

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2024****Subject Code:3170721****Date:01-06-2024****Subject Name:Parallel and Distributed Computing****Time:02:30 PM TO 05:00 PM****Total Marks:70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

		MARKS
Q.1	(a) What is Parallel Computing? Explain the use of it.	03
	(b) Explain difference between Parallel and Distributed Computing.	04
	(c) Write a short note on Flynn's Classification.	07
Q.2	(a) Explain memory issues in shared memory.	03
	(b) Draw and explain Pipeline Architecture.	04
	(c) Briefly Multiprocessor architecture.	07
OR		
	(c) Draw and explain Dataflow Architecture in parallel computing.	07
Q.3	(a) What is Vector Processing? Why it is required.	03
	(b) Explain Non-Uniform Memory Access (NUMA).	04
	(c) Discuss in detail the various performance metrics in parallel computing.	07
OR		
Q.3	(a) Define the terms: scheduling and contention.	03
	(b) Explain load balancing with suitable example.	04
	(c) Write a short note on divide and conquer algorithm.	07
Q.4	(a) Differentiate between synchronous and asynchronous Communication.	03
	(b) Discuss the advantages and disadvantage of distributed system.	04
	(c) List down and explain the design issues of distributed system.	07
OR		
Q.4	(a) Define Distributed System and need of it.	03
	(b) Differentiate between Client-Server and Peer-to-Peer model.	04
	(c) How Scalability and cache coherence work on multiprocessor systems?	07
Q.5	(a) Explain Distributed File System (DFS).	03
	(b) What is CUDA? Explain in details.	04
	(c) Draw and explain shared memory architecture.	07
OR		
Q.5	(a) Define the following terms: Consistency, OpenMP, and Atomicity.	03
	(b) Write a short note on Apache Hadoop.	04
	(c) Explain POSIX Threads. Explain pthread_t and pthread_kill in details.	07
