Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER–IV • EXAMINATION– WINTER • 2014

Subject Code: 740101 **Date: 26-11-2014**

Subject Name: Distributed Database System

Time: 02:30 pm - 05:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1 **(a)** Explain in brief the components of distributed DBMS with neat diagram. **07**

(b) A relational database is given below. **07**

EMP

ENO	ENAME	TITLE
E1	J. Doe	Elect. Eng
E2	M. Smith	Syst. Anal.
E3	A. Lee	Mech. Eng.
E4	J. Miller	Programmer
E5	B. Casey	Syst. Anal.
E6	L. Chu	Elect. Eng.
E7	R. Davis	Mech. Eng.
E8	J. Jones	Syst. Anal.

ASG

ENO	PNO	RESP	DUR
E1	P1	Manager	12
E2	P1	Analyst	24
E2	P2	Analyst	6
E3	P3	Consultant	10
E3	P4	Engineer	48
E4	P2	Programmer	18
E5	P2	Manager	24
E6	P4	Manager	48
E7	P3	Engineer	36
E8	P3	Manager	40

PROJ

PNO	PNAME	BUDGET	LOC
P1	Instrumentation	150000	Montreal
P2	Database Develop.	135000	New York
P3	CAD/CAM	250000	New York
P4	Maintenance	310000	Paris

PAY

TITLE	SAL
Elect. Eng.	40000
Syst. Anal.	34000
Mech. Eng.	27000
Programmer	24000

Apply the BEA algorithm to vertically fragment the PROJ relation. Attribute Affinity Matrix is given below.

	A1	**A2**	**A3**	**A4**
A1	45	25	12	0
A2	25	70	65	50
A3	12	65	50	40
A4	0	50	40	10

Q.2 **(a)** Explain the layers of query processing. **07**

(b) What do you mean by DBMS standardization? Give an example to explain it. **07**

OR

(b) Explain the type of information required during fragment allocation. **07**

Q.3 **(a)** Explain views in centralized DBMS with example. **07**

(b) Give an example of reduction of primary horizontal fragmentation. **07**

OR

Q.3 **(a)** Explain distributed semantic integrity control with suitable example. **07**

(b) Give an example of reduction of derived fragmentation. **07**

Q.4 **(a)** Explain in brief the distributed query optimization algorithm R*. **07**

(b) Explain the properties of transactions. **07**

OR

Q.4	**(a)**	Explain join ordering in fragment queries.	**07**
	(b)	Give an example workflow during transactions.	**07**
Q.5	**(a)**	What is classification of concurrency control algorithm?	**07**
	(b)	Explain optimistic concurrency control algorithms.	**07**
		OR	
Q.5	**(a)**	Explain in detail types of networks.	**07**
	(b)	Explain wireless and broadband networks and internet protocols.	**07**

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