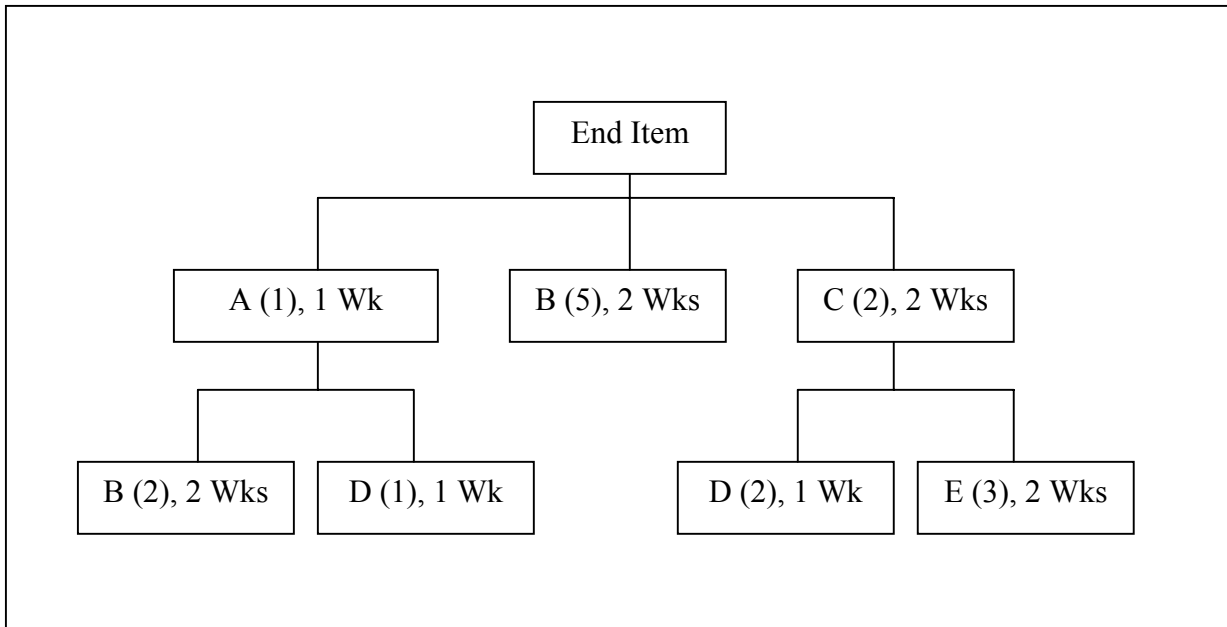


**Homework #9**  
**Supply Chain Models: Manufacturing & Warehousing (ISyE 3104) – Fall 2002**  
**Due 12:05pm 11/14/02**

Total 60 points  
 Show all your work

1. Given the product structure diagram below.



Assume that the MPS for the end item for weeks 4 through 12 is

Week	4	5	6	7	8	9	10	11	12
Net Req	100	50	100	200	100	50	100	200	100

Assume that lot-for-lot scheduling is used throughout. Also assume that the entering inventory for parts B and D in period 4 are 50 and 10 respectively and the scheduled receipts for part B in period 4 is 200.

- a. What is the lead-time for making the end item, if you start from scratch. (5 Points)
  - b. Determine the planned order release for component B (10 Points)
  - c. Determine the planned order release for component D (10 Points)
2. A company orders an inventory item from an outside supplier. The demand of this item for the next 6 weeks is anticipated to be 45, 34, 76, 45, 23 and 56. Currently the company is holding 12 of these items in its inventory. At the end of 6 weeks the

company wants to have 20 items in its inventory. Assume a cost of \$2 per period and a cost of \$20 for setup. Determine the order policy for this item based on:

- a. Silver-Meal (10 Points)
  - b. Least unit cost (10 Points)
3. What alternatives are there to lot-for-lot scheduling at each level? Discuss the potential advantages and disadvantages of other lot-sizing techniques. (5 Points)
4. In class we built assembly lines for the Penville Company to investigate the operating characteristics of alternative production approaches. For this question, consider the similarities and differences between push and pull control systems.
- a. In general, how does the push system compare to the pull approach relative the creation of work-in-process? Why? (5 Points)
  - b. In general, how does the push system compare to the pull approach relative assembly cycle time? Why? (5 Points)