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KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
FIRST YEAR, SECOND SEMESTER EXAMINATION
FOR THE DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY
DIT 1007 – DATABASE MANAGEMENT SYSTEM

Date: 05TH December 2023
Time: 2:30PM – 4:30PM

INSTRUCTIONS TO CANDIDATES

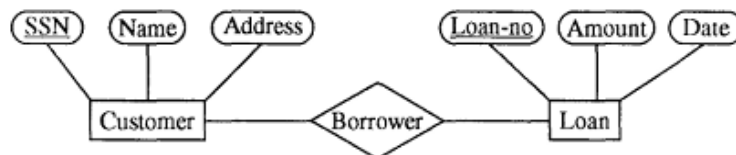
ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- Using SQL code, Create a table student such that the primary key constraint on the column Roll-No is described as a table level constraint. (4 Marks)
- Highlight the two main classifications of databases while giving an example of each. (4 Marks)
- Explain the following terms as used in database systems: -
 - Primary Key (2 Marks)
 - Composite key (2 Marks)
 - Shema (2 Marks)
- Discuss any three objectives of normalization (6 Marks)
- Differentiate between relational and relationship as used in databases. (4 Marks)
- Using diagrams and explanation, elucidate the difference between hierarchical model and entity relationship model (6 Marks)

QUESTION TWO (20 MARKS)

- With the aid of diagrams explain any four types of relationships in relation to entity relationship diagram. (8 Marks)
- Represent the following ER diagram in a tabular format (6 Marks)



- Using SQL, create a Database called Wholesale and hence Create Tables Customers, Orders, Products and Order_products using SQL commands and the information below. (6 Marks)
Customers (CustomerID, CustomerName, CustomerAddress)
Orders (OrderID, OrderDate, #CustomerID)
Products (ProductID, ProductName, price)

QUESTION THREE (20 MARKS)

- a) Define the term Data abstraction while explaining the three main levels of data abstraction in databases (8 Marks)
- b) Mapping cardinalities or cardinality ratios, express the number of entities to which another entity can be associated with. Demonstrate the four types of mapping cardinalities. (8 Marks)
- c) Write the assertion for the following statement. (4 Marks)
"The sum of all loan amounts for each branch must be less than the sum of all account balances at the branch."

QUESTION FOUR (20 MARKS)

- a) During database design, the consideration of its lifecycle is very key. With the use of a detailed diagram, elaborate on the stages of DDLC (Database Development Life Cycle). (12 Marks)
- b) Draw the E-R diagram of the registration process of the student in a particular course at Kiriri Women's University of Science and Technology. (8 Marks)

QUESTION FIVE (20 MARKS)

- a) Discuss five roles of a database administrator as used in databases (10 Marks)
- b) The following table is in First Normal Form, Normalize to 2NF and 3NF (10 Marks)

Course	Prof	Room	Room-Cap	Enrol-Unit
353	Ken	A532	45	40
351	Ken	C320	100	60
355	Mary	H940	50	45
456	Mary	B278	50	45
459	Peter	D110	300	200