

Do ALL 32 multiple choice problems. Two marks each to a maximum of 58 marks.

1. Which of the following are disadvantages of the partnership form of ownership?
 - A) Personal liability and double taxation
 - B) Personal liability and limited firm life**
 - C) Double taxation and limited firm life
 - D) Ease of formation and unlimited firm life
 - E) Ease of formation and ease of ownership transfer

2. Which one of the following would have the greatest present value, assuming a positive discount rate?
 - A) \$1,000 today plus \$100 a month for 2 years
 - B) \$1,000 today plus \$200 a month for a year
 - C) \$1,000 today plus \$400 a month for six months
 - D) \$2,200 today plus \$200 a month for six months**
 - E) \$2,200 today plus \$100 a month for a year

3. You are considering two projects with the following cash flows:

	Project A	Project B
Year 1	\$2,500	\$4,000
Year 2	3,000	3,500
Year 3	3,500	3,000
Year 4	4,000	2,500

Which of the following statements are true concerning these two projects?

- I. Both projects have the same future value at the end of year 4, given a positive rate of return.
 - II. Both projects have the same future value given a zero rate of return.
 - III. Both projects have the same future value at any point in time, given a positive rate of return.
 - IV. Project A has a higher future value than project B, given a positive rate of return.
- A) II only**
 - B) IV only
 - C) I and III only
 - D) II and IV only
 - E) I, II, and III only

4. Which of the following risks do debt ratings specifically attempt to assess?
- I. Interest rate risk
 - II. Default risk
 - III. The risk of a call being made
- A) I only
B) II only
C) I and II only
D) II and III only
E) I, II, and III
5. You own a bond that has a 7 percent coupon and matures in 12 years. You purchased this bond at par value when it was originally issued. If the current market rate for this type and quality of bond is 7.5 percent, then you would expect:
- A) the bond issuer to increase the amount of each interest payment on these bonds.
B) the yield to maturity to remain constant due to the fixed coupon rate.
C) to realize a capital loss if you sold the bond at the market price today.
D) today's market price to exceed the face value of the bond.
E) the current yield today to be less than 7 percent.
6. It is more difficult to value a stock than it is to value a bond because:
- A) The future cash flows of a stock are known
B) The life of an equity security is limited
C) The required market rate of return on a stock is known in advance
D) The maturity value of a stock is known
E) None of the statements are correct
7. Which of the following are disadvantages associated with average accounting return?
- I. difficulty in obtaining necessary information to do computation
 - II. exclusion of time value of money considerations
 - III. the use of a cutoff rate as a benchmark
 - IV. the accounting basis of the values used in the computation
- A) I and IV only
B) II and III only
C) I, II, and III only
D) II, III, and IV only
E) I, II, and IV only

8. If portfolio weights are positive: 1) Can the return on a portfolio ever be less than the smallest return on an individual security in the portfolio? 2) Can the variance of a portfolio ever be less than the smallest variance of an individual security in the portfolio?
- A) 1) yes; 2) yes
 B) 1) yes; 2) no
C) 1) no; 2) yes
 D) 1) no; 2) no
 E) 1) maybe; 2) no
9. Which of the following would be considered an example of unsystematic risk?
- I. Higher quarterly loss than expected for Air Canada
 II. Lower consumer spending than expected
 III. Latest unemployment figures increased, as expected
- A) I only**
 B) II only
 C) III only
 D) II and III only
 E) I and III only
10. The cost of equity is affected by:
- I. the growth rate of the firm.
 II. the market risk premium.
 III. the risk level of the firm.
 IV. dividend increases or decreases.
- A) I and III only
 B) II and IV only
 C) I, II, and III only
 D) II, III, and IV only
E) I, II, III, and IV
11. If an underwriter buys securities from an issuing firm and sells them directly to a small number of investors, the underwriter has:
- A) used best efforts underwriting
B) a bought deal
 C) a firm commitment offer
 D) a larger bid-ask spread on the securities
 E) used regular underwriting to sell the securities
12. The cost of capital assigned to an individual project should be that rate which:
- A) corresponds to the risk level of the firm's division which has responsibility for the project.
 B) corresponds to the source of the funds used for the project.
 C) corresponds to the latest pre-tax cost of debt and equity for the overall firm.
 D) is the firm's current weighted average cost of capital.
E) considers both the nature and the characteristics of the actual project.

