



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY  
SCHOOL OF INFORMATICS & INNOVATIVE SYSTEMS  
UNIVERSITY EXAMINATION FOR DEGREE BACHELOR OF EDUCATION ARTS  
WITH IT  
2nd YEAR 1st SEMESTER 2015/2016 ACADEMIC YEAR  
NAMBALE**

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**COURSE CODE: SCS 212**

**COURSE TITLE: DATABASE MANAGEMENT SYSTEM**

**EXAM VENUE: STREAM: (BED ARTS)**

**DATE: 00/05/2017**

**EXAM SESSION: 2.00-4.00PM**

**TIME:**

**2.00 HOURS**

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**Instructions:**

- 1. Answer all the questions in Section A and ANY other 2 questions in Section B.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

## QUESTION ONE

a) Imagine you are a database consultant who has been asked to answer the following questions posed by a potential client.

Using your own simple examples and/or any suitable diagrams show how you would address the questions posed by the client

(i) What is the difference between a query, statement & transaction? [5 marks]

(ii) Do transactions have to conform to any rules? [5 marks]

(iii) What is database locking used for? [5 marks]

iv) Securing a database aims to achieve the following objectives:

Confidentiality

Integrity

Availability

(b) Briefly describe what is meant by each of the above objectives. [6mks]

(c) For each objective, describe two appropriate security controls. [3mks]

(d) Explain how each of the following mechanisms contribute to providing security for a database:

i. Authorization [2mks]

ii. Backup and Recovery [2mks]

iii. Encryption [2mks]

## Question 2

a) Discuss about three level architecture with representation of data in each level. [6mks]

b) Discuss about the reasons brings you to choose the database than the file system. [6mks]

c) What is Data independence? Discuss about levels of Data Independence. [4mks]

d) Discuss about Client Server Architecture. [4mks]

### Question 3

a) What is Data warehouse? Discuss about the properties of Data Warehouse.

[8mks]

b) Discuss about Star schema Architecture.

[6mks]

c) Discuss the abilities and responsibilities of DBA.

[6mks]

### Question 4

a) Discuss about the components of ER Model?

[6mks]

b) What is meant by cardinality of a relation? How the cardinality helps in determination of the nature of an entity in a relation.

[4mks]

C) Define database and explain what the advantages of database are? [10mks]

### Question 5

a) Explain what is DBMS and state its functions

[6mks]

b) What is an ERD? Explain with the help of an example

[8mks]

c) With example explain four different type of relationship in database

[6mks]