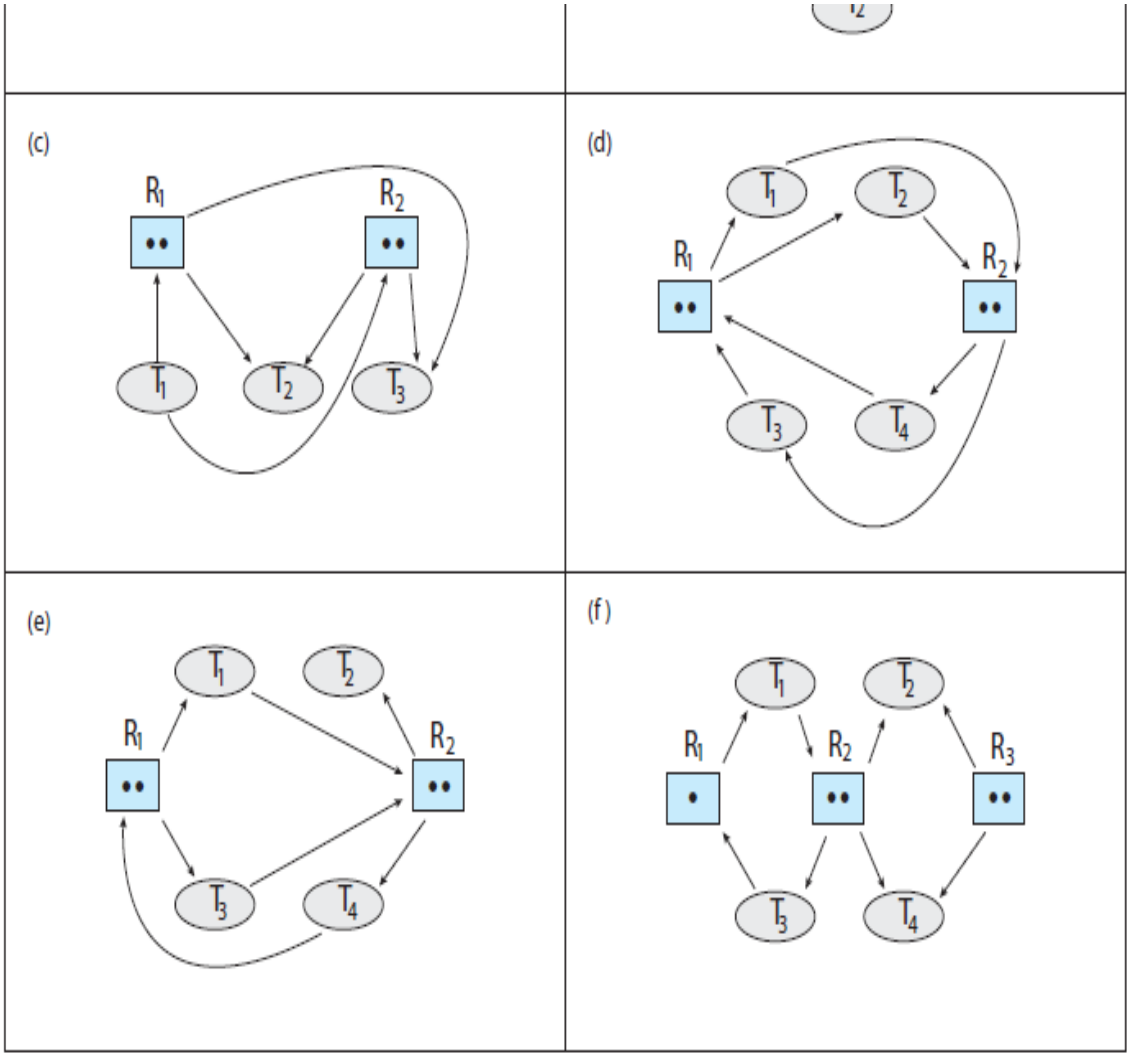
Q1. Three process P1, P2 and P3 arrive at time zero. The total time spent by the process in the system is 10ms, 20ms, and 30ms respectively. They spent first 20% of their execution time in doing I/O and the rest 80% in CPU processing. What is the percentage utilization of CPU using FCFS scheduling algorithm?

Q2. Three process p1, P2 and P3 arrive at time zero. Their total execution time is 10ms, 15ms, and 20ms respectively. They spent first 20% of their execution time in doing I/O, next 60% in CPU processing and the last 20% again doing I/O. For what percentage of time was the CPU free? Use Round robin algorithm with time quantum 5ms.

8.22 Consider a system consisting of four resources of the same type that are shared by three threads, each of which needs at most two resources. Show that the system is deadlock free.

8.18 Which of the six resource-allocation graphs shown in Figure 8.12 illustrate deadlock? For those situations that are deadlocked, provide the cycle of threads and resources. Where there is not a deadlock situation,
illustrate the order in which the threads may complete execution.


(c)
R1
R2
T1
T2
T3
(d)
T1
T2
R1
R2
T3
T4
(e)
T1
T2
R1
R2
T3
T4
(f)
T1
T2
R1
R2
R3
T3
T4