

CS245 Winter 2009 Final Solutions

1.

- (a) T
- (b) F
- (c) T
- (d) F
- (e) F
- (f) F
- (g) T
- (h) T
- (i) T
- (j) T

2.

- (a) x, 5 IOs (4 IOs just for index)
- (b) y, 5 IOs (4 IOs just for index)
- (c) 23 IOs (13 IOs just for index)

3.

- (a) B<-9, A<-4
<ABORT T1>, <ABORT T2>, FLUSH LOG
- (b) A<-4, B<-10
<ABORT T1>, FLUSH LOG
- (c) C<-14, A<-4
<ABORT T1>, <ABORT T3>, FLUSH LOG
- (d) C<-15
- (none)

4.

- (a)
r1(A) w1(B) c1 w2(A) r2(B) c2
r1(A) w1(B) w2(A) c1 r2(B) c2
r1(A) w1(B) w2(A) r2(B) c1 c2
r1(A) w1(B) w2(A) r2(B) c2 c1
r1(A) w2(A) w1(B) c1 r2(B) c2
r1(A) w2(A) w1(B) r2(B) c1 c2
r1(A) w2(A) w1(B) r2(B) c2 c1
w2(A) r1(A) w1(B) c1 r2(B) c2
w2(A) r1(A) w1(B) r2(B) c1 c2
w2(A) r1(A) w1(B) r2(B) c2 c1

- (b) 5
- (c) 3
- (d) 3
- (e) 7

5.

- (a) 15000 IOs
- (b) 75000 IOs
- (c) 35000 IOs
- (d) 25000 IOs
- (e) 260000 IOs

6.

- (a)
A: 50
B: 5

C: 2
D: 20

- (b) $R(*, B, C, D), 1$
- (c) $R(A, B, *, *), 0$
- (d) $R(*, B, C, D), 19$
- (e) $R(*, B, C, D), 39$

7.

(a) Yes

T1T2T3T4 or T1T2T4T3

Yes

$l-X1(Y) w1(Y) l-X2(X) w2(X) l-S2(Y) u2(X) l-S3(X) r3(X) l-S1(Z) r1(Z) l-X4(Z) w4(Z) l-S4(X) r4(X) r2(Y) u1(Y) u2(Y) u3(X) u1(Z) u4(Z) u4(X)$

(b) No

(none)

No (not conflict serializable)

8.

(a) All allowed

All allowed

(b) All allowed

A,B

(c) All allowed

A,B

(d) All allowed

A,B,C