Finance 3130   **Corporate Finiance   Sample Final Exam**   **Spring 2012**

True/False
Indicate whether the statement is true or falsewith A for true and B for false.

_____ 1. Interest paid by a corporation is a tax deduction for the paying corporation, but dividends paid are not deductible. This treatment, other things held constant, tends to encourage the use of debt financing by corporations.

_____ 2. According to the Capital Asset Pricing Model, investors are primarily concerned with portfolio risk, not the risks of individual stocks held in isolation. Thus, the relevant risk of a stock is the stock's contribution to the riskiness of a well-diversified portfolio.

_____ 3. The major advantage of a regular partnership or a corporation as a form of business organization is the fact that both offer their owners limited liability, whereas proprietorships do not.

_____ 4. Midway through the life of an amortized loan, the percentage of the payment that represents interest is equal to the percentage that represents principal repayment. This is true regardless of the original life of the loan.

_____ 5. The inventory turnover ratio and days sales outstanding (DSO) are two ratios that are used to assess how effectively a firm is managing its assets.

Multiple Choice
Identify the choice that best completes the statement or answers the question.

_____ 6. You recently sold to your brother 200 shares of Disney stock, and the transfer was made through a broker, and the trade occurred on the NYSE. This is an example of:
   a. A futures market transaction.
   b. A primary market transaction.
   c. A secondary market transaction.
   d. A money market transaction.
   e. An over-the-counter market transaction.

_____ 7. Ten years ago, Levin Inc. earned $0.50 per share. Its earnings this year were $2.20. What was the growth rate in Levin's earnings per share (EPS) over the 10-year period?
   a. 15.17%
   b. 15.97%
   c. 16.77%
   d. 17.61%
   e. 18.49%

_____ 8. Amram Company's current ratio is 1.9. Considered alone, which of the following actions would reduce the company's current ratio?
   a. Borrow using short-term notes payable and use the proceeds to reduce accruals.
   b. Borrow using short-term notes payable and use the proceeds to reduce long-term debt.
   c. Use cash to reduce accruals.
   d. Use cash to reduce short-term notes payable.
   e. Use cash to reduce accounts payable.

_____ 9. Northwest Lumber had a profit margin of 5.25%, a total assets turnover of 1.5, and an equity multiplier of 1.8. What was the firm's ROE?
   a. 12.79%

b. 13.47%
c. 14.18%
d. 14.88%
e. 15.63%

____ 10. Ripken Iron Works believes the following probability distribution exists for its stock. What is the coefficient of variation on the company's stock?

State of the Economy	Probability of State Occurring	Stock's Expected Return
Boom	0.25	25%
Normal	0.50	15%
Recession	0.25	5%

a. 0.4360
b. 0.4714
c. 0.5068
d. 0.5448
e. 0.5856

____ 11. You have the following data on three stocks:

Stock	Standard Deviation	Beta
A	0.15	0.79
B	0.25	0.61
C	0.20	1.29

As a risk minimizer, you would choose Stock ____ if it is to be held in isolation and Stock ____ if it is to be held as part of a well-diversified portfolio.
a. A; A.
b. A; B.
c. B; C.
d. C; A.
e. C; B.

____ 12. Ewert Enterprises' stock currently sells for $30.50 per share. The stock's dividend is projected to increase at a constant rate of 4.50% per year. The required rate of return on the stock, r_s, is 10.00%. What is Ewert's expected price 3 years from today?
a. $31.61
b. $32.43
c. $33.26
d. $34.11
e. $34.81

____ 13. You were hired as a consultant to Kroncke Company, whose target capital structure is 40% debt, 10% preferred, and 50% common equity. The after-tax cost of debt is 6.00%, the cost of preferred is 7.50%, and the cost of retained earnings is 13.25%. The firm will not be issuing any new stock. What is its WACC?
a. 9.48%
b. 9.78%
c. 10.07%
d. 10.37%
e. 10.68%

14. To help finance a major expansion, Delano Development Company sold a noncallable bond several years ago that now has 15 years to maturity. This bond has a 10.25% annual coupon, paid semiannually, it sells at a price of $1,025, and it has a par value of $1,000. If Delano's tax rate is 40%, what component cost of debt should be used in the WACC calculation?
    a. 5.11%
    b. 5.37%
    c. 5.66%
    d. 5.96%
    e. 6.25%

15. Thompson Stores is considering a project that has the following cash flow data. What is the project's IRR, NPV and Payback if the WACC is 10%? Note that a project's projected IRR can be less than the WACC (and even negative), in which case it will be rejected.

