COS418 Precept 8 - Consistency

11/16/18

Circle the degree of consistency satisfied by each of the following sequence of reads and writes. Curly braces indicate operations within a transaction.

Q1				
P1: {V	${W(x) 1, W(y) 2}$		(y) 4}	Strictly Serializable
P2:	{W(x) 1, R	(y) 4}	Linearizability	
P3:	3: {W(x) 0, W(y) 4}			Sequential consistency Causal+ consistency
P4:	{R(x) 0}		(x) 1}	Eventual consistency
Q2				
P1: W((x) 1	R(y) 4		Linearizability
P2:	R(x) 1	R(y)	4	Sequential consistency
P3: R(x) 1 W(y) 4				Causal+ consistency
P4:	R(x) 1	R(y)	4	Eventual consistency
1 4.	14(x) 1	TX(y)	7	
Q3				
P1: W(x) 3 W(y) 7				Linearizability
P2:	W(x) 1			Sequential consistency
P3:	R(x) 1	R(x) 3	R(y) 7	Causal+ consistency
P4:	R(x) 1	R(x) 3	R(y) 7	Eventual consistency
P5:	R(x) 1	R(x) 3	R(y) 7	

P1: W(x) 3 W(y) 7	Linearizability
	Lincarizability
P2: W(x) 1	Sequential consistency
P3: R(x) 1 R(x) 3 R(y) 7	Causal+ consistency
P4: R(x) 3 R(x) 1 R(y) 7	Eventual consistency
P5: R(x) 1 R(x) 3 R(y) 7	
Q5	
P1: W(x) 1	Linearizability
P2: W(x) 3	Sequential consistency
P3: W(x) 7	Causal+ consistency
P4: R(x) 3 R(x) 7 R(x) 1	Eventual consistency
P5: R(x) 3 R(x) 1 R(x) 7	
Q6	
P1: W(x) 1	Linearizability
P2: W(x) 3	Sequential consistency
P3: R(x) 3 W(x) 7	Causal+ consistency
P4: R(x) 3 R(x) 7 R(x) 1	Eventual consistency
P5: R(x) 3 R(x) 1 R(x) 7	Eventual consistency
Q7	
P1: W(x) 1	Linearizability
P2: R(x) 1 W(x) 3	Sequential consistency
P3: R(x) 3 W(x) 7	Causal+ consistency
P4: R(x) 3 R(x) 7 R(x) 1 P5: R(x) 3 R(x) 1 R(x) 7	Eventual consistency