D Y Patil College of Engineering,Akurdi, Pune

Department of Computer Engineering

HIGH PERFORMANCE COMPUTING (2015 PATTERN)

CLASS - BE **QUESTION BANK**

UNIT – I

1. Explain control structure of Parallel platform in detail.
2. What is the basic working principle of VLIW Processor.
3. What are the applications of parallel computing? Explain in detail.
4. Explain basic working principle of Superscalar Processor.
5. What are the limitation of Memory System Performance.
6. Explain SIMD, MIMD & SIMT Architecture.
7. What are the types of Dataflow Execution model.
8. Write a short notes on UMA, NUMA & Level of parallelism.
9. Explain cache coherence in multiprocessor system.
10. Explain N-wide Superscalar Architecture.
11. Explain interconnection network with its type?
12. Write a short note on Communication Cost In Parallel machine.
13. Compare between Write Invalidate and Write Update protocol.

UNIT – II

1. Explain decomposition, Task & Dependancy graph.
2. Explain Granularity, Concurrency & Task interaction.
3. Explain decomposition techniques with its types.
4. What are the characteristics of Task and Interactions?
5. Explain the Mapping techniques in details.
6. Explain parallel Algortithm Model.
7. Explain Thread Organization.
8. Write a short note on IBM CBE
9. Explain hisory of GPUs and NVIDIA Tesla GPU.
10. Explain recursive decomposition with suitable example.
11. Explain Graph Partitioning with suitable example.
12. Write a short note on NVIDIA Tesla GPU.

UNIT – III

1. Explain Broadcast & Reduce operation with help of diagram.
2. Explain One-to-all broadcast and reduction on a Ring?
3. Explain Operation of All to one broadcast & Reduction on a ring?
4. Write a pseudo code for One-to-all broadcast alogrithm on hypercube with different cases?
5. Explain term of All-to-all broadcast & reduction on Liner array, mesh and Hypercube topologies.
6. Explain Scatter and Gather Operation.
7. Write short note on Circular shaft on Mesh and hypercube.
8. Explain different approaches of Communication operation.
9. Explain all to all personalized communication?