SHUBHAM MITTAL

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Ex 16.3

① Write - read conflict (Reading uncommited data or Dirty Read) -

T 1 R(x)
T 1 R(y)
T 1 W(x)
T 2 R(x) - Dirty Read
...

② Read - Write Conflict (Unrepeatable reads) -

T1 R(x)
T 1 R(y)
T 2 R(x) T2 R(y)
T 1 W(x)
...
Now T2 will get unrepeatable read

③ Write - Write conflict (Overwriting of uncommited data) -

T 1 R(x)
T 1 R(y)
T 2 R(x)
T 1 W(x) - Step 4 T2 R(y)
T 2 W(x) - Write - Write conflict
...

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④ Write - read conflict -
T2 will not get a Shared lock on X, until T1 commits

Read - Write conflict -
T1 will not get Exclusive lock on X, until T2 commits

Write - Write conflict -
T1 will not get Exclusive lock on X in step 4, until T2 commits

Ex 16.7

① Because we are inserting a new row in the table Enrolled, we do not need any lock on the existing rows. So we would use READ UNCOMMITTED

② Because we are updating one existing row in the table Enrolled, we need an exclusive lock on the row which we are updating. So we would use READ COMMITTED.

③ To prevent others transactions from inserting or updating the table Enrolled while we are reading from it (known as the phantom problem), we would need to use SERIALIZABLE.

④ SAME AS ABOVE