

Material cost control

$$1) EOQ = \sqrt{\frac{2AO}{C}}$$

$$2) \text{Total annual cost of } EOQ @ r) TOC + TCC \} = \sqrt{2AOC}$$

$$3) TOCPA = A \% \text{ order size} \times \text{order}$$

$$4) TCCPA = \text{Half of order size} \times \text{carrying cost}.$$

Safety stock [without]

$$5) ROL = \text{Maximum lead time} \times \text{Maximum consumption} \\ = \text{Minimum level} + [\text{Avg con} \times \text{Avg lead time}]$$

$$6) \text{Max level} = ROL + ROQ - [\text{Min con} \times \text{Min lead time}]$$

$$7) \text{Min level} = ROL - [\text{Max con} \times \text{Max lead time}]$$

$$8) \text{Ave con} = \text{Minimum level} + \frac{1}{2} ROQ \\ = \text{Min level} + \text{Max level} / 2.$$

Safety stock [with]

$$a) ROL = [\text{Max con} \times \text{Max lead time}] + \text{Safety stock}$$

$$b) \text{Saf stock} = \frac{\text{Annual demand}}{\text{No. of days}} \times [\text{Max led time} \times \text{Min LT}]$$

$$c) \text{Max level} = EOQ + \text{Safety stock}$$

$$d) \text{Min level} = \text{Safety stock}$$

e) Average consumption is same in both.

Danger level = Ave cons x emergency lead time

$$10) \text{ Inventory turn over Ratio} = \frac{\text{cost of Mater consum}}{\text{cost of Avg RIM held.}}$$

$$\therefore \text{cost of Material} = \text{op} + \text{pur} - \text{closing}$$

$$\text{Cost of Avg RIM} = \frac{1}{2} (\text{op} + \text{closing})$$

$$11) \text{ cost per kg RIM} = \frac{\text{Total purchase cost}}{\text{Total unit} - \text{Normal loss}}$$