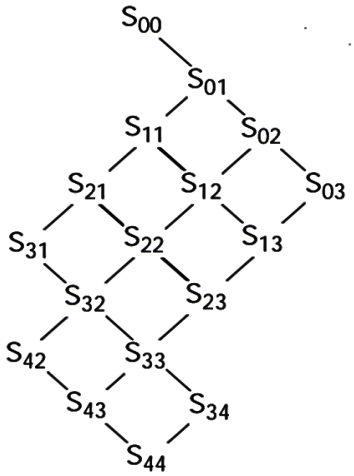
Theoretical questions:

Q1:

The below figure represents the lattice of consistent states.



Q2:

Starvation may be caused by an unfair scheduler that determines what process is denied necessary resources. A first in first out scheduler that does not have a starvation prevention mechanism may lead to a giving the resources to a task that requires more time to complete and uses more resources. In fixed priority pre-emptive scheduling starvation of lower priority processes is possible if there are high amount of high priority processes/tasks that are queued for the resources the smaller ones need.

Q3:

Q4:

The diameter of the weighted graph is equal to eight. The path that satisfies it is :

d -> h -> L -> m

The unweight diameter is satisfied by the following paths:

E -> a -> c -> g-> L -> m

E -> a -> c -> g -> L -> k

E -> a -> c -> g -> i -> k

E -> a -> c -> f -> i -> k