



GARISSA UNIVERSITY

UNIVERSITY EXAMINATION **2017/2018** ACADEMIC YEAR **ONE**
SECOND SEMESTER EXAMINATION

SCHOOL OF INFORMATION SCIENCE

FOR THE DIPLOMA OF INFORMATION TECHNOLOGY

COURSE CODE: DIT 020

COURSE TITLE: RELATIONAL DATABASE MANAGEMENT SYSTEM

EXAMINATION DURATION: 3 HOURS

DATE: 09/04/18

TIME: 09.00-12.00 PM

INSTRUCTION TO CANDIDATES

- The examination has **SIX (6)** questions
- Question **ONE (1)** is **COMPULSORY**
- Choose any other **THREE (3)** questions from the remaining **FIVE (5)** questions
- Use sketch diagrams to illustrate your answer whenever necessary
- Do not carry mobile phones or any other written materials in examination room
- Do not write on this paper

This paper consists of **FOUR (4)** printed pages

please turn over



QUESTION ONE (COMPULSORY)

(a) Define the following terms.

- i. database
- ii. database management system
- iii. Foreign key
- iv. Attributes
- v. Relationship

[10 Marks]

(b) Distinguish between logical and physical data independence.

[4 Marks]

(c) Explain the purposes of the three DBMS languages

[6 Marks]

(d) You are instructed to develop a database system to store the information of patients visiting the given hospital.

- i. Name FOUR(4) attributes/fields needed for the system **[4 Marks]**
- ii. Identify the primary key which can be used to differentiate between the patients. **[1 Mark]**

QUESTION TWO

(a) Consider the table structure below.

TABLE STUDENT:

STUDNO	LNAME	FNAME	INITIAL	DOB	UNIT CODE
101	Mwangi	John	N	11/08/80	2100
102	Kimaiyo	Peter	M	12/12/84	2200
103	Chebet	Martha	K	02/04/83	2305
104	Oduor	Louis	M	11/06/80	2200
105	Njuguna	Frank	G	15/09/85	2100



Using SQL,

- i. Extract information about student who are born after 01/01/1982 [3 Marks]
- ii. Enter the Last record into the table. [3 Marks]
- iii. Return the names of students taking unit code 9945 [2 Marks]
- iv. Remove the table STUDENT from the database [2 Marks]
- v. Order the table by unit code in ascending [2 Marks]
- vi. List the FNAME and LNAME of all the students [3 Marks]

QUESTION THREE

- (a) Explain FIVE advantages of database management system [10 Marks]
- (b) Explain the three database languages [5 Marks]

QUESTION FOUR

- a) “The File-based Approach had several challenges” explain the statement. [5 Marks]
- b) Using the sales order below answer the question that follows.



Sales Order

Fiction Company
 202 N. Main
 Mahattan, KS 66502

CustomerNumber:	1001	Sales Order Number:	405
Customer Name:	ABC Company	Sales Order Date:	2/1/2000
Customer Address:	100 Points Manhattan, KS 66502	Clerk Number:	210
		Clerk Name:	Martin Lawrence

Item Ordered	Description	Quantity	Unit Price	Total
800	widgit small	40	60.00	2,400.00
801	tingimajigger	20	20.00	400.00
805	thingibob	10	100.00	1,000.00
Order Total				3,800.00

Required

- i. Normalize to the 3NF [10 Marks]

QUESTION FIVE

- (a) Explain the business conditions that enable a business database to be effective. [8 Marks]
 (b) What do you understand by E-R Modeling? [2 Marks]

Hence, explain briefly terms:

- i. Cardinality
 ii. Composite attribute
 iii. Weak attribute [5 Marks]

QUESTION SIX

- (a) With the aid of well labeled diagrams explain the three types of relationships. [6 Marks]
 (b) Distinguish between generalization and specialization. [4 Marks]
 (c) Explain the roles of a database administrator [5 Marks]

