41.5 / 50

excellent

Question	Answer
1	D
2	D
3	B
4	C
5	A
6	D
7	C
8	B
9	D
10	~~B~~ A
11	D
12	A
13	~~A~~ A
14	C
15	B

12

Diversification can controlled

1. Which of the following is a source of unsystematic risk?

   A. Interest rates
   B. Business cycle
   C. Energy Prices
   D. Introduction of a bad product

2. The ________ is the compound annual rate of interest earned on a debt security purchased on a given date and held to maturity.

   A. Risk premium
   B. Yield curve
   C. Risk-free rate
   D. Yield to maturity

Σ PV

3. The value of any asset is the ________.

   A. Sum of all future cash flows it is expected to provide over the relevant time period
   B. Sum of the present values of all future cash flows it is expected to provide over the relevant time period
   C. Present value of the sum of all future cash flows it is expected to provide over the relevant time period
   D. Sum of all compounded future cash flows it is expected to provide over the relevant time period

4. Consistent with capital market theory, systematic risk: un diversification can't controlled

   I. Refers to the variability in all risky assets caused by macroeconomic and other aggregate market-related variables.
   II. Is measured by the coefficient of variation of returns on the market portfolio. CV
   III. Refers to nondiversifiable risk.

   A. I only
   B. II only
   C. I and III only
   D. II and III only

5. An investor is considering adding another investment to a portfolio. To achieve the maximum diversification benefits, the investor should add an investment that has a correlation coefficient with the existing portfolio closest to:

   A. –1.0 Perfectly negative
   B. –0.5
   C. 0.0
   D. +1.0

6. According to the CAPM, what is the rate of return of a portfolio with a beta of 1?
   A. Between R_m and R_f
   B. The risk-free rate, R_f
   C. Beta * ($R_m - R_f$)
   D. The return on the market, R_m

$r = RF + b(r_m - RF)$

$r = RF + (r_m - rf)$

7. The inflation risk premium on a bond is 2 percent, the U.S. T-bill rate is 5 percent, the maturity risk premium on the bond is 3 percent, the default risk premium on the bond is 2 percent, and the liquidity risk premium on the bond is 1 percent. Calculate its nominal rate of return.

RP

IP + 5 + 6

$r^* + IP + RP$

3 + 2 + 1 = 6

   A. 16%
   B. 13%
   C. 11%
   D. 9%

8. A stock with a beta of 2 is

   A. Twice as risky as the average stock in the market.
   B. Will have twice the expected return as the average stock in the market.
   C. Will have twice the standard deviation as the average stock in the market.
   D. Will have twice the return as the risk-free rate. X

9. What is the expected return of a zero-beta security?

$r = RF$

   A. Market rate of return.
   B. Zero rate of return.
   C. Negative rate of return.
   D. Risk-free rate of return.

10. ________ rate of interest creates equilibrium between the supply of savings and the demand for investment funds.

sup = demand

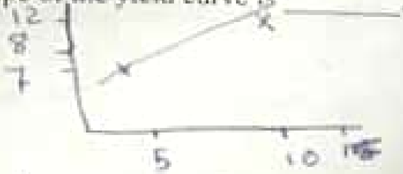
   A. Nominal
   B. Real
   C. Risk-free x
   D. Inflationary x

11. The term structure of interest rates is the relationship between ________.

   A. The present value of principal and coupon rate of the bonds
   B. The general expectation of inflation and nominal rate of return for bonds
   C. The general expectation of inflation and real rate of return for bonds
   D. The maturity and rate of return for bonds with similar level of risk

YTM

12. Assume the following returns and yields: U.S. T-bill = 8%, 5-year U.S. T-note = 7%, IBM common stock = 15%, IBM AAA Corporate Bond = 12% and 10-year U.S. T-bond = 6%. Based on this information, the shape of the yield curve is ________.



A. Upward sloping
B. Downward sloping
C. Flat
D. Normal

13. The shorter the amount of time until a bond's maturity, the more responsive is its market value to a given change in the required return.

