Tutorial 5 Deadlocks

1) Describe how deadlocks can be prevented.

2) Suppose the current system resource allocation is described by the following table. A request is received by job 1 for 2 resources. Determine whether or not the request should be served in order to avoid a deadlock. Explain how the decision was reached.

Job No.	Devices Allocated	Maximum Required	Remaining Needs
1	1	3	2
2	2	7	5
3	4	10	6
Total number of devices allocated: 7			
Total number of devices in system: 10			

3) In order to recover from a deadlock it may be necessary to select a victim process to terminate. Explain factors to be considered to select such a process.

4) Write the conditions required for a deadlock to occur and explain how to eliminate two of them from a system.

5) Explain the deadlock detection algorithm using directed resource graphs. Implement the algorithm on each of the two directed resource graphs below and determine the deadlocked processes if any.