

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Fundamentals of Logistics and
Supply Chain Management

Subject Code : CCN2117

Session : Semester One, 2018/19

Numerical Answers

Question B1

(a) Annual demand: $5,000 \times 6 = 30,000$ units

$$\begin{aligned}EOQ &= \sqrt{\frac{2DS}{H}} \\ &= \sqrt{\frac{2 \times 30,000 \times 300}{4,000 \times 15\%}} \\ &= \sqrt{\frac{18,000,000}{600}} \\ &= \sqrt{30,000} \\ &= \mathbf{173 \text{ units (Q)}}\end{aligned}$$

(b) $R = \bar{d}L$
 $= 30,000 / 310 \times 7$
 $= \mathbf{677 \text{ units}}$

(c) D/Q
 $= 30,000 / 173$
Number of reorders = $\mathbf{173 \text{ orders}}$

(d) $Q/2$
 $= 173 / 2$
Number of average inventory level = $\mathbf{87 \text{ orders}}$

$$(e) \quad TC = DC + \frac{D}{Q} S + \frac{Q}{2} H$$
$$(30,000 \times \$30) + [(30,000/173) \times \$300] + [(173/2) \times \$600]$$
$$=\$1,003,923$$