**Supply Chain Management**

**1. A medical device company sells branded power tools to the hospitals. The annual demand is approximately 1,800 batteries. The cost price per power tool is $250 for and estimated annual holding cost is 35% of the product’s value. It costs approximately$180 to place an order (ordering cost). The company currently orders 150 power tools per month (considering LT as 30 days).**

**a. Determine the ordering, holding, and total inventory costs for the current order quantity.**

**b. Determine the economic order quantity (EOQ).**

**c. How many orders should be placed per year using the EOQ?**

**d. Determine the ordering, holding, and total inventory costs for the EOQ. (10 Marks)**

**Answer:**

**INTRODUCTION:**

Inventory management is defined as the process of procuring, warehousing and utilizing the inventory effectively right from the stage of raw material to produce the finished goods and making them ready to be shipped for sale. One major part of inventory planning and adjustment is managing the

**2. M/s Futurama, handles a variety of imported auto components. One of the key components is suspension systems. Considering the criticality of this part, company has built a separate storage facility that has annual fixed cost of US$, 5000. Since the components are imported, company is incurring following ordering costs**

**Delivery cost per order = US$2000**

**Import Duty per Order = US$300**

**Custom Fees per Order = US$200**

**Import License per annum = US$200**

**There is a total demand of 12000 pieces per annum (monthly demand of 1000 pieces with a standard deviation of 100 pieces). The supply lead time is 1 month with a standard deviation of 0.3 month. Company is conveniently placing one order every month with an average qty of 1000. The cost per piece is US$30. The annual holding cost rate is 30%. Calculate cycle stock and safety stock point if the firm is willing to tolerate a 1% chance (Z0.99 = 2.32) of a stock out during an order cycle. Also calculate the total cost of inventory. (10 Marks)**

**Answer:**

**INTRODUCTION:**

Inventory management is the process of purchasing, storing and utilizing the inventory of a company effectively right from the raw material stage to the finished goods ready to be shipped for sale. Managing inventory is crucial because too much of a stock lying in warehouse can result in damage,

**3. a. Explain the situation, when it is advisable to use exponential smoothing methods offorecasting over the moving average method of forecasting. For a product in the growth phase of life cycle, which method would you prefer any why? (5 Marks)**

**INTRODUCTION:**

Exponential smoothing method: This method computes a smoothed average that becomes necessarywhile

**3. b. State the difference between the key inventory indicators; Inventory Turns Ratio and Days of Inventory Outstanding. Income statement of Alexa Corporation from 2019 showed the cost of goods sold (COS) was $39.40 million, and its average inventory value during the same period was $8.32 million.**

**Calculate company’s number of Inventory Turns Ratio (ITR) for that year and Days of Inventory Outstanding (DIO). (5 Marks)**

**INTRODUCTION:**

Inventoryturnover

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