SVKM'S
DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
Academic Year (2022-23)
YEAR IV / Semester VIII

Program: B. Tech in Computer Engineering | **Max. Marks: 75**
Subject/Course: High Performance Computing | **Time: 9:00 a.m. to 12.00 p.m.**
Date: 27/07/2023 | **Duration: 3 Hours**

RE-EXAMINATION

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.

(1) This question paper contains **01** pages.
(2) All Questions Are Compulsory.
(3) Answer to each new question is to be started on a fresh page.
(4) Figures in the brackets on the right indicate full marks.
(5) Assume suitable data wherever required, but justify it.
(6) Support your answers with neat labelled diagrams, wherever necessary.

Question No.		Max. Marks
Q1 (a)	State and Explain the Advantages and Disadvantages of Parallel Computing. **OR** Explain what are the different classes of parallel computer architecture.	[05] [05]
Q1 (b)	Describe in detail the Shared Memory Model and Distributed Memory model along with its advantages and disadvantages.	[10]
Q2 (a)	Define Threading and explain its advantages. **OR** Explain in brief about the OpenMP Programming Model	[05] [05]
Q2 (b)	Explain Blocking message passing operation in detail.	[10]
Q3 (a)	Discuss the various Performance Metrics for Parallel Systems.	[05]
Q3 (b)	Explain the Effect of Granularity on Performance with an example. **OR** State and discuss the Amdahl's law for performance measurement.	[10] [10]
Q4 (a)	Explain Exploratory Decomposition technique with an example. **OR** State and explain different types of Parallel Algorithm Models	[10] [10]
Q4 (b)	Explain Hybrid Decomposition in brief.	[05]
Q5 (a)	Illustrate all Network Topologies used in interconnection networks **OR** Illustrate the concept of Pipelining and Superscalar Execution with an example	[10] [10]
Q5 (b)	Explain how Effective Memory Latency can be improved using Caches.	[05]

***** All the Best *****