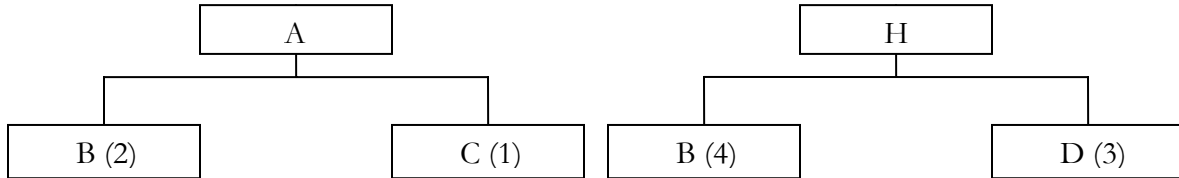


MATERIAL REQUIREMENTS PLANNING (MRP) –SOLUTION TO QUESTIONS

QUESTION 1: The product structures for products A and H are given below. The production schedule calls for 500 units of A in week 4 and 6 and 200 units of H in week 3 and 5. Prepare the MRP records for items A, H and B for the next 6 weeks.

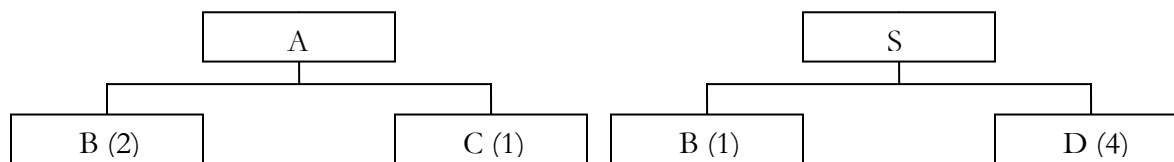


Additional information is as follows:

Product	On Hand	Safety Stock	Lot Size	Lead time (weeks)	Scheduled Receipts	
					Quantity	Week
A	300	50	30	1	120	6
H	50	-	40	1	-	-
B	250	100	LFL	1	-	-

Component A Lot Size: 30, LT: 1W	Weeks					
	1	2	3	4	5	6
Gross Requirements				500		500
Scheduled Receipts						120
Projected-on-hand /Available	250	250	250	250	20	140
Net Requirements				250		360
Planned Order Receipts				270		360
Planned Order Releases			270		360	
Component H Lot Size: 40, LT: 1W	Weeks					
	1	2	3	4	5	6
Gross Requirements			200		200	
Scheduled Receipts						
Available	50	50	50	10	10	10
Net Requirements			150		190	
Planned Order Receipts			160		200	
Planned Order Releases		160		200		
Component B Lot Size: LFL, LT: 1W	Weeks					
	1	2	3	4	5	6
Gross Requirements		640	540	800	720	
Scheduled Receipts						
Available	150	150				
Net Requirements		490	540	800	720	
Planned Order Receipts		490	540	800	720	
Planned Order Releases	490	540	800	720		

QUESTION 2: The product structures for items A and S are given below. The production schedule calls for 500 units of A in each of weeks 4 and 6 and 600 units of S in week 5. Prepare the MRP records for items A, S and B for the next 6 weeks.

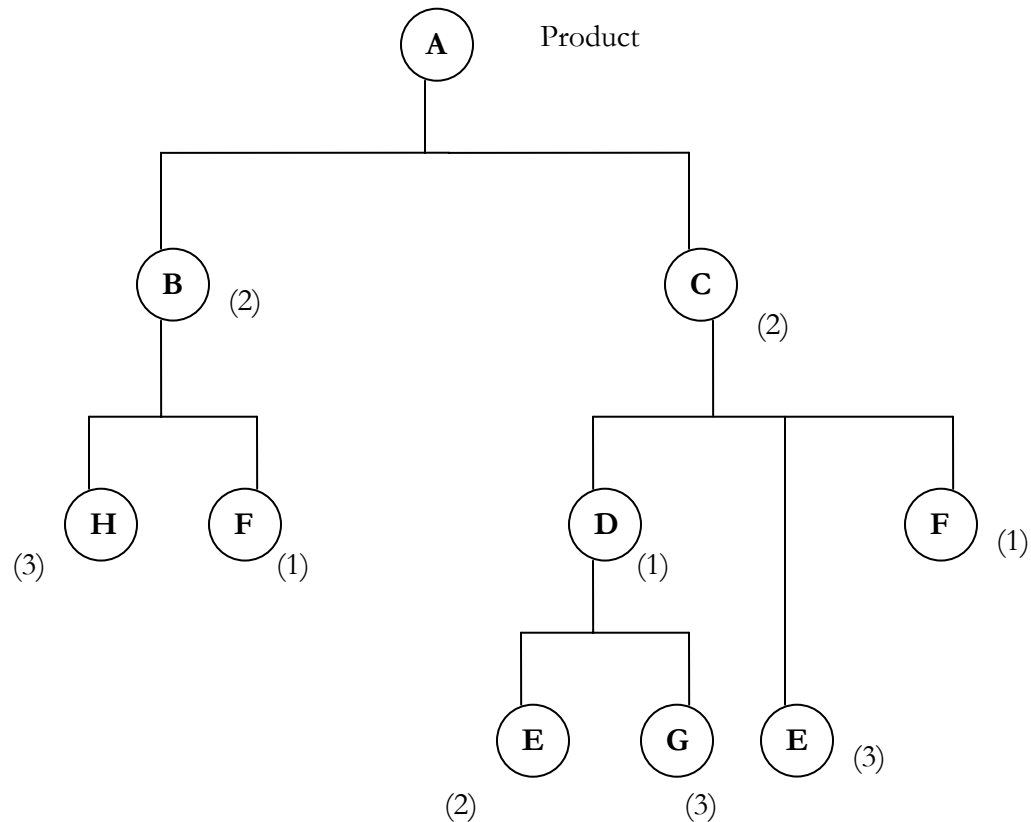


Additional information is as follows:

