

09. In schedule S there are 4 transactions each transaction is reading two data items and updating (on writing) the same and no two transactions are sharing the same data items. Then the schedule is equivalent to _____ number of serial schedule.

(a) 4 (b) 8
(c) 16 (d) 24

~~(d) \exists~~

T_1	T_2	T_3	T_4	Number of possible serial schedules with 4 Transactions.
R	R	R	R	
R	R	R	R	
w	w	w	w	

Number of serial schedule = 4!

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10. A schedule S is having 3 transactions and each transaction is having two different data items and a blind 'Write A' statement is in all the three transactions.

With the above information can you say whether the schedule is serializable or not.

- (a) can't say
- (b) serializable but it is not possible to determine how many equivalent serial schedules are there
- (c) serializable and it is equivalent to only two serial schedule
- (d) detailed schedule is needed.

Q) ~~log~~ Schedule S \rightarrow 3 transactions

~~All~~ T \rightarrow blind write \rightarrow write(A) first

if conflict serializable not possible
then new serializable is possibility.

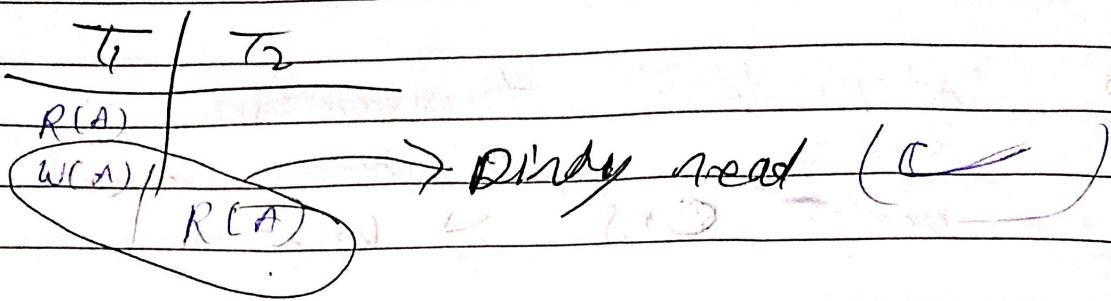
C) Serializable \Rightarrow it is equivalent to
only two serializable schedule.

11. An application program is using the isolation level ‘UnCommitted Read’. Which of the following problems are possible.

- (I) Dirty Read
 - (II) Unrepeatable Read
 - (III) Lost update
-
- (a) I, II & III
 - (b) II & III
 - (c) I & II only
 - (d) II only

~~(E) 11-8~~

Isolation level \rightarrow Uncommitted Read



- ~~(I)~~ Dirty Read
~~(II)~~ Unrepeatable Read
~~(III)~~ Lost updates

~~C~~ $L \not\rightarrow T$ only

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12. Which of the following statement is false?

- (a) Conservative or static 2 PL protocol is dead lock free and guarantees recoverable schedule.
- (b) Strict 2 PL protocol is not dead lock free and guarantees serializable schedules.
- (c) Basic timestamp ordering suffers from cascading roll back (i.e., not recoverable schedule) and dead lock free.
- (d) strict time stamp ordering is recoverable and conflict serializable
- (e) None

- Ques 12) False statement -
- (a) Conflict air static 2 PL protocol is deadlock free & guaranteed recoverable schedule. (X)
- (b) Strict 2 PL is not deadlock free & guaranteed recoverable. (✓)
- (c) Basic time-stamp ordering suffers from cascading rollback & deadlock free. (✓)
- (d) strict time stamp ordering is recoverable & conflict serializable. (✓)
- (e) None

13) In multiple Granularity locking protocol at a particular node transaction T_1 is holding SIX LOCK. When transaction T_2 is also requesting a lock, at that node which other lock is allowed.

