

Reg No.: \_\_\_\_\_

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**

Eighth Semester B.Tech Degree Regular Examination June 2023 (2019 Scheme)

**Course Code: CST402****Course Name: DISTRIBUTED COMPUTING****Max. Marks: 100****Duration: 3 Hours****PART A***Answer all questions, each carries 3 marks.*

Marks

- |    |  |     |
|----|--|-----|
| 1  | List the Characteristics of Distributed System   | (3) |
| 2  | What are the Transparency requirements of Distributed System.                          | (3) |
| 3  | What are the basic properties of scalar time.  | (3) |
| 4  | Explain about Termination Detection.   | (3) |
| 5  | Explain the issues in Deadlock detection.  | (3) |
| 6  | List the requirements of Mutual Exclusion Algorithms.                                  | (3) |
| 7  | List the different types of Messages in Rollback Recovery.                             | (3) |
| 8  | Explain no orphans consistency condition.  | (3) |
| 9  | Summarize Distributed File System Requirements.  | (3) |
| 10 | Differentiate between whole file serving and whole file caching in Andrew file System. | (3) |

**PART B***Answer any one full question from each module, each carries 14 marks.***Module I**

- |    |   |     |
|----|---|-----|
| 11 | a) Explain in Detail about the Design issues of a Distributed System. | (8) |
|    | b) What are the applications of Distributed Computing.                | (6) |

**OR**

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|----|--|-----|
| 12 | a) Explain about the Models of communication networks. | (8) |
|    | b) Compare logical and physical concurrency.           | (6) |

**Module II**

- |    |   |      |
|----|---|------|
| 13 | a) Illustrate the Working of Spanning Tree based Termination Detection Algorithm. | (10) |
|    | b) Define properties of Vector time.  | (4)  |

**OR**

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|----|---|-----|
| 14 | a) Explain Ring based Election Algorithm in Detail. | (8) |
|----|---|-----|

- b) Explain how logical clock is implemented. (6)

**Module III**

- 15 a) Explain Lamport's Algorithm for Mutual Exclusion. (8)  
b) Explain in Detail about Deadlock handling Strategies in a Distributed environment. (6)

**OR**

- 16 a) Illustrate Suzuki-Kasami's Algorithm. (8)  
b) Explain how Wait for Graph can be used in Deadlock Detection. (6)

**Module IV**

- 17 a) Explain about Lamport's Bakery Algorithm. (8)  
b) Explain Checkpointing and Rollback Recovery in Detail. (6)

**OR**

- 18 a) Explain the disadvantages of distributed shared memory. (8)  
b) Differentiate Consistent and Inconsistent State with example. (6)

**Module V**

- 19 a) Which are the assumptions made in Consensus and Agreement Algorithm (8)  
b) Explain about the file service architecture (6)

**OR**

- 20 a) Explain SUN NFS architecture (8)  
b) Explain about Google File System. (6)

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