

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA - SEMESTER-V • EXAMINATION – SUMMER • 2015

Subject Code: 2650005

Date: 08-05-2015

Subject Name: Parallel Programming

Time: 02:30 pm to 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)** Answer the following questions
- [1.] List all characteristics of good parallel program. Explain how Vision and Ocean circulation differ. **05**
- [2.] Explain terms (1.)SIMD (2.) MISD **02**
- (b)** What is shared memory? Explain shared memory architecture models with diagram. **07**
- Q.2 (a)** Explain how Sequential Programming differs with parallel Programming? **07**
- (b)** Explain what is usage of Parallelism in Sequential Machines? **07**
- OR**
- (b)** List all Parallel Computers and Explain Cluster Computer & Supercomputers. **07**
- Q.3 (a)** Explain Classification of Pipeline Processors. **07**
- (b)** [1] Explains Difference of Memory vs. Parallelism. **04**
- [2] Explains Difference of Overhead vs. Parallelism. **03**
- OR**
- Q.3 (a)** [1] Explain Difference of Forward Dependency vs. Backward Dependency. **03**
- [2] List the Type of Dependency. And explain any two dependencies. **04**
- (b)** What is loop splitting? What is loop interchange? Explain difference of loop splitting & loop interchange. **07**
- Q.4 (a)** Writes a simple UNIX program that perform Odd/Even interchange to alphabetize a list L of recodes on field x. **07**
- (b)** What is message passing model? Explain collective communication in message passing interface. **07**
- OR**
- Q.4 (a)** Writes a simple UNIX program that performs fixed 26-ways parallel solution to alphabetizing. **07**
- (b)** Explain point to point communication in message passing interface with example. **07**
- Q.5 (a)** Write a short note on Histogram Computation. **07**
- (b)** Explain following MPI routines **07**
- [1.] MPI_Wait() [2.] MPI_Scan() [3.] MPI_Recv() [4.] MPI_Free_mem()
- OR**
- Q.5 (a)** Write a short note on POSIX functions. **07**
- (b)** What is PVM? Explain how one task send message to another task in PVM. **07**