- (a) IS
- (b) IX
- (c) S
- (d) SIX
- (e) X

@ 238 on Q. 13 Multiple Granularity Locking

Ti Halos & Lock

T₂ request a lock

that node which other lock is allowed

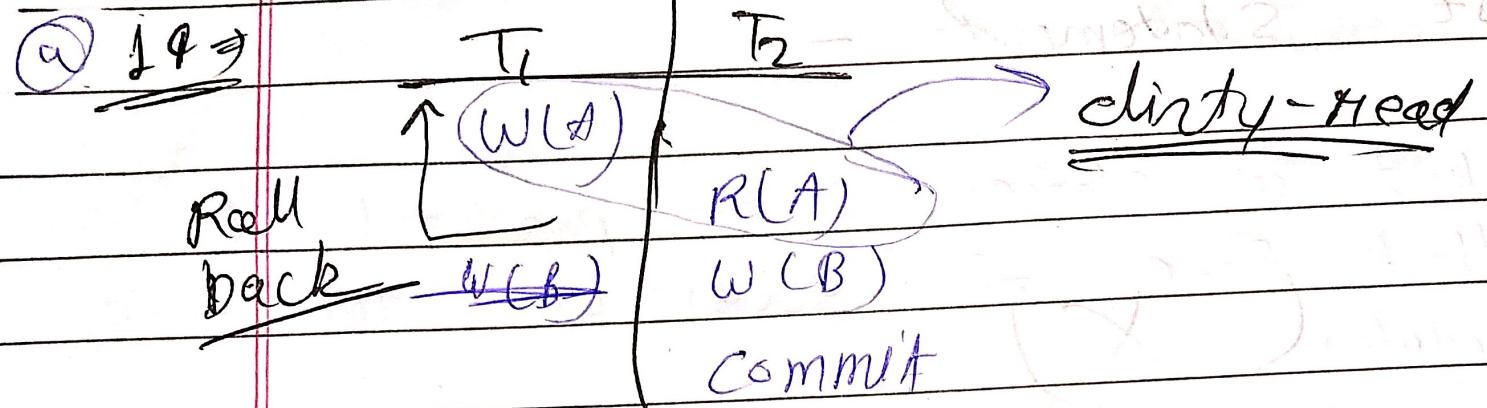
(@) IS - (Intention - Shared) \Rightarrow

It contains explicit locking at a lower level of the tree but only with shared locks.

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14. A schedule S : T₁ : write A ; T₂ : Read A ; T₂ : write B ; T₂ : commit ; T₁ : Roll back. For the above schedule which of the following problem it is facing?

- (a) Cascading Roll back
- (b) UnRepeatable Read
- (c) Non Recoverable Schedule
- (d) None

