GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER – II(New)• EXAMINATION – SUMMER - 2020

Subject Code:3720222   **Date: 29/10/2020**
Subject Name: Parallel Algorithms
Time: 02:30 PM TO 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)**	Enlist and discuss various Parallel Algorithm Models	**07**
	(b)	Describe Desirable properties for parallel algorithm	**07**
Q.2	**(a)**	Explain Priority, Arbitrary and Common CRCW PRAM.	**07**
	(b)	Write an algorithm for Generic permutations.	**07**
		OR	
	(b)	Write an algorithm for Generic combination.	**07**
Q.3	**(a)**	Discuss parallel formulation for finding largest value in 1-d array.	**07**
	(b)	Explain canno's algorithm for Matrix multiplication.	**07**
		OR	
Q.3	**(a)**	Differentiate 1-D and 2-D partitioning in matrix vector multiplication.	**07**
	(b)	Parallel Formulation for Quick Sort on a CRCW PRAM.	**07**
Q.4	**(a)**	Discuss Parallel discrete event simulation in detail.	**07**
	(b)	Discuss parallel formulation of dijkstra algorithm.	**07**
		OR	
Q.4	**(a)**	Explain sequential algorithm for the selection problem	**07**
	(b)	Explain CREW searching on a sorted sequence.	**07**
Q.5	**(a)**	Discuss parallel formulation of Prim's algorithm for minimum spanning tree using 1-D block mapping.	**07**
	(b)	Write Floyd's Algorithm Parallel Formulation Using 2-D Block Mapping and derive parallel running time for Floyd's algorithm	**07**
		OR	
Q.5	**(a)**	Write Floyd's Algorithm Parallel Formulation Using 2-D Block Mapping and derive parallel running time for Floyd's algorithm.	**07**
	(b)	List techniques for All pair shortest path problem and explain parallel formulation of any one technique.	**07**

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