

**Corporation Finance
Spring 2012**

Sample Exam 2B

True/False

Indicate whether the statement is true or false.

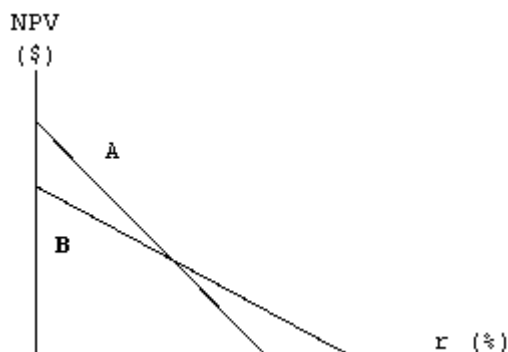
- ___ 1. The total return on a share of stock refers to the dividend yield less any commissions paid when the stock is purchased and sold.
- ___ 2. According to the basic DCF stock valuation model, the value an investor should assign to a share of stock is dependent on the length of time he or she plans to hold the stock.
- ___ 3. The before-tax cost of debt, which is lower than the after-tax cost, is used as the component cost of debt for purposes of developing the firm's WACC.
- ___ 4. Funds acquired by the firm through retaining earnings have no cost because there are no dividend or interest payments associated with them, and no flotation costs are required to raise them, but capital raised by selling new stock or bonds does have a cost.

Multiple Choice

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

- ___ 5. If a stock's dividend is expected to grow at a constant rate of 5% a year, which of the following statements is CORRECT?
 - a. The expected return on the stock is 5% a year.
 - b. The stock's dividend yield is 5%.
 - c. The price of the stock is expected to decline in the future.
 - d. The stock's required return must be equal to or less than 5%.
 - e. The stock's price one year from now is expected to be 5% above the current price.
- ___ 6. The expected return on Northeast Corporation's stock is 14%. The stock's dividend is expected to grow at a constant rate of 8%, and it currently sells for \$50 a share. Which of the following statements is CORRECT?
 - a. The stock's dividend yield is 7%.
 - b. The stock's dividend yield is 8%.
 - c. The current dividend per share is \$4.00.
 - d. The stock price is expected to be \$54 a share one year from now.
 - e. The stock price is expected to be \$57 a share one year from now.
- ___ 7. A stock is expected to pay a dividend of \$0.75 at the end of the year. The required rate of return is $r_s = 12.5\%$, and the expected constant growth rate is $g = 8.5\%$. What is the current stock price?
 - a. \$17.82
 - b. \$18.28
 - c. \$18.75
 - d. \$19.22
 - e. \$19.70
- ___ 8. Hettenhouse Company's perpetual preferred stock sells for \$102.50 per share, and it pays a \$9.50 annual dividend. If the company were to sell a new preferred issue, it would incur a flotation cost of 4.00% of the price paid by investors. What is the company's cost of preferred stock for use in calculating the WACC?
 - a. 9.27%
 - b. 9.65%
 - c. 10.04%
 - d. 10.44%

- e. 10.86%
- ___ 9. Assume that you are a consultant to Magee Inc., and you have been provided with the following data: $r_{RF} = 4.00\%$; $RP_M = 5.00\%$; and $b = 1.15$. What is the cost of equity from retained earnings based on the CAPM approach?
- 9.75%
 - 10.04%
 - 10.34%
 - 10.65%
 - 10.97%
- ___ 10. 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?
- 9.08%
 - 9.56%
 - 10.06%
 - 10.56%
 - 11.09%
- ___ 11. 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?
- 9.48%
 - 9.78%
 - 10.07%
 - 10.37%
 - 10.68%
- ___ 12. Several years ago the Pettijohn Company sold a \$1,000 par value, noncallable bond that now has 15 years to maturity and a 7.00% annual coupon that is paid semiannually. The bond currently sells for \$925, and the company's tax rate is 40%. What is the component cost of debt for use in the WACC calculation?
- 4.35%
 - 4.53%
 - 4.72%
 - 4.90%
 - 5.10%
- ___ 13. Projects A and B have identical expected lives and identical initial cash outflows (costs). However, most of one project's cash flows come in the early years, while most of the other project's cash flows occur in the later years. The two NPV profiles are given below:



Which of the following statements is CORRECT?

