(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR

SUPPLEMENTARY/SPECIAL EXAMINATIONS
YEAR ONE SEMESTER TWO EXAMINATIONS

FOR DIPLOMA IN
(INFORMATION TECHNOLOGY)

COURSE CODE : **DIT 059**

COURSE TITLE : **DATABASE SYSTEMS**

DATE: 09/02/2021 **TIME:** 2.00 P.M — 4.00 P.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE (24 MARKS) - COMPULSORY

a. State the advantages of each of the following: (4Marks)
   i.   Database management system
   ii.   Traditional file processing system
b. Most companies prefer database management system over traditional file processing system. discuss

                                                                     (8Marks)
c. *Relationships* are the glue that holds the tables together state and explain three types of relationships found among the tables in a database   (6Marks)
d. List any four Structured Query Language (**SQL**) statements and state their meaning
                                                                     (4Marks)

e.

QUESTION TWO (18MARKS)

a. Define the term normalization as used in database   (2 Marks)

b. State and discuss giving examples where possible the three normal forms in database
                                                                     (10 Marks)

c. State an explain three types of data anomalies in database   (6 Marks)

QUESTION THREE (18MARKS)

a.
   i.   write an **SQL** statement that **creates** the table below   (5 Marks)
          Student table

REG NO	FNAME	LNAME	COURSE	DEPARTMENT

   ii.   write an SQL statement that **inserts** the following values in table in b.i above
          REG NO= 'dit/0001/2020', **FNAME**= 'joseph', **LNAME**='Israel',
          COURSE='diploma in it', **DEPARTMENT** = 'IT'.   (5Marks)
   iii.   write an **SQL** statement that **selects** students **REG NO, FNAME** and
          DEPARTMENT   (3Marks)
   iv.   write an **SQL** statement that updates **FNAME** of the value inserted in student
          table in b.ii above to Samuel   (5Marks)

QUESTION FOUR 18MARKS

Discuss the FOUR database models   (18 Marks)

QUESTION FIVE 18 MARKS

a. Define the term a transaction as used in database systems   **(2 Marks)**

b. State an explain the **four** properties of a transaction   **(8 Marks)**

c. Using a diagram describe **five** states of a transaction   (5 Marks)

d.

     i.   define the term deadlock as use in a transaction   **(1 Mark)**

     ii.   state an explain any two concurrency control mechanisms   **(2 Marks)**