QUESTION BANK

Programme	: B. Tech	Semester	: Winter 2024-25
Course	: Parallel and Distributed Computing	Course	: CSE4019

S. No	Questions
	Unit-1
1.	List and explain the Key Concepts and Challenges in parallel computing.
2.	Identify the need for Parallelism. Explain with neat sketch for serial and parallel computing in details.
3.	Classify the Types of parallel computing and its applications.
4.	Describe the advantages and disadvantages of parallel computing.
5.	Demonstrate with neat sketch for Shared memory and Distributed memory in details.
6.	Describe with sketch for Flynn's Taxonomy. Explain the features, advantages and disadvantages.
7.	Discuss with neat diagram for Multicore Processor Architecture and its advantages in details.
8.	Summarize the Performance Metrics for Processors.
9.	Classify the seven types of parallel programming models and its neat sketch in details.
10.	Identify the need for Parallel Algorithms and its types.
11.	Identify the need for OpenMP. Implement the Vector addition and Dot Product using OpenMP with sample output.
12.	Implement the Loop work sharing and sections work sharing using OpenMP with sample output.
	Unit-2
1.	Identify the Nontrivial parallel algorithm features. Explain the parallel algorithms and their design considerations in details.
2.	Summarize the preliminaries in parallel algorithm design. Describe the concepts of Decomposition, Tasks, and Dependency Graphs.
3.	Discuss the concepts of Granularity, Concurrency, and Task-Interaction in details.
4.	Classify the seven types of decomposition techniques with neat sketch in details.
5.	Demonstrate with neat sketch for Mapping Techniques for Load balancing.
6.	Differentiate static and dynamic mapping. Explain the Schemes for Dynamic Mapping in details.
7.	Discuss with neat sketch for Synchronous Parallel Processing.
8.	Explain with neat sketch for Vector Supercomputers and SIMD Computers in details.
9.	Describe with neat diagram for SIMD Architecture and its SIMD Parallel Process.
10.	Summarize with neat diagram for programming principles and its common programming principles.
11.	Implement the combined parallel loop reduction and orphaned parallel loop reduction using OpenMP with sample output.
12.	Implement the Matrix multiply operations using OpenMP with sample output.
	HAPPY LEARNING