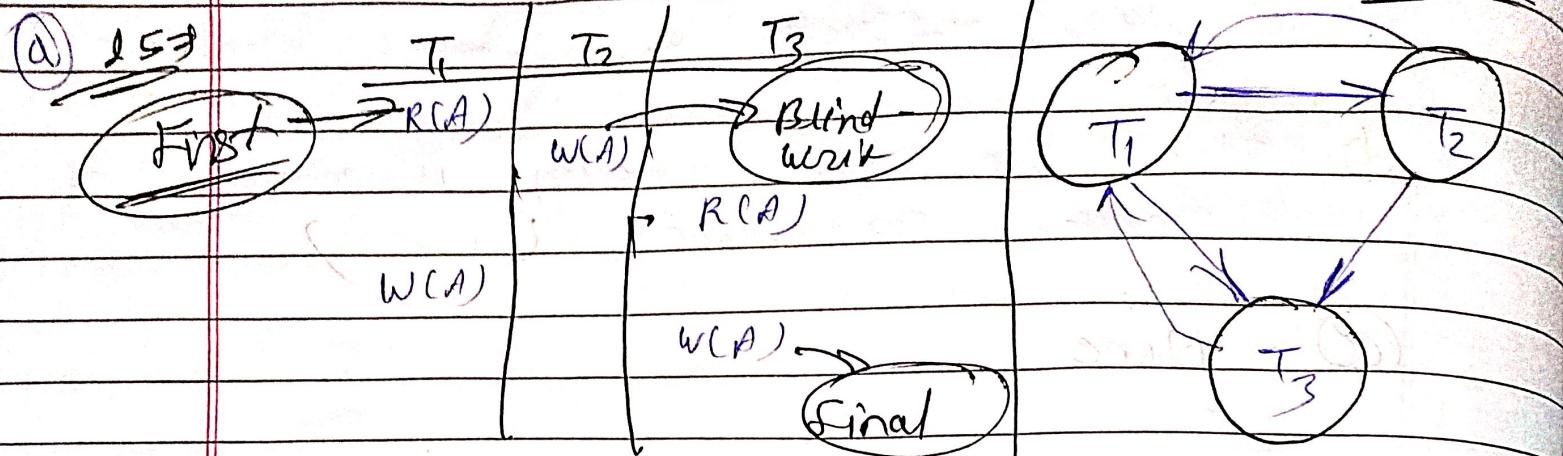


④ Cascading Roll-back

15. A schedule S contains three transactions T_1 , T_2 , T_3 and the operations sequence is given below:

T_1 : Read A; T_2 : Write A; T_3 : Read A; T_1 : Write A; T_3 : Write A and all the above transactions are committed. Is the above schedule is serializable or not? If yes it is equivalent to which serial schedule. Find the proper combination of the given alternatives from I to VII.

- I. View serializable
 - II. Conflict serializable
 - III. Both
 - IV. Not serializable
 - V. T_2 ; T_1 ; T_3
 - VI. T_1 ; T_2 ; T_3
 - VIII. T_2 ; T_3 ; T_1
-
- (a) Only IV
 - (b) II, V
 - (c) I, VI
 - (d) I, V



