TECHNICAL UNIVERSITY OF MOMBASA

INSTITUTE OF COMPUTING AND INFORMATICS

Select department

UNIVERSITY EXAMINATION FOR:

DICT/SEP2016/J-FT

EIS 2201: DATABASE MANAGEMENT

SPECIAL/ SUPPLEMENTARY EXAMINATION

SERIES: SEPTEMBER 2018

TIME: 2HOURS

DATE: Sep 2018

Instructions to Candidates
You should have the following for this examination
-Answer Booklet, examination pass and student ID
This paper consists of **FIVE** questions. Attemptany THREE questions.
Do not write on the question paper.

Question ONE
a) Explain the following:
   i.   Information   **[1 Mark]**
   ii.   Relational Database   **[2 Mark]**
   iii.   Primary Key   **[1 Mark]**
   iv.   Foreign Key   **[2 Mark]**
   v.   Any THREE normal forms   **[6 Marks]**

b) State properties of a relation   **[4 Marks]**
c) State any 4 disadvantaged of flat file system used to store data   **[4 Marks]**

Question TWO
a) Define the term 'Database Management system'   **[2 Marks]**
b) Describe any FOUR facilities provided by Database Management System (DBMS)   **[8 Marks]**
c) Describe the functions of any TWO DDL and TWO DML SQL statements   **[8 Marks]**
d) State the use of SQL 'where' clause   **[2 Mark]**

Question THREE
a)   Describe any four constraints of relation database model   **[8 Marks]**
b)   Explain the concepts listed below in the context of relational model:

i) Attribute
    ii) Domain
    iii) Tuple
    iv) Degree
    v) Cardinality   [**5 Marks**]
c)   Briefly describe the architecture of three-tier database system and state its one application   **[7 Marks]**

Question FOUR

a) Outline the characteristics of database technology   **[8 Marks]**
 b) In relation to DBMS explain the three schemas and state where the DMS store the schemas   **[7 Marks]**
c)   Define the term 'Data Dictionary'   **[1 Mark]**
d) List the components of Database System   **[4 Marks]**

Question FIVE

a) A company uses the relation Appointment to store details of its employees. An instance of the relation is shown below.

Appointment

StaffNo	Name	Position	Gender	DOB	Salary	BranchNo
SL21	John	Manager	M	1-0ct-1965	75,000	B005
SG37	Ann	Assistant	F	10-Nov-1960	38,000	B003
SG14	Ali	Supervisor	M	24-Mar-1963	18,000	B003
SA9	Mary	Assistant	F	19-Feb-1970	30,000	B007
SGS	Susan	Manager	F	3-Jun-1967	39,000	B003
SL41	Rosemary	Assistant	F	13-Jun-1965	29,000	B005

    Write SQL statements to perform the following:
    i.   List full details of all staff
    ii.   Produce a list of salaries for all staff, showing only the staff number, name, and the salary details
    iii. Show total salary paid to all managers
    iv.   List names of female staff who earn between 20,000 and 30,000
    v.   Produce a single list showing total salaries paid to males and females
    vi.   Insert record of a new employee: SL48 Josphine, Kariuki, Manager, 14th June, 1969
    vii. Delete record of employee 'SL004'
    viii. Update the salary so that the minimum salary of a Manager is 55,000   **[16 Marks]**
b)   Distinguish between User and meta data   [4 Marks]