Sample Answers to In-Text Questions

# Chapter 15: Inventory Management

# Discussion Questions

1. Discuss why inventory management is needed to effectively manage operations and supply chains.

Answer: Inventory must be managed in the supply chain to balance supply and demand, to keep materials flowing from raw materials to finished goods, all along the supply chain, at the most efficient and effective amounts. Inventory is an asset that must be productive, and not wasteful.

1. Why must companies carry inventory?

Answer: To meet normal demand, to buffer against shortages, to take advantage of quantity discounts, to hedge against future price increases, to reduce transportation costs and transit time, to decouple processes and demand.

1. Identify the various types of inventory and explain how they contribute to the operations function of an organization.

Answer: Raw materials, MRO, Work in process, and finished goods. Self-explanatory to instructors.

1. What are the most common types of costs associated with inventory?

Answer: Purchase and ordering costs, setup costs, carrying costs, and stock-out costs.

1. Why is inventory critical within supply chains?

Answer: For the reasons listed in question 2 above: To meet normal demand, to buffer against shortages, to take advantage of quantity discounts, to hedge against future price increases, to reduce transportation costs and transit time, to decouple processes and demand.

1. Identify some of the key metrics organizations use to assess how well their inventories are being managed.

Answer: Key metrics are backorders, turnover, days of inventory in stock, order cycle time, fill rate, accuracy rate, return on assets, etc.

1. What are the advantages and disadvantages of physically counting inventory?

Answer: Advantage is to make records more accurate for the financial books, determine accuracy rate, etc. The disadvantage is companies usually must close down operations during counting, they are inaccurate because of untrained personnel doing the counting.

1. Use the ABC classification method to categorize the various items at a local grocery store. For example, in what category would fresh fruit and vegetables be listed? Why?

Answer: Examples will vary.

1. Explain the differences among inventory control systems. What are the advantages and disadvantages of each system?

Answer:   
1. a Single –period system has items that may or may not be reordered. The quantity must be right to meet demand, there may be waste if they order too much, or if they spoil or expire.   
2. A Periodic review system is counted regularly and replenished if needed. It is for low volume, and replenishment is not time critical. They do not require stringent monitoring. The disadvantage is the lack of inventory control between periods.   
3. A continuous review system is when you must know the current balance at any time. It is the most expensive form of control, and counting, but it is ordered before a shortage becomes critical.

1. Briefly explain the bullwhip effect. Why is it common in batch-ordering situations and for products with seasonal demand?

Answer: The bullwhip effect, mentioned in Chapter 14 is a phenomenon that occurs from the customer backwards up the supply chain. The magnitude of change increases as you go backwards. If the demand changes slightly, it becomes larger due to waiting to order if you have inventory on hand, and is ordered more seldom but in larger quantities the further back you go up the chain.

1. What steps can organizations take to minimize the bullwhip effect?

Answer: It helps to share information with your supply chain partners about expected order volumes, using a postponement production strategy, channel alignment, and disintermediation, where you have a shorter supply chain.

1. What are some strategies for making inventory systems sustainable?

Answer: Applying lean principles to reduce inventories, including inventory in the classification system, Using less materials, and environmentally friendly materials, reduce older inventory before it becomes slow moving, etc.

1. Identify key issues related to managing inventory in the service sector.

Answer: Some service companies have perishable, such as food service, health services have strict controls on their products, airline seats and hotel rooms are managed using yield management, etc. Some are also using the same techniques as goods producing companies.

**Critical Thinking Exercises**

1. You are the manager of Macy’s Department store in Buffalo, New York. How would you go about the evaluating the impact of inventory shortages?

Answer: Student examples will vary.

1. Supermarkets carry a wide range of inventory items that makes managing inventory difficult. The manager of a supermarket in your neighborhood is your friend and seeks your help in calculating inventory turnover because the supermarket is facing severe cash flow problems. How would you go about helping him?

Answer: Examples will vary. You could have him look at product groups, and compare the average inventory versus sales for that product group, even though the products will change somewhat, Etc. ?