

THE HONG KONG POLYTECHNIC UNIVERSITY  
HONG KONG COMMUNITY COLLEGE

**Subject Title** : Introduction to Inventory and Warehousing Management

**Subject Code** : CCN2127

**Session** : Semester One, 2017/18

**Numerical Answers**

**Question B3**

$$(a) \quad EOQ = \sqrt{\frac{2DS}{H}}$$
$$= \sqrt{\frac{2 \times 500 \times 52 \times 10}{90}}$$

$$EOQ = 76 \text{ units}$$

$$(b) \quad R = \bar{d}L$$
$$26,000 / 320 \times 5 = 406 \text{ units}$$

$$(c) \quad D/Q$$
$$= 26,000 / 76$$

$$\text{Number of reorders} = 342 \text{ orders / year}$$

$$(d) \quad \text{Total annual cost TC: } \frac{D}{Q}S + \frac{Q}{2}H + DC$$

$$EOQ = 76 \text{ face masks /order: } [(26,000/76) \times \$10] + [(76/2) \times \$90] + (\$50 \times 26,000)$$
$$= 3,421.05 + 3,420 + 1,300,000$$
$$= \$1,306,841$$

$$(e) \quad EOQ = 1,000 \text{ face masks/order: } [(26,000/1,000) \times \$10] + [(1,000/2) \times \$90] + (\$50 \times 26,000)$$
$$= 260 + 45,000 + 1,300,000$$
$$= \$1,345,260$$

**The difference of \$38,419 is significant**