Operating System- MTL458
Minor Test 2
Date: 08-10-16, Time: 1 hour, Total Marks: 20

Note: Attempt any *four* questions. All questions carry equal marks.

1. First, give a solution (algorithm) which allows at most n-1 entries in the buffer, of the producer/consumer problem with finite buffer. Secondly, modify the given algorithm to remedy this deficiency.
2. Apply deadlock detection algorithm to the following data and show the results:
   Available = (2 1 0 0)

   Request =

2	0	0	1
1	0	1	0
2	1	0	0

   Allocation =

0	0	1	0
2	0	0	1
0	1	2	0

3. Suppose that there are two types of philosophers. One type always picks up his left fork first (a "lefty"), and the other type always picks up his right fork first (a "righty"). Using semaphore, define both type of philosophers' behaviour.
4. Five batch jobs, A through E, arrive at a computer centre at essentially the same time. They have an estimated running time of 15, 9, 3, 6, and 12 minutes, respectively. Their priorities are 6,3,7,9, and 4, respectively, with a lower value corresponding to a higher priority. For Priority scheduling and Shortest job first scheduling algorithms, determine the turnaround time for each process and the average turnaround for all jobs.
5. What are the four conditions that create deadlock? List two ways in which the no-preemption condition can be prevented.