Year:	0	1	2	3	4	5
Cash flows:	−$1,000	$300	$295	$290	$285	$270

    a. IRR - 11.16%, NPV = 96.72, Payback = 3.4 years
    b. IRR= 13.78%, NPV = 125.232, Payback = 3.4 years
    c. IRR= 13.78%, NPV = 96.72, Payback = 3.4 years
    d. IRR = 12.45%, NPV = 96.72, Payback 4.1 years

    e. IRR = 12.45%, NPV = 125.232, Payback = 4.1 years

16. Suppose the U.S. Treasury announces plans to issue $50 billion of new bonds. Assuming the announcement was not expected, what effect, other things held constant, would that have on bond prices and interest rates?
    a. Prices and interest rates would both rise.
    b. Prices would rise and interest rates would decline.
    c. Prices and interest rates would both decline.
    d. There would be no changes in either prices or interest rates.
    e. Prices would decline and interest rates would rise.

17. Last year Toto Corporation's sales were $225 million. If sales grow at 6% per year, how large (in millions) will they be 5 years later?
    a. $271.74
    b. $286.05
    c. $301.10
    d. $316.16
    e. $331.96

18. You want to go to Europe 5 years from now, and you can save $3,100 per year, beginning immediately. You plan to deposit the funds in a mutual fund which you expect to return 8.5% per year. Under these conditions, how much will you have just after you make the 5th deposit, 5 years from now?
    a. $17,986.82
    b. $18,933.49
    c. $19,929.99
    d. $20,926.49
    e. $21,972.82

19. Below is the common equity section (in millions) of Teweles Technology's last two year-end balance sheets:

	2006	2005
Common stock	$2,000	$1,000
Retained earnings	2,000	2,340
Total common equity	$4,000	$3,340

Teweles has never paid a dividend to its common stockholders. Which of the following statements is CORRECT?

a. The company's net income in 2006 was higher than in 2005.
b. Teweles issued common stock in 2006.
c. The market price of Teweles' stock doubled in 2006.
d. Teweles had positive net income in both 2005 and 2006, but the company's net income in 2006 was lower than it was in 2005.
e. The company has more equity than debt on its balance sheet.

____ 20. Companies generate income from their "regular" operations and from other sources like interest earned on the securities they hold, which is called non-operating income. Lindley Textiles recently reported $12,500 of sales, $7,250 of operating costs other than depreciation, and $1,000 of depreciation. The company had no amortization charges and no non-operating income. It had $8,000 of bonds outstanding that carry a 7.5% interest rate, and its federal-plus-state income tax rate was 40%. How much was Lindley's operating income, or EBIT?

a. $3,462
b. $3,644
c. $3,836
d. $4,038
e. $4,250

____ 21. An investor is considering starting a new business. The company would require $475,000 of assets, and it would be financed entirely with common stock. The investor will go forward only if she thinks the firm can provide a 13.5% return on the invested capital, which means that the firm must have an ROE of 13.5%. How much net income must be expected to warrant starting the business?

a. $52,230
b. $54,979
c. $57,873
d. $60,919
e. $64,125

____ 22. D. J. Masson Inc. recently issued noncallable bonds that mature in 10 years. They have a par value of $1,000 and an annual coupon of 5.5%. If the current market interest rate is 7.0%, at what price should the bonds sell?

a. $829.21
b. $850.47
c. $872.28
d. $894.65
e. $917.01

____ 23. McCue Inc.'s bonds currently sell for $1,250. They pay a $120 annual coupon, have a 15-year maturity, and a $1,000 par value, but they can be called in 5 years at $1,050. Assume that no costs other than the call premium would be incurred to call and refund the bonds, and also assume that the yield curve is horizontal, with rates expected to remain at current levels on into the future. What is the difference between this bond's YTM and its YTC? (Subtract the YTC from the YTM.)