13. An investor has a portfolio with an expected return of 11.19%. The portfolio is equally invested in a stock and a risk-free asset. The market has an expected return of 17% and the risk-free asset has an expected return of 3%. What is the beta of the stock?
- A) 0.98
 - B) 1.17**
 - C) 1.43
 - D) 1.62
 - E) 1.94
14. A stock has a beta of 1.4 and an expected return of 16%. The risk-free rate is 5%. What is the slope of the Security Market Line?
- A) 7.86%**
 - B) 7.98%
 - C) 8.23%
 - D) 8.67%
 - E) 8.98%
15. An agreement to exchange currencies at some point in the future using an agreed-upon exchange rate is called a _____ trade.
- A) spot
 - B) forward**
 - C) swap
 - D) floating
 - E) triangle
16. Dos Amigos Co. plans on saving money to buy some new equipment. The company is opening an account today with a deposit of \$15,000 and expects to earn 4% interest. After 3 years, the firm wants to add an additional \$50,000 to the account. If the account continues to earn 4%, how much money will the James Co. have in their account five years from now?
- A) \$66,872.96
 - B) \$68,249.79
 - C) \$70,952.96
 - D) \$72,329.79**
 - E) \$81,361.18
17. Aru borrowed \$149,500 for two years from the bank. At the end of the two years, she repaid the loan with one payment of \$176,590. What was the interest rate on the loan?
- A) 8.68%**
 - B) 9.06%
 - C) 10.00%
 - D) 10.42%
 - E) 18.12%

18. DJ Tiesto just won a "Name That Tune" contest with a grand prize of \$250,000. However, the contest stipulates that the winner will receive \$100,000 immediately, and \$15,000 at the end of each of the next 10 years. Assuming that he can earn 5% on his money, how much has he actually won?
- A) \$92,156.46
 - B) \$98,225.11
 - C) \$115,826.02
 - D) \$215,826.02**
 - E) \$250,000.00
19. You need to borrow \$18,000 to buy a truck. The current loan rate is 9.9% APR compounded monthly and you want to pay the loan off in equal monthly payments over five years. What is the size of your monthly payment?
- A) \$363.39
 - B) \$374.04
 - C) \$381.56**
 - D) \$394.69
 - E) \$455.66
20. Kiki&Ting Co. bond has an 8 percent coupon and pays interest annually. The face value is \$1,000 and the current market price is \$1,020.50. The bond matures in 20 years. What is the yield to maturity?
- A) 7.79 percent**
 - B) 7.82 percent
 - C) 8.00 percent
 - D) 8.04 percent
 - E) 8.12 percent
21. Suppose you purchase a zero coupon bond with face value \$1,000, maturing in 20 years from now, for \$214.51. If the yield to maturity on the bond remains unchanged, what will the price of the bond be five years from now?
- A) \$315.24**
 - B) \$387.52
 - C) \$410.91
 - D) \$680.58
 - E) \$1,000.00
22. Hendrickse Industries common stock sells for \$43.05 a share and pays an annual dividend that increases by 5 percent annually. The market rate of return on this stock is 10 percent. What is the amount of the last dividend paid by F & D?
- A) \$1.95
 - B) \$2.05**
 - C) \$2.15
 - D) \$2.21
 - E) \$2.26

23. Hussain Landscaping Inc. is considering a project that will cost \$1.2 million to start. The project is expected to produce cash flows starting in year 2 of \$269,000 a year for the following six years. What is the internal rate of return on this project?
- A) 4.09%
 - B) 5.62%**
 - C) 6.97%
 - D) 8.32%
 - E) 9.19%

24. What is the expected return on a portfolio with weights of 60% in asset A and 40% in asset B?

<u>State</u>	<u>Probability</u>	<u>Return on A</u>	<u>Return on B</u>
Boom	.3	12%	-2%
Normal	.6	8%	2%
Bust	.1	4%	6%

- A) 2.2%
 - B) 4.4%
 - C) 5.8%**
 - D) 8.8%
 - E) 9.9%
25. You form a portfolio by investing equally in A (beta=0.8), B (beta=1.2), the risk-free asset, and the market portfolio. What is your portfolio beta?

