namibia university
of science and technology

FACULTY OF ENGINEERING AND THE BUILT ENVIRONMENT

DEPARTMENT OF LAND AND SPATIAL SCIENCES

QUALIFICATION: BACHELOR OF GEOINFORMATION TECHNOLOGY	
QUALIFICATION CODE: 07BGEI	LEVEL: 7
COURSE CODE: GMN621S	COURSE NAME: GEOINFORMATION MANAGEMENT
SESSION: JULY 2024	PAPER: THEORY
DURATION: 3 HOURS	MARKS: 100

SECOND OPPORTUNITY / SUPPLEMENTARY EXAMINATION QUESTION PAPER	
EXAMINER:	Ms Roxanne Murangi
MODERATOR:	Dr Oluibukun Ajayi

INSTRUCTIONS
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
1. Non-programmable calculator.
2. Pen.
3. Pencil.
4. Eraser
5. Ruler.

This paper consists of three (3) pages (including this cover page).

Question 1

1.1. Identify and explain four (4) cases that may trigger the introduction of an enterprise GIS in an organisation. (8)

1.2. List and explain six (6) main GIS aspects (or components) that you will need to consider in the GIS planning process. (12)

1.3. What is the difference between a problem tree and an objective tree? (6)

1.4. The Logical Framework is an approach to project planning that was developed as a tool for detailed planning with clearly defined objectives that can be measured by using appropriate indicators. List the ten (10) in the development of a logical framework in their correct logical sequence. (no explanations please). (10)

1.5. Describe briefly what a "Needs Assessment "is and why it is done. (max. four (4) points for the general explanation and max. six (6) points for the description of its components). (10)

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Question 2

2.1. Why is it important to have comprehensive IPDs for any GIS design? (4)

2.2. What is a Master Input Data List (MIDL) and how is it related to IPDs? (6)

2.3. Explain four (4) characteristics that influence data sources and design. (8)

2.4. Namibia is busy implementing a National Spatial Data Infrastructure (NSDI) Policy and the Namibia Statistics Agency (NSA) is mandated by the Statistics Act, No. 9 of 2011 to implement this. Outline the relevance/importance of implementing the NSDI policy in Namibia. (12)

2.5. Explain the three (3) common logical models for GIS Database designs.   (6)

2.6. List the four (4) main types of spatial errors that are possible in GIS.   (4)

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Question 3

3.1. You are a consultant hired to collect data for a GIS for urban development monitoring. As part of your task, you must determine the appropriate scale and corresponding primary data sources. Assuming you have to produce a map for a town council. What would be the scale of the map if a 120 m x 160 m erf is 6 cm x 8 cm on the map?   (2)

3.2. Now that you have determined the scale of your map in 3.1, what would be the area of a disposal site in cm² if its dimension is 2.4 km by 0.8 km on the ground?   (6)

3.3. Assume a person offers you a three-hectare (i.e. 3 Ha) plot to buy and then shows you the location of the plot on a map with a map scale of 1:2000. The plot which he shows you is a rectangular polygon and measures 9 cm x 8 cm on the map. By how much bigger or smaller (in ha) is this plot on the ground?   (6)

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