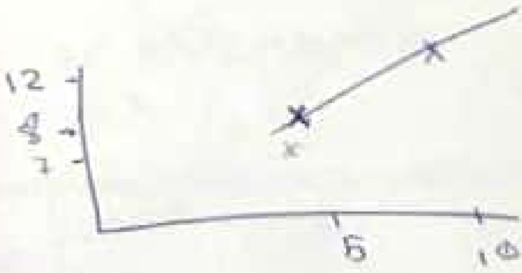
A. FALSE
B. TRUE

14. A ________ is a restrictive provision in a bond indenture, providing for the systematic retirement of the bonds prior to their maturity.

A. Conversion feature
B. Redemption clause
C. Sinking-fund requirement
D. Subordination clause

15. ________ means that subsequent creditors agree to wait until all claims of the are senior debt satisfied before having their claims satisfied.

A. Security interest
B. Subordination
C. Sinking fund requirement
D. Bond indenture



Essay Questions

1. You buy Apple stock for $50 a share. Apple's stock rises to $100 the next year. If you receive $5 during your holding period, what is your rate of return at the end of the first year. " 2 points"

rate of return = (CF + ~~Return~~ sold price - Purchase price) / Purchase price

= (5 + (100 - 50)) / 100 = ~~2~~55 %

2

1.1 = 110%

2. You are given the following estimates for Stock's A and B.

State of economy	Probability	Stock A (r - r̄)	Stock B
Poor	0.25	-5% - 5.75	-8% - 8.5
Normal	0.5	8% - 5.75	10% - 8.5
Good	0.25	12% - 5.75	22% - 8.5

A. What are the expected returns for stock's A and B respectively? "3 points"

r̄ stock(A) = (-5% * 0.25) + (8% × 0.5) + (12% * 0.25)   Σ(r × pr)

= -1.25 + ~~[illegible]~~ 4 + 3

r̄ = 5.75%

r̄ stock(B) = (-8% * 0.25) + (10% * 0.5) + (22% * 0.25)

r̄ = -2 + 5 + 5.5

r̄ = 8.5%

3

3

$6 = \sqrt{\Sigma(r-\bar{r})^2 \times pr}$

B. What are the standard deviations for stock's A and B respectively? "4 points"

stock A

$(r-\bar{r})$	$(r-\bar{r})^2$	$(r-\bar{r})^2 \times pr$
-10.75%	0.01155	0.2889
2.25%	0.0506	0.0253
6.25%	0.039	0.0976
	Σ	15%

6 = √15% = 3.8%

stock B

$(r-\bar{r})$	$(r-\bar{r})^2$	$(r-\bar{r})^2 \times pr$
-16.5%	0.0272	0.6806
1.5%	0.0225	0.01125
13.5	0.01822	0.4556

Σ = ~~[illegible]~~ ~~[illegible]~~ 1.1475

6 = √1.1475

6 = 1.07%

2

C. Which stock is more risky? " 3 points"

stock A is more risky because of 6 = 3.8%

but in b & 6 = 1.07%

$CV_A = \frac{3.8}{5.75} = 0.66$

$CV_B = \frac{1.07}{8.5} = 0.125$

& CVA is ~~[illegible]~~ highest than CV_B => A is risky d More

3. The table below gives the amount invested and betas for three stocks.

Stock	Amount Invested	w	Beta	$\bar{r}$
GM	$10,000	0.25	1.0	9%
IBM	$10,000	0.25	1.2	10.2%
WMT	$20,000	0.5	0.7	7.2%

A. Using the CAPM, if the expected return for the market is 9% and the risk-free rate is 3%, what is the expected return for each stock? " 3 Points"