a. 2.11%
b. 2.32%
c. 2.55%
d. 2.80%
e. 3.09%

____ 24. Moerdyk Corporation's bonds have a 10-year maturity, a 6.25% semiannual coupon, and a par value of $1,000. The going interest rate (r_d) is 4.75%, based on semiannual compounding. What is the bond's price?

a. 1,063.09
b. 1,090.35

  c. 1,118.31
  d. 1,146.27
  e. 1,174.93

____ 25. Rick Kish has a $100,000 stock portfolio. $32,000 is invested in a stock with a beta of 0.75 and the remainder is invested in a stock with a beta of 1.38. These are the only two investments in his portfolio. What is his portfolio's beta?
  a. 1.18
  b. 1.24
  c. 1.30
  d. 1.36
  e. 1.43

____ 26. Yonan Corporation's stock had a required return of 11.50% last year, when the risk-free rate was 5.50% and the market risk premium was 4.75%. Now suppose there is a shift in investor risk aversion, and the market risk premium increases by 2%. The risk-free rate and Yonan's beta remain unchanged. What is Yonan's new required return? (Hint: First calculate the beta, then find the required return.)
  a. 14.03%
  b. 14.38%
  c. 14.74%
  d. 15.10%
  e. 15.48%

____ 27. You hold a diversified portfolio consisting of a $5,000 investment in each of 20 different common stocks. The portfolio beta is equal to 1.12. You have decided to sell a lead mining stock (b = 1.00) at $5,000 net and use the proceeds to buy a like amount of a steel company stock (b = 2.00). What is the new beta of the portfolio?
  a. 1.1139
  b. 1.1725
  c. 1.2311
  d. 1.2927
  e. 1.3573

____ 28. A stock just paid a dividend of $D_0 = \$1.75$. The required rate of return is $r_s = 12.0\%$, and the constant growth rate is $g = 4.0\%$. What is the current stock price?
  a. $20.56
  b. $21.09
  c. $21.63
  d. $22.18
  e. $22.75

____ 29. If $D_0 = \$2.75$, g (which is constant) = 3%, and $P_0 = \$36$, what is the stock's expected total return for the coming year?
  a. 9.82%
  b. 10.07%
  c. 10.33%
  d. 10.60%
  e. 10.87%

____ 30. Gary Wells Inc. plans to issue perpetual preferred stock with an annual dividend of $6.50 per share. If the required return on this preferred stock is 6.5%, at what price should the stock sell?
  a. $90.37
  b. $92.69
  c. $95.06
  d. $97.50
  e. $100.00

____ 31. Assume that you are a consultant to Broske Inc., and you have been provided with the following data: $D_1 = \$1.30$; $P_0 = \$42.50$; and $g = 7.00\%$ (constant). What is the cost of equity from retained earnings based on the DCF approach?
   a. 9.08%
   b. 9.56%
   c. 10.06%
   d. 10.56%
   e. 11.09%

____ 32. You are considering two mutually exclusive, equally risky, projects. Both have IRRs that exceed the WACC that is used to evaluate them. Which of the following statements is CORRECT? Assume that the projects have normal cash flows, with one outflow followed by a series of inflows.
   a. If the two projects' NPV profiles do not cross in the upper right quadrant, then there will be a sharp conflict as to which one should be selected.
   b. If the cost of capital is greater than the crossover rate, then the IRR and the NPV criteria will not result in a conflict between the projects. One project will rank higher by both criteria.
   c. If the cost of capital is less than the crossover rate, then the IRR and the NPV criteria will not result in a conflict between the projects. One project will rank higher by both criteria.
   d. For a conflict to exist between NPV and IRR, the initial investment cost of one project must exceed the cost of the other.
   e. For a conflict to exist between NPV and IRR, one project must have an increasing stream of cash flows over time while the other has a decreasing stream. If both sets of cash flows are increasing or decreasing, then it would be impossible for a conflict to exist, even if one project is larger than the other.

