



**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: JUNE 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

FIRST OPPORTUNITY EXAMINATION QUESTION PAPER	
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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 calculator2. Pen3. Pencil4. Eraser and ruler

THIS QUESTION PAPER CONSISTS OF 10 PAGES (Including this front page)

Question 1

Please explain the meaning of the following terms in the field of Geodemographics:

- 1.1 Ecological fallacy (2)
- 1.2 Enumeration areas (2)
- 1.3 Stratified sampling (2)
- 1.4 Catchment profiling (2)
- 1.5 Gini-coefficient (2)

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Question 2

Geodemographics affects our daily lives in every way and is used in order to understand the way of living of people within a society.

- 2.1 What is the difference between Geodemographics and Demography? (4)
- 2.2 List four (4) factors which contributed to the development and growth of Geodemographics. (4)
- 2.3 Explain in detail the influence Charles Booth's Descriptive Map of London Poverty had on early users of neighbourhood classification. (5)
- 2.4 Name two (2) advantages of the fuzzy logic classification method. (2)

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Question 3

Market departments face real problems in fully understanding their markets and the potential customers for their products and services.

- 3.1 Briefly explain why GIS is essential for Market Analysis. (3)
- 3.2 What is a demographic profile and what can it be used for? (3)
- 3.3 Draw up an example of a demographic profile of customers in specific neighbourhood with three (3) variables. (10)
- 3.4 Define the Huff model and its uses. (4)

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Question 4

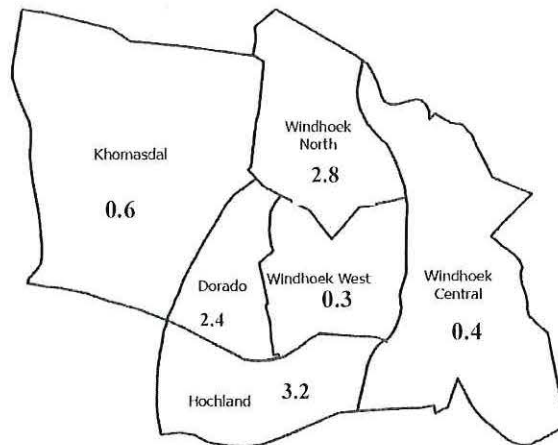
Fieldwork data collection through questionnaire surveys is often the only feasible way to reach a large enough number of respondents/customers to gather statistically significant data for conclusive analysis.

- 4.1 By making use of examples, differentiate between a census and a survey. (5)
- 4.2 Why do we need sampling methods in Geodemographics? (3)
- 4.3 List and briefly explain three (3) sampling methods used in Geodemographics (6)
- 4.4 List and explain with examples two types of questions that can be asked in a questionnaire. (6)

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Question 5

The Global Moran's Index tool measures spatial autocorrelation based on both feature locations and feature values simultaneously. Given a set of features and an associated attribute as illustrated in the figure below, it can be used to evaluate whether the measured attribute is spatially clustered, dispersed or random.



- 5.1 Use the given information in map above where the highlighted numbers represents the measured attribute values, calculate the Moran's I coefficient according to the given equation. Write down all the intermediate calculations. (20)

$$MC = \frac{n}{\sum_{i=1}^n \sum_{j=1}^n c_{ij}} \frac{\sum_{i=1}^n \sum_{j=1}^n c_{ij} (y_i - \bar{y})(y_j - \bar{y})}{\sum_{i=1}^n (y_i - \bar{y})^2}$$

- 5.2 How do you interpret the results from the calculations? (2)

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Question 6

In Namibia the Multiple indexes of deprivation was used to map deprivation at constituency level.

- 6.1 Differentiate between deprivation and poverty. (4)

6.2 Name three (3) of the five (5) domains of a useful indicator or indicator complex and (9)
indicate how each of these were calculated (what was in the nominator and what in
the denominator where appropriate).

[13]

