CS5300

Homework #5

1) Problems 21.20, 21.21 (as discussed in the class), 21.25 PP. 809-810.

2) Consider the following two transactions:

*T*1:
read(*A*)
read(*B*)
if *A* = 0 **then** *B* := *B* + 1
write(*B*)

*T*2:
read(*B*)
read(*A)*
if *B* = 0 **then** *A* := *A*+ 1
write(*A*)

Add lock and unlock instructions to these transactions, so that they observe the two-phase locking protocol. Can the execution of these transactions results in a deadlock?

3) Compare deferred- and immediate-modification versions of log-based recovery schemes in terms of ease of implementation and overhead cost.

4) When a system recovers from a crash, it constructs an undo-list and a redo-list. Explain why log records for transactions on the undo-list must be processed in reverse order, while log records for transactions on the redo-list are processed in a forward direction.