JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE & TECHNOLOGY UNIVERSITY EXAMINATIONS 2012/2013

2ND YEAR 2ND SEMESTER EXAMINATION IN BACHELOR OF EDUCATION (ARTS) WITH IT

(MAIN-SCHOOL BASED)

COURSE CODE: SCS 212

COURSE TITLE: DATABASE SYSTEMS

DATE: 28/8/13   **TIME: 2.00 - 4.00 PM**

DURATION: 2 HOURS

INSTRUCTIONS

1. This paper contains five (5) questions.

2. Answer question 1 (compulsory) and ANY other TWO questions.

3. Write all answer in the booklet provided.

QUESTION ONE 30MARKS

a) What is the difference between a candidate key and the primary key for a given relation?   4marks

b) Explain **six** reasons Why you would choose a database system instead of simply storing data in operating system files   12marks

c) Define and state the advantages of a view in database system   4marks

d) Define database systems   2marks

e) Explain the difference between logical and physical data independence   8marks

Question two 20marks

a) Bidco group of Companies what to hire a databases administrator. List and explain the responsibilities of a DBA to be placed on the adverts   10marks

b) What is a transaction?   2marks

c) Explain in details the ACID test properties used in transaction management   8marks

Question Three 20marks

a) Write shorts about the following terms   10marks

      i. Attribute,

      ii. Entity,

      iii. Relationship,

      iv. Relationship set,

      v. one-to-many relationship, many-to-many relationship,

b) Explain the difference between primary key and Referential key   4marks

c) Why does a DBMS interleave the actions of different transactions instead of executing Transactions one after the other?   6marks

Question four 20marks

a) What is a relational database   4marks

b) Enumerate the advantages of distributed databases   4marks

c) List the various components of a database system environment, briefly describe   4marks

d) Differentiate between ER Diagram and data Flow diagram   8marks

Question Five 20marks

a) Explain the working of GROUP BY clause using appropriate syntax   4marks

b) Write snippet code for creating a table in mysql   2marks

c) Write snippet code to alter a table in Mysql   2marks

d) Drop the table created in   2marks

e) Define aggregate function in Mysql and explain any four of such functions   10marks