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MCSE-011

MCA (Revised)
Term-End Examination

05992 **June, 2017**

MCSE-011 : PARALLEL COMPUTING

Time : 3 hours *Maximum Marks : 100*

Note : *Question no. 1 is* ***compulsory.*** *Attempt any* ***three*** *questions from the rest.*

1. (a) Explain the various classifications of parallel computers in detail. *10*

(b) Discuss the design issues of interconnection network in detail. *10*

(c) Discuss the performance and issues factor in pipelining. *10*

(d) Define MPI. Discuss the features of MPI-1 and MPI-2. *10*

2. (a) Discuss the various parallel programming models in detail. *10*

(b) Discuss the following : *10*

(i) Amdahl's Law

(ii) Gustafson's Law

3. (a) Solve the matrix multiplication problem using the parallel models. *10*

(b) Explain odd-even transposition sorting method. Provide an example to understand the concept. *10*

4. (a) Define granularity. How is parallelism achieved using grain size concept ? Explain in detail. *10*

(b) Define scalar and vector processing. Discuss the merits and demerits of scalar and vector processing. *10*

5. (a) Compute the Network diameter, Bisection width and Node degree of the following networks : *10*

(i) Linear Array

(ii) Ring Network

(iii) Torus Network

(b) Define 8×8 Benz network of 4 stage in detail. *10*