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D Y PATIL UNIVERSITY

End Term Examination (December 2019)

School: School of Engineering

Program: B. Tech Computer Engineering

Course: DBMS-SQL/NoSQL

Course Code: CSC334

Semester: V

Max Marks: 40

Duration (mins.): 90

Attempt any 4 of the following:

1. Answer the following:

[10]

(Each question carries 2 Marks)

- a. State different categories of SQL along with commands in each category.
- b. What is collection and document in Mongo DB?
- c. Explain LIKE operator in SQL.
- d. How BETWEEN operator different from IN operator?
- e. Given a relation $R \rightarrow ABCD$, the functional dependencies are as below:
 - i. $A \rightarrow B$
 - ii. $A \rightarrow BCD$
 - iii. $B \rightarrow CD$
 - iv. $AB \rightarrow CD$

Find super-key, candidate-key and primary-key.

2. Answer the following:

[10]

(Each question carries 5 Marks)

- a. What is transaction? Explain ACID properties of transaction in DBMS.
- b. How is SQL different from NoSQL?

3. Answer the following: [10]
(Each question carries 5 Marks)
- What are cardinality constraints in DBMS? Explain with example.
 - What is normalization and explain its need in terms of different anomalies. State advantages.
4. Analyze the following case and design an ER diagram: [10]
A University Registrar's office maintains data about the following entities:
- Courses, including number, title, credits, syllabus, and prerequisites.
 - Course offerings, including course number, year, semester, section number, Instructor, timings, and classroom.
 - Students, including student-id, name, and program.
 - Instructors, including identification number, name, department, and title.
- Further, the enrollment of students in courses and grades awarded to students (in each course they are enrolled for) must be appropriately modeled. Construct an E-R diagram for the Registrar's office.
Document all assumptions that you make about the mapping constraints .
5. Answer the following queries considering an employee table: [10]
(Each question carries 2 Marks)
- Write an SQL query to find name of employee whose name start with 'M'.
 - SQL query to find second highest salary of employee.
 - Write an SQL query to find an employee whose salary is equal or greater than 10000.
 - How do you find all employees which are also manager?
 - Write an SQL query to print the name of the distinct employee whose DOB is between 01/01/1960 to 31/12/1975.
