PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 4   Date: 03/05/2019
Subject Code: 03105254   Time: 02:00pm to 04:30pm
Subject Name: Database Management System   Total Marks: 60

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (All are compulsory) (Each of one mark)   **(15)**

1. No. of Primary key possible in a relation is / are:
(a) at least one
(b) exactly one
(c) more than one
(d) at most one

2. ODBC stands for
(a) Object Database Connectivity.
(b) Oral Database Connectivity.
(c) Oracle Database Connectivity.
(d) Open Database Connectivity.

3. Collection of information stored in a database at a particular moment is:
(a) View
(b) Instance
(c) Schema
(d) File

4. Level of data abstraction which describes "how the data is actually stored in database" known as:
(a) Physical level
(b) conceptual level
(c) file level
(d) none of these

5. An entity set that does not have sufficient attributes to form a primary key is a
(a) strong entity set.
(b) weak entity set.
(c) simple entity set.
(d) primary entity set.

6. _____ NF has most expressive power about Normal Form. (1NF / 2NF /3NF / BCNF)

7. _____ set of Candidate Key is known as Super Key (Super / Sub)

8. All Super Keys are Candidate Keys. (True / False)

9. In Relational Algebra, Division Operator (/) is a derived operator (True/ False)

10. In ACID properties of transaction C stands for _____.

11. Explain given TRC expression.
    TRC= { T / P (T) }

12. What is data Dictionary?

13. What is prime attribute?

14. Explain weak Entity Set.

15. Consider a Schema R(A B C D E) and FD Set = { AB $\rightarrow$ C, C $\rightarrow$ D, D$\rightarrow$E, B$\rightarrow$A}then Find Closure of B.

Q.2 Answer the following questions. (Attempt any three)   **(15)**

    A) Find the Candidate keys and find the highest normal form of given FD set.
        R(ABCDEF) and FD's {BC→ADEF, A→BCDEF, B→F, D→E}

    B) How can a save point be used in deadlock resolution?

    C) Briefly explain the meaning of transparency as it relates to computer processing. Why is transparency important for concurrency control and recovery management?

    D) Explain Mandatory Access Control.

Q.3 A) List all aggregate functions and explain any 3 of them.   **(07)**

    B) What should be the conditions for Conflict Serializability of concurrent schedules?   **(08)**

<div align="center">

OR

</div>

    B) What should be the conditions for view Serializability of concurrent schedules?   **(08)**

Q.4 A) List advantages of DBMS.   **(07)**

<div align="center">

OR

</div>

    A) List disadvantages of DBMS.   **(07)**

    B) Explain Nested Queries in SQL along with its types.   **(08)**