**CSE411**

**Sample questions on Concurrency**

Q.1: Put appropriate lock and find lock status for the following:

|  |  |  |  |
| --- | --- | --- | --- |
| T1 | T2 | T3 | Lock status |
|  |  |  |  |
| READ(A) |  |  |  |
|  |  |  |  |
|  | READ(A) |  |  |
|  |  |  |  |
|  |  | WRITE(B) |  |
|  |  |  |  |
|  |  | Write (A) |  |

(a)

|  |  |  |  |
| --- | --- | --- | --- |
| T7 | T8 | T9 | Lock status |
|  |  |  |  |
| READ(A) |  |  |  |
|  |  |  |  |
|  | WRITE(A) |  |  |
|  |  |  |  |
|  |  | READ(A) |  |
|  |  |  |  |

(b)

|  |  |  |  |
| --- | --- | --- | --- |
| T7 | T8 | T9 | Lock status |
|  |  |  |  |
| WRITE(A) |  |  |  |
|  |  |  |  |
|  | WRITE(B) |  |  |
|  |  |  |  |
|  |  | WRITE(C) |  |
|  |  |  |  |

Q2: Explain with example a) Lock compatibility matrix, b) Starvation, c) Checkpoint

Q3.

1. Find all locks of T1, T23 and status of the locks from the given lock table as follows.
2. The transactions and locking status are given as follows:

T1 has 4 locks on A, D, G and K with grant status. T2 has three locks on D, G and K with status grant for all. T3 has 4 locks on A, D, G and K with all waiting status. The hash values for characters A to F is 5 and G to J is 15 and K to N is 10.

Construct the lock table and find the lock type (Lock-X or Lock-S) of T2.



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|  |
|  |
| 15 |
|  |
|  |
|  |
|  |
| 10 |
|  |
|  |
|  |
|  |
| 5 |
|  |
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|  |
|  |