



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: THURSDAY, 7TH AUGUST 2025

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) Describe two categories of datasets used in GIS. **[2 Marks]**
- b) Analyze four factors that must be considered when choosing data for use in Geospatial applications. **[4 Marks]**
- c) A GIS stores information about the world as a collection of thematic layers that can be linked together by geography. Local, state, and county governments have found GIS particularly useful in environmental management. Discuss two areas in environmental management where GIS has been used. **[4 marks]**

Section B (Answer any 3 Questions)

QUESTION TWO

- a) Data is often stored in several tables. The relational database model is most widely accepted for managing the attributes of geographical data. Explain any two reasons relational DBMS is attractive in GIS. **[4 marks]**
- b) Discuss the procedure for creating a map. **[6 marks]**

QUESTION THREE

- a) Researchers use remote sensing to acquire GIS data using special cameras on Satellites. Using examples, discuss two specific uses of remotely sensed images of the Earth. **[4 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. **[6 Marks]**

QUESTION FOUR

- a) Analyze two sources of errors that cause inaccuracies in GIS data. **[2 marks]**
- b) Discuss any two projections used in GIS. **[4 Marks]**
- c) Using examples, examine the application of GIS to transportation. **[4 marks]**

QUESTION FIVE

- a) Describe the steps that are followed when modeling reality within a GIS environment. **[4 Marks]**

- b) Explain any three problems that can be experienced when handling spatial data manually as opposed to using geographic information systems. **[6 Marks]**

Question SIX

- a) Tabular data stored in the GIS consists of three basic types. Explain any two of these. **[2 marks]**
- b) 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]**
- c) Examine the historical developments of GIS as a key sub discipline of Geography and Information Technology. **[4 Marks]**

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