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Government College of Engineering, Amravati

Fifth Semester B. Tech. (Computer Science) Course Name: Database Management System
Winter-2016 CT-II CourseCode:ITU502 Time: 60min Max. Marks: 15

Solve any three

- Q.1. Explain the different fundamentals relational algebra operation in sql with suitable example.
- Q.2. Draw the E-R diagram for models an online bookstore. List the entity sets and their primary keys. Extend the E-R diagram, using generalization, to model the case where a shopping basket may contain any combination of books.
- Q.3. Explain different data types in relational model.
- Q.4. Construct a database in SQL that input the different instruction with there departments and salary join it with another table students as a instructor is a mentor of students and calculate.
 - i) Salary of instructor-avg, total, min, max
 - ii) Perform various set operation.

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Fifth Semester B. Tech. (Computer Science) Course Name: Database Management System
Winter-2017 CT-III CourseCode:ITU502 Time: 1Hr.30mi Max. Marks: 25

Question No.1 is compulsory for 7 marks. (Q.2 to Q.5 Solve any three for 6 marks.)

- Q.1. Draw and explain the transaction state in detail.
- Q.2. List and explain the properties of transaction in detail.
- Q.3. Explain the distinction between the terms serial schedule and serializable schedule.
- Q.4. How implementation is occur in atomicity and durability explain in detail.
- Q.5. Devise a timestamp-based protocol.

Solve Any Three

- Q.1.** Draw and explain the structure of relational algebra with an example.
Q.2. List and explain the different types aggregate functions with an examples.
Q.3. List and explain the different types joins operations with an examples.
Q.4. Explain the different types of set operations with an example. OR
Q.5. Consider a database with the following schema:

<i>Person</i> (name, age, gender)	name is a key
<i>Frequents</i> (name, pizzeria)	(name, pizzeria) is a key
<i>Eats</i> (name, pizza)	(name, pizza) is a key
<i>Serves</i> (pizzeria, pizza, price)	(pizzeria, pizza) is a key

Write relational algebra expressions for the following queries.

- Find all pizzerias frequented by at least one person under the age of 18.
- Find the names of all females who eat either mushroom or pepperoni pizza (or both).
- Find the names of all females who eat both mushroom and pepperoni pizza.
- Find all pizzerias that serve at least one pizza that Amy eats for less than \$10.00.
- For each person, find all pizzas the person eats that are not served by any pizzeria the person frequents. Return all such person (name) / pizza pairs.

$aabbbaa$
 $s \rightarrow aAS$
 $s \rightarrow asbAS$
 $s \rightarrow aabbaa$
 $s \rightarrow aAS$
 $s \rightarrow aa$
 $s \rightarrow ASGAa$
 $s \rightarrow abbaa$