THE HONG KONG POLYTECHNIC UNIVERSITY

HONG KONG COMMUNITY COLLEGE

Subject Title : Principles of Financial Planning **Subject Code** : CCN2144

Session : Semester Two, 2017/18

Numerical Answers

Question B3

The PV amount needed for 1st Son:
\$500,000 / $(1+6\%)^{18-6}$ = \$248,484.6818

The PV amount needed for 2nd Son:
\$500,000 / $(1+6\%)^{18-2}$ = \$196,823.1419

$PV_1 + PV_2 = \$248{,}484.6818 + \$196{,}823.1419 = \$445{,}307.82$

Since \$400,000 < \$445,307.82, John has NOT enough money to reach his objective right now.

Question C1

(b) Interest = $\$100{,}000 \times 6\% = \$6{,}000$
Monthly Payment = $\frac{\$100{,}000 + \$6{,}000}{12} = \$8{,}833.33$

(c) $FV = PV(1+r)^t = \$100{,}000 \times (1.2)^{12} = \$891{,}610.04$

(f) $FV_5^1 = \$10{,}000 \times \frac{(1+2\%)^5 - 1}{2\%} = \$52{,}040.40$

(g) The stream of cash flow can be treated as 2 ordinary annuities:
The future value of the 1st ordinary annuity (first 5 months) in 12 month is:
$FV_{12}^1 = FV_5^1 \times (1+2\%)^{12-5}$ =\$59,778.06

The 2nd ordinary annuity that starts at month 7:
$FV_{12}^2 = \$10{,}000 \times \frac{(1+2\%)^6 - 1}{2\%} = \$63{,}081.21$

Total value in 12 months later:
$FV_{12}^1 + FV_{12}^2 = \$59{,}778.06 + \$63{,}081.21 = \$122{,}859.27$