# Sample Questions

Computer Engineering

**Subject Name:** Distributed Computing **Semester: VIII**

Multiple Choice Questions

| **Choose the correct option for following questions. All the Questions carry equal marks** | |
|---|---|
| 1. | _____ and _____ are used to hide the access and location of the system. |
| Option A: | access transparency, location transparency. |
| Option B: | migration transparency, replication transparency |
| Option C: | network transparency, location transparency |
| Option D: | failure transparency, network transparency |
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| 2. | The two popular remote object invocation models are |
| Option A: | RPC and RMI |
| Option B: | CORBA and RMI |
| Option C: | MOM and RPC |
| Option D: | MPI and MOM |
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| 3. | In distributed systems, a logical clock is associated with _____ |
| Option A: | each instruction |
| Option B: | each register |
| Option C: | each process |
| Option D: | none of the mentioned |
| | |
| 4. | Process transfer policy in Load-balancing algorithms is_____ |
| Option A: | Determines how to exchange load information among nodes |
| Option B: | Determines to which node the transferable process should be sent |
| Option C: | Determines the total number of times a process can migrate |
| Option D: | Determines whether to execute a process locally or remotely |
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| 5. | Client centric consistency model useful in applications where_____ |
| Option A: | Data is static |
| Option B: | One client always updates data store |
| Option C: | Data updation is not required |
| Option D: | Data storage is not required |
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| 6. | In distributed file system, file name does not reveal the file's _____ |
| Option A: | Local name |
| Option B: | Global name |
| Option C: | Cache location |
| Option D: | Physical storage location |

