Enrollment No.: _____

Darshan UNIVERSITY
योगः कर्मसु कौशलम्

Darshan Institute of Engineering & Technology
B.Tech. | Sem-2 | Winter-2023

Course Code	:	2101CS201	**Date**	:	02-12-2023
Course Name	:	Database Management System - I	**Duration**	:	150 Minutes
			Total Marks	:	70

Instructions:
1. Attempt all the questions.
2. Figures to the right indicates maximum marks.
3. Make suitable assumptions wherever necessary.

Q.1	**(A)**	Explain types of Database User.	**4**
	(B)	Define Data and Metadata.	**3**
		OR	
		Define Data Dictionary and Data Warehouse.	
	(C)	Explain ANSI SPARC Architecture.	**7**
		OR	
		Explain roles and responsibility of DBA.	
Q.2	**(A)**	Draw and write various symbols used in E-R diagram.	**4**
	(B)	Explain Specialization with example.	**3**
		OR	
		Explain Generalization with example.	
	(C)	Draw E-R diagram for Online Ticket Booking System.	**7**
		OR	
		Draw E-R diagram for School Management System.	
Q.3	**(A)**	Explain Anomalies in brief.	**4**
	(B)	Discuss Lossy Decomposition.	**3**
		OR	
		Discuss Lossless Decomposition.	
	(C)	Explain 1NF and 2NF with example.	**7**
		OR	
		Explain 3NF and BCNF with example.	

Q.4 **(A)** Explain steps in Query processing. **4**

(B) Discuss difference between Linear and Binary search. **3**

OR

Discuss difference between Exhaustive search and Heuristic based optimization.

(C) Explain Materialization in brief. **7**

OR

Explain Pipelining in brief.

Q.5 **(A)** Explain State Transition Diagram. **4**

(B) Discuss Serial Schedule with example. **3**

OR

Discuss Non-serial Schedule with example.

(C) Prepare SQL queries for given tables. **7**

Student (Rno, Name, Branch)
Result (Rno, SPI)

1. Display student name and roll no whose name starts with letter 'B'.
2. Display unique branches.
3. Display SPI of students from CE branch only.
4. Display name of students from CE or ME branch.
5. Display students details whose roll no is between 101 to 125.
6. Display average result of each branch and sort them in ascending order by SPI.
7. Create a view student_view with all columns.

OR

Prepare SQL queries for given tables.
City (CityID, CityName, Pincode)
Village (VillageID, VillageName, CityID)

1. Display city name starts with letter 'K'.
2. Display unique cities.
3. Display pincode of Rajkot city.
4. Display all details of Ahmedabad and Baroda city.
5. Display all the villages of Rajkot city.
6. Display city along with their villages & pin code.
7. Create a view Village_view with VillageID and VillageName.

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Table showing the Bloom's Taxonomy Level and Course Outcome

Question		Bloom's Taxonomy Level *	Course Outcome**
Q.1	(A)	U	CO1
	(B)	R	CO1
	(C)	U	CO1
Q.2	(A)	R	CO2
	(B)	U	CO2
	(C)	A	CO2
Q.3	(A)	U	CO3
	(B)	U	CO3
	(C)	U	CO3
Q.4	(A)	U	CO4
	(B)	U	CO4
	(C)	U	CO4
Q.5	(A)	U	CO5
	(B)	U	CO5
	(C)	A	CO5

* **Bloom's Taxonomy Level**

R - Remembrance, **U** - Understanding, **A** - Application, **N** - Analyze, **E** - Evaluate, **C** – Create

** **Course Outcome**

At the end of the course, student will be able to:

CO1 : discuss the basic concepts of database and database management systems.

CO2 : classify the basic concepts of data models, relational database design and relational algebra.

CO3 : apply normalization techniques on database.

CO4 : discuss query processing and optimization techniques.

CO5 : describe the concepts of transactions, concurrency and database security using PL/SQL programming.