Code No.: CS8233PE | R20 | H.T.No. | | | 8 | R | | | | | |

CMR ENGINEERING COLLEGE: : HYDERABAD
UGC AUTONOMOUS
I–M.TECH–II–Semester End Examinations (Supply) - March- 2023
PARALLEL COMPUTING
(CSE)

[Time: 3 Hours] **[Max. Marks: 70]**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 20 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 **(20 Marks)**

1.	a)	Explain the Impact of Cache memory in Memory system performance.	[2M]
	b)	Explain Balanced Binary Tree communication.	[2M]
	c)	Define Exploratory Decomposition?	[2M]
	d)	What are the tools for evaluating a set of parallel programs?	[2M]
	e)	What are the key attributes that characterize the message-passing programming paradigm?	[2M]
	f)	What are the advantages of threads?	[2M]
	g)	List the uses of sorting.	[2M]
	h)	What is the time complexity of Bitonic Sort?	[2M]
	i)	Define Connected Components?	[2M]
	j)	What is meant by priority queue?	[2M]

PART-B **(50 Marks)**

2.	What are the limitations of Memory system performance? Explain in detail	[10M]
	OR	
3.	Explain the communication system All-to-All Personalized Communication.	[10M]
4.	What are the Characteristics of Inter-Task Interactions? Explain in detail.	[10M]
	OR	
5.	How to determine the best algorithm, evaluating hardware platforms, and examining the benefits from parallelism?	[10M]
6.	Explain Non-Blocking Communication Operations in detail?	[10M]
	OR	
7.	How to create and terminate a thread? Explain in detail?	[10M]
8.	Describe the process of Matrix-Vector Multiplication.	[10M]
	OR	
9.	Explain the Bubble Sort with suitable example.	[10M]
10.	Describe the procedure to find single-source shortest path using Dijkstra's Algorithm with your own example.	[10M]
	OR	
11.	Write the procedure to find two vertices in a graph that are connected or not using Transitive closure.	[10M]

****

8. What is recursion? Write a complete C program that reads a positive integer, calculate the factorial of the number using recursion, and print the result. [10M]

OR

9. Explain about Dynamic memory allocation functions in C. [10M]

10. Write a program to implement Binary search with an example. [10M]

OR

11. Write an algorithm or C program for sorting integers in ascending order using selection sort. [10M]

****