

Course: B. Tech. Branch: Computer Engineering /Computer Science & Engg

Semester: VII

Subject Code & Name: BTCOE703B & Distributed System

Max Marks: 60

Date: 10/02/2025

Duration: 3 Hr.

Instructions to the Students:

1. Each question carries 12 marks.
2. Question No. 1 will be compulsory and include objective-type questions.
3. Candidates are required to attempt any four questions from Question No. 2 to Question No. 6.
4. The level of question/expected answer as per OBE or the Course Outcome (CO) on which the question is based is mentioned in () in front of the question.
5. Use of non-programmable scientific calculators is allowed.
6. Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

Q. 1 Objective type questions. (Compulsory Question)

12

- | | | | |
|---|---|---|---|
| 1 | The set of loosely connected computers are called as _____ | 1 | 1 |
| | a. LAN b. WAN c. Cluster d. Workstation | | |
| 2 | Which of the following computing models is not an example of distributed computing environment? | 2 | 1 |
| | a. Cloud computing b. Peer-to-peer computing c. Cluster computing d. Parallel computing | | |
| 3 | What are the characteristics of processor in distributed system | 2 | 1 |
| | a. They vary in size and function b. They are same in size and function c. They are manufactured with single purpose d. They are real-time devices | | |
| 4 | What are the advantages of file replication? | 2 | 1 |
| | a. Decreases performance b. Improves availability & c. They are consistent d. Improves speed | | |

performance

- 5 What are characteristic of NFS protocol? 2 1
- a. Search for file within directory
b. Read a set of directory entries
c. Manipulate links and directories
d. All of the mentioned
- 6 Transparency that enables multiple instances of resources to be used, is called 1 1
- a. Replication transparency
b. Scaling transparency
c. Concurrency transparency
d. Relocation transparency
- 7 The capability of a system to adapt the increased service load is called 1 1
- a. Scalability
b. Tolerance
c. Capacity
d. None of the mentioned
- 8 _____ involves taking a component, splitting it into smaller parts, and subsequently spreading those parts across the system. 2 1
- a. Replication
b. Distribution
c. Dispensation
d. Partitioning
- 9 A typical _____ program obtains a remote reference to one or more remote objects on a server and then invokes methods on them. 2 1
- a. Server
b. Client
c. Thread
d. Concurrent
- 10 If a process is executing in its critical section _____ 2 1
- a. any other process can also execute in its critical section
b. no other process can execute in its critical section
c. one more process can execute in its critical section
d. none of the mentioned
- 11 According to the ring algorithm, links between processes are 2 1

	a. bidirectional	b. unidirectional	c. both	d. none of the mentioned		
12	What are not the characteristics of a DFS?				2	1
	a. login transparency and access transparency	b. Files need not contain information about their physical location	c. No Multiplicity of users	d. No Multiplicity if files		

Q. 2 Solve the following. 12

- | | | | |
|----|---|---|---|
| A) | What is Good Message Passing System? Explain Features of a good message passing system. | 2 | 6 |
| B) | Explain the Call by value and Call by reference in Parameter Passing Semantics | 2 | 6 |

Q.3 Solve the following. 12

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|----|---|---|---|
| A) | Explain Strict Consistency model of DSM. | 2 | 6 |
| B) | Compare Centralized versus Distributed approach of load balancing algorithm | 4 | 6 |

Q. 4 Solve Any Two of the following. 12

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|----|---|---|---|
| A) | Explain Process transfer policies for load balancing algorithm in detail. | 2 | 6 |
| B) | Describe Design and implementation issues of Distributed shared memory | 3 | 6 |
| C) | Compare between stateful and stateless servers. | 4 | 6 |

Q.5 Solve Any Two of the following. 12

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|----|--|---|---|
| A) | Compare NFS and AFS distributed file system. | 4 | 6 |
| B) | Explain the different types of Election Algorithm in Distributed | 2 | 6 |

Processing

- | | | | |
|----|--|---|---|
| c) | What is binding agent? What is the role of binding agent in distributed systems? | 2 | 6 |
|----|--|---|---|

Q. 6 Solve Any Two of the following. **12**

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|----|---|---|---|
| A) | What are desirable Features of a Good Global Scheduling Algorithm? | 2 | 6 |
| B) | Describe Naming and location transparency in distributed file system. | 2 | 6 |
| C) | Describe How to solve Cache Consistency Problem. | 3 | 6 |

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