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| 7. | The Ricart & Agrawala distributed mutual exclusion algorithm is: |
| Option A: | More efficient and more fault tolerant than a centralized algorithm. |
| Option B: | More efficient but less fault tolerant than a centralized algorithm. |
| Option C: | Less efficient but more fault tolerant than a centralized algorithm. |
| Option D: | Less efficient and less fault tolerant than a centralized algorithm. |
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| 8. | The kernel is _____ of user threads. |
| Option A: | a part of |
| Option B: | the creator of |
| Option C: | unaware of |
| Option D: | aware of |
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| 9. | What is stub? |
| Option A: | transmits the message to the server where the server side stub receives the message and invokes procedure on the server side |
| Option B: | Perform encryption and decryption |
| Option C: | Perform Routing operation |
| Option D: | Perform Retransmission of message |
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| 10. | In a distributed file system, _____ is mapping between logical and physical objects. |
| Option A: | Client interfacing |
| Option B: | Naming |
| Option C: | Migration |
| Option D: | Heterogeneity |
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| 11. | RPC is an example of ---------- |
| Option A: | synchronous communication |
| Option B: | asynchronous communication |
| Option C: | persistent communication |
| Option D: | time independent operation |
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| 12. | What is a remote object reference? |
| Option A: | The variables referenced by the Method Invocation |
| Option B: | An identifier for the skeleton referred by a client |
| Option C: | An identifier for the proxy referenced by a client |
| Option D: | An identifier for a remote object that is valid throughout a distributed system |
| | |
| 13. | In a distributed file system, _____ is mapping between logical and physical objects. |
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| Option B: | Naming |
| Option C: | Migration |
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| 14. | Concurrency transparency is |
| Option A: | Where users cannot tell where an object is physically located in the system |
| Option B: | Hide differences in data representation and how an object is accessed |
| Option C: | Hide that an object may be shared by several independent users |
| Option D: | Hide that an object is replicated |
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| 15. | Client centric consistency model useful in applications where_____ |
| Option A: | Data is static |
| Option B: | One client always updates data store |
| Option C: | Data updates not required in the local store |
| Option D: | Data storage is not required |
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| 16. | The ring election algorithm works by |
| Option A: | Having all nodes in a ring of processors send a message to a coordinator who will elect the leader |
| Option B: | Sending a token around a set of nodes. Whoever has the token is the coordinator. |
| Option C: | Sending a message around all available nodes and choosing the first one on the resultant list |
| Option D: | Building a list of all live nodes and choosing the largest numbered node in the list |
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| 17. | What is a stateless file server? |
| Option A: | It keeps tracks of states of different objects |
| Option B: | It maintains internally no state information at all |
| Option C: | It maintains only client information in them |
| Option D: | It maintains only client access information in them |
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| 18. | In which file model, a new version of the file is created each time a change is made to the file contents and the old version is retained unchanged |
| Option A: | Unstructured files |
| Option B: | Structured files |
| Option C: | Immutable files |
| Option D: | Mutable files |
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| 19. | The Ricart Agrawala distributed mutual exclusion algorithm is: |
| Option A: | More efficient and more fault tolerant than a centralized algorithm. |
| Option B: | More efficient but less fault tolerant than a centralized algorithm. |
| Option C: | Less efficient but more fault tolerant than a centralized algorithm. |
| Option D: | Less efficient and less fault tolerant than a centralized algorithm. |
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| 20. | Which of the following is NOT a technique for achieving scalability |
| Option A: | Centralization |
| Option B: | Distribution |
| Option C: | Replication |
| Option D: | Caching |
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| 21. | A layer which lies between an operating system and the applications running on it is called as - |
| Option A: | Firmware |
| Option B: | Hardware |
| Option C: | Software |
| Option D: | Middleware |
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| 22. | Goals of Distributed system does not include- |
| Option A: | Resource sharing |
| Option B: | Access to remote resources |
| Option C: | Sharing memory space |
| Option D: | Concurrent process execution |
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| 23. | which of the following is not the commonly used semantics for ordered delivery of multicast messages- |
| Option A: | Absolute ordering |
| Option B: | Persistent ordering |
| Option C: | Consistent ordering |
| Option D: | Casual ordering |
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| 24. | The type of transparency that enables resources to be moved while in use without being noticed by users and application is- |
| Option A: | Location Transparency |
| Option B: | Migration Transparency |
| Option C: | Relocation Transparency |
| Option D: | Access Transparency |
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| 25. | A paradigm of multiple autonomous computers, having a private memory, communicating through a computer network, is known as- |
| Option A: | Distributed computing |
| Option B: | Cloud computing |
| Option C: | Centralized computing |
| Option D: | Parallel computing |
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| 26. | Following is not the common mode of communication in Distributed system- |
| Option A: | RPC |
| Option B: | RMI |
| Option C: | Message Passing |
| Option D: | Shared memory |
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| 27. | Following is not the physical clock synchronization algorithm- |
| Option A: | Lamport’s Scalar Clock synchronization |
| Option B: | Christians clock synchronization |

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| Option C: | Berkley clock synchronization |
| Option D: | Network time protocol |
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| 28. | Distributed Mutual Exclusion Algorithm does not use- |
| Option A: | Coordinator process |
| Option B: | Token |
| Option C: | Logical clock for event ordering |
| Option D: | Request and Reply message |
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| 29. | Vector Timestamp Ordering Algorithm is an example of- |
| Option A: | Centralized Mutual Exclusion |
| Option B: | Distributed Mutual Exclusion |
| Option C: | Physical Clock Synchronization |
| Option D: | Logical Clock Synchronization |
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| 30. | What is fault tolerance in distributed Computing? |
| Option A: | Ability of system to continue functioning in the event of a complete failure. |
| Option B: | Ability of system to continue functioning in the event of a partial failure. |
| Option C: | Ability of system to continue functioning when system is properly working. |
| Option D: | Ability of distributed system to work in all conditions. |
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| 31. | In Task Assignment Approach, we have to- |
| Option A: | Minimize IPC cost |
| Option B: | Maximize IPC cost |
| Option C: | Fix IPC cost |
| Option D: | Keep constant IPC cost |
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| 32. | Backward error recovery requires- |
| Option A: | Grouping |
| Option B: | Assurance |
| Option C: | Check pointing |
| Option D: | Validation |
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| 33. | Which of these consistency models does not use synchronization operations? |
| Option A: | Sequential |
| Option B: | Weak |
| Option C: | Release |
| Option D: | Entry |
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| 34. | Which is not possible in distributed file system? |
| Option A: | File replication |
| Option B: | Migration |
| Option C: | Client interface |
| Option D: | Remote access |
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| 35. | X.500 is a- |


