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Finance I

Chapter 7

2. $1000 x 12% = $120

$C/r \times [1 - (1 + r)^{-n}] + [\text{par value} \times (1 + r)^{-n}]$

$\$120/0.08 \times [1 - (1 + 0.08)^{-25}] + [\$1000 \times (1 + 0.08)^{-25}]$

$\$1500 \times [1 - (1.08)^{-25}] + [\$1000 \times (1.08)^{-25}]$

$1500 x 0.853982095 + [$146.0179049]

$1,280.973143 + $146.0179049 = $1426.99

3. Altoona Company

A) PB = PMT [PVFAk,n] + FV [PVFk,n]

PB = 50 [PVFA6,40] + 1000 [PVF6,40]

= 50 (15.0463) + 1000 (.0972) = 849.52

B) PV = $1,197.93

C) If the interest rate is 12% for comparable new issues then the company will incentivize people by offering bonds at a cheaper rate. If the interest rate is 8% then the demand for the company bonds would be higher since it gives higher payments.

D. PV of annuity = $50 * [{1-(1+0.05)^-40} / 0.05] = $857.95

Present value of maturity sum = $1000 * (1/1.05^40) = $142.05

Price of the bond when interest rate is 10% = $857.95 + $142.05 = $1000

4. A - 120*[1/10% - 1/(10%*(1+10%)^15] + 1,000/(1+10%)^15 = 1,152.12

B. 70*[1/12% - 1/(12%*(1+12%)^5] + 1,000/(1+12%)^5 = 819.76

C. 90*[1/6% - 1/(6%*(1+6%)^25] + 1,000/(1+6%)^25 = 1,383.50

D. 70*[1/9% - 1/(9%*(1+9%)^30] + 1,000/(1+9%)^30 = 1,513.68

E. 50*[1/8% - 1/(8%*(1+8%)^6] + 1,000/(1+8%)^6 = 861.31

6. A) $656.82 -PV(5%,40,30,1000)

B) $659.46 -PV(10%,20,60,1000)

C) $985.23 -PV(5%,40,45,1500)

17. A) $200*((1-(1+10\%)^{-5})/10\%)+1200/(1+10\%)^5=1503.26$

B) $200*((1-(1+10\%)^{-20})/10\%)+1000/(1+10\%)^{20}=1851.36$

23. A) ROI = {(P1-P0)* N + D*N} / Amount invested in convertible bonds X100

ROI = {(25-20)*20 + 1*20} / 950 x 100 = [100+20] / 950 X 100 = 12.63 %

B) ROI = Coupon rate / Current price of Bond X100

ROI = 100/950 x 100 = 10.53%

C) $1/$15 x 100 = 6.7%

D) 1. ROI = {(15-20)*20 + 1*20} / 950 [-100+20] / 950 x 100 = -8.4%

2. ROI = Coupon rate / Current price of bond = 100/950 x 100 = 10.53%

3. ROI = $1/$15 x 100 = 6.7%