Product	On Hand	Safety Stock	Lot Size	Lead time (weeks)	Scheduled Receipts	
					Quantity	Week
A	150	50	200	2	-	-
S	200	-	300	2	-	-
B	500	100	LFL	1	200	2 and 4

Component A Lot Size: 200, LT: 2W	WEEKS					
	1	2	3	4	5	6
Gross Requirements				500		500
Scheduled Receipts						
Available	100	100	100	100		
Net Requirements				400		500
Planned Order Receipts				400		600
Planned Order Releases		400		600		
Component S Lot Size: 300, LT: 2W	WEEKS					
	1	2	3	4	5	6
Gross Requirements					600	
Scheduled Receipts						
Available	200	200	200	200	200	
Net Requirements					400	
Planned Order Receipts					600	
Planned Order Releases			600			
Component B Lot Size: LFL, LT: 1W	WEEKS					
	1	2	3	4	5	6
Gross Requirements		800	600	1200		
Scheduled Receipts		200		200		
Available	400	400				
Net Requirements		200	600	1000		
Planned Order Receipts		200	600	1000		
Planned Order Releases	200	600	1000			

QUESTION 3: A product has the following product structure tree:



This inventory status report has just been issued for the product:

Item Code	On Hand	Safety Stock	Allocated Stock	Lot Size	Lead time (weeks)	Scheduled Receipts		Service Parts Orders	
						Quantity	Week	Quantity	Week
A	500	500	500	LFL	1	1000	1	-	-
B	1000	200	500	LFL	1	1000	2	1000	3
C	1000	500	200	LFL	1				
D	1500	500	500	500+	1				
E	500	500		5000+	1				
F	2000	500	500	5000+	3				
G	3000	1000	500	6000+	2	6000	1		
H	2500	500	1000	4000+	2	4000	2	5000	6

- Prepare an MRP schedule for all the components in the product to cover a 6-week planning horizon if the MPS for the product shows an estimated demand or gross requirements of 1,000 units in week 5 and 1,500 units in week 6.
- Is the MPS feasible from a material supply perspective?
- If the MPS is not feasible, what actions could be taken to make it feasible?

Component A LD: 1W, LS: LFL	WEEKS					
	1	2	3	4	5	6
<i>Gross Requirements</i>					1000	1500
<i>Scheduled Receipts</i>	1000					
<i>Available</i>	(500)	500	500	500	500	
<i>Net Requirements</i>					500	1500
<i>Planned Order Receipts</i>					500	1500
<i>Planned Order Releases</i>				500	1500	
Component B LD: 1W, LS: LFL	WEEKS					
	1	2	3	4	5	6
<i>Gross Requirements</i>			1000	1000	3000	
<i>Scheduled Receipts</i>		1000				
<i>Available</i>	300	1300	1300	300		
<i>Net Requirements</i>				700	3000	
<i>Planned Order Receipts</i>				700	3000	
<i>Planned Order Releases</i>			700	3000		
Component C LD: 1W, LS: LFL	WEEKS					
	1	2	3	4	5	6
<i>Gross Requirements</i>				1000	3000	
<i>Scheduled Receipts</i>						
<i>Available</i>	300	300	300	300		
<i>Net Requirements</i>				700	3000	
<i>Planned Order Receipts</i>				700	3000	
<i>Planned Order Releases</i>			700	3000		
Component D LD: 1W, LS: 500+	WEEKS					
	1	2	3	4	5	6
<i>Gross Requirements</i>			700	3000		
<i>Scheduled Receipts</i>						
<i>Available</i>	500	500	500	300		
<i>Net Requirements</i>			200	2700		
<i>Planned Order Receipts</i>			500	2700		
<i>Planned Order Releases</i>		500	2700			
Component E LD: 1W, LS: 5000+	WEEKS					
	1	2	3	4	5	6
<i>Gross Requirements</i>		1000	7500	9000		
<i>Scheduled Receipts</i>						
<i>Available</i>			4000	1500		
<i>Net Requirements</i>		1000	3500	7500		
<i>Planned Order Receipts</i>		5000	5000	7500		
<i>Planned Order Releases</i>	5000	5000	7500			
Component F LD: 3W, LS: 5000+	WEEKS					
	1	2	3	4	5	6
<i>Gross Requirements</i>			1400	6000		
<i>Scheduled Receipts</i>						
<i>Available</i>	1000	1000	1000	4600	3600	3600
<i>Net Requirements</i>			400	1400		
<i>Planned Order Receipts</i>			5000	5000		
<i>Planned Order Releases</i>	5000					

For product F, the company should also make a rush order of 5,000 units to be able to satisfy the planned order receipt of week3.

Component G LD: 2W, LS: 6000+	WEEKS					
	1	2	3	4	5	6
<i>Gross Requirements</i>		1500	8100			
<i>Scheduled Receipts</i>	6000					
<i>Available</i>	7500	7500	6000	3900	3900	3900
<i>Net Requirements</i>			2100			
<i>Planned Order Receipts</i>			6000			
<i>Planned Order Releases</i>	6000					
Component H LD: 2W, LS: 4000+	WEEKS					
	1	2	3	4	5	6
<i>Gross Requirements</i>			2100	9000		5000
<i>Scheduled Receipts</i>		4000				
<i>Available</i>	1000	5000	5000	2900		
<i>Net Requirements</i>				6100		5000
<i>Planned Order Receipts</i>				6100		5000
<i>Planned Order Releases</i>		6100		5000		