H-26

D/SC-2012123

M.Sc. IT & CA (Sem. III) Examination
November-2012
High Performance Computing Clusture Service Computing
EMY : 3042

Faculty Code : D/SC
Subject Code : 2012123

Time : 3 Hours] **[Total Marks : 70**

1. Differentiate Followings. **10**
   (A) Coarse grained vs. fine grained parallelism.
   (B) FORALL statement vs. FORALL construct in HPF Fortran.

2. (A) Draw architecture of distributed memory model. Explain in detail with its advantages & disadvantages over shared memory model. **10**
   (B) Describe Flynn's classification. Give characteristics and application for each. **10**

   OR

   (A) Explain with diagram the UMA and NUMA architectures. Also discuss the advantages and disadvantages of both. **10**
   (B) Differentiate between shared memory and distributed memory parallel processing machines. **10**

3. (A) Discuss about different types of data dependencies in detail. **10**
   (B) Describe Hierarchical organization of processors. **10**

   OR

   (A) What do you understand by MPI and PVM ? What are the reasons to select MPI over PVM ? **10**
   (B) What is the function of parallelizing compiler ? Differentiate between implicit and explicit parallelism. **10**

4. (A) Explain Pipelined Computations with example in details and where it can be used effectively. **10**
   (B) What do you mean by inter-connection networks ? Describe crossbar switch and time shared bus architectures. **10**

   OR

   (A) Differentiate between temporal and data parallelism. Explain any two methods of parallelism in detail. **10**
   (B) Discuss different ways to use cache memory effectively in parallel computing. **10**

UM-2011224 Seat No._____

M. Sc. (IT) (Sem. III) Examination

November – 2011

EMY-3043 : High Performance Computing Cluster Service Computing

Time : 3 Hours] [Total Marks : 70

1 Attempt the following : (any five) **25**

(1) Write a note on parallel processing.
(2) Explain classification of computer architecture.
(3) What is shared memory ? Explain its multiprocessing architecture.
(4) Explain distributed memory multiprocessing.
(5) Explain abstract model of parallel computing.
(6) Explain pipelined computations.

2 Attempt the following : (any five) **25**

(1) Differentiate Scalar Vs. Vector pipelining.
(2) Explain architecture of PVM.
(3) Explain symmetric multiprocessors.
(4) Explain basic programming models of cluster computing.
(5) Discuss advantages of cluster server.
(6) Compare different open source architecture and discuss.

3 Attempt the following : (any two) **20**

(1) Discuss installation and administration issues of cluster.
(2) Explain some applications and algorithms of high performance computing.
(3) Explain cluster design in detail.
