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KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2017/2018 ACADEMIC YEAR
DIPLOMA IN BUSINESS INFORMATION TECHNOLOGY

DBT 026 - -DATABASE MANAGEMENT SYSTEMS

Date: 28th July, 2017.

Time: 3.00pm – 5.00pm

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

- a) Distinguish between Conceptual, Logical and Physical Database Design (6 Marks)
- b) Examine any four desirable properties of a DBMS (4 Marks)
- c) Outline the three goals of database security (6 Marks)
- d) Give English statements for each of the following SQL queries.
- i) Select distinct Position from Staff, Sale where Sale. Staff = Staff. Name (2 Marks)
- ii) select Client, count(distinct Staff) from Sale group byClient (2 Marks)
- e) Explain the following database models (6 Marks)
- i) Relational Model
- ii) Object Oriented Model
- iii) Network Model
- f) With examples, define the following relationships (4 Marks)
- i) One –to-Many
- ii) Many –to- Many

QUESTION TWO (20 MARKS)

- a) Explain the three-schema Database systems Architecture (10 Marks)
- b) A country bus Company owns a number of buses. Each bus is allocated to a particular route although some routes may have several buses. Each route passes through a number of towns. One or more drivers are allocated to each stage of a route, which corresponds to a journey through some or all of the towns on a route. Some of the towns have a garage where buses are kept and each of the buses are identified by their registration number and can carry different number of passengers, since the vehicles vary in size and can be single or double

c) decked. Each route is identified by a route number and information is available on the average number of passengers carried per day for each route. Drivers have an employee number, name, address and sometimes a telephone number.

- i) List all the possible entity types and their attributes that can be derived from the above bus company narrative. (7 Marks)
- ii) Outline any three possible cardinality in the entity types relationships that can be derived from the bus company (3 Marks)

QUESTION THREE (20 MARKS)

- a) Explain the following in detail as used in databases (10 Marks)
 - i) DDL
 - ii) DML
 - iii) VDL
 - iv) SDL
 - v) SQL
- b) Examine any five types of DBMS interfaces (10 Marks)

QUESTION FOUR (20 MARKS)

Table Name: Student

Student ID	Student Name	Course	Tel. No	County
DICT/145	Maimuna	DICT	0712365965	Malindi
BICT/389	Frank	BICT	0712647829	Kisii
BED/245	Sarah	BED	0727748484	Kiambu
BCOM/456	Habiba	BCOM	0733674643	Kisumu

- a) Write SQL statement to CREATE a database named IAT DBASE (4 Marks)
- b) Write SQL statement to CREATE the above table and insert the data into the table (6 Marks)
- c) Write SQL statement to DELETE Habiba (2 Marks)
- d) Write SQL statement to UPDATE Frank's Tel. No. to 020456369 (2 Marks)
- e) Explain the following (6 Marks)

- i) First Normal Form (1NF)
- ii) Second Normal Form (2NF)
- iii) Third Normal Form (3NF)

QUESTION FIVE (20 MARKS)

- a) Define the following terms (6 Marks)
 - i) Entity
 - ii) Attribute
 - iii) Composite Attribute

- b) Construct an Entity Model for the Transport Database case given below. Indicate the various entities, attributes and relationships. (14 Marks)