PVP 20

Code: 20CS3502

III B.Tech - I Semester – Regular Examinations - DECEMBER 2022

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)	Discuss the main categories of data models. What are the basic differences among the relational model, the object model, and the XML model?	L2	CO1	7 M
	b)	Discuss the main characteristics of the database approach and how it supports multiple views of data.	L2	CO1	7 M
OR					
2	a)	Explain the difference between two-tier and three-tier application architectures. Which is better suited for web applications? Why?	L2	CO1	7 M
	b)	Give examples of systems in which it may make sense to use database approach instead of a traditional file processing.	L2	CO1	7 M

UNIT-II					
3	a)	Discuss the role of a high-level data model in the database design process.	L4	CO4	7 M
	b)	Describe the two alternatives for specifying structural constraints on relationship types. What are the advantages and disadvantages of each?	L2	CO4	7 M
OR					
4	a)	Discuss the conventions for displaying an ER schema as an ER diagram.	L4	CO4	7 M
	b)	What is a participation role? When is it necessary to use role names in the description of relationship types?	L4	CO4	7 M
UNIT-III					
5	a)	Discuss the characteristics of relations that make them different from ordinary tables and files.	L3	CO2	7 M
	b)	Describe the four clauses in the syntax of a simple SQL retrieval query. Show what type of constructs can be specified in each of the clauses. Which are required and which are optional?	L3	CO2	7 M
OR					
6	a)	Discuss the various reasons that lead to the occurrence of NULL values in relations.	L3	CO2	7 M
	b)	How can the key and foreign key constraints be enforced by the DBMS? Is the enforcement technique you suggest difficult to implement? Can the constraint checks be	L3	CO2	7 M

		executed efficiently when updates are applied to the database?			
UNIT-IV					
7	a)	Why do practical database designs typically aim for BCNF and not aim for higher normal forms?	L3	CO3	7 M
	b)	Define fourth normal form. When is it violated? When is it typically applicable?	L3	CO3	7 M
OR					
8	a)	What is Join dependency? When does it arise?	L3	CO3	7 M
	b)	Define first, second, and third normal forms when only primary keys are considered. How do the general definitions of 2NF and 3NF, which consider all keys of a relation, differ from those that consider only primary keys?	L3	CO3	7 M
UNIT-V					
9	a)	Discuss the atomicity, durability, isolation, and consistency preservation properties of a database transaction.	L2	CO1	7 M
	b)	Discuss the problems of deadlock and starvation, and the different approaches to dealing with these problems.	L2	CO1	7 M
OR					
10	a)	What are some variations of the two-phase locking protocol? Why is strict or rigorous two-phase locking often preferred?	L2	CO1	7 M

	b)	Discuss the UNDO and REDO operations and the recovery techniques that use each.	L2	CO1	7 M