



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

SUMMER-2024	
Exam Seat No.:	
Academic Year:2023-2024	Semester:IV
Class:SY	Program:B.Tech
Branch Code:INT	Pattern:2022
Name of Course:Database Management System	Course Code:INT222012
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains Three page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

Question No. 1 Attempt following Question

- 1a) Design a generalization specialization hierarchy for a motor vehicle sales company. The company sells motorcycles which have an engine number & cost; cars which have chassis number, an engine number, seating capacity & cost; trucks which have chassis number, an engine number & cost. (6) CO5

Question No. 2 Attempt following Question

- 2a) What is Normalization? What is the need of a normalized database with suitable examples? (6) CO5

Question No. 3 Attempt following Question

- 3a) Explain various aggregate functions used in SQL? (5) CO4, CO5

OR

- 3b) Demonstrate the use of (5) CO4, CO5
- (i) Having Clause
- (ii) Order By Clause

- 3c) Explain typical query processing strategy of DBMS? (5) CO4, CO5

OR

- 3d) I) Write a query to fetch the number of employees working in the department 'HR'. (5) CO4, CO5

III) Write a query to fetch all the records from the EmployeeInfo table ordered by EmpLname in descending order and Department in the ascending order.

EmployeeInfo Table:

EmpID	EmpFname	EmpLname	Department	Project	Address	DOB	Gender
1	Sanjay	Mehra	HR	P1	Hyderabad (HYD)	01/12/1976	M
2	Ananya	Mishra	Admin	P2	Delhi(DEL)	02/05/1968	F
3	Rohan	Diwan	Account	P3	Mumbai(BOM)	01/01/1980	M
4	Sonia	Kulkarni	HR	P1	Hyderabad (HYD)	02/05/1992	F
5	Ankit	Kapoor	Admin	P2	Delhi(DEL)	03/07/1994	M

EmployeePosition Table:

EmpID	EmpPosition	DateOfJoining	Salary
1	Manager	01/05/2024	500000
2	Executive	02/05/2024	75000
3	Manager	01/05/2024	90000
2	Lead	02/05/2024	85000
1	Executive	01/05/2024	300000

- 3e) Demonstrate the use of set operators with suitable examples in query writing. (6) CO4, CO5

OR

- 3f) Describe DROP TABLE command of SQL with Both the options CASCADE and RESTRICT? (6) CO4, CO5

Question No. 4 Attempt following Question

- 4a) What do you understand by concurrency control? Explain view serialization with proper examples? (5) CO2

OR

- 4b) Explain the transaction processing with the help of a state diagram. (5) CO2

- 4c) List and explain various issues while transactions are running concurrently in DBMS? (5) CO2

OR

- 4d) Explain Timestamp based concurrency control. (5) CO2

- 4e) Explain Cascaded aborts Recoverable and Non-recoverable Schedules. (6) CO2

OR

- 4f) What is a transaction? What are the possible causes of transaction failure? (6) CO2

Question No. 5 Attempt following Question

- 5a) What is log based recovery? Explain any one log-based recovery techniques with examples? (5) CO1, CO3

OR

- 5b) Explain different types of parallel database systems. (5) CO1, CO3
- 5c) Enlist and explain crash recovery methods with examples. (5) CO1, CO3

OR

- 5d) Explain centralized and client server architecture. (5) CO1, CO3
- 5e) Explain Distributed databases with its architecture. (6) CO1, CO3

OR

- 5f) List significant differences between Parallel database and Distributed databases. (6) CO1, CO3

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