31/5/24

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Term End Examination

May/June 2024

CET3007B - High-Performance Computing

Question Paper ID: 037713

Faculty/School	School of Computer Science and Engineering	**Term**	Semester VI
Program	TY B.Tech CSE	**Duration**	**1 Hours 30 Minutes**
Specialization	-	**Max. Marks**	**40**

Section - 1 (8 X 5 Marks)
Answer any 8 questions

1	Explain parallelism with the help of grain size for matrix multiplication example.	**5 marks**	CO1, CO4	Creating
2	Explain with example, how parallelism can be used for divide and conquer strategies.	**5 marks**	CO2	Analysing
3	What is Message Passing Interface (MPI) ? Also explain MPI_send() and MPI_recv() with example.	**5 marks**	CO3	Understanding
4	Explain (a) MPI_Scatter (b) MPI_Gather (c) MPI_Broadcast (d) MPI_Finalize (e) MPI_Init	**5 marks**	CO3	Creating
5	Write the general MPI program structure and explain the same with diagrammatic support.	**5 marks**	CO3	Remembering
6	Explain the function definition syntax and function call syntax for CUDA kernel function.	**5 marks**	CO4	Understanding
7	Explain the CUDA programming model with threads, Blocks and Grids illustrated diagrammatically.	**5 marks**	CO4	Evaluating
8	Explain Memory Hierarchy in CUDA. What is the use of cudaMemcpy() function?	**5 marks**	CO4	Analysing

9	Define Iso-efficiency metric of scalability and what is speedup?	**5 marks**	CO1, CO5	Understanding
10	Draw and explain the Bus, Crossbar network topologies.	**5 marks** ٦	CO1, CO5	Understanding

END OF QUESTION PAPER

550