



(Knowledge for Development)

KIBABII UNIVERSITY

(KIBU)

UNIVERSITY EXAMINATIONS

2020/2021 ACADEMIC YEAR

END OF SEMESTER EXAMINATIONS

YEAR ONE SEMESTER TWO EXAMINATIONS

FOR THE DIPLOMA IN

(INFORMATION TECHNOLOGY)

COURSE CODE : DIT 059

COURSE TITLE : DATABASE SYSTEMS

DATE: 25/11/2021

TIME: 9.00 A.M.- 11.00 A.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTION ONE AND ANY OTHER TWO

QUESTION ONE [COMPULSORY] (24 MARKS)

- (a) With respect to Database Management systems, differentiate the following concepts.
- i. Database and Database Systems. [2 Marks]
 - ii. Tuple and attribute [2 Marks]
 - iii. Candidate Key and Primary Key [2 Marks]
- (b) Discuss the limitations of having a database system to manage organizational data. [6 Marks]
- (c) Describe the ways in which information in a database can be manipulated [4 Marks]
- (d) Discuss FOUR functions of a database Management Systems [4 Marks]
- (e) State and explain any FOUR countermeasures to database Threats [4 Marks]

QUESTION TWO (18 MARKS)

- (a) Identify and explain any FOUR components of the DBMS [4 Marks]
- (b) Hazina Sacco uses the manual filing system approach instead of a database approach. List any FOUR limitations that come with Manual filing systems. [4 Marks]
- (c) Explain FOUR classifications of relationships based on Degree. [4 Marks]
- (a) Explain the following DDL Statement [6 Marks]
- i. SELECT
 - ii. UPDATE
 - iii. DELETE

QUESTION THREE (18 MARKS)

- (a) Explain the following terms;
- i. Database recovery [2 Marks]
 - ii. Database security [2 Marks]
 - iii. Database failure [2 Marks]
- (b) Design an ERD depicting the following entities. Assign appropriate primary and foreign keys; [6 Marks]
- STUDENT** (name, date of birth, address, telephone number)
- COURSE** (name, capacity, fees, Duration).
- REGISTRATION** (date).
- (c) Identify the roles of the following people
- i. Database designer [2 Marks]
 - ii. Database Administrator [2 Marks]

iii. Database User

[2 Marks]

QUESTION FOUR (18 MARKS)

- a) What is database privilege? [2 Marks]
- b) Distinguish between data definition and data manipulation [4 Marks]
- c) Discuss the anomalies that can result from bad database design [4 Marks]
- d) Use the table below to answer the following questions;

Patient ID	NAMES	DOB	GENDER	TELEPHONE
1001	John Njuguna	09/02/89	Male	0725052368
1002	Alice Kioko	27/05/87	Female	0987549475
1003	Beatrice Mwiko	11/12/95	Female	079383363
10004	Brenda Njeri	20/02/84	Female	99575980

- i. Write SQL to display all the patient details. [2 Marks]
- ii. Write SQL to display Ids, names and birth dates of all female patients. [2 Marks]
- iii. Write a statement to insert a fifth row to the table. [2 Marks]

QUESTION FIVE (18 MARKS)

- (a) Describe any **TWO** advantages of Database approach [4 Marks]
- (b) Use the information below to answer the questions below.

Each DOCTOR must treat one or more PATIENTS. Each patient must be treated by a doctor. Each PATIENT may take one or more MEDICATIONS. Each MEDICATION is given to one PATIENT

- i. Identify the entities in this case. [6 Marks]
- ii. Represent the above information using ERD notations. [8 Marks]