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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2024/2025 ACADEMIC YEAR
THIRD YEAR, FIRST SEMESTER EXAMINATION
FOR THE DEGREE OF BACHELOR OF EDUCATION (ARTS)
KGE 2309: GEOGRAPHICAL INFORMATION SYSTEM

Date: 11th April 2024
Time: 2.30pm-4.30pm

INSTRUCTIONS TO CANDIDATES:

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Define the following terms:
- GIS. [2 Marks]
 - Spatial data. [2 Marks]
 - Georeferencing. [2 Marks]
- b) List **four** sets of GIS capabilities of handling georeferenced data. [4 Marks]
- c)
 - Explain how one can input data in a GIS. [3 Marks]
 - What are the **three** main functional sub-systems of a GIS. [3 Marks]
 - Differentiate between photogrammetry and GIS technology. [3 Marks]
- d)
 - Discuss **two** main spatial data types. [4 Marks]
 - Describe the common problems encountered when using GIS data [4 Marks]

QUESTION TWO (20 MARKS)

- a) "GIS on its own is meaningless, it gains meaning only by its goals, which generally involve the application of knowledge by scientists but not science itself" (Wright et al, 1997). Discuss this view in the context of whether GIS is considered as only a tool or a Science. [8 Marks]
- b) Explain why metadata is important when determining data quality [4 Marks]
- c) There are **four** primary methods for spatial data classifications: equal interval, quantile, standard deviation, and natural breaks. Using a relevant example, explain each technique. [8 Marks]

QUESTION THREE (20 MARKS)

- a) Using examples, discuss the different areas of GIS Application. [10marks]
- b) List **four** open source and four propriety/commercial GIS soft wares used for spatial data analysis. [4 Marks]
- c) Compare between raster and vector spatial data models for representing geographic features. [6 Marks]

QUESTION FOUR (20 MARKS)

- a) Give an in-depth description of the major components of a GIS. [10marks]
- b) Briefly discuss functions of GIS. [10marks]

QUESTION FIVE (20 MARKS)

- a) List the main spatial data sources for natural resources and environmental management in Kenya. [10 Marks]
- b) Discuss the history of GIS between 1960 to 2000 hence explain the current and expected future trends in GIS. [10 Marks]