

**MURANG’A UNIVERSITY COLLEGE**

***(A constituent college of Jomo Kenyatta University of Agriculture and Technology)***

**UNIVERSITY EXAMINATIONS 2015/2016**

**YEAR ONE SEMESTER I EXAMINATION FOR THE CERTIFICATE IN INFORMATION TECHNOLOGY**

**SCI 0113: DATABASE SYSTEMS**

**DECEMBER 2015**

**SPECIAL**

**Question One (30 marks)**

1. Distinguish between authentication and authorization (4 marks)
2. Describe the following types of database integrity
3. Entity integrity (2 marks)
4. Referential integrity (2 marks)
5. Domain integrity (2 marks)
6. Distinguish between a database and database management system. (4 marks)
7. Describe characteristics of a stand alone computer (6 marks)
8. Distinguish between distributed database and replication server (4 marks)
9. Explain the roles of the following personnel in a database systems environment
10. Database administrators (2 marks)
11. Database Designers (2 marks)
12. Naive or parametric end-users (2 marks)

**Question Two (20 marks)**

1. Explain **four** problems caused by redundancy in a database (4 marks)
2. With the aid of a diagram in each case, distinguish between hierarchical and a relational database model. (6 marks)
3. Describe any **fou**r properties of relational tables (8 marks)
4. Differentiate between logical and physical data independence. (2 marks)

**Question Three (20 marks)**

1. Kenny designed a database and she realized that there was breach of security of the database of the organization. Outline four measures that he should have put in place to avoid this breach. (4 marks)
2. With examples explain the following terms used in database system
3. Entities (2 marks)
4. Attribute values (2 marks)
5. Derived Attribute (2 marks)
6. Distinguish file based approach and database approach as used in data management

(2marks)

1. Describe **four** components of the database management system environment.

(8 marks)

**Question Four (20 marks)**

1. Describe three disadvantages of using database management system (6 Marks)
2. Discuss any three database objects found in Ms access (6 marks)
3. Distinguish between decomposition and functional dependency (4 marks)
4. Describe set of properties that guarantee that database transactions are processed reliably. (4 marks)