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CS143
HW6

1)

A) T2 -> T1
It is conflict-serializable

T1	T2
	Write C
	Write A
Write D	
Read C	
Write A	

B) It can

T1	T2
X-Lock D	
Write D	
	X-Lock C
	Write C
	Unlock C
S-Lock C	
Read C	
	X-Lock A
	Write A
	Unlock A
	Commit
X-Lock A	
Write A	
Unlock D	
Unlock A	
Commit	

C) i. Yes. Read C in T1 would be done before Write C in T2 is committed
ii. It should only commit after T2 committed
iii. If T2 commit, T1 can also commit. If T2 abort, T1 should undo Write D

D) If TS(T2) < TS(T1), then the transaction would flow normally as T2 executes write C earlier than T1 executes read C and T2 executes write A before T1 executes write A

2)

1) False. The function of checkpoint is to log the modified pages (wrote) and to manage their rollbacks.
2) True. If the system crashed in the middle of a transaction, checkpoints provide logs allowing the administrator to decide actions on the transaction.
3) True. However its usefulness is dependent on the time between checkpoints
5) Then the manager have to continue from the last checkpoint with no previous damaged checkpoint.

3)

a) Two of the log pages will be read. It will stop after reading T1 committed
b) T0, T1, T4 will be redone. T2, T3, T5 will be undone.
c) At the end of recovery,

A = 100
B = 800
C = 2100