Availability of water
- Arable land
- Grazing land
- Building materials level ground

SITUATION: The position of the settlement in relation to the surrounding environment.

Here we consider:
- Transport routes
- The general relief (e.g. valley, mountain etc.)
- Aspect
- Soil fertility
When the site, situation, customs and traditions are combined, we find that some areas tend to be nucleated while other areas are dispersed.

**Brief Summary:**

<table>
<thead>
<tr>
<th></th>
<th>Dispersed</th>
<th>Nucleated</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Water</strong></td>
<td>Freely available</td>
<td>In short supply</td>
</tr>
<tr>
<td><strong>Relief</strong></td>
<td>Flat ground</td>
<td>Steeper ground</td>
</tr>
<tr>
<td><strong>Soil</strong></td>
<td>Unfertile</td>
<td>Fertile</td>
</tr>
<tr>
<td><strong>Tradition</strong></td>
<td>Nguni settlement</td>
<td>Tswana village</td>
</tr>
<tr>
<td><strong>Defence</strong></td>
<td>Peace time</td>
<td>War and violence</td>
</tr>
<tr>
<td><strong>Climate</strong></td>
<td>Mild</td>
<td>Extreme climates</td>
</tr>
</tbody>
</table>

**Wet-point settlement:** where there is water in a dry area, e.g. spring, oasis. If water is scarce, people gather around a wet point.

**Dry-point settlement:** where there is a dry point in a wet area, people settle on dry land, e.g. small hills suitable for settlement in a marshy area.

**Function of a Settlement:** most rural settlements are serviced by a central service centre. The service centres provide a market and provide goods and services to the surrounding population, for example, transport, medical, etc.

Once you have identified the settlement, you must identify the characteristics of that settlement.

**Characteristics of a settlement:**

- **Size:** The number of people living together. This can vary from the smallest isolated farmstead to a small hamlet (a few farms) to a village that may consist of a few hundred inhabitants. The size is also referred to as the hierarchy of the settlement. Ensure that you know there characteristics and South African examples. The triangle has a large base (lots of small settlements) and a narrow apex (less of the larger settlements)
- **Pattern:** Settlements that are far apart are isolated or dispersed. Settlements that are close together to each other are clustered or nucleated.

There are various positives and negatives to living in isolated or dispersed settlements

<table>
<thead>
<tr>
<th>Dispersed Advantages</th>
<th>Nucleated Advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmers can make their own decisions</td>
<td>Help is readily available in times of trouble, health emergencies and war</td>
</tr>
<tr>
<td>They can mechanise and implement environmentally friendly farming methods</td>
<td>Farmers need less capital, seeing that they can borrow machines and other implements from each other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disadvantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>- There is a shortage of social contact</td>
<td></td>
</tr>
<tr>
<td>- Farmers cannot rely on community for any help</td>
<td></td>
</tr>
<tr>
<td>- Requires a large amount of capital to maintain the farming practices</td>
<td>- All farmers have to reach consent with regards to certain farming methods</td>
</tr>
<tr>
<td>- Land is often fragmented, and thus sometimes too small to mechanise</td>
<td></td>
</tr>
<tr>
<td>- If soil erosion occurs, all farmers are affected, for example dongas that reach across farm boundaries</td>
<td></td>
</tr>
<tr>
<td>- There is less opportunity for the use of individual choices</td>
<td></td>
</tr>
</tbody>
</table>

- **Shape:** Another term used to describe the shape is the morphology of the settlement. This refers to how the buildings are arranged in relation to each other, and their physical appearance.

![Shape Diagram]

The above are the most common shapes, but it is crucial to know how the shapes developed.
The Relationship between Populations and Dwellings:

In grade 11, you learnt that demography is the branch of human geography that studies human populations. It looks at changes in human population numbers, birth rates and death rates, patterns of human distribution, how they change over time, and population differences between age and sex classes.

You will see that settlement geography tends to focus on people’s dwellings, rather than on people. This is because dwellings provide clues about how, where and why their inhabitants settled, where they did and how settlements have changed over time.

In spite of the different approaches, settlement geography has much in common with demography. Settlement geography and demography provide useful data (statistics and other information) that both branches can use.

**HINTS:**

Hint 1 – In the final examination, 20% to 30% of the settlement questions will be about rural settlement, with urban settlement making up the rest.

Hint 2 – Expect to be examined on some settlement work in the mapwork examination.

Hint 3 – Photographs, sketches, maps, advertisements and statistical data can also be expected in this section.

Hint 4 – Make sure you know the key concepts and terminology and are able to apply this knowledge to new situation.
X-AMPLE QUESTIONS:

Question 1:

1.1 Four options are provided as possible answers to the following questions. Choose the answer and write only the letter A-D next to the question number (1.1.1 – 1.1.5), for example 1.1.6.B.

