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1. **Token based algorithms require 2 or more successive rounds of message exchanges among the sites**
 - a. TRUE
 - b. FALSE**
 2. **Synchronization delay is**
 - a. The time interval a request waits for its CS execution to be over after its request messages have been sent out.
 - b. The time required after a site leaves the CS and before the next site enters the CS**
 - c. The rate at which the system executes requests for the CS.
 - d. None of the above
 3. **The response time is**
 - a. The rate at which the system executes requests for the CS.
 - b. The time required after a site leaves the CS and before the next site enters the CS.
 - c. The time interval a request waits for its CS execution to be over after its request messages have been sent out**
 - d. None of the above
 4. **System Throughput is**
 - a. The rate at which the system executes requests for the CS**
 - b. The time required after a site leaves the CS and before the next site enters the CS.
 - c. The time interval a request waits for its CS execution to be over after its request messages have been sent out.
 - d. None of the above
 5. **Lamport's algorithm for mutual exclusion requires**
 - a. $4(n-1)$ messages per CS invocation
 - b. $(n-1)$ messages per CS invocation
 - c. n messages per CS invocation
 - d. $3(n-1)$ messages per CS invocation**
 6. **Ricart and Agrawala's algorithm for mutual exclusion requires**
 - a. $(n-1)$ messages per CS invocation
 - b. n messages per CS invocation
 - c. $2(n-1)$ messages per CS invocation**
 - d. None of the above
 7. **In which algorithm the execution of a CS requires \sqrt{N} REQUEST, \sqrt{N} REPLY and \sqrt{N} RELEASE messages in**
 - a. Ring Algorithm
 - b. Maekawa algorithm**
 - c. Lamport's algorithm
 - d. Ricart and Agrawala's algorithm
 8. **A failed message from S_i to S_j indicates that**
 - a. S_i cannot grant S_j 's request because it has currently granted permission to a site with a higher priority request.**
 - b. S_i would like to find out from S_j ,if it has succeeded in locking all sites in its request set.
 - c. S_i is returning the permission to S_j .
 - d. None of the above
 9. **A yield message from S_i to S_j indicates that**

- a. Si cannot grant Sj's request because it has currently granted permission to a site with a higher priority request.
- b. Si would like to find out from Sj ,if it has succeeded in locking all sites in its request set.
- c. Si is returning the permission to Sj**
- d. None of the above

An inquire message from Si to Sj indicates that

- a. Si cannot grant Sj's request because it has currently granted permission to a site with a higher priority request.

b. Si would like to find out from Sj ,if it has succeeded in locking all sites in its request set

- c. Si is returning the permission to Sj.
- d. None of the above

Communication in distributed systems is based on

- a. High level message passing
- b. Low level message passing**
- c. Middleware message passing
- d. Layered protocol

In distributed systems which of the following models are used for communication

- a. Message -oriented RPC
- b. Remote Procedure call
- c. Data Streaming
- d. All of the above**

Parameter Marshaling means

- a. Sending parameters into a message
- b. Receiving parameters into a message
- c. Packing parameters into a message**
- d. None of the above

A remote procedure call is

- a. inter-process communication**
- b. a single process
- c. a single thread
- d. a single stream

An RPC application requires

- a. specific protocol for client server communication
- b. a client program

- c. a server program
- d. **all of the mentioned**

16. The local operating system on the server machine passes the incoming packets to the
- a. **Server stub**
 - b. client stub
 - c. client operating system
 - d. none of the above
17. Which RPC is useful when a reply will be returned but client is not prepared to wait for it and do nothing in meantime?
- a. Synchronous RPC
 - b. **Asynchronous RPC**
 - c. One-way RPC
 - d. Deferred RPC
18. There are number of services that form part of DCE(Distributed Computing Environment) itself. Which service provides a transparent way of accessing any file in the system in the same way worldwide.
- a. Directory Service
 - b. Security Service
 - c. **Distributed File Service**
 - d. Distributed time Service
19. Language-level objects, from which proxy and skeletons are automatically generated. Depends on the particular language are called as
- a. Transient objects
 - b. Compile time objects
 - c. **Runtime objects**
 - d. Persistent Objects
20. A client binds to a distributed object: an implementation of the object's interface, called a _____, is loaded into the client's address space.
- a. Skeleton
 - b. **Proxy**
 - c. Client stub
 - d. Server Stub
21. The data stores in client centric consistency models have

- a. No simultaneous updates
- b. Very strong consistency models
- c. Inconsistencies that cannot be hidden
- d. **None of the above**

22. **Eventual consistency essentially requires only that updates are guaranteed to propagate to all replicas**

- a. **True**
- b. False

23. **Eventual consistent data store provides better performance when no of replicas accessed is limited to**

- a. $2^{\text{no. of clients}}$
- b. $2^{\text{no. of clients}-1}$
- c. **One**
- d. Both a and b

24. **If a process has seen a value of X at time t, then it will never see an older version of X at a later time. This consistency model is**

- a. Monotonic writes
- b. **Monotonic reads**
- c. Monotonic writes and reads
- d. None of the above

25. **A write operation is always completed before a successive read operation by the same process, no matter where that read operation takes place. This consistency model is**

- a. Read after writes
- b. Writes after reads
- c. **Read your writes**
- d. Writes your reads

26. **In writes follow reads consistency models, the updates are propagated as a result of previous read operations**

- a. **True**
- b. False
- c. Selectively true
- d. Selectively false

27. **If no updates take place for a long time, all replicas will gradually become consistent. This form of consistency is called**

- a. Local consistency
- b. Strict local consistency
- c. **Eventual consistency**

d. Strict Eventual consistency

In token-based algorithm for mutual exclusion, which of the following statement is true

- a. A unique token is shared among all sites
- b. A site is allowed to enter its CS if it possesses the token
- c. Sequence numbers are used instead of time stamps
- d. **All of the above**

Which algorithm uses heuristic approach to select a site for sending token request messages

- a. Suzuki kasami algorithm
- b. Raymond's algorithm
- c. Maekawa's algorithm
- d. **Singhal's algorithm**

Synchronization delay for Raymonds's tree-based method is

- a. $\log N$
- b. $2T$
- c. **$(T \cdot \log N)/2$**
- d. $T \cdot \log N$

Suzuki kasami broadcast algorithm requires ___ messages per CS invocation

- a. **N**
- b. \sqrt{N}
- c. $2(N-1)$
- d. $N/2$

Raymond's algorithm is prone to deadlocks

- a. True
- b. **False**

Design issue in Suzuki kasami algorithm is

- a. Outdated requests
- b. Current requests
- c. Outstanding requests
- d. **All of the above**

Which algorithm requires $N/2$ messages per CS execution

- a. Lamport's algorithm
- b. Suzuki kasami algorithm
- c. Maekawa's algorithm
- d. **Singhal's algorithm**

In Raymond's tree-based method, the holder variable of root site points to

- a. Left sub tree
- b. Right sub tree
- c. Root**
- d. Root site does not have holder variable