



**NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY**

**FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT
DEPARTMENT OF LAND AND SPATIAL SCIENCES**

QUALIFICATIONS: BACHELOR OF GEOINFORMATION TECHNOLOGY	
QUALIFICATIONS CODES: 07BGEI	QUALIFICATIONS LEVEL: 7
COURSE CODE: GDG621S	COURSE NAME: GEODEMOGRAPHICS
SESSION: JULY 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms Susanna Ankama
MODERATOR:	Ms Celeste Espach

INSTRUCTIONS
<ol style="list-style-type: none">1. Write your student number on each answer sheet used.2. Answer ALL the questions.3. Read each question carefully before attempting to answer.4. Write clearly and neatly.

PERMISSIBLE MATERIALS
<ol style="list-style-type: none">1. Non-Programmable calculator.2. Pen3. Pencil4. Eraser and ruler

THIS QUESTION PAPER CONSISTS OF 5 PAGES (Including this front page)

Question 1

Please explain the meaning of the following terms:

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|-----|----------------------------|-------------|
| 1.1 | Geodemographics | (4) |
| 1.2 | Trade Area Analysis | (3) |
| 1.3 | Choropleth map | (3) |
| 1.4 | Reverse ecological fallacy | (3) |
| 1.5 | Market Analysis | (2) |
| | | [15] |
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Question 2

As a GIS Analyst, you are tasked to assist in analyzing and identifying areas suitable to build a new medical center in Windhoek. Part of the information provided is 1) **Population data** per suburb which is given in a form of excel tables not spatially referenced. You have also been given the following spatially referenced datasets: 2) **Existing Medical centers**, 3) **Windhoek Townships**.

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| 2.1 | List the first (6) steps to follow in order to attain the classification for this task. | (6) |
| 2.2 | Explain the GIS operation you will use to integrate the Population data into the workflow and why. | (6) |
| 2.3 | Briefly discuss two main methods to enhance data through GIT technologies. | (4) |
| 2.4 | What other methods of data collection can be considered without going into the field? Explain in detail. | (4) |
| | | [20] |
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Question 3

Very few countries in Africa have effective address systems for rural areas. This makes it difficult for planning and implementation of service delivery to the people. StatsSA is currently running an initiative called “addressing the unaddressed” to provide postal address for the people living in slums and shanty towns around the world.

- 3.1 Name two (2) similar international projects learned in the course that are working on providing proper spatial data and attributes in order to bring development, planning and implementation of service delivery in rural areas. (2)
- 3.2 What are the objectives of the two projects? (4)
- 3.3 In your own understanding, what are the disadvantages of lack of spatial data and proper attributes for development planning? (4)

[10]

Question 4

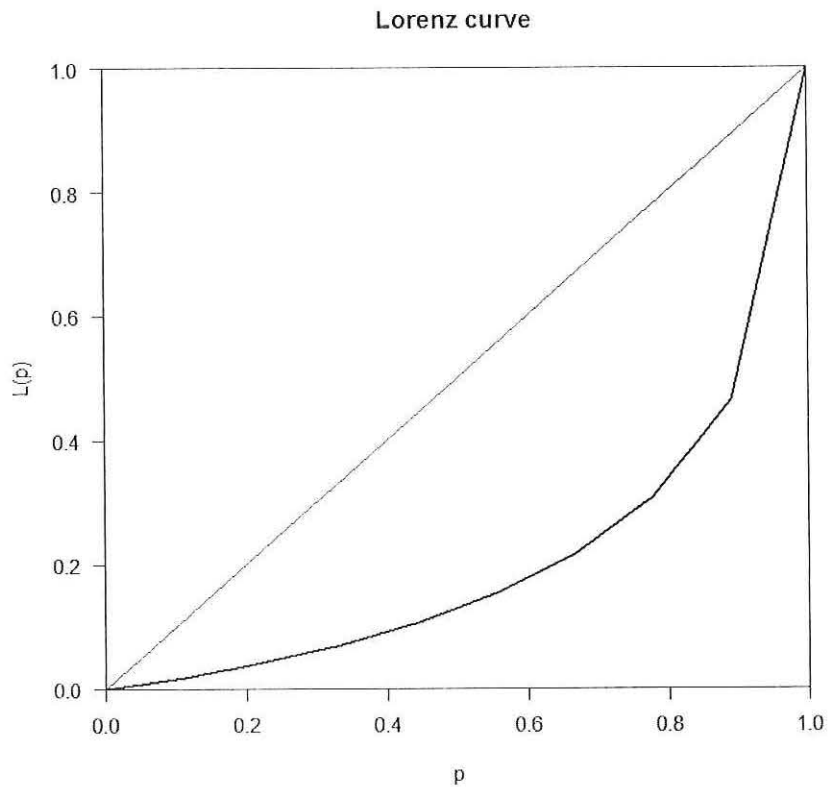
The power of a GIS in market analysis is in its ability to manage data from a number of different sources and its capability for interactive visualization in exploring data and the results of analyses.

- 4.1 Briefly explain how demographic profiles are used in market analysis. (4)
- 4.2 How can geodemographic cluster segmentation methods be used before and after a market analysis study? Explain. (4)
- 4.3 What is the difference between Catchment profiling and Trade Area Analysis? (6)
- 4.4 List and explain three different ways of devising a catchment area around a particular store. (6)

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Question 5

A popular way of expressing inequality graphically is through a Lorenz diagram. This curve is also used in poverty analysis in Namibia. An example of such a diagram or curve is given below.



- 5.1 How is the Lorenz curve derived and how is it interpreted? (3)
- 5.2 What does the straight line mean in a Lorenz curve? (3)
- 5.3 A measure for this inequality is the Gini-coefficient. The Gini-coefficient takes the value between 0 and 1, where 0 stands for the unlikely perfect equality and 1 for the equally unlikely total inequality. How is the Gini-coefficient measured in the Lorenz curve? (2)
- 5.4 Looking in detail at the curve below, in this particular case, the monthly expenditure per capita was calculated. What does the curve show at $p = 0.8$? (3)

- 5.5 In your opinion or knowledge, is the Gini-coefficient high or low in Namibia, and what does it mean? (4)

[15]

Question 6

Answer the following questions regarding questionnaires:

- 6.1 List the different phases to develop and collect data by using questionnaires. (7)
- 6.2 Describe five (5) guidelines for developing a good questionnaire. (5)
- 6.3 Advice on when to use open format questions and closed format questions. Give an example for each. (4)
- 6.4 When can you use random sampling? (2)
- 6.5 Describe one method of quality control and monitoring of a survey that is usually done before the field work and why. (2)

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