- A) 0.67
- B) 0.75**
- C) 0.95
- D) 1.12
- E) 1.15

26. Salmon Fraser Co. has a capital structure which is based on 40 percent debt, 10 percent preferred stock, and 50 percent common stock. The after-tax cost of debt is 6 percent, the cost of preferred is 7 percent, and the cost of common stock is 9 percent. The company is considering a project that is equally as risky as the overall firm. This project has initial costs of \$125,000 and cash inflows of \$76,000 a year for two years. What is the projected net present value of this project?

- A) \$11,275.07**
- B) \$11,398.16
- C) \$11,403.03
- D) \$11,006.18
- E) \$11,783.43

27. You decide to raise \$8 million in additional funding via a rights offering. One right is being granted for every share of stock currently outstanding. The offering consists of a total of 400,000 new shares. Currently, there are 2.5 million shares outstanding at a market price of \$31 per share. What is the value of one right?
- A) \$.71
 - B) \$1.15
 - C) \$1.24
 - D) \$1.37
 - E) **\$1.52**
28. Kara NanoTech Co. is a rapidly growing technology firm. To fund its next growth phase, the firm needs to raise \$1.2 million. The firm estimates that it can sell new shares of stock at a price of \$55 a share. The estimate for legal, accounting, and other costs related to the stock issue are \$450,000. The underwriters' spread is 6.5 percent. How many shares of stock must Jaxson Smith sell to meet its financing need?
- A) 31,182 shares
 - B) 31,501 shares
 - C) **32,086 shares**
 - D) 32,609 shares
 - E) 33,335 shares
29. Yiran Technologies pays no dividend at the present time. The company plans to start paying an annual dividend in the amount of \$.25 a share for 3 years commencing next year. After the 3 years, the company plans on paying a constant \$1 a share dividend indefinitely. How much are you willing to pay to buy a share of this stock if your required return is 13 percent?
- A) \$4.72
 - B) \$4.99
 - C) \$5.45
 - D) **\$5.92**
 - E) \$6.35
30. Dana is considering a project which will produce cash inflows of \$1,200 a year for 6 years. The project has a 15 percent required rate of return and an initial cost of \$3,400. What is the discounted payback period?
- A) 2.83 years
 - B) 2.92 years
 - C) **3.96 years**
 - D) 3.99 years
 - E) 4.13 years

31. Canadian Treasury bills are yielding 2.6% and the annual inflation rate in Canada is 1.8%. What is the inflation rate in Japan if the short-term government bonds in Japan are yielding 1.2%?
- A) **0.4%**
 - B) 0.8%
 - C) 1.2%
 - D) 1.6%
 - E) 2.0%
32. The current spot rate between Australian dollars and Canadian dollars is A\$1.015 per \$1. The rate on Canadian T-bills is 5% and the rate on an Australian risk-free security is 10%. What is the one-year forward rate if interest rate parity holds?
- A) A\$0.9689 per \$1
 - B) A\$1.0486 per \$1
 - C) **A\$1.0633 per \$1**
 - D) A\$1.0827 per \$1

Do THREE of four PROBLEMS for 14 marks each. Clearly indicate which three are to be marked. Show your work, including the general form of any equations.

1. Chapter 5 Lump sum TVM

Mr and Mrs. Y are considering buying their dream house in two years. Currently the house costs \$272,109 and they have saved \$30,000 to this end. Their real estate agent has convinced them that house prices are likely to rise by 5% a year over the next two years. In two years, they wish to make a down payment of 25% of the cost of the house. What annual rate of return must they earn on their savings to be able to make the down payment two years from now? Unfortunately, because of recent commitments, Mr. and Mrs. Y can only make one additional saving of \$15,000 in two years towards the down payment.

Expected value of the house in 2 years: $FV = 272,109 (1.05)^2 = \$300,000$ (1)

- Down payment: 25% of 300,000 \$75,000 (2)

- Contribution to down payment in 2 years \$15,000 (3)

- Extra funds needed for down payment (2) – (3) \$60,000

- So, current \$30,000 (PV) must grow to \$60,000 (FV) in 2 years (n)

- Using $FV = PV(1 + r)^n$, we solve for r

- $\ln(1 + r) = 1/n \times \ln(FV/PV)$

- $r = \exp(1/n \times \ln(FV/PV)) - 1$

- Substituting, $r = 41.4\%$

2. Chapter 6 Annuity savings

You are planning to retire in exactly 20 years. You are capable of making regular contributions to your savings at the end of every quarter over these 20 years. Your savings will earn an APR of 18 % compounded quarterly. You expect to live for 20 years past retirement and you anticipate withdrawing a minimum of \$20,000 at the beginning of each month to cover living expenses. During retirement, the interest rate will be an APR of 12 % compounded semi-annually. How much must you contribute to your retirement savings each quarter?

