



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2008/2009

INSTITUTE OF OPEN LEARNING

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

(INFORMATION TECHNOLOGY)

SIT 111 : INTRODUCTION TO DATABASES

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DATE: MONDAY 15TH FEBRUARY 2010 **TIME: 11.00 A.M. – 1.00 P.M.**

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INSTRUCTIONS

Section A (Compulsory)

Question 1

- a) What is the meaning of the following acronym: **DBMS**? Discuss the disadvantages of file systems over the DBMS. (4 marks)
- b) Explain in brief the following field types:
Character field, date field, Numeric field and memo field. (4 marks)
- c) Describe the critical factors of design methodology. (4 marks)
- d) Define the terms database, entity, attribute and relationship. (4 marks)
- e) Describe the components and features of a DBMS. (12 marks)

SECTION B:

Answer only Two questions from this Section.

Question 2

- a) Using an example, describe a network data model, hierarchical data model and relational data models. (20 marks)

Question 3

- a) Using examples, describe the three types of entity relationship diagrams. (10 marks)
- b) Name and explain three relational keys. (6 marks)
- c) Identify and explain two query languages. (4 marks)

Question 4

- a) What do you understand by the term relational integrity? Explain four relational integrity levels. (10 marks)
- b) Explain three types of databases failures. (6 marks)
- c) State and explain the constraints of ER models. (4 marks)

Question 5

A recruitment agency finds suitable employees for its client companies. The agency holds files of companies who are looking for employees, employees who are looking for jobs and newspapers in which to place advertisements. When potential employees or job seekers look for jobs, they apply to the agency for an advertised job in the newspapers. The agency classifies potential employees for similar jobs offered by the same companies in future. Using Chen notation, draw an entity relationship diagram for the following scenarios.

- a) Identify the entities for the above scenario
- b) Identify the relationships between entities
- c) Showing the primary key ONLY for each entity on the diagram
- d) Showing the cardinality of each relationship on the diagram. (20 marks)