

Code No.: CS8233PE

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**CMR ENGINEERING COLLEGE: : HYDERABAD**  
**UGC AUTONOMOUS**  
**I-M.TECH-II-Semester End Examinations (Supply) – September- 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 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**

**(20 Marks)**

1. a) What is the role of Parallel Computing? [2M]
- b) List the advantages of Parallel Computing. [2M]
- c) What is the analysis of Parallel Programs? [2M]
- d) What are the models used for Parallel Algorithms? [2M]
- e) Write two differences between Multithreading and Multiprocessing. [2M]
- f) How many items are there in MPI? [2M]
- g) Write the importance of sorting. [2M]
- h) Define Bubble sort for parallel applications. [2M]
- i) How to find minimum cost spanning tree using Prim's Algorithm? [2M]
- j) What is the DFS Algorithm? [2M]

**PART-B**

**(50 Marks)**

2. List and explain the types of Parallel Computing. [10M]
- OR**
3. Explain the motivation and scope of Parallel Computing. [10M]
4. Discuss the principles of Parallel Algorithm design. [10M]
- OR**
5. Explain the analytical modeling of Parallel programs. [10M]
6. Discuss the programming shared address space platforms. [10M]
- OR**
7. Explain the message passing paradigm with example. [10M]
8. Discuss the Matrix Vector Multiplication with example. [10M]
- OR**
9. Perform the Radix sort on the following list of numbers 22, 58, 36, 02, 85, 20. [10M]
10. Explain the method of finding the Minimum Spanning Tree for a connected graph using Prim's algorithm. [10M]
- OR**
11. Explain the BFS with example. [10M]

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