(6 pages)

Reg. No. :

Code No.: 6390

Sub. Code: PCSM 15/ ZCSM 15

M.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2021

First Semester

Computer Science - Core

DISTRIBUTED COMPUTING / DISTRIBUTED OPERATING SYSTEM

(For those who joined in July 2017 onwards)

Time : Three hours

Maximum : 75 marks

PART A — $(10 \times 1 = 10 \text{ marks})$

Answer ALL questions.

Choose the correct answer :

- 1. The loosely coupled systems are referred to as
 - (a) serial processing systems
 - (b) parallel processing systems
 - (c) data processing system
 - (d) distributed computing systems

- 2. LAN Stands for
 - (a) Local Area Network
 - (b) Limited Area Network
 - (c) Large Area Network
 - (d) Local Aided Network
- 3. The process of reconstruction of program objects from message data on the receiver side is known as ______
 - (a) decoding (b) encode
 - (c) buffer (d) translate
- 4. Which of the following two operations are provided by the Inter Process Communication facility?
 - (a) write and delete message
 - (b) delete and receive message
 - (c) send and delete message
 - (d) receive and send message
- 5. PRC stands for
 - (a) Remote Procedure Calls
 - (b) Remote Process Calls
 - (c) Remote Procedure Cells
 - (d) Remote procedure Count

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- 6. In a DSM system, data blocks migrate between nodes on demand in known as _____
 - (a) Data location and access
 - (b) Replacement strategy
 - (c) Thrashing
 - (d) Heterogeneity
- 7. Which one of the following condition are processes are allowed to request for new resources without releasing the resources that they are currently holding?
 - (a) Mutual-exclusion (b) Hold-and-wait
 - (c) No-preemption (d) Circular-Wait
- 8. _____ is the relocation of a process from its current location to another node
 - (a) Threads (b) Process
 - (c) Process migration (d) Processor Allocation
- 9. The model processing of the client's request is performed at the server's node.
 - (a) Remote service model
 - (b) Data-drive model
 - (c) Data-caching model
 - (d) Remote service model

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- 10. A <u>is a file that has multiple copies</u>, with each copy located on a separate file server.
 - (a) remote file (b) cached file
 - (c) data drive model (d) replicated file

PART B — $(5 \times 5 = 25 \text{ marks})$

- Answer ALL questions, choosing either (a) or (b). Each answer should not exceed 250 words.
- 11. (a) Explain the distributed computing system models with example.

Or

- (b) Describe the components of distributed computing environment with example.
- 12. (a) Enumerate the concept of synchronization in message passing.

Or

- (b) Discuss the handling failures n interprocess communication.
- 13. (a) Explain the design and implementation issues of distributed shared memory.

 \mathbf{Or}

(b) Explain the structure of shared memory with example.

Page 4 **Code No. : 6390** [P.T.O.] 14. (a) Discuss the clock synchronization with example.

\mathbf{Or}

- (b) Discuss the conditions for deadlock with example
- 15. (a) Explain the features of distributed file system with example.

Or

(b) Describe about the properties of atomic transaction with example.

PART C — $(5 \times 8 = 40 \text{ marks})$

- Answer ALL questions, choosing either (a) or (b) Each answer should not exceed 600 words.
- 16. (a) Discuss the types of network with example.

Or

- (b) Explain the basic concepts of ATM technology with example.
- 17. (a) Enumerate the various types of message passing techniques.

 \mathbf{Or}

(b) Explain the various buffering strategies in inter process communications.

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18. (a) Illustrate the PRC Model with neat diagram.

Or

- (b) Explain the Architecture of distributed shared memory with neat diagram.
- 19. (a) Discuss the deadlock avoidance with example.

Or

- (b) Demonstrate the process migration with neat diagram.
- 20. (a) Explain the File-Accessing Models with example.

 \mathbf{Or}

(b) Discuss the fault tolerance in distributed file systems with example.

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