Number of quarterly periods until retire = $4 \times 20 = 80$

Number of monthly periods during retirement = $12 \times 20 = 240$

Effective quarterly rate of interest for savings: $r_Q = APR_{save}/m = 18\%/4 = 4.5\%$

Effective semi-annual rate of interest for retirement: $r_{SA} = APR_{out}/m_{out} = 12\%/2 = 6.0\%$

Effective monthly rate of interest for retirement: $r_M = (1 + r_{sa})^{\frac{1}{6}} - 1 = 1.06^{\frac{1}{6}} - 1 = 0.009759$

Cash outflows during retirement form an annuity due. PV of retirement cash outflows must equal FV of savings annuity:

$$PVA_{out} = C_{out} + C_{out} \left[\frac{1 - \frac{1}{(1 + r_M)^{t-1}}}{r_M} \right] = 20,000 + 20,000 \left[\frac{1 - \frac{1}{1.009759^{239}}}{0.009759} \right] = \$1,868,209$$

This PV must equal the FV of the savings:

$$PVA_{out} = FVA_{save} = C_{save} \left[\frac{(1 + r_Q)^t - 1}{r_Q} \right] = C_{save} \left[\frac{1.045^{80} - 1}{0.045} \right] = \$1,868,209$$

$$\rightarrow C_{save} = \$2,560.74$$

6. Chapter 14 wacc

Carlton Inc. has just paid a dividend on their preferred shares of \$2.00 per share. It is estimated that dividends on its preferred shares will grow at 10% indefinitely. The preferred stock currently is selling at \$44 per share. The risk free rate is 3%, the expected return on the market is 10%, and Carlton's stock beta is 1.2. Carlton's bonds have 10% coupon rate, 20 years to maturity, \$1000 face value and currently are selling at \$900. Carlton's tax rate is 40% and it intends to raise additional capital as follows: 20% from preferred stock, 40% from new common equity, and the remainder from the debt market. Assume there are no costs to issuing debt or equity. What is Carlton's weighted average cost of capital (WACC)?

$$R(e) = 3 + 1.2 * (10 - 3) = 0.114$$

$$R(p) = 2 * (1 + 0.1) / 44 + 0.10 = 0.15$$

$$R(d) \Rightarrow \text{Find YTM} = 11.26\%$$

$$W(e) = 0.4$$

$$W(p) = 0.2$$

$$W(d) = 1 - 0.4 - 0.2 = 0.4$$

$$\text{Tax} = 40\%$$

$$\text{WACC} = W(e)R(e) + W(p)R(p) + W(d)R(d)(1 - \text{Tax}) = 9.36\%$$

7. Chapter 14 Flotation cost

Red Inc. plans to purchase new machinery. Cost of the new equipment is \$100,000. The firm has a D/E ratio of 3. The firm estimates its flotation cost of equity to be 8% and its flotation cost of debt to be 2%. If Red's corporate tax rate is 34%, what is the dollar flotation cost of financing the new machinery?

$$\begin{aligned} \frac{D}{E} = 3 &\rightarrow D = 3 \quad E = 1 \quad \& \quad V = D + E = 4 \\ \text{Weights:} \quad w_D = \frac{D}{V} = \frac{3}{4} = 0.75 &\quad \& \quad w_E = \frac{E}{V} = \frac{1}{4} = 0.25 \end{aligned}$$

$$\text{Average flotation cost: } f_A = w_E f_E + w_D f_D = 0.25 * 8 + 0.75 * 2 = 3.5\%$$

$$\text{Total Cost, } TC = C_0 + TC * f_A$$

$$\rightarrow TC = \frac{C_0}{1 - f_A} = \frac{\$100,000}{0.965} = \$103,627$$

$$\text{Dollar flotation cost: } FC = TC - C_0 = \$103,627 - \$100,000 = \$3,627$$