- a. More of Project A's cash flows occur in the later years.
- b. More of Project B's cash flows occur in the later years.
- c. We must have information on the cost of capital in order to determine which project has the larger early cash flows.
- d. The NPV profile graph is inconsistent with the statement made in the problem.
- e. The crossover rate, i.e., the rate at which Projects A and B have the same NPV, is greater than either project's IRR.

- _____ 14. Projects S and L are equally risky, mutually exclusive, and have normal cash flows. Project S has an IRR of 15%, while Project L's IRR is 12%. The two projects have the same NPV when the WACC is 7%. Which of the following statements is CORRECT?
- a. If the WACC is 10%, both projects will have positive NPVs.
 - b. If the WACC is 6%, Project S will have the higher NPV.
 - c. If the WACC is 13%, Project S will have the lower NPV.
 - d. If the WACC is 10%, both projects will have a negative NPV.
 - e. Project S's NPV is more sensitive to changes in WACC than Project L.
- _____ 15. Van Auken Inc. is considering a project that has the following cash flows:

Year	Cash Flow
0	-\$1,000
1	400
2	300
3	500
4	400

The company's WACC is 10%. What are the project's payback, internal rate of return, and net present value?

- a. Payback = 2.4; IRR = 10.00%; NPV = \$600.
 - b. Payback = 2.4; IRR = 21.22%; NPV = \$260.
 - c. Payback = 2.6; IRR = 21.22%; NPV = \$300.
 - d. Payback = 2.6; IRR = 21.22%; NPV = \$260.
 - e. Payback = 2.6; IRR = 24.12%; NPV = \$300.
- _____ 16. ZumBahlen Inc. is considering the following mutually exclusive projects:

Year	Project A Cash Flow	Project B Cash Flow
0	-\$5,000	-\$5,000
1	200	3,000
2	800	3,000
3	3,000	800
4	5,000	200

At what cost of capital will the net present value of the two projects be the same? (That is, what is the "crossover" rate?)

- a. 15.68%
 - b. 16.15%
 - c. 16.74%
 - d. 17.33%
 - e. 17.80%
- _____ 17. Edelman Electric Systems is considering a project that has the following cash flow and WACC data. What is the project's MIRR? Note that a project's projected MIRR can be less than the WACC (and even negative), in which case it will be rejected.

WACC:	10.00%			
Year:	0	1	2	3
Cash flows:	<hr/> -\$800	\$350	\$350	\$350

- a. 8.62%
- b. 9.58%
- c. 10.64%
- d. 11.82%
- e. 13.14%

**Corporation Finance
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Answer Section**

Sample Exam 2B

TRUE/FALSE

- | | | | |
|-----------|--------|-----------|---------------------------------------|
| 1. ANS: F | PTS: 1 | DIF: Easy | TOP: (8.4) Total stock returns |
| 2. ANS: F | PTS: 1 | DIF: Easy | TOP: (8.4) Stock valuation |
| 3. ANS: F | PTS: 1 | DIF: Easy | TOP: (10.2) Cost of debt |
| 4. ANS: F | PTS: 1 | DIF: Easy | TOP: (10.4) Cost of retained earnings |

MULTIPLE CHOICE

5. ANS: E
Statement e is true, because the stock price is expected to grow at the dividend growth rate.

PTS: 1 DIF: Medium OBJ: TYPE: Conceptual
TOP: (8.5) Constant growth model

6. ANS: D
 $P_1 = P_0(1 + g) = \$54$. Therefore, d is correct. All the other answers are false.

PTS: 1 DIF: Medium OBJ: TYPE: Conceptual
TOP: (8.5) Constant growth model

7. ANS: C
- | | |
|-----------------------|----------------|
| D_1 | \$0.75 |
| r_s | 12.5% |
| g | 8.5% |
| $P_0 = D_1/(r_s - g)$ | \$18.75 |

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

8. ANS: B
- | | |
|--------------------------|--------------|
| Preferred stock price | \$102.50 |
| Preferred dividend | \$9.50 |
| Flotation cost | 4.00% |
| $r_p = D_p/(P_p(1 - F))$ | 9.65% |

PTS: 1 DIF: Easy OBJ: TYPE: Problems
TOP: (10.3) Component cost of preferred stock

9. ANS: A
- | | |
|----------------------------------|--------------|
| r_{RF} | 4.00% |
| RP_M | 5.00% |
| b | 1.15 |
| $r_s = r_{RF} + (RP_M \times b)$ | 9.75% |

PTS: 1 DIF: Easy OBJ: TYPE: Problems
TOP: (10.5) Component cost of retained earnings: CAPM

