GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu)
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QUESTION BANK(DESCRIPTIVE – 12 MARKS)

Subject Name: Database Management Systems
Subject Code: 22A0512T
Course & Branch: B.Tech & (Common to CSE , CS, DS, AI&ML)
Year & Semester: II B.Tech II Semester **Regulation:** RG23

Q. No	Unit-I: Introduction to Database and ER diagrams	[BT Level] [CO][Marks]
1	Compare different types of Data Models with examples.	[L2][CO1][12]
2	Difference between the Database System and File System with neat sketch.	[L2][CO1][12]
3	Explain the concept of Schema and Instance and it's types with examples.	[L2][CO1][12]
4	Explain architecture of Database System.	[L2][CO1][12]
5	What is Data Independence? Explain the Three-tier architecture of Data Independence with neat diagram.	[L2][CO1][12]
6	Explain 3 Levels of Data abstraction with neat diagram.	[L2][CO1][12]
7	Explain Relation model with an examples.	[L2][CO1][12]
8	Explain Record Based Model with examples.	[L2][CO1][12]
9	Explain Entity Relationship Model with suitable example.	[L2][CO1][12]
10	Explain Object Oriented Based Model with example.	[L2][CO1][12]
Q. No	**Unit-II: Relational Model**	**[BT Level] [CO][Marks]**
1	Explain different Integrity Constraints in Relational model.	[L2][CO2][12]
2	Explain Relational Algebra with examples.	[L2][CO2][12]
3	Explain Relational Calcus with examples.	[L3][CO2][12]
4	Explain Selection, Projection & Union operation with examples.	[L3][CO2][12]
5	Implement referential integrity constraint by considering an examples.	[L3][CO2][12]
6	Explain Join, Cross product & Intersection operations in relational algebra with examples.	[L2][CO2][12]
7	Implement Set operations in relational algebra with examples.	[L3][CO2][12]
8	Create the following 2 tables in Relational Algebra using given schemas: Sailors(sid int, sname varcha2, rating int, age int) and Boats(bid int, bname varchar2, bcolor varchar2) i) Insert data values into tables. ii) Find the names of sailors with a rating greater than 5. iii) Retrieve the names and ages of sailors.	[L2][CO2][12]

9	Define DML? Explain DML commands with examples.	[L3][CO2][12]
10	Create the following 2 tables in Relational Calcus using given schemas: Sailors(sid int, sname varcha2, rating int, age int) and Boats(bid int, bname varchar2, bcolor varchar2) i) Insert appropriate data values into tables. ii) Find the names of sailors with a rating greater than 5. iii) Retrieve the names and ages of sailors.	[L3][CO2][12]
11	What is DDL? Explain DDL command syntaxes.	[L3][CO2][12]
Q. No	**Unit-III: SQL**	**[BT Level] [CO][Marks]**
1	Explain SELECT, FROM and WHERE Clauses with suitable examples.	[L4][CO3][12]
2	Create a Sailors, Boats & Reserves tables for Nested Query using given schemas: Sailors(sid int, sname varcha2, rating int, age int), Boats(bid int, bname varchar2, bcolor varchar2) and Reserve(bid int, bname varchar2, bcolor varchar2) i) Insert appropriate values into tables. ii) Find the names of sailors who have reserved boat no 103. iii) Find the names of sailors, who have reserved Red boat.	[L4][CO3][12]
3	Explain various aggregate functions and provide the suitable examples.	[L4][CO3][12]
4	Explain Primary Key and Foreign Key with suitable examples.	[L4][CO3][12]
5	Explain Unique and Not Null constraints with examples.	[L4][CO3][12]
6	Explain Integrity Constraints with examples.	[L4][CO3][12]
7	Implementation of Different types of join with examples, syntaxes.	[L4][CO3][12]
8	Explain and demonstrate the use of SQL functions for Date and Time, Numeric and String conversions.	[L4][CO3][12]
9	Create a Sailors, Boats & Reserves tables for View using given schemas: Sailors(sid int, sname varcha2, rating int, age int), Boats(bid int, bname varchar2, bcolor varchar2) and Reserve(bid int, bname varchar2, bcolor varchar2) i) Insert appropriate values into tables. ii) Find the names of sailors. Who have not reserved. iii) Find the colors of boats reserved by lubber.	[L4][CO3][12]
10	Explain the functions in SQL with Suitable example.	[L4][CO3][12]

Q. No	Unit-IV: Normalization	[BT Level] [CO][Marks]
1	Explain the need for normalization with suitable example.	[L3][CO4][12]
2	Explain functional dependency in the context of relational databases.	[L3][CO4][12]
3	Compare and contrast 1NF, 2NF with suitable examples.	[L3][CO4][12]
4	Difference between 3NF and BCNF with examples.	[L3][CO4][12]
5	Compare primary key, candidate key, Super key and foreign keys with suitable examples.	[L3][CO4][12]
6	Explain transitive dependency with 3NF. Provide an example to illustrate your answer.	[L3][CO4][12]
7	Illustrate Join Dependency and the Fifth Normal Form with example.	[L3][CO4][12]
8	What is Multi-Valued Dependency and the Fourth Normal Form with an example.	[L3][CO4][12]
9	Illustrate with an example about partial functional dependency and fully functional dependency.	[L3][CO4][12]
10	Explain lossy decomposition and loss less decomposition with example.	[L3][CO4][12]

