Tutorial-6 Atishay Jain

Q1) It is a classic example of deadlock, Neither P0 nor P1 can make progress because. They are both waiting for a resource that the other process hold.

Q3) The initial system is in a safe state because all process can complete there execution without deadlock. C has max claim of 9 instead of 7, the system would not be in a safe state. ~~[illegible]~~ because there would be enough resource to satisfy maximum claims

Q3) A and B share a semaphore. A acquire, B waits but A never release, causing both to wait indefinity

Q6) a) P1 P2 P3 P1
| | | |
R2 R1 R1 R2
| | |
P4 P1 P3

b) Yes there is a cycle in graph.
$P_1 \to R_2 \to P_4 \to P_2$ ~~Q~~ $\to P_1$

c) Since ther is a cyle it's deadloch.

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Q8) To ensure that system is deadlock free, we need to make sure that it's impossible for any combiner of process to simultaneou request all ~~[illegible]~~ available resou

$$n = \frac{6 \text{ drives}}{2 \text{ drive/pro}} = 3 \text{ proc.}$$

So max value of n ~~to~~ for the system to be deadlock is 3

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Q9) Deadlock is unlikely to occur becaus the total maximum resour. needs ~~of~~ all process are less than the total number of resource available; preventing circular waiting.

Q10) The largest value of K that will alway avoid deadlock in this system is 2. Each process can request and hold a max of 2 instance, ensuring that at least one source remain available for other process to make progress and avoiding circular wait condition