UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)
उत्तराखंड मुक्त विश्वविद्यालय, हल्द्वानी (नैनीताल)

MCA-11/PGDCA-11/MSC(IT)-12
1ST YEAR 2ND SEMESTER ASSIGNMENT

Last Date of Submission: 15 May, 2013

Course Title: Fundamentals of Database Management Systems
Course Code: MCA-07/PGDCA-07/MSC(IT)-07
Year: 2012-13 **Maximum Marks: 40 Marks**

Section 'A'

Section 'A' contains 08 short answer type questions of 5 marks each. Learners are required to answers 4 questions only. Answers of short answer-type questions must be restricted to 250 words approximately.

1. Give a set of FDs for the relation schema R(A,B,C,D) with primary key AB under which R is in 2NF but not in 3NF.
2. Explain some of the Useful aggregate functions in SQL.
3. Define stored procedure with their function by giving suitable examples.
4. Explain normalization with the help of an appropriate example of relational schema.
5. Explain any three Data Definition Language commands.
6. Differentiate between:
    a. implicit and explicit cursor
    b. entity integrity and referential integrity
    c. Database security.
    d. Distributed databases.
7. (a) Discuss the different types of data integrity constraints.
    (b) Differentiate between Data Definition Language and Data Manipulation Language.
8. What is logical data independence and why is it important?

Section 'B'

Section 'B' contains 04 long answer-type questions of 10 marks each. Learners are required to answers 02 questions only.

1. Mention the differences between text files and database files. Why are database files preferred in a commercial organization?

2. Consider the following collection of relation schemes:

professor(profname, deptname)
department(deptname, building)
committee(commname, profname)

(a) Find all the professors who are in any one of the committees that Professor Smith is in.
(b) Find all the professors who are in at least all those committees that Professor Smith is in.
(c) Find all the professors who are in exactly (i.e., no more and no less) all those committees that Professor Smith is in.
(d) Find all the professors who have offices in at least all those
3. buildings that Professor Smith has offices in.

4. (a) Consider the following relational schema:

Sailors(SailorId, SailorName, Rating, Age)

Reserves(SailorId, BoatId, Day)

Boats(BoatId, BoatName, Color)

Express the following queries :

a. Find the names of sailors who have reserved the same color boats as the sailor named 'Ram'.
b. Find the colors of boats reserved by sailor 'Ram'.
c. Find the names of sailors who have reserved a red or a green boat.
d. Find the names of sailors who have reserved at least two boats.
e. Find the names of sailors who have reserved all boats.
f. Find the names of boats that are reserved by more than one sailor.

(b) Consider the following relational database schema

SUPPLIER(SupplierNo, SupplierName, SupplierCity)

PART(PartNo, PartName, Weight, Quantity, Color)

SUPPLY(SupplierNo, PartNo, Quantity)

a. Give an SQL DDL definition of the above schema.
b. Express the following queries in SQL:
    (i) Find the names of parts which are supplied by more than one supplier.
    (ii) Find the name of suppliers who have supplied all the red colored parts.
    (iii) Find the names of supplier who has supplied blue parts more than average
    (iv) Number of the blue parts supplied by the supplier in the same city.

(v) Find the names of supplier who supply atleast two parts.

(vi) Delete Suppliers who have supplied no parts.