Space for Marks | Question No.

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Q2. a.

Ans.

Snapshot of system.

Process	Allocation A B C D	Max A B C D	Available A B C D
P_0	0 0 1 2	0 0 1 2	1 5 2 0
P_1	1 0 0 0	1 7 5 0	
P_2	1 3 5 4	2 3 5 6	
P_3	0 6 3 2	0 6 5 2	
P_4	0 0 1 4	0 6 5 6	

a) Total amount of resources.

A	B	C	D
3	14	12	12

b) content of need matrix.

Need Matrix.

P	A	B	C	D
P_0	0	0	0	0
P_1	0	7	5	0
P_2	1	0	0	2
P_3	0	0	2	0
P_4	0	6	4	2

c) Safe sequence.

Need P_0 (0, 0, 0, 0) < Available (1, 5, 2, 0)

Hence can be satisfied.

P_0 is finished.

current available is (1, 5, 3, 2)

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P_1 requires (0,7,5,0) > Available
Hence cannot be satisfied now.

need P_2 (1,0,0,2) < Available (1,5,3,2)
so P_2 can be satisfied.
P_2 is finished
Current available (2,8,8,6)

need P_3 (0,0,2,0) < Available (2,8,8,6)
So P_3 can be satisfied
P_3 is finished
current available (2,14,11,8)

need P_4 (0,6,4,2) < Available (2,14,11,8)
so P_4 can be satisfied.
P_4 is finished.
current available (2,14,12,12)

need (P_1) (0,7,5,4) < available (2,14,12,12)
So P_1 can be satisfied
P_1 is finished.
current available (3,14,12,12)

we have got back our resources.
so the safe Sequence is
$\langle P_0, P_2, P_3, P_4, P_1 \rangle$