____ 33. Aubey Inc. is considering two projects that have the following cash flows:

Year	Project 1 Cash Flow	Project 2 Cash Flow
0	−$2,000	−$1,900
1	500	1,100
2	700	900
3	800	800
4	1,000	600
5	1,100	400

At what cost of capital would the two projects have the same net present value?
   a. 4.73%
   b. 5.85%
   c. 6.70%
   d. 7.50%
   e. 8.20%

TRUE/FALSE

1. ANS: T   PTS: 1   DIF: Medium
   TOP: (3.9) Federal income taxes: int exp and dividends
2. ANS: T   PTS: 1   DIF: Easy   TOP: (6.3) CAPM and risk
3. ANS: F   PTS: 1   DIF: Easy   TOP: (1.2) Firm organization
4. ANS: F
   There is no reason to think that this statement would be true. Each portion of the payment representing interest declines, while each portion representing principal repayment increases. Therefore, the statement is clearly false. We could also work out some numbers to prove this point. Here's an example for a 3-year loan at a 10% annual interest rate. The interest component is never equal to the principal repayment component.

Original loan	1000	
Rate	10%	
Life	3	
Payment	$402.11	

	Beg. Balance	Interest	Principal	Ending Bal.
1	$1,000.00	$100.00	$302.11	$697.89
2	$697.89	$69.79	$332.33	$365.56
3	$365.56	$36.56	$365.56	$0.00

   PTS: 1   DIF: Medium   TOP: (2.17) Amortization
5. ANS: T   PTS: 1   DIF: Easy   TOP: (4.3) Asset management ratios

MULTIPLE CHOICE

6. ANS: C
   It is a secondary market transaction because the stock is transferred from one investor to another.

   PTS: 1   DIF: Easy   OBJ: TYPE: Conceptual
   TOP: (1.7) Financial markets
7. ANS: B

N	10
PV	$0.50
PMT	$0
FV	$2.20
I/YR	**15.97%**

   PTS: 1   DIF: Easy   OBJ: TYPE: Problems
   TOP: (2.4) Growth rate
8. ANS: B
   a would leave the CR unchanged.
   b would indeed reduce the CR.

c is false, given that the initial CR > 1.0.
d is false, given that the initial CR > 1.0.
e is false, given that the initial CR > 1.0.

Original CA/CL	Minus .5	New CA/CL	Old CR	New CR	
1.9/1	0/0.5	1.9/1.5	1.90	1.27	CR falls if initial CR is greater than 1.0

PTS: 1   DIF: Medium   OBJ: TYPE: Conceptual
TOP: (4.2) Current ratio

9. ANS: C

Profit margin	5.25%
TATO	1.50
Equity multiplier	1.80
ROE	**14.18%**

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
TOP: (4.8) Du Pont equation: basic calculation

10. ANS: B
This is a relatively technical problem. It should be used only if calculations are emphasized in class, or on a take-home exam where students have time to look up formulas.

State	Return	Deviation from Mean	Squared Deviation	
0.25	25.00%	10.00%	1.00%	
0.50	15.00%	0.00%	0.00%	
0.25	5.00%	−10.00%	1.00%	
Expected return	15.00%		0.50%	Expected variance

s = 7.07%

Coefficient of variation = s/Expected return
Coefficient of variation = **0.4714**

PTS: 1   DIF: Medium   OBJ: TYPE: Problems
TOP: (6.2) Coefficient of variation

11. ANS: B   PTS: 1   DIF: Easy   OBJ: TYPE: Conceptual
TOP: (7.5) Risk aversion

12. ANS: E

Stock price	$30.50
Growth rate	4.50%
Years in the future	3
$P_3 = P_0(1 + g)^3 =$	**$34.81**

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
TOP: (8.6) Future price of a constant growth stock

13. ANS: B

	Weights	Costs
Debt	40%	6.00%

Preferred		10%	7.50%
Common		50%	13.25%

$\text{WACC} = w_d \times r_d(1 - T) + w_p \times r_p + w_c \times r_s$ **9.78%**

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
TOP: (10.10) WACC

14. ANS: D

Coupon rate	10.25%
Periods/year	2
Maturity (yr)	15
Bond price	$1,025.00
Par value	$1,000
Tax rate	40%