$\bar{r} = RF + b(r_m - RF)$

$\bar{r}_{GM} = 3\% + 1(9\% - 3\%)$

$= 3\% + 6\%$

$= 9\%$

$\bar{r}_{IBM} = 3\% + 1.2(9\% - 3\%)$

$= 10.2$

$\bar{r}_{WMT} = 3\% + 0.7(9\% - 3\%)$

$= 7.2$

3

B. What is the beta for this portfolio based on the invested amounts? " 3 Points"

$b = \sum w \times b$

$= (1 \times 0.25) + (1.2 \times 0.25) + (0.7 \times 0.5)$

$b = 0.9$

3

C. Using the CAPM, what is the expected return for this portfolio? " 2 Points"

CAPM → $\bar{r} = RF + b(r_m - RF)$

$\bar{r} = 3\% + 0.9(9\% - 3\%)$

$\bar{r} = 8.4\%$

2

$\bar{r} = \sqrt{\sum \bar{r}_p \bar{r}_p \times pc}$

$\therefore \bar{r} = \sqrt{\ldots}$

#4. Facebook plans to issue new bonds to finance its expansion plans. In its efforts to price the issue, Facebook has identified a company of similar risk with an outstanding bond issue that has an 8 percent coupon rate having a maturity of ten years. This firm's bonds are currently selling for $1,080. If interest is paid annually for both bonds, what must the coupon rate of the new bonds be in order for the issue to sell at par? What will be the current yield of this bond? " 5 Points"

$i = 9\%$

$n = 10$

$SP = 1{,}080$

sell price = 1000

YTM =

(2) Current Yield = investment / ~~[illegible]~~

= ~~[illegible]~~ 17.54%

Current Yield = 1000 / 57

Current Yield = 5.7%

4

حل سؤال رقم ٤

الحل في الاول

$r = 6\%$

Bond issued annually

$i = 8\%$

$n = 10$

Selling price = 1080

(1)

$$YTM_{\text{issued Bond}} = \frac{80 + \frac{1000-1080}{10}}{\frac{1000+1080}{2}} = 6\%$$

$r = 6\%$

Facebook bond annually

$i = ?$ → اسعر الفائدة

$n = 10$

selling price = 1000

$$PP_{\text{New Bond}} = I\left(\frac{1-(1+0.06)^{-10}}{0.06}\right) + \frac{1000}{(1.06)^{10}}$$

$1000 = I(7.36) + 558.39$

$-558.39 \qquad -558.39$

$\frac{441.60}{7.63} = \frac{7.63 I}{7.63}$

$I = 57.87$

$\frac{I}{1000} = i \times \frac{1000}{1000}$

$i = 5.77\%$ for new Bond

5. Use the following expectations on Stocks X and Y to build a portfolio XY, created by combining 60% of stock X and 40% of stock Y

	Probability	Stock X return	Stock Y return
Bear Market	0.2	-20% x 60% +	-15% x 40%
Normal Market	0.5	18% x 60% +	20% x 40%
Bull Market	0.3	50% x 60%	10% x 40%

r - r̄
-18% -16 = -34%
18.8% -16 = 2.8%
34% -16 = 18%

What is the return and the standard deviation of this portfolio? "5 points"

$\bar{r} = (18\% \times 0.2) + (18.8 \times 0.5) + (34\% \times 0.3)$

$= -3.6 + 9.4 + 10.2$

$\bar{r} = 16\%$

4.8

$\sigma = \sqrt{\Sigma(r-\bar{r})^2 \times Pr}$

$(r-\bar{r})$	$(r-\bar{r})^2$	$(r-\bar{r}^2 \times Pr)$
0.34	0.1156	0.02312
0.028	0.0784	0.0392
0.18	0.0324	0.972

$\sqrt{\Sigma(r-\bar{r})^2 \times Pr} = \sqrt{.03432}$

$= 1.017$

$\sigma \Rightarrow 10.17\%$

8

6. An annual coupon bond has \$1000 face value, coupon rate of 5%, will mature in 10 years, and currently sells for \$810, what would be the rate of return on your investment after two years, if you sell the bond at market interest rate of 4%. "5 Points"

العرض الأول

FV = 1000
$i = 5\%$
$n = 10 - 2 = 8$
CS = 810

$I = i \times 1000$
$= 5\% \times 1000$

$I = 50$

$n = 10 - 2$
$= 8$

$$YTM = \frac{50 + \frac{1000 - 810}{8}}{\frac{1000 + 810}{2}} = 8\%$$

annual rate of ...

العرض الثاني

$$P_B = I\left(\frac{1 - (1+r)^{-n}}{r}\right) + \frac{Par}{(1+r)^n}$$

$$= 50\left(\frac{1 - (1+0.04)^{-8}}{0.04}\right) + \frac{1000}{(1+0.04)^8}$$

336.637243 +

$= \$1067.37$