

FIN 3210

Fall 2017 Exam 2

Name Answer Key

NOTE: Type your name in cell G1

Multiple Choice

1	C	0
2	B	0
3	E	0
4	D	0
5	C	0
6	C	0
7	E	0
8	D	0
9	E	0
10	B	0
11	C	0
12	C	0
13	C	0
14	A	0
15	C	0
16	D	0

Total missed 0

Total off 0

Answer Key

Problem #1 (15 points)

Debt: 45,000 bonds with a 7 percent coupon, a par value of \$1,000, a current price quote of 115.32 with 12 years to maturity. 35,000 bonds with a 5.4 percent coupon, a par value of \$2,000, a current price quote of 106.35 with 25 years to maturity. Both bonds make semiannual coupon payments.

Common Stock: 3,500,000 shares of common stock with a price of \$78 and a beta of 1.1. The company expects to pay a dividend of \$4.65 next year and the dividends will grow at 4.2 percent forever.

Market: The corporate tax rate is 40 percent, the market risk premium is 7 percent, and the risk-free rate is 3.5 percent.

<i>Debt:</i>	Bond A	Bond B
Number of bonds	45,000	35,000
Par value (\$)	\$ 1,000	\$ 2,000
Coupon rate	6.00%	5.40%
Par value (% of par)	100	100
Quoted price	115.320	106.350
Settlement date	1/1/2000	1/1/2000
Maturity date	1/1/2012	1/1/2025
Coupons per year	2	2
<i>Common stock</i>		
Number of shares	3,500,000	
Price	\$ 78	
Beta	1.10	
Dividend next year	\$ 4.65	
Dividend growth rate	4.2%	
<i>Market</i>		
Market risk premium	7.0%	
Risk-free rate	3.5%	
Tax rate	40%	

Bond A

YTM	4.35%
Aftertax cost	2.61%

Bond B

YTM	4.95%
Aftertax cost	2.97%

Equity

CAPM	11.20%
DDM	10.16%
Average	10.68%

	Market value	Weight
Bond A	\$ 51,894,000	0.1299
Bond B	74,445,000	0.1864
Equity	273,000,000	0.6836
Total	\$ 399,339,000	1.00

	Weight times cost
	0.00339
	0.00554
	0.07302
WACC =	8.19%

Answer Key

Problem #2 (11 points)

You find a bond with 19 years to maturity that has a semiannual coupon rate of 3.5 percent, a yield to maturity of 3.9 percent, and a par value of \$10,000. What is the dollar price of the bond? Suppose that the price of the bonds fell \$5 from yesterday's price. Did interest rates move up or down on this day?

Par value (% of par)	100
Coupon rate	3.50%
Yield to maturity	3.90%
Settlement date	1/1/2000
Maturity date	1/1/2019
Coupons per year	2
Par value (\$)	\$ 10,000

Price (percent of par) 94.667

Dollar price

\$ 9,466.72

If the price fell, interest rates must have increased.

Answer Key

Problem #3 (11 points)

Hailey Corp. has an unusual dividend policy. The company will pay a dividend of \$7, \$16, \$11, and \$2.90 for each of the next four years, respectively. Afterwards, the company has pledged to increase dividends by 5 percent per year indefinitely. If the required return on the company is 11 percent, how much should you pay for the stock today?

Dividend in Year 1	\$	7.00
Dividend in Year 2	\$	16.00
Dividend in Year 3	\$	11.00
Dividend in Year 4	\$	2.90
Perpetual growth rate		5%
Required return		11%

Year 5 dividend \$ 3.05

Price in Year 4 \$ 50.75

Cash flows

Year 1 \$ 7.00

Year 2 \$ 16.00

Year 3 \$ 11.00

Year 4 \$ 53.65

Price today **\$ 62.68**

Answer Key

Problem #4 (11 points)

A stock has had returns listed below each year over the past 25 years. What was the average return, variance, and standard deviation of this stock's returns over this period?

Year 1	32%
Year 2	14%
Year 3	9%
Year 4	5%
Year 5	-20%
Year 6	38%
Year 7	16%
Year 8	21%
Year 9	-13%
Year 10	8%
Year 11	11%
Year 12	17%
Year 13	28%
Year 14	7%
Year 15	3%
Year 16	-2%
Year 17	5%
Year 18	14%
Year 19	19%
Year 20	9%
Year 21	37%
Year 22	-6%
Year 23	-15%
Year 24	21%
Year 25	14%

Average return

Variance

Standard deviation

Answer Key

Problem #5 (5 points)

In broad terms, why is some risk diversifiable? Why are some risks nondiversifiable? Does it follow that an investor can control the level of unsystematic risk in a portfolio, but not the level of systematic risk?

Some of the risk in holding any asset is unique to the asset in question. By investing in a variety of assets, this unsystematic portion of the total risk can be eliminated at little cost. On the other hand, there are systematic risks that affect all investments. This portion of the total risk of an asset cannot be costlessly eliminated. In other words, systematic risk can be controlled, but only by a costly reduction in expected returns.