[Total No. of Printed Pages:2] **CODE NO:- U-293**

**FACULTY OF ENGINEERING& TECHNOLOGY**

**TE(CSE/IT) Examination - *DEC - 2014***

# DATABASE MANAGEMENT SYSTEM (Rev)

**[Time: THREE *Hours*]** **[Max. Marks: 80]**

"Please check whether you have got the right question paper."

1. *Q. no 1 from section A and Q no. 6 from section B are compulsory.*
2. *Solve any two from remaining questions from each section A and B.*

## SECTION A

| | | | |
|---|---|---|---|
| Q 1 | | Attempt any five | (10) |
| | i) | List out the major components of DBMS environment and discuss how they relate to each other. | |
| | ii) | The weak entity's primary key is partially or wholly derived from the parent side of the relationship.justify. | |
| | iii) | What is composite attribute of entity and when is it used? | |
| | iv) | What do you mean by integrity constraints? | |
| | v) | Define DDL and DML. | |
| | vi) | Explain the different types of keys? | |
| | vii) | What do you mean by mapping operation? | |
| | viii) | What are composite and derived attribute? | |
| Q2 | a) | What do you mean by data abstractions.<br>Explain the role of different levels of abstraction in detail. | (08) |
| | b) | List significant differences between a file processing and DBMS. | (07) |
| Q3 | a) | Design a generalization- specialization hierarchy for motor-vehicle sales company. The company sells motorcycle, passenger cars, vans and buses. Justify your placement of attributes at each level of hierarchy | (08) |
| | b) | Describe how strong and weak entities differ and provide an example of each. | (07) |
| Q4 | a) | What is a type inheritance? How does a superclass/subclass relationship represent type inheritance? | (08) |
| | b) | Discuss the characteristics of relation that make them different from ordinary tables and files. | (07) |
| Q5 | a) | Define the concept of aggregation. Give two examples of where this concept is useful. | (08) |
| | b) | Design an ER schema for part of bank database. Each bank can have multiple branches and each branch can have multiple account and loans. | (07) |

## SECTION-B

| | | | |
|---|---|---|---|
| Q6 | | Consider the following relation emp (eno, ename, title, bdate, salary, d no)<br>Proj (p no, p name, budget, d no) workson (e no, p no, resp, hours), dept(d no, dname, m greno)<br>Write down queries expressed in SQL. (attempt any five) | (10) |
| | i) | Write an SQL query that returns all works on records where hours worked is less than 10 and the responsibility is manager. | |
| | ii) | Write down an SQL query that returns the project number and name of your project with a budget greater than $10000 | |
| | iii) | Write an SQL query that returns the employees who have a title of 'EE' or' SA' and make more than &$35,000 | |
| | iv) | Write an SQL query that returns the employees in department 'DI' ordered by decreasing salary | |
| | v) | Write an SQL query that returns the project name, department name, and budget for all projects with a budget < $50,000 | |

| | | | |
|---|---|---|---|
| | vi) | Write an SQL query that returns the employee numbers and salaries of all employees in the ‘consulting’ department. | |
| | vii) | Write an SQL query that returns the employee name, project name, employee title, and hours for all works on records. | |
| | viii) | Write an SQL query that returns the employee name, department name, and employee title. | |
| Q7 | a) | Explain third normal form in detail. | (08) |
| | b) | What isschedule? Explain serial schedule. Give an example of interleaving operation which isnot schedule. Find conflict operation on it. | (07) |
| Q8 | a) | What is dead lock? What are different ways of handling | (08) |
| | b) | Constitute an example of<br>i) Dirty read anomaly<br>ii) Lost updata anomaly | (07) |
| Q9 | a) | What is decomposition? Explain lossy and lossless decomposition with example. | (08) |
| | b) | What is transaction? Explain ACID properties in detail | (07) |
| Q10 | a) | Explain the concept of conflict and view serializability. Prove that if schedule is view serializable, it is also conflict serializable. | (08) |
| | b) | List the various fundamental operation of relational algebra with example. | (07) |