

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Winter 2022 - 23 Examinations

Semester: 7
Subject Code: 03105402
Subject Name: Parallel & Distributed Computing

Date: 11/10/2022
Time: 10:30am to 1:00pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Each of one mark)**(15)**

1. Cache coherence: For which shared (virtual) memory systems is the snooping protocol suited?

- A. Crossbar connected systems B. Systems with hypercube network
 C. Systems with butterfly network D. Bus based systems

2. Processes on the remote systems are identified by

- A. host ID B. host name and identifier
 C. identifier D. process ID

3. In distributed system each processor has its own

- A local memory B clock
 C both local memory and clock D none of the mentioned

4. If $X=0, y=10$ and two processes are as below

P1	P2
Store x,1	load R1,y
Store y,11	store y',R1
	load R2,x
	store x',R2

Which is not true in case of sequential consistency if the output is (x',y') ?

- A. (1,11) B. (0,10) C. (1,10) D. (0,11)

5. "Requesting node sending requested data starting from memory, and requestor which has made only sharing node, known as

- A Write miss B Write node
 C Read miss D Read Node

6. Match the provider with cloud based service.

- | | |
|--------------|--------------------------|
| 1. Amazon | A. Azure |
| 2. IBM | B. Elastic Compute Cloud |
| 3. EMC | C. Decho |
| 4. Microsoft | D. Cloudburst |

7. Shared Memory has a problem of Lack of scalability.-- TRUE/FALSE
8. In matrix multiplication using PTHREAD we can create as much number of threads to increase the performance. TRUE/FALSE
9. Coherence caches provide _____.
10. _____ is software which provides a programming model one level above the basic building block of processes and also provide message passing.
11. Example of Snoopy bus protocol _____
12. Define Memory Consistency.
13. Write Syntax of Thread Creation in Pthread ().
14. State Moore's Law
15. Give Full Form of NUMA

Q.2 Answer the following questions. (Attempt any three) **(15)**

- A) Discuss Performance metric of parallel system in detail.
- B) Explain Cloud services?
- C) Explain architecture of Distributed Shared Memory.
- D) Difference between Multicomputer and Multiprocessor.

Q.3 A) Explain One to All broadcast in different structure. **(07)**

B) Define Virtualization. List the types of Virtualization. Explain the types of Virtualization. **(08)**

OR

B) Differentiate Consistency and coherency in parallel system? Explain Cache coherency protocol in detail **(08)**

Q.4 A) What are the various issues in design of Distributed computing? **(07)**

OR

A) Explain Parallel Computer Model. **(07)**

B) Explain about RPC in detail and also explain normal procedure call v/s remote Procedure call. **(08)**