## B.E. (Computer Technology) Fifth Semester (C.B.S.)

## **Database Management System**

P. Pages: 2 Time: Three Hours			* 0 9 5 1 *			<b>TKN/KS/16/7433</b> Max. Marks : 80	
	Notes	5: 1. 2. 3. 4. 5. 6. 7. 8. 9.	All questions carry marks as in Solve Question 1 OR Question Solve Question 3 OR Question Solve Question 5 OR Question 7 OR Question 7 OR Question 9 OR Question 9 OR Question 11 OR Question 11 OR Question 11 OR Question 12 OR Question 12 OR Question 13 OR Question 14 OR Question 15 OR Question 15 OR Question 16 OR Question 16 OR Question 17 OR Question 17 OR Question 18 OR Question 18 OR Question 19 OR Quest	ns No. ns No. ns No. ns No. ns No. ons No. atness er nece	2. 4. 6. 8. 10. 5. 12. and adequate dimensions. essary.		
1.	a)	Explain	the architecture of DBMS with	n neat s	ketch diagram.		7
	b)	Who is	DBA? Explain different function	ons per	formed by DBA.		6
				0	R		
2.	a)	Define data model. Give different types of data model with example.					
	b)	What a	re the three levels of data abstra		6		
3.	a)	Explain	different Relational Algebra o		6		
	b)	Define		7			
				O	R		
4.	a)	Draw E – R diagram for a hospital management system.					
	b)	Define Relational Algebra. Explain tuple and domain relational calculus.					
5.	a)	Give detailed classification of indexing techniques. Explain each type with neat sketch.					
	b)	Define trigger. Write syntax of trigger. What are the different types of trigger that can be applied in relational databases.					
				O	R		
6.	a)		hort note on: ssertion	ii)	Trigger		4
	b)	Supplie Parts ( <u>F</u> Project	iven relational schema er ( <u>S#</u> , sname, status, city) <u>P#</u> , Pname, color, weight, city) ( <u>J#</u> , Project_Name, city) <u>#</u> , P#, J#, city)				

		i) Get the part number for parts such that no other part has higher weight value.	2					
		ii) Get project_Name for project supplied by.	2					
		iii) Get the supplier no. for supplier who supply project J1 with red Part.	2					
		iv) Get part_number (P#) for part supplied to any project in "London".	2					
		v) Get name of suppliers with letter starting as 'A'.	2					
7.	a)	Define query optimization. What are the various measures to evaluates the cost of query.						
	b)	Give block nested-loop join algorithm for computing the join relations and analyze its cost for the beast and worst case.						
		OR						
8.	a)	Explain various steps in Query processing with the help of neat sketch.	7					
	b)	Write short note on Query evaluation.						
9.	a)	Explain the states of a transaction with the help of state transition diagram.	6					
	b)	What is conflict serializability? Explain different form of schedule equivalence i.e. conflict serializability.	7					
		OR						
10.	a)	Explain lock based protocol for concurrency control in database transaction.						
	b)	What is two phase locking protocol? How does it guarantee serializability?	6					
11.	a)	Explain following with respect to crash recovery.						
		1) Shadow paging.	4					
		2) Check point.	3					
		3) Log based recover.	3					
		4) Buffer Management.	4					
OR								
12.	a)	Explain ARIES algorithm for Recovery.	7					
	b)	What are various types of failures that occur in a system and also explain recovery method used.						
		*****						

Primary keys are underlined. Obtain solution for the following queries using SQL.