B.E.(with Credits)-Regular-Semester 2012 - Computer Science and Engineering Sem IV CS 403 - Database Management System

P. Pages : 2 Time : Three Hours			ours * 4 0 0 3 *	GUG/W/16/3878 Max. Marks : 80	
	Note	es :	 All questions carry equal marks. Assume suitable data wherever necessary. Illustrate your answers wherever necessary with the help of necessary. 	eat sketches.	
1.	a)	Dra	w and explain DBMS System Structure.	8	
	b)	Exp	blain specialization and Generalization with the help of diagram.	8	
2.	a)	Exp	olain different attribute types.	4	
	b)	Def i) iii)	Time the term :ii)Candidate KeyAssociationiv)DML	4	
	c)	Are enti	weak entities necessary? What is the difference between a weak entry set? Can weak entity set be converted to strong entity?	ntity set and strong 8	
3.	a)	 Consider the following database Employee (emp_no, name, skill, pay_rate) Position (posting_no, skill) Duty – allocation (posting_no, emp_no, day, shift) 			
		Wri	ite SQL queries for the following.		
		i)	Get complete details from duty allocation.	1	
		ii)	Find the shift details for employee 'XYZ'.	1	
		iii)	Find the employee with the lowest pay rate.	1	
		iv)	Get a list of employees not assigned a duty.	1	
		v)	Find the names and the rate of pay of all employees who are alloc	cated a duty. 2	
		vi)	Get employees whose rate of pay is more than or equal to the rate 'XYZ'.	of pay of employee 2	
	b)	Exp	plain extended relational algebra operation.	8	
			OR		
4.	a)	Giv i) iii) v) vii)	e Syntax of following SQL commands. Create ii) Alter Drop iv) Insert Delete vi) Update Select viii) Where	8	

	b)	Define Domain. Explain domain constraint with example.		
5.	a)	State and prove Armstrong's Axioms for Functional Dependencies.	8	
	b)	Explain Boyce – Code Normal Form (BCNF) and also compare BCNF with 3 NF.	8	
		OR		
6.	a)	Compute the closure of following set F of Functional dependencies for relational schema. R = (A, B, C, D, E) $F: (A \rightarrow BC, CD \rightarrow E, B \rightarrow D, E \rightarrow A)$ List candidate key of R.	8	
	b)	Explain the following. i) 4 NF ii) 2 NF	8	
7.	a)	What is a Checkpoint? What is use of checkpoint in database.	8	
	b)	Explain ACID property with example.	8	
		OR		
8.	a)	Specify what is meant by "Transaction" Explain abstract transaction model using state diagram.	8	
	b)	What measures are required for recovery of a database using log based recovery methods?	4	
	c)	Explain two phase lock protocol.	4	
9.		Write short note on :	16	
		i) Parallel System		
		ii) Centralized System		
		iii) Multimedia Database		
		iv) Distributed System.		
		OR		
10.	a)	Explain On-line Analytical Processing.		
	b)	What is data warehouse? Explain its architecture.	8	
