



PAPER ID-310405

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Subject Code: KCS501

Roll No:

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**BTECH**  
**(SEM V) THEORY EXAMINATION 2023-24**  
**DATA BASE MANAGEMENT SYSTEM**

**TIME: 3 HRS****M.MARKS: 100****Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.****2 x 10 = 20**

Q No.	Question	Marks	CO
a.	What is the concept of keys in database?	2	1
b.	What is strong & weak entity set?	2	1
c.	Explain referential integrity.	2	2
d.	Explain entity integrity constraints.	2	2
e.	Write different inference rule for functional dependency?	2	3
f.	Why do we normalize database?	2	3
g.	What do you mean by testing of serializability?	2	4
h.	Define replication in distributed database.	2	4
i.	Define concurrency control.	2	5
j.	Define exclusive lock.	2	5

**SECTION B****2. Attempt any three of the following:**

a.	Discuss three level of abstractions or schemas architecture of DBMS.	10	1
b.	What is Aggregate function in SQL? Write SQL query for aggregate function.	10	2
c.	Describe the following terms: (i) Multivalued dependency (ii) Trigger	10	3
d.	Discuss the procedure of deadlock detection and recovery in transaction?	10	4
e.	Write the salient features of graph based locking protocol with suitable example.	10	5

**SECTION C****3. Attempt any one part of the following:**

a.	State the procedural DML and nonprocedural DML with their differences.	10	1
b.	Discuss the role of database administrator & explain the database architecture.	10	1

**4. Attempt any one part of the following:**

a.	What is ER Diagram? Explain different components of an ER Diagram with employee project Management system.	10	2
b.	Write difference between cross join, Natural join, left outer join and right outer join with suitable example.	10	2

**5. Attempt any one part of the following:**

a.	What is functional dependency? Explain the procedure of calculating the canonical cover of a given functional dependency set with suitable example.	10	3
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b.	Describe the term MVD in the context of DBMS by giving an example. Discuss 4NF and 5NF also.	10	3
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**6. Attempt any one part of the following:**

a.	What is conflict serializable Schedule? Explain the difference between conflict and view serializable schedule using suitable example?	10	4
b.	What is Log? How is it maintained? Discuss the features of deferred database modification and immediate database modification in brief.	10	4

**7. Attempt any one part of the following:**

a.	Discuss 2 phase commit (2PC) protocol and time stamp-based protocol with suitable example. How the validation-based protocols differ from 2PC?	10	5
b.	What are multi version schemes of concurrency control? Describe with the help of an example. Discuss the various Time stamping protocols for concurrency control also.	10	5