

**B.TECH. SEM -IV INFO. TECH. 2014 COURSE (CBCS) :
SUMMER - 2018**

SUBJECT: DATABASE MANAGEMENT SYSTEM

Day: Saturday
Date: 09/06/2018

S-2018-2299

Time: 10.00 AM TO 01.00 PM
Max. Marks: 60

N.B:

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Use of non-programmable **CALCULATOR** is allowed.
- 4) Neat diagram must be drawn **WHEREVER** necessary.
- 5) Assume suitable data **WHEREVER** necessary.

Q.1 Explain in detail about main steps in database design and clearly focus in detail about the goal of each step? (10)

OR

Q.1 Define E-R diagram. Explain various symbols used in E-R diagram. (10)

Q.2 What is relation algebra? Explain select, project, rename and union operation with suitable example. (10)

OR

Q.2 Consider the following schemas (10)
Sailors (Sid, Sname, rating, age, real)
Reserves (Sid, bid, day)
Boat (bid, bname, color)
Write the following queries in relational algebra tuple relational calculus and domain relational calculus”

- a) Find the name of sailor who have reserved boat 103.
- b) Find the names and ages of sailor with rating above 7.
- c) Find the names of sailor who have reserved a red boat.
- d) Find the Sname, bid and day for each reservation.
- e) Find the name of sailors who have reserved at least one boat.

Q.3 What are different aggregate functions? Write following queries in SQL using aggregate operators. (10)

Please refer relational Schema given in Q.2

- a) Find average age of sailors for rating level greater than 7.
- b) Find the name of the sailor with minimum rating
- c) Find the name of the sailor with maximum rating

OR

Q.3 What is view? How to specify a view? Explain the difference between view and materialized view. (10)

Q.4 Draw PL/SQL block structure and execution environment. Explain each block. (10)

OR

Q.4 What is explicit cursor and implicit cursor? Explain it with suitable example. (10)

Q.5 What is locking? Explain two phase locking techniques for concurrency control. (10)

OR

Q.5 What are ACID properties? Explain it in detail. (10)

Q.6 Explain document based data model in No SQL data bases. (10)

OR

Q.6 Write a note on “No SQL database :MongoDB”. (10)

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