PAN AFRICA CHRISTIAN UNIVERSITY

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

END OF SEMESTER EXAMINATION

DEPARTMENT:	**COMPUTING & INFORMATION TECHNOLOGY**
COURSE CODE:	**BSIT309**
COURSE TITLE:	**GEOGRAPHICAL INFORMATION SYSTEMS**
CAMPUS:	**ROYSAMBU**
EXAM DATE:	**TUESDAY, 6TH AUGUST 2024**
TIME:	**6:00PM-9:00PM**

INSTRUCTIONS

- This exam script has **TWO (2)** sections.
- Read all questions carefully before attempting.
- Answer All questions in Section **A** and any other THREE questions in Section **B.**
- Write only your **student number** on the answer booklet provided.
- None programmable calculators permitted
- Calculators on phones, tablets and computers are NOT permitted in Theory Papers

Section A (Compulsory)

Question One

a) Distinguish between thematic and topographic maps. **[2 Marks]**

b) Explain two problems that can be experienced with spatial referencing systems.
[4 Marks]

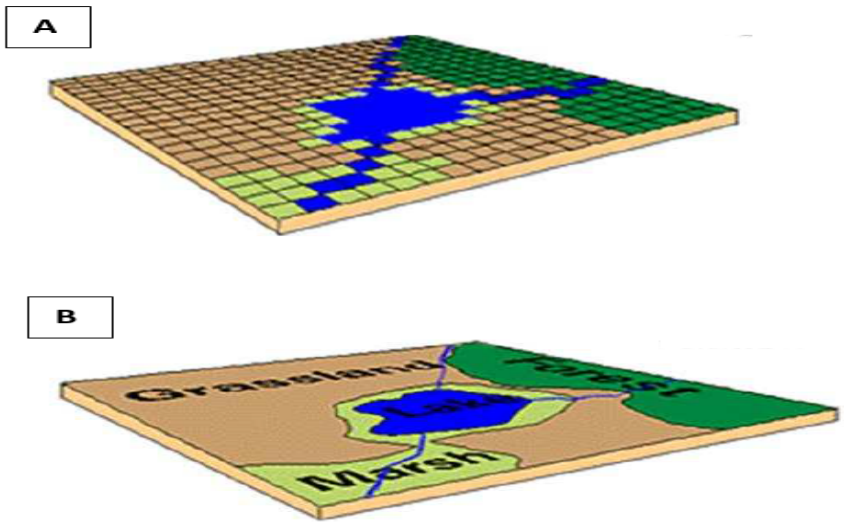
c) Maps are graphic representations of the real world or part of it, where all or some of the features may be elaborated to show them. Map elements should be well arranged/designed for effective communication. Describe two map elements a GIS expert should incorporate in map design.
[4 Marks]

Section B (Answer any 3 Questions)

QUESTION TWO

a) A GIS stores information about the world as a collection of thematic layers that can be linked together by geography. Local, state, and federal governments have found GIS particularly useful in land management. Discuss two areas in land management where GIS has been used.
[2 marks]

b) The following diagram reflects the two primary spatial data encoding techniques. Using examples distinguish between the two models.
[4 Marks]



c) Discuss the process of creating a map. **[4 marks]**

QUESTION THREE

a) Highlight two modes or dimensions that characterize all GIS data. **[2 marks]**

b) Before starting any analysis, one needs to assess the problem and establish an objective. It is important to think through the process before making any judgments about the data or reaching any decisions and generate a step-by-step procedure to monitor the development and outline the overall objective. Describe the steps that outline the basic procedure for geographical analysis. **[4 Marks]**

c) Discuss two benefits of using a database for GIS attribute data management. **[4 Marks]**

QUESTION FOUR

a) Highlight the significance of having accurate and right level information on a map. **[2 marks]**

b) Explain two issues to be considered when scanning maps for use in GIS. **[2 marks]**

c) Describe two methods used to identify errors in the input of attribute data. **[2 marks]**

d) Discuss any two major categories of referencing systems in GIS. **[4 marks]**

QUESTION FIVE

a) Highlight two main features that characterize topology. **[2 Marks]**

b) Explain any two problems that can be experienced when handling spatial data manually as opposed to using geographic information systems. **[4 Marks]**

c) Remote sensing data is considered advantageous for many GIS applications. Discuss two major technologies for remote sensing. **[4 marks]**

Question SIX

a) Attribute data stored in the GIS consists of three basic types. Explain any two of these. **[2 marks]**

b) Apart from the production of maps, the GIS also performs geospatial analysis. Discuss two of such analyses. **[4 marks]**

c) Describe the logical steps necessary to put a GIS to work using a diagram.
[4 marks]

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