KIRIRI WOMEN'S UNIVERSITY OF SCIENCE AND TECHNOLOGY
UNIVERSITY EXAMINATION, 2023/2024 ACADEMIC YEAR
FOR THE CERTIFICATE IN INFORMATION TECHNOLOGY
CIT 1007 – INTRODUCTION TO DATABASE

Date: 08TH December 2023
Time: 2:30PM – 4:30PM

INSTRUCTIONS TO CANDIDATES
ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS

QUESTION ONE (30 MARKS)

a) Relationships are associations that exist between entities. Explain the following relationships with the help of diagrams where possible. (6 Marks)
   i) 1:N
   ii) M:N
   iii) 1:1
b) Differentiate between the following two types of Database models and in each state one advantages and disadvantage of using them. (8 Marks)
   i) Relational Database model
   ii) Network Database model
c) State and explain the major components of a database. (8 Marks)
d) Data storage is built around a corresponding application that uses diagrammatic representation of convectional file systems. Discuss any four disadvantages of a file. (8 Marks)

QUESTION TWO (20 MARKS)

a) Users are part of the components of a database system and they are categorized differently. Explain the three different categories of database users. (6 Marks)
b) Describe four contents of a database. (8 Marks)
c) State and explain the three main categories of Models. (6 Marks)

QUESTION THREE (20 MARKS)

a) State and explain the four functions of a Database Management System. (8 Marks)
b) A data model is a comprehensive scheme for presenting how data is to be represented for manipulations by computer programs. Using an example, discus hierarchical model as a type of database model. (6 Marks)
c) A Database Management System is made up of different Components. List and explain the software component of a DBMS. (8 Marks)

QUESTION FOUR (20 MARKS)

a)   Define the following terms as used in database management.   (6 Marks)
        i)   Database
        ii)   Database Management System
        iii)   Meta data
b)   Using the E-R model approach to database design, discuss the database design process   (8 Marks)
c)   Discus four components of a relational data model   (8 Marks)

QUESTION FIVE (20 MARKS)

a)   Discuss the history behind database systems and explain the future trends   (8 Marks)
b)   Discuss Object Oriented Data Model and state two disadvantages from the use of this model
                                                                                                                                  (8 Marks)
c)   A database system is more than a file. Discuss three disadvantages of a database system   (6 Marks)