THE HONG KONG POLYTECHNIC UNIVERSITY

HONG KONG COMMUNITY COLLEGE

Subject Title : Introduction to Procurement Management

Subject Code : CCN2159

Session : Semester Two, 2017/18

Numerical Answers

Question B1

Annual demand rate D : $500 \times 26 = 13{,}000$

Setup cost S : $50

Unit cost C : $10

Percent carrying cost i : 20% $\Rightarrow$ Annual unit holding cost H = $20 \times 20\% = \$4$

$$EOQ = \sqrt{\frac{2DS}{H}}$$

$$= \sqrt{\frac{2 \times 13{,}000 \times 50}{4}}$$

= 570 Units (Q)

Total annual cost TC: $\frac{D}{Q}S + \frac{Q}{2}H + DC$

Q= 5,000 recycle bag/order: [(13000/5000) x$50] + [(5000/2) x $4] + ($10 x 13000) = $140,130

EOQ= 570 recycle bag/order:[(13000/570) x$50] + [(570/2) x $4] + ($10 x 13000) = $132,280

The difference of ($140,130 - $132,280) = $7,850

Question B2

(a) 0.5(280) + 0.3(230) + 0.2 (210) = 251

(b) (280 + 230 + 210 + 160)/4 = 220

(c) 300 + 0.5(280-300) = 290

(d) $F_{December}$ = 450 + 0.5(280-450) = 365

$T_{December}$ = 150 + 0.8 (365-450) = 82

$FIT_{December}$ = 365+82 = 447