



<b>CMR INSTITUTE OF TECHNOLOGY</b> <b>Dept. of Information Science &amp; Engineering</b>		USN <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>								
<b>Internal Assessment Test II – June 2026</b>										
Sub:	DATABASE MANAGEMENT SYSTEM						Code:	BCS403		
Date:	02/06/2026	Duration:	90 mins	Max Marks:	50	Sem/Sec:	IV A, B, C	Branch:	ISE	
<b>Answer any 5 full questions from the following.</b>										
								Marks	OBE	
									CO	RBT
1	Determine if the following schedule is serializable and explain your reasoning: i) T1 : R(X)W(X) T2 : R(X)W(X) T1 : COMMIT T2 : COMMIT ii) T1 : W(X)R(Y) T2 : R(X)W(Y) T1 : COMMIT T2 : COMMIT						10	5	L3	
2	Discuss the ER to Relational Mapping Algorithm for a Company Database with suitable examples for each step.						10	1	L2	
3	Explain different types of update operation on relational database.						10	1	L2	
4	Explain concurrency control based on Timestamp Ordering.						10	5	L2	
5	What are document-based NoSQL systems? Explain CRUD operations in MongoDB.						10	6	L2	

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5	What are document-based NoSQL systems? Explain CRUD operations in MongoDB.						10	6	L2	

6	<p>Consider the following relational database schema and write the queries in relational algebra expressions:</p> <p>EMP(Eno, Ename, Salary, Address, Phone, DNo)  DEPT(DNo, Dname, DLoc, MgrEno)  DEPENDENT(Eno, Dep_Name, Drelation, Dage)</p> <p>(i) List all the employees who reside in 'Belagavi'.  (ii) List all the employees who earn salary between 30000 and 40000.  (iii) List all the employees who work for the 'Sales' department.  (iv) List all the employees who have at least one daughter.  (v) List the department names along with the names of their managers.</p>	10	1	L3
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Faculty Signature

CCI Signature

HOD Signature

6	<p>Consider the following relational database schema and write the queries in relational algebra expressions:</p> <p>EMP(Eno, Ename, Salary, Address, Phone, DNo)  DEPT(DNo, Dname, DLoc, MgrEno)  DEPENDENT(Eno, Dep_Name, Drelation, Dage)</p> <p>(i) List all the employees who reside in 'Belagavi'.  (ii) List all the employees who earn salary between 30000 and 40000.  (iii) List all the employees who work for the 'Sales' department.  (iv) List all the employees who have at least one daughter.  (v) List the department names along with the names of their managers.</p>	10	1	L3
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