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| Option A: | Directory services |
| Option B: | Naming services |
| Option C: | Replication services |
| Option D: | Consistency services |
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| 36. | A DFS is executed as a part of- |
| Option A: | System specific program |
| Option B: | Operating system |
| Option C: | File system |
| Option D: | Application program |
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| 37. | Processes on the remote systems are identified by- |
| Option A: | Host ID |
| Option B: | Identifier |
| Option C: | Host name and identifier |
| Option D: | Process ID |
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| 38. | The function of load-balancing algorithm is- |
| Option A: | It tries to balance the total system load by transparently transferring the workload from heavily loaded nodes to lightly loaded |
| Option B: | It helps the process to know the time by simply making a call to the operating system. |
| Option C: | allows a process to access named entity |
| Option D: | It synchronizes the clocks |
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| 39. | A Multi-threaded Server has following threads- |
| Option A: | Dispatcher Thread |
| Option B: | Client Thread |
| Option C: | Worker Thread |
| Option D: | Client and Server Thread |
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| 40. | Maekawa's Mutual Exclusion Algorithm is based on- |
| Option A: | Coordinator selection |
| Option B: | Token |
| Option C: | Voting |
| Option D: | Tickets |

## Descriptive Questions

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| What are the different architecture models of Distributed System? Explain with suitable diagrams. |
| Write a short note on Raymond's Tree based Mutual exclusion algorithm. |
| What is RPC? Explain model of RPC. |
| What are different data centric consistency model? |

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| Write a short note on code migration. |
| Explain Bully election algorithm with example. |
| Define fault tolerance. Describe different types of faults. |
| Explain Hadoop distributed file system. |
| Explain Bully election algorithm with an example and different scenarios. Use neat diagrams for the same. |
| Draw and explain the general architecture of a Message-Queuing System |
| What are the features of Andrew File System? Define File service architecture of AFS? |
| Briefly describe the architecture and server operations of NFS. |
| Explain the different issues and steps involved in a good Load Balancing algorithm |
| Explain the Centralized algorithms for Mutual Exclusion in Distributed Systems. |
| Describe File caching schemes in brief. |
| What is the need for Code Migration? Explain the code migration issues in detail. |
| Define remote procedure call (RPC)? Describe the working of RPC in detail. |
| What is an open distributed system and what benefits does openness provide? |
| Explain Cristian's algorithm for physical clock synchronization |
| Describe the role of stubs in Remote Procedure Calls. |
| Define fault tolerance. Describe the different types of faults. |
| What are the different architecture models of Distributed System? Explain one with a suitable diagram. |
| Write a short note on the advantages of code migration. |
| Explain Stream oriented communication with example. |
| Explain Berkeley physical clock algorithm |
| Explain different load estimation policies used by load balancing approach. |
| Differentiate between NOS, DOS and Middleware in the design of a distributed systems. |
| Differentiate between Data Centric and Client centric Consistency models with examples. |
| What are the steps involved in the execution of Maekawa's Algorithm for Mutual Exclusion |
| Write short note on - Group Communication. |
| What is replication in distributed system? Explain the advantages of replication. |
| Write short note on - Network File System (NFS) |
| Discuss the Bully algorithm with appropriate example. State its advantages and disadvantages. |
| What are the different model of distributed system? Explain. |
| How Monotonic Read consistency model is different from Read your Write consistency Model? Support your answer with suitable example. |