

QUESTIONS

- For the bill of materials (BOM) in Figure 7.14:
 - How many immediate parents does item B have? How many immediate parents does item E have?
 - How many unique components does item A have at all levels?
 - How many units of item F will be required to produce 10 units of item A?
 - Based on the lead times provided, what should the planning horizon be (i.e., what is the longest lead time from top to bottom)?
- A table is made from one tabletop, four legs, and four hangers. Each of the legs is made from 4 feet of hickory wood and $\frac{1}{4}$ gallon of varnish. Each of the hangers is made from a brace and 4 bolts and 4 nuts. Draw the BOM for the table.
- Product C is assembled from components D and E. Item D is made from item F and Item G. Item F is made from item J and item K. Item E is made from item H and item I. Item H is made from Item J. All parent items require 1 unit of their respective component items. The lead times for each item are listed in Table 7.15.
 - What is the lead time required to respond to a customer order for product C, assuming that there are no existing inventories or scheduled receipts?
 - What is the customer response time if items J and K are in stock (i.e., do not need to be ordered)?
 - If you are allowed to keep either item G or item I in stock (along with items J and K from part b), which one would you choose?

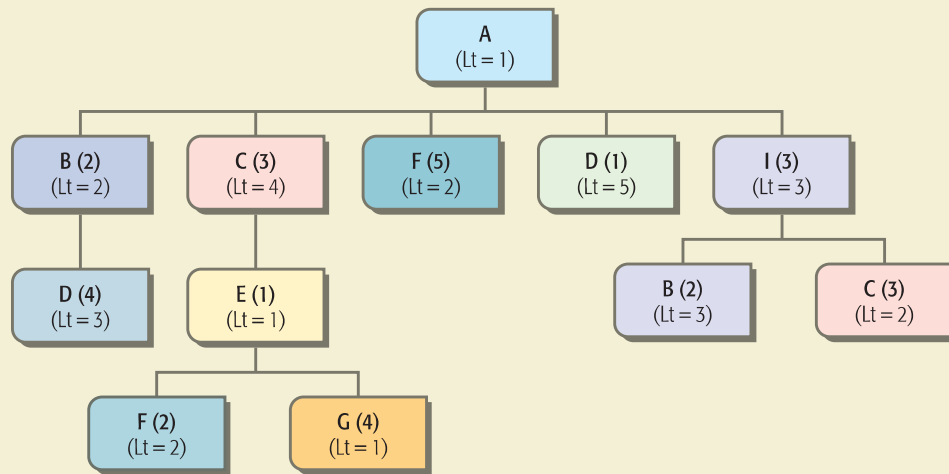


FIGURE 7.14

TABLE 7.15

Item	C	D	E	F	G	H	I	J	K
Lead time (weeks)	3	5	6	5	1	1	3	1	3

4. The partially completed MRP record in Table 7.16 provides gross requirements, scheduled receipts, lead time, and beginning on-hand inventory.
 - a. Complete the record for a lot size of FOQ = 1,500 units.
 - b. Complete the record for a lot size of $P = 3$.
 - c. Complete the record for an L4L lot size.
 - d. Which lot size rule results in the lowest average inventory?
 - e. Which lot size rule results in the fewest/most orders?
5. The partially completed MRP record in Table 7.17 provides gross requirements, scheduled receipts, lead time, and beginning on-hand inventory.
 - a. Complete the record for a lot size of FOQ = 250 units.
 - b. Complete the record for a lot size of $P = 2$.
 - c. Complete the record for an L4L lot size.
 - d. Which lot size rule results in the lowest average inventory?
 - e. Which lot size rule results in the fewest/most orders?

TABLE 7.16

Item: F200						Lot size:			
Description: iPod ear buds						Lead time:		2 weeks	
Beg. inv.: 200						Safety stock:		10	
Week	1	2	3	4	5	6	7	8	9
Gross requirements	1,000	1,100	750	900	1,200	0	400	0	1,300
Scheduled receipts	2,100								
Planned OH inventory									
Planned receipts									
Planned order release									

TABLE 7.17

Item: A100						Lot size:			
Description: Pontiac Solstice hood						Lead time:		1 week	
Beg. inv.: 250						Safety stock:		20	
Week	1	2	3	4	5	6	7	8	9
Gross requirements	200	150	300	100	150	200	250	0	200
Scheduled receipts									
Planned OH inventory									
Planned receipts									
Planned order release									