

Unit 7 - Week 5

Course outline

How does an NPTEL online course work?

Week 0 Assignment 0

Week 1

Week 2

Week 3

Week 4

Week 5

Consensus in Cloud Computing and Paxos

Byzantine Agreement

Failures & Recovery Approaches in Distributed Systems

Week 5: Lecture Material

Quiz : Assignment-5

Week 5 - FEEDBACK

Assignment-5 Solution

Week 6

Week 7

Week 8

Text Transcripts

DOWNLOAD VIDEOS

LIVE Session

Assignment-5

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-03-04, 23:59 IST.

1) True or False ?

1 point

Consider the following statement:

"Byzantine agreement cannot be reached among three processors if one processor is faulty"

True

False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

2) True or False ?

1 point

Consider the following statement:

"Pease showed that in a fully connected network, it is possible to reach an agreement if number of faulty processors ' f ' exceeds $(n-1)/3$ where n = number of processors"

True

False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False

3) Consider the following statement:

1 point

True or False ?

"Koo-Toueg algorithm is a coordinated checkpointing and recovery technique that takes a consistent set of checkpointing and avoids domino effect and livelock problems during the recovery"

True

False

No, the answer is incorrect.
Score: 0

Accepted Answers:
True

4) Find out the correct model for the given assumptions of a system:

1 point

Assumption 1: No bounds on process execution

Assumption 2: The drift rate of a clock is arbitrary

Assumption 3: No bounds on message transmission delays

Asynchronous distributed system

Synchronous distributed system

On demand computing system

Parallel processing system

No, the answer is incorrect.
Score: 0

Accepted Answers:
Asynchronous distributed system

5) Consider the following statements:

1 point

Statement 1: In the synchronous system model, consensus is solvable

Statement 2: In the asynchronous system model, consensus is impossible to solve

Statement 3: Paxos doesn't provide safety and eventual liveness

Only statement 1 is true

Only statement 1 and statement 2 are true

Only statement 2 and statement 3 are true

Only statement 3 is true

No, the answer is incorrect.
Score: 0

Accepted Answers:
Only statement 1 and statement 2 are true

6) Messages with 'receive' recorded but message 'send' not recorded and do not arise if processes roll back to a consistent global state are called_____

1 point

In-transit messages

Lost messages

Orphan messages

Duplicate messages

No, the answer is incorrect.
Score: 0

Accepted Answers:
Orphan messages

7) The _____may arise when a process rolls back to its checkpoint after a failure and requests all the other affected processes also to roll back.

1 point

Rollback

Phantom Effect

Domino Effect

Livelock problem

No, the answer is incorrect.
Score: 0

Accepted Answers:
Livelock problem

8) Cascaded rollback which causes the system to roll back to too far in the computation (even to the beginning), in spite of all the checkpoints is known as_____

1 point

Rollback

Phantom Effect

Domino Effect

Livelock

No, the answer is incorrect.
Score: 0

Accepted Answers:
Domino Effect

9) Consider the following statements :

1 point

Statement 1: In masking, system always behaves as per specifications even in presence of faults.

Statement 2: In non-masking, system may violate specifications in presence of faults. Should at least behave in a well-defined manner.

Only statement 1 is true

Both statement 1 and statement 2 are true

Both statement 1 and statement 2 are false

Only statement 2 is true

No, the answer is incorrect.
Score: 0

Accepted Answers:
Both statement 1 and statement 2 are true

10) True or False ?

1 point

Communication-induced checkpointing rollback recovery combines checkpointing with logging of non-deterministic events relies on piece-wise deterministic (PWD) assumption.

True

False

No, the answer is incorrect.
Score: 0

Accepted Answers:
False