Q1)
Lamport's Mutual Exclusion Algorithm modified for read/write accesses

Every process follows these rules:

1) A process Pi maintains a queue of requests to enter CS ordered by timestamps, containing the timestamp of the request and whether the request is for read or write
2) A process Pi wishing to enter CS sends a message to all other processes, with a timestamp and whether the request is for read or write, and adds its request to the queue
3) Upon receiving a request from another process Pj, Pi puts Pj's request in the queue, including includes whether the request is for read or write
4) Upon leaving the CS, Pi sends a release message to all other processes and deletes its request from the queue
5) Upon receiving a release message from Pj, Pi deletes Pj's request from the queue

To Enter the CS, a performs Pi follows the following steps:

1. Pi sends its request, including timestamp and whether it is read or write, to all other processes, and adds its request to the queue
2. The process enters the CS when it has received n - 1 acks, and EITHER Pi has the smallest timestamp of the queue OR Pi is requesting a read and all requests in the with smaller timestamps are also reads
3. On leaving CS, a process Pi sends a release message to all other processes and deletes Pi from the queue.