No

Subject Code: 740201

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER-IV • EXAMINATION- WINTER • 2015

Date: 05\12\2015

Subject Name: ADVANCED DATABASES Time: 2:30 PM TO 5:00 PM Instructions: 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.				
Q.1	(a)	i) Explain the distinctions among the terms primary key, candidate key, super key.ii) Define the concept of aggregation. Give two examples of where this concept is useful.	07	
Q.2	(b)(a)(b)	Define: transaction. Explain the properties of transactions. Explain in detail relational algebra operations with suitable example. Consider the following relational database,	07 07 07	
		Employee(<u>person_name</u> , street, city) Works(<u>person_name</u> , company_name, salary) Company(<u>company_name</u> , city) Manages(<u>person_name</u> , manager_name) Give a relational algebra expression for the following queries:		
		 Give a relational algebra expression for the following queries: i) Find the company with the most employees. ii) Find the company with the smallest payroll. OR 		
	(b)	Let the following relation schemas be given: $R = (A, B, C)$ $S = (D, E, F)$ Let the relations $r(R)$ and $s(S)$ be given. Give a expression in the tuple relational calculus that is equivalent of the followings: $i) \qquad r \times s$ $ii) \qquad \prod_{A} (r)$	07	
Q.3	(a) (b)	Explain inheritance and multiple inheritance in object-oriented data model. Explain and compare two-phase locking protocol and strict two-phase locking protocol.	07 07	
Q.3	(a) (b)	OR Explain how the concept of object identity in the object –oriented model differs from the concept of tuple equality in the relational model. Explain in detail multi version concurrency control scheme.	07 07	
Q.4	(a) (b)	Explain in detail parallel database architecture. What is phantom phenomenon? Explain how index-locking technique solves the problem.	07 07	
		OR		
Q.4	(a)	Explain the distinction between the terms of serial schedule and serializable schedule.	07	

	(b)	Explain in detail three-phase commit protocol.	07
Q.5	` '	Explain in detail LDAP. Explain how the following differ: fragmentation transparency, replication transparency, and location transparency. OR	07 07
Q.5		Explain in detail applications of data mining. Explain in detail OLAP.	07 07
