c. phantom bills  
d. time-phased bills  
(Medium)

36. All of the following could be contained in the item master file except  
a. on-hand quantities  
b. lead times  
c. planned order releases  
d. on-order quantities  
(Medium)

37. The process of subtracting on-hand quantities and scheduled receipts from gross requirements to produce net requirements is referred to as  
a. cycle counting  
b. lot sizing  
c. exploding  
d. netting  
(Medium)

38. Lot sizing  
a. determines the quantities in which items are usually made or purchased  
b. involves physically counting at least some inventory items daily and reconciling differences  
c. subtracts on-hand quantities and scheduled receipts from gross requirements  
d. subtracts an item’s lead time from its due date to determine order date  
(Medium)

39. When production or purchasing is made in predetermined batches or lots  
a. planned order receipts are always equal to net requirements  
b. planned order receipts are always smaller than net requirements  
c. planned order receipts can be different from net requirements  
d. planned order receipts occur after net requirements  
(Medium)

40. In MRP time phasing is  
a. the process of scheduling forward from today’s date to determine the earliest time a job can be completed  
b. the process of subtracting an item’s lead time from its due date to determine when an order should be released  
c. the process of scheduling backward from a due date to determine when to begin a job  
d. the process of determining requirements for lower-level items by multiplying the planned orders of parent items by the quantity per assembly of component items  
(Medium)
73. Given the following Product Structure Record

![Product Structure Diagram]

The number of F’s required for each A would be
a. 2
b. 3
c. 12
d. 16

74. Given the following Product Structure Record

![Product Structure Diagram]

The number of G’s required for each A would be
a. 2
b. 8
c. 12
d. 24

75. Given the following MRP matrix for Item X:

<table>
<thead>
<tr>
<th>ITEM: X</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LT: 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gross Requirements</td>
<td>500</td>
<td>400</td>
<td>500</td>
<td>350</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td>Schedule Receipts</td>
<td>500</td>
<td>500</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Project on Hand</td>
<td>250</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Requirements</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned Order Receipts</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
items that are no longer needed as soon as planned or for quantities that may have changed. One of the advantages of the MRP system is its ability to show the effect of change in one part of the production process on the rest of the system.

9. Briefly describe the three inputs to capacity requirements planning (CRP).
   There are three major inputs to CRP. (1) The planned order releases from the MRP process. (2) A routing file, which specifies which machines or workers are required to complete an order from the MRP plan, in what order the operations are to be conducted, and the length of time each operation should take. (3) An open order file, which contains information on the status of jobs that have already been released but have not yet been completed.

10. List ways in which overloaded conditions can be reduced.
    Student answers will vary but could include: (1) eliminating unnecessary requirements; (2) rerouting jobs to alternative machines, workers, or work centers; (3) splitting lots between two or more machines; (4) increasing normal capacities; (5) subcontracting; (6) increasing the efficiency of the operation; (7) pushing work back to later time periods; (8) revising the master schedule.

11. What is Enterprise Resource Planning (ERP)?
    Enterprise Resource Planning (ERP) is software that organizes and manages a company’s business processes by sharing information across functional areas. It transforms transactional data like sales into useful information that supports business decisions in other parts of the company, such as manufacturing, inventory, procurement, invoicing, distribution, and accounting. In addition to managing all sorts of back-office functions, ERP connects with supply chain and customer management applications, helping businesses share information both inside and outside the company. Thus, ERP serves as the backbone for an organization’s information needs, as well as its e-business initiatives.

12. What steps are necessary to effectively implement Enterprise Resource Planning (ERP)?
    Effective ERP implementation typically requires that a firm analyze its business processes, choose the ERP modules to implement, understand the level of sophistication needed for the business, finalize delivery and access, and link the system with its external partners.