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GUJARAT TECHNOLOGICAL UNIVERSITY

ME - SEMESTER- I (New course) • REMEDIAL EXAMINATION - SUMMER 2015 Subject Code: 3715502 Date:13/05/2015 Subject Name: Parallel & Distributed computing (core-II) Time: 10:30 am to 1:00 pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. (a) Why we require parallel computing? Explain concept of parallelism with your 0.1 **07** arguments. (b) Explain Amdahløs and Gustafsonøs Laws. 07 0.2(a) Explain Omega interconnection network with example. 07 **(b)** Discuss race condition. Explain it with example. 07 **(b)** Discuss mutual Exclusion with respect to parallel execution. 07 (a) Define granularity. Explain different types of granularity with suitable example. 0.3 07 **(b)** Explain Instruction level parallelism with example. 07 (a) Explain Data Parallelism with suitable example. 07 0.3**(b)** Explain MPI_SEND and MPI_RECEIVE routines with syntax and example. 07 (a) Discuss cluster computing with its architecture. 07 0.4 **(b)** Discuss Massive Parallel processing with example. 07 (a) Discuss grid computing with its architecture. 0.4 07 (b) Explain non-blocking message-passing operation in message passing Paradigm **07** with diagram. Why synchronization is required in distributed computing? **Q.5** 07 (a) Synchronization mechanism in distributed computing. **(b)** Discuss various design issues in distributed operating system. 07 (a) Write a short note on fault tolerance in distributed computing. **Q.5** 07 **(b)** List various consistency models used in DSM? Explain any one. 07
