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

MCA 2ND YEAR 4TH SEMESTER ASSIGNMENT

Last Date of Submission: 31 May 2016

Course Title: Advanced database management system   **Course Code:** MCA-13
Year: 2015-16   **Maximum Marks:** 40 Marks

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. What are Codd's rule? Discuss the Codd's rule for the designing an efficient Database.
2. What is data model? Explain Hierarchical data model.
3. Explain the 3-tier architecture of DBMS over 2-tier architecture of DBMS.
4. What are the characteristics of SQL? What is the difference between embedded SQL and dynamic SQL?
5. What is Functional dependency? Explain six inference rules for functional dependencies.
6. What is Transaction processing? Explain characteristics schedule based on Recoverability and Serializability.
7. What do you understand by the concurrency control? Explain two phase locking techniques for concurrency control.
8. What are database security issues? Explain discretionary access control based on grant and revoking privilege.

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

1. What do you mean by Good and Bad decompositions? Explain different anomalies you remove while going from 1NF to 2NF and then from 2NF to 3NF. What do you mean by Boyce Codd Normal Form?

2. Explain basic structure of SQL. Write down complete syntax of create, insert, delete and modification commands supported by SQL. Explain 'group by' SQL query with example.

3. What is E-R diagram? Draw E-R diagram for any of the Hospital, after determining, the entities of interest and the relationships that exist between these entities.

4. What are the different techniques for database recovery? Discuss in details.