Q. No	Unit-V: Transaction Management & Introduction to indexing techniques	[BT Level] [CO][Marks]
1	Describe the ACID Properties of a transaction.	[L2][CO5][12]
2	Explain Timestamp protocol with an example.	[L2][CO5][12]
3	Explain the two phase locking protocol with an example.	[L2][CO5][12]
4	Elaborate the states of a transaction with a neat Sketch.	[L2][CO5][12]
5	Define Serializability. Explain the types of serializability with examples.	[L2][CO5][12]
6	Explain various concurrency control protocols with locking techniques.	[L3][CO6][12]
7	What is dead lock in database system? Explain with suitable examples.	[L3][CO6][12]
8	Explain Log Based Recovery with example.	[L3][CO6][12]
9	Explain Optimistic concurrency control techniques with examples.	[L3][CO6][12]
10	Explain Hash Based Indexing with suitable examples.	[L2][CO6][12]

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QUESTION BANK(DESCRIPTIVE – 2 MARKS)

Subject Name: Database Management Systems
Subject Code: 22A0512T Course & Branch: B.Tech & (Common to CSE, CS, DS, AI&ML)
Year & Semester: II B.Tech II Semester Regulation: RG23

2 Marks Questions (Short)

Q.No	Unit-1: Introduction to Database system and Entity Relationship Model	[BT Level][CO][Marks]
1	What is Data and Information?	[L1][CO1][2 M]
2	What is Database system?	[L1][CO1][2 M]
3	What is DBMS?	[L1][CO1][2 M]
4	Define Entity Set?	[L1][CO1][2 M]
5	Define Schema? Explain types of schemas?	[L1][CO1][2 M]
6	Define Attribute?	[L1][CO1][2 M]
7	List the types of Relationships?	[L1][CO1][2 M]
8	What is Data Model? Explain types of Data Models?	[L1][CO1][2 M]
9	What is Inheritance?	[L1][CO1][2 M]
10	Difference between Database and File System?	[L1][CO1][2 M]

Q.No	Unit-2 : Relational Model	[BT Level][CO][Marks]
1	Define Primary key?	[L1][CO2][2 M]
2	What is Referential Integrity?	[L1][CO2][2 M]
3	What is Selection operation in Relation algebra	[L1][CO2][2 M]
4	What is Projection operation in Relation algebra	[L1][CO2][2 M]
5	What is join operation in Relation algebra	[L1][CO2][2 M]
6	Compare Unique and Not null constraint?	[L1][CO2][2 M]
7	Define Relational Calcus?	[L1][CO2][2 M]
8	What is DML? Explain different types of operations?	[L1][CO2][2 M]
9	What is constraint? Explain types of Constraints?	[L1][CO2][2 M]
10	Explain types of relational models?	[L1][CO2][2 M]

Q.No	Unit-3 : SQL: 2 Marks Questions (Short)	[BT Level][CO][Marks]
1	Define View? What are the types of views?	[L1][CO3][2 M]
2	Explain SQL functions?	[L1][CO3][2 M]
3	What is nested queries?	[L1][CO3][2 M]
4	What is join? Explain its types?	[L1][CO3][2 M]
5	List the Aggregate functions in SQL?	[L1][CO3][2 M]
6	Explain relational set operators with types?	[L1][CO3][2 M]
7	Explain about basic SQL querying “select” and “project”?	[L1][CO3][2 M]
8	Difference between views and joins?	[L1][CO3][2 M]
9	Implement of integrity constrains with syntax?	[L1][CO3][2 M]
10	Explain about sub queries?	[L1][CO3][2 M]

Q.No	Unit-4 : Normalization: 2 Marks Questions (Short)	[BT Level][CO][Marks]
1	Define Functional dependency?	[L1][CO4][2 M]
2	What is Transactive dependency?	[L1][CO4][2 M]
3	Define Partial functional dependency?	[L1][CO4][2 M]
4	What is Join dependency?	[L1][CO4][2 M]
5	What is Normalization?	[L1][CO4][2 M]
6	Define BCNF	[L1][CO4][2 M]
7	What is surrogate key?	[L1][CO4][2 M]
8	Difference between lossy join and lossless join?	[L3][CO4][2 M]

Q.No	Unit-5 : Transaction Concept & Introduction to Indexing Techniques 2 Marks Questions (Short)	[BT Level][CO][Marks]
1	Define Transaction?	[L1][CO5][2 M]
2	List the states of transaction?	[L1][CO5][2 M]
3	What is Lock Granularity ?	[L1][CO5][2 M]
4	What is Two Phase Locking ?	[L1][CO5][2 M]

5	What is Time Stamping ?	[L1][CO5][2 M]
6	Define Atomicity ?	[L1][CO5][2 M]
7	What is database Recovery ?	[L1][CO5][2 M]

Signature of the Staff:

Signature of Department Academic Committee Member 1:

Signature of Department Academic Committee Member 2:

Signature of Department Academic Committee Member 3