	Distributed System
SOURCE: 01	Distributed Computing
01	Introduction to Distributed Systems   Introduction to Distributed Computing
02	<u>Characteristics of Distributed Systems</u>
03	<u>Challenges of Distributed System</u>
04	Goals of Distributed System
05	Types of Distributed System
06	<u>Distributed System Models</u>
07	Software Concepts
08	Hardware Concepts
09	<u>Differentiation Between Distributed OS, Network OS and Middleware OS</u>
10	<u>Client Server Model</u>
11	Open System Interconnect on Reference Model in Distributed Computing
12	Inter-process Communication in Distributed Computing
13	Remote Procedure Call in Distributed Computing
14	Remote Method Invocation
15	<u>Differentiate Between Message Oriented Communication and Stream Oriented Communication</u>
16	Stream Oriented Communication
17	Message Oriented Communication
18	Group Communication
19	Middleware Services in Distributed Computing
20	Introduction to Synchronization in Distributed Computing
21	<u>Cristian Algorithm</u>
22	Berkeley Algorithm
23	Network Time Protocol
24	<u>Logical Clocks</u>
25	<u>Lamport Logical Clock</u>
26	<u>Vector Clock</u>
27	Bully Algorithm
28	Ring Algorithm
29	Mutual Exclusion
30	Centralized Algorithm for Mutual Exclusion in Distributed Computing
31	Lamport Algorithm and Mutual Exclusion
32	Ricart Agrawala Algorithm for Mutual Exclusion
33	Maekawa's Algorithm
34	Resource Management in Distributed Computing
35	Features of Global Scheduling Algorithm
36	Task Assignment Approach
37	Load Balancing Approach
38	Issues of Designing Load Balancing Algorithms
39	Load Sharing Approach in Distributed Computing
40	Introduction to Process Management in Distributed Computing
41	Process Migration in Distributed Computing  Three dain Distributed Computing
42	Threads in Distributed Computing
43	Process vs Threads in Distributed Computing
44	Code Migration in Distributed Computing
45	Consistency and Replication in Distributed Computing

46	Replication Management in Distributed Computing
47	Fault Tolerance in Distributed Computing
48	Distributed File System in Distributed Computing
49	Desirable Features of Distributed File System in Distributed Computing
SOURCE: 02	Distributed System  Distributed System
01	Distributed System Introduction   DS Architecture   Example
02	Distributed System Resource Sharing and Web Challenges   Data Migration   Computational Migration
03	System Model   Architecture Model   Fundamental Model
04	Limitations   Absence of Global Clock   Absence of Shared Memory
05	Distributed System   Lamport's Logic Clock   Limitation
06	Distributed System   Vector Clock   Vector Clock Solved Example
07	Causal Ordering of Messages in Distributed System   Birman Schiper Stephenson Protocol
08	Global State in Distributed System   Chandy Lamport Global State Recording Algorithm
09	Distributed System   Termination Detection Algorithm   Huang's Termination Detection Algorithm
10	Distributed Mutual Execution Classification, Requirements of Mutual Exclusion Theorem
11 12	<u>Distributed System   Distributed Mutual Exclusion   Token Based and Non-Token Based Algorithm</u> Distributed Mutual Exclusion   Non-Token Based Algorithm   Lamport Non-Token Based Algorithm
13	Distributed Mutual Exclusion   Non-Token Based Algorithm   Ricart-Agrawala Algorithm
14	Distributed Mutual Exclusion   Non-Token Based Algorithm   Maekawa's Algorithm
15	Distributed Mutual Exclusion   Token Based Algorithm   Suzuki Kasami Broadcast Algorithm Example
16	Distributed Mutual Exclusion   Token Based Algorithm   Singhal Heuristic Algorithm
17	Distributed Mutual Exclusion   Token Based Algorithm   Raymond Tree Algorithm
18	Performance Metric for Distributed Mutual Exclusion Algorithm  Distributed Decadles of Detection & Decadles of Distributed Systems  Performance Metric for Distributed Mutual Exclusion Algorithm
19	Distributed Deadlock Detection   Resource vs Communication Deadlocks Distributed System
20	Centralized Deadlock Detection   Completely Centralize Algorithm   Ho Ramamurthy Algorithm
21	Distributed Deadlock Detection   Path Pushing Algorithm with Example
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24	Classification of Agreement Problem   Byzantine   Consensus Problem   Interactive Consistency
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27	Mechanism for Building Distributed File Systems   Building DFS  Distributed Shared Memory   Algorithm for Implementation Shared Memory   Central-Server Algo
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29	Backward and Forward Error Recovery in Distributed System   Recovery in Concurrent System  Transaction in Distributed System   ACID Properties Distributed Transaction
30 31	Consistent Set of Checkpoints in Distributed System   Recovery in Distributed System
	Issues in Fault Tolerance   Voting Protocol n Distributed System
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35	Locks and Types of Lock   Distributed Transactional Lock Timestamp Ordering Protocol for Concurrency Control
35	Comparison of Methods for Concurrency Control   Optimistic Concurrency Control, Timestamp
36	Distributed Transaction: Flat and Nested Distributed Transactions
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38	<u>Distributed Transaction: Atomic Commit Protocols   Two Phase Commit</u> Concurrency Control in Distributed Transactions   Optimistic Concurrency Control, Timestamp
40	Distributed Deadlocks, Transaction Recovery in Distributed System
40	Replication: System Model and Group Communication, Fault-Tolerance Service
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42	High Available Service   Transaction with Replicated Data in Distributed System