CPS-610 LAB 3

Hussain Afzal - 501043872
Ivan - 501033549

Part 1:

a)

6 schedules exist if we are using only whole transactions them being:

   i) T1->T2->T3
   ii) T1->T3->T2
   iii) T2->T1->T3
   iv) T2->T3->T1
   v) T3->T1->T2
   vi) T3->T2->T1

All these schedules would be serial as they would only occur after each previous one completes its transaction.

If we were to allow interleaving of each operation in each transaction. The number of possible transactions would shoot up to (13! - any invalid sequence where the transactions operations are out of order). In this set there would be many schedules that are not serial however there would still only be 6 real schedules that are serial in this set as well.

b) *Program is in Submitted Files*

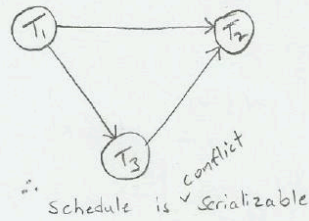c) *Program is in Submitted Files*

d)

Part 2:

CPS - 610
LAB - 3
Hussain
Ivan

PART-2
Schedule 1

T_1	T_2	T_3
r(X)		
w(X)		
		r(X)
		w(X)
	w(X)	
r(Y)		
w(Y)		
C1		
		w(Y)
		C3
	w(Y)	
	C2	

a)

$\therefore$ Schedule is conflict Serializable

b) $T_1 \to T_3 \to T_2$

c) N/A

Schedule 2

T_1	T_2	T_3
	r(X)	
	w(X)	
		r(Y)
		w(Y)
		r(Z)
		w(Z)
		C3
	r(Z)	
	w(Z)	
	C2	
r(X)		
w(X)		
C1		

a)

$\therefore$ Schedule is conflict Serializable
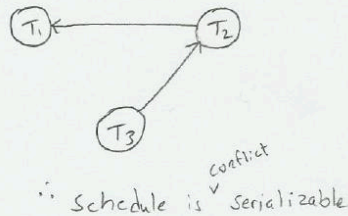
b) $T_3 \to T_2 \to T_1$

c) N/A

Schedule 3

T_1	T_2	T_3
w(A)		
	w(B)	
		w(C)
r(X)		
	r(X)	
r(Y)		
w(X)		
C1		
	w(Y)	
	C2	
		w(Y)
		C3

a)

conflict

$\therefore$ Schedule is not serializable

b) N/A
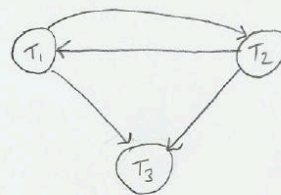
c) The schedule is not conflict serializable because there is a cycle in the graph.

var A, B, C no conflicts

View Serializability

	X	Y
initial r	T_1, T_2	T_1
update	T_1	T_2, T_3
final updte	T_1	T_3

$X: T_2 \rightarrow T_1$

$Y: T_1 \rightarrow T_3$

$\therefore$ Schedule 3 is View serializable

$T_2 \rightarrow T_1 \rightarrow T_3$