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KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR
FOR THE CERTIFICATE IN INFORMATION TECHNOLOGY
CIT 1007 – INTRODUCTION TO DATABASE MANAGEMENT

Date: 11th April, 2022.
Time: 11:30am-1:30pm

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Explain the advantages of the database systems. (5 Marks)
- b) Differentiate the two distinct levels of data independence. (4 Marks)
- c) What is a relation? Highlight the properties of a relation. (6 Marks)
- d) Highlight the four verbs that are used in SQL. (4 Marks)
- e) Discuss the three needs for query optimization. (6 Marks)
- f) List five main operations that can be formulated with Structured Query Language (SQL). (5 Marks)

QUESTION TWO (20 MARKS)

- a) Identify and explain the modern DBMS characteristics. (12 Marks)
- b) Highlight DBA responsibilities. (8 Marks)

QUESTION THREE (20 MARKS)

- a) Create the following using the SQL: (6 Marks)
Database name: university
Table name: Courses

	Name	Title
001	Charles	Info.systems
002	Mary	Bachelor of IT
003	Maina	Cert in IT

- b) Add a new column 'Course_code'. (2 Marks)
- c) Modify the size of the column 'Name'. (2 Marks)
- d) Rename column 'Name' to 'FirstName'. (2 Marks)
- e) Use truncate command to remove all the records from the table. (2 Marks)
- f) Insert the following data in the table '004, Judy, Dip in IT'. (4 Marks)
- g) Remove the table completely from the database. (2 Marks)

QUESTION FOUR (20 MARKS)

- a) Discuss six database management system applications. (12 Marks)
- b) Define the E-R model and explain the components of E-R model. (8 Marks)

QUESTION FIVE (20 MARKS)

- a) Identify and describe the functional components of a database systems. (10 Marks)
- b) Define the term data abstraction and by the use of a diagram, explain the three levels of abstractions corresponding to the three views. (10 Marks)