NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-620015
B.TECH. DEGREE (FOURTH SEMESTER)
BRANCH: COMPUTER SCIENCE AND ENGINEERING
ASSESSMENT 1
SUB.CODE & TITLE: CSPC43 OPERATING SYSTEMS

TIME: 10.00 A.M.- 11.00 A.M. DATE:02.03.2021 MAX. MARKS: 20

(Buffer time: 20 minutes)

ANSWER ALL QUESTIONS

1. What is a Virtual machine? Supposing a real time interactive application is running on a Virtual Machine, comment on the performance of application. (3)
2. Explain how a program is transformed into a process. (2)
3. List the queues that are used by the various schedulers in a uniprocessor system and briefly explain the need for each queue. What are the conditions under which the short term scheduler makes a decision? (4)
4. Consider the following set of processes with the length of the CPU-burst time given in milliseconds

Process ID	Arrival Time	Burst Time
0	0	6
1	3	4
2	5	2
3	6	5
4	8	1

Find the schedule of the processes using the following scheduling policies: Longest Remaining Time First (LRTF) and Highest Response ratio Next (HRRN). (4)

5. Explain how scheduler activation helps to overcome the problems associated with user level threads? (3)
6. Process P1 produces a random number, Process P2 finds the square of that random number if the number is even and Process P3 displays the sum of the squares. Write the pseudo code for the procedures executed by P1, P2 and P3. (Use semaphores as the synchronization primitive). (4)