



KL
UNIVERSITY

KONERU LAKSHMAIAH
EDUCATION FOUNDATION
(Deemed to be University, Estd. u/s. 3 of UGC Act 1956)

B.Tech - Even Sem : End Semester Exam
Academic Year:2021-2022
19CS3252R - Parallel Algorithms
Set No: 2

Time:		Max.Marks: 100					
S.NO	Answer All Questions	Choice	Options	Marks	CO	CO BTL	COI BTL
1.	Which mapping technique is used to perform load balancing in parallel algorithm design?	choice Q-2		10Marks	CO1	3	3
2.	Describe control parallelism and data parallelism used in Parallel Random-Access Machines (PRAM)? Data parallelism to be implemented in which method of PRAM? Need of lock/semaphore in shared memory model.			10Marks	CO1	3	3
3.	Is interconnection network support parallel communication? Justify the answer with direct connection network and indirect connection network.	choice Q-4		15Marks	CO1	3	3
4.	In the four PRAM models (EREW, CREW, ERCW, and CRCW), which model is the most powerful? Why?			15Marks	CO1	3	3
5.	Perform Bitonic sort on these elements 3,5,8,9,10,12,14,20,95,90,60,40,35,23,18,0 with parallel approach.	choice Q-6		10Marks	CO2	4	4
6.	Is it parallel formulation in PRAM can be achieved with CRCW model? Describe the reasons for your answer?			10Marks	CO2	4	4
7.	Describe odd-even transposition sort with examples? Calculate the performance of these algorithms.	choice Q-8		15Marks	CO2	4	4
8.	Describe analytical modeling of parallel programs. What are the performance metrics for parallel systems?			15Marks	CO2	4	4
9.	Describe row wise 1-D partitioning used for parallel computation in matrix vector multiplication.	choice Q-10		10Marks	CO3	4	4
10.	Describe ISO efficiency metric of scalability?			10Marks	CO3	4	4
11.	How can matrix multiplication be done with parallel approach of cannon's algorithm?	choice Q-12		15Marks	CO3	4	4
12.	Describe pointer jumping. How is pointer ranking used in parallel approach?			15Marks	CO3	4	4
13.	Find out minimum cable required to connect computers in LAN by using prim's algorithm. Consider your own example with graphs nodes as computers and edge cost as length of wire.	choice Q-14		10Marks	CO4	4	4
14.	Describe Floyd's algorithm used for all pairs shortest path?			10Marks	CO4	4	4
15.	Describe single source shortest path with parallel algorithm approach.	choice Q-16		15Marks	CO4	4	4
16.	What are work splitting strategies? Describe generic scheme for dynamic load balancing?			15Marks	CO4	4	4

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