

**QP Code : 1616****(3 Hours)****Old Course****Total Marks: 100****N.B. 1. Question No. 1 is compulsory.****2. Attempt any FOUR out of remaining SIX questions.****3. Assume suitable data wherever required.**

Q.1 a) Draw an EER diagram for following case study.

The Company is organized into departments. Each department has a unique name, a unique number, and a particular employee who manages the department. We keep track of the start date when that employee began managing department. A department may have several locations. The department controls a number of projects, each of which has a unique name, a unique number, and a single location. An employee is assigned to one department, but may work on several projects, which are not necessarily controlled by the same department. We keep track of the current number of hours per week that an employee works on each project. We also keep track of the direct supervisor of each employee. 10

b) With reference to above case study write SQL expression for: 10

i) Add one new department to database.

ii) Change in address of employee 'ABC' from Andheri to Malad.

iii) Find the employees that are having salary greater than 20000.

iv) Find the employee with maximum salary.

v) Find name of the employee who is working on more than 2 projects.

Q.2 a) What is Cartesian product, outer join, self-join, inner join? 10

b) Define DDB, aggregation, replication, query processing, query optimization. 10

Q.3 a) What is Heuristic query optimization? Explain with proper example. 10

b) What is fragmentation in distributed database? Explain its types with suitable example. 10

Q.4 a) Explain Concurrency control and recovery in distributed database 10

b) Explain types of constraints in EER diagram. 10

Q.5 a) What is nested relation? Explain with suitable example. 10

b) Explain query processing in distributed database. 10

Q.6 a) Explain micro lifecycle in database design methodology. 10

b) What is XML schema? Give suitable example. 10

Q.7 Write short note on (any two) 20

a) Dynamic SQL

b) XML documents

c) Nested loop join and hash join d) client-server architecture

**QP-Con. 6860-15.**