10. 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

11. ANS: B

	Weights	Costs
Debt	40%	6.00%
Preferred	10%	7.50%
Common	50%	13.25%
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

12. ANS: C

Coupon rate 7.00%
 Periods/year 2
 Maturity (yr) 15
 Bond price \$925.00
 Par value \$1,000
 Tax rate 40%

Calculator inputs:

$N = 2 \times 15$ 30
 PV = Bond's price -\$925.00
 PMT = coupon rate * par/2 \$35
 FV = Par = Maturity value \$1,000
 I/YR 3.93%
 times periods/yr = before-tax cost of debt 7.86%
 = After-tax cost of debt $(A-T r_d)$ for use in WACC **4.72%**

PTS: 1 DIF: Medium OBJ: TYPE: Problems
 TOP: (10.5) Component cost of retained earnings: CAPM

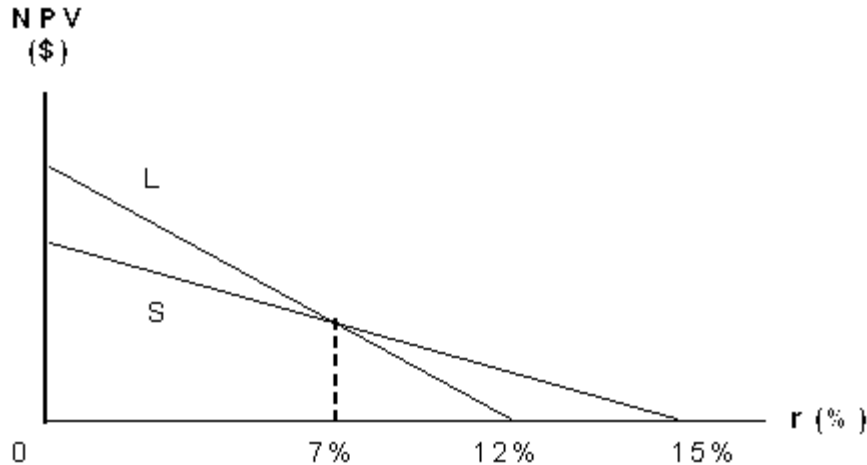
13. ANS: A

Statement a is true and the other statements are false. Distant cash flows are more severely penalized by high discount rates, so if the NPV profile line has a steep slope, this indicates that cash flows occur relatively late.

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

14. ANS: A

The easiest way to think about this question is to begin by drawing an NPV profile as shown below, then using it to decide which statement is correct.



Statement a is true, because both projects have an IRR greater than the WACC and thus will have a positive NPV. Statement b is false, because at 6%, the WACC is less than the crossover rate and Project L has a higher NPV than S. Statement c is false, because at 13% the WACC is greater than the crossover rate and S would have a higher NPV than L. Statement d is false, because of reasons mentioned for statement a. Statement e is false, because Project L's NPV profile is steeper, which means Project L's NPV is more sensitive to changes in WACC.

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

15. ANS: D
 Payback = $2 + \$300/\$500 = 2.6$ years
 Using the cash flow register, calculate NPV and IRR:
 IRR = **21.22%**
 NPV = \$260.43 \approx **\$260**

PTS: 1 DIF: Easy OBJ: TYPE: Problems
 TOP: (Comp: 11.2,11.3,11.8) NPV, IRR, and payback--nonalgorithmic

16. ANS: B
 Find the differences between the two projects' respective cash flows as follows:
 $(CF_A - CF_B)$.
 $CF_0 = -5,000 - (-5,000) = 0$.
 $CF_1 = 200 - 3,000 = -2,800$.
 $CF_2 = -2,200$.
 $CF_3 = 2,200$.
 $CF_4 = 4,800$.

Enter these CFs and find the IRR/YR = **16.15%**, which is the crossover rate.

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

17. ANS: E
 WACC: 10.00%
 Year: 0 1 2 3
 Cash flows: $-\$800$ \$350 \$350 \$350 TV = Sum of compounded inflows:
 Compounded values, FVs: \$423.50 \$385.00 \$350.00 \$1,158.50

MIRR = **13.14%** Found as discount rate that equates PV of TV to cost, discounted back 3 years @ 10%

MIRR = **13.14%** Alternative calculation, using Excel's MIRR function

PTS: 1 DIF: Medium OBJ: TYPE: Problems

TOP: (11.6) MIRR (constant cash flows; 3 years)