SREENIVASA INSTITUTE OF TECHNOGY AND MANAGEMENT STUDIES

(AUTONOMOUS)

Murukambattu, Chittoor

MCA DEPARTMENT

QUESTION BANK

For

18MCA122 -Database Management Systems

Regulation – 2018

Academic Year 2018 – 19

Prepared by

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SUBJECT NAME: Database Management Systems **SUBJECT CODE: 18MCA122**

YEAR &SEM: I & II **Academic Year: 2018-19**

UNIT I - Introduction & Database Design and E-R Model		
Database System Applications - Purpose of Database Systems - View of Data - Database Languages - Database Design - Database Architecture - Database Users and Administrators. The Entity-Relationship Model – Entity Sets –Relationship sets –Attributes –Entity-Relationship Diagrams –Weak Entity Sets –Extended E-R Features		
PART -A		
Q. No.	**Questions**	**Blooms Taxonomy Level**
1	What is database?	Remembering
2	What is DBMS?	Remembering
3	List out applications of Database system?	Remembering
4	Mention three types of views	Remembering
5	What are the 3 important components of ER Model	Remembering
6	Mention types of Attributes	Understanding
7	What is weak entity set	Remembering
8	List out additional features of EER Model	Remembering
9	Define Specialization and Generalization	Understanding
PART –B		
1	Describe the three levels of data abstraction?	Understanding
2	Explain various applications of database systems	Understanding
3	Discuss the overall architecture of database system in detail.	Understanding
4	Discuss the purpose of Database systems	Understanding
5	Explain ER Model in detail	Understanding
6	Write Extended ER Model.	Understanding
7	Write about Database Design in detail	Understanding
8	Discuss about Database Languages	Understanding
9.	Mention about Database Users and Administrator	Remembering
UNIT II - The Relational Model		
Introduction to The Relational Model –Integrity Constraints over Relations – Querying Relational Data – Logical Database Design: ER to Relational Relational Algebra And Calculus – Preliminaries – Relational Algebra – Relational Calculus – Expressive power of Algebra and Calculus.		
PART -A		
1	Define Relational Model	Understanding
2	List out various keys in DBMS	Remembering
3	What is Integrity Constraint	Understanding
4	List out the steps to convert ER Model into Relational Model	Remembering
5	What is Relational Algebra	Understanding
6	Define Relational Calculus	Understanding
7	List out Relational Algebra operators	Remembering
8	Mention two types of Relational Calculus	Remembering
PART –B		
1	Write about Integrity constraints and querying Languages	Understanding
2	Demonstrate the process of converting ER Model to Relational Model with an example	Applying
3	Explain Relational Algebra and its operators with examples	Understanding

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4	Illustrate Set operators in Relational Algebra	Applying
5	Write about Join Operators in Relational Algebra	Understanding
6	Write about Relational Calculus with examples	Understanding
7	Experiment Querying with the Relational Data	Applying
8	Write about expressive power of Algebra and calculus	Understanding
9	Explain Logical Database design with an example	Understanding
UNIT III - SQL & PL/SQL		
Interactive SQL Part I - Types of Data Constraints - Computations done on Table Data - Oracle functions - Grouping Data from Tables in SQL - Sub queries – Joins - Concatenation data from table columns using the Union - Intersect and Minus Clause – Views – Sequences - Granting and Revoking Permissions - Advantages of PL/SQL - The Generic PL/SQL block - Control Structure - What is Cursor - Database Triggers - Types of Triggers.		
PART – A		
1	What is Data Definition Language?	Understanding
2	Differentiate between alter and update commands	Understanding
3	Differential between drop and delete	Understanding
4	List out DDL commands	Remembering
5	Purpose of Group by clause	Understanding
6	What are views? How they are created?	Understanding
7	Mention the types of Joins	Remembering
8	What is the difference between WHERE and Having Clause?	Remembering
9	What is PL/SQL	Understanding
10	List out the SET operators	Remembering
PART – B		
1	Illustrate DDl, DML commands	Applying
2	Discuss briefly about SQL Functions	Understanding
3	Demonstrate various SQL Clauses like WHERE,DISTINCT,ORDER BY,GROUP BY AND HAVING	Applying
4	Write about various types of SQL Constraints	Understanding
5	Illustrate Various JOINs in SQL	Applying
6	Explain SQL Views with Examples	Understanding
7	What is PL/SQL and its advantages	Understanding
8	Write about PL/SQL cursors	Understanding
9	Update student data using Cursors	Applying
10	Illustrate SQL Sequence and set operators	Applying
UNIT IV - Relational Database Design & Transaction Management		
Schema refinement and Normal Forms – Introduction to schema refinement – Functional Dependencies– Reasoning about FDS – Normal Forms – Properties of Decompositions – Normalizations. Transaction Concept - Transaction States - Concurrency Executions – Serializability – Recoverability - Testing for Serializability		
PART – A		
1	What is Normalization	Understanding
2	List out the Anomalies that occur due to Redundancy	Remembering
3	Define Functional Dependency	Remembering
4	What is closure of F	Understanding

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5	List out the Normal Forms	Remembering
6	Mention the properties of Decomposition	Remembering
7	What is Transaction	Understanding
8	Mention the Transaction Properties	Remembering
9	List out the Transaction States	Remembering
10	What is Serialiazability	Understanding
	PART – B	
1	Explain the need of Schema Refinement	Understanding
2	Consider a relation R (A , B , C , D , E , F , G) with the functional dependencies- $A \rightarrow BC$ $BC \rightarrow DE$ $D \rightarrow F$ $CF \rightarrow G$ Compute A^+,D^+,BC^+	Applying
3	Demonstrate First 3 Normal Forms with Examples	Applying
4	Differentiate the difference between Third Normal Form and BCNF with example	Understanding
5	Categorize the Properties of Decomposition with Examples	Analyzing
6	Explain Transaction Properties and its states	Understanding
7	Write about concurrent Execution, Serial, Non Serial and Serializability schedules	Understanding
8	Discuss about conflict Serialiazability and View Serialiazability	Understanding
9	Illustrate Test for Conflict Serialiazability	Analyzing
10	Discuss about Recoverability in detail	Understanding
	UNIT V – Concurrency Control and Recovery System	
	Lock-Based Protocol - Timestamp-Based Protocols - Validation-Based Protocols - Deadlock Handling. Failure Classification - Storage Structure - Recovery and Atomicity - Log-Based Recovery - Recovery with Concurrent Transactions	
	PART-A	
1	List out the Concurrency Control Techniques in DBMS	Remembering
2	Why Read lock is called as Shared lock	Understanding
3	Why write lock is called as Exclusive Lock	Understanding
4	Define Two Phase Locking protocol	Understanding
5	What is Timestamp of a Transaction	Understanding
6	What is Deadlock and starvation	Understanding
7	What is the Purpose of wait-for-graph	Understanding
8	Mention failure classification types	Remembering
9	List out storage structure types	Remembering
10	Mention two log based approaches	Remembering
	PART – B	
1	Interpret Locking Protocol in detail	Understanding
2	Discuss the Time Stamp Ordering Protocol in Detail	Understanding
3	Write about Validation Protocol	Understanding
4	Illustrate Deadlock detection	Applying
5	Explain the two problems that occur with Lock based protocol	Understanding
6	Write about Recovery and atomicity	Understanding

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7	Explain Log based Recovery in detail	Understanding
8	What is Recovery with concurrent Execution	Understanding
9	Write about Deadlock Handling	Understanding
10	Briefly Infer Concurrency Control Techniques	Understanding