

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE SEM-III Examination-Dec.-2011**

**Subject code: 130703****Date: 17/12/2011****Subject Name: Database Management System****Time: 2.30 pm -5.00 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 the purpose and application of DBMS. | 5 |
| (b) | Explain functions of DBA to handle DBMS.     | 5 |
| (c) | Draw three level architecture of DBMS.       | 4 |

**Q.2**

- |     |   |    |
|-----|---|----|
| (a) | What is normalization? What is redundancy?<br>Compare 1NF and 2NF with example.     | 07 |
| (b) | Give Symbol used in E-R Diagram and Draw the E-R diagram of University exam System. | 07 |

**OR**

- |     |  |    |
|-----|--|----|
| (b) | Give Symbol used in E-R Diagram and Draw the E-R diagram of Library Management System. | 07 |
|-----|--|----|

**Q.3**

- |     |   |   |
|-----|---|---|
| (a) | What is the advantage of using 3NF? Explain with example. | 5 |
| (b) | Explain natural join operation with example.              | 5 |
| (c) | What is ACID properties?                                  | 4 |

**OR****Q.3**

- |     |  |   |
|-----|--|---|
| (a) | Explain gernarization feature of E-R Diagram.            | 5 |
| (b) | Explain selection and projection operation with example. | 5 |
| (c) | Explain BCNF with example                                | 4 |

**Q.4**

- |     |  |   |
|-----|--|---|
| (a) | Explain commit and rollback command.       | 5 |
| (b) | Explain DDL , DML and DCL with example     | 5 |
| (c) | What is trigger? How it is useful? Explain | 4 |

**OR****Q.4**

- |     |   |   |
|-----|---|---|
| (a) | Explain aggregation operation of E-R Diagram. | 5 |
| (b) | What is cursor? Explain with example.         | 5 |
| (c) | Explain two phase locking.                    | 4 |

**Q.5**

- |     |  |   |
|-----|--|---|
| (a) | Implement following relation using SQL query.<br>Student(stud_no,stud_name,sub1,sub2,totalmark,percentage)<br>Create the table, add 5 records and display the data | 5 |
| (b) | Calculate total mark and percentage and also arrange the students on ascending order of total mark and also make a view of it.                                     | 5 |
| (c) | Update the mark of sub1 of student_no=111 with 50 and also Calculate totalmark and percentage accordingly.   | 4 |

**OR**

- Q.5** (a) Implement following relation using SQL query. **5**  
Employee(emp\_no,emp\_name,department,city,salary)  
(1) Find all the employee whose emp\_no is less than 100 and salary more than 25000 and department is "Account"  
(2) count the no of employee and Sum the salary of all employee  
(3) Delete the employee having minimum salary.
- (b) Explain Data encryption **5**
- (c) Explain deadlock detection. **4**

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