FIN300 – Corporation Finance

Review I

Spring, 2001

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Guideline Answers

Multiple Choice
1. D 11. B
2. C 12. B
3. B 13. A
5. E 15. B
7. B 17. E
8. B 18. C
10. B 20. A

Short Answer Section
1. (a) i. CR=32/17=1.88
   ii. QR=0.66
   iii. TDR=68.75%
   iv. Rec. TO=14.06
   v. ACP=26 days
   vi. Profit M.=19.2%
   vii. ROA=36%
   viii. ROE=115.2%
   ix. Equity Multiplier = 3.2
   x. Inventory TO=1.73

   (b) On average, the company turns its inventory over 1.73 times in a year.

   (c) i. $20
   ii. $18.75
   iii. 7
   iv. 18,000
(d) \[ sgr = \frac{b \times ROE}{1 - b \times ROE} = \frac{0.5 \times 1.152}{1 - (0.5 \times 1.152)} = 136\% \]

\[ b = \frac{1,728,000 - (1.44 \times 600,000)}{1,728,000} = 0.5 \]

Therefore, dividend growth rate is 136%. Current dividend is $1.44 and price is $20. We use the constant growth formula, to find the required rate of return.

\[ P_0 = \frac{D_0 \times (1 + g)}{r - g} \Rightarrow 20 = \frac{1.44 \times (1 + 1.36)}{r - 1.36} \Rightarrow r = \frac{1.44 \times (2.36)}{20} + 1.36 = 153\% \]

Therefore the required rate of return is 153%.

2. (a) 

\[ 1,200 = 120 \times PVIFA_{100,\text{ytm}} + 1000 \times PVIF_{100,\text{ytm}} \]

\[ ytm \approx 10\% \]

(b) In this case, since we will have to sell our bonds for $1,120 in 15 years, the effective maturity of the bond reduces to 15 years.

\[ 1,200 = 120 \times PVIFA_{15,\text{ytm}} + 1,120 \times PVIF_{15,\text{ytm}} \]

\[ ytm \approx 9.79\% \]

3. (a) \[ 250,000 \times PVIF_{25.5\%} = 846,589 \]

(b) 

\[ r = \frac{.24}{12} = .02 = 2\% \]

\[ n = 25 \times 12 = 300 \]

\[ 846,589 = pmt \times FVIFA_{300,2\%} \]

\[ pmt = \$44.64 \]

**Bonus Question**

Use general model. We know dividend and price at time 1. Therefore:

\[ P_0 = \frac{D_0}{1 + r} + \frac{P_1}{1 + r} = \frac{3}{1 + .3} + \frac{23}{1 + .3} = \frac{26}{1.3} = 20 \]