BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)

Computer Science & Engineering

B. Tech. Sem - IV :SUMMER : 2023

SUBJECT : ITC-II: DATABASE SYSTEMS

Day : Friday

Time : 10:00 AM-01:00 PM

Date : 02-06-2023

S-25585-2023

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) Assume suitable data **WHEREVER** necessary.
5) Draw neat diagram **WHEREVER** necessary.

Q.1 How does DBMS provide data abstraction? Explain the concept of data independence. **(10)**

OR

Q.1 What is an integrity constraint? Explain its enforcement by DBMS with illustrative example. **(10)**

Q.2 Explain Query optimization with respect to SQL databases. **(10)**

OR

Q.2 Write SQL statements for following **(10)**

students (Enrno, name, courseId, emailId, cellno)
course (courseId, course_nm, duration)

i) Add a column city in student table
ii) Find out list of students who have enrolled in 'computer' course.
iii) List name of all course with their duration
iv) List name of all students start with 'a'.
v) List email Id and cell no of all mechanical engineering students

Q.3 Normalize following relation up to 3NF : **(10)**
Bank(acno, cust_name, ac_type, bal, int_rate, cust_city, branchId, branch_nm, br_city)

OR

Q.3 Normalize following relation up to 3NF : **(10)**
Student(roll_no., stud_name, branch, PRN_NO, stud_city)

Q.4 What is DOL and DML? Explain with suitable example. **(10)**

OR

Q.4 Discuss primary key, foreign key and unique in detail with example. **(10)**

Q.5 What is a transaction processing system? Explain with examples. **(10)**

OR

Q.5 Enlist ACID properties. Explain in details with suitable example. **(10)**

Q.6 Explain with suitable examples massive data sets. **(10)**

OR

Q.6 Write short note on spatial and geographic database. **(10)**

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