

Roll No



**PRESIDENCY UNIVERSITY
BENGALURU**

**SCHOOL OF ENGINEERING
END TERM EXAMINATION - JUN 2023**

Semester : Semester VI - 2020

Course Code : CSE3079

Course Name : Sem VI - CSE3079 - Parellel Computing

Program : CSE

Date : 14-JUN-2023

Time : 9.30AM - 12.30PM

Max Marks : 100

Weightage : 50%

Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Question paper consists of 3 parts.
- (iii) Scientific and non-programmable calculator are permitted.
- (iv) Do not write any information on the question paper other than Roll Number.

PART A

ANSWER ALL THE QUESTIONS

(10 X 2 = 20M)

1. Mention any 4 decomposition techniques. (CO3) [Knowledge]
2. What are the two types of approaches in speculative decomposition? (CO3) [Knowledge]
3. Draw the structure of tree based network. (CO2) [Knowledge]
4. List any two differences between parallel systems and distributed systems. (CO1) [Knowledge]
5. List the advantage and disadvantage of barrier clause. (CO4) [Knowledge]
6. Define the term thread. (CO4) [Knowledge]
7. List the features including message passing cost. (CO2) [Knowledge]
8. What are the performance metrics used to evaluate parallel programs? (CO2) [Knowledge]
9. What is meant by Concurrency? (CO1) [Knowledge]
10. What is Uni Processor? (CO1) [Knowledge]

PART B

ANSWER ALL THE QUESTIONS

(5 X 10 = 50M)

11. Explain how can we execute more than one instruction at a time in single processing unit.
(CO1) [Comprehension]
12. Write a program for process 1 to send out a message containing the integer 42 to process 2 using send () and receive() primitives using MPI.
(CO4) [Comprehension]
13. Explain about various Parallel Algorithm Models.
(CO3) [Comprehension]
14. Write a program to scatter data {39, 72, 129, 42} with 4 processors using MPI and explain.
(CO4) [Comprehension]
15. Draw and Explain any four internetwork topologies.
(CO2) [Comprehension]

PART C

ANSWER ALL THE QUESTIONS

(2 X 15 = 30M)

16. Solve the given problem using Recursive Decomposition technique
(i). Find the Smallest of given Number [7M]
(ii). Sort the given list [8M]

5	12	11	1	10	6	8	3	7	4	9	2
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- (CO3) [Application]
17. Describe about send and receiving operations in Blocking & Non-Blocking communications.
(CO2) [Application]