NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI-620015
B.TECH. DEGREE (FOURTH SEMESTER)
BRANCH: COMPUTER SCIENCE AND ENGINEERING
ASSESSMENT 3
SUB.CODE & TITLE: CSPC43 OPERATING SYSTEMS

TIME: 12.00 Noon - 01.00 P.M. DATE:22.04.2021 MAX. MARKS: 20

(Buffer time: 20 minutes)

ANSWER ALL QUESTIONS

1. Consider the following snapshot of a system.

	Max. need			Allocated resources			Available		
	R1	R2	R3	R1	R2	R3	R1	R2	R3
P1	3	6	8	2	2	3	2	3	0
P2	4	3	3	2	0	3			
P3	3	4	4	1	2	4			

Check whether the current allocation state is safe or not using Banker's algorithm. What will happen if P1 places a request (1,1,0)? (3)

2. How messages are communicated between two processes if the following is used
   i) Direct communication
   ii) Blocking Send
   iii) Zero Capacity buffer (3)
3. What are the different ways of solving problems associated with fragmentation and Thrashing? (4)
4. What are the functions of Interrupt handler and device drivers? (4)
5. Explain the importance of consistency semantics in sharing of files. (3)
6. Assume a computer has main memory of size 1000K. The sequence of arrival and finishing of jobs are as follows:
   Job 1 with size 200K arrives
   Job 2 with size 500K arrives
   Job 3 with size 450K arrives
   Job 1 finishes
   Job 4 with size 150K arrives
   Job 5 with size 300K arrives

   Demonstrate how memory is allocated to each job if Buddy System is followed. (3)