

**KENYA METHODIST UNIVERSITY
FIRST TRIMESTER EXAMINATION
APRIL 2009**

**FACULTY : ARTS & SCIENCES
DEPARTMENT : COMPUTER INFORMATION SYSTEMS
COURSE CODE : CISY 423
COURSE TITLE : ADVANCED DATABASE MANAGEMENT SYSTEMS
TIME : 2HRS**

Instructions: Attempt Question 1 and any other two questions.

Question 1 (30 Mks)

- a) List and Briefly explain the Security Features of a DBMS. (14 Mks)

- b) Explain the concept of Replication and distinguish between Vertical and Horizontal Fragmentation. (4 Mks)

- c) Describe four key features of OODBMS. (4 Mks)

- d) Explain how DBMS locks work. Distinguish between the various types of locks. (4 Mks)

- e) Describe the relationship between Data Warehousing, Data Mining and Online Analytical Processing. (4 Mks)

SECTION B (Answer any two questions)

Question 2(15 Mks)

- a) Describe various database integrity features implemented in DBMS you are familiar with. (5 Mks)
- b) Briefly explain the role of Data Mining in business. (5 Mks)
- c) Describe key features of Multidimensional Database. (5 Mks)

Question 3 (15 Mks)

- a) Explain what you understand by Concurrency Control. Explain the properties of concurrency control. (5 Mks)
- b) Explain the uncommitted dependency problem and how it can be solved (5 Mks)
- c) Explain the role of the System Catalogue in Transactions Management (5 Mks)

Question 4 (15 Mks)

- a) Outline the OODBMS manifesto (5 Mks)
- b) List and Explain three alternative strategies for building an OODBMS (5 Mks)
- c) Compare Relational Databases and Multidimensional Databases. (5 Mks)

Question 5 (15 Mks)

- a) Describe the major components of a Data Warehouse. (5 Mks)
- b) Discuss key issues in building a Data Warehouse. (5 Mks)
- c) Explain the concept of transparency in distributed databases and describe how it can be implemented. (5 Mks)