A LECTURE NOTE
ON
TH.1 INDUSTRIAL ENGINEERING & MANAGEMENT
SEMESTER -6

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Sr. Lecture Mechanical Engineering

Mechanical Engineering

GOVT. POLYTECHNIC, MALKANGIRI

1) From the following information estimate the economic order quantity.

Annual carriages = 20,000 units
Ordering cost = Rs. 400/order
Carrying cost = Rs 1/unit/Annum

$$EOQ = \sqrt{\frac{2 \times 20,000 \times 100}{1}}$$

$$= 2000 \text{ units}$$

2) Calculate EOQ

Quarterly consumption of materials = 4000 units
Cost placing per order = Rs. 100
Cost per unit = Rs 80.
Shortage & Carrying cost = 8% of Inventory

$$A = 4000 \times 4 = 16,000$$
$$H = 80 \times \frac{8}{100} = 6.4$$
$$S = Rs. 100$$

$$EOQ = \sqrt{\frac{2 \times 16000 \times 100}{6.4}}$$

$$= 707.1$$

$$\simeq 707 \text{ quantity}$$

$D = 5000$
$S = 200$ Rs.
$H = 8$ Rs.

} Find EOQ, No of order/cycle & time bet^n orders.

$$EOQ = \sqrt{\frac{2 \times 5000 \times 200}{8}}$$

$$= 500.$$

No. of order / cycle $= \frac{5000}{500} = 10.$

Time bet^n orders $= \frac{360}{10} = 36$ days

Data

D = 12,000 units.
ordering cost (S) = 100.
Purchase price/unit = Rs 50.
carrying cost/year = 20%.

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Holding cost = 20% of 50.

$$= \frac{20}{100} \times 50 = 10.$$

(1) $EOQ = \sqrt{\frac{2 \times 12000 \times 100}{10}}$

$= 489.89 \simeq 490$ quantity

(2) No. of orders $= \frac{12000}{490} = 24.49 \simeq 25$ orders

(3) Time bet^n 2 successive order $= \frac{\text{No. of working Days}}{\text{no. of orders.}}$

$$= \frac{360}{25} = 14.4 \text{ days}$$