

**K. J. Somaiya Institute of Technology, Sion, Mumbai-22**  
(Autonomous College Affiliated to University of Mumbai)

*Supplementary exam* - August 2023

(B.Tech) Program: Artificial Intelligence & Data Science

Examination: SY

Course Code: AIC403

Date of Exam: 25/8/23

Duration: 2.5 Hours

Course Name: Database management System

Scheme: II

Semester: IV

Max. Marks: 60

**Instructions:**

- (1) All questions are compulsory.
- (2) Draw neat diagrams wherever applicable.
- (3) Assume suitable data, if necessary.

		Max. Mks	CO	BT level
<b>Q 1</b>	<b>Solve any six questions out of eight:</b>	<b>12</b>		
i)	What do you mean by the atomicity property of a transaction?	2	4	Understand
ii)	In the given query which of the keywords has to be inserted? INSERT INTO employee _____ (1002,Joey,2000);	2	4	Apply
iii)	Give examples of Unary Relationships.	2	4	Understand
iv)	What are the three levels of data abstraction?	2	1	Understand
v)	Give examples of composite attributes	2	2	Understand
vi)	Give an example of Many-to-One relationship	2	2	Understand
vii)	What operator tests for absence of data in a column using SQL?	2	6	Understand
viii)	What is the purpose of the SQL <i>AS</i> clause?	2	2	Understand
<b>Q.2</b>	<b>Solve any four questions out of six.</b>	<b>16</b>		
i)	List various types of attributes	4	1	Understand
ii)	Define the following i) Candidate Key ii) Foreign Key	4	4	Understand
iii)	Explain grant and revoke command with syntax and example.	4	4	Understand
iv)	Explain <i>Group by</i> clause with syntax and example.	4	2	Remember
v)	Discuss the role of Database Administrator	4	1	Understand
vi)	List any four applications of DBMS.	4	2	Understand
<b>Q.3</b>	<b>Answer any two of the three:</b>	<b>16</b>		
i)	Explain ACID properties of transactions.	8	6	Understand

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ii)	Draw ER diagram for Hospital Management System (Use DOCTOR,PATIENT,HOSPITAL and MEDICAL_RECORD Entity). Identify Primary Key and Foreign Key.	8	2	Apply
iii)	Normalize database Employee(emp_id,emp_name,phone,skill,salary,deptno,dept_name,jobno,job_title) upto 3NF	8	5	Apply
<b>Q.4</b>	<b>Solve any two questions out of three.</b>	<b>16</b>		
i)	Write SQL query for following consider table EMP(emp_no , dept_no, e_name ,salary, Designation, joining_date, DOB,city) i) Display names of employees whose experience is more than 10 years ii) Display age of employees iii) Display average salary of all employee iv) Display name of employee who earned highest salary	8	4	Apply
ii)	Consider the following schema: Salesman (sid, sname, city, commission) Orders (Order_no, Purch_amt, Ord_date, sid, cid) Customers (cid, cname, city) Frame the following queries using Relational Algebra: a) Display all the information about all the salesmen. b) Write a query to display the columns in a specific order, such as order date, salesman ID, order number, and purchase amount for all orders. c) Write a SQL query to locate customers who live in the city of 'Paris'. Return customer's name, city. d) Write a SQL query to calculate the total purchase amount of all orders. Return total purchase amount. e) Write a SQL query to count the number of customers. Return number of customers.	8	3	Apply
iii)	With an example, explain what is Conflict Serializable Schedule	8	6	Understand