



**PRESIDENCY COLLEGE**

**(AUTONOMOUS)**

AFFILIATED TO BANGALURU CITY UNIVERSITY, APPROVED BY ANTE, DELHI & RECOGNISED BY THE GOVT. OF KARNATAKA  
RE-ACCREDITED BY NAAC WITH 'A+' GRADE

**21C204.1C**

**REG NO:**

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**END TERM EXAMINATION NOV/DEC 2023**  
**BCA I SEMESTER**  
**GC204.1C: DATABASE MANAGEMENT SYSTEMS**

**Duration: 2 Hours**

**Max Marks: 60**

**Instruction:** Answers should be written in **English** only.

**PART – A**

Answer **any EIGHT** questions. Each question carries **TWO** marks.

**(8 X 2 =16)**

1. What is DBMS? Give two examples.
2. Define instance.
3. Write a SQL command to create a student table with three attributes.
4. What are Entity sets and key attributes?
5. Differentiate the Candidate key and super key.
6. What is a tuple?
7. Write syntax and an example of update SQL command.
8. What are views?
9. List the advantages of concurrent execution.
10. What is a transaction?

**PART - B**

Answer **any FOUR** questions. Each question carries **SIX** marks.

**(4 X 6 =24)**

1. List and explain various characteristics of the database approach.

2. Explain Centralized and Client-server architecture.
3. Explain the various types of relationships.
4. What are constraints? Explain domain, key, and referential integrity constraints.
5. Explain 2NF and 3NF with an example.
6. List and explain desirable properties of transactions.

### PART - C

Answer any TWO questions. Each question carries TEN marks.

(2X 10 =20)

1. Explain DBMS's three-level architecture with a neat diagram.
2. What is indexing? Explain various types of single-level ordered indexes.
3. Consider the Company database with the following schema:

EMPLOYEE (fname, minit, lname, ssn, bdate, address, sex, salary, superssn, dno)

DEPARTMENT (dname, dnumber, mgrssn, msrstartdate)

DEPT\_LOCATIONS (dnumber, dlocation)

PROJECT (pname, pnumber, plocation, dnum)

WORKS\_ON (essn, pno<hours)

DEPENDENT (essn, dependent\_name, sex, bdate, relationship)

Write the SQL queries to:

- a. Find the sum of the salaries of all employees of the 'Accounts' department.
  - b. Retrieve the names of employees who were born in the year 1990's
  - c. Retrieve the name of each employee Controlled by a particular department.
  - d. Retrieve the name of each dept and the number of employees working in each department.
  - e. Retrieve the department number and number of employees making a salary more than 40000.
4. What is concurrency? Explain Lock and timestamp-based protocol.

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