

Paper Id: 110729

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4. Attempt any *one* part of the following:

7 x 1 = 7

- (a) What is Mutual exclusion? Describe the requirements of mutual exclusion in distribute system. Is mutual exclusion problem more complex in distributed system than single computer system? Justify your answer.
- (b) What do you mean by deadlock avoidance? Explain in brief. Describe edge chasing deadlock detection algorithm.

5. Attempt any *one* part of the following:

7 x 1 = 7

- (a) Describe mechanism for building distributed file system. Explain data access actions in distributed file system.
- (b) Discuss the architecture of distributed shared memory and various design issues related to this memory.

6. Attempt any *one* part of the following:

7 x 1 = 7

- (a) What is checkpoint in message passing system? Show that when checkpoints are taken after every K ($K > 1$) message sent, the recovery mechanism suffers from domino effect. Assume that a process takes a checkpoint immediately after sending the K^{th} message but doing nothing else.
- (b) What is voting protocol? Compare and contrast Static and dynamic voting protocol.

7. Attempt any *one* part of the following:

7 x 1 = 7

- (a) What do you mean by atomic commit in distributed database system? Also explain the two-phase commit protocol used for realizing atomicity in distributed system.
- (b) Discuss the optimistic methods for distributed concurrency control. Explain what are the different validations conditions for optimistic concurrency control?

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