Bankers Algorithm Example.

Answer the following question using banker's algorithm

(1) What is the content of need matrix?

(2) Is the system in safe state or not? If yes then write safe sequence.

(3) If a request from process P1 arrives for (2,2,1), can the request be granted immediately?

No of processes= 5(P0,P1,P2,P3,P4)

No of resources= A=10, B=5, C=7

	Allocation			MAX			Available		
	A	B	C	A	B	C	A	B	C
P0	0	1	0	7	5	3	3	3	2
P1	2	0	0	3	2	2			
P2	3	0	2	9	0	2			
P3	2	1	1	2	2	2			
P4	0	0	2	4	3	3			

Ans-1 Need Matrix (MAX- Allocated)

	A	B	C
P0	7(7-0)	4(5-1)	3(3-0)
P1	1	2	2
P2	6	0	0
P3	0	1	1
P4	4	3	1

Work= Available

Work= 3 3 2

Ans-2

P1 = work = Work +Available

3 3 2 + 2 0 0 = 5 3 2

Work = 5 3 2

P3 = work = Work + Available

5 3 2 + 2 1 1 = 7 4 3

P4= work = Work + Available

7 4 3 + 0 0 2 = 7 4 5

P0= work = Work + Available

7 4 5 + 0 1 0 = 7 5 5

P2= work = Work + Available

7 5 5 + 3 0 2 = 10 5 7

Yes system in safe state. Safe sequence= <p1, p3, p4, p0, p2>

Ans-3 Yes Request immediately granted because available A=3,B=3,C=2 and request from P1, A=2, B=2 ,C=1 which is less than available.