

Code: CSCS1T4

**I M.Tech - I Semester – Regular/Supplementary Examinations –
January - 2017**

**DATABASE MANAGEMENT SYSTEMS
(COMPUTER SCIENCE & ENGINEERING)**

Duration: 3 hours

Max. Marks: 70

Answer any FIVE questions. All questions carry equal marks

1. a) Discuss the main characteristics of the database approach and how it differs from traditional file system. 8 M

- b) Define the following terms:
 - i) DDL 2 M
 - ii) DML 2 M
 - iii) Query Language 2 M

2. a) Discuss the role of a high level data model in the database design. 7 M

- b) Discuss the naming conventions used for ER schema diagrams with suitable example. 7 M

3. a) What is a relation? Difference between a relational schema and a relation instance. 8 M

- b) Write SQL queries for the following: 6 M
- i) Find all employees who were born during the 1980's
 - ii) Find the name and address of all employees who work in 'Research' Department
 - iii) Find the name of each employee who work on all the project controlled by deptno 5
4. a) What is MVD? Explain. 6 M
- b) What is normal form? Explain 3NF & BCNF with example. 8 M
5. a) How the data is organised in hash based Index? When would you use a hash based index? 7 M
- b) Explain the principles of various RAID levels. 7 M
6. a) Define query optimization and explain its significance for DBMS. 7 M
- b) How does a DBMS represent a relational query evaluation plan? 7 M
7. a) What is seralizability? What is a serializable schedule? Give example. 7 M

b) What is a locking protocol? Describe the strict two-phase locking protocol. 7 M

8. a) Describe multi version concurrency control? What are its Benefits? 7 M

b) What are the advantages of the ARIES recovery algorithm? Explain. 7 M