

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
INFORMATION SCIENCE**

BSIS 456: DATABASE CONSTRUCTION AND MANAGEMENT

STREAMS: BSIS

TIME: 2 HOURS

DAY/DATE: MONDAY 16/12/2024

2.30 P.M – 4.30 P.M

INSTRUCTIONS

- This examination paper has **FIVE (5)** questions
- Candidates are required to attempt **QUESTION 1** and **ANY OTHER TWO** questions
- No reference materials **OF ANY KIND** should be carried into the Examination room
- **DO NOT** write on the question paper

QUESTION ONE (30 MARKS)

- a) Evaluate five best practices to adhere when creating a relational database in an information centre. (10 marks)
- b) Analyze the role of a database system in a university library. (10 marks)
- c) Using clear examples, examine Five measures every library should put in place to control access to electronic information resources. (10 marks)

QUESTION TWO (20 MARKS)

a) Describe five key requirements of a secure library database system.

(10 marks)

b) “Database Schema provides a skeleton structure and a global view of entire database”, explain.

(10 marks)

QUESTION THREE (20 MARKS)

a) Using very clear examples, describe the following operations of relational algebra.

(10 marks)

i) Union operator

ii) Select operator

b) “Normalization eradicate data redundancy in a library database”, justify. (10 marks)

QUESTION FOUR (20 MARKS)

a) “The primary goal of a Database Management System (DBMS) is to provide a way to store and retrieve database information that is both convenient and efficient” Explain this statement in the context of a public library. (10 marks)

b) Analyze Two aggregate functions of a Structured Query Language (SQL) (10 marks)

QUESTION FIVE (20 MARKS)

a) Describe Two commands applicable in the structured query language. (SQL)

(10 marks)

b) Distinguish between physical data independence.

(10 marks)
