

Seat  
No.

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मन - 035

## Database Management System (1100)

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Attempt **any two** questions from each unit.
5. Figures to the right indicate full marks.
6. Assume suitable data if necessary.

### UNIT - I

1. a) Define following terms with example. 10
  - i) Entity.
  - ii) Weak entity set.
  - iii) Attribute inheritance.
  - iv) Schema.
  - v) Instances.
- b) What are the different types of database users ? Explain. 10
- c) Draw overall system structure of database management system and explain. 10

### UNIT - II

2. a) Explain the fundamental operations in relational algebra with examples. 10
- b) Consider the following relational database schema and write the following queries in relational algebra. 10

Project (projectid, projectname, architect)  
Employee (empid, empname)  
Assigned to (projectid, empid)

  - i) Get details of employee working on both P231 and P353.
  - ii) Get the names of all employees who are designed to the projects designed by architect 'Rahul'.
  - iii) Get the names of the employees who work on all the projects.

- c) Consider the database of Q. 2b and solve all queries in Q. 2b in Tuple Relational Calculus. 10

**UNIT - III**

3. a) Explain DDL and DML commands with example. 10
- b) Consider the database of Q. 2b and solve all queries in Q. 2b in SQL. 10
- c) Consider the database of Q. 2b and solve following queries in SQL. 10
- i) Find the number of projects on which 'Rahul' works on.
- ii) Get the details of employees working on database projects.
- iii) Get the details of projects on which 'Sachin' works on.

**UNIT - IV**

4. a) Explain multiversion concurrency control scheme. 10
- b) What is recovery ? Describe Shadow paging. 10
- c) What is normalization ? Explain 1NF, 2NF, 3NF with example. 10

**UNIT - V**

5. a) Explain any five object oriented concepts. 10
- b) Explain persistence of object in OODBMS. 10
- c) Explain the concept of object identity. 10

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