Roll No. | | | | | | | | | | | | | Total No. of Pages : 02

Total No. of Questions : 08

M.Tech.(IT)/(CSE Engg.) (E-III) (Sem.–3)

PARALLEL COMPUTING

Subject Code : CS-517

M.Code : 35417

Time : 3 Hrs. Max. Marks : 100

INSTRUCTION TO CANDIDATES :

1. Attempt any FIVE questions out of EIGHT questions.
2. Each question carry TWENTY marks.

1. a) What is meant by Parallel Computing? Discuss the reduction paradigm of parallel computing and enlist various applications that need parallel computation,

   b) Describe the hardware taxonomy and elaborate the important features of Handler's classification along with its advantages.

2. a) Explain the PRAM model and discuss which PRAM model can be used to execute any other PRAM algorithm and how.

   b) Discuss the parallelism approaches and outline the tradeoff between data and control parallelism.

3. a) Discuss in detail the performance metrics and laws governing performance measurements of a parallel program computation.

   b) Define and explain the metrices-speedups, efficiency, utilization and communication overhead with respect to single program performance execution.

4. a) Outline the organization of a processor. Also, differentiate between static and dynamic interconnection with example.

   b) Explain Embeddings and Simulation along with their important features.

5. a) Discuss the technique of SPMD under software taxonomy of parallel computing,

   b) Briefly discuss the characteristics and features of S1MD and MIMD.

6. a) What is parallel programming? Explain data parallel programming along with its advantages and disadvantages.

   b) Compare and contrast the major characteristics of shared memory programming and distributed memory programming.

7. a) Explain in detail the scheduling and parallelization techniques. Also, discuss the support environments for parallel programming.

   b) How do we schedule parallel programs? Describe the process of loop scheduling with the help of an example program.

8. Explain the following :

   a) Flynn's classification

   b) Object-oriented programming

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.