

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. - SEMESTER – I • EXAMINATION – WINTER • 2014

Subject code: 3715502**Date: 07-01-2015****Subject Name: Parallel and Distributed Computing (Core - II)****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 Flynn's taxonomy. **07**
 (b) Explain SMP vs MPP vs Cluster Computing. **07**

- Q.2** (a) Explain Amdahl's and Gustafson's Laws. **07**
 (b) Explain Divide and Conquer algorithmic paradigm, and also give one scenario each where divide and conquer algorithm is best fit and worse fit. **07**

OR

- (b) Explain porting and benchmarking of the application. **07**

- Q.3** (a) Explain Parallel architecture **07**
 (b) Explain Parallelism by pipelining with proper diagram. **07**

OR

- Q.3** (a) Write short note on computers with distributed memory organization. **07**
 (b) What is the role of interconnection of network in multiprocessor and multicomputer system? **07**

- Q.4** (a) Discuss MPI Point to point communication. **07**
 (b) Discuss peer-to-peer architectural model for construction of distributed systems. **07**

OR

- Q.4** (a) Discuss important operating systems services that are essential for supporting the development of concurrent and scalable distributed systems. **07**
 (b) Discuss techniques for achieving high-performance in distributed file systems. **07**

- Q.5** (a) Discuss the role of naming services in distributed systems. List two navigation schemes that can be used for name resolution in domain name systems. **07**
 (b) Discuss space decoupling. **07**

OR

- Q.5** (a) What is fully distributed Mutual Exclusion Approach? **07**
 (b) Explain briefly the interaction among scheduler, interrupt-handler and dispatcher. Why saving context of process is nontrivial and how it can be done successfully? **07**
