



MASENO UNIVERSITY

UNIVERSITY EXAMINATIONS 2018/2019

**SECOND YEAR SECOND SEMESTER EXAMINATIONS FOR
THE SCHOOL OF PUBLIC HEALTH, SCHOOL OF
ENVIRONMENTAL SCIENCE, SCHOOL OF BIOLOGICAL
SCIENCE, SCHOOL OF BUSINESS AND ECONOMICS, SCHOOL
OF ARTS AND SOCIAL SCIENCES AND SCHOOL OF
AGRICULTURE AND FOOD SECURITY WITH INFORMATION
TECHNOLOGY**

MAIN CAMPUS

UCI 204: RELATIONAL DATABASE SYSTEMS

Date: 2nd April, 2019

Time: 8.30 - 11.30 am

INSTRUCTIONS:

- Answer ALL questions in SECTION A and any other TWO from SECTION B



UNIT CODE : UCI 204

DATE: JAN - APRIL 2019

SECTION A: ANSWER ALL QUESTIONS IN THIS SECTION (COMPULSORY)

QUESTION ONE [30 MARKS]

1. Explain the functions of the following people in database design:
(6 marks)
 - i. *data administrator*
 - ii. *database administrator*
 - iii. *database designer*
 - iv. *programmer*
2. Discuss the concept of Normalization (3 marks)
3. Explain the components of a database management system (6 marks)
4. What is a Primary key? What is its function in database design? (4 Marks)
5. Database architecture is logically divided into two types, state and explain the types (6 marks)
6. Databases are widely used , Enumerate six representative applications (5 marks)

SECTION B: ANSWER ANY TWO (2) QUESTIONS IN THIS SECTION

QUESTION TWO [20 MARKS]

- a) Explain FIVE advantages of using databases (5marks)
- b) Define the term normalization stating the forms of normalization (4marks)
- c) What will the following statement display (5 marks)
- d) Basic structure of an SQL expression consists of 3 clauses; name and explain (6 marks)

QUESTION THREE [20 MARKS]

- a) Write the statement for inserting the following data in student_data table (5 marks)

First name: Cyrus

Last name: Mckenzie

Title: architecture

Age: 34

Years of service: 2

Salary: 95000

Perks: 17000

email: rudolf@bugnet.com

- b) All DDL commands are auto-committed. That means it saves all the changes permanently in the database, highlight five data definition language commands and give their description (5 marks)
- c) One of the functions of a DBA is administration and management of data content. Describe the functions and responsibilities of concern as far as data content administration and management that the DBA carries out. (10 marks)

QUESTION FOUR [20 MARKS]

- a) What is meant by the following terms? (8 marks)
- I. Table
 - II. Record
 - III. Primary key
 - IV. Composite key
- b) How can you find the number of rows in a table using the SELECT statement? (1 marks)
- c) Draw and explain the symbols and Notation used in ER – Diagram (5 marks)
- d) Explain any three types of queries (6 marks)

QUESTION FIVE [20 MARKS]

- a) What does the following SQL statement do in a table (2 marks)
- b) Traditionally data was organized in file formats. DBMS was all new concepts then and all the research was done to make it to overcome all the deficiencies in traditional style of data management. State and explain the characteristics of a modern DBMS (10 marks)

- c) Most database systems are built around one particular data model, although it is increasingly common for products to offer support for more than one model. State and explain three database models. (6 marks)
- d) State and explain two advantages of relational model (2 marks)