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0400CST402052301

Pages: 2

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

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|----|---|-----|
| 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

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|----|---|------|
| 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)
