Roll No.												

PRESIDENCY UNIVERSITY
BENGALURU

School of CSE

Mid - Term Examinations - November 2024

Semester: V
Course Code: CSE3079
Course Name: Parallel Computing
Program:B.Tech CSE

Date: 06/11/2024
Time: 02.00pm to 03.30pm
Max Marks: 50
Weightage: 25%

Instructions:

(i) Read all questions carefully and answer accordingly.
(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Qx2M=10M**

1	How Parallel Computing works?	**2 Marks**	**L1**	**CO1**
2	Relate the term superscalar execution.	**2 Marks**	**L1**	**CO1**
3	List the dependency issues in superscalar execution.	**2 Marks**	**L1**	**CO1**
4	Draw the diagram of completely-connected network of eight nodes.	**2 Marks**	**L1**	**CO1**
5	Write the formulae to calculate efficiency in performance metrics.	**2 Marks**	**L1**	**CO1**

Part B

Answer ALL Questions. Each question carries 10 marks. **4QX10M=40M**

6	**a.**	Demonstrate Multiplicity of functional units with neat diagram.	**5 Marks**	**L3**	**CO1**
	b.	Describe CPU instruction execution steps with neat diagram.	**5 Marks**	**L2**	**CO1**

Or

7	**a.**	Illustrate Superminivax-11 system architecture with neat diagram.	**5 Marks**	**L3**	**CO1**

	b.	Summarize Parallelism and pipelining within CPU with diagram.	**5 Marks**	**L2**	**CO1**
8	**a.**	Estimate superscalar execution with code and execution schedule.	**5 Marks**	**L3**	**CO1**
	b.	Compare tightly coupled system with loosely coupled system.	**5 Marks**	**L2**	**CO1**
		Or			
9	**a.**	Compare parallel system with distributed memory.	**5 Marks**	**L2**	**CO1**
	b.	Explain arithmetic pipeline with neat sketch.	**5 Marks**	**L2**	**CO1**
10	**a.**	Sketch the concept of granularity for adding 16 numbers.	**7 Marks**	**L3**	**CO2**
	b.	Generalize the Omega network with 421 codes.	**3 Marks**	**L2**	**CO2**
		Or			
11	**a.**	Predict tree structure with diagram.	**3 Marks**	**L2**	**CO2**
	b.	Interpret the one-to-all broadcast using ring topology.	**7 Marks**	**L3**	**CO2**
12	**a.**	Draw the diagram of a static and dynamic tree network.	**2 Marks**	**L2**	**CO2**
	b.	Interpret the all-to-one reduction using hypercube.	**8 Marks**	**L3**	**CO2**
		Or			
13	**a.**	Sketch bus topology.	**3 Marks**	**L3**	**CO2**
	b.	Examine the one-to-all broadcast mesh topology.	**7Marks**	**L3**	**CO2**