Calculator inputs:

N = 2 × 15	30
PV = Bond's price	−$1,025.00
PMT = coupon rate * par/2	$51.25
FV = Par = Maturity value	$1,000
I/YR	4.96%
times periods/yr = before-tax cost of debt	9.93%
= After-tax cost of debt (A–T r_d) for use in WACC	**5.96%**

PTS: 1   DIF: Medium   OBJ: TYPE: Problems
TOP: (10.2) Component cost of debt

15. ANS: C

Year:	0	1	2	3	4	5
Cash flows:	−$1,000	$300	$295	$290	$285	$270

IRR = **13.78%**
NPV = 96.71781 = 96.72
Payback:

Years	**Outcome - 1000**
3	**885-1000 = -115**
x	**0**
4	**1,170 - 1,000 = 170**

x =   3 + 1 [0 - (-115)]/[170 - (-115)] =   3 + 115/285 = 3.403 ==> 3.4

PTS: 1   DIF: Easy/Medium   OBJ: TYPE: Problems
TOP: (11.3) IRR (uneven cash flows; 5 years)

16. ANS: E   PTS: 1   DIF: Medium   OBJ: TYPE: Conceptual
TOP: (1.5) Security prices and interest rates

17. ANS: C

N	5
I/YR	6.0%
PV	$225.00
PMT	$0.00
FV	**$301.10**

PTS: 1 DIF: Easy OBJ: TYPE: Problems
TOP: (2.2) FV of a lump sum

18. ANS: C

N	5
I/YR	8.5%
PV	$0.00
PMT	$3,100
FV	**$19,929.99**

PTS: 1 DIF: Easy OBJ: TYPE: Problems
TOP: (2.8) FV of an annuity due

19. ANS: B PTS: 1 DIF: Medium OBJ: TYPE: Conceptual
TOP: (3.2) Balance sheet

20. ANS: E

Sales	$12,500
Operating costs excluding depr'n	$7,250
Depreciation	$1,000
Operating income (EBIT)	**$4,250**

PTS: 1 DIF: Easy OBJ: TYPE: Problems
TOP: (3.3) Income statement: EBIT

21. ANS: E

Assets = equity	$475,000
Target ROE	13.5%
Required net income	**$64,125**

PTS: 1 DIF: Easy OBJ: TYPE: Problems
TOP: (4.5) Return on equity (ROE): finding net income

22. ANS: D

Coupon rate	5.5%
PMT	$55
N	10
I/YR	7.0%
FV	$1,000
PV	**$894.65**

PTS: 1 DIF: Easy OBJ: TYPE: Problems
TOP: (5.3) Bond valuation

23. ANS: A

If held to maturity:		If called in 5 years:	
N = Maturity	15	N = Call	5
PV	$1,250	PV	$1,250
PMT	$120	PMT	$120
FV = Par	$1,000	FV=Call Price	$1,050
I/YR = YTM	8.91%	I/YR = YTC	6.81%

Difference:	**2.11%**

PTS: 1 DIF: Medium OBJ: TYPE: Problems

TOP: (5.4) Yields to maturity and call
24. ANS: C

Par value	$1,000
Coupon rate	6.25%
Periods/year	2
Yrs to maturity	10
N = periods	20
Annual rate	4.75%
Periodic rate	2.38%
PMT/period	$31.25
FV	$1,000
PV	**$1,118.31**

PTS: 1   DIF: Medium   OBJ: TYPE: Problems
TOP: (5.6) Bond valuation: semiannual coupons
25. ANS: A

Company	Investment	Port. weight	Beta	Weight × beta	
Stock 1	$ 32,000	0.32	0.75	0.24	
Stock 2	$ 68,000	0.68	1.38	0.94	
	$100,000	1.00		1.18	= Portfolio beta

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
TOP: (6.3) Portfolio beta
26. ANS: A

Risk-free rate	5.50%	
Old market risk premium	4.75%	
New market risk premium	6.75%	
Old required return	11.50%	
Beta	1.26	Intermediate step: b = (old return − r_{RF})/old RP_M
New required return	**14.03%**	

