

Registration Number:

Date & session:

**ST.JOSEPH’S UNIVERSITY, BENGALURU -27**

**B.C.A – III SEMESTER**

**SEMESTER EXAMINATION: OCTOBER 2023**

**(Examination conducted in November /December 2023)**

**CA 3122: Database Management Systems**

**(For current batch students only)**

**Time: 2 Hours Max Marks: 60**

**This paper contains TWO printed pages and THREE parts**

**PART A**

**Answer all the questions (2\*5=10)**

1.Identify the differences between DDL and DML languages.

2. Locate the situations in which we do not use database management system?

3. What is normalization in database management system? Mention the types of normalization.

4. Define key in DBMS. List the different types of keys used in database management system.

5. What are the levels of abstraction?

**PART B**

**Answer any five of the following questions (4\*5=20)**

6. What are the characteristics of database approach?

7. Demonstrate any five-aggregate functions with syntax and example.

8. Compare and Contrast between network model and hierarchical model.

9. Explain the first normal form and BCNF in detail.

10. What is Transaction Control Language? List any two Transaction Control Commands.

11. Explain Selection and Projection operations in relational algebra with a relevant example for each.

12. Illustrate database backup and database recovery.

**PART C**

**Answer any three of the following questions (10\*3=30)**

13. a) Explain the steps involved in transaction processing.

b) Explain data fragmentation and replication. [5+5]

14.a) What is the use of ER diagram?

b) Draw ER diagram for Hospital Management System (Use DOCTOR,PATIENT,HOSPITAL and MEDICAL\_RECORD Entity). Identify Primary Key and Foreign Key.

[2+8]

15. a) Write SQL query for following

consider the table:

**EMP(empno , deptno, ename ,salary, Designation, joiningdate, DOB,city)**

1. Create the EMP table.
2. Insert 5 records in the EMP table.
3. Display names of employees whose experience is more than 10 years.
4. Display age of employees.
5. Display average salary of all employees.
6. Display name of employee who earned highest salary .
7. Find the department wise count of employee.

b) Illustrate GROUP BY clause. [7+3]

16.a) Compare and contrast between centralized and client server architecture.

b)Explain Concurrency control techniques in DBMS.

[5+5]

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