Total No. of Pages 2
FOURTH SEMESTER
END SEMESTER EXAMINATION

Roll No. .....
B.TECH (CSE)
(MAY-2019)

CO/SE-211 DATABASE MANAGEMENT SYSTEM

Time: 3 Hours

Maximum Marks : 70

Note: Attempt any 5 questions. Question no. 1 is compulsory. Assume suitable missing data, if any.

Q1 Attempt the following: **(7X2=14)**

i. Discuss the types of database.
ii. Explain the concept of buffer management.
iii. Define primary key, alternate key and candidate key with example.
iv. Write a brief note over SQL.
v. Total participation vs. Partial participation
vi. Explain ACID properties.
vii. Discuss join dependencies.

Q2 What is the need of using ER diagram. Explain its various components. Discuss the notation used to draw an ER diagram. Consider the following problem statement:

In a university, a Student enrolls in Courses. A student must be assigned to at least one or more Courses. Each course is taught by a single Professor. To maintain instruction quality, a Professor can deliver only one course.

Identify the entities, attributes and relationships and draw an ER diagram. **(14)**

Q3 (a) Explain relational algebra. What are the basic relational algebra operations. Discuss with example. Consider the following relational schema and answer the following queries using relational algebra: **(8+6=14)**

BOOKS(DocId, Title, Publisher, Year)
STUDENTS(StId, StName, Major, Age)
AUTHORS(AName, Address)
borrows(DocId, StId, Date)
has-written(DocId, AName)
describes(DocId, Keyword)

i. List the name of students who are older than 30 and who are not studying CS.
ii. List all books published by McGraw-Hill before 1990.

Q4 (a) Define normalization. A company wants to store the complete address of each employee, they create a table named employee_details. Make this table complies with 3NF.

p_id	emp_name	emp_zip	emp_state	emp_city	emp_dist

(b) Explain serializability of schedules. What is a conflict and view serializable schedule.

(2X7=14)

Q5 (a) Describe different locking techniques of concurrency control. Discuss with example.
(b) Explain the concept of deadlock. How is it different from starvation. Discuss with the help of an example. **(2X7=14)**

Q6 Write short notes (Any two): **(2X7=14)**

a. Relational calculus and it types
b. File organization techniques
c. Anomalies classification with example

foreign key ko insert anamoly , update and delete anamoly