Not CS

III Not Serializable

Only IV

~~cycle~~

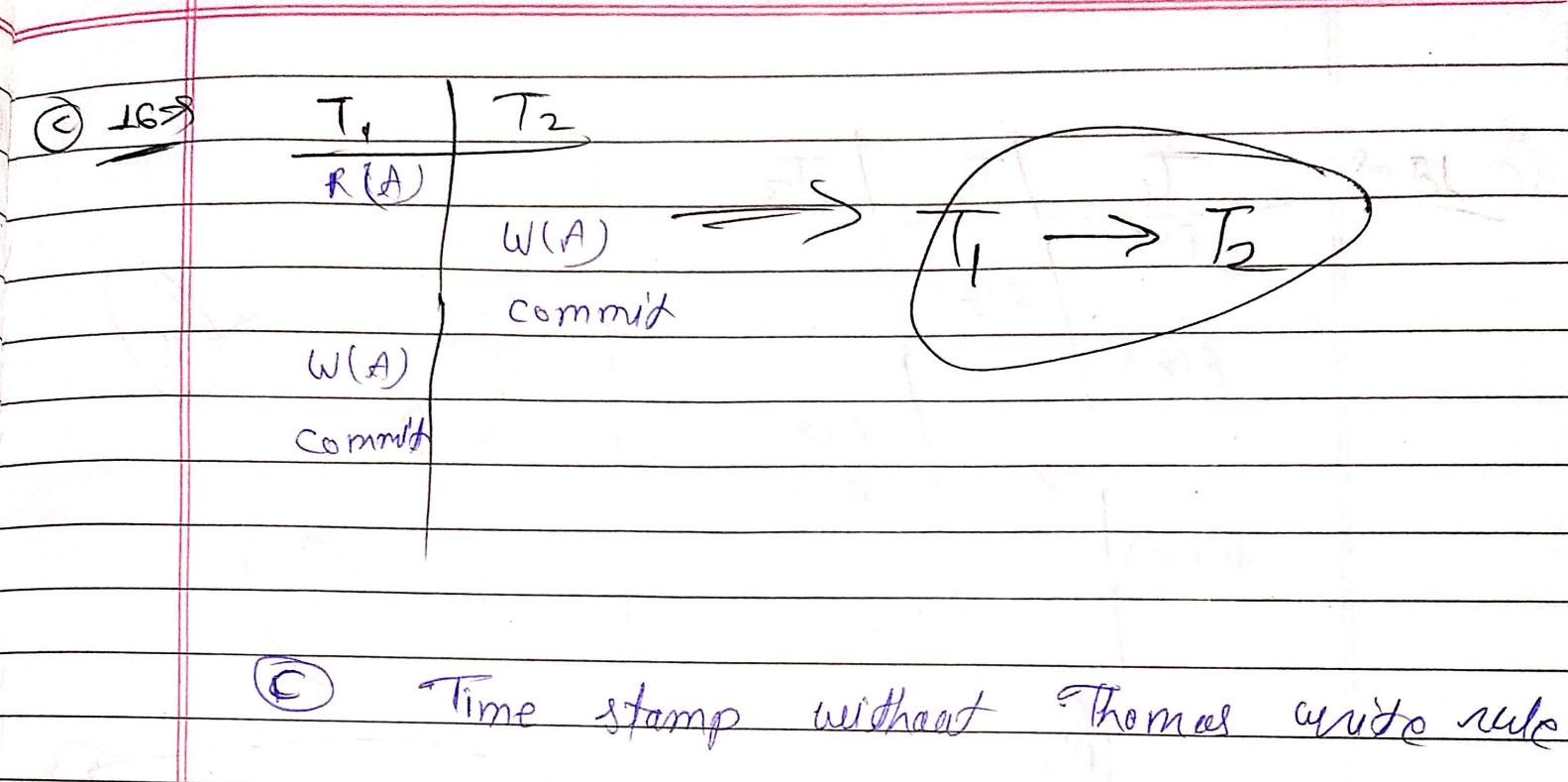
Not VS

16. A schedule S with T_1 and T_2 transactions is having following operations sequence.

T_1 : Read A; T_2 : Write A; T_2 : Commit; T_1 : Write A; T_1 : Commit.

The above schedule is serializable under which concurrency control protocol.

- (a) Strict 2 PL
- (b) Conservative 2 PL
- (c) Time stamp without Thomas write rule
- (d) Time stamp with Thomas write rule



17. A schedule S: T_1 : Read(x); T_2 : Write(x);
 T_2 : Write(y); T_3 : Write(y); T_1 : Write(y);
 T_1 : commit; T_2 : commit; T_3 : commit

