Ch-1

1. What are the major goals of distributed system? Explain the need of transparency in distributed system along with the challenges in achieving that. - 2069 Chaitra
2. Define distributed system. Differentiate between an autonomous system and a distributed system with examples. - 2069 Sample-Question
3. “Distributed system acts as a single coherent system to its end user”. Justify the statement with its features and examples. - 2069 Sample-Question
4. Why do we need a distributed system? Explain the advantages and disadvantages of distributed system in detail. - 2069 Sample-Question
5. What are the main characteristics (design goals or objectives or requirements) of a distributed system? - 2069 Sample-Question
6. Why there are challenges in achieving some requirements of a distributed system? Explain the challenges associated with different requirements of distributed system. - 2069 Sample-Question
7. Define transparency. “Transparency is one the most important feature of a distributed system”, justify the statement with example. Explain the challenges in achieving the transparency in distributed system. - 2069 Sample-Question
8. Explain the different models of distributed system. - 2069 Sample-Question
9. Explain the different types of distributed systems: grid, cluster, cloud. - 2069 Sample-Question

Ch-2

1. How do you convince that middle-ware plays the important role in Distributed System? Explain the operation of RPC in client server communication in Distributed System. - 2069 Chaitra
2. What do you mean by file and directory service? Explain the operation of SUN NFS with its architecture. - 2069 Chaitra
3. Define distributed objects. How distributed objects communicate with other? - 2069 Sample-Question
4. Define distributed objects? What are the needs of event notification during the communication among distributed objects? Explain the distributed event notification architecture in detail - 2069 Sample-Question
5. Define distributed file system (DFS)? What are the different requirements of the distributed file system? - 2069 Sample-Question
6. Define distributed file system (DFS)? How does DFS encourage sharing a storage device, explain in detail with the help of a distributed file service architecture. - 2069 Sample-Question
7. Define transparency in distributed system. Give the reason for “access transparency is not maintained by conventional RPC”. How can it be solved, explain with detail modern RPC procedure. - 2069 Sample-Question

8. Define name service and explain its types. Explain the collection of name servers as a distributed system for the resolution of resource names along with resolution methods. - 2069 Sample-Question

Ch-3

1. Why network operating system (NOS) is widely preferred over distributed operating system (DOS) in practical distributed systems? Explain DOS as a middle-ware. - 2069 Chaitra
2. What are the different operating system layers? Explain the importance of each of the layers. - 2069 Sample-Question
3. Differentiate between network operating system and distributed operating system. - 2069 Sample-Question
4. Eventhough a distributed operating system is needed in a distributed system to perform a particular task; it is not widely popular in use, why? What and how a DOS in realized in a practical distributed system? - 2069 Sample-Question
5. Define middleware and explain its importance in distributed system with suitable diagram. - 2069 Sample-Question
6. Define and differentiate between process and threads. Explain the importance of threads in distributed system with suitable examples. - 2069 Sample-Question
7. Briefly explain the different types of operating system architectures. (Monolithic and microkernel architectures) - 2069 Sample-Question

Ch-4

1. Why network operating system (NOS) is widely preferred over distributed operating system (DOS) in practical distributed systems? Explain DOS as a middle-ware. - 2069 Chaitra
2. What is IDL? Explain CORBA RMI with its services. - 2069 Chaitra

Ch-5

1. Define logical and physical clocks. Explain Lamport time-stamp algorithm along with an example. - 2069 Chaitra
2. What is logical clock synchronization? What is the need of logical clock synchronization in distributed system? Justify the need with suitable example along with a logical clock synchronization algorithm. - 2069 Sample-Question
3. Define vector clock. Explain the clock synchronization algorithm using vector clock along with an example. - 2069 Sample-Question
4. Define logical and physical clocks. How can you synchronize the physical clock in a distributed network, explain with suitable algorithm. Also make a comment on the algorithm if any and suggest the solution. - 2069 Sample-Question
5. Define clock synchronization. What is the need of clock synchronization? Explain the Lamport's clock synchronization algorithm along with an example. - 2069 Sample-Question

6. Define event ordering, causal ordering, and global ordering with suitable examples. - 2069 Sample-Question

Ch-6

1. Present a practical scenario where you need an election algorithm. Explain an election algorithm with example that is suitable to your scenario. - 2069 Chaitra
2. Define distributed mutual exclusion. In how many ways the mutual exclusion can be achieved in distributed system? (see all mutual exclusion algorithms) - 2069 Sample-Question
3. How does mutual exclusion maintain synchronization in distributed system? Explain Ricart-Agrawala mutual exclusion algorithm along with an example. - 2069 Sample-Question
4. What is the need of an election algorithm; explain with few practical examples. Explain any one of the election algorithms by justifying its need. - 2069 Sample-Question
5. In what situations are the following election algorithms suitable? A) Bully B)Ring (also see another names for Bully and Ring) - 2069 Sample-Question
6. What is the need of multicast communication and consensus in distributed system, explain in brief. - 2069 Sample-Question

Ch-7

1. Compare passive replication with active replication approach. Also discuss with a technique that make the distributed system highly available. - 2069 Chaitra
2. Define replication. What are the needs (advantages) of replication? Also point out its drawbacks. - 2069 Sample-Question
3. What are the different requirements of replication in distributed system? - 2069 Sample-Question
4. Define replica manager (RM). Draw and explain the replication architecture. - 2069 Sample-Question
5. Explain the different replication models with suitable examples. - 2069 Sample-Question
6. How does replication provide fault tolerance and high availability services to the users? - 2069 Sample-Question

Ch-8

1. What do you mean by Distributed Deadlock? Explain the two-phase commit protocol of handling distributed transaction. - 2069 Chaitra
2. What are the flat and nested transactions? Describe the methods for concurrency control in distributed system. - 2069 Chaitra
3. Define transaction and nested transaction with examples. Explain how an atomicity is gained in transactions. - 2069 Sample-Question
4. Define concurrency control and its need in any transaction. What are the major goals and mechanisms of concurrency control? - 2069 Sample-Question

5. Define concurrency control. Explain the different methods of concurrency control. Also make a comparison among them. - 2069 Sample-Question
6. Define distributed transaction and nested distributed transaction with examples. - 2069 Sample-Question
7. What are the needs and roles of atomic commitment protocol (ACP) in distributed transactions? Explain different ACPs (two-phase and three-phase) in detail. - 2069 Sample-Question
8. Define distributed concurrency control. Explain the different methods of concurrency control in distributed transactions. Also make a comparison among them (same as Q.N.38) - 2069 Sample-Question
9. Define distributed deadlock in distributed transaction. Explain the deadlock resolution technique with an example. - 2069 Sample-Question
10. Explain transaction recovery techniques with example (log file, shadow paging etc.) - 2069 Sample-Question

Ch-9

1. What do you mean by faults, failures and errors? How do you handle faults in Distributed System? Explain process resilience approach in brief. - 2069 Chaitra
2. Define fault tolerance. Explain how fault tolerance is ensured in distributed system. What are the different fault tolerance techniques? - 2069 Sample-Question
3. Explain process resilient with example. - 2069 Sample-Question
4. Explain reliable client-server communication. - 2069 Sample-Question

Ch-10

1. What is IDL? Explain CORBA RMI with its services. - 2069