PTS: 1   DIF: Medium   OBJ: TYPE: Problems
TOP: (6.5) CAPM
27. ANS: B

% lead stock:	5%
Lead beta:	1.00
Steel beta:	2.00
Old beta:	1.12 = 0.95X + 0.05(1.00) where X is the portfolio's average beta w/o steel.
	X = 1.12/0.95 − 0.05 = 1.12895

New beta = 0.95X + 0.05(2.00) = 0.95 × 1.12895 + 0.05 × 2.00 = **1.1725**

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
TOP: (7.5) Portfolio beta
28. ANS: E

D_0	$1.75	
r_s	12.0%	
g	4.0%	
$D_1 = D_0(1 + g)$ =	$1.82	Intermediate step used to find answer
$P_0 = D_1/(r_s - g)$	**$22.75**	

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
TOP: (8.5) Constant growth valuation

29. ANS: E

D_0	$2.75
g	3.0%
P_0	$36.00
$D_1 = D_0(1 + g) =$	$2.83 Intermediate step used to find answer
Total return $= r_s = D_1/P_0 + g$	**10.87%**

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
TOP: (8.6) Expected total return

30. ANS: E

Preferred dividend	$6.50
Required return	6.5%
Preferred price $= D_P/r_P =$	**$100.00**

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
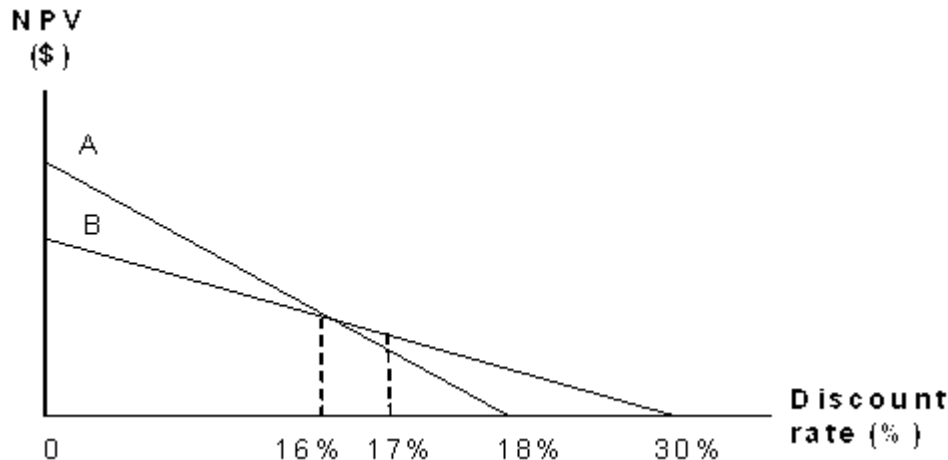TOP: (8.10) Preferred stock valuation

31. ANS: C

D_1	$1.30
P_0	$42.50
g	7.00%
$r_s = D_1/P_0 + g$	**10.06%**

PTS: 1   DIF: Easy   OBJ: TYPE: Problems
TOP: (10.6) Component cost of retained earnings: DCF, D1

32. ANS: B

Again, it is useful to draw NPV profiles that fit the description given in the question. Any number that meets the criteria will do.

Statement a is false, because if the profiles do not cross, then one will dominate the other, with both a higher IRR and a higher NPV at every discount rate. Statement b is true. Statement c is false. Statement d is false because a conflict can result from differences in the timing of the cash flows. Statement e is false because scale differences can result in profile crossovers and thus conflicts.

PTS: 1   DIF: Medium/Hard   OBJ: TYPE: Conceptual
TOP: (11.4) NPV profiles

33. ANS: B
Subtract Project 2 cash flows from Project 1 cash flows:
$CF_0 = -100$
$CF_1 = -600$
$CF_2 = -200$
$CF_3 = 0$
$CF_4 = 400$
$CF_5 = 700$

Put these in the cash flow register and solve for IRR/YR, which is **5.85%**.

PTS: 1   DIF: Medium   OBJ: TYPE: Problems
TOP: (11.4) Crossover rate--nonalgorithmic