The above schedule is _____

(a) view serializable

(b) conflict serializable

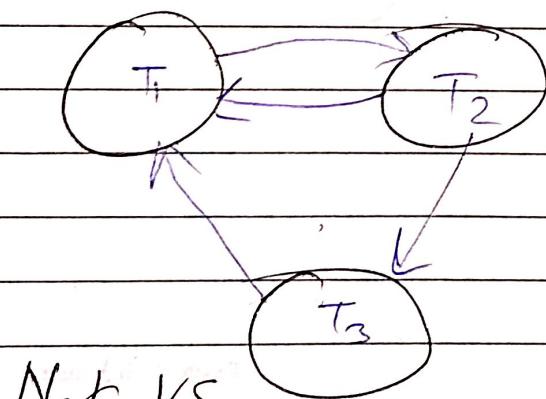
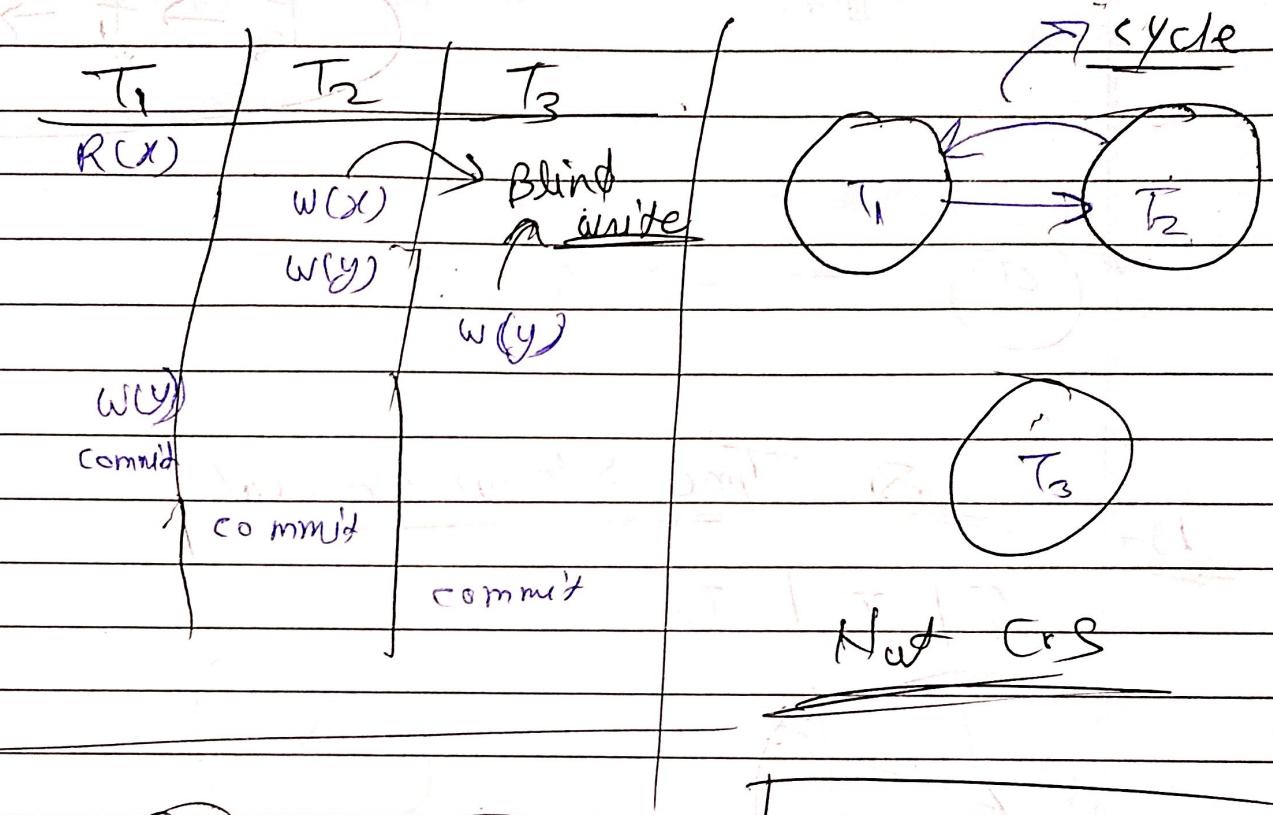
(c) Recoverable

(d) not serializable

(c)

Time stamp without Thomas write rule.

(d) $LT =$



(d) Not Serializable

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18. Consider the schedule with transactions T_1 , T_2 , T_3 with the following schedule. Draw the serializability or not. If the schedule is serializable, write down the equivalent serial schedule.

S: T_1 : Read(x); T_2 : Read(z); T_1 : Read(z);
 T_3 : Read(x); T_3 : Read(y); T_1 : Write(x);
 T_3 : Write(y); T_2 : Read(y); T_2 : Write(z);
 T_2 : Write(y)

- (a) T_2, T_2, T_1 T_3, T_1, T_2 (b) T_1, T_2, T_3
(c) T_2, T_1, T_3 (d) T_3, T_2, T_1

a) $18 \Rightarrow$

$T_1 \quad T_2 \quad T_3$

$R(x)$

$R(z)$

$R(z)$

$(R(x))$

$R(y)$

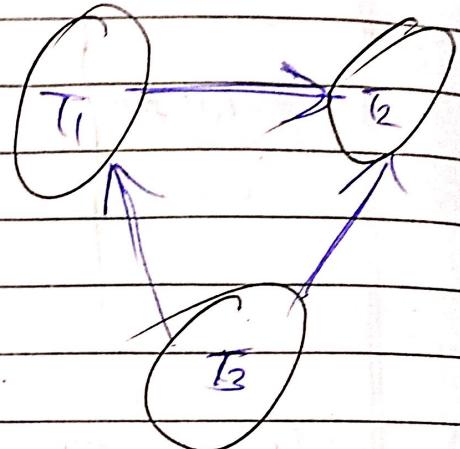
$w(x)$

$w(y)$

$R(y)$

$W(z)$

$w(y)$



$T_3 \rightarrow T_1 \rightarrow T_2$

a)

$T_3 \rightarrow T_1 \rightarrow T_2$