KIRIRI WOMENS' UNIVERSITY OF SCIENCE AND TECHNOLOGY

UNIVERSITY EXAMINATION, 2022/2023 ACADEMIC YEAR

END OF SEMESESTER EXAMINATION

FOR DIPLOMA IN INFORMATION COMMUNICATION TECHNOLOGY

DIT 1007- DATABASE MANAGEMENT SYSTEMS

Date:

Time:

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTION(COMPULSORY) AND ANY OTHER TWO QUESTION
QUESTION ONE (30 MARKS)
a) Define the term data model as used in databases.   (2 marks)

b) Distinguish between the following database concepts.

     i.   Database schema and database state   (2 marks)

     ii.   Composite attribute and multi-valued attribute   (2 marks)

     iii. Entity type and an entity set   (2 marks)

c) Describe Four types of users of database management systems in organizations (6 mar

d) Explain Three challenges that organizations face in implementing database management
   systems   (6 marks)

e) i. Discuss Five characteristics of the database   (5 marks)

   ii. Explain how the database approach differs from traditional file systems   (5 marks)

QUESTION TWO (20 MARKS)

a) Describe Four models used in database design   (6 marks)

b) Describe the phases involved in the development process of a database   (10 marks)

c) Describe the backup and replication ability of database management systems   (4 marks)

QUESTION THREE (20 MARKS)

a) Describe Three types of database administration   (9 marks)

b) Describe Five features of Relational Database Management Systems   (5 marks)

c) Explain Six roles performed by a database administrator   (6 marks)

QUESTION FOUR (20 MARKS)

a) Describe the criteria used in first normal form (1NF) in database design   (5 marks)

b) Analyze Five benefits of using a data warehouse in an organization   (5 marks)

c) Explain Five capabilities that should be provided by a DBMS   (10 marks)

QUESTION FIVE (20 MARKS)

a) Distinguish between data mart and data warehouse   (4 marks)

b) In an organization, an employee is identified by a unique employee number, salary and telephone number. Each employee works in a department. Each department is managed by an employee and is identified by a department number, name and budgetary allocation. Each employee may have a dependent child that is identified by employee number, name and age.

   Draw an ER diagram to represent the narrative   (10 Marks)

c) Describe Three types of relationships possible among entities in a Database   (6 Marks)