Q. P. Code : 552501
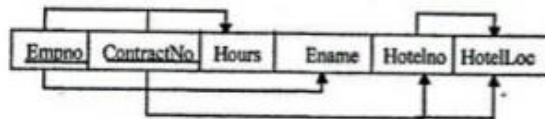
(Time: 3 Hrs)   Marks: 80

N.B. : 1. Question no. 1 is **compulsory**.
     2. Solve any **Three** questions out of remaining **Five** questions.

Qu-1	a)	Explain Transaction state diagram.	5
	b)	Describe View and Trigger.	5
	c)	Discuss different Users of Database system.	5
	d)	Explain different types of attributes in ER Model.	5
Qu-2	a)	Explain the algorithm to map ER and EER model to relational model in detail	10
	b)	Explain steps in Query Processing.	10
Qu-3	a)	What is Conflict Serializability? How precedence graph is used to check whether the schedule is conflict serializable or not?	10
	b)	Explain DML and DDL commands with syntax.	10
Qu-4	a)	Consider the following dependency diagram of relation R and Normalize till 3NF	10

Empno. | ContractNo. | Hours | Ename | Hotelno | HotelLoc

	b)	Discuss fundamental operations in relational algebra.	10
Qu-5	a)	Employees(Empid, Fname, Lname, Email, Phoneno, Hiredate, Jobid, Salary, Mid, Did) Departments(Did , Dname, Managerid , Locationid) Locations(Locationid , Streetadd, Postalcode, City) Write the SQL queries for the following. 1. List the employees have a manager who works for a department based in the US. 2. Write a query to display the details of all employees in the Finance department. 3. Give 10% hike to all the Employees working in Did 20. 4. Write a query to display all the information of the employees whose salary is within the range 1000 & 3000. 5. Display the information of all the employees whose first name starts with 'R' in descending order of their salary.	10
	b)	Draw and explain Database System Structure.	10
Qu-6		Write Note on any **TWO**.	20
	a)	Shadow Paging.	
	b)	ACID Properties of Transaction.	
	c)	Deadlock Detection and Recovery.	