Code No.: R22CS58111PE | R22 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
I–M.TECH–I–Semester End Examinations (Regular) - March- 2024
HIGH PERFORMANCE COMPUTING (PE-I)
(CSE)

[Time: 3 Hours] **[Max. Marks: 60]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 10 marks. Answer all questions in Part A.
Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART-A **(10 Marks)**

1. a)	Differentiate Intragrid and Intergrid.	[1M]
b)	What are the Benefits of Grid Computing?	[1M]
c)	Define Message Passing Interface.	[1M]
d)	What are condition variables?	[1M]
e)	What are the Cluster Classifications?	[1M]
f)	Define scatter(),gather() with example.	[1M]
g)	Define COMPaS.	[1M]
h)	Define Rigid Jobs.	[1M]
i)	Define Human – Machine Interface.	[1M]
j)	What is Pervasive Computing?	[1M]

PART-B **(50 Marks)**

2.	Illustrate an Autonomic Computing with example.	[10M]
	OR	
3.	Build a Grid Architecture Model.	[10M]
4.	Show how the two-dimensional matrix-vector multiplication program needs to be changed so that it will work correctly for a matrix of size n x m on a q x r process grid.	[10M]
	OR	
5.	Implement a producer-consumer framework in OpenMP using sections to create a single producer task and a single consumer task. Ensure appropriate synchronization using locks. Test your program for a varying number of producers and consumers.	[10M]
6.	Describe the Lightweight Communication Mechanisms.	[10M]
	OR	
7.	Explain the concept of Traditional Communication Mechanisms for clusters.	[10M]
8.	Explain Communication-Based Co-scheduling.	[10M]
	OR	
9.	Explain the Malleable Jobs with Dynamic Parallelism.	[10M]
10.	Explain about types of protocols used in device connectivity.	[10M]
	OR	
11.	Describe the concept of Palm OS.	[10M]

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