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| **ST. JOSEPH’S UNIVERSITY, BANGALORE-27** | | | | | |
| **M.Sc - II SEMESTER** | | | | | |
| **END SEMESTER EXAMINATION: APRIL 2023**  **(Examination conducted in May 2023)**  **CS8121-Advanced Database Management System**  **(For current batch students only)** | | | | | |
| **This Question paper contains 3 parts and 2 side print** | | | | | |
|  |  |  |  |
| **Time- 2 Hrs** | |  | **Max Marks-50** | |

**PART A**

**Answer all the following questions. 2x5=10**

## What do you mean by database recovery? Mention its types.

1. How can Deferred update help in data recovery?
2. Define fragmentation and its types in distributed database system.
3. How are databases different from data warehousing?
4. Mention any two types of fact table. Write its purposes.

**PART B**

**Answer any FIVE the following questions. 5x4=20**

6. Compute a BCNF for a student database with 4 relations and all the relations with

minimum three attributes.

. 7. Explain the steps of query processing with the help of a neat diagram.

8. Describe different states of transactions with the help of a flow chart.

9. Compare the functions of Parallel and Distributed databases.

10. Explain any two kinds of transparencies in distributed database design.

11. Consider the following two transactions and schedule (time goes from top to bottom). Is

this schedule conflict-serializable? Explain with the help of a graph.

| Transaction T0 | Transaction T1 |
| --- | --- |
| r0(X)  w0(X)  r0(Y)  w0(Y)  commit0 | r1(X)  r1(Y)  commit1 |

12. Write a note on Optimistic Concurrency control with an example.

**PART C**

**Answer any TWO the following questions. 2x10=20**

13. Write SQL queries for the database given below: (7 + 3)

a) Employee Table: (name, department, contact number, email id and employee head id)

Department Table: (Department id, name, department head and employee id)

Salary Table: (employee id, salary)

Project Table: (Project id, duration and employee id).

Add Constraint on each table

Insert 5 records in all the tables.

### b) Select the details of the employee whose name start with P.

### How many employees are getting salary more than 5000?

### Select the project details of employee with minimum duration and maximum duration.

14. a) Describe the Snowflake schema in details.

b) Write a note on Amazon Redshift’s architecture. (5 + 5)

15. Explain with suitable example the deadlock situation in concurrency control database.

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