THE HONG KONG POLYTECHNIC UNIVERSITY

HONG KONG COMMUNITY COLLEGE

Subject Title : Introduction to Procurement Management **Subject Code** : CCN2159

Session : Semester Two, 2016/17

Numerical Answers

Question B1

(a) Annual demand rate D : 100 bottles × 6 = 600 bottles
Setup cost S : $60
Unit cost C : $80
Percent carrying cost i : 15% ⇒ Annual unit holding cost H = $200 × 15% = $30

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

$$= \sqrt{\frac{2 \times 600 \times 60}{30}}$$

= 49 Units (Q)

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

Q= 1000 bottles/order: [(600/1000) x$60] + [(1000/2) x $30] + ($80 x 600) = $63,036

EOQ= 49 bottles/order: [(600/49) x$60] + [(49/2) x $30] + ($80 x 600) = $49,470

The difference of ($63,036 - $49,470) = $13,566

Question B2

(a) 0.6(150) + 0.3(160) + 0.1 (120) = 150

(b) (150 + 160 + 120)/3 = 143

(c) 180 + 0.3(150-180) = 171

(d) F_{July} = 190 + 0.3(150-190) = 178
T_{July} = 10 + 0.5 (178-190) = 4
FIT_{July} = 178+4 = 182