Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

Subject Code:180702		BE - SEMESTER-VIII EXAMINATION – SUMMER 2016 Code:180702 Date:05/05/201	MER 2016 Date:05/05/2016	
		0:30 AM to 01:00 PM Total Marks:	Total Marks: 70	
Inst	2.	Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.		
Q.1	(a) (b)	Explain the physical organization of Parallel Platforms. Explain pipelining and superscalar execution with suitable examples.	07 07	
Q.2	(a)	Explain One-to-all broadcast and all-to-one reduction communication with suitable examples	07	
	(b)	Explain various data decomposition techniques used to achieve concurrency with examples	07	
		OR		
	(b)	Discuss different parallel algorithm models in detail.	07	
Q.3	(a)	Explain the effect of granularity on performance for addition of n numbers using p processing element	07	
	(b)	Discuss different performance metrics of parallel systems. OR	07	
Q.3	(a)	Differentiate blocking and non-blocking message passing operations	07	
	(b)	Write a short note on Message Passing Interface.	07	
Q.4	(a)	Explain the various collective communication operations provided by MPI.	07	
	(b)	Explain the concept of barriers and read-write locks	07	
Q.4	(a)	OR Explain following functions with respect to Pthreads API. Also discuss arguments of these functions. i. pthread_create() ii. pthread_join()	07	
	(b)	Write a note on Synchronization primitives in POSIX	07	
Q.5	(a)	Explain Cannon's Algorithm for Matrix-Matrix Multiplication	07	
	(b)	Explain bubble sort and its variants.	07	
Q.5	(a)	OR Explain bitonic sort with example	07	
V .2	(a) (b)	Write an algorithm for Single-Source Shortest Paths.(Dijkstra's Algorithm)	07	
