Seat No.: Enrolment No.

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) Total Marks: 70** Time: 02:30 pm - 05:00 pm **Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. Q.1 Explain Flynn's taxonomy. 07 (a) (b) Explain SMP vs MPP vs Cluster Computing. 07 **Q.2 07** (a) Explain Amdahløs and Gustafsonøs Laws. Explain Divide and Conquer algorithmic paradigm, and also give one scenario 07 **(b)** each where divide and conquer algorithm is best fit and worse fit. OR Explain porting and benchmarking of the application. **07 (b)** Q.3 Explain Parallel architecture 07 (a) Explain Parallelism by pipelining with proper diagram. **07** (b) Q.3Write short note on computers with distributed memory organization. 07 (a) What is the role of interconnection of network in multiprocessor and (b) 07 multicomputer system? **Q.4** Discuss MPI Point to point communication. 07 (a) Discuss peer-to-peer architectural model for construction of distributed **(b)** 07 systems. OR **Q.4** (a) Discuss important operating systems services that are essential for supporting **07** the development of concurrent and scalable distributed systems. Discuss techniques for achieving high-performance in distributed file systems. 07 **(b) Q.5** (a) Discuss the role of naming services in distributed systems. List two navigation **07** schemes that can be used for name resolution in domain name systems. Discuss space decoupling. (b) 07 **Q.5** What is fully distributed Mutual Exclusion Approach? 07 (a) Explain briefly the interaction among scheduler, interrupt-handler and **(b)** 07 dispatcher. Why saving context of process is nontrivial and how it can be done successfully?
