

Total No. of Questions : 6]

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SEAT No. :

[Total No. of Pages : 2

BE/Insem./Oct.-583

B.E. (Computer Engineering)
HIGH PERFORMANCE COMPUTING
(2015 Pattern) (Semester - I)

Time : 1 Hour]

Instructions to the candidates:

- 1) Attempt questions Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6.
- 2) Draw neat & Labelled diagrams if necessary.
- 3) Assume suitable data if necessary.
- 4) Figures to the right indicate full marks.

/Max. Marks : 30

Q1) a) Explain with suitable diagram SIMD, MIMD architecture. [4]

b) Explain the impact of Memory Latency & Memory Bandwidth on system performance. [6]

OR

Q2) a) Describe Uniform-memory-access and Non-uniform-memory-access with diagrammatic representation. [6]

b) Describe the scope of parallel computing. Give applications of parallel computing. [4]

Q3) a) Explain any three data decomposition techniques with example. [6]

b) Give the characteristics of tasks. [4]

OR

Q4) a) Give the characteristics of GPUs and any two applications of GPU processing. [4]

b) Explain any three parallel algorithm models with suitable example. [6]

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Q5) a) Explain Broadcast and Reduction example for multiplying matrix with a vector. [6]

b) Explain the concept of Scatter & Gather. [4]

OR

Q6) a) Compare the one-to-all broadcast operation for Ring, Mesh and Hypercube topologies. [6]

b) Explain the prefix-sum operation for an eight-node hypercube. [4]

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