PVP 20

Code: 20CS3502

III B.Tech - I Semester – Regular / Supplementary Examinations
NOVEMBER 2023

DATABASE MANAGEMENT SYSTEMS
(COMPUTER SCIENCE & ENGINEERING)

Duration: 3 hours Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.

BL – Blooms Level CO – Course Outcome

			BL	CO	Max. Marks
UNIT-I					
1	a)	Explain the advantages of DBMS.	L2	CO1	7 M
	b)	Explain the difference between Centralized and Client-Server Architecture for DBMS.	L2	CO1	7 M
OR					
2	a)	Define Data Models, Schemas and Instances.	L2	CO1	9 M
	b)	Explain the concept of Data Independence with an example.	L2	CO1	5 M
UNIT-II					
3	a)	Define ER Diagram. What are the components of an ER diagram?	L2	CO4	7 M
	b)	How do you refine the ER Design for a company database?	L3	CO4	7 M
OR					

4	a)	What are the various Relationship Types, Relationship Sets, Roles, and Structural Constraints in a ER diagram.	L2	CO4	7 M
	b)	Explain weak entity types. Give an example.	L2	CO4	7 M
		UNIT-III			
5	a)	What are the Relational Algebra Operations from Set Theory? Explain.	L2	CO2	7 M
	b)	Consider the SAILOR database Sailors (sid:string, sname:string, rating:integer, age:integer) Boats (bid:integer, bname:string, color:string) Reserves (sid:integer, bid:integer, day:date) Based on the above schema answer the following queries in SQL i)Find the names of sailors with age greater than 25 ii)Find the colors of boats reserved by 'John' iii)Find the names of sailors who have reserved both red and green boat.	L3	CO2	7 M
		OR			
6	a)	Explain different types of joins in Relational Algebra.	L2	CO2	7 M
	b)	Use Relational model constraints to define Primary keys and Foreign keys for the following relations using SQL Employee (Eno, Ename, Address, Phoneno, Dno)	L3	CO2	7 M

		Department (Dno, Dname, Address,) Project (Pno, Pname, Plocation, Dno)			
		UNIT-IV			
7	a)	Define Normalization. Explain briefly various keys and attributes participating in keys.	L2	CO3	7 M
	b)	What do you mean by multivalued dependency? Explain 4NF using an example.	L2	CO3	7 M
		OR			
8	a)	Compare 3NF and BCNF with examples.	L3	CO3	7 M
	b)	Explain join dependency and fifth normal form with an example.	L2	CO3	7 M
		UNIT-V			
9	a)	Explain the concept of shadow paging in recovery technique.	L2	CO1	7 M
	b)	Explain how Serializability is used for Concurrency Control.	L2	CO1	7 M
		OR			
10	a)	Explain how rollback and cascading rollback of a transaction is implemented?	L2	CO1	7 M
	b)	What are the different states of a transaction and commit point of a transaction?	L2	CO1	7 M