



KENYATTA UNIVERSITY
UNIVERSITY EXAMINATIONS 2007/2008
INSTITUTE OF OPEN LEARNING
EXAMINATION FOR THE DEGREE OF BACHELOR OF INFORMATION
TECHNOLOGY
SIT 012: INTRODUCTION TO DATABASE SYSTEMS

DATE: Wednesday 9th January, 2008

TIME: 10.30 a.m. – 12.30 p.m.

INSTRUCTIONS

Question One

- i) Define the following terms: [10 marks]
- a) Data
 - b) Information
 - c) Database
 - d) Database system
 - e) Database management system
- ii) Outline three advantages and three disadvantages of using databases. [6 marks]
- iii) Clearly distinguish between the role of a data administrator and a database administrator. [4 marks]

Question Two

- a)
- i) List four factors to consider when choosing a database management System. [4 marks]
 - ii) Explain the following data types as used in MS Access. [8 marks]
 - (i) Text (iii) memo
 - (ii) Yes/No (iv) OLE object
 - iii) Explain four functions of a DBMS. [4 marks]
- b)
- i) Define a query. [2 marks]
 - ii) List any two types of Queries. [2 marks]

Question Three

- i) Explain the following types of models (4mks)
- a) Relational data model
 - b) Network data model
- ii)
- a) Define file system (2mks)
 - b) Explain any three types of File systems (6mks)
- ii) Differentiate between conceptual database design and logical database design (4mks)

Question Four

- i) Define the following terms (6mks)
 - a) Cardinality
 - b) Attributes
 - c) Relationships
- iii) What is an E-R model? (2mks)
- b)
 - i) Using a simple diagram explain the following types of modeling relationships (9mks)
 - a) 1 : 1
 - b) 1 : M
 - c) M : M
 - ii) Explain briefly the following types of attributes (3mks)
 - a) Multi-valued
 - b) Composite
 - c) Derived

Question Five

- a)
 - i) Define Normalization (2mks)
 - ii) Explain three importance of normalizing a database (3mks)
 - iii) Explain the following (6mks)
 - a) 1NF
 - b) 2NF
 - c) 3NF
- b)
 - i) Write SQL statements for the following
 - a) Select all names that start with an 'A' in a table students (3mks)
 - b) Insert records into a table persons the Lastname and Contact only (3mks)
 - c) Write a syntax for update statement to modify data in a table (3mks)