GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–III(OLD) • EXAMINATION – WINTER 2016

Subject Code:130703   **Date:09/01/2017**

Subject Name:Database Management System

Time:10:30 AM to 01:00 PM   **Total Marks: 70**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Explain characteristics/features of DBMS which differentiate it from File System Processing.	**07**
	(b)	Explain Following: 1. Three schema architecture of DBMS. 2. Role of DBA.	**07**
Q.2	**(a)**	Write SQL Queries for following set of tables: EMPLOYEE (EmpNo, Name, DoB, Address, Gender, Salary, DNumber) DEPARTMENT (DNumber, Dname, ManagerEmpNo, MnagerStartDate). 1. Display the Age of 'male' employees. 2. Display all employees in Department named 'Marketing'. 3. Display the name of highest salary paid 'female' employee. 4. Which employee is oldest manger in company? 5. Display the name of department of the employee 'SMITH'.	**10**
	(b)	Explain Cartesian Product operation in Relational ALGEBRA.	**04**
		OR	
	(b)	Explain Foreign Key constraint in Relational Model with example.	**04**
Q.3	**(a)**	Explain following terms with reference to E-R model. 1. Entity & it's Attributes. 2. Relationship Type (including recursive). 3. Cardinality & Participation. 4. Weak-Entity Type & Relationship Type.	**08**
	(b)	What is Functional Dependency? How is it eliminated in Data?	**06**
		OR	
Q.3	**(a)**	Explain various types of JOIN with example.	**08**
	(b)	What is Transaction in DBMS? Explain it's properties.	**06**
Q.4	**(a)**	Explain 3NF & BCNF. What is the difference between them?	**08**
	(b)	Explain Serializability with it's types.	**06**
		OR	
Q.4	**(a)**	Explain Concurrency control Methods in DBMS.	**07**
	(b)	What is System Recovery? Explain Two phase commit protocol.	**07**
Q.5	**(a)**	Explain with reference to SQL: 1. Group by & having 2. Commit, rollback, savepoint.	**08**
	(b)	Explain methods of Query Optimization.	**06**
		OR	
Q.5	**(a)**	Explain Cursor & it's type in PL/SQL.	**07**
	(b)	What is the Database Trigger? Explain it's use in DBMS.	**07**