

THE HONG KONG POLYTECHNIC UNIVERSITY
HONG KONG COMMUNITY COLLEGE

Subject Title : Fundamentals of Logistics and Supply Chain Management

Subject Code : CCN2117

Session : Semester Two, 2017/18

Numerical Answers

Question B1

(a) Annual demand: $800 \times 6 = 4800$ units

$$\begin{aligned}EOQ &= \sqrt{\frac{2DS}{H}} \\ &= \sqrt{\frac{2 \times 4800 \times 50}{80 \times 20\%}} \\ &= \sqrt{\frac{480,000}{16}} \\ &= \sqrt{30,000} \\ &= \mathbf{173 \text{ units (Q)}}\end{aligned}$$

(b) $R = \bar{d}L$
 $= 4800 / 330 \times 3$
 $= \mathbf{44 \text{ units}}$

(c) D/Q
 $= 4800 / 173$
Number of reorders = $\mathbf{28 \text{ orders}}$

(d) $Q/2$
 $= 173 / 2$

Number of average inventory level = **87 orders**

$$(e) \quad TC = DC + \frac{D}{Q}S + \frac{Q}{2}H$$

$$(4800 \times \$30) + [(4800/173) \times \$50] + [(173/2) \times \$16]$$

$$=\$146,771$$