1.1.1 The smallest rural settlement type is a:
A) hamlet
B) isolated farmstead
C) low-order service
D) village

1.1.2 A settlement is classified as rural as a result of the...
A) number of people living in the settlement
B) size of the settlement
C) function of the settlement
D) number of low-order activities performed by the settlement

1.1.3 Site is influenced by the following factors:
A) water, relief, aspect
B) water, defence, relief, fuel
C) water, topography, altitude, aspect
D) historical circumstances, water, farmland

1.1.4 Dry-point settlements occur near...
A) deserts
B) oases
C) marshes
D) higher ground

1.1.5 Agriculture is an example of a … economic activity
A) quaternary
B) tertiary
C) secondary
D) primary. (5x2) [10]
Question 2:

Refer to the map below showing an area in the southern hemisphere outside the tropics, and answer the questions that follow:

2.1 Match each of the settlements represented by the letters A to D, respectively, with one of the following distributions:
- Random dispersed
- Linear nucleation
- Linear dispersed
- Haphazard nucleation
- Circular cluster

(4 x 2) (8)

2.2 For each of settlements A and B, state and explain the factor that might have influenced its morphology.

(2 x 2) (4)

2.3 Is settlement E a wet or a dry settlement? Give a reason for your answer.

(2 x 2) (4)

2.4 State one advantage that settlement B has over settlement A.

(1 x 2) (2)

2.5 State and explain the climatic factor that could have been responsible for the location of settlement C.

(2 x 2) (4)
Question 3:

Match the geographical term with the correct definition. Write down only the question number and answer, e.g. 3.1 B.

<table>
<thead>
<tr>
<th>Geographical Term:</th>
<th>Definition:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Site</td>
<td>A. A gigantic urban complex resulting from the coalescence (joining together) of several conurbations and large cities</td>
</tr>
<tr>
<td>3.2 Secondary sector</td>
<td>B. The exact ground or area on which a settlement is built</td>
</tr>
<tr>
<td>3.3 Megalopolis</td>
<td>C. Economic activities producing goods using raw materials</td>
</tr>
<tr>
<td>3.4 Conurbation</td>
<td>D. A main city of a region often surrounded by dependent towns</td>
</tr>
<tr>
<td>3.5 Metropolis</td>
<td>E. Larger urban centre formed by the growth and coalescence (joining together) of several individual towns and cities</td>
</tr>
</tbody>
</table>

Question 4:

Look carefully at the sketch below and answer the questions that follow:

4.1 Name the factors that influenced the location of each of the settlements labelled A, B, C and H. (4x2) (8)

4.2 Settlements labelled D, B and J are nucleated.
4.2.1 Identify the type of nucleated pattern each settlement represents. (3x2) (6)
4.2.2 State and explain briefly the socioeconomic / human factor that gave rise to each of the settlements (D, B and J). (3x2) (6)
4.2.3 Identify each of the dispersed settlements represented by the letters F and G. (2x2) (4)

4.2.4 State and explain briefly the factor that influenced the morphology of the settlement labelled G. (2x2) (4)

Question 5:

Use the figure below to assist you to answer the question below. Choose a term from the list provided that will match each of the statements labelled A to E, respectively. Write only the letter (A – E) and the selected term.

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of settlement referred to as uni-functional</td>
<td>Pattern associated with a single farmstead</td>
<td>Zone where rural and urban functions merge</td>
<td>Where one type of transport is replaced by another</td>
<td>Precise land on which a settlement is located</td>
</tr>
<tr>
<td>Activity concerned with the processing of raw material</td>
<td>Extraction of raw materials from the earth</td>
<td>An open space in a settlement for recreation</td>
<td>More goods are exported than imported at the harbour</td>
<td>Specialised skills and information available in the CBD</td>
</tr>
</tbody>
</table>

LIST OF TERMS
Secondary activities, informal trading, quaternary activities, rural urban fringe, positive balance of trade, mining, rural settlement, gross national product, dispersed settlement, nucleated settlement, site, break of bulk point, tertiary activities, green belt
Question 6:

Study the scatter graph and answer the questions that follow:

6.1 What relationship does the graph show? (1x2) (2)
6.2 What is the relationship between hamlets and villages? (1x2) (2)
6.3 What is the relationship between villages and cities with regard to population? (1x2) (2)
6.4 Which of the settlement types, hamlets, villages, towns or cities, would be found in the largest numbers? Give a reason for your answer. (2x2) (4)

Question 7:

Study the diagram below which shows maps X, Y and Z as three different settlements in rural areas:
7.1 Write down X, Y and Z as a list and name each settlement pattern next to the appropriate letter. (3x2) (6)

7.2 Describe each settlement pattern. (3x2) (6)

7.3 Explain why each of these rural settlement patterns may have developed. (3x2) (6)

7.4 Mention two economic disadvantages associated with settlement Y, and two economic advantages enjoyed by settlement X. (4x2) (8)

7.5 Why do settlements Z and Y have a social advantage over settlement X? (1x2) (2)

Question 8:

Study the sketch that shows possible settlement sites, on the following page and answer the questions that follow:
8.1 Differentiate between 'site' and 'situation' of a settlement. (2x2) (4)

8.2 Match each of the settlements labelled A, B, C, D and E with one of the following factors:
   8.2.1 Defence against neighbouring tribes
   8.2.2 Availability of a permanent water source
   8.2.3 Close to fuel supply and building materials
   8.2.4 Bridging point
   8.2.5 Dry point (6x2) (12)

8.3 Give two reasons for A not being an ideal site for a settlement. (2x1) (2)

8.4 Assume that a nucleated rural settlement develops at G:
   8.4.1 State the shape that it is most likely to take. (1x2) (2)
   8.4.2 Give two reasons for your answer. (2x2) (4)